

Appendix – I



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

*Established by Government of Central Provinces Education Department by Notification No. 513 dated the 1st of August, 1923 & presently a State University governed by Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017)

DIRECTION NO. 11 OF 2020

**ADMISSIONS AND EXAMINATIONS LEADING TO THE AWARD OF THE
DEGREE OF BACHELOR OF ARTS (SEMESTER PATTERN)(THREE YEAR
DEGREE COURSE)DIRECTION, 2020.**

Whereas, Maharashtra Public Universities Act, 2016 (VI of 2017) (hereinafter the Act) has come into force from 1st March 2017;

AND

Whereas, the University has issued Direction No.15 of 2017 dealing with the composition of the four faculties created by the Act, where under the existing different faculties of the University have been merged into the four new faculties created by the Act, by which the erstwhile independent faculties of "Arts" and "Social Sciences" have been merged in the new faculty of "Humanities" under the Act;

AND

Whereas, the University Grants Commission, New Delhi vide letter No.D.O.No.F-1-2/2008 (XI Plan) dated 31st January 2008 regarding new initiatives under the XIth Plan-Academic Reforms in the University has suggested for improving quality of higher education and to initiate the Academic Reforms at the earliest,

AND

Whereas, the Special Task Committees under the erstwhile faculties of Arts and Social Sciences in their meetings held during 02nd March 2016 to 16th May 2016, prepared the syllabi and scheme of examination for the Bachelor of Arts, Semester Pattern (Three Year Degree Course) in the erstwhile Faculties of Arts and Social Science and recommended to the Hon'ble Vice-Chancellor for starting the said course from the academic session 2016-17;

AND

Whereas, the Hon'ble Vice Chancellor of RashtrasantTukadojiMaharaj Nagpur University, Nagpur in exercise of his powers under 14(7) of the Maharashtra University Act, 1994 (since repealed by the Act VI of 2017) has considered, accepted and recommended to the Academic Council, on behalf of the Board of Studies under the Faculties of Arts and Social Science, the policy decision regarding introduction of Bachelor of Arts, Semester Pattern

, course, it's syllabi along with the draft Direction and the scheme of examination for semesters-I to VI;

AND

Whereas, the Academic Council in its meeting held on 08th June, 2016 vide item No. 1(B) & 4 (B) has considered, accepted and recommended to Management Council, for Bachelor of Arts (Three Year Degree Course) in the Faculty of Arts & Social Science, Semester Pattern syllabi with draft direction and the Scheme of examination of Semester-I to VI

AND

Whereas, the Management Council in its meeting held on 14th June, 2016 vide item No. 96 (B)& 99(B), has considered, accepted the course of Bachelor of Arts, semester pattern (Three Year Degree Course) in the erstwhile Faculties of Arts & Social Science, semester pattern syllabi with draft Direction and scheme of examination of Semester-I to VI;

AND

Whereas, Direction No. 12 of 2016, introducing the semester pattern Bachelor of Arts (Three Year Degree Course) from the Academic Session 2016-17 had been issued by the University;

AND

Whereas, the University has issued Direction No. 13 of 2017 prescribing "conditions for conduct of undergraduate and post graduate examinations based on credit based/choice based credit system, in all faculties, Direction, 2017" on 06/06/2017, prescribing certain conditions relating to maximum and minimum passing marks in the theory /practical subjects prescribed in the semester of a course, the maximum theory and practical subjects in a semester, rules of exemption and ATKT, and also the coding pattern for the subjects in each semester of the course;

AND

Whereas, provision for Additional B. A. on the lines prescribed in Ordinance No. 146/1997, since repealed, has been provided vide the decision of the Vice-Chancellor taken under section 12(7) of the Act, on behalf of the faculty of Humanities, on 05-01-2019 and the same were incorporated in the Direction no. 04 of 2019;

AND

Whereas, Direction No. 04 of 2019 replacing Direction No. 27 of 2017 and incorporating the appropriate provisions was issued by the University but the same has lapsed by virtue of the provision of proviso to section 12(8) of the Act necessitating issuance of a new Direction incorporating the provisions of Direction 04 of 2019, since lapsed;

Now, therefore, I, Dr. Subhash R. Chaudhari, in exercise of my powers under section 12(8) of the Act, do hereby issue the following Direction;



1. This Direction may be called "Admissions and Examinations leading to the award of the Degree of Bachelor of Arts (Semester Pattern)(Three Year Degree Course) Direction, 2020"
2. The Direction shall come into force from the date of its issuance and will be applicable to all the students taking admissions in the 1st& 2nd semesters, 3rd&4thsemesters of the Bachelor of Arts, (semester pattern) (three year degree course)and also the students admitted for the Additional B. A. course during the academic session 2018-2019 and onward.
3. The duration of the B.A. course shall be of three academic years consisting of six semesters with the University examinations at the end of each semester namely:
 - a) B.A. Semester I Exam
 - b) B.A. Semester II Exam
 - c) B.A. Semester III Exam
 - d) B.A. Semester IV Exam
 - e) B.A. Semester V Exam
 - f) B.A. Semester VI Exam
4. The theory examinations of semesters-I, II, III, IV, V and VI shall be conducted by the University and shall be held separately at the end of each semester at such places and dates as may be decided and notified by the University and shall be held as per the schedule given in the Table below.

Sr. No.	Name of the examination	Regular Students, Ex And External Students Examination	External. Students and Supplementary Students Examination
1	Semester I, III & V	Winter	Summer
2	Semester II, IV & VI	Summer	Winter

5. ELIGIBILITY TO THE COURSE:

In order to be eligible for admission to the 1stsemester of Bachelor of Arts, Semester Pattern (Three Year Degree) course, the applicant should have passed the 12th standard examination of the Maharashtra State Board of Secondary and Higher Secondary Education in the Faculty of Arts or Faculty of Commerce or Faculty of Science, Vocational Stream, Professional Courses or any other 10+2 examination with English as one of the compulsory subject. Where,




however, the applicant has passed the 12th standard examination without English as the compulsory paper such applicant shall have to obtain the eligibility certificate from the University.

6. ELIGIBILITY FOR ADMISSION IN EXAMINATION:-

Subject to compliance with the provisions of this Direction and of other ordinances in force from time to time, the following persons shall be eligible for admission to the examination:-

- (a) A student who has prosecuted a regular course of study for not less than six months prior to that examination;
- (b) A teacher in an educational institution eligible under the provisions of Ordinance No. 18;
- (c) An external student.

Provided that in the case of the candidates eligible under clause (b) and (C) above the candidate shall have attended a course of laboratory instructions by obtaining casual admission in a college for the subject in which laboratory work is prescribed. Such a candidate shall submit a certificate to that effect signed by the Principal of the college.

- (d) For external candidate the internal mark of a subject/paper shall be awarded in proportion to the marks secured by him/her in the University examination in the theory or practical subject/paper.

7. **ATKT Rules:-** Only the students who have taken admission as regular students are eligible for the benefits of the ATKT rules hereunder. Thus the external students and the students appearing in examinations under para 6 (b) above and para 21 hereinafter are not eligible for the benefit of the ATKT rules.

The ATKT rules for admission in higher semesters of the B.A. (Semester Pattern) course shall be as given in following table:

Admission Semester	to	The student should have attended the session satisfactorily and appeared for the examination.	Candidate should have passed in at least 50% of the passing heads of the examinations, fraction, if any, to be ignored (Theory and Practical being separate passing heads.)

A	B.A.I st Semester	-----	-----
B	B.A.II nd Semester	B.A. Ist semester	-----
C	B.A.III rd Semester	B.A. II nd semester	Semester I and Semester II examinations taken together.
D	B.A.IV th Semester	B.A. III rd semester	-----
E	B.A.V th Semester	B.A. IV semester	a) Should have passed the examinations of semester I and semester II, And b) 50% of the total number of heads prescribed for semester III and semester IV examinations.
F	B.A.VI th Semester	B.A. V semester	-----

- 8) a) Without prejudice to other provisions of Ordinance no. 6 relating to the examination in general, provisions of Para 5, 8, 10 and 31 of the said ordinance shall apply to every student admitted to this course.
- b) The students admitted to this Degree Course shall be governed by the general Ordinances/ Directions of the University which are applicable to all the regular, external and ex-students. These ordinances include complete as well as relevant provision of Ordinance No. 1, 2, 6, 7-A, 9, 10, 19, 109, ordinance No. 30 of 2006, (Amended Ordinance No. 4 of 2006), Direction 9 of 2008, Direction 5 of 2004, wherever applicable.
- 9) The fee for the course including the tuition, examination, laboratory and other fees shall be as prescribed by the university from time to time.




10) Students can opt following papers for the B.A. Semester I to VI as per the details given below:-

Paper -I Code-1T1	Compulsory English	Compulsory subject	Compulsory
Paper -II Code-1T2	Second Language: Marathi, Hindi, Urdu, Supplementary English, Gujrati, Bengali, Telugu, Sanskrit, French, German, Russian, Persian, Arabic, Pali and Prakrit or Latin	Any one of these languages	Compulsory
Paper -III to V Code-1T3 to 1T5	Marathi Literature, Hindi Literature Urdu Literature, Gujrati Literature, Bengali Literature, Telugu Literature, French Literature, German Literature, Russian Literature Persian Literature, Arabic Literature, Pali and Prakrit Literature, Latin Literature, Sanskrit Literature Communicative English, Functional English, English Literature, Functional Hindi, Music, History, Economics, Political Science, Sociology, Philosophy, Psychology, Geography, Home Economics, Dr. Ambedkar Thoughts, Public Administration, Buddhist Studies, Ancient Indian History Culture & Archaeology, Gandhian Thoughts , Fashion Design, Military Science, Mathematics and Statistics.	Any Three from these subjects	Optional

Note: The coding of the subjects in the semester II onward shall be on the lines of the coding in the first semester. Thus the theory papers in semester II shall be coded as 2T1 to 2T5 and so on. In case of the practical subject the same shall be coded as 1P1, 1P2 or 2P1, 2P2 or 3P1, 3P2 and so on depending upon the semester.

11) The five subject offered by the students at semester I level will remain unchanged till the final semester.

- 12) (a) The scope of the subjects shall be as prescribed in the syllabus.
- (b) The medium of instruction and examination shall be English, Hindi, Marathi, except for the courses in Languages and Literature.
- 13) The maximum marks assigned to each paper and minimum marks, an examinee must obtain in order to pass the examination shall be as per clause 25 herein.
- 14) The practical examination of all semester will be conducted at the end of each semester as indicated in the table given below:

Sr. No.	Name of the examination	Main Examination	Supplementary Examination
1	Semester I; III & V	Winter	Summer
2	Semester II, IV & VI	Summer	Winter

- 15) The scheme of awarding internal marks shall as per clause 26 of this Direction.
- 16) Successful examinees at the B.A. Sem-VI Examination who obtained not less than 60% marks (aggregate of Sem- I, II, III, IV, V and VI Examinations taken together) shall be placed in first division, those obtaining less than 60% but not less than 45% in second Division, and all other successful examinees below 45% in third division.
- 17) There shall be no classification of successful candidates at Sem- I to Sem-V Examination. The division of the successful candidate shall be declared at the end six semester taking in to consideration the score of all six semesters.
- 18) An examinee successful in the minimum period prescribed for the examination, obtaining not less than 75% of the maximum marks prescribed in the subject shall be declared to have passed the examination with Distinction at that subject. Distinction shall not be awarded to an examinee availing of the provision of the exemptions and compartments at any of the examination.
- 19) Provisions of Ordinance No, 7-A relating to the condonation of Deficiency of Marks for passing an examination and compartment as amended updated vide ordinance No. 45 of 1983 shall apply to the examinations under this Direction.
- 20) The names of the successful examinee passing the examination as a whole in the minimum prescribed period and securing the grades

equivalent to first and second division shall be arranged in order of merit as provided in ordinance 6 relating to examination in general.

- 21) No candidate shall be admitted to an examination under this Direction, if he / she has already passed the same examination of this university or of any other university. However, any person who has passed Final B.A. examination under this Direction or any earlier Ordinances/Direction of this University or any of the First Degree Examination of this University or of any other Statutory University may on payment of the fee prescribed by the University, from time to time, be admitted to subsequent examination in one or more optional subject/s not offered by him/her in earlier examination, without being required to prosecute regular course of studies in the subject/s in a college. Such an examinee will be required to take simultaneously all the examinations of the six semesters leading to the Degree of Bachelor of Arts in subject/s and on securing not less than the minimum passing marks prescribed for the subject/s shall be issued a certificate of having passed examination in the Additional subject/s as the case may be.
- 22) Successful examinees at the B.A. Semester I, II, III, IV, V and VI Examinations shall be entitled to receive a Certificate signed by the Director, Board of Examinations & Evaluation of University (DBE&E) and successful examinees at the end of B.A. Semester VI examination shall, on payment of prescribed fees, receive a Degree in the prescribed format, signed by the Vice-Chancellor.
- 23) The provisions of Direction No. 3 of 2007 for the award of grace marks for passing an examination, securing higher grade in subject(s) as updated from time to time shall apply to the examination under this direction.
- 24) **Absorption scheme** for failure students of the Annual pattern:
- All the students of the annual pattern who failed to complete the course within the time given i.e. till Summer 2019, will have to switch over to the semester pattern course under this Direction by taking fresh admission.
 - The students of the annual pattern who have passed the first year annual pattern, as per annual pattern, shall get admission to the IIIrd semester.
 - The students who have passed the first year and the second year of the annual pattern shall be admitted to the Vth semester.
 - The final semester mark sheet of the students who are absorbed under clauses (b) and (c) shall be prepared by converting their total marks in to out of 3000 marks.
 - The candidates of old course (Yearly Pattern) who had become eligible to the second year or third year under the ATKT Rules

shall be permitted to appear for higher class (Semester III or V) as per the new course (Semester Pattern) examination of the Bachelor of Arts programme (Semester Pattern) provided they submit eligibility certificate (as per Proforma given below) from the Principal of the College stating that he/she has satisfactorily undergone a course of study.

ELIGIBILITY CERTIFICATE

(For getting admission for Semester III or Semester V of Degree Course)

Name of the Previous Examination _____ Year _____

This is to certify that this Shri / Shrimati / Kumari _____ is eligible

to get the admission for _____ of B.A. Degree Course.

Name and signature of the Principal _____

Name of the College _____

Dated ____ / ____ / ____

SEAL

25. Teaching & examination scheme Bachelor of Arts, Semester Pattern (Three Year Degree Course) B.A. (Semester I, II, III, IV, V, VI)

Subject	Teaching Scheme				Maximum /Practical and Theory Internal Assessment Marks					
	Th	Tu	Pra c	Tota l	Time Hrs	The o Max Mar ks	Inter nal Asses smen t/ Prac. Mark s	Tot al	Total Passing Marks	
Compulsor y English	04	01*	----	05	3	80	20	100	40	
Second Languages	04	----	----	04	3	80	20	100	40	

Optional Except ELT.	05	----	----	05	3	80	20	100	40
Eng. Literature	06	----	----	06	3	80	20	100	40
Practical Subjects like geography, music, etc.	04	----	01	05	3(Th) 6-8 (Prac)	40/ 40 (As per the syllabus)	10/ 10 (As per the syllabus)	50 50 (As per the syllabus)	20/ 20 (As per the syllabus)

***One tutorial period consisting of 20 students per batch for Compulsory English**

26. Guidelines for Internal Assessment, Theory Paper and Practical:-

1. The internal assessment marks shall be awarded by the concerned teacher.
2. The internal assessment shall be completed by the College / University at least 15 days prior to the final examination of each semester. The Marks shall be sent to the University immediately after the assessment in the prescribed format.

3. General guidelines for Internal Assessment are:

- a) The internal assessment marks assigned to each theory paper shall be awarded on the basis of assignments like class test, attendance, home assignments, study tour, visit to educational institutions and research organizations, field work, group discussions or any other innovative practice / activity, as prescribed in the relevant syllabus.
- b) There shall be no separate / extra allotment of work load to the teacher concerned. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
- c) The concerned teacher / department / college shall keep the record of all the above activities until six months after the declaration of the results of that semester.

(Red signature)

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- d) At the beginning of each semester, every teacher / department / college shall inform his / her students unambiguously the method he / she proposes to adopt and the scheme of marking for internal assessment, wherever the heads for award of internal marks are not specified in the syllabus of the paper.
- e) The teacher shall announce the schedule of activity for internal assessment in advance in consultation with HOD / Principal.
- f) Final submission of internal marks to the University shall be before the commencement of the University Theory / Practical examinations whichever is later.

27. The scope of the subjects, paper pattern for theory examination and distribution of marks shall be as prescribed by the Board of Studies of the relevant subject and as given in the syllabus.

However, broad distribution of marks for different subjects in each semester will be as under:

Subject	Theory	Internal Assessment	Practical	Internal Assessment	Total
Compulsory English.	80	20	-----		100.
Second Languages.	80	20	-----		100
Optional subjects without practicals.	80	20	-----		100
Optional subjects with practicals. (Optional)	40	10	40	10	100

28. **Practical Examination:-** A. Each practical shall carry 40 marks. For the examination, the distribution of the marks shall be as follows:

i. Record / Journal / Internal: 10 marks - Evaluated by

ii. assessment

Internal

: 10 marks - Evaluated jointly by

External & Internal

: 20 marks - Evaluated by External

Practical Performance

iii. Viva

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NOTE: 1. Practical performance shall be jointly evaluated by the external and internal examiner. In case of discrepancy, the external examiner's decision shall be final.

3. Practical examinations shall be of 3 to 8 hours duration for one or two days, depending on the subject and the number of students.

B. The Practical Record of every student shall carry a certificate as shown below, duly signed by the teacher-in-charge and the Head of the Department.

C. If the student fails to submit his / her certified Practical Record duly signed by the Teacher-In-Charge and the Head of the Department, he / she shall not be allowed to appear for the Practical Examination and no Marks shall be allotted to the student.

D. The certificate template shall be as follows:

CERTIFICATE

Name of the college / institution _____

Name of the Department: _____

This is to certify that this Practical Record contains the bonafide record of the Practical work of Shri / Shrimati / Kumari _____ of B.A. _____

_____ Semester _____ during the academic year _____

The candidate has satisfactorily completed the experiments prescribed by Rashtrasant Tukadoji Maharaj Nagpur University for the subject _____

Dated ____ / ____ / ____

Signature of the teacher who taught the examinee

1. _____

2. _____

Principal of the College



29. Repeal:- On issuance of this Direction the Direction No.12 of 2016 shall stand repealed.
30. Saving :- Notwithstanding repeal of the Direction No 12 of 2016 and earlier Direction governing the annual pattern course of Bachelor of Arts, the students who had taken admission under the annual pattern course shall continue to be governed by the relevant Directions/Ordinance until they complete their course within the time permissible under the absorption scheme hereunder. On failure to complete the course within the permissible time and attempts such students, at their option, may be absorbed in the new course, under this Direction, as per the absorption scheme. Such student shall be eligible to get exemption in the equivalent subjects/papers which he/she has passed. The decision regarding equivalence of the subject shall be that of the Dean of the Faculty taken in consultation with the Chairman of the relevant Board of studies



(Dr. Subhash R. Chaudhari)
Vice-Chancellor

Dated : 19 / 08 / 2020.



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

“(Established by Government of Central Provinces Education Department by Notification No. 513 dated the 1st of August, 1923 & presently a State University governed by Maharashtra Public Universities Act, 2016 (Mah. Act no. VI of 2017).”

DIRECTION NO. 17 OF 2018

Directions, Subject Scheme and Syllabus
For
Bachelor of Commerce (B.Com) Examinations
(Credit Based Semester Pattern)

FACULTY OF COMMERCE & MANAGEMENT

Bachelor of Commerce (B.Com) Examinations

2018-19 and Onwards

(Three Years Semester Pattern Under Graduate Course)



RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Direction No. 17 of 2018

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF
BACHELOR OF COMMERCE (CREDIT BASED SEMESTER PATTERN) UNDER FACULTY
OF COMMERCE AND MANAGEMENT**

(Issued by the Vice-Chancellor under section 12(8) of the Maharashtra Public Universities. Act, 2016)(Mah. Act No. VI of 2017)

WHEREAS, the Maharashtra Public Universities Act, 2016 (No. VI of 2017) (hereinafter Act) has come into force with effect from 1st March, 2017;

AND

WHEREAS, the University Grants Commission, New Delhi vide letter no. D.O. No. F-2/2008/(XI Plan), Dated 31st January 2008 regarding new initiatives under the XI Plan-Academic reforms in the University has suggested for improving quality of higher education and to initiate the Academic reform at the earliest.

AND

WHEREAS, faculty of commerce and management in its meeting held 14.3.2016 has decided to update the existing syllabus for award of the degree of Bachelor of Commerce commensurate with the curricula existing in the various universities in India and with a view to include the latest trends in the commerce stream as well as to design it to suit to the needs of the industries and corporate houses,

AND

WHEREAS, University Grants Commission, New Delhi has prescribed the Model Curriculum for award of the Bachelor degree in the Faculty of commerce and directed to implement the same from the academic session 2016-2017

AND

WHEREAS, Chairman of all the Board of Studies in the Faculty of Commerce in their meeting held on 5.4.2016 prepared the Scheme of Credit Based Semester pattern for conduct of the B.Com. Examination,

AND

WHEREAS, Board of Studies viz. (1) Business Administration and Business Management, (2) Commerce, (3) Accounts and Statistics, (4) Business Economics and (5) Ad-hoc Board in Computer Application in its meetings held on 8.2.2016 respectively updated the existing Syllabi and recommended some modifications in the scheme of examination for graduate courses,

AND

WHEREAS, Coordinator of Task Force, Faculty of Commerce & Management has consented to the changes in the syllabus and the scheme of examination for the award of B.Com Degree,

AND

WHEREAS, the Vice-Chancellor, Nagpur University, Nagpur approved the recommendations so made by the Special Task Committee in the Faculty of Commerce duly concurred by the Coordinator, Faculty of Commerce as required under Section 38 (a) of the Act

AND

WHEREAS, As per the Advice of the Vice Chancellor, Coordinator, Faculty of Commerce & Management, Coordinator, Special Task Committee in the meeting held on 14.3.2016 constituted subcommittee for syllabus restructuring of B.Com with CBS pattern. The Sub-committee submitted the Draft Syllabus of B.Com with CBS pattern in meeting held on 5.4.2016

AND

WHEREAS, Direction No. 59 of 2016 entitled 'Examination leading to the Degree of Bachelor of Commerce (B.Com) (CREDIT BASED SEMESTER PATTERN) in the Faculty of Commerce & Management, was issued by the Vice-Chancellor;

AND

WHEREAS, in accordance with the provisions of the Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017) the Direction NO. 59 of 2016 stands expired;

AND

WHEREAS, the Joint Meeting of all the Chairman of Board of Studies under the Faculty of Commerce and Management and Dean, Faculty of Commerce and Management had approved the revised Syllabus and Scheme of Examination leading to the Degree of Bachelor of Commerce (Credit Based Semester Pattern) in its meeting held on 21st August 2018 and recommended the same for approval of the Hon'ble Vice-Chancellor;

AND

WHEREAS, the matter involved is required to be implemented urgently for the purpose of prescribing examinations leading to the degree of Bachelor of Commerce (B.Com) (CBS) in the Faculty of Commerce and Management;

AND

WHEREAS, the preparation of Ordinance to regulate the matter relating to the examinations leading to the degree of Bachelor of Commerce (B.Com) (CBS) is time consuming process;

Now, therefore, I, Dr. Siddharthvinayak P. Kane, Vice-Chancellor, Rastrasant Tukdoji Maharaj Nagpur University, Nagpur in exercise of the powers vested in me under Section 12(8) of the Maharashtra Public Universities Act, 2016 (VI of 2017) do hereby issue the following direction:-

- The Direction shall come into force with effect from the date of its issuance by the Vice-Chancellor. It shall also govern the students who were admitted to the B.Com.(C.B.S.) course in the academic sessions 2016-2017 and 2017-2018.
- The duration of the course shall be of **three** academic years consisting of the **six** semesters with university examination at the end of each semester namely
 - B.Com Semester I Examination
 - B. Com Semester II Examination
 - B. Com Semester III Examination
 - B.Com Semester IV Examination
 - B.Com Semester V Examination
 - B.Com Semester VI Examination

The examination shall be held at such places and on such dates which are notified by the University.

I. ELIGIBILITY TO THE COURSE

- The duration of B. Com. Course shall be of Three years consisting Semester-I &II in first year ,Semester-III &IV in second year and Semester-V &VI in third year
- Subject to compliance with the provisions of this direction and of other ordinances in force from time to time, an applicant for admission to this course shall have passed the XII Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education, with English at Higher or Lower level and any Modern Indian Language at higher or lower level with any combination of optional subjects;

OR

- XII Standard Examination of Maharashtra State Board of Secondary and Higher Secondary Education in Vocational Stream with one language only; OR any other examination recognized as equivalent thereto; in such subjects and with such standards of attainments as may be prescribed Minimum Competition vocation course (MCVC).

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OR

Any other Equivalent Examination of any State in (10+2) pattern with English & any combination of subjects

- The Examinations for Semesters I,II,III,IV , V and VI shall be held twice a year at Such places and on such dates as notified by the University.
- The fees for examination shall be as prescribed by the Rashtrasant Tukdoji Maharaj Nagpur University from time to time.
- Applicant for the examination pursuing the regular course of study leading to the Bachelor Degree in Commerce shall not be permitted to join any other course in this University or any other University simultaneously.
 - **ATKT Rules** for Admission for the B.Com. Course -An unsuccessful examinee at the any semester examination shall be **ALLOWED TO KEEP TERM in accordance to the following table:**

Admission to Semester	Candidate should have filled in the examination form of the R.T.M. Nagpur University	Candidate should have passed at least 50%of the passing heads of following examinations
I Semester	As provided eligibility to the course, as above in the direction.	-
II Semester	Semester I	-
III Semester	-	Semester I and II taken together i.e. 6 heads clear
IV Semester	Semester III	-
V Semester	-	Semester I & II all heads clear& semester III & IV together i.e. 6 heads clear
VI Semester	Semester V	-

Note- The consideration of passing heads in respect of all the subjects, including languages, includes the University Theory Examination and Internal Assessment/Practical marks taken together for all subjects.

For providing teaching facility in the subjects of Elective Groups minimum requirement of students is 5.

II. CREDIT SYSTEM OF EVALUATION

- The B. COM. programme shall consist of **Thirty Six** Papers/Subjects in old terminology

With the issuance of this Direction, The Direction No 59 of 2016 shall stand repealed.

Nagpur:

Dated : 18.9.2018

Sd/-
(**Dr. S.P. Kane**)

Vice-Chancellor

Subjects offered, contact hours, credits attached and allocation of marks shall be as follows:

APPENDIX-I

Scheme of teaching and examination under credit based semester system for B.Com Course.

Semester-I

Course Code	Subjects	Internal /University Exam.	Total Hours	Marks			Credits
				Semester EndExam	Internal Assessment	Total Marks	
1T1	Financial Accounting-I	Uni.	60	80	20	100	4
1T2	Business Organization	Uni.	60	80	20	100	4
1T3	Company Law	Uni.	60	80	20	100	4
1T4	Business Economics-I	Uni.	60	80	20	100	4
1T5	Compulsory English	Uni.	60	80	20	100	4
1T6	Second Language 1T6.1- Supplementary English 1T6.2- Marathi 1T6.3- Hindi	Uni.	60	80	20	100	4.
Total			360	480	120	600	24

Note.-Second Language subject of B. Com. Semester ; I, II, III & IV shall be as follows:

A)The syllabus, question paper pattern and question paper of the following subjects :

1. Supplementary English, 2. Marathi, 3. Hindi will be as per the Commerce Language Board.

B) The syllabus , question paper pattern and question paper of the following subjects :

Sanskrit, Urdu, Gujarathi, Telgu, Bengali, Persian, Arebic Pali &Prakrit, Latin will be as per the Boards of the faculty of Arts for B.A. Semester- I, II, III & IV respectively.

Vocational Courses :Semester -I

Course Code	Subjects	Total Hours	Examination Scheme				Total Marks TH. + PR + IM)	Credits
			Theory (Uni)	Internal (College)	Practical (Uni)			
			Max Marks theory Paper (TH)	Max Marks (IM)	Max Marks practical (PR)	Min Passing Mark		
1T7	Entrepreneurship Development	60	80	20	-	40	100	4
1T8	1T8.1- Computer Application-II or 1T8.2- Principles and Practice of Insurance-II or 1T8.3- Advertising, Sales Promotion & Sales Management-II	60	80	20	-	40	100	4

Semester-II

Course Code	Subjects	Internal /University Exam.	Total Hours	Marks			Credits
				Semester EndExam	Internal Assessment	Total Marks	
2T1	Statistics and Business Mathematics	Uni.	60	80	20	100	4
2T2	Business Management	Uni.	60	80	20	100	4
2T3	Secretarial Practice	Uni.	60	80	20	100	4
2T4	Business Economics-II	Uni.	60	80	20	100	4
2T5	Compulsory English	Uni.	60	80	20	100	4
2T6	Second Language 2T6.1- Supplementary English 2T6.2- Marathi 2T6.3- Hindi	Uni.	60	80	20	100	4.
Total			360	480	120	600	24

Note-.Second Language subject of B. Com. Semester ; I, II, III & IV shall be as follows:

A)The syllabus, question paper pattern and question paper of the following subjects :

1. Supplementary English, 2. Marathi, 3. Hindi will be as per the Commerce Language Board.

B) The syllabus , question paper pattern and question paper of the following subjects :

Sanskrit, Urdu, Gujarathi, Telgu, Bengali, Persian, Arebic Pali &Prakrit, Latin will be as per the Boards of the faculty of Arts for B.A. Semester- I, II, III & IV respectively.

Vocational Courses : Semester -II

Course Code	Subjects	Total Hours	Examination Scheme				Total Marks (TH. + PR + IM)	Credits
			Theory (Uni)	Internal (College)	Practical (Uni)			
			Marks Theory Paper	Max Marks (IM)	Marks Practical (PR)	Passing Marks		
2T7	Entrepreneurship Development	60	80	20	-	40	100	4
2T8	2T8.1- Computer Application-II or 2T8.2- Principles and Practice of Insurance-II or 2T8.3- Advertising, Sales Promotion & Sales Management-II	60	80	20	-	40	100	4

Semester-III

Course Code	Subjects	Internal /University Exam.	Total Hours	Marks			Credits
				Semester End Exam.	Internal Assessment	Total Marks	
3T1	Financial Accounting -II	Uni.	60	80	20	100	4
3T2	Business Communication & Management	Uni.	60	80	20	100	4
3T3	Business Law	Uni.	60	80	20	100	4
3T4	Monetary Economics –I	Uni.	60	80	20	100	4
3T5	Compulsory English	Uni.	60	80	20	100	4
3T6	Second Language 3T6.1- Supplementary English 3T6.2- Marathi 3T6.3- Hindi	Uni.	60	80	20	100	4.
Total			360	480	120	600	24

Note-Second Language subject of B. Com. Semester ; I, II, III & IV shall be as follows:

A)The syllabus, question paper pattern and question paper of the following subjects :

1. Supplementary English, 2. Marathi, 3. Hindi will be as per the Commerce Language Board.

B) The syllabus , question paper pattern and question paper of the following subjects :

Sanskrit, Urdu, Gujarathi, Telgu, Bengali, Persian, ArebicPali&Prakrit, Latin will be as per the Boards of the faculty of Arts for B.A. Semester- I, II, III & IV respectively.

Vocational Courses :Semester-III

Course Code	Subjects	Total Hours	Examination Scheme				Total Marks (TH. + PR + IM)	Credits
			Theor y (Uni)	Internal (College)	Practical (Uni)			
			max marks Theory Paper (TH)	Max Marks (IM)	Max Marks Practical (PR)	Min Passing Marks		
3T7	Entrepreneurship Development	60	80	20	-	40	100	4
3T8	3T8.1- Computer Application-II or 3T8.2- Principles and Practice of Insurance-II or 3T8.3- Advertising, Sales Promotion & Sales Management-II	60	80	20	-	40	100	4

Semester-IV

Course Code	Subjects	Internal /University Exam.	Total Hours	sMarks			Credits
				Semester End Exam.	Internal Assessment	Total Marks	
4T1	Financial Accounting -III	Uni.	60	80	20	100	4
4T2	Skill Development	Uni.	60	80	20	100	4
4T3	Income Tax	Uni.	60	80	20	100	4
4T4	Monetary Economics-II	Uni.	60	80	20	100	4
4T5	Compulsory English	Uni.	60	80	20	100	4
4T6	Second Language 4T6.1- Supplementary English 4T6.2- Marathi 4T6.3- Hindi	Uni.	60	80	20	100	4.
Total			360	480	120	600	24

Note-1.For rest of Indian Languages the code is as per syllabus of B.A. Semester –I

2. Second Language subject of B. Com. Semester ; I, II, III & IV shall be as follows:

A)The syllabus, question paper pattern and question paper of the following subjects :

1. Supplementary English, 2. Marathi, 3. Hindi will be as per the Commerce Language Board.

B) The syllabus , question paper pattern and question paper of the following subjects :

Sanskrit, Urdu, Gujarati, Telgu, Bengali, Persian, Arabic Pali &Prakrit, Latin will be as per the Boards of the faculty of Arts for B.A. Semester- I, II, III & IV respectively.

Vocational Courses :Semester-IV

Course Code	Subjects	Total Hours	Examination Scheme				Total Marks (TH. + PR + IM)	Credits
			Theory (Uni)	Internal (College)	Practical (Uni)			
			Max Marks Theory Paper (TH)	Max Marks (IM)	Max Marks Practical (PR)	Min Passing Marks		
4T7	Entrepreneurship Development-IV	60	80	20	-	40	100	4
4T8	4T8.1- Computer Application-IV or 4T8.2- Principles and Practice of Insurance-IV Or 4T8.3- Advertising, Sales Promotion and Sales Management-IV	60	80	20	-	40	100	4

Semester-V

Course Code	Subjects	Internal /Uni. Examination	Total Hours	Marks			Credits
				Semester End Exam.	Internal Assessment	Total Marks	
5T1	Core Group						
	1. Financial Accounting- IV	Uni.	60	80	20	100	4
5T2	2. Cost Accounting	Uni.	60	80	20	100	4
5T3	3. Indian Economy- I	Uni.	60	80	20	100	4
5T4	Elective Group –I (Any One) 5T4.1 Marketing Management OR 5T4.2 Computerized Accounting	Uni.	60	80	20	100	4
5T5	Elective Group- II (Any Two) 5T5.1 Business Finance -I OR 5T5.2 Auditing OR 5T5.3 Management Process	Uni. Uni.	60 60	80 80	20 20	100 100	4 4
Total			360	480	120	600	24

Vocational Courses :Semester-V

Course Code	Subjects	Total Hours	Examination Scheme				Total Marks (TH. + PR + IM)	Credits
			Theory (Uni)	Internal (College)	Practical (Uni)			
			Max Marks Theory Paper (TH)	Max Marks (IM)	Max Marks Practical (PR)	Min Passing Marks		
5T7	Entrepreneurship Development-V	60	80	20	-	40	100	4
5T8	5T8.1 Computer Application-V Or 5T8.2 Principles and Practice of Insurance-V Or 5T8.3 Advertising, Sales Promotion and Sales Management-V	60	80	20	-	40	100	4

Semester-VI

Course Code	Subjects	University Examination	Total Internal /Hours	Marks			Credits
				Semester End Exam.	Internal Assessment	Total Marks	
6T1	Core Group 1. Financial Accounting -V	Uni.	60	80	20	100	4
6T2	2.Management Accounting	Uni.	60	80	20	100	4
6T3	3.Indian Economy - II	Uni.	60	80	20	100	4
6T4	Elective Group-II (Any One) 6T4.1 Human Resource Management OR 6T4.2- Indirect Tax	Uni.	60	80	20	100	4
6T5	Elective Group-II (Any Two) 6T5.1 Business Finance - II OR 6T5.2 Industrial Law OR 6T5.3 Advanced Statistics	Uni. Uni.	60 60	80 80	20 20	100 100	4 4
Total			360	480	120	600	24

Vocational Courses :Semester-VI

Course Code	Subjects	Total Hours	Examination Scheme				Total Marks (TH. + PR + IM)	Credits
			Theory (Uni)	Internal (College)	Practical (Uni)			
			Max Marks Theory Paper (TH)	Max Marks (IM)	Max Marks Practical (PR)	Min Passing Marks		
6T7	Entrepreneurship Development-VI	60	80	20	-	40	100	4
6T8	6T8.1 Computer Application-VI Or 6T8.2 Principles and Practice of Insurance-VI Or 6T8.3 Advertising, Sales Promotion and Sales Management-VI	60	80	20	-	40	100	4

III Choice of Vocational Courses :

Apart from doing General B.Com, students can opt for vocational courses in B. Com as under :

- ***Vocational subjects:*** The various vocational courses (mainly sponsored by UGC) which can be chosen by the students are given below. As per the UGC letter no. F.9-3/95 (Desk-VE) dated 23.12.1999 a course for **Entrepreneurial Development is compulsory** for students opting for vocational subjects. Thus with every vocational subject there will be one paper of Entrepreneurship Development.

Group –I - Computer Applications

- I. Entrepreneurship Development- Paper-I
- II. Computer Applications
- (2 papers in each year i.e. 6 papers in 3 years)

Group –II - Principles and Practice of Insurance

- I. Entrepreneurship Development- Paper-I
- II. Principles and Practice of Insurance
- (2 papers in each year i.e. 6 papers in 3 years)

Group –III - Advertising, Sales Promotion And Sales Management

- I. Entrepreneurship Development- Paper-I
- II. Advertising, Sales Promotion And Sales Management
- (2 papers in each year i.e. 6 papers in 3 years)

NOTE :

Students opting for UGC Vocational subject (any one group of the two mentioned above) may select the same in lieu of following mentioned subjects in the respective Semester.

B.Com. Semester-I :

- a. Second Language subject i.e. Hindi, Marathi, Supp. English, etc.
- b. Company Law

B.Com. Semester-II :

- a. Second Language subject i.e. Hindi, Marathi, Supp. English, etc.
- b. Secretarial Practice

B.Com. Semester-III :

- a. Second Language subject i.e. Hindi, Marathi, Supp. English, etc.
- b. Business Communication and Management

B.Com. Semester-IV :

- a. Second Language subject i.e. Hindi, Marathi, Supp. English, etc.
- b. Skill Development

B.Com. Semester-V :

- a. Core Group-I
- b. Elective Group-I

B.Com. Semester-VI :

- a. Core Group-II
- b. Elective Group-II

Summary of the Total Marks and Credits

<u>Sr. No.</u>		<u>Instruction Hours</u>	Total Marks) Semester End Exam.	Credits
1	Semester-I	360	600	24
2	Semester-II	360	600	24
3	Semester-III	360	600	24
4	Semester-IV	360	600	24
5	Semester-V	360	600	24
6	Semester-VI	360	600	24
Total		2160	3600	144

- The Semester End written examination of all subjects shall be conducted by the University.

B.COM. Examination Semester-I

Subject	Examination Scheme	Maximum Marks	Minimum Passing Marks (Combined)
1. Financial Accounting – I	<i>University Theory Examination</i>	80	40
	Internal Assessment	20	
	Total	100	
2. Business Organization	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
3. Company Law	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
4. Business Economics-I	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
5. Compulsory English	University Theory Examination	80	
	Internal Assessment	20	

	Total	100	40
6. Second Language	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
Total		600	240

B.COM. Examination Semester–II

Subject	Examination Scheme	Maximum Marks	Minimum Passing Marks (Combined)
1. Statistics & Business mathematics	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
2. Business Organization	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
3. Company Law	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
4. Business Economics-II	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
5. Compulsory English	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
6. Second Language	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
Total		600	240

B.COM. Examination Semester–III

Subject	Examination Scheme	Maximum Marks	Minimum Passing Marks (Combined)
1. Financial Accounting –II	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
2. Business Communication and Management	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
3. Business Law	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
4.Monetary Economics-I	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
5. Compulsory English	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
6.Second Language	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
Total		600	240

B.COM. Examination Semester–IV

Subject	Examination Scheme	Maximum Marks	Minimum Passing Marks (Combined)
1. Financial Accounting – III	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
2. Skill Development	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
3. Income Tax	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
4.Monetary Economics-II	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
5. Compulsory English	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
6.Second Language	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
Total		600	240

B.COM. Examination Semester–V

Subject	Examination Scheme	Maximum Marks	Minimum Passing Marks (Combined)
Group 1. Financial Accounting-IV	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
2. Cost Accounting	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
3. Indian Economy- I	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
4. Elective Group-I (Any One) Marketing Management OR Computerized Accounting.	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
5. Elective Group- II (Any Two) Business Finance -I OR Auditing OR Management Process	University Theory Examination	80 80	40 40
	Internal Assessment	20 20	
	Total	100 100	
Total		600	240

B.COM. Examination Semester–VI

Subject	Examination Scheme	Maximum Marks	Minimum Passing Marks (Combined)
Group 1.Financial Accounting -V	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
2.Management Accounting	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
3. Indian Economy II	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
4. Elective Group-I (Any One) Human Resource Management OR Indirect Tax	University Theory Examination	80	40
	Internal Assessment	20	
	Total	100	
5. Elective Group- II Business Finance –II OR Industrial Law OR Advanced Statistics	University Theory Examination	80 80	40 40
	Internal Assessment	20 20	
	Total	100 100	
Total		600	240

APPENDIX-II

I. GENERAL RULES AND REGULATIONS

The scope of the subject, percentage of passing in theory will be governed as per following rules:

- In order to pass at the Semester I, II, III, IV, V and VI examinations an examinee shall obtain not less than 40% marks in each paper. This is to say that out of total 100 marks student should score 40 marks jointly in university examination (80 Marks) and internal examination (20 marks).
- The results of successful candidates at the end of semester-VI shall be classified on the basis of aggregate marks obtained in all the six semesters.
- The candidates who pass all the semester examinations in the first attempt are eligible for ranks.
- The results of the candidates who have passed the Semester-VI examination but not passed the lower semester examinations shall be declared as NCL (not completed lower semester examinations). Such candidates shall be eligible for the Degree only after successful completion of all the lower semester examinations.
- Percentage of marks for declaring class:
Distinction- 75% and above (First Class With Distinction).
First Class- 60% and above
Second Class 45% and above but less than 60%.
Third Class 40% but not less than 45%
- An unsuccessful examinee at the any semester wise end examination shall be eligible for re-examination on payment of a fresh Examination fee prescribed by the University.

II. TEACHING NORMS FOR THEORY PAPERS

- For all Theory Papers there shall be **FIVE Periods Per week per Subject of 48 Minutes duration** each. Each Theory Paper must cover minimum 60 Clock Hours of Teaching and 360 Clock Hours for semester I, II, III IV, V & VI form awl the 6 papers and One Credit, subject of Theory will be of 1 Clock Hour
- No person shall be admitted to this Programme, if he has already passed the same Programme or a Programme of any other statutory University (which has been recognized as equivalent to this programme.)
- A candidate who fails in any of the semester examinations may be permitted to take the examinations again at a subsequent appearance as per the syllabus and scheme of

examination in vogue at the time the candidate took the examination for the first time. This facility shall be limited to the following two years i.e. 4 more attempts.

- Examinee successful at the Semester I, II, III, IV, V and VI examinations shall, on payment of the prescribed fee, receive a Degree in the prescribed form signed by the Vice-Chancellor.
- Qualification of Teacher shall be as per U.G.C. and State Government norms.

APPENDIX- III

Rashtrasant Tukdoji Maharaj Nagpur University

I. SUBJECTS FOR B.Com. EXAMINATION

Semester-I

1. 1T1-Financial Accounting-I
2. 1T2- Business Organization
3.1T3 Company Law
4. 1T4 Business Economics –I
5.1T5 Compulsory English
6.1T6 Second Language

Semester-II

1. 2T1 Statistics and Business Mathematics
2. 2T2 Business Management
3. 2T3 Secretarial Practice
4. 2T4 Business Economics –II
5.2T5 Compulsory English
6.2T6 Second Language

Semester-III

1. 3T1 Financial Accounting-II
2. 3T2 Business Communication and Management
3. 3T3 Business Law
4. 3T4 Monetary Economics –I
5.3T5. Compulsory English
6. 3T6 Second Language

Semester–IV

1. 4T1 Financial Accounting-III
2. 4T2 Skill Development.
3. 4T3 Income Tax
4. 4T4 Monetary Economics –II
5. 4T5 Compulsory English
6.4T6 Second Language

Semester–V

Core Group	1. 5T1 Financial Accounting IV
	2.5T2 Management Accounting
	3. 5T3 Indian Economy-I
Elective Group-I (Any One)	4. 5T4 .1 - Marketing Management OR 5T4.2 - Computerizes Accounting
Elective Group – II (Any Two)	5. 5T5.1- Business Finance 1 OR 5T5.2 - Auditing OR 5T5.3 – Management Process

S**Semester–VI**

Core Group	1.6T1 Financial Accounting -V
	2. 6T2 Cost Accounting
	4. 6T3 Indian Economy – I
Elective Group-II (Any One)	4. 6T4.1- Human Resource Management OR 6T5.2 - Indirect Tax
Foundation Group II (Any Two)	5. 6T5.1 - Business Finance-II OR 6T5.2 - Industrial Law OR 6T5.3 – Advanced Statistics

Workload

Workload Chart (70 periods per week)(Odd Semesters)(July to November)

B. Com. Semester - I			B. Com. Semester – III			B. Com. Semester – V		
S. No.	Subjects	N/o. of Periods	S. No.	Subjects	No. of Periods	S. No.	Subjects	No. of Periods
1.	Financial Accounting-I	5	1.	Financial Accounting-II	5	1.	Core Group 1. Financial Accounting IV Cost Accounting Indian Economy -I	5
2.	Business Organization	5	2.	Business Communication and Management	5	2		5
						3		5
3	Company Law	5	3.	Business Law	5	4.	Elective Group - I Marketing Management OR Computerized Accounting	5
4.	Business Economics –I	5	4.	Monetary Economics -I	5	5.	Elective Group - II Business Finance -I OR Auditing OR Management Process	5
								5
Total Periods		20	Total Periods		20	Total Periods		30

Workload Chart (70 periods per week)(Even Semesters)
(December to April)

B. Com. Semester - II			B. Com. Semester – IV			B. Com. Semester – VI		
S. No.	Subjects	No. of Periods	S. No.	Subjects	No. of Periods	S. No.	Subjects	No. of Periods
1.	Statistics and Business Mathematics	5	1.	Financial Accounting-III	5	1. 2. 3.	Core Group Financial Accounting-V	5
2.	Business Management	5	2.	Skill Development.	5		Cost Accounting	5
3.	Secretarial Practice	5	3.	Income Tax	5		Indian Economy-II	5
4.	Business Economics – II	5	4.	Monetary Economics –II	5	4.	Elective Group-I Human Resource Management OR Indirect Tax	5
						5.	Elective Group- II Business Finance-II OR Industrial Law OR Advanced Statistics	5 5
Total Periods		20			20			30

WEEKLY Workload Chart (LANGUAGES) (For Semesters I, II, III & IV)

SUBJECT(S)		PERIODS
1.	Compulsory English	5 PERIODS OF THEORY + 1 PERIOD OF TUTORIAL FOR A BATCH OF 20 STUDENTS
2.	Second Language - Supplementary English/ Hindi/Marathi/Sanskrit etc.	5 PERIODS OF THEORY

II. CONVERSION OF MARKS TO GRADES AND CALCULATIONS OF GPA (GRADE POINT AVERAGE) AND CGPA (CUMULATIVE GRADE POINT AVERAGE) :

In the Credit and Grade Point System, the assessment of individual Subjects in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

Abbreviations and Formulae Used

G : Grade

GP : Grade Points

C : Credits

CP : Credit Points

CG : Credits X Grades (Product of credits & Grades)

SGPA = $\sum CG$: Sum of Product of Credits & Grades points / $\sum C$: Sum of Credits points

SGPA : Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

CGPA : Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

While calculating the CG the value of Grade Point 1 shall be consider Zero (0) in case of learners who failed in the concerned course/s i.e. obtained the marks below 40. After calculating the SGPA for an individual semester and the CGPA for entire programme, the

value can be matched with the grade in the Grade Point table as per the Five (05) Points Grading System and expressed as a single designated GRADE such as O,A,B,C, F. (Fail).

Marks	Grade	Grade Points
75& above	O (Outstanding)	10
60-74	A (Very Good)	09
45-59	B (Good)	08
40-44	C (Average)	07
39& Below	F (Fail)	00

CGPA	Grade	Division
10	O (Outstanding)	Distinction
9-10	A (Very Good)	First
8-9	B (Good)	Second
7-8	C (Average)	Third

Note: -

- Consider Grade Points equal to Zero for (C x G) calculations of failed Learner/s in the concerned course/s.

The illustration for the conversion of marks into grades in a course and semester Illustrations of Calculation:- Pass

Subjects	Total Maximum Marks	Total Minimum Marks	Total Marks Obtained	Grade (G)	Grade points (GP)	Credit of the Course (C)	(Credit) X (Grade points) (CX GP)	SGPA = $\sum CG / \sum C$
C-11	100	40	60	A	9	4	36	SGPA $= 208/24$ $= 8.67$ Grade B RESULT = PASS
C-12	100	40	50	B	8	4	32	
C-13	100	40	75	O	10	4	40	
C-14	100	40	70	A	9	4	36	
C-15	100	40	48	B	8	4	32	
C-16	100	40	52	B	8	4	32	
Total	600	240	355	--	48	24	208	

Illustrations of Calculation:- Fail

Subjects	Total Maximum Marks	Total Marks Obtained	Grade(G)	Grade points(GP)	Credit of the Course(C)	(Credit) X (Grade points) (CX GP)	SGPA = $\Sigma CG / \Sigma C$
C-31	100	32	F	0	4	00	SGPA =102/24 =4.24 Grade F RESULT =FAIL
C-32	100	34	F	0	4	00	
C-33	100	60	B	8	4	32	
C-34	100	75	O	10	4	40	
C-35	100	33	F	0	4	00	
C-36	100	55	B	8	4	32	
Total	600	304	--	26	24	102	

Provision of Direction No.44 of 2001 governing the award of grace marks for passing an examination, securing higher Grades shall apply to the examination

III. GUIDELINES FOR SETTING QUESTION PAPERS:

- The question paper should be set in such a manner so as to cover the complete syllabus as prescribed by the University.
- The numerical questions in any of the subjects shall be set in ENGLISH only and the candidate shall have to answer such questions in ENGLISH only. The candidate may answer non-numerical questions in ENGLISH, MARATHI or HINDI.
- The duration of the Semester wise End Examination shall be **3.00** Hours per course.

**Revised Absorption Scheme B. Com.(old course Annual Pattern) 2014-2015 to
CBS New Course introduced in 2016-2017, issued under Direction No. 59 of
2016**

1. It is notified for general information of all concerned that the failure students of **B.Com. old course Annual Pattern introduced in 2014 shall be absorbed in the new course CBS Pattern introduced from the session 2016-2017 examination with the following scheme.**

2. The University shall conduct the examination of old course for three more consecutive examinations after the new scheme of examination is introduced as per following table:

B.Com. Examination	Attempt 1	Attempt 2	Attempt 3
B.Com. Part I	Winter 2016	Summer 2017	Winter 2017
B.Com. Part II	Winter 2017	Summer 2018	Winter 2018
B.Com. Part III	Winter 2018	Summer 2019	Winter 2019

3. Those who have completed & passed **B.Com. Part-I as per Old course (Annual pattern)** are eligible for admission in the **B.Com. II, SEM - III New Course**

4. The failure students of **B.Com. I and B.Com. II of old course (Annual Pattern - Introduced in 2014)** can be admitted to the 3rd and 5th semester of B.Com Course Semester Pattern respectively under this direction under the ATKT rules prevailing in Old Course (Introduced in 2014). However, they will be required to clear papers of annual pattern course in which they failed in 3 attempts as mentioned in above table.

5. The students are required to clear all their papers within the stipulated time. The students who failed to clear their course in three consecutive attempts as per this clause, will be required to appear in equivalent papers of new CBS semester pattern indicated in **Appendix.I, II & III**

Note:

The students who will appear in equivalent papers of **new course CBS scheme** paper with maximum theory marks 80, will get proportional marks out of 100, updated in **old course mark sheet of B.Com. I**

6. Those who have completed & passed **B.Com. Part - I & B.Com. Part - II** as per Old course are eligible for admission in the **B.Com. Part – III, Sem - V (New course)**.

7. Failure students of **B.Com. Part - II old course** and having ATKT as per rules are eligible to take admission in **B.Com. Part-III , Semester V New Course**. They should clear their **B.Com. Part - II old course backlog** papers in next **three attempts (Last Chance Winter 2018)**. If they fail to pass in **Winter-2018** attempt they will have to appear in equivalent papers of **new course CBS scheme** as per absorption scheme indicated in **Appendix- II**.

Note:

The students who will appear in parallel papers of **new course CBS scheme** paper with maximum theory marks 80, will get proportional marks out of 100, updated in **old course mark sheet of B.Com. Part-II**.

8. Failure students of **B.Com. Part-III old course** are having chances upto **winter 2019** examination (**Last Chance**). So they should appear **B.Com. Part-III old course examination & is required to clear their backlog**. After that those who will have backlog in the **B.Com. Part-III old course** will have to appear in equivalent papers of **new course CBS scheme** as per the absorption scheme indicated in **Appendix- III**.

Note:

The students who will appear in parallel papers of **new course CBS scheme** paper with maximum theory marks 80, will get proportional marks out of 100, updated in **old course mark sheet of B.Com. Part-III**.

The equivalence & exemption of subjects for the students absorbed in the new course shall be as Below

Appendix- I B.Com Part- I

Sr. No.	Old Course 2014-2015	Max. Marks	Sr. No.	New Course 2016-2017	Max. Marks.
	Theory			Theory	
1	Compulsory English	100	1	Compulsory English -Sem I	80
2	Ind Language (Other Indian language as per syllabus) (Hindi, Marathi,etc.)	100	2	Ind Language (Other Indian language as per syllabus) (Hindi, Marathi,etc.)-Sem-I	80
3	Financial Accounting-I	100	3	Financial Accounting-I Sem- I	80
4	Fundamentals of Statistics& Computer	100	4	Statistics & Business Mathematics-Sem-II	80
5.	Principles of Business Management	100	5.	Business Management-Sem-II	80
6	Business Economics	100	6	Business Economics-II Sem-II	80
7.	Company Law & Secretarial Practice(CLSP)	100	7	Company Law- Sem-I	80

Appendix- II B.Com Part- II

Sr. No.	Old Course 2014-2015	Max. Marks	Sr. No.	New Course 2016-2017	Max. Marks.
	Theory			Theory	
1	Compulsory English	100	1	Compulsory English -Sem III	80
2	Ind Language (Other Indian language as per syllabus) (Hindi, Marathi,etc.)	100	2	Ind Language (Other Indian language as per syllabus) (Hindi, Marathi,etc.)-Sem-III	80
3	Financial Accounting-II	100	3	Financial Accounting-II Sem- III	80
4	Cost & Management Accounting	100	4	Cost Accounting- Sem- V	80
5.	Business Communication	100	5.	Business Communication & Management-Sem-III	80
6	Monetary Economics	100	6	Monetary Economics-I I Sem-IV	80
7.	Business & Industrial Law	100	7	Business Law- Sem-III	80

Appendix- III B.Com Part- III

Sr. No.	Old Course 2014-2015	Max. Marks	Sr. No.	New Course 2016-2017	Max. Marks.
	Theory			Theory	
1	Financial Accounting –III	100	1.	Financial Accounting –III Sem- V	80
			2.	Auditing Sem- V	80
2	Income Tax & Auditing	100			
3	Functional Management	100	3	Management Process- SemV	80
4	Indian Economy	100	4	Indian Economy-II Sem-VI	80
5.	Business Finance	100		Business Finance- II Sem-VI	80
6	Computerized Accounting	80		Computerized Accounting- Sem-V	80



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

FACULTY OF SCIENCE

DIRECTION NO. 9 OF 2016

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE
DEGREE OF BACHELOR OF SCIENCE**

(THREE YEARS DEGREE COURSE – SEMESTER PATTERN)

(Issued under Section 14(8) of the Maharashtra Universities Act, 1994)

Whereas, Maharashtra Universities Act No. XXXV has come into force with effect from 22nd July, 1994 and further amended by Maharashtra Universities (Amendment and Continuance) Act, 2003, hereinafter referred as 'Act' has come into force from 8th August 2003.

AND

Whereas, the University Grants Commission, New Delhi vide letter No.D.O.No.F 1-2/2008/(XI Plan), dated.31 Jan.2008 regarding new initiatives under the XIth Plan – Academic Reforms in the University has suggested for improving quality of higher education and to initiate the Academic Reforms at the earliest.

AND

Whereas, the Board of Studies in all the Science subjects in their meeting held during 21/04/2012 prepared the syllabi and scheme of examination for the B. Sc. degree course and recommended for starting of the semester pattern in Faculty of Science from the academic session 2013-14,

AND

Whereas, the recommendations of various Board of Studies in the faculty of Science regarding Upgradation and Revision of various syllabi and introduction and implementation of Semester Pattern Examination System at under graduate level was considered by the faculty of Science in its meeting held on 19/09/2012 and constituted a Committee to decide the policy decision regarding semester pattern examination system.

AND

Whereas, the Dean, Faculty of Science has consented to the syllabi and the scheme of examination for the award of B.Sc. degree in Faculty of Science,

AND

Whereas, the faculty of Science in its meeting held on 19/09/2012 vide item No. 35, has considered, accepted and recommended to Academic Council, the policy decision regarding introduction of Semester pattern and the draft syllabi of B.Sc. Semester-I & VI along with draft direction and other details.

AND

Whereas, the Emergent Faculty of Science in its meeting held on 27.1.2015, has considered, accepted and recommended to Academic Council, for B.Sc. Semester-I to VI along with draft direction and other details.

AND

Whereas, the Vice Chancellor of Rashtrasant Tukadoji Maharaj Nagpur University, in exercise of powers conferred upon me under sub-section (7) of section 14 of the Maharashtra Universities Act., 1994, on behalf of the Academic Council & Management Council for B.Sc. along with draft direction and other details.

AND

Whereas, the new scheme of examination as per semester pattern is to be implemented from the Academic Session 2013-14 for B. Sc. First Year & onwards which is to be regulated by this direction and as such there is no direction issued and in existence and framing of an Ordinance for the above examination is a time consuming process.

AND

Whereas, the admission of students in the semester pattern at B.Sc. First Year are to be made in the Academic Session 2013-14.

Now, therefore, I, Dr. V.S. Deshpande, Vice Chancellor of Rashtrasant Tukadoji Maharaj Nagpur University, in exercise of powers conferred upon me under sub-section (8) of section 14 of the Maharashtra Universities Act., 1994, do hereby direct as under:

1. This Direction may be called, "**Examination leading to the Degree of Bachelor of Science (Three Year Degree Course-Semester Pattern)**".
2. This direction shall come into force with effect from the date of its issuance.
3. (i) The following shall be the examination leading to the Degree of Bachelor of Science in the faculty of Science namely:
 - a. The B.Sc. Semester-I Examination;
 - b. The B.Sc. Semester-II Examination;
 - c. The B.Sc. Semester-III Examination;
 - d. The B.Sc. Semester-IV Examination;
 - e. The B.Sc. Semester-V Examination; and
 - f. The B.Sc. Semester-VI Examination.
- (ii) The period of Academic Session shall be such, as may be notified by the University.
4. The theory examination of Semester-I, II, III, IV, V and VI shall be conducted by the University and shall be held separately at the end of each semester at such places and dates as may be decided by the University and shall be held as per the schedule given in Table 1.

Table 1			
Sr. No	Name of the Examination	Main Examination	Supplementary Examination
1	Semester I, III and V	Winter	Summer
2	Semester II, IV, and VI	Summer	Winter

5. Subject to compliance with the provisions of this Direction and of other Ordinances in-force from time to time, the following persons shall be eligible for admission to the examinations:-

- (a) A student who has prosecuted a regular course of study for not less than one academic year prior to that examination;
- (b) A teacher in an Educational Institution eligible under the provisions of Ordinance No. 18, and
- (c) A women candidate who has not pursued a regular course of study.

Provided that in the case of the persons eligible under clauses (b) and (c), an applicant to the examination shall have attended a full course of laboratory instructions in a College in the subject in which laboratory work is prescribed. The candidate shall submit a Certificate to that effect signed by the Principal of the college.

6. Eligibility of every applicant for admission to B. Sc. Semester course shall:-

A) In case of the B. Sc. Semester I examination:-

The candidate should have passed the 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education with English and other Modern Indian Languages together with any three Science subjects comprised in the faculty of Science or an examination recognized as equivalent thereto in such subjects and with such standards of attainments as may be prescribed.

Provided that students passing the 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education and offering Vocational Stream with one Language only and with any one of the following groups of subjects shall be eligible for admission to the B. Sc. Semester I course and in onward semesters with the corresponding group of subjects as shown in Table 2:-

Table 2		
S. No.	Groups of subjects of 12 th Standard students	Corresponding Next Higher Examination groups of Science subjects at B. Sc. Semester I (Along with Compulsory English and any one of the languages from Marathi, Hindi, Urdu, Gujarati, Telugu, Bengali, Sanskrit, Supplementary English, French, German, Russian, Persian, Arabic, Pali and Prakrit or Latin in B. Sc. Semester I & II only).
1	1. English or Any Modern Language 2. Physics, Chemistry, Mathematics, Biology	Combination of any 3 science subjects as shown in table 4 from among Physics, Chemistry, Mathematics, Statistics, Geology, Electronics, Industrial Chemistry, Computer Science, Information Technology, Botany, Zoology, Biochemistry, Microbiology, Biotechnology, Environmental Science, Sericulture, Geo-exploration and Drilling Technology, Computer Maintenance, Electronic Equipment Maintenance, Industrial Fish & Fisheries
2	1. English or Any Modern Language 2. Vocational Course of 200 Marks 3. Physics, Chemistry, Mathematics	Combination of any 3 science subjects as shown in table 4 from among Physics, Chemistry, Mathematics, Statistics, Computer Science, Information Technology, Geology, Electronics, Industrial Chemistry, Geo-exploration and Drilling Technology, Computer Maintenance, Electronic Equipment Maintenance.
3	1. English or Any Modern Language 2. Vocational Course of 200 Marks 3. Physics, Chemistry, Biology	Combination of any 3 science subjects as shown in table 4 from among Chemistry, Botany, Zoology, Biochemistry, Microbiology, Biotechnology, Geology, Computer Science, Information Technology, Industrial Chemistry, Environmental Science, Sericulture, Geo-exploration and Drilling Technology, Computer Maintenance, Electronic Equipment Maintenance, Industrial Fish & Fisheries
4	MCVC Group	

	a) Agriculture Group Or Fisheries Group	Combination of any 3 science subjects as shown in table 4 from among Botany, Zoology, Microbiology, Bio-Technology, Bio-Chemistry, Geology, Chemistry, Environmental Science, Sericulture, Industrial Fish & Fisheries
	b) Para-medical group	Combination of any 3 science subjects as shown in table 4 from among Botany, Zoology, Microbiology, Biochemistry, Bio-Technology, Chemistry, Environmental Science, Sericulture, Industrial Fish & Fisheries.
	c) Engineering and Technology or Engineering & Technology repairs & maintenance group at M.C.V.C.	Combination of any 3 science subjects as shown in table 4 from among Physics, Chemistry, Electronics, Computer Science, Information Technology, Mathematics, Statistics, Industrial Chemistry, Computer Maintenance, Electronics Equipment Maintenance
	d) Engineering and Technology Group Electronics Technology Trade	Combination of any 3 science subjects as shown in table 4 from among Physics, Computer Science, Information Technology, Statistics, Chemistry, Mathematics, Industrial Chemistry, Electronics, Information Technology, Computer Maintenance, Electronic Equipment Maintenance.

NOTE: For finalization of admission under Sr. No. 4 a) and b), Chemistry at Standard XII level will be compulsory AND For admission under Sr. No. 4 c) and d), Mathematics at Standard XII level will be compulsory.

B) In case of the B. Sc. Semester II, III, IV, V and VI Examinations:- The student should have attended a minimum of 90 days in the respective semester and passed the previous semester examination as per the rules of ATKT as mentioned in Para 7 of this direction.

7) The ATKT rules for admission for the B.Sc. Course (**Theory and Practical as separate passing head and on calculation fraction, if any, shall be ignored**) shall be as given in the following Table- 3.

Table 3		
Admission to Semester	The student should have attended the Session / term satisfactorily	Candidates should have passed at least one half of the passing heads of the following examinations (Theory and Practical as separate passing head and on calculation fraction, if any, shall be ignored)
1	2	3
B. Sc. Semester I	Semester I and admitted As per para 6 of this Direction	-----
B. Sc. Semester II	Semester II	-----
B. Sc. Semester III	Semester III	One half of the total head prescribed for Sem I and Sem II examination
B. Sc. Semester IV	Semester IV	-----
B. Sc. Semester V	Semester V	a) Passed Sem I & II examination and b) One half of the total head prescribed for Sem III & IV examination
B. Sc. Semester VI	Semester VI	-----

8. a) Without prejudice to the other provisions of Ordinance No. 6 relating to the Examinations in General, the provisions of Paragraph 5, 8, 10 and 31 of the said ordinance shall apply to every candidate.

b) The students admitted to this Degree course shall be governed by the general Ordinances / Directions of the University which are applicable to all the regular or ex-students. These Ordinances includes complete as well as relevant provision of Ordinance No. 1, 2, 6, 7-A, 9, 10, 19, 109, Ordinance No. 30 of 2006, (amended Ordinance No. 4 of 2006), Direction 9 of 2008, Direction 5 of 2004 wherever applicable accordingly AND Direction / Ordinance of ATKT as well as reassessment / provisional admission as issued from time to time.

9. The fee for each Semester examination shall be as prescribed by the University from time to time.

10. Every examinee for the B. Sc. Semester I & II examination shall be examined in:

- i) Compulsory English
- ii) Any one of the following Languages
Marathi, Hindi, Urdu, Supplementary English, Gujarati, Bengali, Telugu, Sanskrit, French, German, Russian, Persian, Arabic, Pali and Prakrit or Latin
- iii) Subjects from any one of the following groups, as indicated in Table 4 given below:

Table 4	
Chemistry, Physics, Mathematics	Biotechnology, Microbiology, Chemistry
Chemistry, Statistics, Mathematics	Mathematics, Statistic, Electronics
Chemistry, Zoology, Botany	Electronics, Computer science, Mathematics.
Chemistry, Zoology, Geology	Mathematics , Physics, Geology
Chemistry, Physics, Geology	Mathematics, Chemistry, Computer science
Chemistry, Botany, Geology	Biotechnology, Zoology, Chemistry
Chemistry, Mathematics, Geology	Biotechnology, Botany, Chemistry
Physics, Mathematics, Statistics	Mathematics, Physics, Information Technology
Chemistry, Biochemistry, Environmental Science	Geology, Mathematics, Computer Science
Chemistry, Environmental Science , Geology	Sericulture, Chemistry, Zoology
Chemistry, Zoology, Microbiology	Sericulture, Chemistry, Botany
Chemistry, Botany, Microbiology,	Chemistry, Geology, Geo-exploration and Drilling Technology
Chemistry, Biochemistry, Botany	Physics, Geology, Geo-exploration and Drilling Technology
Chemistry, Biochemistry, Zoology	Mathematics, Geology, Geo-exploration and Drilling Technology
Chemistry, Biochemistry, Microbiology	Statistic, Geology, Geo-exploration and Drilling Technology
Physics, Mathematics, Electronics	Physics, Mathematics, Geo-exploration and Drilling Technology
Chemistry, Physics, Electronics	Chemistry, Physics, Geo-exploration and Drilling Technology
Chemistry, Zoology, Environmental Science	Mathematics, Physics, Computer Maintenance
Chemistry, Botany, Environmental Science	Mathematics, Electronics, Computer Maintenance
Chemistry, Geology, Environmental Science	Mathematics, Chemistry, Computer Maintenance
Chemistry, Microbiology, Environmental Science	Mathematics , Statistics, Computer Science
Chemistry, Statistics, Computer Science	Chemistry, Biochemistry, Geology
Physics, Mathematics, Electronic Equipment Maintenance	Mathematics, Environmental Science, Computer Maintenance
Chemistry, Zoology, Industrial Fish & Fisheries	Biotechnology, Botany, Biochemistry
Physics, Mathematics, Computer Science	Biotechnology, Zoology, Biochemistry
Physics, Statistics, Computer Science	Biotechnology, Microbiology, Biochemistry
Chemistry, Industrial Chemistry, Mathematics	Sericulture, Zoology, Botany
Biotechnology, Chemistry, Biochemistry	Chemistry, Industrial Chemistry, Botany
Physics, Chemistry, Environmental Science	

11. Every examinee for the B.Sc. Sem-III, IV, V and VI Examination shall be examined in each of the three Science subjects in which he/she has been examined at the B.Sc. Sem-I & II Examination.

12. An examinee who has been successful at the B.Sc. Sem-I & II Examination, may offer an additional subject mentioned in Table 4, not offered by him / her at the B.Sc. Sem-I & II Examination, on his prosecuting a regular course of study for one academic year in that subject. Such an examinee shall not be permitted to take any other examination simultaneously with the examination in the additional subject. The fee for the additional subject shall be as prescribed by the University from time to time.

13. The Scope of the subjects of all semesters of B.Sc. examination shall be as indicated in the respective syllabi in force from time to time. The medium of instruction and examination shall be English, except for the courses in Languages.

14. The maximum marks allotted to each subject and the minimum marks which an examinee must obtain in order to pass the examination shall be as per the Appendix A appended to this Direction.

15. The practical examination of all semesters shall be conducted at the end of each semester as indicated in Table 5 given below.

Table 5			
S. No	Name of the Examination	Main Examination	Supplementary Examination
1	Semester I, III and V	Winter	Summer
2	Semester II, IV, and VI	Summer	Winter

16. The scheme of awarding internal marks shall be as per Appendix- B appended with this Direction.

17. Successful examinees at the B.Sc. Sem-VI Examination who obtained not less than 60% marks (aggregate of Sem-I, II, III, IV, V & VI Examinations taken together, excluding Languages) shall be placed in First Division, those obtaining less than 60% but not less than 45% in Second Division, and all other successful examinees in the Third Division.

Explanation :

Division at the B.Sc. Examination shall be declared on the basis of the marks obtained only in the Science Subjects at the Sem-I, II, III, IV, V & VI Examinations taken together.

18. There shall be no classification of successful examinees at the Sem-I to Sem-V Examinations.

19. An examinee successful in the minimum period prescribed for the examination, obtaining not less than 75% of the maximum marks prescribed in the subject shall be declared to have passed the examination with Distinction in that subject.

Explanation :

- (1) Distinction shall be awarded only in the Science Subjects.
- (2) Distinction at the B.Sc. Examination shall be awarded on the basis of the marks obtained at the B.Sc. Semester - I, II, III, IV, V and Semester VI Examination taken together.
- (3) Distinction shall not be awarded to an examinee availing of the provision of the exemptions and compartments at any of the examination.

20. Provisions of Ordinance No 7-A relating to the Condonation of Deficiency of Marks for passing an examination and compartment as amended up-to-date vide ordinance No. 45 of 1983 shall apply to the examinations under this Direction.

21. (A) The students who have passed B.Sc. Semester VI examination of this University or any other statutory University shall be eligible to seek admission for studying practical of any other optional subjects offered for B.Sc. Degree for simultaneous study of complete three year course for that subject in one year and to appear simultaneously for all parts of examination leading to the degree of Bachelor of Science (additional) in that subject, subject to the following condition. An examinee shall have attended full course of laboratory instructions in a College in the subject in which laboratory work is prescribed. An examinee shall submit a certificate to that effect signed by the Principal of the College.

(B) On securing not less than minimum marks prescribed for the subject / subjects shall be issued a certificate of having passed the examination in the additional subject / subjects as the case may be.

(C) The application for admission to the examination under (A) above shall be submitted to the Registrar not less than three months before the date of commencement of the examination.

22. As soon as possible after the examinations, the Board of Examinations shall publish a list of successful examinees at the B.Sc Sem-I & II; B.Sc. Sem-III & IV and B.Sc. Sem-V & VI Examinations. Such list at the B.Sc. Semester VI Examination shall be arranged in three Divisions. The names of the examinees passing the examination as a whole in the minimum prescribed period and obtaining the prescribed number of places in First or Second Division shall be arranged in Order of Merit as provided in the Examinations in General Ordinance No. 6. While preparing the Merit list for the B. Sc. Examination the marks secured by the candidate in the compulsory languages at their Semester I & II Examination will be taken into consideration in addition to the marks scored by them in their optional subjects.

23. No Person shall be admitted to B.Sc Sem-I, II, III, IV, V and VI Examinations, if he/she has already passed the corresponding or an equivalent examination of any other Statutory University.

24. Successful examinees at the B. Sc. Sem I, II, III, IV, and V Examinations shall be entitled to receive a **Certificate** signed by the **Registrar** and successful examinees at the end of B. Sc. Sem VI examination shall, on payment of prescribed fees, receive a Degree in the prescribed format, signed by the Vice-Chancellor.

25. The provisions of direction no. 3 of 2007 for the award of grace marks for passing an examination, securing higher grade in subject(s) as updated from time to time shall apply to the examination under this direction.

26. Absorption / Matching Scheme:

- a. While switching over to semester pattern, the failure students of annual pattern will be given total five (three + two) chances to clear each examination.
After availing five chances for clearing the examination as per annual pattern, no examination would be held for annual pattern candidates.
 - b. The candidates who have cleared all the subject heads of first year annual pattern examination shall get admission to third semester directly. However, candidates who are allowed to keep term will not be eligible for admission to third semester unless they clear all the papers / practicals / subject heads of first year annual pattern examination.
 - c. The candidates who have cleared all the subject heads of second year annual pattern examination shall get admission to fifth semester directly. However, candidates who are allowed to keep term will not be eligible for admission to fifth semester unless they clear all the papers / practicals / subject heads of second year annual pattern examination.
 - d. For other Statutory University candidates with similar yearly pattern program, point No. 26 'b' and 'c' shall be applicable.
 - e. The scheme of awarding internal marks / practical marks / theory marks / marklist (if any and if required) shall be as per guidelines given in Appendix – C.
 - f. For other Statutory University candidates with Semester Pattern Bachelor of Science Program – the candidate shall be admitted to the next higher semester provided that Candidate shall have cleared previous semester and R. T. M. Nagpur University Committee constituted from time to time for the purpose shall scrutinize and clear the case on the basis of subject and syllabus contents of his / her previous semester examination of the other Statutory University.
 - g. **Those students who fail to clear the examination within the available chances (Three + Two) would be bound by absorption / matching scheme as per Appendix – C.**
27. With the issuance of the Direction, the Direction No.2 of 2015 shall stand repealed.

Nagpur
Date : 2/5/2016

Sd/-
Dr. S. P. Kane
Vice-Chancellor

Appendix – A
Teaching & Examination Scheme
Bachelor of Science
Three Year (SIX SEMESTER) DEGREE COURSE

B. Sc. (Semester I and II)

S. No.	Subject	Teaching scheme			Examination scheme								
					Theory					Practical			Total Marks (Th, Pr, IA)
		Th + Tu (Periods)	Pr (Periods)	Total Periods	Duration Hrs	Max Marks Th paper	Max Marks IA	Total	Min Passing Marks	Duration Hrs	Max marks practical	Min passing marks	
1	Compulsory English	4+1	-	4+1	3	60	15	75	30	-	-	-	75
2	Second Language	3	-	3	3	60	15	75	30	-	-	-	75
3	Science subjects excluding Maths (Paper I)	3+ @	-	6+ @	3	50	10	120	48	-	-	-	150
4	Science subjects excluding Maths (Paper II)	3+ @	-		3	50	10			-	-	-	
5	Science subjects excluding Maths (Practical)	-	6		6	-	-	-	-	-	6-8*	30	
6	Mathematics (Paper I)	4+1	-	8+2	3	60	15	150	60	-	-	-	150
7	Mathematics (Paper II)	4+1	-		3	60	15			-	-	-	
Note:													
1. Th = Theory; Pr = Practical; Tu = Tutorial; IA = Internal Assessment; @ = Tutorials wherever applicable; * = If required, for two days.													
2. Minimum marks for passing will be 40% of the total marks allotted to that paper / practical.													
3. Candidate has to pass theory papers and practical separately													
Point no. 6 & 7 in the above table is applicable only to students offering Mathematics as one of the subjects.													
Grand Total of Semester I & II: 450 + 150 each semester = TOTAL – 600 Marks per semester													

S. No.	Subject	Teaching scheme			Examination scheme								
					Theory				Practical			Total Marks (Th, Pr, IA)	
		Th + Tu (Periods)	Pr (Periods)	Total Periods	Duration Hrs	Max Marks Th paper	Max Marks IA	Total	Min Passing Marks	Duration Hrs	Max marks practical		Min passing marks
1	Science subjects excluding Maths (Paper I)	3+ @	-	6+ @	3	50	10	120	48	-	-	-	150
2	Science subjects excluding Maths (Paper II)	3+ @	-		3	50	10			-	-	-	
3	Science subjects excluding Maths (Practical)	-	6	6	-	-	-	-	-	6-8*	30	12	
4	Mathematics (Paper I)	4+1	-	8+2	3	60	15	150	60	-	-	-	150
5	Mathematics (Paper II)	4+1	-		3	60	15			-	-	-	

Note:

- Th = Theory; Pr = Practical; Tu = Tutorial; IA = Internal Assessment; @ = Tutorials wherever applicable; * = If required, for two days.
- Minimum marks for passing will be 40% of the total marks allotted to that paper / practical.
- Candidate has to pass theory papers and practical separately

Point no. 4 & 5 in the above table is applicable only to students offering Mathematics as one of the subjects.

Grand Total of Semester III, IV, V & VI: 450 each semester = TOTAL - 450 Marks per semester

Appendix - B:

Guidelines for Internal Assessment, Theory paper pattern and Practical

1. Each semester shall comprise of minimum 90 teaching days.
2. Every subject (Except Languages and Mathematics) in each semester will comprise
 - a. Two theory papers – 50 Marks each
 - b. One internal assessment based on the two theory papers for 10 Marks each. Total 20 Marks.
 - c. One practical / laboratory work – Total 30 marks
3. For Mathematics
 - a. Two theory papers – 60 marks each
 - b. One internal assessment based on the two theory papers for 15 marks each. Total 30 marks
4. In addition to the above, Semester I and II will have
 - a. One compulsory English paper of 60 marks with 15 marks internal assessment, Total 75 marks.
 - b. One second language paper (Marathi, Hindi, Urdu, Supplementary English, Gujarati, Bengali, Telugu, Sanskrit, French, German, Russian, Persian, Arabic, Pali and Prakrit or Latin) of 60 Marks with 15 marks internal assessment, Total 75 marks.

Internal Assessment:

5. The internal assessment shall be done by the College at least 15 days prior to the final examination of each semester. The Marks shall be sent to the University immediately after the Assessment in the prescribed format.
6. Guidelines for Internal Assessment are appended herewith.
 - a) The internal assessment marks assigned to each theory paper as mentioned in Appendix - A shall be awarded on the basis of assignments like class test, attendance, project assignments, seminar, study tour, industrial visits, visit to educational institutions and research organizations, field work, group discussions or any other innovative practice / activity.
 - b) There shall be one / two assignments (as described above) per Theory paper.
 - c) There shall be no separate / extra allotment of work load to the teacher concerned. He/ She shall conduct the Internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
 - d) The concerned teacher / department / college shall have to keep the record of all the above activities until six months after the declaration of the results of that semester.
 - e) At the beginning of each semester, every teacher shall inform his / her students unambiguously the method he / she proposes to adopt and the scheme of marking for internal assessment.
 - f) Teacher shall announce the schedule of activity for internal assessment in advance in consultation with HOD / Principal.
 - g) Final submission of internal marks to the University shall be before the commencement of the University Theory Examinations.

Theory Papers:

7. All Theory papers shall be divided into four units.
8. The theory question papers shall be of 3 hours duration and comprise of 5 questions with equal weightage to all units.
9. The pattern of question papers is appended herewith.
 - Each theory paper will be of 50 marks (60 marks for Mathematics and Languages) each.
 - All questions are compulsory and will carry equal marks.
 - Question paper for any theory paper will comprise of five questions of 10 marks (12 marks for Mathematics and Languages) each.
 - Question No. 1 to 4 will be from four units each with an internal choice. The questions can be asked in the form of long answer type for 10 marks (12 Marks for Mathematics and Languages) or two questions / short notes of 5 marks each (6 Marks for Mathematics and Languages) or four questions / short notes of 2½ each (3 Marks for Mathematics and Languages).

- Question No. 5 shall be compulsory with three questions / notes of very short answer type from each of the four units having 1 mark each. The student shall have an option of answering any 10 questions out of the 12 questions. In case of Mathematics and Languages, question 5 shall be compulsory with two questions / notes of very short answer type from each unit having 1½ mark each. The student shall answer all the 8 questions.

Practical:

10. Practical exam shall be of 6 to 8 hours duration for one or two days, depending on subject and number of students.
11. The Practical Record of every student shall carry a certificate as shown below, duly signed by the teacher-in-charge and the Head of the Department.
12. If the student fails to submit his / her certified Practical Record duly signed by the Teacher-In-Charge and the Head of the Department, he / she shall not be allowed to appear for the Practical Examination and no Marks shall be allotted to the student.
13. The certificate template shall be as follows:

C E R T I F I C A T E

Name of the college / institution _ _ _ _ _

Name of the Department: _ _ _ _ _

This is to certify that this Practical Record contains the bonafide record of the Practical work of Shri / Kumari / Shrimati _ _ _ _ _ of _ _ _ _ _ Semester _ _ _ _ _ during the academic year _ _ _ _ _ . The candidate has satisfactorily completed the experiments prescribed by Rashtrasant Tukdoji Maharaj Nagpur University for the subject _ _ _ _ _

Dated _ _ _ / _ _ _ / _ _ _ _

Signature of the teacher who taught the examinee

1. _ _ _ _ _
2. _ _ _ _ _

Head of the Department

Appendix – C:

1. While switching over to semester pattern, the failure students of annual pattern will be given total five (three plus two) chances to clear each examination.
2. Student has to clear the corresponding semesters from the new syllabus if Candidate does not clear Part I, Part II and Part III from the Annual Pattern (Old Course) in total of five (Three + Two) chances given in Annual Pattern Old Course. Example cases are given in table (Point No 11 of the Appendix C).
3. While switching over from Annual Pattern (Old Course) to Semester Pattern Course, the candidate shall submit his original marklist of Annual Pattern (Old Course) to the R. T. M. Nagpur University for issuance of new marklist of Semester Pattern Course.
4. As per requirement and if necessary, while switching over from Annual Pattern (Old Course) to Semester Pattern Course, the University shall issue Semester Pattern Course marklist in proportion of marks obtained in the Annual Pattern (Old Course).
5. As soon as the candidate enters in the Semester Pattern Course from the Annual Pattern (Old Course) as per the given absorption / matching scheme and successfully completes the course in the Semester Pattern Course, the University shall award revised marklist as per the Semester Pattern Course for a particular semester.
6. In case of any difference in minimum passing marks in the Annual Pattern (Old Course) AND in the Semester Pattern Course, the University shall convert marks proportionately for issuance of marklist in the Semester Pattern Course.
7. If the candidate has cleared theory papers in the concerned subject in the Annual Pattern (Old Course) [Part I / II / III] – Candidate shall be awarded marks in theory papers and internals marks proportionately in the Semester Pattern Course [Semester I, II / III, IV / V, VI].
8. If the Candidate has failed in the theory papers of any subject of the Annual Pattern (Old Course), then the candidate has to appear for theory papers in that subject for both the concerned semesters (Ex. Part I – concerned semesters are Semester I & II). Proportionate internal marks shall be awarded on the basis of marks obtained in the theory papers of semester pattern course in that subject.
9. If the candidate has cleared practical head in the concerned subject in the Annual Pattern (Old Course), the candidate shall be awarded proportionate marks in the Semester Pattern Course.
10. If the Candidate has failed in the practical head of any subject of the Annual Pattern (Old Course), then the candidate has to appear for the practical head in that subject for both the concerned semesters (Ex. Part I – concerned semesters are Semester I & II). Marks shall be awarded on the basis of marks obtained in the practical head of semester pattern course in that subject.
11. **Example cases:**

Old course (Annual Pattern)	Semester Pattern Course
If the candidate has cleared all subject heads of part I / part II in the annual pattern (Old Course)	1. The candidate shall be eligible to take admission in semester III / semester V of the semester pattern course.
If the candidate is declared fail in English and zoology (Th / Pract) heads in Part I of the annual pattern after total of five (three + two)	1. Candidate shall appear as an external student for the semester I and II English and Zoology theory papers in the semester pattern. 2. If the candidate has failed in practical head in the annual pattern, the university shall conduct practical examinations for Semester I and II and candidate shall appear for the same as an external candidate to clear practical head in the semester pattern. 3. Once the candidate clears the subjects in the semester pattern, Candidate shall be eligible to take fresh admission to semester III of the semester pattern course. 4. Candidate shall submit his original marklists of annual pattern course to the

chances in the old pattern.	<p>University for Issuance of mark list of semester pattern course.</p> <ol style="list-style-type: none"> University shall award internal marks in proportion to marks obtained in theory papers. University shall award practical marks (if applicable) in proportion to marks obtained in the annual pattern zoology practical if Candidate has passed.
If the candidate is declared fail in English and zoology (Th / Pract) heads in Part II of the annual pattern after total of five (three + two) chances in the old pattern.	<ol style="list-style-type: none"> Candidate shall appear as an external student for the semester III and IV English and Zoology theory papers in the semester pattern. If the candidate has failed in practical head, the university shall conduct practical examinations for Semester III and IV and candidate shall appear for the same as an external candidate to clear practical head in the semester pattern. Once the candidate clears the subjects in the semester pattern, Candidate shall be eligible to take fresh admission to semester V of the semester pattern course. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course. University shall award internal marks in proportion to marks obtained in theory papers. University shall award practical marks (if applicable) in proportion to marks obtained in the annual pattern zoology practical if Candidate has passed
If the candidate is declared fail in English and zoology(Th / Pract) heads in Part III of the annual pattern after total of five (three + two) chances in the old pattern.	<ol style="list-style-type: none"> Candidate shall appear as an external student for the semester V and VI English and Zoology theory papers in the semester pattern. If the candidate has failed in practical head, the university shall conduct practical examinations for Semester V and VI and candidate shall appear for the same as an external candidate to clear practical head in the semester pattern. Once the candidate clears the subjects in the semester pattern, Candidate shall be eligible to get semester pattern degree from the University. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course. University shall award internal marks in proportion to marks obtained in theory papers. University shall award practical marks (if applicable) in proportion to marks obtained in the annual pattern zoology practical if Candidate has passed.
If the candidate is declared fail in Maths and Zoology (Th / Pract) heads in Part I but cleared all the heads of part II of the annual pattern after total of five (three + two) chances in the old pattern.	<ol style="list-style-type: none"> Candidate shall appear as an external student for the semester I and II Maths and Zoology theory papers in the semester pattern. If the candidate has failed in practical head, the university shall conduct practical examinations for Semester I and II and candidate shall appear for the same as an external candidate to clear practical head in the semester pattern. Once the candidate clears the subjects in the semester pattern, Candidate shall be eligible to take fresh admission to semester V of the semester pattern course. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course. University shall award internal marks in proportion to marks obtained in theory papers. University shall award practical marks (if applicable) in proportion to marks obtained in the annual pattern zoology practical if Candidate has passed.
If the candidate is declared fail in Hindi and Zoology (Th / Pract) in Part II but cleared Part I of the annual pattern after total of five (three +	<ol style="list-style-type: none"> Candidate shall appear as an external student for the semester III and IV Hindi and Zoology theory papers in the semester pattern. If the candidate has failed in practical head, the university shall conduct practical examinations for Semester III and IV and candidate shall appear for the same as an external candidate to clear practical head in the semester pattern. Candidate is also eligible to take fresh admission to semester V of the semester pattern course. However, Candidate shall clear semester III and IV Hindi and Zoology theory papers and practicals (if applicable) in the semester pattern before the candidate is

two) chances in the old pattern.	<p>awarded with degree in semester pattern course.</p> <ol style="list-style-type: none">5. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course.6. University shall award internal marks in proportion to marks obtained in theory papers.7. University shall award practical marks (if applicable) in proportion to marks obtained in the annual pattern zoology practical if Candidate has passed.
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RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Directon No. 23 of 2017

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE
OF Bachelor of Business Administration (BBA) (CREDIT BASED SEMESTER
PATTERN) (FACULTY OF COMMERCE AND MANAGEMENT)**

(Issued by the Vice-Chancellor under section 12(8) of the Maharashtra Public Universities. Act, 2016)(Mah. Act No. VI of 2017)

WHEREAS, the Maharashtra Public Universities Act, 2016 (No. VI of 2017) (hereinafter Act) has come into force with effect from 1st March, 2017;

AND

WHEREAS,the Faculty of Commerceand Managementin its meeting held on 14.3.2016 have decided to restructure the syllabus for the award of the degree of Bachelor of Business Administration (BBA) Examination commensurate with the curricula existing in the various Universities in India and with a view to include the latest trends in the commerce stream as well as to design it to suit to the needs of the industries and corporate houses as provided under Section 38(a) of the Act;

AND

WHEREAS,all the Board of Studies in Faculty of Commerce and Management in its meeting held on 5.4.2016 restructured the existing syllabi and recommended the new scheme of examination;

AND

WHEREAS,the recommendations made by the all four Board of studies under Faculty of CommerceandManagementwere approved by the Academic Council, in its meeting held on 8.6.2016;

AND

WHEREAS,no ordinance is in existence prescribing THE EXAMINATION LEADING TO THE DEGREE OF Bachelor of Business Administration (BBA) (CREDIT BASED SEMESTER PATTERN);

AND

WHEREAS,the Special Task Committeein its meeting on 23-11-2016 decidedto prepare a draft of new direction & syllabus of BBA (CBS);

AND

WHEREAS,the Special Task Committeein its meeting on 04-01-2016considered and approved the draft of new direction and syllabus of BBA (CBS) submitted by the sub-committee & recommended it to the Hon'ble Vice-Chancellor for his approval;

AND

WHEREAS, Direction No. 1 of 2017 entitled 'Examination leading to the Degree of Bachelor of Business Administration (BBA) (CREDIT BASED SEMESTER PATTERN) in the Faculty of Commerce & Management, was issued by the Vice-Chancellor;

AND

WHEREAS, certain difficulties regarding implementation of the absorption scheme under the Direction No. 1 of 2017, were encountered by the colleges and the University administration, necessitating clarification and suitable modifications in the said scheme;

AND

WHEREAS, in the meeting of the task force in the Faculty of Commerce and Management, held on 3.8.2017 certain decisions were taken which are required to be incorporated in the Direction No. 1 of 2017;

AND

WHEREAS,the matter involved is required to be implemented urgently for the purpose of prescribing examinations leading to the degree of Bachelor of Business Administration (BBA) (CBS)in the Faculty of Commerce and Management;

AND

WHEREAS, the preparation of Ordinance to regulate the matter relating to the examinations leading to the degree of Bachelor of Business Administration (BBA) (CBS) is time consuming process;

Now, therefore, I,Dr. SiddharthvinayakP. Kane, Vice-Chancellor, Rastrasant Tukdoji Maharaj Nagpur University, Nagpur in exercise of the powers vested in me under Section 12(8) of the Maharashtra Public Universities Act, 2016 (VI of 2017) do hereby issue the following direction:-

1. This Directionmay be called '**Examination leading to the Degree of Bachelor of Business Administration (BBA) (CREDIT BASED SEMESTER PATTERN) in the Faculty of Commerce & Management, Direction, 2017**,---Number-----

2. This Direction shall come into force with effect from the date of its issuance.
3. There shall be Six Examinations leading to the degree of Bachelor of Business Administration (BBA)namely :
 - (1) The **Bachelor of Business Adminstration (BBA)** – 1st Semester Examination,
 - (2) The **Bachelor of Business Adminstration (BBA)** – 2nd Semester Examination,
 - (3) The **Bachelor of Business Adminstration (BBA)** – 3rd Semester Examination,

- (4) The **Bachelor of Business Administration (BBA)** – 4th Semester Examination,
- (5) The **Bachelor of Business Administration (BBA)** – 5th Semester Examination and
- (6) The **Bachelor of Business Administration (BBA)** – 6th Semester Examination.

- 4. The duration of the Degree Course under this shall be of three academic years divided into six semesters with the BBA 1st and 2nd Semester Examinations during the first academic year, the BBA 3rd and 4th Semester Examinations during the second year and the BBA 5th and 6th Semester Examinations during the third year.
- 5. The examinations specified in paragraph 3 above shall be held twice a year at such places and on such dates as may be fixed by the University.
- 6. The details of eligibility for **BBA Sem I** examination:

- (A) For the **BBA 1st Semester**, Examinee shall have Passed the 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education, with English at Higher or Lower level and any Modern Indian Language at higher or lower level with any combination of optional subjects;

OR

XII Standard Examination of Maharashtra State Board of Secondary and Higher Secondary Education in Vocational Stream with one language only; OR any other examination recognized as equivalent thereto; in such subjects and with such standards of attainments as may be prescribed Minimum Competition vocation course (MCVC).

OR

Any other Equivalent Examination of any State in (10+2) pattern with any combination of subjects.

- 7. A collegiate candidate shall have pursued a regular course of study for not less than 90 days of the academic session before being examined for any semester examination of **BBA** in any recognized institution and or college affiliated to Rashtrasant Tukdoji Maharaj Nagpur University where the course is conducted.
- 8. An applicant for the Bachelor of Business Administration 1st, 2nd, 3rd, 4th, 5th or 6th Semester Examination shall have passed an examination specified in Clauses (A), (B), (C), (D), (E) and (F) of paragraph 6 respectively, not less than one academic year prior to his admission to the respective examination.
- 9. Without prejudice to the other provisions of Ordinance No. 6 relating to the Examinations in General, the provisions of Paragraphs 5, 7, 8, 10, 26 and 31 of the said Ordinance shall apply to every collegiate candidate.
- 10. The fees for the examination shall be as prescribed by the University from time to time and whenever any change is made in the fees prescribed for any particular examination that shall be notified through a notification for information of the examinees concerned.

11. With the issuance of this Direction, The Direction No 15 of 2014 , 47 of 2016 and 1 of 2017 shall stand repealed.

12. Teaching and Examination Scheme for examinees of Bachelor of Business Administration 1st, 2nd, 3rd, 4th, 5th and 6th Semester Examinations shall be as mentioned below:

Teaching and Examination Scheme
Bachelor of Business Administration (BBA)
Three Year Degree Course (Semester Pattern)
With effect from 2016-17

(A)

BBA 1st Semester Examination

Sr. No.	Subjects	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
			Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	English	1T1	5	80	20	100	40	100	4
2	Fundamentals of Business Management	1T2	5	80	20	100	40	100	4
3	Computer Applications for Business	1T3	5	80	20	100	40	100	4
4	Cost Accounting	1T4	5	80	20	100	40	100	4
	Total		20	320	80	400	160	400	16

- Note :
1. Duration of each theory class should be minimum 48 minutes.
 2. TH = Theory, IM = Internal Marks.
 3. Minimum marks for passing the subject will be 40.
 4. There would be combined passing for theory and internal assessment taken together.
 5. One credit is equivalent to one hour of Teaching, that is to say,
For each subject, 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.
 6. Each semester will consist of 15 to 18 weeks of Academic Work equivalent to 90 actual teaching days.

(B)

BBA 2nd Semester Examination

Sr. No.	Subjects	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
			Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	Principles of Marketing Management	2T1	5	80	20	100	40	100	4
2	Financial & Management Accounting	2T2	5	80	20	100	40	100	4
3	Micro-Economic Fundamentals	2T3	5	80	20	100	40	100	4
4	English	2T4	5	80	20	100	40	100	4
	Total		20	320	80	400	160	400	16

- Note :
1. Duration of each theory class should be minimum 48 minutes.
 2. TH = Theory, IM = Internal Marks.
 3. Minimum marks for passing the subject will be 40.
 4. There would be combined passing for theory and internal assessment taken together.
 5. One credit is equivalent to one hour of Teaching, that is to say,
For each subject, 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.
 6. Each semester will consist of 15 to 18 weeks of Academic Work equivalent to 90 actual teaching days.

(C)

BBA 3rd Semester Examination

Sr. No.	Subjects	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
			Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	Principles of Financial Management	3T1	5	80	20	100	40	100	4
2	Basic Statistical Techniques	3T2	5	80	20	100	40	100	4
3	Evolution of Business & Commercial Geography	3T3	5	80	20	100	40	100	4
4	Environment Management	3T4	5	80	20	100	40	100	4
	Total		20	320	80	400	160	400	16

- Note :
1. Duration of each theory class should be minimum 48 minutes.
 2. TH = Theory, IM = Internal Marks.
 3. Minimum marks for passing the subject will be 40.
 4. There would be combined passing for theory and internal assessment taken together.
 5. One credit is equivalent to one hour of Teaching, that is to say,
For each subject, 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.

6. Each semester will consist of 15 to 18 weeks of Academic Work equivalent to 90 actual teaching days.

(D)

BBA 4th Semester Examination

Sr. No.	Subjects	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
			Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	Principles of Human Resource Management	4T1	5	80	20	100	40	100	4
2	Money, Banking & Finance	4T2	5	80	20	100	40	100	4
3	Introduction to Sociology & Psychology	4T3	5	80	20	100	40	100	4
4	Business Legislations	4T4	5	80	20	100	40	100	4
	Total		20	320	80	400	160	400	16

Note :

1. Duration of each theory class should be minimum 48 minutes.
2. TH = Theory, IM = Internal Marks.
3. Minimum marks for passing the subject will be 40.
4. There would be combined passing for theory and internal assessment taken together.
5. One credit is equivalent to one hour of Teaching, that is to say,
For each subject, 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.
6. Each semester will consist of 15 to 18 weeks of Academic Work equivalent to 90 actual teaching days.

(E)

BBA 5th Semester Examination

Sr. No.	Subjects	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
			Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	Entrepreneurship Development	5T1	5	80	20	100	40	100	4
2	Principles of Operations Management	5T2	5	80	20	100	40	100	4
3	International Business Environment	5T3	5	80	20	100	40	100	4
4	Research Methodology	5T4	5	80	20	100	40	100	4
	Total		20	320	80	400	160	400	16

Note :

1. Duration of each theory class should be minimum 48 minutes.
2. TH = Theory, IM = Internal Marks.
3. Minimum marks for passing the subject will be 40.
4. There would be combined passing for theory and internal assessment taken together.
5. One credit is equivalent to one hour of Teaching, that is to say,

For each subject, 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.
 6. Each semester will consist of 15 to 18 weeks of Academic Work equivalent to 90 actual teaching days.

(F)

BBA 6th Semester Examination

Sr. No.	Subjects	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
			Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	Elective Paper – 1	6T1	5	80	20	100	40	100	4
2	Elective Paper – 2	6T2	5	80	20	100	40	100	4
3	Project Work	6P1	10	150	50	200	80	200	8
	Total		20	310	90	400	160	400	16

Note :

- Duration of each theory class should be minimum 48 minutes.
- TH = Theory, IM = Internal Marks.
- Minimum marks for passing the subject will be 40 and for Project Work it will be 80.
- There would be combined passing for theory and internal assessment taken together.
- One credit is equivalent to one hour of Teaching, that is to say,
 For each subject, 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.
- Each semester will consist of 15 to 18 weeks of Academic Work equivalent to 90 actual teaching days.

Elective Subjects (Any one of the following to be selected by the student):

Every student appearing for BBA – 6th Semester Examination has to select any one of the specialization as elective subject before commencement of the academic session:

- Elective A - Financial Management**
 - Paper 1 – Fundamentals of Business Finance
 - Paper 2 – Advanced Financial Management
- Elective B - Human Resource Management**
 - Paper 1 – Fundamentals of Human Resource Management
 - Paper 2 – Advanced Human Resource Management
- Elective C - Marketing Management**
 - Paper 1 – Fundamentals of Marketing Management
 - Paper 2 – Advanced Marketing Management

12. Assessment

- The final total assessment of the candidates is made in terms of an internal assessment (Sessional) and an external assessment for each course/subject taken together.
- For each paper, 20 marks will be based on internal assessment and 80 marks for semester end examination (external assessment) to be conducted by the R T M Nagpur University,

- unless otherwise stated.

1a	Attendance of the student during a particular semester	05 marks
1b	An assignment based on curriculum to be assessed by the teacher concerned	05 marks
1c	Subject wise class test conducted by the teacher concerned	05 marks
1d	Subject presentation/viva-voce seminar conducted during the semester	05 marks
1	Internal assessment Total marks	20
2	Semester wise End Examination marks	80
Total Marks Per Course		100

- There shall be no separate / extra allotment of workload to the concerned teacher. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
- The internal marks will be communicated to the University at the end of each semester, but before the semester end examinations / as instructed by University. These marks will be considered for the declaration of the results.
- The record of internal marks, evaluation & result should be maintained for a period of one year by respective institute/college for verification by competent authority.
- The maximum and minimum marks which each subject carries in BBA Semester - I, Semester - II, Semester - III, Semester - IV, Semester - V & Semester - VI Examination are as indicated in Paragraph 11. A, B, C, D, E & F respectively.

13. (A) The scope of the subjects and pattern of examination shall be as indicated in the Syllabus.

(B) The Medium of instructions and examinations shall be in ENGLISH only.

(C) The Maximum/minimum marks which each subject carries & workload in BBA 1st, 2nd, 3rd, 4th, 5th and 6th Semester Examination shall be as indicated in Examination & Teaching Scheme (item no 11) "A", "B", "C", "D", "E" and "F" respectively.

14. Evaluation of Project

- Project Work shall carry 200 marks
- Evaluation Pattern

	Max. Marks
Project Report Evaluation by External Examiner appointed by the University	100
Presentation and Open Defense Seminar (External Examiner)	50
Presentation and Open Defense Seminar (Internal Examiner)	50
Total	200

- For Project work a batch of Maximum **TWENTY** students per guide /supervisor has to be allotted by the Institute. The Guide/Supervisor shall act as an internal examiner for project Examination.
- The guide or the supervisor shall be appointed by the institute and should be full time approved faculty to BBA / MBA Programme or PhD supervisor in Business Management.
- The External examiner shall be appointed from the list of full time approved teaching faculty of the BBA/MB A program by the University.**
- Each such External examiner shall examine a maximum of TWENTY students.**
- One copy of Project work (Printed or Type Written) shall be submitted to the University through the supervisor of the candidate and the Principal/ Director / Head of the Institute, at least **One Month** prior to the date of commencement of Semester-VI Examination or following the

- instructions issued by University at that time and one copy will be retained by the college/Department for internal evaluation purpose.
- (vi) A Candidate shall submit with his/her project work, a certificate from the Supervisor to the effect-
- That the candidate has satisfactorily completed the Project work for not less than one session and
 - That the Project work is the result of the candidate's own work and is of sufficiently high standard to warrant its presentation for examination.
- (vii) Candidate shall submit his declaration that the Project is the result of his own research work and the same has not been previously submitted to any examination of this University or any other University. The Project shall be liable to be rejected and /or cancelled if found otherwise.
- (viii) The Project work shall be evaluated through seminar and open defense and Viva-voce at the College/ Department by internal and external examiners appointed by university **before Semester-VI Examination.**
- A student appearing for BBA Semester VI Examination will have to pay additional fees as prescribed by the University from time to time.

15. Standard of Passing

The scope of the subject, percentage of passing in Theory and Project and Internal Assessment will be governed as per following rules:

- In order to pass at the Bachelor of Business Administration (B.B.A.) 1st, 2nd, 3rd, 4th, 5th and 6th Semester Examinations, **an examinee shall obtain not less than 40 % marks in each paper, that is to say combined in the written Examination conducted by the University and in internal assessment put together.**
- An examinee who is unsuccessful at the examination shall be eligible for admission to the subsequent examinations on payment of a fresh fee prescribed for the examination together with the conditions of the ordinance in force from time to time.

16. Credit and Grade Point System:

Conversion of Marks to Grades and Calculations of SGPA (Grade Point Average) and CGPA (Cumulative Grade Point Average): In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

Abbreviations and Formulae Used

G: Grade

GP: Grade Points

C: Credits

CP: Credit Points

CG: Credits X Grades (Product of credits & Grades)

SGPA = ΣCG : Sum of Product of Credits & Grades points / ΣC : Sum of Credits points

SGPA: Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

CGPA: Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

After calculating the SGPA for an individual semester and the CGPA for entire programme, the value can be matched with the grade in the Grade Point table as per the ten (10) Points Grading System and expressed as a single designated GRADE such as O, A+, A, B+, B, etc.

Marks	Grade	Grade Points
80 and above	O (Outstanding)	10
70-79	A+ (Excellent)	9
60 -69	A (Very Good)	8
55 -59	B+ (Good)	7
50-54	B(Above Average)	6
45-49	C (Average)	5
40 -44	P (Pass)	4
00 -39	F (Fail)	0
	AB (Absent)	0

A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

(A) There shall be no classification of examinees successful at the Bachelor of Business Administration (BBA) Semester - I, Semester - II, Semester - III, Semester - IV, Semester - V and Semester - VI Examinations whereas SGPA will be notified.

(B) Division at the Bachelor of Business Administration (BBA) Semester - VI Examination shall be declared on the basis of the aggregate marks at the BBA Semester - I, Semester - II, Semester - III, Semester - IV, Semester - V and Semester - VI Examination taken together and the CGPA will be calculated and notified.

(C) Successful examinees at the Bachelor of Business Administration (BBA) Semester - VI Examination shall be awarded division based on CGPA as follows :

CGPA	Grade	Division
8.5 - 10	O	Distinction(Outstanding)
7.5 - 8.4	A	Distinction
6.0 - 7.4	B	First
4.5 - 5.9	C	Second
4.0 - 4.4	D	Pass
00 - 3.9	F (Fail)	Fail

17. The percentage of passing marks in each subjects shall be as indicated in Examination Scheme (item no 11) "A", "B", "C", "D", "E" and "F" respectively.

18. Unsuccessful examinees at the above examinations can be readmitted to the same examination on payment of a fresh fee and such other fees as may be prescribed.
19. Provisions of Ordinance No. 3 of 2007 relating to the award of Grace Marks for passing an examination, securing higher division / class and for securing distinction in subject(s) shall be applicable.
20. Notwithstanding anything to the contrary in this Direction, no person shall be admitted to an examination under this Ordinance, if he/ she has already passed the same examination or an equivalent examination of any other University.
21. Examinees passing all the **Bachelor of Businesss Adminsitration (BBA)** Examination shall on payment of the prescribed fees shall receive a Degree in the prescribed form signed by the Vice-Chancellor.
22. The aforesaid Amendment shall come into force from the date of its issuance and shall remain in force till the relevant Ordinance come into being in accordance with the provisions of the Maharashtra University Act, 1994.
23. The marks for internal assessment should be communicated to University within time limit as per University norms. The record of conduct of such examination, evaluation and marks for internal assessment should be maintained for a period of at least **one** year by the respective college / Department for the verification by the competent authority.
24. **Promotion to Higher Semester (A.T.K.T.):** The unsuccessful candidate of any semester examination shall be ALLOWED TO KEEP THE TERM (ATKT) in accordance with the following table: (Theory and Internal assessment of that theory subject shall be jointly considered as single passing head).

Admission to academic year	Candidate should have passed All Subjects of the following examination	Candidate should have filled the examination form and appeared for the following examinations	Candidate should have passed in Minimum 50% Subjects of the following examination
1 st Semester	H.S.S.C/ equivalent	----	-----
2 nd Semester	-----	1st Semester	----
3 rd Semester	-----	2nd Semester	4 subjects of 1st and 2nd Semesters taken together
4 th Semester	-----	3rd Semester	As Above
5 th Semester	1st and 2nd Semesters	4th Semester	4 subjects/ passing heads of 3rd and 4th Semesters taken together
6 th Semester*	As Above	5th Semester	As Above

Note: (*) A candidate admitted to Final Semester can appear for Final Semester examination however the result of the Final Semester examination will be withheld unless the candidate clears all the lower examinations of the **BBA Course**.

25. Pattern of Question Papers of BBA year end Examination:

- The question paper should be set in such a manner so as to cover the complete syllabus as prescribed by the University.
- The Semester End examination shall be held as per the schedule notified by the University.
- The question paper shall be of 80 marks & the time duration of the Semester End examination would be 3 hours.
- The question paper shall have 4 long answers questions corresponding to Four Units of each course. Each long answer question shall carry 8 marks. There will be internal choice for each question for these long answer questions which means that the student has to mandatorily attempt one question from each unit of the syllabus. Hence, there would be 8 long answer questions in the question paper but the student has to attempt 4 questions with an internal choice for each question from each unit of the syllabus. The students shall get due credit for precise answers as per Marking Scheme given by the paper setters/ moderators.
- Question no. Five shall include Four compulsory questions from any of the six units carrying 4 marks each.
- The paper setters / moderators shall submit the proposed marking scheme (Memorandum of Instructions) along with question paper so that the students can be given due credit for precise answers.

Illustrative Question Paper for BBA Program*

Question No.	Unit	Nature	Max. Marks
1	I	a. Long Answer Question b. Long Answer Question OR c. Long Answer Question d. Long Answer Question	8 Marks each
2	II	a. Long Answer Question b. Long Answer Question OR c. Long Answer Question d. Long Answer Question	8 Marks each
3	III	a. Long Answer Question b. Long Answer Question OR c. Long Answer Question d. Long Answer Question	8 Marks each
4	IV	a. Long Answer Question b. Long Answer Question OR c. Long Answer Question d. Long Answer Question	8 Marks each
5	I II III IV	a. Short Answer Question b. Short Answer Question c. Short Answer Question d. Short Answer Question	4 Marks each
TOTAL MARKS			80

(*) This pattern of question paper is not applicable for the following papers for which the question paper patterns are prescribed separately along with the detailed syllabus of respective subjects.

- BBA 1st Semester Examination – Cost Accounting

- BBA 1st Semester Examination – English
- BBA 2nd Semester Examination - English
- BBA 2nd Semester Examination – Financial & Management Accounting
- BBA 3rd Semester Examination – Basic Statistical Techniques
-

26. Absorption Scheme for Examinees of BBA Old Course (Introduced in 2014):

1. The students of the BBA Course (Introduced in 2014) immediately preceding the new course under this direction shall be given chance to appear for three more consecutive examinations according to old syllabus (Introduced in 2014). The University shall conduct the examination of old course for three more consecutive examinations after the new scheme of examination is introduced as per following table:

BBA Examination	Attempt 1	Attempt 2	Attempt 3
BBA Part I	Winter 2016	Summer 2017	Winter 2017
BBA Part II	Winter 2017	Summer 2018	Winter 2018
BBA Part III	Winter 2018	Summer 2019	Winter 2019

The students are required to clear all their papers within the stipulated time. The students clearing all the papers of old scheme of Examination (Introduced in 2014) shall be awarded Degree according to old scheme of Examination. But, the students who failed to clear their course in three consecutive attempts as per this clause, will be required to appear afresh for BBA (CBS) examination provided under this direction.

a) The failure students of BBA I and BBA II of old course (Annual Pattern - Introduced in 2014) can be admitted to the 3rd and 5th semester of BBA Course respectively under this direction under the ATKT rules prevailing in Old Course (Introduced in 2014). However, they will be required to clear papers of annual pattern course in which they failed in 3 attempts as mentioned above.

b) The candidates who have cleared BBA Part I of old course (Annual Pattern - Introduced in 2014) examination shall get admission to Third Semester of BBA Part II of the new course directly.

c) The candidates who have cleared BBA Part II of old course (Annual Pattern - Introduced in 2014) examination shall get admission to Fifth Semester of BBA Part III of the Semester Pattern directly.

2. The absorption of students of old course (Introduced in 2014) referred above shall be made to the new course in the following manner:
 - A. A student who has passed all subjects BBA I of old course (Introduced in 2014), under Direction No.15 of 2014, shall be admitted to BBA 3rd Semester course without any restriction.
 - B. A student who has failed in some subjects of BBA I of old course (Introduced in 2014) but qualifying the conditions of ATKT prevailing under the Direction No. 15 of 2014 can be admitted to BBA 3rd Semester course. Such a student shall clear those subjects of BBA I in maximum three attempts, as shown in the above table. Where a student fails to clear those subjects in the maximum permissible attempts he/she will have to take casual admission in the first and second semesters of the new course under this Direction, by

paying fee of Rupees Five Hundred for each semester, and clear the papers of those semesters. However, such a student shall be given exemption in the equivalent subjects of the first and second semesters.

- C. A student who has passed all subjects BBA II of old course (Introduced in 2014) shall be admitted to BBA 5th Semester course.
- D. A student who has failed in some subjects of BBA II of old course (Introduced in 2014) but qualifying the conditions of ATKT prevailing under the said direction can be admitted to BBA 5th Semester course. Such a student shall clear these subjects in maximum three attempts, as shown in the table above. Where a student fails to clear those subjects in the maximum permissible attempts he/she will have to take casual admission in the Third and Fourth semesters of the new course under this Direction, by paying fee of Rupees Five Hundred for each semester, and clear the papers of those semesters. However, such a student shall be given exemption in the equivalent subjects of the Third and Fourt semesters.
- E. Similarly, a student of BBA III of old course (Introduced in 2014), if not able to pass all the subjects till Winter 2019 examination he/she will have to take casual admission in the Fifth and Sixth semesters of the new course under this Direction, by paying fee of Rupees Five Hundred for each semester, and clear the papers of those semesters. However, such a student shall be given exemption in the equivalent subjects of the Fifth and Sixth semesters.

3. Declaration of Result and Preparation of Marklist

The final year Marklist of students absorbed from BBA Old Course (Introduced in 2014) shall be prepared on the following guidelines:

- A. Where a student who has passed BBA I in the annual pattern (Introduced in 2014) has been absorbed under the absorption scheme hereunder, the marks of the BBA I of such student being out of 700 shall be converted to out of 800 so as to bring uniformity in the mark sheets of the regular students under this Direction and the students absorbed under the absorption scheme.
 - B. Similarly where a student has passed BBA I and II in annual pattern (Introduced in 2014) and has been absorbed under the scheme under this direction (Semester Pattern), the total marks obtained by such a student in BBA I and II examinations being out of 700 shall be converted to out of 800 each for the BBA I and II examinations each.
4. The equivalence & exemption of subjects for the students absorbed in the new course shall be as follows:

BBA New Course Examination (Semester Pattern)	Name of Subject in New Course Examination (Semester Pattern)	BBA Old Course Examination (2014)	Equivalent Subject in Old Course	Status of Exemption
Semester I	English	BBA Part I	English & Business Communication	Yes
	Fundamentals of Business Management	BBA Part I	Principles of Management	Yes
	Computer Applications for Business	BBA Part I	Computer Applications for Business	Yes

	Cost Accounting	BBA Part I	Financial & Cost Accounting	Yes
Semester II	Principles of Marketing Management	BBA Part II	Principles of Marketing Management	Yes
	Financial & Management Accounting	BBA Part I	Financial & Cost Accounting	Yes
	Micro-Economic Fundamentals	BBA Part I	Business Economics	Yes
	English	BBA Part I	English & Business Communication	Yes
Semester III	Principles of Financial Management	BBA Part II	Management Accounting & Financial Management	Yes
	Basic Statistical Techniques	BBA Part II	Statistical Methods for Business	Yes
	Evolution of Business & Commercial Geography		----	No*
	Environment Management	BBA Part II	Environment Management	Yes
Semester IV	Principles of Human Resource Management	BBA Part II	Human Resource Management	Yes
	Money, Banking & Finance	BBA Part I	Business Economics	Yes
	Introduction to Sociology & Psychology		----	No*
	Business Legislations	BBA Part II	Business & Industrial Laws	Yes
Semester V	Entrepreneurship Development	BBA Part III	Entrepreneurship Development	Yes
	Principles of Operations Management	BBA Part III	Production & Operations Management	Yes
	International Business Environment		---	No*
	Research Methodology	BBA Part II	Research Methodology	Yes
Semester VI	Financial Management – Paper 1	BBA Part III	Financial Management – Paper 1	Yes
	Financial Management – Paper 2	BBA Part III	Financial Management – Paper 2	Yes
	Human Resource Management – Paper 1	BBA Part III	Human Resource Management – Paper 1	Yes
	Human Resource Management – Paper 2	BBA Part III	Human Resource Management – Paper 2	Yes
	Marketing Management - Paper 1	BBA Part III	Marketing Management -Paper 1	Yes
	Marketing Management - Paper 2	BBA Part III	Marketing Management -Paper 2	Yes

() All these subjects have no equivalent subjects in the BBA Old Course Examination (introduced in 2014). Hence, students desiring for absorption in New Course under this Direction are mandatorily required to appear for these subjects in respective semesters.*

- If a student who had opted for final year 'Service Sector Management' specialization papers of old syllabus (2014) & could not pass it in three attempts, he shall appear for a new specialization subject as per semester pattern scheme.
- The above absorption scheme of B.B.A. shall be effective till the introduction of new Syllabus.

27. Guidelines for Project Work :

Objective

Every student will be assigned a project in 6th Semester of BBA and it will be pursued by him/her under the supervision of an internal supervisor. The objective of the Project Work is to help the student develop his/her ability to apply multi-disciplinary concepts, tools and techniques to solve organizational problems and/or to evolve new/innovative theoretical frame work.

Type of Project

The Project may take any one of the following forms:

- i) Comprehensive case study (covering single organization/multifunctional area problem, formulation, analysis and recommendations)
- ii) Inter-organizational study aimed at inter-organizational comparison/ validation of theory/survey of management services.
- iii) Evolution of any new conceptual / theoretical framework.
- iv) Field study (Empirical study).
- v) Software analysis, Design and solutions for organizational achievement (Applicable to IT)

Selection of Project Topic:

- Project topic has to be selected with respect to the programme of study and area elected by the student.
- Title of the project should clearly specify the objective and scope of the study. It should be specific and neither too vague nor centralistic. The topics should be designed meticulously. It can be designed like “Employee Welfare Measures” – A case study of XYZ Ltd.
- Project selection has to be made in consultation with the supervisor who will act as a Project guide for the student.

Scope of Work

The student is expected to carry out following activities in the project:

1. Prepare a synopsis and get it approved by the supervisor as assigned by the respective Institutes.
2. Undertake a detailed literature survey on the subject matter.
3. Make relevant data collection/observation.
4. Consult experts of the field.
5. Visit related organizations/institutions/industries.
6. Compile data in proper format.
7. Make proper conclusion/recommendations.
8. Prepare a Project Report.
9. The volume of the project-report should be ranging from 60-80 pages.
10. Obtain approval of Project Report by project supervisor.
11. Submit two hard bound copies of the Project Report at the Institute.
12. Submission of the Project Report shall be one month prior to the date of the commencement of the 6th Semester Examinations for BBA.

General Format of the Report

The project report should preferably be written in the following format:

- a) Executive Summary
- b) Introduction to topic
- c) Research Methodology
- d) Analysis and Findings of the study

- e) Conclusions and Recommendations of the study
- f) Bibliography
- g) Appendices – to include questionnaire, if any

Examination and Evaluation

The Project is to be treated as a paper of study of the BBA-6th Semester comprising of 200 marks. The external assessment shall be done on the basis of the project report and Viva Voce. The Project shall be evaluated by an External faculty for 150 marks and of which 100 marks will be allocated to the Written Report Content and Presentation and 50 marks for Viva Voce. The Project work shall be evaluated by internal and external examiners for 100 marks (as mentioned above) at the respective institute / college as per the scheduled fixed by the university. One such External Examiner shall not examine more than 20 students in one academic year.

28. This direction shall come into force phase wise from the academic session 2016-17.

Nagpur
Date : 29.08.2017

Sd/-
Dr. S. P. Kane
Vice-Chancellor

Appendix A

Subject/Paper Summary for BBA Program

Semester	Subject Code	Name of Subject
I	1T1	English
	1T2	Fundamentals of Business Management
	1T3	Computer Applications for Business
	1T4	Cost Accounting
II	2T1	Principles of Marketing Management
	2T2	Financial & Management Accounting
	2T3	Micro-Economic Fundamentals
	2T4	English
III	3T1	Principles of Financial Management
	3T2	Basic Statistical Techniques
	3T3	Evolution of Business & Commercial Geography
	3T4	Environment Management
IV	4T1	Principles of Human Resource Management
	4T2	Money, Banking & Finance
	4T3	Introduction to Sociology & Psychology
	4T4	Business Legislations
V	5T1	Entrepreneurship Development
	5T2	Principles of Operations Management
	5T3	International Business Environment
	5T4	Research Methodology
VI	6T1	Elective – Paper 1
	6T2	Elective – Paper 2
	6P1	Project Work

Appendix B

List of Elective Subjects

Group Area	Paper	Name of Subject
Financial Management	1	Fundamentals of Business Finance
	2	Advanced Financial Management
Human Resource Management	1	Fundamentals of Human Resource Management
	2	Advanced Human Resource Management
Marketing Management	1	Fundamentals of Marketing Management
	2	Advanced Marketing Management

Appendix C

Detailed Syllabus

Bachelor of Business Administration (BBA) Examination

Semester - I

1T1- English

Unit I: Basic Grammar – Tense, Forms of the Verb, Preposition, Articles, Punctuation, Single Word for a Group of Words, Sentence Construction, Comprehension.

Unit II: Business Letter Writing- Enquiries and replies, Placing and fulfilling orders , Complaints and follow-up letters , Sales letters, Circular letters, Application for employment and Resume.

Unit III: Business Manners- Body Language, Gestures, Telephone etiquette, E-mail etiquette.

Textbook:

- 1) The Bet – Anton Chekov
- 2) Socrates and the Schoolmaster – F. L. Brayne

Unit IV: Textbook:

- 1) An Astrologer's Day – R. K. Narayan
- 2) The Gift of the Magi – O' Henry
- 3) With the Photographer – Stephen Leacock

Reference Books:

1. Textbook entitled 'Prism: Spoken and Written Communication, Prose & Poetry' published by Orient Longman
2. Orient Longman, Raj N Bakshi 2003-2007.
3. The grammar Tree, MridulaKaul, BeenaSugathan, ArchanaGilani- Oxford university press 2011
4. Grammar for All, N Ramlingam, Himalaya Publishing House, 2nd Edition 2014.
5. John Eastwood, Oxford Practice Grammar with answers
6. High School English Grammar & Composition, Wren & Martin Revised by NDV Prasad Rao, S Chand Publication
7. Business Correspondence & Report Writing, R C Sharma &Krisha Mohan, 3rd Edition, Tata Mcgrall Hill
8. Communication, C S Rayudu, Himalaya Publication July 2008
9. Business Communication, UrmilaRai, S M Rai, Himalaya Publication 9th Edition.

1T1- ENGLISH

QUESTION PAPER PATTERN

[Maximum Marks – 80]

1. (A) Comprehension of Unseen Passage (UNIT-I)
(Four Very Short Answer Questions based on the given Passage)
4 X 2 Marks= 8 Marks

(B) Four items out of Six based on any one of the Grammar/Vocabulary items prescribed in **UNIT-I**

4 X 1 Mark = 4 Marks

(C) Four items out of Six based on any one of the Grammar/Vocabulary items prescribed in **UNIT-I**

4 X 1 Mark = 4 Marks

2. (A) ONE out of TWO Questions from **UNIT-II** (Business Letter Writing)

1 X 8 Marks = 8 Marks

(B) ONE out of TWO Questions from **UNIT-II** (Business Letter Writing)

1 X 8 Marks = 8 Marks

3. (A) ONE out of TWO Questions from **UNIT-III** (Business Manners)

1 X 8 Marks = 8 Marks

(B) ONE out of TWO Long Answer Questions (to be answered in about 150 words) based on the prescribed Lessons in **UNIT-III** from the textbook *Prism*

1 X 8 Marks = 8 Marks

4. (A) TWO Short Answer Questions (to be answered in about 75 words) out of THREE based on the Lessons Prescribed in **UNIT-III**

2 X 4 Marks = 8 Marks

(B) ONE out of TWO Long Answer Questions (to be answered in about 150 words) based on the prescribed Lessons in **UNIT-IV** from the textbook *Prism*

1 X 8 Marks = 8 Marks

5. (A) TWO Short Answer Questions (to be answered in about 75 words) out of THREE based on the prescribed Lessons in **UNIT-IV** from the textbook *Prism*

2 X 4 Marks = 8 Marks

(B) FOUR **Very Short Answer Questions** out of SIX to be answered in one or two sentences each from the prescribed Lessons (from *Prism*) in **UNIT-III&UNIT-IV**

4 X 2 Marks = 8 Marks

1T2 – Fundamentals of Business Management

Unit I: Introduction -Nature, function, definition and importance of management, Definition, nature, purpose and scope of management, Functions of a manager, is management a science or art? Development of Management Thought -Scientific management; Contribution of Taylor, Fayol, Mary Follet, Elton Mayo; Hawthorne experiments, Contingency approach.

Unit II: Management and Administration-Management and administration, Management as a profession, Professionalism of management in India, Management ethics and management culture, Skills required of manager, Classification of skills, Methods of skills development.

Unit III: Management Planning-Concept of planning, objectives, Nature, Types of plan, Stages involved in planning, Characteristics of a good plan, Importance, Limitations of planning, Making planning effective, Strategic planning in Indian Industry.

Unit VI: Decision Making-Concept, characteristics of decisions, Types of decisions, Steps Involved in decision making, Importance of decision making, Methods of decision making, Committee Decision Making. Organisation -Concepts, Principle of organization, Importance, Features of good organization structure, Types of Organisation structure.

Reference Books:

1. Essential of Business Administration - K.Aswathapa Himalaya Publishing House
2. Management: Concept and Strategies By J. S. Chandan, Vikas Publishing
3. Principles of Management, By Tripathi, Reddy Tata McGraw Hill
4. Principles of Management By Ramasamy T, Himalaya Publishing House
5. Principles of Management, Dr.NeeruVashisht&Dr.Namita Rajput, Taxmann

1T3 – Computer Applications for Business

Unit I: Introduction to Computers - Generation of Computers, Block Diagram, Working of Computer, Hardware and Software, Programming and Flow Charts concepts, Operating systems (MSDOS, Windows, UNIX, Linux), Networking concepts.

Unit II: Working with Computers - Introduction to Word, Excel, PowerPoint, Internet,. Lab Activity would be based on the following topics: a. MS Word b. MS Excel c. MS PowerPoint

Unit III: Introduction to e-Commerce, e-Learning and e-Business, M-Commerce. Introduction to Basic Web Page designing Language (HTML), using Tags: - Structural, Formatting, List tags and Table.

Unit IV: IT Consulting – Basic concepts of business, strategy and operation; Business / Strategic Consulting: Reengineering, BPR; Operations Consulting: domain knowledge concept, domain-consulting. IT Enabled Services (ITES) – Processes, Outsourcing Function, Call Centres; BPO's: Captive BPO's (GE and Dell) and Third Party BPO's (Infosys BPO, Wipro BOP, Mphasis, Daksh and EXL etc).

Reference Books:

1. E-Commerce- ParagDewan (Excel Books),
2. P.K.Sinha –Computer Fundamentals.
3. World Wide Web –design with HTML –C Xavier ,
4. Computer Application in Management –NirupmaPathak ,
5. BPO- SarikaKulkarni,
6. BPO' Processes & Challenges By Harsh Bharghav& Deepak Kumar,
7. IT Enabled Retailing by k. Suresh,
8. IT Strategies for Business- FarhaKulkarni
9. Computer Applications in Management- UshaDahiya&SapnaNagpala, Taxmann

1T4 – Cost Accounting

Unit –I: Introduction -Meaning of Cost, Costing and Cost Accounting, Features, Scope and Functions of Cost Accounting, Advantages and Limitations of Cost Accounting; Concept of Cost; Analysis and Classification of Costs; Elements of Cost; Preparation of Cost Sheet (Statement of Cost); Quotations and tender. Introduction and need for reconciliation between financial accounts and cost account, reasons for disagreement in Profit; Preparation of Reconciliation Statement.

Unit -II: Process Costing: Meaning, features and applicability, difference between process and job costing, wastage and by-products, normal and abnormal loss. Preparation of process accounts

Unit III: Operating Costing: Classification of costs, Features of operating costing: Transport costing (Standard charge, running and operating cost, maintenance charges and log sheet)

Unit IV Marginal Costing: Introduction, Application of Marginal costing in terms of cost control, level of activity planning- Break-even-analysis: Application of BEP for various business problems.

Simple Numerical will be based on Unit II, III and IV

Reference Books:

- 1) Management Accounting, Bhagwati&Pillai, Second Edition, S. Chand & Company Ltd.
- 2) Cost & Management Accounting, Ravi M Kishore, Taxmann Publications Pvt. Ltd.
- 3) Cost and Management Accounting V. K. Saxena& C. D. Vashist, Sultan Chand & Sons Publication.
- 4) Cost Accounting, Text and Problems, MC Shuka, TS Grewal and MP Gupta, S Chand Publications

Question Paper Pattern for BB4 - Cost Accounting

Question No.	Unit	Nature	Max. Marks
1	I	a. Theory Question b. Theory Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
2	II	a. Numerical Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
3	III	a. Numerical Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
4	IV	a. Numerical Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
5	I II III IV	Short Answer Theory Question Short Answer Theory Question Short Answer Theory Question Short Answer Theory Question	4 Marks each
TOTAL MARKS			80

Bachelor of Business Administration (BBA) Examination

Semester - II

2T1- Principles of Marketing Management

Unit I Marketing :Definition, nature, scope & importance, MarketingManagement, Core concepts of marketing, selling concept,production concept, modern marketing concept.

Unit II Segmentation: Concept, basis of segmentation, Importance inmarketing; Targeting : Concept Types, Importance; Positioning: Concept, Importance, Brand positioning, Repositioning.

Unit III Marketing Mix: Product : Product Mix, New Product development, levels of product, types of product, Product life cycle, Branding and packaging, different types of distribution channels.

Unit IV Price: Meaning, objective, factors influencing pricing, methods of pricing. **Promotion :** Promotional mix, tools, objectives, media selection & management. **Process & Scope Marketing Information Systems :** Meaning Importance and Scope **Consumer Behaviour :** Concept, Importance and Factors influencing consumer behaviour.

Reference Books:

1. Marketing Mgt. by Philip Kotler (PHI)
2. Marketing Management by Rajan Saxena
3. Marketing Management by Namaswamy & Ramakumari.

2T2 – Financial & Management Accounting

Unit –I: Introduction - Meaning, Scope and importance of Financial Accounting. Financial Accounting - concepts and conventions, classification of accounts, Rules and principles governing Double Entry Book-keeping system (Preparation of Journal), Nature and function of financial Reporting, GAAP.

Unit –II: Final Accounts of Companies - Final Accounts of Joint Stock Companies – contents and preparation of Trading and Profit and Loss Account, Profit and Loss Appropriation Account and Balance sheet with adjustment, Closing Entries (Simple entries)

Unit III: Management Accounting - Meaning, Scope, Importance, and Limitations of Management Accounting, Difference between Financial Accounting and Management Accounting, Break even analysis, Analysis of Financial Statements (using ratio analysis-simple ratios)

Unit IV: Budgetary Control - Business budgets and budgetary control – Types of budget and its utility, preparation of cash & flexible budgets.

Note: Simple Numericals will be based on all Units.

Reference Books:

1. S. N Maheshwari : Financial Accounting Theory and problems – S.Chand (G/L) & Company Ltd,
2. Pillai R. S. N. – Management Accounting – S. Chand & Co. Pvt. Ltd.
3. Shukla and Grewal : Advanced Accounts (S. Chand & Ltd. New Delhi)
4. Management Accounting & Financial Management :-Arora M N (Himalaya Publishing House Pvt. Ltd.)
5. Accounting for Management- Dr. Ashok Sehgal & Dr. Deepak Sehgal, Taxmann

Illustrative Question Paper Pattern for BB6 – Financial & Management Accounting

Question No.	Unit	Nature	Max. Marks
1	I	a. Theory Question	8 Marks
		b. Theory Question	8 Marks
		OR	
		c. Numerical Question	16 Marks
2	II	a. Numerical Question	8 Marks
		b. Numerical Question	8 Marks

		OR c. Numerical Question	16 Marks
3	III	a. Numerical Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
4	IV	a. Numerical Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
5	I II III IV	Short Answer Theory Question Short Answer Theory Question Short Answer Theory Question Short Answer Theory Question	4 Marks each
TOTAL MARKS			80

2T3– Micro-Economic Fundamentals

Unit I: Introduction to Micro Economics- Meaning, Definition, Importance of Micro Economics, Factors affecting Micro Economics. Difference between Micro-Economics & Macro Economics.

Unit-II Demand and Supply Analysis - Concept of Demand, Law of Demand-Meaning, Definition, Assumptions & Exceptions. Elasticity of Demand- Meaning, Types and Factors affecting Elasticity of Demand; The Indifference Curve Theory; Supply- Concept of Supply, Elasticity of Supply, Types and Factors affecting Elasticity of Supply.

Unit III: Production & Cost Analysis - Production & Production Function: Concept, Forms of Production function, Law of Variable Proportions, Returns to scale. Cost Concepts, Short term and Long term cost output relationship, The Isocost and Isoquant Approach, Economic Region and Economies & Diseconomies of scale.

Unit IV: Market Structures- Characteristics and price determination in various market structures - Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly. Pricing: Meaning, Types of Pricing.

Reference Books:

1. Agarwala S.K., Microeconomic Theory, Excel Books, New Delhi
2. Appannaiah, Reddy & Shanthi, BBM Semester Economics, 2006, Himalaya Publishing House, Mumbai.
3. Dholakia R H & Oza A.N., 1996, Oxford University Press, New Delhi
4. Dominick Salvatore, Managerial economics in a Global economy, 2006, Thomson learning Press
5. Jhingan, 2004, M.L., Microeconomic Theory, Veranda Publishers, New Delhi.
6. Ravindra R Dholakia, Ajay N Oza, Micro -Economics for Management Studies, Oxford University Press, Delhi
7. Robert S. Pindyck, Daniel L. Rubinfeld, Prem L. Mehta, Microeconomics, 2006, Pearson, New Delhi.
8. Suma Damodran, Managerial Economics, 2006, Oxford University Press, New Delhi
9. Sundharam K P. M, microeconomics, Sultan Chand & Sons.

2T4 - ENGLISH

(To be implemented from the Session 2016-2017 onwards)

1	Unit I	<p>Basic Grammar & Vocabulary :</p> <ul style="list-style-type: none"> • Subject-Verb-Agreement / Concord of Nouns, Pronouns and Possessive Adjectives • Spotting errors and rewriting sentences correctly. • Phrasal Verbs, Collocations and Idioms (based on the exercises at the end of the prescribed lessons from <i>Golden Harvest</i>) • Words Often Confused 	<p>Reference Books:</p> <ol style="list-style-type: none"> 1. Macmillan Foundation English by R. K. Dwivedi and A. Kumar (Macmillan/Trinity) 2. Learners' English Grammar and Composition by N. D. V. Prasad Rao (S.Chand Publication) 3. Developing Communication Skills by Krishna Mohan and Meera Banerji (Trinity)
2	UNIT II	<p>Business Communication</p> <ul style="list-style-type: none"> • Memorandum Writing • Notice, Agenda and Minutes 	1. Developing Communication Skills by Krishna Mohan and Meera Banerji (Trinity)
		<ul style="list-style-type: none"> • Writing Advertisements for: Rent, Sale, Situations Vacant 	2. Write Right by Sarita Manuja (Macmillan/Trinity)
3	UNIT III	<p>Prose Items:</p> <ul style="list-style-type: none"> • A Real Good Smile: Bill Naughton • What India Inc Wants: <ol style="list-style-type: none"> a. Our Muddled Generation: Dinesh Kumar b. Employers Look for Potential Employees, not Exam Results: Manish Sabharwal • The Thief: Ruskin Bond 	Prescribed text : <i>Golden Harvest</i> by Orient BlackSwan

4	UNIT IV	Prose Items: <ul style="list-style-type: none"> • A Simple Philosophy: Seathl • Go, Kiss the World: SubrotoBagchi • My Struggle for an Education: Booker T. Washington 	Prescribed text : <i>Golden Harvest</i> by Orient BlackSwan
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2T4 - ENGLISH

(QUESTION PAPER PATTERN)

[Maximum Marks – 80]

1. (A) FIVE items out of SEVEN based on Subject-Verb- Agreement/Concord (fill in the blanks) - **UNIT-I** 5 x 1 Mark = 5 Marks
 (B) FIVE items out of SEVEN based on Spotting Errors and Rewriting Sentences correctly. - **UNIT-I** 5 x 1 Mark = 5 Marks
 (C) FIVE items out of SEVEN based on Phrasal Verbs/ Collocations/Idioms - **UNIT-I** 5 x 1 Mark = 5 Marks
 (D) FIVE items out of SEVEN based on Words Often Confused (fill in the blanks) - **UNIT- I** 5 x 1 Mark = 5 Marks

2. (A) ONE out of TWO items on Memorandum Writing - **UNIT-II** 1 X 5 Marks = 5 Marks
 (B) ONE out of TWO questions based on Notice, Agenda and Minutes - **UNIT-II** 1 X 10 Marks = 10 Marks
 (C) ONE out of TWO questions based on Writing Advertisements- **UNIT-II** 1 X 5 Marks = 5 Marks

3. (A) ONE out of TWO Long Answer Questions to be answered in about 150 words - **UNIT-III** (Prescribed Text) 1 X 10Marks = 10 Marks
 (B) TWO out of THREE Short Answer Questions to be answered in about 75 words - **UNIT-III** (Prescribed Text) 2 X 5 Marks = 10 Marks

4. (A) ONE out of TWO Long Answer Questions to be answered in about 150 words - **UNIT-IV** (Prescribed Text) 1 X 10 Marks = 10 Marks
 (B) TWO out of THREE Short Answer Questions to be answered in about 75 words - **UNIT-IV** (Prescribed Text) 2 X 5 Marks = 10 Marks

Bachelor of Business Administration (BBA) Examination

Semester – III

3T1 – Principles of Financial Management

Unit –I: Introduction of Business Finance - Meaning, Scope and importance of Business Finance. Finance Functions. Goals & objectives of financial management

Unit –II: Sources of Financing - LONG TERM: Equity shares, Preference Shares, debentures,/ Bonds (Types, features & utility), term loans, lease & hire purchase, retained earnings,; SHORT TERM: trade credit, bank finance, commercial paper, factoring & bills discounting.

Unit III: Cost of Capital - Cost of capital, Cost of different sources of finance, weighted average cost of capital, Concept of Leverage, Concepts of Capital Structure.

Unit IV: Working Capital Management - Meaning, Scope, Importance, and Limitations of Working Capital, Factors affecting Working Capital needs, Various Approaches for financing Working Capital. Concept of Operating Cycle, Estimation of Working Capital Requirement

Note: Simple Numerical will be based on Unit III and IV only.

Reference Books:

- 1) Financial Management by Ravi Kishore, Taxmann Publications Pvt Ltd
- 2) Financial Management – I M Pandey – S. Chand & Co. Pvt. Ltd. (Old editions in Vikas Publications)
- 3) Financial Management , Theory, Concepts and Problems by Dr. R. P. Rustagi, Taxmann Publications Pvt Ltd
- 4) Financial Management, Text, Problems and Cases, by M Y Khan and P K Jain, McGraw-Hill Publications

BBA Sem III

3T2 – Basic Statistical Techniques

Unit I – Definition, functions, scope and role of statistics in business and importance of statistics. Classification of data, tabulation, frequency distribution, diagrams & graphs.

Unit II – Importance and requisites of a good statistical average, types of averages – arithmetic mean, median, mode, geometric mean, harmonic mean, weighted average, relationship amongst different averages.

Unit III – Meaning and significance of dispersion, methods of measuring dispersion – range, quartile deviation, mean deviation, standard deviation and coefficient of skewness.

Unit IV – Definition of correlation, significance of correlation, types of correlation, merits and limitations of coefficient, Calculation of coefficient of correlation and probable error for simple series, calculation of coefficient of correlation and probable error for continuous series.

Numerical shall be based on Unit II, Unit III, and Unit IV

Reference Books:

1. Fundamentals of statistics : D. V. Elhance & Veena Elhance
2. Statistics : V. K. Kapoor – S. Chand & Sons
3. Statistics : B. New Gupta – Sahitya Bhavan Agra
4. Statistics Methods : S.P. Gupta – S. Chand & Sons
5. Fundamental of Statistics : S. C. Gupta – Himalaya Publishing House
6. Business Mathematics & Statistics : NEWK Nag & S.C. Chanda – Kalyani Publishers

Illustrative Question Paper Pattern for BB10 – Basic Statistical Techniques

Question No.	Unit	Nature	Max. Marks
1	I	a. Theory Question b. Theory Question OR c. Theory Question d. Theory Question	8 Marks each
2	II	a. Theory Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
3	III	a. Theory Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
4	IV	a. Numerical Question b. Numerical Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
5	I II III IV	Short Answer Theory Question Short Answer Theory Question Short Answer Theory Question Short Answer Theory Question	4 Marks each
TOTAL MARKS			80

3T3 – Evolution of Business & Commercial Geography

Unit I–Evolution of Business & Economy: Industrial revolution (1820-1850); Rise of European business (1850-1900); Impact of First World War on International Business; The Great Depression and its effect on International Business; Impact of Second World War on International Business.

Unit II – Evolution of Business in post WWII Scenario: Cold War and its impact on International Business; OPEC Crises and its impact on International Business; Gulf War and its impact on International Business; Dawn of IT era and its impact on business & economy.

Unit III – Commercial Geography: Geography - meaning & its relation with Commerce & Commercial Geography - Nature and scope. Approaches of commercial Geography. 2. Geographical Environment & Commerce - Relationship between geographical environment and Commerce, Economic activities, Determinism and possibilism, Physical environment - Location, size and shape of the country relief, climate, water bodies, soils, vegetation, animals, minerals, Cultural environment, settlements, transport, communication and technology.

Unit IV -Industries : Role of industries in Economic development; Factors of industrial location - Raw material, power, market, transport and communication, land capital, technology; Webers theory of industrial location, Iron & steel industry - India & USA, Cotton textile industry - India & USA. Engineering industry in India - Major industrial regions of the world and India.

Reference Books:

1. Global Governmentality - Edited by Wendy Larner& William Walters, Routledge Resource
2. The Origins of Globalisation - Karl Moore & David Charles Louis, Routledge Resource
3. British Business History (1720-1994) - John F Wilson, Manchester University Press
4. The History of Family Business (1850-2000) - Andrea Colli, Cambridge University Press
5. Exporting the American Model: The Post war transformation of European Business - Marie-Laure Djelic, Oxford University Press
6. Order and Disorder after the Cold War - Brad Roberts, MIT Press
7. Commercial Geography - Sir Dudley Stamp.
8. Fundamentals of Economic Geography - Van Royen&Bengston.
9. Economic Geography - J. Alexander
10. Economic Geography - Jones &Darkenwald.

3T4 – Environment Management

Unit I: Introduction to Environment Management: Definition, Scope importance, Need for public awareness, sustainable development, Natural Resources- renewable and non- renewable resources, role of individual in conservation of natural resources(Forest, water, land, energy, mineral)

Unit II: Environment Pollution: Types of pollution- air, water, soil, noise, thermal and Nuclear, causes effectsna control measures, Global warming, green house effect, Ozone layer depletion, Acid rains

Unit III: Human Population: Global population growth, variations among nations, Population explosion-causes and impact, Family welfare Programs-methods of sterilization; Infectious diseases, water related diseases, risk due to chemicals in food, Cancer and environment

Unit IV: Social Issues in Environment: Construction of dams: problems and concerns of resettlement, rehabilitation of affected people; Environmental ethics- issues and possible solutions, resource consumption patterns and need for equitable utilization; Equity disparity in western and eastern countries; Urban and rural equity issues; Need for gender equity.

Reference Books:

1. A text book of environmental by K M Agrawal, P K Sikdar, S C Deb”, published by Macmillan
2. Environment management by N K Uberoi”, published by Excel Books
3. Environment management by Dr. Swapan Deb”, published by Jaico Publishing House.
4. Environmental Management by S K Agrawal”, published by A.P.H. publishing Corporation.

Bachelor of Business Administration (BBA) Examination

Semester – IV

4T1 – Principles of Human Resource Management

Unit 1 : Introduction to Human Resource Management: Definition, concept and Scope of H. R. M., Difference between Personnel Management and H.R.M., Importance and Functions of H.R.M. Role of H.R Department.

Unit 2 : Job Analysis, Job Design: Meaning of Job Analysis, Uses, Process and methods of collecting data for job analysis, Job Description, Job Specifications. Meaning of Job Design, Techniques of Job Design

Unit 3 : Human Resource Planning - Recruitment - Selection: Definition and objectives of Human Resource planning, process of Human Resource planning factors influencing estimation of Human Resources, Concept of Recruitment & Selection, sources of recruitment, Selection Procedure

Unit 4 : Induction & Training : Concept of Induction, Training- Need for training, benefits of training, identification of training needs and methods/ types of training. Evaluation of effectiveness of training programs.Placement, Transfer, Promotion, Demotion.

Reference Books:

- Dr. S S Khanka : Human Resource Management,
- Aswathappa, K.; Human Resource and Personnel Management (Text and Cases), Tata McGraw Hill Publishing Company
- Dessler,Gary; Human Resource Management;Prentice Hall
- SubbaRao, Personnel and Human Resources management, HPH.
- Human Resource Management- Text and Cases-- VSP Rao

4T2 – Money, Banking and Finance

Unit I: Money - Concept and functions of Money, Origin and development of Money, Limitations of Barter System, Classification of Money, Importance of Money, Qualities of Good Money, Defects of money.

Unit-II – Banking and Finance - Commercial Banking- Role and functions of Commercial Banks, Credit creation and its limitations Central Banking-Functions of Central Bank. Reserve Bank of India –Role in Indian Economy, Monetary & Non-Monetary functions of RBI.

Unit III: National Income Determination- Meaning, Method & Difficulties of Measuring National Income; Concept of GDP, GNP, NNP, PI, DPI. Inflation and Deflation- Types, Causes and Measures to Control.

Unit IV: Monetary and Fiscal Policy- Concept, Objectives, Instruments, Limitations of Monetary and Fiscal policy, Public Finance- Meaning, Scope and Importance of Public Finance, Public Finance Vs Private Finance.

Reference Books:

1. Appannaiah, Reddy &Shanthi, BBM Semester Economics, 2006, Himalaya Publishing House, Mumbai.
2. Chaturvedi D., Macro Economics, 2005, Galgotia Publishing Company, New Delhi.
3. Dominick Salvatore, Managerial economics in a Global economy, 2006, Thomson learning Press
4. Datt, Ruddar and K P M Sundharam, 2005, Indian Economy, S.Chand and Co. Pvt. Ltd. New Delhi
5. Jhingan, 2004, M.L., Money Banking International Trade and Public Finance, Ed. 8, Veranda Publishers, New Delhi.

6. Mithani D. M., Money, Banking, International trade and Public Finance, 2006, Himalaya Publishing House, Mumbai
7. Samuelson, Paul Anthony and William D. Nordhaus, 1998, Economics, Ed. 6 New Delhi: Tata McGraw Hill Publishing Company Ltd, New Delhi.
8. Somashekhar N T., Money, Banking, International trade and Public Finance, 2006, Himalaya Publishing House, Mumbai
9. Suma Damodran, Managerial Economics, 2006, Oxford University Press, New Delhi.

4T3 – Introduction to Sociology & Psychology

Unit I: Sociology as the Science of Society: (a) Sociology – Meaning and Definitions, (b) Characteristics of Sociology as a science (empirical, theoretical, cumulative and nonethical), (c) Development of Modern Industrial Society – Characteristics, industrialism, capitalism, urbanism, liberal democracy, (d) Postmodern Society – Nature and Characteristics, (e) Culture – Meaning and elements, (cognitive elements, beliefs, values and norms and signs), Meaning, stages and agencies of socialisation.

Unit II: Social Structure and Social Change: (a) Structural aspects of social system – Institutions, groups, subgroups, roles, norms and values, (b) Social change – Its sources – Internal and External, (c) Types of Social Change – Changes in social values with reference to pattern variables, changes in occupational structure and demographic changes

Unit III: Introduction to Psychology: (a) Definition, Nature, Scope and Applications of Psychology. (b) Methods: Introspection, Observation, Experimental, Interview, Questionnaire and Case Study. (c) Contemporary Perspectives: Biological, Cognitive, Psychoanalytical, Humanistic, Evolutionary and Cross-cultural. (d) Biological Bases of Behaviour: Evolution, Genes and Behaviour. The Response Mechanism: Receptors, Effectors and Adjustors. (e) The Nervous System: The Basic Structure, Functions and Divisions of the Peripheral and Central Nervous System.

Unit IV: Social Psychology: (a) Introduction: Nature and Scope; Methods of Studying Social Behaviour: Observation, Experimental, Field Study, Survey, Sociometry and Cross-cultural. (b) Socialization: Agents and Mechanisms, Socialization and Deviation. (c) Perceiving Others: Forming Impressions; Role of Non-verbal Cues, Group stereotypes, Central Traits; Primary and Recency Effects; Models of Information Integration; Attribution of Causality: Biases and Theories (Jones and Davis, Kelley).

Reference Books:

1. Inkeles, Alex, "What is Sociology?", Prentice Hall of India, New Delhi, 1987
2. Jayaram N., "Introduction to Sociology", Macmillan India, Madras, 1988
3. Ghode R.N. and Bhau Daydar, "Sociology: Basic Concepts", Spectrum Publications, Nagpur
4. Atkinson and Hilgard (2002). Introduction to Psychology. New York: Thomson Wadsworth
5. Feldman, R. S. (2006). Understanding Psychology. India: Tata McGraw Hill.
6. Feldman, R. S. (1985). Social Psychology: Theories, Research and Application. New York: McGraw Hill.
7. Myers, David, G (1994). Exploring Social Psychology. New York: McGraw Hill.

4T4 – Business Legislations

Unit I: Administration of law & legal system in India - Introduction to legal aspects of Business in general; Freedom of Trade, Profession and Occupation (Constitutional Provisions).

Unit II: Indian Contract Act (1872) - a) Definition (Sec.2) b) Essential elements of a valid contract c) Competency to enter in contracts (Sec. 11 & 12).d) Consent – Free consent, Coercion, undue influence, fraud, misrepresentation, mistake (sec 13-23).Void Agreement (sec 24-30) f) Consequences of breach of contract (sec73-75).

Unit III: The Companies Act (1956) - Definition & characteristics of a company, Company distinguished from partnership, Kinds of Companies, Provisions relating to incorporation, lifting the Corporate Veil. Memorandum of Association, Doctrine of ultra-vires, Articles of Association, Doctrine of indoor management & constructive notice, Concept of Prospectus.**Company Management And Board Meeting :** Administrative Hierarchy, Board of Director – Director- Legal Position, Appointment, Qualification, Disqualification, Removals Power, duties, Liabilities etc. Managing Director – Meaning, Appointment, and Disqualification.Manager-Meaning, Disqualification.Company Meetings Meaning of meeting-General Body meeting – statutory Meeting, Annual General meeting, Extra ordinary meeting Board Meeting.

Unit IV: The Consumer Protection Act,1986 Salient features of Act. Definitions- Consumer, Complaint, Services, Defect and Deficiency, Complainant. Rights and Reliefs available to consumer.Procedure to file complaint.Consumer Disputes Redressal Agencies.(Composition, Jurisdiction, Powers and Functions.) Procedure followed by Redressal Agencies. Introduction to GST

Reference Books:

- 1) Business and Commercial Laws-Sen and Mitra.
- 2) An Introduction to Mercantile Laws-N. D. Kapoor
- 3) Business Laws-N. M. Wechlekar
- 4) Company Law-Avatar Singh
- 5) Law of Contract-Avtar Singh
- 6) Consumer Protection Act in India .Niraj Kumar
- 7) Consumer protection in India. V.K.Agrawal
- 8) Consumer Grievance Redressal under CPA. Deepa Sharma.

Bachelor of Business Administration (BBA) Examination

Semester – V

5T1 – Entrepreneurship Development

Unit I:Entrepreneur & Entrepreneurship: Evolution of the concept of Entrepreneurs, Characteristics of an Entrepreneur, Distinction between an entrepreneur and a manager; functions of an entrepreneur, types of entrepreneurs, concept of intrapreneurs; growth of entrepreneurship in India, role of entrepreneurship in economic development,.

Unit II:Entrepreneurial growth: Factors - Economic factors, non-economic factors, Government actions; Entrepreneurial competencies – meaning, major competencies, developing competencies; Entrepreneurship Development Programs (EDPs) - Need, objectives, course content of EDPs, phases of EDPs, evaluating EDPs.

Unit III:Small Enterprises: An introductory framework: Definition, characteristics, relationship between small and large units, rationale, objectives, scope, opportunities for entrepreneurial career, problems of SSIs; Project Identification and Selection (PIS) - Meaning of project, project identification, project selection, contents of project reports, formulation of project reports; Project Appraisal - Concept, methods, economic analysis, financial analysis, market analysis, technical feasibility, managerial competence.

Unit IV:Institutional& financial support to Entrepreneurs: Need for institutional support, various institutions supporting entrepreneurship in India - MIDC, MSME, MCED, DIC, SSIB, MSSIDC, BIFR; Financial support to entrepreneurs: Commercial banks, other financial institutions - IDBI, IFCI, SFCs, SIDBI, venture capital.

Reference Books:

1. Entrepreneurship 6 th edition. Robert D Hisrich , Tata McGraw-Hill.
2. Kuratko- Entrepreneurship – A Contemporary Approach, (Thomson Learning Books)
3. Small-Scale Industries and Entrepreneurship. Desai, Vasant (2003). Himalaya Publishing House, Delhi.
4. S.S. Khanka – Entrepreneurial Development (S. Chand & Co.)
5. Exploring Entrepreneurship, Blundel& Lockett, Oxford University Press
6. Entrepreneurship, Roy, Oxford University Press

5T2 – Principles of Operations Management

Unit I: Introduction to Operations Management: Introduction to Operations Management, its Nature, Scope, Importance and Functions. Difference between production, manufacturing and service. Concept and types of production, mass, job-based, batch and assembly line production system. Types of services.

Unit II: Facilities and Production Planning : Factors affecting plant location, types of plant layouts – product layout, process layout, fixed position layout, cellular layout, types of service layouts. Concept of production planning, definitions of capacities, master production schedule, material planning. Introduction to maintenance.

Unit III: Material Management: Scope of materials management, Purchase and Stores Functions, Introduction to warehouse management, Concept of Lead time, re-order level, minimum and maximum stock, Basic concepts of Inventory management, inventory costs, ordering and carrying cost.

Unit IV: Quality Management and Productivity: Introduction to quality, dimensions of quality, concept of product, process and service quality. Introduction to Quality Management System, concept of TQM, ISO, Kaizen, Quality circles, Six-sigma. Concepts of productivity, machine, labour and cost productivity.

Reference Books:

1. Operations Management by Shridhar, Himalaya Publishing House
2. Operations Management Nair: TMH
3. Production and Operations Management, Adam & Ebert, Prentice Hall India
4. Operations Management by Chary ,Mcgraw Publications, 4th edition.
5. Production and Operations Management, K.Aswathappa&K.ShridharaBhat, Himalaya Publication
6. Production and Operations Management, R.Panneerselvam, 3rd Edition, Eastern Economy Edition.

5T3 – International Business Environment

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Unit I: Introduction to International Business: Importance, nature and scope of International business; Modes of entry into International Business; Internationalization process and managerial implications; Issues in foreign investments, technology transfer, pricing and regulations; International collaborative arrangements and strategic alliances; Concept and significance of balance of payments account

Unit II: International Business Environment: Economic, Political, Cultural and Legal environments in International Business. Framework for analyzing international business environment.

Unit III: Global Trading and Investment Environment: World trade in goods and services – Major trends and developments; World trade and protectionism – Tariff and non-tariff barriers; Foreign investments-Pattern, Structure and effects; Movements in foreign exchange and interest rates and their impact on trade and investment flows.

Unit IV: International Economic Institutions and Agreements: WTO, WTO and Developing Countries, IMF, World Bank, UNCTAD, International commodity trading and agreements. Structure and functioning of EC and NAFTA, Regional Economic Groupings in Practice: Levels of Regional Economic Integration; Regionalism vs. Multilateralism; Important Regional Economic Groupings in the World.

Reference Books:

1. Bennet, Roger, International Business, Financial Times, Pitman Publishing, London.
2. Bhattacharya, B., Going International: Response Strategies of the Indian Sector, Wheeler Publishing, New Delhi.
3. Czinkota, Michael R., et. al., International Business, the Dryden Press, Fortworth.
4. Danoes, John D. and Radebaugh, Lee H., International Business: Environment and Operations, Addison Wesley, Readings.
5. Hill, Charles W. L., International Business, McGraw Hill, New York.

5T4 – Research Methodology

Unit I: Introduction - Meaning, Objectives and Types of research, Research Approach, Research Process, Relevance & scope of research in management. **Research Design** - Features of good Design, Types of Research Design,

Unit II: Sampling Design - Steps in sample Design, Characteristics of a good sample Design, Probability & Non Probability sampling. Hypothesis – Meaning, Types, Process, Formation of Hypothesis, Testing of Hypothesis

Unit III: Measurement & scaling techniques - Errors in measurement. Test of sound measurement, Scaling and scale construction technique. Attitude Measurement and Scales: Introduction to attitude - Various Methods to measure attitude.

Unit IV: Methods of data collection - Primary data – questionnaire and interviews; Collection of secondary data. **Interpretation of data** - Techniques of Interpretation, Report writing, Layout of a project report, preparing research reports.

Reference Books:

1. Research Methodology – C.R. Kothari
2. Business Research Methods – Naval Bajpai
3. Business Research Methodology – J K. Sachdev

Bachelor of Business Administration (BBA) Examination
Semester – VI

Elective A - Financial Management

Paper 1

6T1– Fundamentals of Business Finance

Unit –I: Mathematics of Finance – Concept of Time Value of Money, Compounding and Discounting of single cash flow, series of cash flow and annuity. Simple problems based on Time Value of Money

Unit –II: Capital Budgeting - Premises of Capital Budgeting Decisions, Tools in Capital Budgeting, Pay Back Period, Average Rate of Return on Investments, Net Present Value, IRR.

Unit –III: Dividend decision and Management of Earnings - Relevance approach of dividend valuation models, Irrelevance approach of dividend valuation models, Stability of dividend, Factors determining dividend decisions.

Unit IV: Corporate Restructuring - Reasons & drivers of corporate restructuring, Methods of restructuring- mergers (types of merger), takeovers, acquisitions (Types of Takeover/ acquisition), divesting/ demerger, spin-off, split ups

Simple Numerical will be based on Unit I, II and III only.

Reference Books:

- 1) Financial Management by Ravi Kishore, Taxmann Publications Pvt Ltd
- 2) Financial Management – I M Pandey – S. Chand & Co. Pvt. Ltd. (Old editions in Vikas Publications)
- 3) Financial Management , Theory, Concepts and Problems by Dr. R. P. Rustagi, Taxmann Publications Pvt Ltd
- 4) Financial Management, Text, Problems and Cases, by M Y Khan and P K Jain, McGraw-Hill Publications

Paper 2

6T2 – Advanced Financial Management

Unit –I: Banking Services and Operations -Definition of banks, Functions of Commercial Banks, Banking Structure in India, Role of RBI vis-a-vis other commercial banks, Introduction to Bank Deposits, Types of Deposit Accounts, KYC

Unit –II: Insurance Services - Concept of insurance, principles of insurance, Traditional and Unit linked policies, individual and group policies, Different type of insurance products – whole life products, term assurance annuities, and endowment, Medi-Claim and health insurance products.

Unit –III: Mutual Funds – Organization Structure, Classification of Funds –Types of Funds – Equity Funds, Debt Funds, Liquid Funds, Balanced Funds, Monthly Income Plans, ETFs, Commodity Funds, Fund of Funds, Sectoral Funds, ELSS; Calculation of NAV; Systematic Investment Plans; Concept of Cost Averaging and Value Averaging.

Unit IV: Capital Market - Introduction to Capital Markets, Structure of Capital Market, Primary and Secondary Market, Stock Exchanges in India- BSE, NSE, OTCEI, ICSEI, Functions of Stock Exchange, SEBI and Role of SEBI in Capital Market

Reference Books:

- 1) Indian Financial System by Bharti V Pathak Pearson Publications
- 2) Indian Financial System by M Y Khan McGraw-Hill Publications
- 3) Financial Markets and Services , Gordon and Natrajan, Himalaya Publications
- 4) Financial Services, SandeepGoel, PHI Publications
- 5) Know Your Bank (volume I to VI) published by IIBF
- 6) Life and Health Insurance, 13th Edition by Kenneth Black Jr., Harold D. Skipper Jr., PHI Publications

Elective B-Human Resource Management

Paper 1

6T1- Fundamentals of Human Resource Management

Unit 1 :Introduction: Concept, HRM ; Evolution of HRM; Challenges of HRM; Role of Human Resource Management in strategic management, Characteristics of Workforce today

Unit 2 : Performance Appraisal :Concept and Introduction, Importance, process – methods of performance appraisal – Traditional & Modern Methods.

Unit 3 : Job Evaluation & Compensation management: Concept, objectives and methods of Job Evaluation, Wages & Salary, components of employee remuneration – – base and supplementary. Wages & Salary Administration

Unit 4 : Legal Aspects :Introduction to Provident Fund Act, Employee State Insurance Corporation Act, Minimum Wages Act, Industrial Relations Act, Industrial Dispute Act.

ReferenceBooks :

- Dr. S S Khanka : Human Resource Management,
- Aswathappa, K.; Human Resource and Personnel Management (Text and Cases), Tata
- Rao, V S P, Human Resource Management, Text and Cases
- Dessler, Gary; Human Resource Management; Prentice Hall
- Subba Rao, Personnel and Human Resources management, HPH.
- Seema Sanghi , Human Resource Management

Paper 2

6T2- Advanced Human Resource Management

Unit 1 : Job Analysis, Job Design & Job Evaluation: Job Analysis & Design - Job Analysis – Meaning, Uses, Competency approach to job analysis, Job Description, Job Specifications & Role Analysis, Factors affecting Job Design, Techniques of Job Design, Cases and Exercises in understanding Job Analysis. Job Evaluation –Concept, objective & methods.

Unit 2: Performance Appraisal: Nature, Objectives of Performance Appraisal, Performance Planning and Potential Appraisal, Pitfalls of Appraisal, Praise and Recognition; Rewards and Incentives; Promotions. HR Records, MIS HR Reports, HR Formats – Personnel Files, Attendance, Leave, Medical Records.

Unit 3 : Industrial Relations : Nature, Concept, scope, objectives & significance of Industrial Relations, Trade unions, Functions of Trade Unions - Forms of collective bargaining - Workers' participation in management, Nature & causes of Industrial Dispute and Settlement of Industrial Disputes.

Unit 4 : Ancillary Topics: Goal Setting, Promotions and Transfers; Separations- Retirement, VRS, Deputation, Death, Retrenchment, Pink Slips, Competency Mapping, Employee Manual / PPP Handbook. Concept of Retention and Attrition. Online recruitment; Employee referrals; Recruitment process outsourcing Head hunting; Downsizing; Voluntary retirement schemes (VRS) HR outsourcing, Job Rotation & Transfer

Reference Books :

- Dr. S S Khanka : Human Resource Management,
- Aswathappa, K.; Human Resource and Personnel Management (Text and Cases), Tata
- Rao, V S P, Human Resource Management, Text and Cases
- Dessler, Gary; Human Resource Management; Prentice Hall
- Subba Rao, Personnel and Human Resources management, HPH.
- Seema Sanghi, Human Resource Management

Elective C-Marketing Management

Paper 1

6T1- Fundamentals of Marketing Management

Unit - I: Integrated Communication Mix (IMC) -meaning, importance; Communication meaning, importance, process, communication mix-components, role in marketing,

Unit - II: Branding - meaning, brand recall, brand positioning. Importance of branding and advertising. Digital Marketing – Scope and Importance, Search Engine Optimisation (SEO), Out of home (OOH).

Unit - III: Sales Organisation and Relationship : Purpose of sales organization, Types of sales organization structures, Sales department external relations, Distributive network relations.

Unit - IV: Concept of services - Nature & characteristics of services, Marketing Mix and strategies in Service Marketing, Product decisions, pricing strategies, Promotion of services, Placing or Distribution methods of services, Service vision & Strategies: Includes Advertisements, Branding, Packaging of Services.

Reference Books:

1. Marketing Mgt. by Philip Kotler (PHI)
2. Marketing Management by Rajan Saxena, Tata McGraw Hill, Education
3. Service Sector Management by S M Jha
4. Sales Management - Cundiff, Still, Govoni

Paper 2

6T2- Advanced Marketing Management

Unit – I : Sales Management : - Evolution of sales function, Objectives of sales management positions, Functions of Sales executives, Relation with other executives, Salesmanship : Theories of personal selling, Types of Sales executives, Qualities of sales executives, Prospecting, pre-approach and post-approach, Organising display, showroom & exhibition

Unit – II: Distribution network Management: Product Distribution Channel & Types of Marketing Channels, Factors affecting the choice of channel, Types of middleman and their characteristics, Wholesale and Retail, Supply Chain Management (SCM) and introduction to Supply Chain Management, Various types of Warehousing and transportation facilities.

Unit – III: Service Quality - Impact of service Quality, Approaches to service Quality, Ten original dimensions of Service Quality, How to improve service Quality, Service quality information systems, Benchmarking and certification. Marketing challenges in services business; Classification of services; End user, Profit orientation, Services tangibility, People based services, Expertise. Role of IT in service industry.

Unit – IV: Customer Retention & Relationship Marketing: CB-Services, Facts & Importance of CB in services, Evolution of Relationship Marketing, Enhancement of Internal & External relationships, Customer Retention (Operations, Delivery System). Various types of services offered to customers – hotel, hospital, transport, insurance, banking and education.

Reference Books:

1. Marketing Mgt. by Philip Kotler (PHI)
2. Marketing Management by Rajan Saxena, Tata McGraw Hill Education
3. Service Sector Management by S M Jha
4. Sales Management - Cundiff, Still, Govoni



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

DIRECTION NO. 24 OF 2017

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF
BACHELOR OF COMMERCE (COMPUTER APPLICATION) (BCCA)
(CREDIT BASE SEMESTER PATTERN) FACULTY OF COMMERCE**

(Issued by the Vice-Chancellor under section 12(8) of the Maharashtra Public Universities. Act, 2016) (Mah. Act No. VI of 2017)

WHEREAS, the Maharashtra Public Universities Act, 2016 (No. VI of 2017) (hereinafter Act) has come into force with effect from 1st March, 2017;

AND

WHEREAS, the amendment to the said Act came to be effected from 2016-2017.

AND

WHEREAS, the Faculty of Commerce at its meeting held on 14.3.2016 have decided to update and upgrade the existing syllabus for the award of the degree of Bachelor of Commerce (B.Com. (Computer Application)) (BCCA) commensurate with the curricula existing in the various Universities in India and with a view to include the latest trends in the commerce stream as well as to design it to suit to the needs of the industries and corporate houses as provided under Section 38(a) of the Act.

AND

WHEREAS, the Coordinator of the Faculty of Commerce concurred with the recommendations of the Special Task Committee in Computer Application in the Faculty of Commerce on 5.4.2016.

AND

WHEREAS, the Special Task Committee in Computer Application in its meetings held on 5.4.2016 updated the existing syllabi and recommended some modifications in the scheme of examination for under graduate courses.

AND

WHEREAS, the Coordinator, Faculty of Commerce has consented to the changes in the syllabus and the scheme of examination for the award of Bachelor of Commerce (B.Com. (Computer Application)) (BCCA) Degree.

AND

WHEREAS, the Vice-Chancellor, Nagpur University, Nagpur approved the recommendations so made by the Special Task Committee in the Faculty of Commerce duly concurred by the Coordinator, Faculty of Commerce as required under Section 38 (a) of the Act .

AND

WHEREAS, as per the Advice of the Vice Chancellor, Coordinator, Faculty of Commerce & Coordinator, Special Task Committee (Computer Application) in the meeting held on 24.2.2016 constituted sub-committee for syllabus restructuring of BCCA with Semester pattern.

AND

Whereas, the Sub-committee submitted the Semester Draft Syllabus of BCCA in meeting held on 5.4.2016.

AND

Whereas, the University has issued Direction to 15 of 2017 dealing with the composition of the four faculties created by the Act, where under the existing different faculties of the University have been merged into the four new faculties created by the Act, by which the erstwhile independent faculty of “Law” has been merged in the new faculty of “Humanities” under the Act;

AND

Whereas, the University has issued Direction No. 13 of 2017 prescribing “conditions for conduct of undergraduate and post graduate examinations based on credit based/choice based credit system, in all faculties, Direction, 2017” on 06/06/2017, prescribing certain conditions relating to maximum and minimum passing marks in the theory /practical subjects prescribed in the semester of a course, the maximum theory and practical subjects in a semester, rules of

exemption and ATKT, and also the coding pattern for the subjects in each semester of the course, necessitating appropriate changes in the existing Directions governing the undergraduate and post graduation courses in all the faculties of the University;

AND

WHEREAS it is expedient to provide an Ordinance for the purpose of prescribing examinations leading to the degree of Bachelor of Commerce (B.Com. (Computer Application))(BCCA) in the Faculty of Commerce and phasic repeal of Ordinance No. 21 of 1994 governing the existing course of Bachelor of Commerce (B.Com. (Computer Application))(BCCA) but the Ordinance making is a consuming process and there is an exigency necessitating exercise of powers by the Vice-Chancellor under section 12(8) of the Act;

Now, therefore, I, Dr. S. P. Kane, Vice-Chancellor, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of the powers vested in me under Section 14(8) of the Maharashtra University Act of 1994 do hereby issue the following direction:

THIS DIRECTION SHALL BE CALLED “DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF BACHELOR OF COMMERCE (COMPUTER APPLICATION) (BCCA)(CREDIT BASE SEMISTER PATTERN) FACULTY OF COMMERCE”.

1. There shall be SIX examinations leading to the degree of B.Com. (Computer Application) (BCCA) namely:

Part-I

- (1) The B.Com. (Computer Application) (BCCA) Semester-I Examination,
- (2) The B.Com. (Computer Application) (BCCA) Semester-II Examination,

Part-II

- (3) The B.Com. (Computer Application) (BCCA) Semester-III Examination,
- (4) The B.Com. (Computer Application) (BCCA) Semester-IV Examination,

Part-III

- (5) The B.Com. (Computer Application) (BCCA) Semester-V Examination,
- (6) The B.Com. (Computer Application) (BCCA) Semester-VI Examination,

2. The duration of the Degree Course under this shall be of three academic years. The BCCA Semester - I Examination at the end of the first Semester and BCCA Semester - II Examination at the end of the Second Semester in First Year and the

Semester - IV Examination at the end of Semester - IV in Second Year and the BCCA Semester - V Examination at the end of the Semester - V and BCCA Semester - VI Examination at the end of Semester - VI in Third Year.

3. The Examinations Specified in above paragraph (i.e., Paragraph – 2) above shall be held twice a year (Winter + Summer) at such places and on such dates as may be fixed by the University.
4. The details of the procedure for admission as well as eligibility for examination of:

- (A) An applicant of the **BCCA Semester – I** Examination shall have :

Passed the 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education, with English at Higher or Lower level and any Modern Indian Language at higher or lower level with any combination of optional subjects.

OR

12th Standard Examination of Maharashtra State Board of Secondary and Higher Secondary Education in Vocational Stream with one language only; OR any other examination recognized as equivalent there to; in such subjects and with such standards of attainments as may be prescribed Minimum Competition vocational course (MCVC).

OR

Any other Equivalent Examination of any State in (10+2) pattern with any combination of subjects.

- (B) An applicant of the **BCCA Semester - II** Examination shall have :
Appeared BCCA Semester – I Examination of this University.
- (C) An Applicant of the **BCCA Semester-III** Examination shall have :
Appeared BCCA Semester – I & Semester – II Examination of this University.
- (D) An Applicant of the **BCCA Semester-IV** Examination shall have :
Appeared BCCA Semester – I, Semester – II & Semester – III Examination of this University.
- (E) An Applicant of the **BCCA Semester- V** Examination shall have :
Passed BCCA Part – I (Semester – I & Semester - II), BCCA Part – II (Semester – III) and appeared BCCA Part – II Semester – IV Examination of this University.
- (F) An Applicant of the **BCCA Semester- VI** Examination shall have :
appeared BCCA Part – III Semester – V Examination of this University.

Name of Examination	Candidate should have Passed in following Examinations	Candidate should have Completed the term and filled Examination Form
BCCA Part - I Semester - I	The Qualifying Examination mentioned in Paragraph – 4 (A)	-----
BCCA Part - I Semester - II	---	BCCA Part - I (Semester – I)
BCCA Part - II Semester - III	---	BCCA Part - I (Semester – II)
BCCA Part - II Semester - IV	---	BCCA Part - II (Semester – III)
BCCA Part - III Semester - V	Passed BCCA Part – I (Sem. – I & Sem. – II) Passed BCCA Part – II (Sem. - III)	BCCA Part - II (Semester – IV)
BCCA Part - III Semester - VI	---	BCCA Part - III (Semester – V)

5. Without prejudice to the other provisions of Ordinance No. 6 relating to the Examinations in General, the provisions of Paragraphs 5, 7, 8, 10, 26 and 31 of the said Ordinance shall apply to every collegiate candidate.
6. The fees for the examination shall be as prescribed by the Management Council from time to time and whenever any change is made in the fees prescribed for any particular examination that shall be notified through a notification for information of the examinees concerned.

With the issuance of this Direction, The Direction No 12 of 2014, Direction No. 48 of 2016 and Direction No. 64 of 2016 shall stand repealed.

Nagpur
Date : 29/08/2017

Sd/-

Dr. S. P. Kane
Vice-Chancellor

7. Teaching and Examination Scheme

B.Com. (Computer Application) (BCCA)

(A) BCCA Part – I

Semester – I

Course Code	Subjects	Paper	Teaching Scheme per weeks			Examination Scheme						Total Marks	Credits	
						Theory				Practical				
			Theory (Periods)	Practical (Periods)	Total (Periods)	Max Marks - Theory Paper (TH)	Max Marks - Internal Assessment	Total	Min Passing Marks	Max Marks - Practical (PR)	Min Passing Marks			
Theory														
1T1	English and Business Communication - I	I	5	-	5	80	20	100	40	-	-	100	4	
1T2	Financial Accounting	II	5	-	5	80	20	100	40	-	-	100	4	
1T3	Fundamentals of Computer	III	5	-	5	80	20	100	40	-	-	100	4	
1T4	Programming in ‘C’	IV	5	-	5	80	20	100	40	-	-	100	4	
Practical														
1P1	Component - I: Fundamentals of Computer Component - II: Programming in ‘C’	P- I	-	10	10	-	-	-	-	100	40	100	4	
	Total		20	10	30							500	20	

Notes:

- Duration of one Theory period is 48 minutes and Practical period is $48 \times 2 = 96$ minutes.
- TH = Theory, PR = Practical, IA = Internal Assessment.
- Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
- The practical shall be treated as a separate passing head.
- Record should be prepared for Practical. Both Components should be included in Practical Record.
- The candidate has to pass theory papers and Practical Paper separately.
- One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.

Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

8. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
9. The odd semester may be scheduled from July to December and even semester from January to June.

(B) BCCA Part – I

Semester – II

Course Code	Subjects	Paper	Teaching Scheme per weeks			Examination Scheme						Total Marks	Credits	
						Theory				Practical				
			Theory (Periods)	Practical (Periods)	Total (Periods)	Max Marks - Theory Paper (TH)	Max Marks - Internal Assessment	Total	Min Passing Marks	Max Marks - Practical (PR)	Min Passing Marks			
Theory														
2T1	English and Business Communication - II	I	5	-	5	80	20	100	40	-	-	100	4	
2T2	Principles of Business Management	II	5	-	5	80	20	100	40	-	-	100	4	
2T3	Programming in C++'	III	5	-	5	80	20	100	40	-	-	100	4	
2T4	E-Commerce and Web Designing	IV	5	-	5	80	20	100	40	-	-	100	4	
Practical														
2P1	Component - I : Programming in 'C++' Component - II : E-Commerce and Web Designing	P- I	-	10	10	-	-	-	-	100	40	100	4	
	Total		20	10	30							500	20	

Notes:

1. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
2. TH = Theory, PR = Practical, IA = Internal Assessment.
3. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
4. The practical shall be treated as a separate passing head.
5. Record should be prepared for Practical. Both Components should be included in Practical Record.
6. The candidate has to pass theory papers and Practical Paper separately.
7. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.

Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

8. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
9. The odd semester may be scheduled from July to December and even semester from January to June.

(C) BCCA Part - II

Semester – III

Course Code	Subjects	Paper	Teaching Scheme per weeks			Examination Scheme						Total Marks	Credits	
			Theory (Periods)	Practical (Periods)	Total (Periods)	Theory			Practical					
						Max Marks - Theory Paper (TH)	Max Marks - Internal Assessment	Total	Min Passing Marks	Max Marks - Practical (PR)	Min Passing Marks			
Theory														
3T1	Environmental Studies	I	5	-	5	80	20	100	40	-	-	100	4	
3T2	Business Economics	II	5	-	5	80	20	100	40	-	-	100	4	
3T3	Visual Basic Programming	III	5	-	5	80	20	100	40	-	-	100	4	
3T4	Database Management System	IV	5	-	5	80	20	100	40	-	-	100	4	
Practical														
3P1	Component - I : Visual Basic Programming Component – II: Database Management System	P- I	-	10	10	-	-	-	-	100	40	100	4	
	Total		20	10	30							500	20	

Notes:

1. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
2. TH = Theory, PR = Practical, IA = Internal Assessment.
3. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
4. The practical shall be treated as a separate passing head.
5. Record should be prepared for Practical. Both Components should be included in Practical Record.
6. The candidate has to pass theory papers and Practical Paper separately.
7. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

Viz Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits

Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

8. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
9. The odd semester may be scheduled from July to December and even semester from January to June.

(D) BCCA Part - II

Semester – IV

Course Code	Subjects	Paper	Teaching Scheme per weeks			Examination Scheme						Total Marks	Credits
			Theory (Periods)	Practical (Periods)	Total (Periods)	Theory			Practical				
						Max Marks - Theory Paper (TH)	Max Marks - Internal Assessment	Total	Min Passing Marks	Max Marks - Practical (PR)	Min Passing Marks		
Theory													
4T1	Mathematics	I	5	-	5	80	20	100	40	-	-	100	4
4T2	Business Law	II	5	-	5	80	20	100	40	-	-	100	4
4T3	Core Java	III	5	-	5	80	20	100	40	-	-	100	4
4T4	PHP & MySQL	IV	5	-	5	80	20	100	40	-	-	100	4
Practical													
4P1	Component – I :Core Java Component – II : PHP & MySQL	P- I	-	10	10	-	-	-	-	100	40	100	4
	Total		20	10	30							500	20

Notes:

1. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
2. TH = Theory, PR = Practical, IA = Internal Assessment.
3. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
4. The practical shall be treated as a separate passing head.
5. Record should be prepared for Practical. Both Components should be included in Practical Record.
6. The candidate has to pass theory papers and Practical Paper separately.
7. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.

Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits

8. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
9. The odd semester may be scheduled from July to December and even semester from January to June.

(E) BCCA Part - III

Semester – V

Course Code	Subjects	Paper	Teaching Scheme per weeks			Examination Scheme						Total Marks	Credits
			Theory (Periods)	Practical (Periods)	Total (Periods)	Theory			Practical				
						Max Marks - Theory Paper (TH)	Max Marks - Internal Assessment	Total	Min Passing Marks	Max Marks - Practical (PR)	Min Passing Marks		
Theory													
5T1	Computerized Accounting using Tally	I	5	-	5	80	20	100	40	-	-	100	4
5T2	VB.Net	II	5	-	5	80	20	100	40	-	-	100	4
5T3	SEC – I : (i) Management Information Systems (ii) System analysis & Design	III	5	-	5	80	20	100	40	-	-	100	4
5T4	DSE– I : (i) Cost & Management Accounting (ii) Corporate Accounting	IV	5	-	5	80	20	100	40	-	-	100	4
Practical													
5P1	Component -I : Tally Component – II VB.Net	P- I	-	10	10	-	-	-	-	100	40	100	4
	Total		20	10	30							500	20

Notes:

1. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
2. TH = Theory, PR = Practical, IA = Internal Assessment.
3. SEC = Skill Enhancement Course, DSE = Discipline Specific Elective (DSE) Course.
4. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
5. The practical shall be treated as a separate passing head.
6. Record should be prepared for Practical. Both Components should be included in Practical Record.
7. The candidate has to pass theory papers and Practical Paper separately.
8. One credit is equivalent to one hour of Teaching or two hours of Practical Work per

week.

Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.

Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

9. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.

10. The odd semester may be scheduled from July to December and even semester from January to June.

(F) BCCA Part - III

Semester – VI

Course Code	Subjects	Paper	Teaching Scheme per weeks			Examination Scheme						Total Marks	Credits
			Theory (Periods)	Practical (Periods)	Total (Periods)	Theory			Practical				
						Max Marks - Theory Paper (TH)	Max Marks - Internal Assessment	Total	Min Passing Marks	Max Marks - Practical (PR)	Min Passing Marks		
Theory													
6T1	C#.Net	I	4	-	4	80	20	100	40	-	-	100	4
6T2	SEC– II : (i) Python (ii) Ruby on Rail	II	4	-	4	80	20	100	40	-	-	100	4
6T3	DSE– II : (i) Entrepreneurship Development (ii) Company Law and Secretarial Practice	III	4	-	4	80	20	100	40	-	-	100	4
Practical													
6P1	Component - I : C#.Net Component - II : SEC - II	P- I	-	6	6	-	-	-	-	100	40	100	4
6P2	Project	Proj	-	6	6	-	-	-	-	100	40	100	4
	Total		12	12	24							500	20

Notes:

- Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
- TH = Theory, PR = Practical, IA = Internal Assessment.
- SEC = Skill Enhancement Course, DSE = Discipline Specific Elective (DSE) Course.
- Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
- The practical shall be treated as a separate passing head.
- Record should be prepared for Practical. Both Components should be included in Practical Record.
- The candidate has to pass theory papers, Practical Paper and Project separately.
- One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits.

Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

9. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
10. The odd semester may be scheduled from July to December and even semester from January to June.

8. In order to pass the examination, an examinee shall obtain not less than 40% marks in each of the theory papers and each of the practical and the project.
 - (A) An examinee who is unsuccessful in the examination shall be eligible for admission to the subsequent examinations on payment of a fresh fee prescribed for the examination together with the conditions of the ordinance in force from time to time.
9. (A) The scope of the subjects and pattern of examination shall be as indicated in syllabi.
 - (B) The Medium of instructions and examinations shall be in ENGLISH only.
 - (C) The Maximum/minimum marks which each subject carries & workload in **BCCA** Part-I (Semester – I & II), Part – II (Semester – III & IV) and Part – III (Semester – V & VI) shall be as indicated in Examination & Teaching Scheme in Paragraph No -7.
10. Applicant for B.Com. (Computer Application) (BCCA) Examination prosecuting regular course of study shall not be permitted to join any other course in this or any other University.
11. The percentage of passing marks in Theory & Practical shall be as indicated in Examination Scheme mentioned in Paragraph 7.

In order to pass at the B.Com. (Computer Application) (BCCA) Semester - I, Semester - II, Semester - III, Semester - IV, Semester - V and Semester - VI Examinations an examinee shall obtain not less than 40% marks in each subject (Theory / Practical), that is to say jointly in the written subject theory Examination and in internal assessment / Sessional wherever applicable.
12. **ASSESSMENT**
 - The final total assessment of the candidates is made in terms of an internal assessment (Sessional) and an external assessment for each course.
 - For each paper, 20 marks will be based on internal assessment and 80 marks for semester end examination (external assessment), unless otherwise stated.
 - The division of the 20 marks allotted to internal assessment of theory papers should be based on class test, attendance, project assignments,

seminar, power point presentation, fieldwork, group discussions or any other innovative practice / activity as determined by the teacher in respective subject and moderated by Head of the Institute/Principal.

Sr. No	Parameters	Max. Marks
1	Internal Marks on the basis of Class Attendance	05
2	Internal Marks on the basis of Class Assignment / Test	05
3	Internal Marks on the basis of Students Seminar / Students Lecture Forum	05
4	Internal Marks on Students Overall Performance	05
Total Internal Assessment Marks		20

- There shall be no separate / extra allotment of workload to the concerned teacher. He / She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
- At the beginning of each semester, every teacher shall inform his / her students unambiguously the method he / she propose to adopt and the scheme of marking for internal assessment with the prior permission of HOD / principal.
- An unsuccessful examinee at any internal shall be eligible for reexamination on payment of fresh examination fee prescribed by the University as per the respective directions.
- The internal marks will be communicated to the University at the end of each semester, but before the semester end examinations. These marks will be considered for the declaration of the results.
- The record of internal marks, evaluation & result should be maintained for a period of one year by respective institute/college for verification by competent authority.
- The maximum and minimum marks which each subject carries in BCCA Semester - I, Semester - II, Semester – III, Semester – IV, Semester - V & Semester - VI Examination are as indicated in Paragraph 7. A, B, C, D, E & F respectively.
- A copy of Project work shall be submitted to college prior to commencement of Semester - VI Examination for Evaluation by Internal and External Examiner appointed as per University rules.
- Candidate shall submit his / her declaration that the Project is a result of his / her own work and the same has not been previously submitted to any examination of this University or any other University.
- The Practical Examination of each Semester will be conducted by Internal and External Examiner appointed as per University rules.

- The old course students shall be absorbed as per the absorption scheme mentioned in Appendix D.

STANDARD OF PASSING

- Every candidate must secure 40% marks in each paper (Theory / Practical).
 - There shall be no internal marks in Practical and Project Examination.
13. (A) There shall be no classification of examinees successful at the B.Com. (Computer Application) (BCCA) Semester - I, Semester - II, Semester - III, Semester - IV, Semester - V and Semester - VI Examination whereas SGPA will be notified.

*** Conversion of Marks to Grades and Calculations of SGPA (Grade Point Average) and CGPA (Cumulative Grade Point Average):** In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

Abbreviations and Formulae Used

G: Grade

GP: Grade Points

C: Credits

CP: Credit Points

CG: Credits X Grades (Product of credits & Grades)

SGPA = ΣCG : Sum of Product of Credits & Grades points / ΣC : Sum of Credits points

SGPA: Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

CGPA: Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

After calculating the SGPA for an individual semester and the CGPA for entire programme, the value can be matched with the grade in the Grade Point table as per the ten (10) Points Grading System and expressed as a single designated GRADE such as O, A+, A, B+, B, etc.

Marks	Grade	Grade Points
85 and above	O (Outstanding)	10
75 - 84	A+ (Distinction)	9
71 - 74	A (Very Good)	8
61 - 70	B+ (Good)	7
55 - 60	B(Above Average)	6

50 - 54	C (Average)	5
40 - 49	P (Pass)	4
00 - 39	F (Fail)	0
	AB (Absent)	0

A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

(B) Division at the B.Com. (Computer Application) (BCCA) Semester - VI Examination shall be declared on the basis of the aggregate marks at the BCCA Semester - I, Semester - II, Semester-III, Semester- IV, Semester- V and Semester- VI Examination taken together and the CGPA will be calculated and notified.

(C) Successful examinees at the B.Com. (Computer Application) (BCCA) Semester - VI Examination shall be awarded division based on CGPA as follows:

CGPA Range	Final Grade	Equivalent Class/ Division
9.01 to 10.00	O	First Division (Outstanding)
8.01 to 9.00	A+ (Distinction)	First Division(Distinction)
7.01 to 8.00	A(Very Good)	First Division (Very Good)
6.01 to 7.00	B+(Good)	First Division (Good)
5.55 to 6.00	B(Above Average)	Second Division (Above Average)
5.00 to 5.54	C(Average)	Second Division (Average)
4.00 to 4.99	P (Pass)	Pass
0	F (Fail)	Fail
0	AB(Absent)	Absent

14. Successful examinees in the B.Com. (Computer Application) (BCCA) Semester Examination shall be awarded Distinction in each subject in which examinees obtain 75% or more marks in that subject at the respective Examination.
15. Unsuccessful examinees at the above examinations can be readmitted to the same examination on payment of a fresh fee and such other fees as may be prescribed.
16. Provisions of Ordinance No. 3 of 2007 relating to the award of Grace Marks for passing an examination, securing higher division / class and for securing distinction in subject(s) shall be applicable.
17. Notwithstanding anything to the contrary in this Direction, no person shall be admitted to an examination under this Ordinance, if he / she has already

- passed the same examination or an equivalent examination of any other University.
18. Examinees successful at B.Com. (Computer Application) (BCCA) Semester - I, Semester - II, Semester - III, Semester - IV, Semester - V and Semester - VI Examination shall on payment of the prescribed fees receive a Degree in the prescribed form signed by the Vice-Chancellor.
19. This Scheme shall come into force from the academic session 2016-17.
20. The Provisions of Ordinance No. 21 of 1994 governing the existing course for B.Com. (Computer Application) (BCCA) stands repealed physically on implementation of this Direction.

APPENDIX – A

QUESTION PAPER PATTERN

First / Second / Third / Fourth / Fifth / Sixth Semester B.Com. (Computer Application) (BCCA) Examination Choice Based Credit System (CBS)

**Subject Name
Paper - I**

Time: 3 Hours

Total Marks: 80

-
- N. B. - a) Draw well labeled diagram wherever necessary.
b) All questions are compulsory.

Part - A

- N. B. – 1. Each question carries two marks.
2. Answers should not more than five lines.

Q1.

8 x 2 =

16

- A. }
B. } Unit - I
- C. }
D. } Unit - II
- E. }
F. } Unit - III
- G. }
H. } Unit - IV

Part - B

N. B. – 1. Each question carries three marks.

2. Answers should not more than ten lines.

Q2.

8 x 3 =

24

A. }
B. } Unit - I

C. }
D. } Unit - II

E. }
F. } Unit - III

G. }
H. } Unit - IV

Part - C

N. B. – 1. Each question carries five marks.

2. Answers should not more than 400 words for 5 marks questions
and 600 words for 10 Marks questions respectively.

Q3. Either

(A) }
(B) } Unit - I **OR**
(C) } 10

Q4. Either

(A) }
(B) } Unit - II **OR**
(C) } 10

Q5. Either

(A) }
(B) } Unit - III **OR**
(C) } 10

Q6. Either

(A) }
(B) } 5

BCCA Syllabus } Unit - IV

QUESTION PAPER PATTERN OF ENGLISH AND BUSINESS**COMMUNICATION****Subject: English and Business Communication - I****SEMESTER – I****Time: 3 Hours]****[Total Marks:****80**

Q 1. A. Comprehension of Unseen Passage from Unit I 10
Marks

(Five VSAQs of 2 Marks each based on the Unseen Passage)

B. Questions on ANY TWO components of Enriching Vocabulary from Unit I
(Five items to be solved out of Eight (5 x 1 Mark) X 2) 10
Marks

(Synonyms / Antonyms to be given in 'match the following' format – 5 words against 8 options)

Q 2. A. ONE out of TWO Letters (Application for Employment/Job Offer Letters)
from Unit II 10
Marks

B. ONE out of TWO Letters (Sales letters / Claim and Adjustment Letters)
from Unit II 10
Marks

Q 3. A. ONE LAQ out of TWO from Unit III (10 × 1) = 10
Marks

B. TWO SAQs out of THREE from Unit III (5 × 2) = 10
Marks

Q 4. A. THREE SAQs with internal choice from Prose Section of Unit IV

(3 x 5 Marks)=15

	Marks	
B.	ONE SAQ with internal choice from Poetry Section of Unit IV	05
	Marks	

Total = 80

Marks

N.B.	LAQ	-	Long Answer Questions to be answered in about 150 words
	SAQ	-	Short Answer Questions to be answered in about 75 words approximately.

INTERNAL ASSESSMENT OF ENGLISH AND BUSINESS COMMUNICATION: 20 MARKS

The Internal Assessment would be done on the basis of the assignments submitted by the student and his/her performance, attendance and conduct during the Semester. The concerned teacher shall provide, in advance, a list of topics/assessment items/Question Bank (to the students) based on the Units prescribed for the Theory Examination. Students shall finalize 2 topics/items from 2 different units with the approval of the concerned teacher and submit the same within the prescribed deadline.

Students may be given freedom to submit a creative writing assignment on human values/world peace/environmental issues inspired by or related to the lessons/poems prescribed in the syllabus.

2 Assignments	-	6+6 = 12 Marks
Performance & Conduct	-	4 Marks
Attendance	-	4 Marks
TOTAL	-	20 MARKS

QUESTION PAPER PATTERN OF ENGLISH AND BUSINESS COMMUNICATION

Subject: English and Business Communication - II
SEMESTER – II

Time: 3 Hours]

[Total Marks: 80

Q 1. A. Comprehension of Unseen Passage from Unit I 10

Marks

(Five VSAQs of 2 Marks each based on the Unseen Passage)

B. Questions from Section B of Unit – I 10

Marks

- (Five items out of Eight on meanings of the Words often Confused - (1 x 5 Marks))
- (Five items out of Eight on Punctuation –(1 x 5 Marks))

Q 2. A. ONE out of TWO Letters (Inviting Quotations/Placing Orders) 10

from Unit II

Marks

	B.	ONE out of TWO Letters (Credit Letters - Granting/Refusing Credit, Letter to Bank for overdraft facility) from Unit II	10
		Marks	
Q 3.	A.	ONE LAQ out of TWO from Unit III	(10 × 1) = 10
		Marks	
	B.	TWO SAQs out of THREE from Unit III	(5 × 2) = 10
		Marks	
Q 4.	A.	THREE SAQs with internal choice from Prose Section of Unit IV	(3 × 5 Marks) = 15
		Marks	
	B.	ONE SAQ with internal choice from Poetry Section of Unit IV	05
		Marks	
			Total = 80
			Marks

N.B.	LAQ	-	Long Answer Questions to be answered in about 150 words
	SAQ	-	Short Answer Questions to be answered in about 75 words approximately.

INTERNAL ASSESSMENT OF ENGLISH AND BUSINESS COMMUNICATION: 20 MARKS

The Internal Assessment would be done on the basis of the assignments submitted by the student and his/her performance, attendance and conduct during the Semester. The concerned teacher shall provide, in advance, a list of topics/assessment items/Question Bank (to the students) based on the Units prescribed for the Theory Examination. Students shall finalize 2 topics/items from 2 different units with the approval of the concerned teacher and submit the same within the prescribed deadline.

Students may be given freedom to submit a creative writing assignment on human values/world peace/environmental issues inspired by or related to the lessons/poems prescribed in the syllabus.

2 Assignments	-	6+6 = 12 Marks
Performance & Conduct	-	4 Marks
Attendance	-	4 Marks
TOTAL	-	20 MARKS

APPENDIX – B

(A) Project and Classification of Marks on Project

Towards the end of the second year of study, a student will be examined in the course "Project Work".

- a. Project Work may be done individually or in groups (Maximum 3 students) in case of bigger projects. However if project is done in groups, each student must be given a responsibility for a distinct module and care should be taken to monitor the progress of individual student.
- b. The Project Work should be done using the tools covered in B.Com. (Computer Application) (BCCA).
- c. The Project Work should be of such a nature that it could prove useful or be relevant from the commercial / management angle.
- d. The project work will carry 100 marks.
- e. Project Work can be carried out in the Institute or outside with prior permission of the Institute.
- f. The external viva-voice examination for Project Work would be held as per the Examination Time Table of the Third year of study, by a panel of one external and one Internal Examiner.

Types of Project

As majority of the students are expected to work out a project in some industry / research and development laboratories / educational institutions / software export companies, it is suggested that the project is to be chosen which should have some direct relevance in day-today activities of the candidates in his/her institution. The Applications Areas of project – Financial / Marketing / Database Management System / Relational Database Management System / E-Commerce / Internet / Manufacturing / web Designing / Scientific / ERP etc.

Project Proposal (Synopsis)

The project proposal should be prepared in consultation with the guide. The project guide must be a person having minimum Qualification MCM / M.Sc. (Computer Science + Information Technology) / M.Sc. (Mathematics / Electronics / Statistics / Physics + Post B.Sc. Diploma in Computer Science & Application) / MCA. The project proposal should clearly state the objectives and environment of the proposed project to be undertaken. It should have full details in the following form:

Format of Synopsis for Desktop Application

1. Title of the Project.
2. Objectives of the Project.
3. Project Category (DBMS / RDBMS / OOPS etc.).
4. Tools / Platform and Languages to be used.

5. Complete Structure of the System:
 - i. Numbers of Modules and its Description.
 - ii. Modular Chart / System Chart.
 - iii. Data Structures or Tables.
 - iv. Process Logic of each Module.
 - v. Types of Report Generation.
6. References.

Note: Synopsis should not be more than 3-4 pages.

Format of Synopsis for Web Application

1. Title of the Project.
2. Objectives of the Project.
3. Project Category (DBMS / RDBMS / OOPS etc.).
4. Tools / Platform and Languages to be used.
5. Complete Structure of the System:
 - i. Number of pages and links their short description.
 - ii. Use / Information of Pages.
 - iii. Feedback Form (if any).
6. References.

Note: Synopsis should not be more than 3-4 pages.

Project Report Formulation

Front Page.

College Certificate Page.

Declaration Page.

Acknowledgment Page.

Project Profile.

Index or Content Page.

- i. *Contents _____.

Appendices

- i. List Figures, Tables & Charts.
- ii. Approved copy of Synopsis.

Glossary

*** Contents.**

- i. Introduction.
- ii. Objectives.
- iii. Preliminary System Analysis.
 - Preliminary Investigation.

- Present System in Use.
 - Flaws in Present System.
 - Need of New System.
 - Feasibility Study.
 - Project Category.
- iv. Software Engineering Paradigm Applied
 - Modules
 - System / Modular Chart.
 - v. Software & Hardware Requirement Specification.
 - vi. Detailed System Analysis.
 - Data Flow Diagram.
 - Numbers of Modules and Process Logic.
 - Data Structures and Tables.
 - Entity-Relationship Diagram.
 - vii. System Design.
 - Form Design.
 - Source Code.
 - Input screen & Output Screen.
 - viii. Testing & Validation Checks.
 - ix. System Security Measures.
 - x. Implementation, Evaluation and Maintenance.
 - xi. Future Scope of the project.
 - xii. Suggestion & Conclusion
 - xiii. Bibliography & References.

Note :-

- i. A Student is expected to complete the Assignments based on Syllabus of Practical subjects and submit the same in the form of a files (assignment Record) at the end of Academic Session for the evaluation purpose.
- ii. A student should submit internal assessment of each theory paper prescribed by the subject teacher.
- iii. A Student is expected to deliver a seminar on any course curricular subject / latest trends in IT relevant subject per semester for internal assessment.

Classification Of Marks on Project :-

Report & Documentation	40
Viva voice (External)	40
Viva voice (Internal)	20

Total Marks

100

The marks of Project shall be notified as a whole out of 100 in Foil/C-Foil.

(B) Practical and Classification of Marks on Practical

1. Practical exam shall be of 4 hours duration.
2. The Practical Record of every student shall carry a certificate as shown below, duly signed by the teacher-in-charge and the Head of the Department.
3. If the student fails to submit his / her certified Practical Record duly signed by the Teacher-In-Charge and the Head of the Department, he / she shall not be allowed to appear for the Practical Examination and no Marks shall be allotted to the student.
4. After Viva-Voice and evaluation of practical records of a student by the Internal & External Examiner, both examiners should sign on the certificate of practical records.
5. The certificate template shall be as follows:

Name of the college / Institution

Name of the Department:

CERTIFICATE

This is to certify that Mr./Mrs./Ms. _____
of class BCCA Part _____ Semester _____ has satisfactorily completed the
practical experiments prescribed by Rastrashant Tukdoji Maharaj Nagpur
University for the subject _____ during the academic year
_____.

Signature
Practical In-charge

Signature
Head of the Department

Signature
Internal Examiner

Signature
External Examiner

Date: _____

Classification of Practical Marks :-

Practical – I		Marks	Marks
		(Component – I)	(Component – II)
1.	Writing a Program or Problem	20	20

- (Algorithm & Flowchart)
2. Execute on a computer
3. Taking Hard Copy

Practical – II

- | | | | |
|----|---|----|----|
| 1. | Writing a Program or Problem
(Algorithm & Program) | 10 | 10 |
|----|---|----|----|

External Viva Voce

10	10
----	----

Practical Record	10	10
-------------------------	----	----

Total Marks	50	+	50	=	100
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Note:

- Since the practical contains two components (i.e. two subjects), so each components has to be evaluated as above.
- Whereas, the marks of Practical shall be notified as a whole out of 100 in Foil / C-Foil.

APPENDIX – C

ABSORPTION SCHEME

B.COM.(COMPUTER APPLICATION) (BCCA)

(From Annual Pattern Introduced in 2014 to CBS Pattern from Session 2016-17)

It is notified for general information of all concerned that the failure students of **B.Com. (Computer Application) (BCCA) Annual pattern Old Course (introduced in 2014)** shall be absorbed in the new course **CBS Pattern introduced from the session 2016-2017 examination with the following scheme.**

1. Those who have completed & passed **B.Com. (Computer Application) (BCCA) Part-I as per Old course (Annual pattern)** are eligible for admission in the **B.Com. (Computer Application)(BCCA) SEM - III CBS Pattern introduced from the session 2016-2017 (New course).**
2. Failure students of **B.Com. (Computer Application) (BCCA) Part - I old course** and having ATKT as per rules mention in direction No. _____ of _____ are eligible to take admission in **B.Com. (Computer Application)(BCCA) SEM - III CBS Pattern introduced from the session 2016-2017 (New course).**

They should clear their **B.Com. (Computer Application) (BCCA) Part - I old Course backlog** papers in next **three attempts (Last Chance Winter 2017)**. If they fail to pass in **Winter-2017** attempt they will have to appear in parallel papers of **new course CBS scheme** as per absorption scheme indicated in **Appendix- D.**

Note:

- i. The students, who will appear in parallel papers of **new course CBS scheme** paper with maximum theory marks 80, will get proportional internal marks out of 20 updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - I.**
3. Those who have completed & passed **B.Com. (Computer Application)(BCCA) Part-I & B.Com. (Computer Application) (BCCA) Part - II as per Old course** are eligible for admission in the **B.Com. (Computer Application) (BCCA) CBS scheme (Part – III) Sem - V (New course).**

4. Failure students of **B.Com. (Computer Application) (BCCA) Part - II old course** and having ATKT as per rules are eligible to take admission in **B.Com. (Computer Application) (BCCA) Part-III Sem – V CBS scheme New course**. They should clear their **B.Com. (Computer Application) (BCCA) Part - II old course backlog** papers in next **three attempts (Last Chance Winter 2018)**. If they fail to pass in **Winter-2018** attempt they will have to appear in parallel papers of **new course CBS scheme** as per absorption scheme indicated in **Appendix- D**.

Note:

- i. The students who will appear in parallel papers of **new course CBS scheme** paper with maximum theory marks 80, will get proportional internal marks out of 20, updated in **old course mark sheet of B.Com. (Computer Application) (BCCA) Part-II**.

5. Failure students of **B.Com. (Computer Application) (BCCA) Part-III old course** are having chances upto **winter 2019 examination (Last Chance)**. So they should appear **B.Com. (Computer Application) (BCCA) Part-III old course examination & is required to clear their backlog**. After that those who will have backlog in the **B.Com. (Computer Application) (BCCA) Part-III old course** will have to appear in parallel papers of **new course CBS scheme** as per the absorption scheme indicated in **Appendix- D**.

Note:

- i. The students who will appear in parallel papers of **new course CBS scheme** paper with maximum theory marks 80, will get proportional internal marks out of 20, updated in **old course mark sheet of B.Com. (Computer Application) (BCCA) Part-III**.

APPENDIX – D

(A) BCCA Part – I

Old Course (Annual Pattern) → New Course CBS Pattern (Choice Based System)

Sr. No	Old Course (Annual Pattern)	Max Marks	Sr. No	New Course CBS Pattern (Choice Based System)	Max Marks
Theory			Theory		
1	English & Business Communication	80	T1	English and Business Communication - II	80
2	Principles of Business Management	80	2T2	Principles of Business Management	80
3	Financial Accounting	80	1T2	Financial Accounting	80
4	Information Systems	80	1T3	Fundamentals of Computer	80
5	Information Technology	80	2T4	E-Commerce and Web Designing	80
6	Introduction to Operating Systems	80	1T4	Programming in 'C'	80
Practical			Practical		
7	Practical-I : Microsoft Office	100	1P1	Practical - I : Fundamentals of Computer & Programming in 'C'	100
8	Practical-II : Operating System	100	2P1	Practical - I : E-Commerce and Web Designing	100

(B) BCCA Part – II**Old Course (Annual Pattern) → New Course Pattern (Choice Based System)**

Sr. No	Old Course (Annual Pattern)	M. Marks	Sr. No	New Course CBS Pattern (Choice Based System)	Max Marks
Theory			Theory		
1	Statistics & Quantitative Techniques	80	4T1	Mathematics	80
2	Business Economics	80	3T2	Business Economics	80
3	Cost & Management Accounting	80	4T2	Business Law	80
4	Programming Skills (C Prog.)	80	3T3	Visual Basic Programming	80
5	E-Commerce & Web Designing	80	4T4	PHP & MySQL	80
6	MIS & System Analysis	80	3T4	Database Management System	80
Practical			Practical		
7	Practical-I : Programming Skills	100	3P1	Practical - I : Visual Basic Programming & Database Management System	100
8	Practical-II : HTML	100	4P1	Practical - I : PHP & MySQL	100

(C) BCCA Part – III**Old Course (Annual Pattern) → New Course Pattern (Choice Based System)**

Sr. No	Old Course (Annual Pattern)	M. Marks	Sr. No	New Course CBS Pattern (Choice Based System)	Max Marks
Theory			Theory		
1	Business Law	80	5T4	DSE – I : (i) Cost & Management Accounting (ii) Corporate Accounting	80
2	Computerized Accounting (TALLY)	80	5T1	Computerized Accounting using Tally	80
3	Software Product and Project Management	80	5T3	SEC – I : (i) Management Information Systems (ii) System analysis & Design	80
4	Front End Development	80	6T1	C#.Net	80
5	DBMS and Oracle	80	5T2	VB.Net	80
Practical			Practical		
6	Practical-I : Tally	100	5P1	Practical - I : Computerized Accounting using Tally	100
7	Practical-II : VB & Oracle	100	5P1	Practical - I : VB.Net	100
Project			Project		
8	PROJECT	100	6P2	Project	100

ABSORPTION SCHEME

B.COM.(COMPUTER APPLICATION) (BCCA)

(From Annual Pattern very old (before 2014) to Annual Pattern introduced from 2014-15)

It is notified for general information of all concerned that the failure students of **B.Com. (Computer Application) (BCCA) Old Course shall be absorbed in the new course introduced from the session 2014-2015 examination with the following scheme.**

1. Those who have completed & passed **B.Com. (Computer Application) (BCCA) Part-I as per Old course** are eligible for admission in the **B.Com. (Computer Application)(BCCA) Part - II New course.**
2. Failure students of **B.Com. (Computer Application) (BCCA) Part - I old course** and having ATKT as per rules are eligible to take admission in **B.Com. (Computer Application) (BCCA) Part-II New course.** They should clear their **B.Com. (Computer Application) (BCCA) Part - I old Course backlog** papers in next **three attempts (Last Chance Winter 2016).** If they fail to pass in **Winter-2016** attempt they will have to appear in parallel papers of **new course scheme** as per absorption scheme indicated in **Appendix- E.**

Note:

- i. The students, who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional marks out of 100, updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - I.**
 - ii. The students, who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional marks out of 70, updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - I.**
3. Those who have completed & passed **B.Com. (Computer Application)(BCCA) Part - I & B.Com. (Computer Application) (BCCA) Part - II as per Old course** are eligible for admission in the **B.Com. (Computer Application) (BCCA) Part - III New course.**
 4. Failure students of **B.Com. (Computer Application) (BCCA) Part - II old course** and having ATKT as per rules are eligible to take admission in **B.Com. (Computer Application) (BCCA) Part-III New course.** They should clear their **B.Com. (Computer Application) (BCCA) Part - II old course backlog** papers in next **three attempts (Last Chance Winter 2017).** If they fail to pass in **Winter-2017** attempt they will have to appear in parallel papers of **new course scheme** as per absorption scheme indicated in **Appendix- E.**

Note:

- i. The students who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional marks out of 100, updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part-II**.
 - ii. The students, who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional marks out of 70, updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - II**.
5. Failure students of **B.Com. (Computer Application) (BCCA) Part-III old course** are having chances upto **winter 2018 examination (Last Chance)**. So they should appear **B.Com. (Computer Application) (BCCA) Part-III old course examination & is required to clear their backlog**. After that those who will have backlog in the **B.Com. (Computer Application) (BCCA) Part-III old course** will have to appear in parallel papers of **new course scheme** as per the absorption scheme indicated in **Appendix- E**.

Note:

- i. The students who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional marks out of 100, updated in old course mark sheet of **B.Com. (Computer Application) (BCCA) Part-III**.
- ii. The students, who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional marks out of 70, updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - III**.

APPENDIX – E

(i) B.Com. (Computer Application) (BCCA) Part-I

Sr. No.	Old course Theory	Max. Marks	Sr. No.	New Course Theory	Max. Marks
1	English & Business Communication.	100	1	English & Business Communication	80
2	Principles of Business Management.	100	2	Principles of Business Management	80
3	Basic Economics & Business Environment.	100	3	Introduction to Operating Systems	80
4	Financial Accounting.	100	4	Financial Accounting	80
5	Information Systems.	70	5	Information Systems	80
6	Information Technology	70	6	Information Technology	80
7	Practical I : IS	30	7	Practical-I : Microsoft Office	100
8	Practical II : IT	30	8	Practical-II : Operating System	100

Note:

- Students who appear in practical of New Course Scheme, then he/she must **have to be appeared with maximum practical marks out of 100** as per the new course scheme, which shall be converted in proportion to 30 marks and updated in old course marksheet.

(ii) B.Com. (Computer Application) (BCCA) Part-II

Sr. No.	Old course Theory	Max. Marks	Sr. No.	New Course Theory	Max. Marks
1	Cost & Management Accounting	100	1	Cost & Management Accounting	80
2	Statistics & Quantitative Techniques.	100	2	Statistics & Quantitative Techniques.	80
3	MIS & System Analysis	100	3	MIS & System Analysis	80
4	E-Commerce & Web Designing	70	4	E-Commerce & Web Designing	80
5	Programming Skills (C Prog.)	70	5	Programming Skills (C Prog.)	80
6	Computerized Accounting (TALLY)	70	6	Basic Economics & Business Environment.	80
7	Practical- I : PS (C Prog.)	30	7	Practical-I : Programming Skills	100
8	Practical-II : E-Comm& WD	30	8	Practical-II : HTML	100
9.	Practical-III : Comp.A/c(Tally)	30			

Note:

- i. The Students who already appeared and passed in Practical of **old course B.Com. (Computer Application) (BCCA) Part – II with maximum Practical marks out of 30**, should be convert into its proportional Practical marks out of 100 and should update in old course mark sheet of B.Com. (Computer Application) (BCCA) Part - II.
- ii. And if students who appear in practical of New Course Scheme, then he/she must **have to be appeared with maximum practical marks out of 100** as per the new course scheme.

(iii) B.Com. (Computer Application) (BCCA) Part-III

Sr. No.	Old course Theory	Max. Marks	Sr.No.	New Course Theory	Max. Marks
1	Business Laws.	100	1	Business Law	80
2	Auditing and Income Tax	100	2	Computerized Accounting (TALLY)	80
3	Software Product and Project Management.	100	3	Software Product and Project Management.	80
4	Front End Development	70	4	Front End Development	80
5	DBMS and Oracle	70	5	DBMS and Oracle	80
6	Practical- I : FED	30	6	Practical-I : Tally	100
7	Practical -II : DBMS & Oracle	30	7	Practical-II : VB & Oracle	100
8	Project	100	8	Project	100

Note:

- i. The Students who already appeared and passed in Practical of **old course B.Com. (Computer Application) (BCCA) Part – III with maximum Practical marks out of 30**, should be convert into its proportional Practical marks out of 100 and should update in old course mark sheet of B.Com. (Computer Application) (BCCA) Part - III.
- ii. And if students who appear in practical of New Course Scheme, then he/she must **have to be appeared with maximum practical marks out of 100** as per the new course scheme.

APPENDIX –E

BCCA Part – I

Semester – I

Paper - I: English and Business Communication – I (1T1)

UNIT I

- A. Comprehension of an Unseen Passage
- B. Enriching Vocabulary: Synonyms and Antonyms, Single Word for a Group of Words, Change of Word from Noun to Adjective & vice-versa.

UNIT II

Business Correspondence: Application for Employment, Job Offer Letters, Sales letters, Claim and Adjustment Letters

UNIT III

Communication Process: Sender, Channel, Message, Receiver and Response

Types of Communication:

- | | | |
|--|---------------|------------------------|
| a. According to mode: | a. Oral | b. Written |
| b. According to Medium: | a. Electronic | b. Print |
| c. According to number of participants : | a. Dyadic | b. Group |
| d. According to Direction: | a. One-way | b. Two-way |
| e. According to Purpose: | a. General | b. Business (Specific) |

UNIT IV

Textbook entitled 'Prism: Spoken and Written Communication, Prose & Poetry' published by Orient Black Swan

Prose

- i) With the Photographer – Stephen Leacock
- ii) Socrates and the Schoolmaster – F. L. Brayne
- iii) Speech on Indian Independence – Jawaharlal Nehru

Poetry

- i) On Television - Roald Dahl
- ii) The Felling of the Banayan Tree - Dilip Chitre
- iii) Stay Calm - Grenville Kleiser

Reference Books:

(For UNIT I)

- i) English Grammar – N.D.V. Prasada Rao (S.Chand)
- ii) Developing Communication Skills – Krishna Mohan & Meera Banerji (Macmillan)

(For UNIT II)

- i) Business Communication: Urmila Rai, S.M. Rai- (Himalaya Publishing House)
- ii) Business Correspondence and Report Writing – R. C. Sharma & Krishna Mohan (Tata McGraw-Hill)
- iii) Developing Communication Skills – Krishna Mohan & Meera Banerji (Macmillan)

(For UNIT III)

- i) Business Communication and Management- Dr. K.R.Dixit (Vishwa Publishers, Nagpur)

(For UNIT IV)

Prescribed Text Book :

- i) *Prism: Spoken and Written Communication, Prose & Poetry* published by Orient Black Swan

Paper - II: Financial Accounting (1T2)

UNIT – I

Introduction to Financial Accounting: Accounting as an information system, Financial, cost and management accounting and their interrelationships, Finance Function and Accounting, Accounting as an academic Discipline, Accounting as an Career and Profession, Place of Accounting Officers in the Organization, Auditing and Internal Control, Ethical Issues in Accounting, Forms of Organizations and Their Effect on Accounting, Accounting and Corporate Governance. **Accounting Concepts, Standards and IFRS:** Introduction ,Accounting Concepts and Convention, Accounting Policies, Generally Accepted Accounting Principles(GAAP),International Financial Reporting Standards(IFRS),Indian Accounting Standards(Ind AS),India's Road map to Convergence with IFRS, Indian Government Accounting Standards(IGAS). **Presentation of Financial Statements: Balance Sheet:** Conceptual Basis of a Balance Sheet, Capital and Revenue Expenditure and receipts, Classification of Item on a Balance sheet, Format of Balance Sheet, Balance Sheet Equation, Preparing Balance Sheet.

UNIT – II

Preparation of final Accounts: The Income Statements: Introduction, Format of Profit and Loss Account, Profit and Loss account of a Manufacturing Concern, Appropriation of Profit, Advantages of Profit and Loss Account. **Mechanics of Accounting:** Introduction, Classification of Accounts, Double Entry System, Overview of Accounting cycle, preparing journals, Subsidiary Books, Ledger, Preparation of Trial Balance, Accounting Errors and Their Rectification, Bank Reconciliation statement (BRS), Computerized Accounting. **Fixed Assets and Depreciation Accounting:** Introduction, Cost of Fixed Assets, Depreciation, Method of computing depreciation, Accounting Treatments for transactions, Impairment of Assets.

UNIT – III

Inventory Valuation: Introduction, Record Keeping for Inventory, Perpetual inventory System, Inventory Valuation/Measurement, Methods of Valuation of Inventories, Analysis of Inventories. **Corporate Accounts:** Introduction to Companies, Types of Companies, Shares and Share Capital, Issue of Shares. **Share Issue:** Payments in Installment, Buyback of Shares, Debentures and Bonds, Income Statement/Profit and Loss Account, Balance Sheet, Company Annual Report. **Cash Flow Statement:** Introduction to Cash Flow Statement, Cash and Cash Equivalents, Cash Flow Activities, Operating Activities, Some Special Items, Free cash Flow, Fund Flow Statement, Analysis of cash Flow Statement, Preparation of cash Flow Statement.

UNIT – IV

Financial Statement Analysis: Introduction Techniques for financial Statement Analysis Horizontal Analysis: Comparative and Trend Statements, Vertical Analysis: Common Size, Liquidity Ratios: Current and Quick Ratio, Solvency Ratios: D/E, Interest Coverage, Profitability ratios:(GP,NP,EBIT,EBDITA,EPS), Return Ratios: ROI,ROE, Turnover Ratios, Analysis of Stock and Debtors, Working Capital Management, Stock Prices and Financial Data :P/E. **Investments:** Introduction, Financial Instruments, Assets and Liabilities, Joint Ventures, Subsidiaries and Associates, Consolidated Financial Statement, Business Combinations, Accounting for Investments, Contemporary Issues in Accounting : Introduction ,Foreign Currency Accounting , Creative Accounting, Forensic Accounting , Environmental Accounting, Lean Accounting ,Human Resource Accounting, Objectives of Human resource Accounting, HRA in India, Inflation Accounting, Responsibility Accounting, Transfer Pricing, Segment reporting, Extensible business Reporting Language(XBRL).

Text Book:

1. VaradrajBapat, Mehul Raithatha, Financial Accounting, McGraw-Hill.

Reference Books:

1. M. N. Arora, K. V. Achalapati, S. Brinda, Financial Accounting, Taxmann
2. M. Hanif, A. Mukherjee, Financial Accounting, McGraw-Hill.
3. N. Ramachandran, Ram Kumar Kakani, Financial Accounting for management, McGraw-Hill.
4. Dhanesh K Khatri, Accounting for Management, McGraw-Hill.

Paper - III: Fundamentals of Computer (1T3)**UNIT – I**

Understanding the Computer: Introduction, Evolution of computers, Generation of computers, Classification of computers, Computing concepts, The computer system, Application of computers. **Computer Organization and Architecture:** Introduction, Central processing unit, Internal communications, Machine cycle, The bus, Instruction set. **Memory and Storage Systems:** Introduction, Memory representation, Random Access Memory, Read Only Memory, Storage systems, Magnetic storage systems, Optical storage systems, Magneto optical system, Solid-state storage devices, storage evaluation criteria.

UNIT – II

Input Devices: Introduction, Keyboard, Pointing devices, Scanning devices, Optical recognition devices, Digital camera, Voice recognition system, Data acquisition sensors, Media input devices. **Output Devices:** Introduction, Display monitors, Printers, Impact printers, Non-impact printers, Plotters, Voice output systems, Projectors, Terminals. **Computer Codes:** Introduction, Decimal system, Binary system, Hexadecimal system, Octal system, 4-bit Binary Coded Decimal(BCD) Systems, 8-bit BCD Systems, 16-bit Unicode, Conversion of numbers

UNIT – III

Computer Software: Introduction, Types of computer software, System management programs, System development programs, standard application programs, Unique application programs, Problem solving, Structuring the logic, Using the computer. **Programming Languages:** Introduction, History of programming languages, Generations of programming languages, Characteristics of good programming languages, Categorization of High-level languages, Popular High-level languages, Factors affecting the choice of languages, Developing a program, Running a program. **Data Communication and Networks:** Introduction, Data communication using modem, Computer network, Network topologies, Network protocol and software, Application of network.

UNIT – IV

Operating Systems: Introduction, History of operating systems, Functions of operating systems, Process management, Memory management, File management, Device management, Security management, Types of operating systems, Providing user

interface, Popular operating systems. **Microsoft Software:** Introduction, MS-DOS, MS Word systems, MS Excel systems, MS PowerPoint systems, MS Access systems, MS Publisher,

Text Book:

1. E Balagurusamy, Fundamentals of Computers, Mc Graw Hill Education.

Reference Books:

1. Dr. Rajiv Midha, S. Brinda, Fundamental of Information Technology, Taxmann.
2. Madhulika Jain, Shashank Jain, Satish Jain, Information Technology Concepts, BPB Publication.
3. Dr. Rajiv Midha, Information Technology, Taxmann
4. B.Ram, Computer Fundamentals (Architecture & organization), New Age International Publisher.
5. Turban, Rainer, Potter, Introduction to Information Technology, Wiley India Edition.
6. Sanjay Saxsena, Introduction to Information Technology, Vikash Publishing House Pvt. Ltd.
7. Dr. Sushila Madan, Information Technology, Taxmann.

Practical List of Fundamentals of Computer

1. Insert a line chart with the following data. Specify Chart title as "Yearly Income (In Lakhs)".

COUNTRIES	GOLD	DIAMOND	IRON ORE
INDIA	50	35	60
USA	40	40	35
CHINA	45	55	60
JAPAN	60	65	70

2. Create a Table of Contents for Generations of Computers.
3. Create the following result card in Ms-Word

**Mount Carmel School
Sector 46, Chandigarh.**

Class 9th
Student Name
Father's Name

Roll No. 123
Maninder Raj
Sh.S.S. Chauhan

**Result Card
Term-II Examination**

Subject	Max. Marks	Marks Obtained
English	100	92
Maths	100	93
Science	100	98
Social Studies	100	88
Hindi	100	78
Computer Science	100	90
Total	600	539

Position in the Class: IInd
Remarks: Good
Parents Signature

Principal Signature

4. Write all the options of standard and formatting toolbar. Use different types of bullets and numbering. Divide the page in two columns.
5. Using Mail merge, write a letter to all the selected candidate for their final interview on 20th Sep 2008 at Dotcom Services Ltd, Nawab Layout, Nagpur 10 at 11:00 am along with necessary documents, resume and 2 Passport size photographs.
6. Create the following table by Insert Table option of MS Word

Country	<i>Population Chart</i>	
	Year	Population (In Lakhs)
INDIA	1998	80
	1999	90
	2000	100
USA	1998	60
	1999	70
	2000	80
UK	1998	70
	1999	75
	2000	80
Total		

Apply Auto format (Table web2) to the above table.
Calculate Total Population by using formula "SUM".

7. Create your resume using Resume Wizard.(Using Templates).
8. Write a Cotemporary letter regarding launch of new product in a company. (Using Templates).
9. Make a list of the following functions with example and syntax.
 - i. Sum
 - ii. Average
 - iii. Max
 - iv. Min
 - v. Count
 - vi. Round
 - vii. Sqrt
 - viii. ABS
 - ix. Upper
 - x. Lower
 - xi. Today
 - xii. Now
 - xiii. Roman
 - xiv. Mean
 - xv. Median
 - xvi. Mode

10. Calculate Profit and prepare a Column chart in MS Excel using the data.

Month	Net Sales (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Profit (Rs. Lakhs)
Jan-02	22	18	
Feb-02	24	9	
Mar-02	32	24	
Apr-02	26	23	
May-02	30	24	
Jun-02	34	25	
Jul-02	35	30	

- Give chart Title - Profit Report
- X axis Title - Months
- Y axis Title - Amt(in Lakhs)

11. Prepare billing report for M/s. Total Synergy Consultancy Private Limited (TSCPL) in MS Excel.

Consultant	Qtr 1	Qtr 2	Qtr3	Figures in '000	
				Qtr 4	Yearly Total
R.Bhatnagar	Rs9,752.00	Rs10,129.00	Rs8,212.00	Rs7,032.00	
M.Lath	Rs5,755.00	Rs6,477.00	Rs5,447.00	Rs4,584.00	
P.Sharma	Rs6,769.00	Rs6,758.00	Rs6,378.00	Rs1,644.00	
K.Pandey	Rs3,708.00	Rs5,795.00	Rs6,188.00	Rs1,636.00	
M.Swamy	Rs5,009.00	Rs2,009.00	Rs7,643.00	Rs7,323.00	
Total→					

Prepare Pie Chart showing consultant's contribution to Total yearly Billing from the above example.

12. Prepare a statement of Marks (Calculate the Total Marks, Average and Grade using functions Sum, Average and IF).

Criteria for Grade: Average ≥ 75 ----Distinction
Average ≥ 60 ----First
Average ≥ 50 ----Second
Average ≥ 45 ----Third

13. Prepare the following table in a worksheet using Ms-Excel

Name	Basic	DA	HRA	Gross Pay	PF	Net Pay
Rojer	10000	2000	2780			
Mack	20000	1050	1500			
Simon	35000	2100	1900			
Fredric	25000	2500	2100			
Harry	20000	1000	1500			

Perform the following calculations:

- Gross Pay=Basic Pay +DA+HRA
- PF=12% of DA
- Net Pay=Gross Pay- PF

Perform the following formatting:

- Set column width=10
- Set row height=15
- Text Alignment:
 - Horizontal : Center
 - Vertical : Centre

14. Prepare following table for “DOTCOM SOLUTIONS LIMITED”

DOTCOM SOLUTIONS LIMITED				
INVENTORY DATABASE				
INV.CODE	DESC	QTY	RATE	PRICE
P1002	TV-COLOUR 21"	35	11000	
P1001	TV-COLOUR 29"	15	28000	
P1003	DVD	20	12000	
P1007	STERIO	53	6000	
P1008	WASHING MACHINE	21	18000	
P1005	REFRIGERATOR	40	8000	
P0004	DISH WASHER	5	20000	
P1009	MIXER	35	3000	
P1010	GRINDER	20	5000	

- Calculate price and apply Auto format to the above table.
- Sort the records in the table in ascending order of INV.CODE.

15. Using conditional formatting on the above table perform the following :

- Highlight those INV.CODE values where INV.CODE is greater than P1005.
- Highlight those quantity values where Qty is between 30 and 50.
- Highlight (Single Underline) the rate values where rate is less than 10000 and (Bold) greater than or equal to 20000.
- Highlight (Strikethrough) the price value where price is equal to 3, 20,000 and (Bold-Italic) not equal to 1, 00,000.

16. Following data of DOTCOM SOLUTIONS LTD. is given

Sales	Rs.40, 00,000
Variable costs	Rs.30, 00,000
Fixed expenses	Rs.70, 000

Calculate:

- Contribution
- Profit Volume Ratio
- Break Even Point
- Margin of Safety

NOTE: Contribution=sales – variable cost

PVR= (contribution /sales) *100

BEP = (fixed cost / PVR)*100

MOS=Profit / PVR*100

Profit=contribution-fixed expense

17. Use IF Function

- From the data given below check whether the expenses are over budget or within budget using function IF.

Actual Expenses	Predicted Expenses	Over/Within Budget
1500	900	
500	900	
500	925	
2000	1500	

- ii. Design a mark sheet and enter record of any 5 students for three subject and check whether their result is PASS or FAIL using (IF-AND).

Table structure should be as given:

Sr. No	Student Name	Marks			Result(PASS/FAIL)
		Subject 1	Subject2	Subject3	

Condition: result will be "PASS" if marks of each subject are greater than 45.

18. Enter the following data in MS-Excel

Property Value	Commission
100,000	7,000
200,000	14,000
300,000	21,000
400,000	28,000

From the above data calculate the following using function SUMIF

- Sum of the commissions for property values over 160,000
- Sum of the commissions for property values below 300,000.
- Sum of the commissions for property values over 100,000

19. Create Timetable by inserting table in Power Point.

20. Using the following data create a chart in power Point.

	Sub 1	Sub 2	Sub 3	Sub 4
John	56	56	60	67
Rita	45	67	80	45
Joseph	56	67	89	78

21. Create a Power Point presentation using Auto Content Wizard.

22. Create a PowerPoint presentation showing various features of MS Office.
Demonstrate the use of master slide.

23. Create a Power Point presentation listing various design templates available. Use various types of bullets and numbering. Each slide should have Animation effect.

24. Create a Power Point Presentation for explaining various network topologies.

25. Create an advertisement in Power Point with maximum 6 slides. Each slide should have custom animation.

26. Create a table **EmpMaster** in MS-ACCESS with following details:

Field Name	Data Type	Description
Emp_Id	Text	Size=15, Input Mask: ###-##-###
Emp_Name	Text	Size=20, Format: > (Display in Uppercase)
Address	Text	Size=30
Joining_date	Date	Format="Short date", Validation rule = Employee joined between 01/01/07 and date()
Married	Yes/No	
No_of_Children	Number	Validation Rule : not more than 2 (<=2)

- Set Emp_Id as Primary key.
- Insert information about 10 Employees.
- Use column width as best fit.
- Print the table design view and datasheet view.

27. Create a table **BookDetails** in MS-ACCESS with following details:

Field Name	Data Type	Description
Book_Id	Text	Size=3 , Like Eg: B101
Title	Text	Size=20, Format: < (Display in lowercase)
Author	Text	Size=20, Format: > (display in uppercase)
Publication	Text	Size=30
Edition_No	Number	Format=Byte
Price	Currency	Use Currency Symbol Rs.
Pages	Number	Format=Byte

- Set Book_Id as Primary key.
- Insert information about 10 Books.
- Use column width as best fit.
- Print the table design view and datasheet view.

28. Consider the following table and perform the operation given below:

ProductDetails

Prod_Id	Prod_Name	Company_Name	Country
101	Chavanprash	Dabur Ltd	India
121	Chocolates	Amul Ltd	India
126	Face wash	Amway Ltd	USA
163	Soap	Hindustan Lever Ltd	India
132	Cold Cream	Nivea Ltd	Germany
135	Hair Gel	L'Oreal Pvt Ltd	Australia
111	Deodorant	Coty Incorporation	South Africa
106	Hair Shampoo	Amway Ltd	USA

- Select only those records whose country = "India"
- Select only those record whose company = "Amway Ltd"
- Print the table datasheet view of both a) and b) after selection.

29. Consider the following table and perform the operation given below
Employee_Details.

Emp_Id	Emp_Name	Desg	Dept_Name	Add	City	Sal
1	Rakesh	Programmer	CMP	Ramanagar	Nagpur	Rs. 10,000.00
2	Amit	Clerk	ACT	Khamla	Nagpur	Rs. 4,500.00
3	Anjali	Operator	REC	Sadar	Nagpur	Rs. 2,200.00
4	Sachin	Accountant	ACT	Tilaknagar	Nagpur	Rs. 11,500.00
5	Sagar	Sr. Accountant	ACT	Ravinagar	Nagpur	Rs. 12,500.00
6	Abhilash	Operator	STO	Dharampeth	Nagpur	Rs. 2,200.00

- Select Emp_Name, Desg and Sal from Employee_Details.
- Select All fields from Employee_Details where Dept_Name = "ACT" AND Sal > 4000.
- Print the Query design view, Datasheet view and SQL view of a) and b

30. Consider the following table and perform the operation given below.

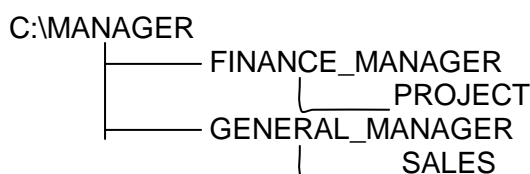
Account

AcctId	AcctType	Amount
A1	Saving	Rs.50,000.00
A2	Saving	Rs.25,000.00
A3	Fixed	Rs.100,000.00
A4	Fixed	Rs.55,000.00
A5	Saving	Rs.25,000.00

- DELETE FROM Account WHERE Amount <=25,000
- Print the Query design view, Datasheet view and SQL view.

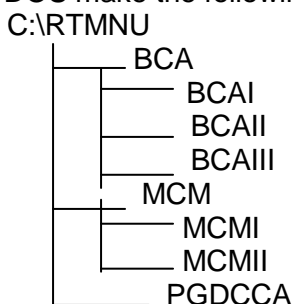
31. Make a directory naming CPC in DOS. Under that make three sub directories BCAI, BCA II, BCAIII. Also explain the commands used in making the directories and subdirectories in DOS.

32. Using Tree Command in DOS make the following tree diagram.



Also explain the commands used in making the above tree diagram.

33. Using tree command in DOS make the following tree diagram



Also explain the commands used in making the above tree diagram.

34. Make a file named "compute.txt" in DOS and write the definition and characteristics of computer in that file. Rename the file compute.txt to computer.txt.

Also explain the commands used in making the file and renaming file. Explain the difference between copy and ren Command.

35. Make a file named "compute.txt" in DOS and write the definition and characteristics of computer in that file. Copy the contents of file compute.txt to computer.txt.

Also explain the commands used in making the file and copying the contents of one file to another file.

36. Make a file named file1.txt in DOS and enter the following text in that file.

WWW can be defined as a set of standards for storing, retrieving, formatting and displaying information using client/server architecture, graphical user interfaces and a hypertext language that enables dynamic link to documents. World Wide Web is a repository of information spread all over the world and linked together.

Copy the contents of file1.txt to file2.txt also explain the difference between rename and copy command.

Paper - IV: Programming in 'C' (1T4)

UNIT – I

Data Types, Operators and some statements: Identifiers and keywords, Constants, C Operators, Type Conversion. **Writing a Program in C:** Variable declaration, Statements, Simple C Programs, Simple Input Statements, Simple Output Statements, and Features of stdio.h. **Control Statements:** Conditional Expressions, Loop Statements, Breaking control statements.

UNIT – II

Function and Program Structures: Introduction, Defining a Function, Return Statement, Types of Functions, Actual & Formal Arguments, Local & Global Variables, Multifunction Program, and The Scope of Variables, Recursive Function, and ANSI Function Slandered. **Arrays:** Array Notation, Array Declaration, Array Initialization, Processing with Arrays, Arrays and Functions, Multidimensional Array, Character Array.

UNIT – III

Pointers: Pointer Declaration, Pointer Arithmetic, Pointers and Functions, Pointers and Arrays, Pointer and Strings, Array of Pointers, Pointers to Pointers. **More on Functions:** Pre-processors, Macros, Header Files, standard Functions.

UNIT-IV

Structures, unions and Bit Fields: Declaration of Structure, Initializing a Structure, Functions and Structures, Array of Structure, Arrays within Structure, Structure within structure, Pointer and ?Structure, Union, Bit Fields, Typedef Enumerations. **Data File Operations:** Review of input/output Functions, Opening and Closing of files, Simple File Operation, Structures and File Operation, Block Read/Write, More on File operations, Low level File operations, Random Access File processing.

Text Book:

1. D. Ravichandran, Programming in C, New Age International Publishers.

Reference Books:

1. E. Balaguruswami, Programming in ANSI C, McGraw-Hill.
2. R Subburaj, Programming in C, Vikash Publishing House Pvt. Ltd.
3. S.K.Shrivastava & DipaliSrivastava, C in Depth, BPB Publication.
4. YashwantKanetkar, Let Us C, BPB Publication, 9th Edition.
5. Veugopal Prasad, Mastering C, McGraw-Hill.
6. Schildt, The Complete Reference C, McGraw-Hill.

Practical List of Programming in C (1P1)

- A1. Draw a flowchart, write an algorithm and program in "C" to check whether the entered character is either alphabet, Digit or Special Character.
- A2. Draw a flowchart, write an algorithm and program in "C" to check whether the entered character is in either Uppercase or Lowercase and also convert that character either in Uppercase or Lowercase by using toupper(), tolower(), getchar(), putchar(), isupper() and islower() library functions.
- A3. Draw a flowchart. write an algorithm and program in "C" to generate the mark sheet of student using following information.
 - a. Name of the student.
 - b. Roll Number
 - c. Course Name

- d. Marks of 5 subjects, each subject carries 100 marks. Passing marks of each subject is 45.
 - e. Calculate Total Marks.
 - f. Calculate Percentage.
 - g. Display the Result, the conditions for result is –
 - Result = “Pass”, if the student get 50% aggregate and must not get less than 45 marks in each subject.
 - Else Result = “Fail”
 - h. Display the Grade, The grade will be –
 - Grade = “Distinction”, If Percentage ≥ 75 .
 - Grade = “First Class”, If $60 \leq \text{Percentage} < 75$.
 - Grade = “Second Class”, If $50 \leq \text{Percentage} < 60$.
 - Grade = “Fail”, If Percentage < 50 .
- A4.** Draw a flowchart, write an algorithm and program in “C” to generate and print Fibonacci series and check whether each number is prime or unprimed.
- A5.** Draw a flowchart, write an algorithm and program in “C” to generate and print Fibonacci series and check whether each number is EVEN or ODD.
- A6.** Draw a flowchart; write an algorithm and program in “C” to convert the total number of days into number of years, months and remaining days. Consider 360 days in a year and 30 days in month.
- A7.** Draw a flowchart; write an algorithm and program in “C” to perform the following arithmetic operations using arithmetic operators in switch statement. The Arithmetic operations are addition (+), Subtraction (-), Multiplication (*), Integer Division (/) Real Division (/), modulo (%) and Raise to power (^).
- A8.** Draw a flowchart; write an algorithm and program in “C” to check the entered character is vowel or not using switch statement.
- A9.** Draw a flowchart; write an algorithm and program in “C” to convert Decimal Number to its equivalent Binary Number.
- A10.** Draw a flowchart; write an algorithm and program in “C” to convert Binary Number to its equivalent Decimal Number.
- A11.** Draw a flowchart; write an algorithm and program in “C” to find LCM and HCF of two numbers.
- A12.** Draw a flowchart, write an algorithm and program in “C” to Print and evaluate the following series. The series is ----

$$\text{Sum} = (x) + (x^{2/2!}) + (x^{3/3!}) + (x^{4/4!}) + (x^{5/5!}) + \dots$$
- A13.** Draw a flowchart, write an algorithm and program in “C” to Print and evaluate the following series. The series is ----

$$\text{Sum} = (x) + (x^{3/3!}) + (x^{5/5!}) + (x^{7/7!}) + (x^{9/9!}) + \dots$$
- A14.** Draw a flowchart, write an algorithm and program in “C” to enter the Nine digit number, find and print even and odd numbers from that nine digit number also find the summation of all even number and odd numbers.
- A15.** Draw a flowchart, write an algorithm and program in “C” to check the entered number is Palindrome or not also print the reverse of the given number.

- A16.** Draw a flowchart, write an algorithm and program in “C” to swap the values of two variables with and without using third variable.
- A17.** Draw a flowchart, write an algorithm and program in “C” to generate and print the Prime Factors of a given number.
- A18.** Draw a Flowchart; Write an Algorithm and Program in “C” to Calculate the Mean and Variance of 10 Integer Numbers.
 Where $\text{Mean} = \sum (X_i)/N$ and
 $\text{Variance} = \sum (X_i - \bar{X})^2/N$
- A19.** Draw a Flowchart; Write an Algorithm and Program in “C” to Find the Largest and smallest number form a single dimension array.
- A20.** Draw a Flowchart; Write an Algorithm and Program in “C” to Search an Element from a single dimension array with its position using Sequential search Technique. Print the message “Element found at position _____”, if the element present in an array and print message “Element Not Found”, If element is not present in an array.
- A21.** Draw a Flowchart; Write an Algorithm and Program in “C” to insert an element in a given position in an array.
- A22.** Draw a Flowchart; Write an Algorithm and Program in “C” to delete an element from a given position of an array.
- A23.** Draw a Flowchart; Write an Algorithm and Program in “C” to Sort elements of a given array using Bubble Sort in an ascending order.
- A24.** Draw a Flowchart; Write an Algorithm and Program in “C” to find the sum of Each Row and each column of a given Matrix and also find the sum of all elements.
- A25.** Draw a Flowchart; Write an Algorithm and Program in “C” to convert the matrix into Transpose of Matrix also print both the original and Transpose of Matrix.
- A26.** Draw a Flowchart; Write an Algorithm and Program in “C” to add two matrices of the given range and print all the three matrices.
- A27.** Draw a Flowchart; Write an Algorithm and Program in “C” to find the product of two matrices of the given range and print all the three matrices.
- A28.** Draw a Flowchart; Write an Algorithm and Program in “C” to check the entered String is Palindrome or not with and without using String Manipulation Functions.
- A29.** Draw a Flowchart; Write an Algorithm and Program in “C” to Find the given character and replace that character with new character of the original text also print the modified text.
- A30.** Draw a Flowchart; Write an Algorithm and Program in “C” to count the number of spaces, alphabets, digits, special symbols from a given text using String Manipulation Functions.
- A31.** Draw a Flowchart; Write an Algorithm and Program in “C” to count the number of spaces, alphabets, digits, special symbols from a given text using ASCII Characters.

A32. Draw a Flowchart; Write an Algorithm and Program in “C” to count the number of words and all characters excluding spaces from a given text without using string manipulation Functions.

A33. Draw a Flowchart; Write an Algorithm and Program in “C” to concatenate two strings into third string without using string manipulation Functions.

A34. Draw a flowchart, write an algorithm and program in “C” to Design and Print the following Output of any entered string, for example -

```
P
P  R
P  R  I
P  R  I  N
P  R  I  N  T
P  R  I  N
P  R  I
P  R
P
```

A35. Draw a Flowchart; Write an Algorithm and Program in “C” to Append to string arrays in third array.

A36. Draw a Flowchart; Write an Algorithm and Program in “C” to Sort a String array in either Ascending or Descending order.

A37. Draw a Flowchart; Write an Algorithm and Program in “C” to insert an element in an appropriate position in a sorted array. The array is sorted in an ascending order.

A38. Draw a flowchart, write an algorithm and program in “C” to Design and Print the following Output.

```

          1
        2 3 2
      3 4 5 4 3
    4 5 6 7 6 5 4
  5 6 7 8 9 8 7 6 5
```

A39. Draw a flowchart, write an algorithm and program in “C” to Design and Print the following Output.

```

          *
        * * *
      * * * * *
    * * * * * *
      * * * *
        * * *
          *
```

A40. Draw a flowchart, write an algorithm and program in “C” to Design and Print the following Output.

```

1
0 1
0 1 0
1 0 1 0
1 0 1 0 1
0 1 0 1 0 1
```

- A41.** Write an algorithm, draw a flowchart and develop 'C' program to Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.
- A42.** Write an algorithm, draw a flowchart and develop 'C' program to create a file "abc.txt" and store the text. Copy the content from "abc.txt" to another file "xyz.txt" using putc() and getc() function. Also read the content of both files.

BCCA Part – I

Semester – II

Paper - I: English and Business Communication – II (2T1)

UNIT-I

(A) Comprehension of an Unseen Passage

(B) Punctuation, Words often confused

UNIT-II

Business Correspondence: Inviting Quotations, Placing Orders, Credit Letters - Granting/Refusing Credit, Letter to Bank for overdraft facility

UNIT-III

- Elements of communication
- Objectives of communication
- Essentials of effective communication
- Barriers to effective communication
- Suggestions to overcome the barriers

UNIT-IV

Textbook entitled 'Prism: Spoken and Written Communication, Prose & Poetry' published by Orient Black Swan

Prose

- i) An Astrologer's Day – R. K. Narayan
- ii) The Gift of the Magi – O. Henry
- iii) The Bet – Anton Chekhov

Poetry

- i) Say Not the Struggle Naught Availeth - Arthur Hugh Clough
- ii) No Men are Foreign- James Kirkup
- iii) Abou Ben Adhem - James Leigh Hunt

Reference Books:

(For UNIT I)

1. English Grammar – N. D. V. Prasada Rao (S.Chand)
2. Developing Communication Skills – Krishna Mohan & Meera Banerji (Macmillan)

(For UNIT II)

3. Business Communication: Urmila Rai, S. M. Rai - (Himalaya Publishing House)
4. Business Correspondence and Report Writing – R. C. Sharma & Krishna Mohan (Tata McGraw-Hill)
5. Developing Communication Skills – Krishna Mohan & Meera Banerji (Macmillan)

(For UNIT III)

6. Business Communication and Management- Dr. K. R. Dixit (Vishwa Publishers, Nagpur)

(For UNIT IV)

Prescribed Text Book:

Prism: Spoken and Written Communication, Prose & Poetry published by Orient Black Swan

Paper - II: Principles of Business Management (2T2)

UNIT- I

Nature And Functions Of Management – Importance Of Management, Definition Of Management, Management Function Or The Process Of Management, Levels Of Management, Organizational Or Business Functions, Role Of A Senior Management, Managerial Skills, Managerial Effectiveness, Management And Administration, Management- A Science Or An Art?, Management- A Profession?, Professional Management Vs Family Management, Management Of International Business. **Development Of Management Thought**- Early Classical Approaches, Neo-Classical Approaches, Modern Approaches. **Planning**- Nature Of Planning, Importance Of Planning, Types Of Plans, Steps In Planning, Strategic Planning Process, Limitation Of Planning, Making Planning Effective, Planning Skills, Strategic Planning In The Indian Industry. **Decision Making**- Meaning Of Decision, Types Of Decision, Steps In Relational Decision-Making, Rationality In Decision-Making, Environment Of Decision-Making, Common Difficulties In Decision-Making.

UNIT- II

Organization- What Is An Organization?, Process Of Organizing, Principles Of Organizing, Span Of Management, Departmentalization, Process Departmentalization, Purpose Departmentalization, Organization Structure, What Type Of Structure Is Best?, Emerging Organization Structures, Committees, Teams, International Organization Structures. **Coordination** – Distinction Between Coordination And Cooperation, Distinction Between Coordination And Control, Need For Coordination, Requisites For Excellent Coordination, Types Of Coordination, Techniques Of Coordination, Difficulties Of Coordination, Coordinating Global Operations. **Informal Organization** – Why Do Informal Group Forms?, Types Of Informal Groups, Stages Of Group Development, Distinction Between Formal And Informal Organization, Benefits Of Informal Organization To Its Members, Benefits Of Informal Organization To Its Management, Dysfunctional Effects Of Informal Organization, How To Minimize The Dysfunctional Effects Of Informal Organization?, Group Dynamics. **Staffing**- Importance And Need For Proper Staffing, Manpower Planning, Recruitment, Selection, Placement, Induction, Manpower Planning In India, Staffing From A Global Perspective.

UNIT- III

Training And Development- Difference Between Training, Education And Development, Advantages Of Training, Steps In Setting Up A Training And Development Programme, Design And Development Of The Training Programme, Evaluation Of Training And Development, Executive Training Practices In India, Mentoring, Learning Organization, Knowledge Management. **Performance Management**- Purpose Of Appraisal, Steps In Designing Performance Management System, Criteria And Standards Of Performance Appraisal, Frequency Of Appraisal, Performance Appraisal Methods, Limitations Of Traditional Appraisal Methods, Post-Appraisal Interview, Appraisal Of Management, Performance Management In Indian Industries, Expatriate Performance Appraisal, Career Planning And Development, Appraisal Of Organizational Development. **Compensation Plans**- Classification Of Compensation, Primary Compensation, Monetary Incentive, Non-Monetary Incentive, Recognition As A Reward, Benefits, Wage Packet Of Indian Worker, International Compensation. **Direction And Supervision**- Requirements Of Effective Direction, Giving Orders, Motivation, Job Satisfaction, Organizational Commitment, Morale, First-Level Or Front- Line Supervision.

UNIT- IV

Communication- Importance Of Communication, Purpose Of Communication, Formal Communication, Forms Of Communication, Informal Communication, The Communication Process, Barriers To Communication, Principles Of Effective

Communication, Communication Networks, Checks On In-Plant Communication, Communication In Indian Industries. **Leadership** – Difference Between A Leader And A Manager, Characteristics Of Leadership, Functions Of A Leader, Traditional Approaches To Leadership, Situational Factors Determining Choice Of Leadership Style, New Approaches To Leadership, Leadership Assessment, Leadership Style In Indian Organization, Worker Participation In Management In India. **Managerial Control**- Steps In A Control Process, Need For Control System, Benefits Of Control, Essentials Of Effective Control System, Problems Of The Control System, Control Techniques. **Organizational Change**- Need For Planned Change, Managing Organizational Change, Requisites For Successful Planned Change, Recent Planned Changes In The Corporate Sector In India.

Text Book:

1. P. C. Tripathi, P. N. Reddy, Principles of Management, McGraw-Hill.

Reference Books:

1. Prof. Partho S. Sengupta, Principles and Practices of Management, Vikash Publishing House Pvt. Ltd.
2. NeeruVaisishth, VibhutiVasishth, Principles of Management Text & Cases, Taxmann
3. Harold Koontz, Heinz Weihrich, Essentials of management, McGraw-Hill.
4. NeeruVaisishth, Business Management, Taxmann.
5. R. S. N. Pillai, S. Kala, Principles and Practices of Management, S. Chand.
6. Chandra Bose, Principles of Management & Administration, PHI.

Paper - III: Programming in 'C++' (2T3)

UNIT – I

Introduction to Object Oriented Programming: Introduction, What is Object Oriented Programming(OOP)?, Structured Procedural programming(SPP), Object Oriented Programming OOP, Characteristics of OOPs, Advantages of OOPs, Disadvantages of OOPs, Comparison of SPP and OOP, Steps in Developing OOP Programs, Structure of Object Oriented Programs, Object Oriented Languages, Importance of C++. **Data Types, Operators and Expressions:** Identifiers & Keywords, Data Types, C++ Simple Data Types, Literals, Variables, the Const Data type, C++ Operators, Type Conversion. **Input and Output Streams:** Comments, Declaration of Variables, the Main () Function, Simple C++ Programs, Program Termination, Features of IOSTream, Keyboard and Screen I/O, Manipulator Functions, Input and Output (I/O) Stream Flags. **Control Statements:** Conditional Expressions, Loop Statements, Nested Control Structures, Breaking Control Statements.

UNIT – II

Function and Program Structures: Introduction, Defining a Function, Return Statement, Types of Functions, Actual & Formal Arguments, Local & Global Variables, Default Arguments, Structure of C++ Program, Order of the Function Declaration, Manually invocated Functions, Nested Functions, Scope Rules, Side Effects, Storage Class Specifiers, Recursive Function, Pre-processors, Header Files, Standard Functions. **Arrays** :Introduction, Array Notation, Array Declaration, Array Initialization, Processing with Arrays, Arrays and Functions, Multidimensional Array, Character Array. **Pointers and Strings:** Introduction, Pointer Arithmetic, Pointers and Functions, Pointers to Functions, Pointers and Arrays, Array of Pointers, Pointers to Pointers, Pointer and Strings, Deciphering Complex Declarations. **Structures, Unions and Bit Fields:** Introduction, Declaration of Structure, Processing with Structures, Initialization of Structures, Functions and Structures, Array of Structure, Array within a Structure, Nested Structure, Pointer and Structure, Unions, Bit Fields, Typedef, Enumerations.

UNIT – III

Classes and Objects: Introduction, Structures and Classes, Declaration of Class, Member Functions, Defining the Object of a Class, Accessing a Member of Class, Array of Class Objects, Pointer and Classes, Union and Classes, Classes within classes(Nested Class). **Special Member Function:** Introduction, Constructors, Destructors, Inline Member Functions, Static Class Members, Friend Function, Dynamic Memory Allocations, This Pointer, Mutable. **Single and Multiple Inheritance:** Introduction, Single Inheritance, Types of Base Classes, Type of Derivation, Ambiguity in Single Inheritance, Array of Class Objects and Single Inheritance, Multiple Inheritance, Container Classes, Member Access Control.

UNIT-IV

Overloading Functions and Operators: Function Overloading, Operator Overloading, Overloading of Binary Operators, Overloading of Unary Operators. **Polymorphism and Virtual Functions:** Polymorphism, Early Binding, Polymorphism with Pointers, Virtual Functions, Late Binding, Pure Virtual Functions, Abstract Base Classes, Constructors under Inheritance, Destructors under Inheritance, Virtual Destructors, Virtual Base Classes. **Templates and Exception Handling:** Function Template, Class Template, Overloading of Function Template, Exception Handling. **Data File Operations:** Opening and Closing of Files, Stream State Member Functions, Reading/Writing a Character from a File, Binary File Operations, Classes and File Operations, Structure and File Operations, Array of Class Objects and File Operations, Nested Class and File Operations. Random Access File Processing.

Text Book:

1. D. Ravichandran, Programming with C++, McGraw-Hill.

Reference Books:

1. E. Balaguruswami, Object Oriented Programming with C++, McGraw-Hill.
2. Rohit Khurana, Object Oriented Programming with C++, Vikash Publishing House Pvt. Ltd.
3. Anirban Das, Goutam Panigrahi, Object Oriented Programming with C++, Vikash Publishing House Pvt. Ltd.
4. Herbert Schildt, The Complete Reference – C++, McGraw-Hill.

Practical List of Programming in 'C++'

1. Write an algorithm, draw a flowchart and develop a C++ program to print the sum and product of digits of an integer.
2. Write an algorithm, draw a flowchart and develop a C++ program to reverse of a number.
3. Write an algorithm, draw a flowchart and develop a C++ program to compute the sum of the first n terms of the following series - $S = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots$
4. Write an algorithm, draw a flowchart and develop a C++ program to compute the sum of the first n terms of the following series - $S = 1 - 2 + 3 - 4 + 5 - \dots$
5. Write an algorithm, draw a flowchart and develop a C++ function that checks whether a given string is Palindrome or not. Use this function to find whether the string entered by user is Palindrome or not.

6. Write an algorithm, draw a flowchart and develop a C++ program to print a triangle of stars as follows (take number of lines from user):
- ```
*


```
7. Write an algorithm, draw a flowchart and develop a C++ program to swap two numbers using pointers.
8. Write an algorithm, draw a flowchart and develop a C++ function to find whether a given no. is prime or not. Use the same to generate the prime numbers less than 100.
9. Write an algorithm, draw a flowchart and develop a C++ program to compute the factors of a given number.
10. Write an algorithm, draw a flowchart and develop a C++ program which takes the radius of a circle as input from the user, passes it to another function that computes the area and the circumference of the circle and displays the value of area and circumference from the main() function.
11. Write an algorithm, draw a flowchart and develop a C++ program to demonstrate the use of single inheritance.
12. Write an algorithm, draw a flowchart and develop a C++ program to find largest among two values using friend function.
13. Write an algorithm, draw a flowchart and develop a C++ program in which a function is passed address of two variables and then alter its contents.
14. Write an algorithm, draw a flowchart and develop a C++ program to display Fibonacci series (i) using recursion, (ii) using iteration
15. Write an algorithm, draw a flowchart and develop a C++ program to calculate Factorial of a number (i) using recursion, (ii) using iteration
16. Write an algorithm, draw a flowchart and develop a C++ program to demonstrate the use of this pointer.
17. Write an algorithm, draw a flowchart and develop a C++ program to perform unary operator overloading.
18. Write an algorithm, draw a flowchart and develop a C++ program to Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator
19. Write an algorithm, draw a flowchart and develop a C++ program to find sum of n elements entered by the user. To write this program, allocate memory dynamically using malloc() / calloc() functions or new operator.
20. Write an algorithm, draw a flowchart and develop a C++ program to create a Marksheet using multilevel inheritance.

## Paper - IV: E-Commerce and Web Designing (2T4)

### UNIT – I

#### Introduction to Electronic Commerce

**Electronic Commerce** : The Scope of Electronic Commerce, Definition of Electronic Commerce, Electronic Commerce and the Trade Cycle, Electronic Markets, Electronic Data Interchange, Internet Commerce, e-Commerce in Perspective. **Business Strategy in an Electronic Age: The Value Chain**, Supply Chains, Porter's Value Chain Model, Inter Organizational Value Chains. **Competitive Advantage**: Competitive Strategy, Porter's Model, First Mover Advantage, Sustainable Competitive Advantage, Competitive advantage using e-Commerce. **Business Strategy**: Introduction to Business Strategy, Strategic Implication of IT, Technology, Business Environment, Business Capability, Existing Business Strategy, Strategy Formulation and Implementation Planning, e-Commerce Implementation, e-Commerce Evaluation. **Case Study: e-Commerce in Passenger Air Transport**: Choices, Airline Booking Systems, Competition and customer Loyalty, Web Booking Systems, Competitive Outcomes

### UNIT – II

#### Business to Business Electronic Commerce

**Inter Organizational Transactions**: Inter Organizational Transactions, the Credit Transaction Trade Cycle, A Variety of Transaction, Pens and Things. **Electronic Markets: Markets**, Electronic Markets, Usage of Electronic Markets, Advantages and Disadvantages of Electronic Markets, Future of Electronic Markets. **Electronic Data Interchange (EDI)**: Introduction to EDI, EDI definition, The Benefits of EDI, EDI Example. **EDI: the Nuts and Bolts** :, EDI technology, EDI Standards, EDI Communications, EDI Implementation, EDI Agreements, EDI Security, Nuts, Bolts and the Tool kit. **EDI and Business** :Organizations that use EDI, EDI Trading Patterns, EDI Transactions, EDI Adoption and EDI Maturity, IOS, EDI an Internet e-Commerce. **Inter Organizational e-Commerce**: Inter Organizational Transaction, Purchasing Online, After Sales Online, e-Commerce in Desk top Facilities Management, Pens and Things and the Web.

### UNIT – III

#### Business to Consumer Electronic Commerce

**Consumer Trade Transactions**: What you want, when you want it, Internet e-Commerce, The e-Shop, Internet Shopping and the Trade Cycle, Other e-Commerce Technologies, Advantages and Disadvantages of Consumer e-Commerce, Consumer e-Commerce at Pens and Things. **The Elements of e-Commerce** : Elements, e-Visibility, The e-Shop, Online Payments, Delivering the Goods, After Sales Service, Internet e-Commerce Security, A Web Site Evaluation Model. **E-Business: Introduction**, Internet Bookshops, Grocery Supplies, Software Supplies and Support. Electronic Newspapers, Internet Banking, Virtual Auctions, Online Share Dealing, Gambling on the Net, e-Diversity **Introduction to the Internet**: Computer in Business, Networking, Internet, Electronic Mail(E-Mail), Resource Sharing, Gopher, World Wide Web, Usenet, Telnet, Bulletin Board Service, Wide Area Information Service. **Internet Technologies**: Modem, Internet Addressing, Physical Connections, Telephone Lines, Internet Browsers, Internet Explorer, Netscape Navigator. **Introduction to HTML**: Designing a Home Page, History of HTML, HTML Generations, HTML Documents, Anchor Tag, Hyper Links, Sample Html Documents. **Header and Body Sections**: **Header** Section, Title, Prologue, Links, Colorful Web Page, Comment Lines, Some Sample Html Documents. **Designing the body Section** : Heading Printing, Aligning the Headings, Horizontal Rule, Paragraph Tab Setting, Image and Pictures, Embedding PNG Format Images.

### UNIT – IV

**Ordered and Unordered Lists**:Lists, Unordered Lists, Headings in a List, Ordered Lists, Nested List. **Table Handling: Table**, Table Creation in HTML, Width of the Table and Cells, Cells Spanning Multiple Rows/Columns, Coloring Cells, Columns Specification,



Some Sample Tables. **Dhtml and Style Sheets:** Defining Styles, Elements of Styles, Linking a Styles Sheet to an HTML Document, In-Line Styles, External Styles Sheets, Multiple Styles. **Frames:** Frameset Definition, Frame Definition, Nested Framesets. **A web Page Design Project:** Frameset Definition, Animals, Birds, Fish. **Forms:** Action Attribute, Method Attribute, Enctype Attribute, Drop Down List, Sample Forms

### Text Books

1. David Whiteley, e-Commerce Strategy, Technologies and Applications, McGraw Hill Education
2. CXavier, World Wide Web design with HTML, McGraw Hill Education.

### Reference Books:

1. Bajaj, Nag, E-Commerce, McGraw-Hill.
2. Eric van der Vlist, Danny Ayers, Erik Bruchez, Joe Fawcett, Alessandro Vernet, Professional Web 2.0 Programming, Wiely.
3. Michael P. Papazoglou, Pieter M.A. Ribbers, e-Business, Wiely.
4. Brian P. Hogan, HTML5 and CSS3, Shroff Publishers.
5. Sandeep panda, AngularJS – Novice to Ninja, Shroff Publishers.
6. Web Technologies – Black Book, Dreamtech Press.
7. Mike Mcgrath, Web Design in Easy Steps, McGraw-Hill.
8. Mike Mcgrath, JavaScript in Easy Steps, McGraw-Hill.
9. Mike Mcgrath, CSS3 in Easy Steps, McGraw-Hill.

### Practical List of E-Commerce & Web Designing

1. Write a program in HTML to link two files. The name of the first file is LINK1.HTML and that of second file is LINK2.HTML. LINK2.HTML should contain a Back link also.
2. Write a program in HTML to design a table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY. Illustrate the usage of cell padding and cell spacing. Also align the Table to the CENTRE of the page.
3. Write a program in HTML to design a Table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY. The table should also contain the below given specifications.
  - a. Table should contain BORDER.
  - b. Background color of the Table should be GREEN.
  - c. Color of the Text should be BLUE.
  - d. Text should be centrally aligned in the cell.
4. Write a program in HTML to illustrate the usage of ROWSPAN in the below given format.

| CITY   | TOWN          |
|--------|---------------|
| NAGPUR | SHANKAR NAGAR |
|        | DHARAMPETH    |
|        | RAMDASPETH    |
| BOMBAY | DADAR         |
|        | V.T.          |
|        | THANE         |

5. Write a program in HTML to illustrate the usage of COLUMN SPAN (COLSPAN) in the below given format.

| NAME    | LIVING CITY | COMPANY CITY |
|---------|-------------|--------------|
| SUJEET  | CHHINDWARA  |              |
| TAPAN   | NAGPUR      | BOMBAY       |
| RAM     | BOMBAY      |              |
| MOHAN   | BANGALORE   |              |
| KRISHNA | PUNE        |              |
| MANGESH | BOMBAY      | NAGPUR       |
| AVINASH | DELHI       |              |

6. Write a program in HTML to divide the Screen into 4 sections.
7. Write a program in HTML to divide the screen horizontally into two sections.
8. Write a program in HTML to demonstrate the usage of Marquee text with the below given Specifications.
  - a. Marquee text is INTERNATIONAL COLLEGE.
  - b. Color of text is BLUE.
  - c. Background color is YELLOW.
  - d. Size of Text is 7.
  - e. Direction is LEFT to RIGHT.
9. Write a program in HTML to demonstrate the usage of Image file with the below given specification.
  1. Background color of page is GREEN.
  2. The size of Image is 400 x 400 pixels.
  3. The Image should contain a border.
  4. Alternate text is "IMAGE NOT FOUND".
  5. Image should appear on the centre of the page.
10. Write a program in HTML to demonstrate the usage of Image file with the below given specifications.
  1. Background color is RED.
  2. The size of Image is 300 x 300 pixels.
  3. The image should contain a BORDER.
  4. Alternate Text is "IMAGE is NOT FOUND".
  5. Vertical space should be 100 pixels.
  6. Horizontal space should be 350 pixels.
11. Write a program in HTML to illustrate Ordered & Unordered Listing in the below given format.
  1. NAGPUR
    - SHANKAR NAGAR
    - DHARAMPETH
    - SADAR
    - RAMDASPETH
  2. BOMBAY
    - DADAR
    - V.T.
    - THANE
  3. BANGALORE
    - ULSOOR
    - SHIVAJI NAGAR
    - MAJESTIC
    - HAL
    - NAL

1. Write HTML code to display the following :

| Industry Segment | Share of Industry RND |      |
|------------------|-----------------------|------|
|                  | 1981                  | 1988 |
| Information      | 32%                   | 42%  |
| Drug             | 07                    | 09   |
| Combined         | 39                    | 51   |

12. Write a program in HTML to illustrate the below given formats.
1. The page should contain a paragraph which is centrally aligned.
  2. FIRST line of the paragraph should be BOLD and ITALIC.
  3. STRIKEOUT the Second Line.
  4. Underline and change the color to RED, of the third line.
  5. Change the font size of the fourth Line to 5.
  6. Change the color of the text to GREEN.
  7. Two horizontal lines below the paragraph.
13. Write a program in HTML to design a table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY.
14. Write a program in HTML to design a Table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY. The table should also contain the below given specifications.
- a. Table should contain BORDER.
  - b. Background color of the Table should be GREEN.
  - c. Color of the Text should be BLUE.
  - d. Text should be centrally aligned in the cell.
15. Write a program in HTML to divide the screen horizontally into two sections.
16. Write a program in HTML to demonstrate the use of the Marquee Text with the below given Specifications.
- a. Marquee Text is INTERNATIONAL COLLEGE.
  - b. Text color is BLUE.
  - c. Repeat the Marquee Text five Times.
  - d. Make use of SCROLLAMOUNT.
  - e. Make use of SCROLLDELAY.
17. a) Give the advantages of style sheets.  
b) Design a web page to embed external style sheet in HTML document.
18. a) What are the different formats of video file? Explain the various methods to add video file in a web page.  
b) Design a web page to show the use of audio file using different approaches and attributes of embed tag.
19. a. What is CSS? Explain different ways to associate CSS to HTML documents.  
a. Design a web page to embed style sheet in HTML document through <HEAD> tag.

# **BCCA Part – II**

## **Semester – III**

### **Paper - I: Environmental Studies (3T1)**

#### **UNIT - I**

**Multidisciplinary Nature of Environmental Studies-** Environment, Environment Studies, Need for public Awareness, Environmental Degradation, Shelter Security, Economic Security, Social Security, Effects of Housing on Environment, Effects of Industry on Environment. **Natural Resources-** Introduction, Types of Natural Resource, Forest Resources, Water Resources, mineral Resources, Food Security Resources, Energy resources, Land Resources, Conservation of Natural Resources, Sustainable Lifestyles, Sustainable Water Management(SWM), Biogeochemical Cycle.

#### **UNIT – II**

**Ecosystem-** Introduction to Ecology and Ecological Succession, Ecosystem, Food Chain, Ecological Pyramids, Types of Ecosystems, Forest Ecosystems, Aquatic Ecosystems, Grassland Ecosystem, Desert Ecosystem. **Biodiversity and its Conservation-**Biodiversity, Values or Benefits of Biodiversity, Bio geographic Zones of India, Hot Spots of Biodiversity, Endangered and Endemic Species, Rare and Threatened Species, Threats to Biodiversity, Human –Wildlife Conflicts, Conservation of Biodiversity.

#### **UNIT – III**

**Environmental Pollution and Its Effects-** Introduction, Requirements of a Non polluted Environment, Public Health Aspects, Air Pollution, Land Pollution, Land Pollution or Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, Hazardous Wastes, Nuclear Hazards (Radiation Pollution), Solid Waste and Its Management, Role of Individuals in Pollution Prevention, Disaster Management.

#### **UNIT – IV**

**Social Issues and the Environment-** Introduction, Sustainable Development, Urbanization, Water Conservation, Resettlement and Rehabilitation of People ; Its Problems and Concerns, Social Issues and The Environment, Wasteland Reclamation, ACTs for Environmental Protection, Carbon Credits, Industrial Symbiosis, Initiatives and Roles of Nongovernmental Organization (NGOs) in Environmental Protection, Issues Involved in Enforcement of Environmental Legislation, Animal Husbandry. **Human population and the Environment-** Population Growth, Family Welfare Programs, Environment and Human Health, Fundamental Rights, Human Rights, Value Education, HIV/AIDS, Environmental Education, Women's Education, Role of Information Technology in Environment and Human Health.

#### **Text Book**

1. Shashi Chawla, Environmental Studies, McGraw-Hill.

#### **Reference Books**

1. Dr. D. K. Asthana, Dr. Meera Asthana, Environmental Studies, S. Chand.
2. Dr. K. Mukkanti, Environmental Studies, S. Chand.
3. Dr. D. D. Mishra, Fundamental Concepts in Environmental Studies, S. Chand.
4. Benny Joseph, Environmental Studies, McGraw Hill Education.

## Paper - II: Business Economics (3T2)

### UNIT – I

**Introduction: Economics And Business Economics** - Introduction, What Is Economics, Definitions, Nature And Scope Of Business Economics, Some Economics Concepts Applied In Business Analysis. **The Economy, Its Basic Problems And Price Mechanism** :- Introduction, What Is An Economy?, How A Free Enterprise Economy Works, Kinds Of Economic Systems, Production Possibilities Of An Economy, Basic Problems Of An Economy, How Market Mechanism Solves The Basic Problems, All Is Not Well With Free Enterprise Economies, Role Of The Government In The Economy. **Laws Of Demand And Supply And Market Equilibrium** :- Introduction, The Concept Of Market, Demand Side Of The Market, Supply Side Of Market, Market Equilibrium, Stability Of Market Equilibrium. **Theory of Consumer Demand: Analysis Of Individual Demand** - Introduction, Meaning Of Individual Demand, Utility- The Basis Of Consumer Demand, Cardinal Approach To Consumer Demand, Ordinal Utility Approach To Consumer Demand –The Indifference Curve Approach, Comparison Of Cardinal And Ordinal Utility Approaches, Revealed Preference Theory, Consumer Surplus. **Elasticity Of Demand** :- Introduction, Meaning Of Demand Elasticity, Price Elasticity Of Demand, Cross-Elasticity Of Demand, Income-Elasticity Of Demand, Advertisement Elasticity Of Demand, Price Expectation-Elasticity Of Demand, Some Estimates Of Demand Elasticity. **Demand Forecasting** :-Introduction, Meaning And Purpose Of Demand Forecasting, Prerequisites Of Good Demand Forecasting, Methods Of Forecasting Demand, Concluding Remarks, Some Case Studies Of Demand Forecasting.

### UNIT – II

**Production And Cost Analysis: Theory Of Production** - Introduction, Some Basic Concepts, Production Function, Laws Of Production-Meaning And Kinds, Short-Run Laws Of Production, Long-Term Laws Of Production-I:Tools Of Analysis, Long-Term Laws Of Production-II: Laws Of Return To Scale, Laws Of Returns To Scale Through Production Function. **Theory of Cost** - Introduction, Cost Concepts, Cost Function, Short-Run Cost-Output Relations, Long-Run Cost Output Relations, Economics And Diseconomies Of Scale, Modern Theory Of Cost. **Market Structure And The Firm's Objectives** - Introduction, Market Structure And Degree Of Competition, Market Structure And Pricing Decisions, The Firm And The Industry, Profit: Meaning And Concepts, Objectives Of Business Firms, A Reasonable Profit Target: A Pragmatic Approach, Profit As Control Measure. **Price And Output Determination Under Perfect Competition** - Introduction, What Is Perfect Competition? Features Of Perfect Competition, Price Determination Under Perfect Competition, Equilibrium Of The Firm In Short-Run, Derivation Of Supply Curve, Equilibrium Of Industry And Firm In Short-Run, Equilibrium Of The Firm And Industry In Long-Run, Long-Run Supply Curve Of The Industry.

### UNIT – III

**Pricing Decisions Under Monopoly** - Introduction, Definition And Features Of Monopoly, Sources And Kinds Of Monopolies, Revenue Curves Under Monopoly, Price And Output Determination In Short-Run, Two Common Misconceptions About Monopoly, There Is No Supply Curve In Short-Run, Monopoly Equilibrium In The Long-Run, Capacity Utilization Under Monopoly, Equilibrium Of Multiplant Monopoly, Price Discrimination Under Monopoly, Monopoly Vs. Perfect Competition, Application Of Monopoly Theory, Measures Of Monopoly Power, Government Regulation Of Monopoly Prices. **Pricing Decision Under Monopolistic Competition** - Introduction, Monopolistic Competition: Definition & Characteristics, Basic Elements Of Monopolistic Competition, Firms Equilibrium Under Monopolistic Competition, Excess Capacity Under Monopolistic Competition, Selling Cost And The Firm's Equilibrium: Non-Price Competition, Monopolistic Competition Vs Perfect Competition: A Comparison, Drawbacks Of Chamberlin's Theory Of Monopolistic Competition. **Pricing Decisions Under Oligopoly**- Introduction, Oligopoly: A Market Of Few Sellers, The Oligopoly Models: An

Overview, A Classical Model Of Duopoly: Cournot's Model, Chamberlin's Model Of Oligopoly : The Small Group Model, Sweezy's Kinked-Demand Curve Model, Price And Output Determination In Collusive Oligopoly, Baumol's Theory Of Sales Maximization, Oligopoly And The Game Theory.

#### **UNIT – IV**

**Factor Market: Factor Demand And Supply** -Introduction, Marginal Productivity Of Factor And Factor Demand, The Factor Supply: An Overview, Derivation Of Individual Labor Supply Curve, Derivation Of Market Labor Supply Curve. **Theory Of Wage Determination** - Introduction, Wage Determination Under Perfect Competition, Wage Differentials, Wage Determination Under Product Monopoly And Competitive Labor Market. **Theory Of Rent, Quasi-Rent And Economic Rent** -Introduction, Ricardian Theory Of Rent, Quasi-Rent: The Short-Term Rent On Fixed Factors, Factor Price, Transfer Earning And Economic Rent. **Theory Of Interest** -Introduction, Meaning Of Interest And Interest Rate, The Classical Theories Of Interest, The Loanable Fund Theory Of Interest, Keynesian Theory Of Interest. **Theory Of Profit** -Introduction, The Meaning Of Profit And Pure Profit, Accounting Profit Vs Economic Profit, Theories Of Profit, Does Profit Enter The Cost Of Production?.

#### **Text Book**

1. D. N. Dwivedi, Essentials of Business Economics, Vikas Publishing House Pvt. Ltd.

#### **Reference Books**

1. David P. Doane, Lori E. Seward, Applied Statistics in Business and Economics, McGraw-Hill.
2. Amit Kumar Upadhyay, Principles of Economics, Vikas Publishing House Pvt. Ltd.
3. P. K. Mehta, Business Economics, Taxmann.
4. Michael Mandel, Economics The basics, McGraw-Hill.
5. Sudip Chaudhuri, Anindya Sen, Economics, McGraw-Hill.
6. Geetika, Piyali Ghosh, Purba Roy Choudhury, Managerial Economics, McGraw-Hill.

### **Paper - III: Visual Basic Programming (3T3)**

#### **Unit – I**

**Introduction to Visual Basic**– Advantages Of Visual Basic, Hardware Requirement, Software Requirement, Installing Visual Basic, Starting Visual Basic, Exiting From Visual Basic. **Working With Visual Basic Window Components**– Menu Bar, Standard Toolbar, Project Explorer Window, Form Layout Window, Properties Window, Toolbox, Code Editor Window, Object Browser, Customizing The Application Development Environment, Editor Tab, Editor Format Tab, General Tab, Docking Tab, Environment Tab, Advance Tab. **Working With Forms**– Extension & With Function Of The File, Properties, Events And Method Of The Form. **Using The Controls Of Visual Basic** – Using Label Control, Using Command button Control, Using Textbox Control, Using Option Button Control, Using Frame Control, Using Checkbox Control, Using Listbox Control, Using Combo box Control, Using Image Control, Using Scroll Control, Using Picture Control, Using Timer Control, Using Drivelistbox Control, Using Dirlistbox, Using File listbox Control, Using The Shape Control. **Basic Programming Fundamentals** – Scope of Variables, Arrays, Operators, Decision Structure, Loop Structure.

#### **Unit – II**

**Working With Procedure, Functions and Modules** – Procedure, Functions, Modules **Accessing Files** – Sequential Method, Random Method, Binary Method. **Menus** – Creating Menus, Creating Popup. **Working With Common Dialog Control** – Showopen, Showsave, Showprint, Showfont, Showcolor, Showhelp. **Control Arrays**– What Is Control Arrays?, Creating Control Arrays Using The First Method, Control

Arrays Using The Second Method, Control Arrays Using The Third Method, **Use Of Load And Unload Statement. Working With Custom Controls** – Imagelist Control, Image combo Control, Treeview Control, Listview Control, Sorting List items, Toolbar Control, Statusbar Control.

### **Unit – III**

**Creating Mdi Applications** – Features Of Child Form, Arrange in Windows, Window List  
**Creating an Application** – Making An Exe File, Taking Printouts. **Database Handling** – Creating the Database, Accessing the Database By Using The Data Control, Using Ado Data Control. **Working With Advance Data Controls** – Datalist Control, Datacombo Control, Datagrid Controls, Setting the Properties of the Datagrid Control, Msflexgrid Control, Setting the Properties of Msflexgrid Control, Sorting A Column, Merging Cells, Description Of Merge Options, Using The Data Form Wizard, Working With Ms Chart Layout. **Working with SQL Statement** – Displaying All Fields, Displaying Selected Fields, Modifying the Data, Creating Search Program, Creating Numeric Search Programs, Creating Complex Search Program.

### **Unit – IV**

**Debugging Techniques** – Syntax Errors, Logical Errors, Run-Time Error, Debug Toolbar, Assert Method, Debugging Mode, Step Into, Step Out, Run To Cursor, Set Next, Show Next, Locals Window, Immediate Window, Watch Window, Edit Watch, Deleting Watch Expression, Quick Watch, Call Stack. **Handling Errors**– How Run-Time Error Occurs?, Trapping Error, Handling Errors, Resuming Program Execution, Resume, Resume Next, Using Resume Next, Err Object, Properties, Methods. **Working With Data Environment and Data Report**– SQL Query Builder, Data Report, Use of Controls, Using the Function Control, Using the Page Footer. **Working With Com Components** – What Is COM?, Introduction, ActiveX Controls, Using The ActiveX Control, Creating The ActiveX Control, Using The ActiveX Control In The Standard EXE, ActiveX Documents, Benefits, Creating An ActiveX Documents, Lifetime Events Of An ActiveX Documents, Describing About Hyperlink Object, Property bag Object, Write Property, Read Property, Property Change Method, Inserting Menus, ActiveX Document Migration Wizard, ActiveX Code Components, Setting Project Properties.

### **Text Book**

1. Soma Dasgupta, Visual Basic – to Advance, BPB Publications.

### **Reference Books**

1. Mohammad Azam, Programming with Visual basic, Vikas Publishing House Pvt. Ltd.
2. Mike Mcgrath, Visual basics in Easy Steps, McGraw-Hill.
3. Michael Vine, Microsoft Visual Basic Programming, PHI.
4. Evangelos Petroustos, Mastering Visual basic, Wiley India Pvt. Ltd.

### **Practical List of Visual Basic Programming**

- B1.** Draw a Flowchart. Write an Algorithm and Program to calculate the bonus for the Employee using user defined data types. If grade is A then bonus will be 1000, if B bonus 7000, if C bonus 5000, otherwise no bonus will be given. If the users have to reuse the program then all the values should be cleared and the cursor should be set to the first control. (Note - Use option button & frames)
- B2.** Draw a Flowchart. Write an Algorithm and Program to give options of Font size, Font color and Font face in the check boxes. Convert the text in the text box by applying the selected fonts.

- B3.** Draw a Flowchart. Write an Algorithm and Program to increase & decrease the width of command button and to change the position of command button (top & left) on the form using scrollbar.
- B4.** Draw a Flowchart. Write an Algorithm and Program to generate a thermometer using vertical scrollbar.
- B5.** Draw a Flowchart. Write an Algorithm and Program to accept an employee\_no, emp\_name from the user. Display several cities in the list box in which your company have the branches. Allow the user to do the following.
- User should add the city if new branch opens.
  - Display the selected city.
  - Remove the city if the branch closed.
  - Create another list box in which user can add the metropolitan cities.
- Note: Multiple cities can be added from the available cities.
- B6.** Draw a Flowchart. Write an Algorithm and Program to find the reverse of a 4 digit number and print the sum of all the digits.
- B7.** Draw a Flowchart. Write an Algorithm and Program to enter a base number and an exponent number from the user. Calculate exponential value of an entered base number.  
(For Example, if base = 2 and the exponent = 5 then the value will be 32)
- B8.** Draw the Flowchart. Write an Algorithm and Program to ask a Password while opening a project. Validate the user's password for 3 times, else do not allow the user to open the project.
- B9.** Draw a Flowchart. Write an Algorithm and Program to generate a stopwatch of 10 minutes using timer control.
- B10.** Draw a Flowchart. Write an Algorithm and Program to calculate the age of the user in year, month and days as on the current date.
- B11.** Draw a Flowchart. Write an Algorithm and Program to match the given pairs.
- |                     |            |
|---------------------|------------|
| 1. Sachin Tendulkar | a. Boxing  |
| 2. Vishwanath Anand | b. Tennis  |
| 3. Leander Pace     | c. Chess   |
| 4. Mike Tyson       | d. Cricket |
- B12.** Draw a Flowchart. Write an Algorithm and Program to conduct a competitive examination. The examination contains 5 questions and each question is having 4 option. Assign 10 marks for every appropriate answer & 0 for wrong. Display the total marks at the end.
- B13.** Draw a Flowchart. Write an Algorithm and Program to add and subtract two different matrices.
- B14.** Draw a Flowchart. Write an Algorithm and Program to prepare a calculator. The calculator includes following operations - addition, subtraction, multiplication, division.
- B15.** Draw a Flowchart. Write an Algorithm and Program to calculate the area of a triangle and the area of circle.
- |                  |   |                                                       |
|------------------|---|-------------------------------------------------------|
| Area of Triangle | = | $\frac{1}{2} \times \text{Base} \times \text{Height}$ |
| Area of Circle   | = | $\text{Pi} \times \text{Radius} \times \text{Radius}$ |



- B16.** Draw a Flowchart. Write an Algorithm and Program to enter the temperature in degree & convert it into Fahrenheit and vice versa.
- $$\text{Celsius} = (F - 32) \times (5 / 9)$$
- $$\text{Fahrenheit} = (C + 32) \times (9 / 5)$$

- B17.** Draw a Flowchart. Write an Algorithm and Program to calculate the average of five numbers using focus event.

- B18.** Draw a Flowchart. Write an Algorithm and Program to input text from the user & change it to Upper case and Lower case using option buttons.

- B19.** Draw a Flowchart. Write an Algorithm and Program to generate an Electricity Bill. Input customer number, customer name, current reading, last reading and area from the user. Are should be any one from the following -

- I. Household                      II. Industrial                      III. Non Household  
IV. Urban                          V. Rural                              VI. Agriculture  
VII. Poultry Farm

|                                                                                                                     |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Rates for Household :<br>1 to 30 - Rs.1<br>31 to 100 - Rs. 2.55<br>101 to 300 - Rs.2.95<br>301 and above - Rs. 4.55 | Rates for Industrial :<br>1 to 1000 - Rs.2.40<br>1001 to 15000 - Rs. 3<br>15001 and above - Rs. 3.40 |
| Rates for Non Household :<br>1 to 100 - Rs.2.50<br>201 and above - Rs. 5                                            | Rates for Urban :<br>For all - Rs. 2.25                                                              |
| Rates for Rural :<br>For all - Rs. 1.40                                                                             | Rates for Agriculture :<br>For all - Rs. 1.90                                                        |

- B20.** Draw a Flowchart. Write an Algorithm and Program to input ASCII values from the user & classify them into Small letters, Capital letters, Numeric value & special characters.

- B21.** Draw a Flowchart; write an Algorithm and Program to generate a Telephone Bill. Input customer number, customer name, telephone number, current reading, last reading, the month of billing and area as Urban OR Rural from the user. Calculate the bill as follows -

- Call rates for Urban area :-  
Free Calls - 150  
151 to 400 - 0.80 Rs.  
401 to 1000 - Rs. 1  
1001 and above - Rs. 1.20  
Call rates for Rural area:-  
Free Calls - 250  
251 to 450 - 0.60 Rs.  
451 to 500 - Rs. 0.80  
501 to 1000 - Rs. 1  
1001 and above - Rs. 1.20

- B22.** Draw a Flowchart. write an Algorithm and Program to sort a Numeric Array using Linear Sort method.

- B23.** Draw a Flowchart. Write an Algorithm and Program to sort a String Array using Bubble Sort.

## Paper - IV: Database Management System (3T4)

### UNIT – I

**Introduction:** Concept of the System, Types of Decisions, Information System, Classification of information System, Conventional File Processing System, Database System, Components of Database Management System, Economic Justification of Database Approach. **Database Concepts:** Introduction, Data, Information, Metadata, Terminologies of Files, Association between Fields, Association between Files (Record Types), File Organization. **Data Structure:** Introduction, Location Methods, Types of Pointer, Inter record Data Structure.

### UNIT – II

**Data Models:** Introduction, Classification of Data Model, Entity Relationship Model. **Database Design:** Introduction, Steps of Database Design, Normalization, Case Problem, Data Volume and Usage Analysis, Integrated Case Study-Database Design for Academic institution. **Implementation Design:** Introduction, Implementation Design, Guidelines for mapping Conceptual data model into a desired logical Data Model, Problem Design Guidelines.

### UNIT – III

**Structured Query Language - I:** Table fundamentals, viewing data in the tables, Eliminating duplicate rows when using a select statements, sorting data in a table, creating a table from a table, inserting data into a table from another table, delete operations, updating the contents of a table, modifying the structure of tables, renaming tables, truncating tables, destroying tables, creating synonyms.

### UNIT-IV

**Structured Query Language - II:** Data Constraints, Types of data constraints, defining different constraints on a table, computations done on table data, ORACLE functions, Date conversion functions, Data functions, Miscellaneous functions, Grouping data from tables in SQL, Subqueries, Joins, concatenating data from table columns, using the UNIONS, INTERSECT and MINUS clause.

### Text Books

1. R. Panneerselvam, Database Management Systems, PHI Publication.
2. Ivan Bayross, SQL, PL/SQL, BPB Publications.

### Reference Books

1. Silberschatz, Korth, Sudarshan, Database System concepts, McGraw-Hill.
2. Gupta, Database Management Systems, McGraw-Hill.
3. Alexis Leon, Mathews Leon, Database Management System, Leaoon Vikas.
4. Mike Mcgrath, SQL in Easy Steps, McGraw-Hill.
5. Dr. P. S. Deshpande, SQL & PL/SQL for Oracle 11g, Dreamtech Press.

### Practical List of Database Management System

1. Write a SQL Query to create a table "employee":

| Field Name   | Datatype | Size |
|--------------|----------|------|
| Emp_no       | varchar2 | 5    |
| Emp_name     | varchar2 | 25   |
| Address      | varchar2 | 50   |
| Phone_number | number   | 10   |
| Designation  | varchar2 | 15   |
| Salary       | number   | 15   |

1. Display the structure of table.
2. Add qualification field at the end of employee table.
3. Modify the size of the name field 25 to 30.

4. Display the employee name whose salary is greater than 20,000.
5. Display the employee details whose name starts with "A".

2. Write a SQL Query to create a table "student":

| Field Name | Datatype | Size    | Constraint |
|------------|----------|---------|------------|
| Roll       | number   | 5       |            |
| Name       | varchar2 | 30      |            |
| Address    | varchar2 | 30      |            |
| City       | varchar2 | 30      |            |
| DOB        | date     |         |            |
| Phone      | number   | 11      |            |
| Class      | varchar2 | 10      |            |
| Marks      | number   | (10, 2) |            |

1. Display the structure of database and insert 10 records.
2. Display student information for all student in city Pune and Nagpur.
3. Display student information where marks greater than 80 and less than 90.
4. Display student name where first two character of student name 'An'.
5. Change student name to Ashish where student roll number A001.

3. Write a SQL Query to create a table "sales\_details":

| Field Name | Datatype | Size |
|------------|----------|------|
| S_id       | varchar2 | 8    |
| P_id       | varchar2 | 8    |
| P_name     | varchar2 | 15   |
| Price      | number   | 10   |
| Qty        | number   | 8    |

1. Drop foreign key constraint on column p\_no in table sales\_details.
2. Add foreign key constraint on column sale\_no in table sales\_details.
3. Modify the column qty to include not null constraint.
4. Insert 10 records in sale\_details.
5. Display p\_id and total of quantity qty for each product.
6. Display p\_id and total of price for all the products.

4. Write a SQL Query to create a table "customer":

| FieldName | Datatype | Size |
|-----------|----------|------|
| Cust_no   | varchar2 | 10   |
| Cust_name | usertype |      |
| Address   | varchar2 | 10   |
| Salary    | number   | 10   |

1. Modify address field with not null.
2. Add city field as it must keep city name Mumbai, Delhi and Kolkata.
3. Add salary field where salary greater than 20,000.
4. Display the structure of table customer.
5. Insert 10 records into the table customer.
6. Display all the customer details who lives in Mumbai and Kolkata.
7. Display all the customer records whose salary>20,000 and salary<30,000.
8. Modify the address field where customer number is 'C001'.

5. Write a SQL query to create c\_master with fieldsc\_no, name, address, city, state and pin\_code:

| Field Name | Datatype | Size |
|------------|----------|------|
| C_no       | varchar2 | 10   |
| Name       | varchar2 | 10   |
| Address    | varchar2 | 10   |
| State      | varchar2 | 20   |
| City       | varchar2 | 20   |
| Pin_code   | number   | 10   |

1. Create sequence which will generate number from 1..999 in ascending order, with an interval of 1 and in cyclic order.
  2. Insert 10 records.
  3. Create index on c\_master which column name c\_no and state.
  4. Create view on c\_master .
  5. Select columns c\_no, city which belongs to Nagpur and Mumbai.
6. Write a SQL query to create a syntax seq\_order which generating numbers from 1...9999 in ascending will number with an interval of 1 in cyclic order.
- | Field Name | Datatype | Size |
|------------|----------|------|
| P_no       | varchar2 | 10   |
| P_name     | varchar2 | 20   |
| Qty        | varchar2 | 10   |
| P_rate     | varchar2 | 10   |
1. Display next value of sequence seq\_order.
  2. Display current value of sequence seq\_order.
  3. Insert values in sal\_order table must be generated using sal\_order sequence.
  4. Display all records of sal\_order table.
  5. Change a cache memory of 50 seq\_order sequence having interval 2.
  6. Drop sequence.
7. Write a SQL Query to-
1. Create an index employee\_index depends on employee table using field name.
  2. Create a view depends on employee table.
  3. Display the records from the view where city as Delhi and Mumbai.
  4. Update the view where employee id is 'E006'.
8. Write a SQL query to illustrate numeric function.
- |         |         |          |             |           |
|---------|---------|----------|-------------|-----------|
| 1. Sqrt | 2. Ceil | 3. Power | 4. Floor    | 5. Round  |
| 6. Mod  | 7. Abs  | 8. Exp   | 9. Greatest | 10. Least |
9. Write a SQL query to create table space data user or data where size of file 100MB extend it by 10MB reach upto 250MB in size. Create user data1 with default tablespace and temporary tablespace. Create role acc\_create with create session, create user, alter user and assign role to user. Assign profile to user where user should fail after 5 attempt and valid for 3 days. Destroy user data1 and tablespace from system.
10. Write a SQL query for join, inner join, outer join, self join and Cartesian join.

# BCCA Part – II

## Semester – IV

### Paper - I: Mathematics (4T1)

#### UNIT – I

**Introduction Scope, Data Collection and Classification:** Meaning of Statistics, Variable and Attribute, Primary Data and Secondary Data, Population (or Universe) and Sample, Complete Enumeration (or Census) and Sample Survey, Statistical Enquiry, Useful Terms Classification, Tabulation, Mechanical Tabulation. **Permutation:** Introduction, Fundamental Rules of Counting, Result on Permutation Examples. **Combination:** Introduction, Result of Combination. **Set Theory :** Method of Set Representation and Notation, Types of Sets, Venn Diagram, Set Operations, Union (Set Addition), Intersection (Set Multiplication), Complement, Difference, Examples on Set Operations, Laws of Algebra of Sets, Duality, Verification of Laws (Using Venn Diagram), Proof of the Laws of Set Algebra, Number of Elements in a set

#### UNIT – II

**Logarithm: Introduction,** Definition of Logarithm, Laws of Logarithm, Common Logarithm and Natural Logarithm, Antilogarithm. **Compound Interest:** Interest Compounded Continuously, Amount at the Changing rates of Interest, Nominal and Effective rate of Interest, Growth and Depreciation. **Other Useful Mathematics Devices: Rounding** of Numbers, Absolute, Relative and Percentage Errors, Significant Figures, Some Short Processes of Calculation, Roots and Reciprocals Expressed as Power, A.P. Series and G.P. Series, Sum and Sum of the Squares of Numbers, Inequalities, Concept of Function, Polynomial, Sigma ( $\Sigma$ ) Notation, Simple Interpolation

#### UNIT –III

**Charts and Diagrams: Objects** of Diagrammatic Representation, Types of Charts and Diagrams. **Frequency Distribution :** Observation, Frequency, Simple Series (or Ungrouped Data) and Frequency Distribution, Useful Terms Associated with Grouped Frequency Distributions, Construction of frequency Distribution, Cumulative Frequency Distribution, Relative Frequency Distribution, Diagrammatic Representation of Frequency Distributions, Frequency Curve. **Measures of Central Tendency :** Average or Measure of Central Tendency, Arithmetic Mean (A.M.), Important Properties of A.M., Simplified Calculation for A.M., Mean of Composite Group, Geometric Mean (G.M.), Properties of G.M., Harmonic Mean (H.M.), Advantages and Disadvantages of A.M., G.M., H.M., Relations between A.M., G.M., H.M., Median, Calculation of Median, Advantage and Disadvantage of Median, Mode, Calculation of Mode, Advantages and Disadvantages of Mode, Relation between Mean, Median, Mode, Partition Values - Quartiles, Deciles, Percentiles, Calculation of Partition Values. **Measures of Dispersion :** Meaning and Necessity of 'Measures of Dispersion, Range, Quartile Deviation (Or Semi – Interquartile Range), Mean Deviation (Or Mean Absolute Deviation), Standard Deviation (S.D.), Important Properties of S.D., Calculation of Standard Deviation ( $\sigma$ ), S.D. of Composite Group, Relation between S.D. and Other Measures, Relative Measure of Dispersion.

#### UNIT- IV

**Moments, Skewness and Kurtosis :** Moments, Relation between central and Non-Central moments, Beta coefficients and Gamma-coefficients, Standardized Variable, Moments of Frequency Distributions, Skewness, Kurtosis. **Curve Fitting :** Curve Fitting, Straight Line and Parabola, Free- hand Method of Curve Fitting, Method of Least squares, Fitting Straight line, Simplified Calculations, Fitting Parabola, Fitting Exponential and Geometric Curves. **Correlation and Regression :** Concepts of 'correlation' and 'Regression', Bivariate Data, Bivariate , Frequency Distribution, Scatter Diagram, Correlation, Covariance, Correlation Coefficient ( $r$ ), Properties of Correlation coefficient,

Calculation of  $r$ , Interpretation and use of  $r$ , Variance of the Sum (Difference) of Two Series, Regression, Properties of Linear Regression, Explained Variation and Unexplained Variation, Regression Curve in Bivariate Frequency Distribution, Rank Correlation. **Time Series** : Meaning and Necessity of 'Time Series Analysis', Components of Time Series, Adjustments to Time Series Data, Secular Trend, Measurement of Trend, Monthly Trend from Annual Data, Seasonal Variation, Measurement of Seasonal Variation, Cyclical Fluctuation, Business Forecasting, Exponential Smoothing. **Probability Theory** : Introduction, Random Experiment, Outcome, Event, Important Terminology, Techniques of Counting, Classical (or 'a Priori') Definition of Probability, Theorems of Probability, Draw without Replacement, Repeated Trials-Drawing with Replacement, Bayes' Theorem Other Approaches to Probability Theory, Set and Probability, Finite Probability Space and Assignment of Probabilities, Finite Equiprobable Sample Space and Classical Definition, Conditional Probability, Independent Events.

### Text Book

1. N G Das, J K Das, Business Management and Statistics, McGraw-Hill.

### Reference Books

1. Mrintunjay Kumar, Business Mathematics, Vikas Publishing House Pvt. Ltd.
2. Ajay Goel, Alka Goel, Mathematics & Statistics, Taxmann.
3. Walter Rudin, Principles of mathematical Analysis, McGraw-Hill.
4. Dr. S. R. Arora, Dr. Kavita Gupta, Business Mathematics and Statistics, Taxmann.

## Paper - II: Business Law (4T2)

### UNIT- I

#### THE INDIAN CONTRACT ACT, 1872

Meaning Of Essentials Of Contract, Offer And Acceptance, Capacity Of Parties, Considerations, Free Consent, Legality Of Object And Consideration, And Agreements Opposed To Public Policy, Void Agreement And Contingent Contracts, Performance Of A Contract, Discharge Of A Contract, Remedies For Breach Of Contract, Quasi-Contracts, Indemnity And Guarantee, Bailment And Pledge, Contract Of Agency.

### UNIT- II

**THE SALE OF GOODS ACT, 1930:-** The Sale Of Goods Act, 1930, Contract Of Sale, 'Sale' And 'Agreement To Sell' Distinguished, Meaning & Types Of Goods, Sale/Agreement To Sell, Price. **Condition And Warranties**-Meaning, Condition & Warranty Distinguished, Express And Implied Conditions And Warranties, Doctrine Of Caveat Emptor. **Transfer Of Property**- Meaning, Rules Regarding To The Transfer Of Property, Transfer Of Property In Specific Or Ascertained Goods, Transfer Of Property In Unascertained Goods And Future Goods, Rules Relating To Transfer Of Property Of Goods Sent 'On Approval' Or 'On Sale Or Return', Delivery. **Rights Of Unpaid Seller** - Meaning, Right Of Lien, Right Of Stoppage Of Goods In Transit, Lien And Stoppage In Transit Distinguished, , Effect Of Sub-Sale Or Pledge By Buyer Upon The "Two Rights Of The Unpaid Seller", Right Of Resale, Rights Of Seller And Buyers, Right Of Unpaid Sellers Against Buyer Personality, Auction Sale.

**THE INFORMATION TECHNOLOGY ACT, 2000 :-** Meaning, objectives, scheme, scope, provision relating to electronic signature, provision relating to electronic governance, acknowledgement and dispatch of electronic records, secure electronic records and secure electronic signature, regulation of certifying authorities, electronic signature certificates, duties of subscribers, penalties, compensation and adjudication,

the cyber appellate tribunal, offences, constitution of advisory committee, power of controller to make regulations.

### **UNIT- III**

**THE INDIAN PARTNERSHIP ACT, 1932:** Meaning & Essentials Of Partnership, Co-Ownership, Partnership Deed, Registration Of Firm, Types Of Partnership On The Basis Of Duration, Types Of Partners, Position Of Minor As A Partner, Mutual Rights And Duties, Relation Of Partners With Third Parties, Implied Authority Of Partners, Reconstitution Of Firms, Dissolution Of Firm, Settlement Of Accounts, Public Notice.

**THE LIMITED LIABILITY PARTNERSHIP ACT, 2008 (LLP):**-Meaning & Features Of LLP, Comparison Between Existing Partnership & LLP, Comparison Between Company & LLP, Minimum No. Of Partners, Designated Partners, Incorporation Document, Incorporation By Registration, Effects Of Registration, Registered Office Of LLP & Change Therein, Name Of LLP and change therein, partners of LLP and change therein, cessation of partnership interest, partner as agent of LLP And Not Of Other Partners, Extent Of Liability Of LLP, Extent Of Liability Of Partner, Unlimited Liability In Case Of Fraud, Whistle Blowing, Contribution. **Account, Audit And Taxation :-** Maintenance Of Books Of Account, Other Records And Audit, Etc, Annual Return, Partners Transferable Interest, **Taxation of LLP**, Conversion From Firm Into LLP, Conversion From Private Co. Into LLP, Conversion From Unlisted Public Co. Into LLP, Winding Up Of LLP, compulsory winding up, commencement of winding up by tribunal, voluntary winding up of a LLP.

### **UNIT- IV**

**The Negotiable Instruments Act, 1881 (Part-I) :-**Negotiable instrument, promissory note, bill of exchange, acceptance, distinction between bill of exchange & promissory note, cheque, distinction between a cheque and bill of exchange, crossing, bouncing or dishonor cheque, holder & holder in due course, distinction between holder & holder in due course, negotiation and assignment, distinction between negotiation and assignment, endorsement, material alteration.

**The Negotiable Instruments Act, 1881 (Part-II):-** liabilities of various parties, proportionate in case of partial failure of consideration, presentment for acceptance, presentment for payment, acceptance for honor, payment for honor, dishonor of bill, notice of dishonor, rights of holder in case of instrument acquired after dishonor or after maturity, noting and protesting, drawee in case of need, discharge of an instrument, discharge of a parity, distinction between discharge of an instrument & discharge of a parity, hundi, types of hundies.

### **Text Book**

1. P C Tulsian, Bharat Tulsian, Business law, McGraw-Hill.

### **Reference Books**

1. M. C. Kuchhal, VivekKuchhal, Business laws, Vikas Publishing House Pvt. Ltd.
2. SushmaArora, Business Laws, Taxmann.
3. AkhileshwarPathak, Legal Aspects of Business, McGraw-Hill.
4. C. L. Bansal, Business Laws, Taxmann.
5. Chandra Kumar Roy, Pravhat Kumar Roy, Business Laws, Vikas Publishing House Pvt. Ltd.
6. Satish B Mathur, Business Law, McGraw-Hill.
7. Dr. K. V. Achalapati, RamannaMurthi, Business Laws, Taxmann

## Paper - III: Core Java (4T3)

### UNIT- I

**Getting Started** - The HelloWorld Applet, What is Java?, Why Learn Java, Installing and Setting Up the Java SDK, Writing Your First Application, Learning Java Syntax Basics, Writing Your First Applet! **Variables, Data Types, and Simple I/O** – The Project: the Name Game Application, Variables and Data Types, Working with Numbers, Getting Simple User Input, Strings and String Operations, Getting Back to the Name Game. **The Fortune Teller**: Random Numbers, Conditionals, and Arrays – The Project: the Fortune Teller, Generating Random Numbers, Controlling the Random Numbers Range, The If Statement, The if-else Statement, Using the Switch Statement, Understanding the Arrays, Back to the Fortune Teller.

### UNIT- II

**Using Loops and Exception Handling** – The Project: The Number Guesser, Counting Forward with Loops, Skipping Values, Counting Backwards, Nested For Loops, Looping on Arrays, Using the while loop, Exception Handling, Back to the Numbers Guesser Program. **Blackjack: Object-Oriented Programming** – The Project: The BlackJack Application, Understanding Object-Oriented Concept, Examining Member Variables, Defining and Using Methods, Understanding Access Modifiers, The Card and CardDeck Class, Extending a Class, Back to the BlackJack Game. **Creating a GUI Using the Abstract Windowing Toolkit** – The Project: MadLib Program, The java.awt Package, Using Frames, Using Components, Back to the MadLib Game Application.

### UNIT- III

**Advance GUI: Layout Managers and Events Handling** – The Project: the AdvancedMadLib Application, Using Layout Managers, Handling AWT Events, Getting Back to the AdvancedMadLib Application. **Writing Applets** – The Project: QuizShow Applet, Understanding Applets, Including an Applet in a Web Page, Learning Applet Methods: init(), start(), stop(), and destroy(), Printing Status Messages, Writing Java Programs that Can Run as Applets or Applications, Using Sounds and Images, Back to the QuizShowApplet Applet.

### UNIT- IV

**The Graphics Class: Drawing Shapes, Images, and Text** – The Project: Memory Game, The Graphics Class, Fonts and FontMetrics, Drawing Images, Using the Color Class, Getting Back to the Memory Game. **Custom Events Handling and File I/O** – The Project: The Block Game, Building the Block Class, Creating the BlockGrid Class, Building the PlayArea Event Model, Creating the PlayArea Class, Creating the ScoreInfoPanel Class, Creating the Block Game Application. **Creating Your Own Components and Packages** – The Project: MinePatrol, Creating Lightweight Components, Preparing to create the jpr.lightweight Package, Building the MineCell Classes, Creating the Mine Field Classes, Creating the MinePatrol Application.

### Text Book

1. Java Programming for the absolute beginner, PHI, Joseph P. Russel (Text book).

### Reference Books

1. E. Balagurusamy, Programming with Java – A Premier, McGraw-Hill.
2. Mike Mcgrath, Java in Easy Steps, McGraw-Hill.
3. RashmiKanta Das, Core Java for Beginners, Vikas Publishing.
4. Schildt, The Complete Reference Java 2, McGraw-Hill.
5. Dr. R. NageswaraRao, Core Java – An Integrated Approach, Dreamtech Press.
6. Joel Murach, Murach's Java Programming, Shroff Publishers.



## Practical List of Core Java

- A1.** Write an algorithm, draw a flowchart and develop a Java program to accept a number from the user and print its factorial.
- A2.** Write an algorithm, draw a flowchart and develop a Java program to accept three numbers from the user and print the largest number.
- A3.** Write an algorithm, draw a flowchart and develop a Java program to print first 10 prime numbers.
- A4.** Write an algorithm, draw a flowchart and develop a Java program to print the following designs
- |      |         |       |         |
|------|---------|-------|---------|
| *    | 1       | 1     | 1       |
| **   | 1 2     | 2 2   | 2 2     |
| ***  | 1 2 3   | 3 3 3 | 3 3 3   |
| **** | 1 2 3 4 | 2 2   | 4 4 4 4 |
- A5.** Write an algorithm, draw a flowchart and develop a Java program to accept any 10 numbers from the user to store it in an Array and print the largest of all.
- A6.** Write an algorithm, draw a flowchart and develop a Java program to multiply two matrices by accepting matrix elements from the user.
- A7.** Write an algorithm, draw a flowchart and develop a Java program to accept 10 names from the user to store them in array of string and print them in Alphabetical order.
- A8.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate multilevel inheritance.
- A9.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate object references.
- A10.** Write an algorithm, draw a flowchart and develop a Java program to accept any digit number from the user and print its reverse.
- A11.** Write an algorithm, draw a flowchart and develop a Java program to find area of rectangle, square, cylinder using the concept of method overloading.
- A12.** Write an algorithm, draw a flowchart and develop a Java program to accept a number from the user and search that number in array of numbers.
- A13.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate method overriding and method overloading.
- A14.** Write an algorithm, draw a flowchart and develop a Java program to define a package P1 with class A having method show1() and show2(). Write another class B in package P2 to access elements of class A in it.
- A15.** Write an algorithm, draw a flowchart and develop a Java program to declare abstract class student having methods getName(), showName() and define these methods in another class B and access them.
- A16.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate
- public variables and methods

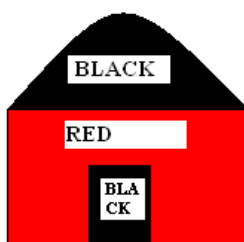
- ii. private variables and methods
- iii. Final class and Methods
- iv. Default Variables
- v. Protected Variables and Methods

**A17.** Write an algorithm, draw a flowchart and develop a Java program to display the following using Applet

**A**  
**A P**  
**A P P**  
**A P P L**  
**A P P L E**  
**A P P L E T**

**A18.** Write an algorithm, draw a flowchart and develop a Java program to design user login screen using Applet and provide the facility of valid user login.

**A19.** Write an algorithm, draw a flowchart and develop a Java program to draw following using graphics class methods in a frame.



**A20.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate multithreading using moving balls example in a frame.

**A21.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate multithreading using moving strings example in a frame.

**A22.** Write an algorithm, draw a flowchart and develop a Java program to change color of applet window with following condition

- a. Green Color should be for exact 3 sec
- b. Red color should be for exact 1 sec

**A23.** Write an algorithm, draw a flowchart and develop a Java program to accept two numbers from user and perform their division. Define an array with size 10, accept index number from the user and store the value at that index of the array. The exception if occurred for division should be handled in inner try block and exception for array storage should be handled at outer try block.

**A24.** Write an algorithm, draw a flowchart and develop a Java program to define an user defined exception `sal_out_of_range` and write a class named `employee` with fields `id`, `name`, `sal`, `phno` and accept details of user according to `id` and store in the variables, if `sal` exceeds 10000, `sal_out_of_range` should be thrown and handled properly.

**A25.** Write an algorithm, draw a flowchart and develop a Java program to design a registration form for new user creation. It should include fields such as `First_Name`, `Last_Name`, `User_Name`, `Password`, `Confirm_Password` and `Email`. After user enters complete data and clicks on `Ok` button, a dialog box should display message of successful user creation else user creation failed message should be displayed. A validation for password and confirm password should be performed in this practical.

- A26.** Write an algorithm, draw a flowchart and develop a Java program to handle all mouse events using an example of cursor movement on a frame.
- A27.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate card layout manager.
- A28.** Write an algorithm, draw a flowchart and develop a Java program to add a text field, a choice control and a label on a frame. User should enter some text in the text field then after hitting the enter key, entered texts should be added to choice control and label should display the number of items present in the choice control.
- A29.** Write an algorithm, draw a flowchart and develop a Java program to design a menu called Text with MenuItems like Set Fore Color, Set Back Color, Set Font to the text in the TextField on the Frame.
- A30.** Create a class named EmpAccDetails, add a method getEmpAccDetails to accept Account Details of Employee such as Income tax paid, grosssal, basic sal, HRA allowance. Add this class to a package EMP. Create another class called EmpDetails with method getEmpPerDetails, also access getEmpAccDetails in the same class by importing the EMP Package.
- A31.** Write an algorithm, draw a flowchart and develop a Java program to create three child Threads, all threads should print numbers from 1 to 10 but condition is that Thread 1 whenever starts printing the number should print all numbers completely without any break and then Thread 2 and 3 should print values as per the priority set by the system.
- A32.** Write an algorithm, draw a flowchart and develop a Java program to accept 10 numbers from the user, store it in an Array and print them in Ascending order, also print largest and smallest number of the array.
- A33.** Write an algorithm, draw a flowchart and develop a Java program to demonstrate Parameterized Applet by loading images to the Applet Window using specific name from the Parameter.

## Paper - IV: PHP & MySQL (4T4)

### UNIT- I

**Getting Started With PHP-** Basic HTML Syntax, Basic PHP Syntax, Using FTP, Testing Your Scripts, Sending Text To The Browser, Using The PHP Manual, Sending HTML To The Browser, Adding Comment To The Script, Basic Debugging Steps. **Variables-** What Are Variables?, Variable Syntax, Types Of Variables, Variable Values, Understanding Quotation Marks. **HTML Forms And PHP-** Creating A Simple Forms, Choosing A Form Data In PHP, Displaying Errors, Error Reporting, Manually Sending Data To A Page. **Using Numbers-** Creating The Forms, Performing Arithmetic, Formatting Numbers, Understanding Precedence, Incrementing And Decrementing A Number, Creating Random Numbers.

### UNIT- II

**Using Strings-** Creating The HTML Forms, Concatenating Strings, Handling Newlines, HTML And PHP, Encoding And Decoding Strings, Finding Substrings, Replacing Parts Of A String. **Control Structures-** Creating The HTML Forms, The if Conditional, Validation Functions, Using Else, More Operators, Using elseif, The Switch Conditional, The For Loop. **Using Arrays-** What Is An Array, Creating An Array, Adding Items To An Array, Accessing An Array From A Form.

### UNIT- III

**Creating Web Applications-** Creating Templates, Using External Files, Using Constants, Working With The Date And Time, Handling HTML Forms With PHP, Making Forms Sticky, Sending Email, Output Buffering, Manipulating HTTP Headers. **Cookies And Sessions-** What Are Cookies?, Creating Cookies, Reading From Cookies, Adding Parameters To Cookies, Deleting A Cookie, What Are Sessions?, Creating Session, Accessing Session Variables, Deleting Session. **Creating Functions-** Creating And Using Simple Functions, Creating And Calling Functions That Take Arguments, Setting Default Arguments Values, Creating And Using Functions That Return A Value, Understanding Variable Scope.

### UNIT- IV

**Files And Directories-** File Permissions, Writing To Files, Locking To Files, Reading From Files, Handling File Uploads, Navigating Directories, Creating Directories, Reading Files Incrementally. **Intro To Database-** Introduction To SQL, Connecting To MYSQL, MYSQL Error Handling, Creating And Selecting A Database, Creating A Database, Inserting Data Into A Database, Securing Query Data, Retrieving Data From A Database, Deleting Data In A Database, Updating Data In A Database. **Putting It All Together-** Getting Started, Connecting To The Database, Writing The User-Defined Function, Creating The Template, Logging In, Logging Out, Adding Quotes, Listing Quotes, Editing Quotes, Deleting Quotes, Creating The Home Page.

### Text Book

1. Larry Ullman, PHP for Web, Pearson.

### Reference Books

1. Holznr, The Complete Reference – PHP, McGraw-Hill.
2. Mike Mcgrath, PHP & MySQL in Easy Steps, McGraw-Hill.
3. Steve Suehring, Tim Converse & Joyce Park, PHP and MySQL, Wiely.
4. Joel Murach& Ray Harris, murach's PHP and MySQL, Shroff Publishers.
5. Jason Gilmore, Beginning PHP and MySQL.

## Practical List of PHP & My-SQL

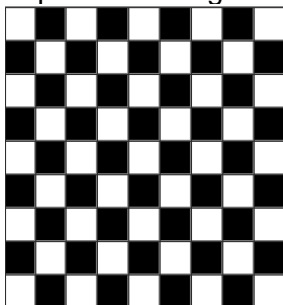
1. Write an algorithm, draw a flowchart and Write a PHP script to print the value of variable in PHP and use print function for printing.
2. Write an algorithm, draw a flowchart and Write a PHP script to print the values of variable using echo.
3. Write an algorithm, draw a flowchart and Write a PHP script to print the following pattern using nested loop.

```
*
* *
* * *
* * * *
* * * * *
```

4. Write an algorithm, draw a flowchart and Write a PHP script to that creates the following table using for loops. Add cell padding="3px" and cell spacing="0px" to the table tag.

|           |            |            |            |            |
|-----------|------------|------------|------------|------------|
| 1 * 1 = 1 | 1 * 2 = 2  | 1 * 3 = 3  | 1 * 4 = 4  | 1 * 5 = 5  |
| 2 * 1 = 2 | 2 * 2 = 4  | 2 * 3 = 6  | 2 * 4 = 8  | 2 * 5 = 10 |
| 3 * 1 = 3 | 3 * 2 = 6  | 3 * 3 = 9  | 3 * 4 = 12 | 3 * 5 = 15 |
| 4 * 1 = 4 | 4 * 2 = 8  | 4 * 3 = 12 | 4 * 4 = 16 | 4 * 5 = 20 |
| 5 * 1 = 5 | 5 * 2 = 10 | 5 * 3 = 15 | 5 * 4 = 20 | 5 * 5 = 25 |
| 6 * 1 = 6 | 6 * 2 = 12 | 6 * 3 = 18 | 6 * 4 = 24 | 6 * 5 = 30 |

5. Write an algorithm, draw a flowchart and Write a PHP script using nested for loop that creates a chess board as shown below. Use table width="270px" and take 30px as cell height and width.



6. Write an algorithm, draw a flowchart and Write a PHP script to insert a new item in an array on any position.
7. Write an algorithm, draw a flowchart and Write a PHP script to sort an array of positive integers using the Sort function asort() and ksort().
8. Write an algorithm, draw a flowchart and Write a PHP script to for Creating, Retrieving and Deleting data from the cookie using POST Method.
9. Write an algorithm, draw a flowchart and Write a PHP script to convert a date from yyyy-mm-dd to dd-mm-yyyy.  
Sample Date: 2012-09-12  
Expected Result: 12-09-2012
10. Write an algorithm, draw a flowchart and Write a PHP script to remove the whitespaces from a string.
11. Write an algorithm, draw a flowchart and Write a PHP function that checks if a string is all lower case.

12. Write an algorithm, draw a flowchart and Write a PHP script to check whether a entered string is palindrome or not
13. Write an algorithm, draw a flowchart and Write a PHP script to print Fibonacci series using recursion.
14. Write an algorithm, draw a flowchart and Write a PHP script using switch case and dropdown list display a - Hello|| message depending on the language selected in drop down list.
15. Write an algorithm, draw a flowchart and Write a PHP script to replace the first 'the' of the following string with 'That' –
16. Sample: 'the quick brown fox jumps over the lazy dog.'
17. Expected Result: That quick brown fox jumps over the lazy dog.
18. Write an algorithm, draw a flowchart and Write a PHP script to check that emailid is valid or not.
19. Write an algorithm, draw a flowchart and Write a PHP script to create a simple 'birthday countdown' script, the script will count the number of days between current day and birth day.
20. Write a SQL statement to create simple table countries including columns country\_id, country\_name and region\_id.
21. Write a SQL statement to create table countries including columns country\_id, country\_name and region\_id and make sure that the column country\_id will be unique and store an auto incremented value.
22. Write a SQL statement to create a table named countries including columns country\_id, country\_name and region\_id and make sure that no countries except Italy, India and China will be entered in the table.
23. Write a SQL statement to insert a record with your own value into the table countries against each columns region\_id.
24. Write a SQL statement to rename the table countries to country\_new.

# **BCCA Part – III**

## **Semester – V**

### **Paper - I: Computerized Accounting using Tally (5T1)**

#### **UNIT-I**

**Introduction to Tally.ERP 9-** Features of Tally, Enhancement in Tally.ERP 9, Installation Procedure of Tally.ERP 9, Opening Tally.ERP 9, Components of the Tally.ERP 9 Window, Creating a Company.**Stock and Godown in Tally-** Stock Groups, Stock Categories, Stock Items, Units of Measure, Godowns.

#### **UNIT-II**

**Groups, Ledgers, Vouchers and Orders-** Introducing Groups, Introducing Ledgers, Introducing Vouchers, Introducing Purchase Orders, Introducing a Sales Order, Introducing Invoices. **Reports in Tally.ERP 9-** Working with Balance Sheet, Working with Profit & Loss A/c Report, Working with Stock Summary Report, Understanding Ratio Analysis, Working with Trial Balance Report, Working with Day Book Report.

#### **UNIT-III**

**Exploring Payroll in Tally.ERP 9-** Working with Payroll Vouchers, Defining Payroll Reports, Working with Statements of Payroll Report, Describing Salary Disbursement.**Taxation-** Indian Tax Structure, Tax Deducted at Source in Tally.ERP 9, Create a Tax Ledger, TDS Vouchers, Printing a TDS Challan, Tax Collected at Source in Tally.ERP 9, TCS Reports in Tally.ERP 9, Calculating VAT in Tally.ERP 9, VAT Classification, VAT Vouchers, VAT Reports in Tally.ERP 9, Service Tax.

#### **UNIT-IV**

**Important Features of Tally.ERP 9-** Taking Backup in Tally.ERP 9, Restoring Data in Tally. ERP 9, Using E-mail in Tally.ERP 9, Migrating Data from Tally 7.2 to Tally.ERP 9, **Tally.NET in Tally.ERP 9-** Configuring the Tally.NET Feature, Assigning Security Levels, Creating Security Controls, Connecting a Company to the Tally.NET Server, Logging as a Remote User.

#### **Text Book:**

1. DT Editorial Services, Tally.ERP 9 in Simple Steps, Dreamtech Press.

#### **Reference Books:**

1. Computerized Accounting using Tally ERP 9, Sahaj Enterprise, Tally Education Private Ltd (TEPL).
2. Vikas Gupta, Business Accounting with MS Excel and Tally.ERP 9 Course Kit, Dreamtech Press.
3. Vishnu Priya Singh, Tally 9.
4. K. K. Nadhani, Accounting with Tally, BPB Publication.
5. K. K. Nadhani and A.K. Nadhani, Tally Tutorial, BPB Publication.

## Practical List of Computerised Accounting using Tally

### 1. Create a company in Tally.Erp 9 with the following details:

|                               |                                                 |
|-------------------------------|-------------------------------------------------|
| <b>Name of company</b>        | <b>Universal Company Ltd.</b>                   |
| Address                       | 1804, world Tower, AB road, Baner, Pune _411080 |
| Country                       | India                                           |
| State                         | Maharashtra                                     |
| Contact number                | 7894561230                                      |
| Mobile number                 | 7741258963                                      |
| Email-Id                      | info@universalmfg.co.in                         |
| Books beginning from          | 01-04-2015                                      |
| Financial year Beginning from | 01-04-2015                                      |

### 2. Create a company in Tally.Erp 9 with the following details:

|                               |                                                                 |
|-------------------------------|-----------------------------------------------------------------|
| <b>Name of company</b>        | <b>Sambhav trading Company</b>                                  |
| Address                       | a/512, palm court, girgaam chaupaty, charni road, Mumbai-400007 |
| Country                       | India                                                           |
| State                         | Maharashtra                                                     |
| Contact number                | 022-22886512                                                    |
| Mobile number                 | 9898745555                                                      |
| Email-Id                      | enquiry@sambhav.com                                             |
| Books beginning from          | 01-04-2014                                                      |
| Financial year Beginning from | 01-04-2014                                                      |

### 3. Create the following ledgers in the books of universal company ltd.

| <b>Name of ledger</b>    | <b>Under (group)</b> | <b>Bill wise details set to</b> | <b>Opening balance</b> |
|--------------------------|----------------------|---------------------------------|------------------------|
| Share capital            | Capital account      | No                              | 15,00,000              |
| Purchase account         | Purchase account     | No                              | Nil                    |
| Sales accounts           | Sales accounts       | No                              | Nil                    |
| Ultra tech cement ltd    | Sundry creditors     | yes                             | 270000                 |
| Building                 | Fixed assets         | No                              | 1200000                |
| Computers                | Fixed assets         | No                              | 50000                  |
| Office furniture         | Fixed assets         | No                              | 175000                 |
| Cash in hand             | Cash accounts        | No                              | 20000                  |
| Civic centre association | Sundry debtors       | yes                             | 290000                 |
| Bank of india            | Bank accounts        | No                              | 80000                  |
| Petty cash               | Cash in hand         | No                              | 50000                  |



**4. Create the following ledgers in the books of universal company ltd.**

| Name of ledger           | Under (group)    | Bill wise details set to | Opening balance |
|--------------------------|------------------|--------------------------|-----------------|
| Proprietors capital      | Capital account  | No                       | 10,00,000       |
| Purchase account         | Purchase account | No                       | Nil             |
| Sales accounts           | Sales accounts   | No                       | Nil             |
| Hindustan unilever ltd   | Sundry creditors | yes                      | 355000          |
| Land and Building        | Fixed assets     | No                       | 850000          |
| Computers and peripheral | Fixed assets     | No                       | 30000           |
| Office furniture         | Fixed assets     | No                       | 75000           |
| Cash in hand             | Cash accounts    | No                       | 18000           |
| Tahuraa Traders Pvt. Ltd | Sundry debtors   | yes                      | 310000          |
| Bank of Baroda           | Bank accounts    | No                       | 102000          |

**5. Record the following vouchers in the books of Universal company ltd.**

- 04-04-2014 withdrawn Rs. 20000 from bank of india and transferred to petty cash book.
- 08-04-2014 paid 2000 from petty cash for buying stationery for office.
- 15-04-2014 made purchase from ultra tech cement ltd. Worth Rs. 45000
- 19-04-2014 issued cheque to ultra tech cement ltd for Rs. 45000
- 21-04-2014 sold goods worth of Rs. 75000 to civic centre association
- 25-04-2014 received a cheque from civic center association for Rs. 75000. The same was deposited in the bank on the same date.
- 30-04-2014 paid staff salary of Rs. 9800 from petty cash

**6. Record the following vouchers in the books of Sambhav Trading Co. Pvt. Ltd.**

- 02-04-2014 withdrawn RS. 10000 From bank of broadband transferred to petty cash book.
- 05-04-2014 paid 1000 from petty cash for office expenses.
- 11-04-2014 made purchase from Hindustan unilever ltd. Worth Rs. 33000
- 13-04-2014 Issued cheque to Hindustan Unilever Ltd. For Rs. 20000
- 14-04-2014 Made purchase from Hindustan Unilever Ltd. Worth Rs. 26000
- 18-04-2014 Issued cheque of Rs. 38000 to Hindustan Unilever Ltd.
- 21-04-2014 sold goods worth of Rs. 90000 to Tahuraa Traders Pvt Ltd.
- 22-04-2014 received a cheque from Tahuraa Traders Pvt Ltd. For Rs. 75000 . The same was deposited in the bank on the same date.
- 23-04-2014 sold goods worth of rs. 85000 to Tahuraa Traders Pvt Ltd.
- 25-04-2014 received cheque from Tahuraa Traders Pvt Ltd. From Rs.75000. The same was deposited in the bank on the same date.
- 30-04-2014 Paid staff salary of Rs. 7200 from petty cash.

**7. Journalize the following transaction in the books of Sanjay Poddar for the month of March 2012.**

| March 2012 | Particular                                | Amt   |
|------------|-------------------------------------------|-------|
| 1          | Sanjay commenced business with cash       | 40000 |
| 2          | Bought goods for cash                     | 25000 |
| 5          | Deposit in Bank                           | 50000 |
| 7          | Bought goods in credit from Anand         | 15000 |
| 10         | Sold goods to Prakash                     | 7000  |
| 12         | Purchase Machinery Payment made by Cheque | 10000 |

8. Journalize the following transaction in the books of Prashant for April 2011 prepare Balance sheet.

| April 2011 | Particular                                                  | Amt      |
|------------|-------------------------------------------------------------|----------|
| 1          | Start business with capital borrowed from his friend Satish | 1,10,000 |
| 3          | Bought Machinery                                            | 40,000   |
| 5          | Sold goods for cash to Satish                               | 25000    |
| 7          | Purchase goods from Somesh                                  | 30000    |
| 9          | Bought goods for cash from Nitin                            | 26000    |
| 11         | Cash sales                                                  | 10000    |
| 15         | sold goods to Manish                                        | 8000     |

9. Journalize the following transaction in the books of Rahul Thakur for the month of March 2012 and prepare profit and loss account.

| March 2012 | Particulars                                    | Amt            |
|------------|------------------------------------------------|----------------|
| 1          | Start Business with Furniture<br>And machinery | 15000<br>40000 |
| 2          | Borrowed from central Bank                     | 45000          |
| 5          | Bought goods                                   | 30000          |
| 8          | Sold goods to Manoj on credit                  | 12000          |
| 10         | Paid Electricity Bill                          | 1500           |
| 13         | Bought Stationary from Vikas                   | 8500           |

10. Journalize the following transaction in the books of Rupesh for the year ended March 2012 and prepare Profit and loss account.

| March 2012 | Particulars                         | Amt   |
|------------|-------------------------------------|-------|
| 1          | Rupesh commenced business with cash | 80000 |
| 2          | Bought goods on credit from Ramesh  | 15000 |
| 6          | Paid into Bank                      | 8000  |
| 8          | Bough from Sanket on credit         | 15000 |
| 10         | Bought goods for cash               | 12000 |
| 12         | Received goods from Sukesh          | 7500  |
| 15         | Goods sold on credit to Chanda      | 9000  |

11. Create cost centers Project A and Project B under primary cost category and record the following transaction in the books of sambhav trading company

- On 07-09-2014, purchased Cement worth Rs. 1, 50,000/- from Ultratech cement Ltd. That will be shared equally between Project A and Project B. A credit period of 30 days was provided.
- Record transaction on 09-09-2014 for the purchase of Steel worth Rs. 4,50,000/- from Embee Enterprises. Allocate Rs. 50,000/- to Project A and the rest to Project B. a credit period of 45 days was allowed.

12. Create cost centers Mumbai and Pune under primary cost category and record the following transaction in the books of Universal co. Limited

- On 05-10-2014, purchases done worth Rs. 2, 50,000/- from Hindustan Unilever Ltd. That will be shared equally between Mumbai and Pune.

- b. Record transaction on 09-10-2014 for the purchase worth Rs. 6,00,000 /- from Hindustan Unilever Ltd. Allocate Rs. 2,50,000/- to Mumbai and the rest to Pune. A credit period of 45 days was allowed.
- c. On 18-10-2014 record a transaction for the sale on Super technologies for Rs. 15,75,000/- of which 1200000 would be allocated to Mumbai branch and the rest to Pune.
- d. On 22-10-2014 one more sales entry was made for Rs. 16,00,000/- to Super technologies of which Rs. 10,00,000/- was allocated to pune branch and the rest to Mumbai.

**13. Record the following transaction in the books of Universal Co. Ltd.**

- a. On May 11/2014 they received a bill no. May /005/2014 for a sum of Rs. 125000/- from M/s. Rajesh shah and Co., architects for consultancy towards designing their office and training centre.
- b. Universal company Ltd. Made the payment after deducting the TDS amount.
- c. On 27<sup>th</sup> May 2014, company received bill no May/015/2014 for a sum of Rs. 75000 from M/s Rajesh shah and co., architects for consultancy.
- d. On 28<sup>th</sup> May, company made the payment after deducting TDS.

**14. Record the following transaction in the books of Raj enterprises.**

1. Goods purchase from "Kirti sales" on credit Bill no. 115 Rs. 62000
  - a. Color tv (lg) 4% 3qty Rs. 30000
  - b. Washing machine (Samsung) 4% 4 qty Rs. 32000
2. Cash received from sangamenter prizes Rs. 15000
3. Goods purchase in cash bill no. 69 Rs. 35000
  - a. B/W tv (Sony) 4% 4 qty Rs. 20000
  - b. Audio (onida) 4% 5 qty Rs. 15000
4. Goods sale on cash rs, 19000
  - a. Color tv (Lg) 4% 1 qty Rs. 15500
  - b. Audio (Onida) 4% 1 qty Rs. 3500
5. Goods purchase in cash from vikram enterprises bill no. 45 Rs. 40000
  - a. Color tv (lg) 4% 2 qty Rs. 20000
  - b. Refrigerator (Videocon) 4% 2qty Rs. 20000
6. Cheque no. received from ravi agency Rs. 10000 and deposited in state bank .
7. Credit sale to vijay enterprises bill no. 93 Rs.17200
  - a. Washing machine (Samsung) 4% 1qty Rs. 8000
  - b. B/W tv (Sony) 4% 1 Qty Rs. 5700
  - c. Audio (Onida) 4% 1 qty Rs. 3500
8. Cash paid to ravi kulkarnirs. 1500
9. Cheque no. 159 paid to central engineering co. Rs 15000
10. Refrigerator purchase on cash Rs. 30000 fom k k agency 3 qty (Videocon) 4%
11. Office rent paid in cash Rs. 1700
12. Received cheque from vijay enterprises Rs. 10000 & deposited in canara bank.
13. Bill received from lokmat Rs. 1500 bill no.5
14. Amount received from vaishali agency in cash rs. 5000 & cheque no. 336791 Rs. 10000 only. Cheque deposited in state bank.
15. Cash sale to Telco ltd. Rs. 29900

- a. Color tv (Lg) 4% 1 qty Rs. 10000
  - b. Washing machine (Samsung) 4% 1 qty Rs. 9100
  - c. Refrigerator (Videocon) 4% 1qty Rs. 10800
16. Cheque deposited in canara bank Rs.5000
17. Cash withdrawn from bank Rs. 34000

**15. Record the following transaction in the books of Maharashtra Traders.**

1. Opening stock for Wadi Godown
  - a. Akai color TV 4% 10 qty Rs.10500 each.
  - b. Refrigerator (Videocon) 7qty 12000 each.
  - c. Washing machine (Samsung) 5 qty 8000 each
  - d. Audio (Philips) 4% 2Qty 2000
  - e. Onida color tv 4% 5 qty 12000 each
  - f. B/W tv (akai) 4% 5 qty 18000
2. Opening stock for nandanwangodown
  - a. Akai color tv 2 qty 10500 each
  - b. refrigerator (Videocon) 3qty 12000 each
  - c. Audio (Philips) 3 qty 1000 each.
3. Cash sale to Bhagwandas Co. Rs. 41500 in wadi godown.
  - a. Color tv (akai) 4% 2 qty Rs.21000.
  - b. Refrigerator (Vedeocon) 4% 1qty Rs. 11300
  - c. Washing Machine (samsung) 4% 1 qty Rs. 9200.
4. Goods purchase in cash from national Trading co. & store Nandanwan godown.
  - a. Audio (Philips) 2qty 4% Rs.6000
  - b. W/M (Samsung) 1qty 4% Rs. 10000
5. Credit sales to Ravina traders Rs. 51800 wadi godown.
  - a. Refrigerator (Videocon) 2qty 4% Rs. 22000.
  - b. W/M (Samsung) 1qty 4% Rs.8300
  - c. Color tv (akai) 2qty 4% 21500
6. Cheque received from vikas enterprises Rs. 20000 & deposited in state bank.
7. Cash withdrawn from state bank cheque no. 16 Rs. 15000/-
8. Received loan from state bank Rs. 10,00,000/- invested in business, interest 10%.
9. Cheque paid to kirti sales rs. 25000/-
10. Goods purchase on credit from rama & sons Rs. 44000 store nandanwan.
  - a. W/M (Lg) 3 qty 4% Rs. 24000
  - b. Refrigerator (Videocon) 1qty 4% Rs. 10000.
  - c. Color tv (onida) 1qty 4% Rs. 10000
11. Akai color Tv purchase in cash Rs. 20000 2qty 4% Rao store in nandanwan.
12. Paid salary Rs. 10000
13. Paid bank loan Rs. 8,00,000
14. Cash sale on wadi godown Rs 42000\
  - a. Audio 2 qty 4% Rs.7000
  - b. w/m (s.s.) 2qty 4% Rs. 17000
  - c. b/w tv (akai) 3qty 4% Rs. 18000
15. Paid to rama & sons by cheque Rs. 18000 chq. No. 1152.
16. Paid electric bill Rs. 10000
17. Total cash sale after allowing discount Rs. 1000.

18. Paid total balance loan on state bank.
19. Advertisement exp. Rs.10000
20. Carriage exp. Rs. 5000
21. Purchase furniture for nandan wangodown Rs.28000 in cash.
22. Withdrawn for personal use Rs, 10000.

**16. Record the following transaction in the books of Rathore Traders.**

1. Goods purchase from sohan & sons Rs. 20000/-
  - a. Gold 10gm (12.5%) Rs. 10000/-
  - b. Silver 1kg (12.5%) Rs.10000/-
2. Goods purchase from sagar computer Rs. 25000/-
  - a. Monitor (Compaq) 1qty 5000/- 4%
  - b. Cpu (Intel) 1qty 15000/- 4%
  - c. Speaker (Logitec) 1qty 5000/- each
3. Goods sold on cash Rs. 22000/-
  - a. Gold (12.5%) 10gm 12000/-
  - b. Silver(12.5%) 1kg 10000/-
4. Withdrawn 400/- Rs. From canara bank.
5. Cash given to sagar computers Rs. 24000/- in full settlement.
6. Cheque given to mr.sohan& sons. Rs 20000.
7. Salary given to mr.sahil Rs. 2000/-
8. Withdrawn Rs. 4000/-
9. Paid insurance premium Rs. 200/-
10. Purchase table without vat Rs.2000/-

## Paper - II: VB.Net (5T2)

### UNIT- I

**Welcome to Visual Basic.NET** – Windows Versus DOS Programming, Installing Visual Basic.NET, The Visual Basic.NET IDE, Creating a Simple Application, Using the Help System. **The Microsoft.NET Framework** – Microsoft's Reliance on Windows, Writing Software for Windows, Common Language Runtime, The Common Type System and Common Language Specification. **Writing Software** – Information and Data, **Variables**, Comments and Whitespaces, Data Types, Sorting Variables, Methods. **Controlling the Flow** – Making Decisions, The if Statement, Select Case, Loops.

### UNIT- II

**Working with Data Structure** – Understanding Array, Understanding Enumerations, Understanding Constants, Structures, Working with Collection and Lists, Building Lookup Tables with Hashtable, Advanced Array Manipulation. **Building Windows Application** – Responding to Events, Building a Simple Application, Creating Complex Applications, Using Multiple Forms. **Displaying Dialog Boxes** – The MessageBox Dialog box, The Open Dialog Control, The Save Dialog Control, The FontDialog Control, The ColorDialog Control, The PrintDialog Control.

### UNIT- III

**Creating Menu** – Understanding Menu Features, Creating Menu, Context Menu. **Debugging and Error Handling** – Major Error Types, Debugging, Error Handling. **Building Objects** – Understanding Objects, Reusability, Our First Object, Constructor, Inheritance, The Framework Classes.

### UNIT- IV

**Accessing Database** – What is Database, SQL Select Statement, Queries in Access, Data Access Components, Data Binding. **Database Programming with SQL Server and ADO.NET** –ADO.NET, The ADO.NET Classes in Action, Data Binding. **Deploying Your Application** – What is Deployment?, Creating a Visual Studio .NET Setup Application, Assemblies as Installers, The Core of Deployment, Deploying Different Solution, Advance Deployment Option.

### Text Book

1. Jonathan, Richard Blair, Beginning VB.NET 2003, WILEY, Thearon Willis.

### Reference Books

1. Thearon Willis, Jonathan Crossland, Richard Blair, Beginning CB.Net 2003, Dreamtech Press, Wiley.
2. Jeffry R. Shapiro, The Complete Reference, Visual Basic .NET, McGraw- Hill.
3. Francesco Balena, Programming Microsoft Visual Basic.net, Microsoft Press.
4. Jeffrey Kent, Visual basic.Net – A Beginner's Guide, McGraw- Hill.

### Practical List of VB. Net

1. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate the reverse of a number.
2. Write an algorithm, draw a flowchart and develop a VB.NET console application to implement the Cos series.
3. Write an algorithm, draw a flowchart and develop a VB.NET console application to find largest and second largest number from the array.
4. Write an algorithm, draw a flowchart and develop a VB.NET console application to create all possible sets from given set {1, 2, 3}.
5. Write an algorithm, draw a flowchart and develop a VB.NET console application to display the following pattern –

```
 *
 * *
 * * *
 * * * *
 * * * * *
```

6. Write an algorithm, draw a flowchart and develop a VB.NET console application to check a number is palindrome or not.
7. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate the binary number from decimal number.
8. Write an algorithm, draw a flowchart and develop a VB.NET console application to check a given number is prime or unprimed.
9. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate the reverse of a string and check the string is palindrome or not.
10. Write an algorithm, draw a flowchart and develop a VB.NET console application to Search an element from characters and as well as from numbers using linear search method.
11. Write an algorithm, draw a flowchart and develop a VB.NET console application to sort a given string in the order of alphabets, digits & symbol.
12. Write an algorithm, draw a flowchart and develop a VB.NET console application to input array element, sorting them using bubble sort method.
13. Write an algorithm, draw a flowchart and develop a VB.NET console application to create jagged array.
14. Write an algorithm, draw a flowchart and develop a VB.NET console application to demonstrate exception handling.
15. Write an algorithm, draw a flowchart and develop a VB.NET windows application to check the user id and password is valid or not.
16. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create a calculator.
17. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create notepad.

18. Write an algorithm, draw a flowchart and develop a VB.NET windows application to demonstrate MDI form.
19. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create a start menu using status bar.
20. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create a menu and perform any operation.
21. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create MDI and arrange all forms as tiles and cascade form.
22. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create popup menu.
23. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create data bound control for retrieving the data from database.
24. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create different dialog box and perform any operation.



## Paper - III: Management Information Systems (5T3)

### UNIT- I

**Management Information Systems: An Overview** - Introduction, Need for Management Information Systems, Management Information Systems: A Concept, MIS: A definition, Management Information System and Information Technology, Nature and Scope of MIS, MIS Characteristics, Structure of MIS, Types of MIS, Role of MIS in Global Business, Challenges of Managing Information Systems. **Information, System and Organization Concepts** - Introduction: A definition, Types of Information, Information Quality, Dimensions of Information, System: A definition, Kinds of Systems, System -related Concepts, Elements of a System, Information System, Organization : A Concept, Impact of Information System on Organization. **Information System and Competitive Advantage** - Introduction, Changing Role of IS, Competitive Advantage, Strategic Information System (SIS).

### UNIT- II

#### **IT Infrastructure and Emerging Technology -**

Introduction , A computer System, Computer Categories, Computer Evolution, IT Infrastructure Components ,Emerging Technology. **Data Resource Management** - Introduction, Database Concepts, Files : The Traditional Approach, The Database Management Approach: The Modern Approach, Database Management System, Data Models, Data Warehousing and Data Mining, Application of DBMS using MS-Access. **Telecommunication and Computer Networks** - Introduction, Telecommunications, Types of Signals, Communication Channels, Characteristics of Communication Channels, Communication Hardware, Communication Networks, Computer Networks in India, Internet.

### UNIT- III

**E-Commerce, e-Business and e-Governance** - Introduction, e-Commerce, e-Commerce Sales Life Cycle, e-Commerce Infrastructure, e-Commerce Applications , e-Commerce Challenges and Opportunities, E-Business, e-Governance. **Enterprise Systems** - Introduction, Enterprise Systems, Enterprise Resource Planning (ERP) System, Customer Relationship Management (CRM) System, Supply Chain Management (SCM) System. **Decision Support Systems** - Introduction, Decision-Making: A Concept, Simon's Model of Decision Making, Types of Decisions, Methods for Decision-Making, Decision Support Techniques, Decision Making and Role of MIS, Decision Support Systems (DSSs), Business Intelligence, Knowledge Management Systems.

### UNIT- IV

**Information System Planning** - Introduction, Information System Planning, Creating an IS Plan (CRISP), Resource Allocation Project Planning, Organization Structure and Location of MIS Department. **Is Choices and System Acquisition** - , Introduction Is Choices, Acquisition of Hardware and Software. **Is Development and Project Management** - Introduction, System Development Models, Project Management. **Information Requirements Analysis & Systems Design** - Introduction, Systems Analysis, Requirements Determination, Strategies for Requirements Determination, Structured Analysis Tools, System Design. **Evolution and Maintenance of IS** - Introduction Evaluation Approaches, Evaluation Classes, Product-Based MIS Evaluation, Cost/benefit –Based Evaluation, Models Used in Evaluation, Process-based Evaluation, System Maintenance.

#### **Text Book**

1. D. P. Goyal, Management Information System, Vikas Publishing House Pvt Ltd.

#### **Reference Books**

1. Waman S. Jawadekar, Management Information Systems, McGraw-Hill.

2. D. P. Nagpal, Management Information Systems, S. Chand.
3. Dr. Sushila Maden, Management Fundamental and Information System, Taxmann.
4. S. Sadagopan, Management Information Systems, PHI.
5. A. K. Gupta, Management Information Systems, S. Chand.
6. Mahesh Halale, Management Information Systems, Himalaya publishing house.

### **Paper - III: System analysis & Design (5T3)**

#### **UNIT- I**

**System Concept And The Information Systems Environment-** Introduction, The Systems Concept, Characteristics Of A System, Elements Of A System, Types Of A System. **The System Development Life Cycle** - Introduction, System Development Life Cycle, Considerations for the Candidate System, Prototyping. **The Role Of System Analyst-** Introduction, Definition, Historical Perspective, What Does It Take To Do Systems Analysis?, The Multifaceted Role Of The Analyst, The Analyst/User Interface, The Place Of The Analyst In The MIS Organization, Rising Positions In System Development, Conclusions.

#### **UNIT- II**

**System Analysis- System Planning And The Initial Investigation-** Introduction, Bases For Planning In System Analysis, Initial Investigation. **Information Gathering-** Introduction, What Kinds Of Information Do We Need?, Where Does Information Originate?, Information Gathering Tools. **The Tools Of Structured Analysis-** Introduction, What Is Structured Analysis?, The Tools Of Structured Analysis. **Feasibility Study-** Introduction, System Performance Definition, Feasibility Study.

#### **UNIT- III**

**System Design- The Process And Stages Of System Design-** Introduction, The Process Of Design, Design Methodologies, Major Development Activities, Audit Consideration. **Input/output And Forms Design-** Introduction, Input Design, Output Design, Forms Design. **File Organization And Data Base Design-** Introduction, File Structure, File Organization, Data Base Design, The Role Of The Data Base Administrator.

#### **UNIT- IV**

**System Implementation- System Testing And Quality Assurance-** Introduction, Why System Testing?, What Do We Test For?, The Test Plan, Quality Assurance, Trends In Testing, Role Of Data Processing Auditor. **Implementation And Software Maintenance-** Introduction, Conversion, Combating Resistance To Change, Post-Implementation Review, Software Maintenance. **Hardware/ Software Selection And The Computer Contract-** Introduction, The Computer Industry, The Software Industry, A Procedure For Hardware/ Software Selection, Financial Considerations In Selection, The Used Computer, The Computer Contract.

#### **Text Book**

1. Elias Awad, System Analysis and Design, Galgotia.

#### **Reference Books**

1. Jeffrey L Whitten, Lonnie D Bentley, System Analysis and Design Methods, McGraw-Hill.
2. Edward, System analysis and Design, McGraw-Hill.
3. Hawryszkiwyez, Fundamentals of System analysis and Design, PHI.
4. Vinod Garg, Workbook on System analysis and Design, PHI.

## Paper - IV: Cost & Management Accounting (5T4)

### UNIT- I

**Introduction to Cost and Management Accounting:** Accounting Framework And Taxonomy, From Cost Accounting To Cost Management, The Dimensions Of Management Accounting. **Forces Shaping Business Environment And Their Effect On Cost And Management Accounting: Drivers** Defining The Future Of Business And Accounting, Trends In Cost And Management Accounting , Evolving Role Of Cost And Management Accountants, Profession Of Cost And Management Accountants.

### UNIT- II

**Strategic Management Accounting:** Linking Strategy to Management Accounting Value Chain for Strategic Management Accounting, Life Cycle Costing, Target Costing, Kaizen Costing. **Cost Measurement and Estimation:** Definition and Measurement Of Cost, Costs On Financial Statements, The Statements Of Financial Position, The Income Statement, Cost Classification, Cost Estimation Methods.

### UNIT- III

**Costing Systems:** Alternative Cost Accumulation Systems—Contingency Based Approach To Accounting, Levels Of Costing Systems, Income Analysis Under Alternative Costing Systems, Reconciling Income Under Alternative Costing Systems, Impact Of Just In Time (JIT) Inventory System. **Job Order Costing:** An Overview Of Traditional Costing Systems, Job Order Costing System For Manufacturing Companies, Job Order Costing System For Service Companies, Job Order Costing For Planning Purposes.

### UNIT- IV

**Process Costing:** Product And Cost Flows Through Process Costing System, Calculating Unit Cost, Process Costing Methods, Production Cost Report, Operation Costing, Accounting For By-Products, Allocation Of Support Service Costs. **Activity-Based Costing And Customer Profitability Analysis:** Traditional Volume-Based Costing, Activity Based Costing (abc), Comparison Of Traditional Volume-Based With The Activity-Based Costing, Advantage And Disadvantages Of Activity-Based Costing, Activity-Based Management(ABM), Scope And Advances In Activity Based Costing, Customer Profitability Analysis.

### Text Book

1. Suveera Gill, Cost and Management Accounting, Vikas Publishing House Pvt. Ltd.

### Reference Books

1. M. Hanif, Modern Cost and Management Accounting, McGraw-Hill.
2. Ravi M. Kishor, Cost and Management Accounting, Taxmann.
3. Puneet Bhatia, Cost and Management Accounting, Pooja Law publishing Co.
4. N. S. Zad, Cost and Management Accounting.
5. T. K Basu, Debtorshi Bhattacharya, Cost And Management Accounting, Platinum Publishers.

## Paper - IV: Corporate Accounting (5T4)

### UNIT-I

**Corporate Accounting (Company Accounts)—Issue Of Share Capital-** Definition, Characteristics Of A Company, Kinds Of Companies (Or) Types Of Companies, Privileges Of A Private Limited Company, Documents, Share Capital, Differences Between “Capital Reserve” And “Reserve Capital”, Shares Of A Company, Equity Shares, Management Of Companies, General Meetings Of The Company, Quorum, Voting, Resolutions, Floating Of A Company (Forming A New Company), Minimum Subscription, Issue Of Shares, Accounting Treatment For Issue Of Shares For Cash, Over-Subscription, Under-Subscription, Calls-In-Arrears, Calls-In-Advance, Issue Of Shares From The Standpoint Of Issue Price, Cash Book, More Than One Type Of Shares, Shares Issued For Consideration Other Than Cash, Forfeiture Of Shares, Re-Issue Of Forfeited Shares, Employee Stock Option Plan, Issue Of Bonus Shares, Rights Issue, Sweat Equity, Underwriting, Buy-Back Of Shares, Escrow Account. **Underwriting Of Shares And Debentures-** Underwriting—Definition, Underwriting Commission And Payment, Sub-Underwriters, Brokers, Managers To The Issue, Applications—Marked, Unmarked And Firm-Underwriting Applications, Types Of Underwriting, Accounting Treatment. **Redemption Of Preference Shares-** Issue And Redemption Of Preference Shares, Determination Of The Amount Of New Issue Stages In Solving Problems.

### UNIT-II

**Issue And Redemption Of Debentures-** Meaning And Definition Of Debenture, Meaning Of Some Terms, Types Of Debentures, Differences Between Shares And Debentures, Debenture Trust Deed, Coupon Rate, Accounting For Issue Of Debentures, Terms Of Issue Of Debentures, Interest On Debentures, Discount Or Loss On Issue Of Debentures, Loss On Issue Of Debentures, Redemption Of Debentures. **Acquisition Of Business (Purchase Of Business)-** Factors Associated With Acquisition Of Business, Determination Of Purchase Consideration, Accounting Entries. **Profits Prior To Incorporation-** Meaning, Accounting Treatment Of Profits/Losses Prior To Incorporation In The Books Of The Company, Methods Of Ascertaining Profit Or Loss Prior To Incorporation, Basis Of Apportionment Of Expenses, Advanced Problems—Professional Course Level, Accounting Standard AS-5 Revised. **Final Accounts Of Companies-** Meaning Of Final Accounts, Preparation Of Final Accounts.

### UNIT-III

**Valuation Of Goodwill And Shares-** Valuation Of Goodwill, Need For Valuation Of Goodwill, Factors Affecting The Value Of Goodwill, Components Of Goodwill, Methods Of Valuation Of Goodwill, Valuation Of Goodwill Advanced Problems, Valuation Of Shares, Methods Of Valuation Of Shares, Different Categories Of Equity Shares, Methods Of Valuation Of Shares—Other Methods Illustrated, Price–Earnings Ratio—(PE Ratio)**Amalgamation, Absorption And External Reconstruction-** Meaning, Types Of Amalgamation, Accounting Treatment As Per AS–14, Absorption, External Reconstruction. **Liquidation Of Companies-** Meaning And Salient Features Of Liquidation, Order Of Payments, Statement Of Affairs, Statement Of Deficiency Or Surplus (List H), Liquidator’s Final Statement Of Account, “B” List Of Contributories, Receiver For Debentures. **Internal Reconstruction-** Need For Internal Reconstruction, Methods Of Internal Reconstruction, Handling Of Reconstruction Account, Balance Sheet After Reconstruction.

### UNIT-IV

**Holding Company Accounts-** Holding Company, Subsidiary Company, Legal Requirements For A Holding Company Consolidated Financial Statements. **Accounts Of Banking Companies-** Definition And Meaning Of Bank, Banking And Banking Company, Forms Of Business Of Banking Companies, Classification Of Commercial Banks, Important Legal Provisions Of Banking Regulation Act 1949, Principal Books Of

Accounts, Registers, System Of Banking Accounting, Preparation And Presentation Of Final Accounts, Guidelines Of RBI For Profit And Loss Account, Special Transactions, Provision For Non-Performing Assets, Income Recognition, Guidelines Of RBI For Preparing Balance Sheet. **Double Account System-** Double Account System, Final Accounts. **Cash Flow Statement-** Cash Flow Statement, Cash Flow Statement—Preparation, Cash Inflow From Debtors, Cash Inflow From Trading Commission, Calculation Of Cash Outflow On Purchases—Purchases Include Both Cash And Credit Purchases, Cash Outflow On Expenses Incurred.

#### **Text Book**

1. Corporate Accounting, V. Rajasekaran, R. Lalitha, Pearson.

#### **Reference Books**

1. Corporate Accounting, V. K. Goyal, Ruchi Goyal, PHI.
2. Corporate Accounting, S N Maheshwari & Suneel K Maheshwari, Vikas Publishing House Pvt. Ltd..
3. Corporate Financial Accounting, Dr. S.K. Singh, SBPD.

# BCCA Part – III

## Semester – VI

### Paper - I: C#.Net (6T1)

#### UNIT - I

**Introducing C#** - What is C#? Evaluation of C#, Characteristics of C#, Application of C#, how does C# differ from C++? How does C# differ from Java? **Understanding .NET: The C# Environment** – The .NET Strategy, The Origin of .NET Technology, The .NET Framework, The Common Language Runtime, Framework Base Class, User and Program Interface, Visual Studio .NET, .NET Languages, Benefits of the .NET Approach, C# and .NET. **Overview of C#** - Introduction, A Simple C# Program, Namespaces, Adding Comments, Main Running Value, Using Aliases for Namespaces Classes, Passing String Objects to WriteLine Method, Command Line Argument, Main with Class, Providing Interactive Input, Using Mathematical Function, Multiple Main Methods, Compile Time Error, Program Structure, Program Coding Style. **Literals, Variables and Data Types** – Introduction, Literals, Variables, Data Types, Value Types, Reference Type, Declaration Types, Initialization of Variables, Default Value, Constant Variable, Scope of Variables, Boxing and Unboxing. **Operators and Expressions** – Introduction, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bitwise Operators, Special Operators, Arithmetic Expressions, Evaluation of Expressions, Precedence of Arithmetic Operators, Type Conversion, Operator Precedence and Associativity, Mathematical Function.

#### UNIT - II

**Decision Making and Branching** – Introduction, Decision Making with if Statement, Simple if Statement, The if...else Statement, The else if Ladder, The Switch Statement, The ? : Operator, Decision Making and Looping – Introduction, The while Statement, The do Statement, The for Statement, The foreach Statement, Jumps in Loops. **Methods in C#** - Introduction, Declaring Methods, The Main Method, Invoking Methods, Nesting of Methods, Method Parameters, Pass by Value, Pass by Reference, The Output Parameters, Variables Argument List, Methods Overloading. **Handling Arrays** – Introduction, One-Dimensional Array, Creating an Array, Two-Dimensional Array, Variable-Size Arrays, The System.Array Class, ArrayList Class. **Manipulating Strings** – Introduction, Creating String, String Methods, Inserting String, Comparing String, Finding String, Mutable String Arrays of String, Regular Expressions.

#### UNIT - III

**Structures and Enumerations** – Introduction, Structure, Structs with Methods, Nested Structs, Difference between Classes and Structs, Enumerations, Enumerator Base Type, Enumerator type Conversion. **Classes and Objects** - Introduction, Basic Principle of OOP, Defining a Class, Adding Variables, Adding Methods, Member Access Modifiers, Creating Objects, Accessing Class Members, Constructors, Overloaded Constructors, Static Members, Static Constructors, Private Constructors, Copy Constructors, Destructors, Member Initialization, The This Reference, Nesting of Members, Constant Members, Read-only Members, Properties, Indexers. **Inheritance and Polymorphism** – Introduction, Classical Inheritance, Containment Inheritance, Defining a Subclass, Visibility Control, Defining Subclass Constructors, Multilevel Inheritance, Hierarchical

Inheritance, Overriding Methods, Hiding Methods, Abstract method, Sealed Class: Preventing Inheritance, Sealed Methods, Polymorphism.

#### UNIT - IV

**Interface: Multiple Inheritances** – Introduction, Defining an Interface, Extending Interface, Implementing Interface, Interface and Inheritance, Explicit Interface Implementation, Abstract Class and Interface. **Operator Overloading** – Introduction, Overloadable Operators, Need for Operator Overloading, Defining Operator Overloading, Overloading Unary Operator, Overloading Binary Operator, Overloading Comparison Operator. **Managing Errors and Exceptions** – Introduction, What is Debugging?, Types of Errors, Exceptions, Syntax of Exception Handling Code, Multiple Catch Statements, The Exception Hierarchy, General Catch Handler, Using Finally Statement, Nested Try Blocks, Throwing Our Own Exceptions, Checked and Unchecked Operators, Using Exceptions for Debugging.

#### Text Book:

1. E. Balagurusamy, Programming in C#, McGraw-Hill.

#### Reference Books:

1. Rod Stephens, C# 5.0 – Programmer's Reference, Wrox A Wiley Brand.
2. Rod Stephens, C# - 24 –Hour Trainer, Wrox A Wiley Brand.
3. Herbert Schildt, The Complete Reference C# 4.0, McGraw-Hill.

#### Practical List of C#.NET

1. Write an algorithm, draw a flowchart and develop a C#.Net console application to check whether the entered number is even or odd.
2. Write an algorithm, draw a flowchart and develop a C#.Net console application to develop Boxing and Unboxing concept.
3. Write an algorithm, draw a flowchart and develop a C#.Net console application to calculate the reverse of a number, to check the given number is palindrome or not.
4. Write an algorithm, draw a flowchart and develop a C#.Net console application to print the Following Pattern:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

5. Write an algorithm, draw a flowchart and develop a C#.Net console application to display the following pattern-

```
 *
 * * *
 * * * * *
* * * * * *
 * * * *
 * * *
 *
```

6. Write an algorithm, draw a flowchart and develop a C#.Net console application to Print and evaluate the following series. The series is -----  

$$\text{Sum} = (1) + (x^2/2!) + (x^4/4!) + (x^6/6!) + (x^8/8!) + \dots$$
7. Write an algorithm, draw a flowchart and develop a C#.Net console application to perform ascending order sorting using Jagged Array.
8. Write an algorithm, draw a flowchart and develop a C#.Net console application to find out the largest and smallest number from an array using jagged array.
9. Write an algorithm, draw a flowchart and develop a C#.Net console application to print abbreviation form of Name.
10. Write an algorithm, draw a flowchart and develop a C#.Net console application to count number of characters, words and blank spaces of given sentence.
11. Write an algorithm, draw a flowchart and develop a C#.Net console application to withdraw, deposit & transfer money to the account using method overloading.
12. Write an algorithm, draw a flowchart and develop a C#.Net console application to overload unary operator '-' and perform subtraction operation.
13. Write an algorithm, draw a flowchart and develop a C#.Net console application to overload binary operator '+' and perform addition operation between two complex numbers.
14. Write an algorithm, draw a flowchart and develop a C#.Net console application to implement the concept of constructor overloading.
15. Write an algorithm, draw a flowchart and develop a C#.Net console application to implement the concept of hierarchical inheritance.
16. Write an algorithm, draw a flowchart and develop a C#.Net console application to implement the concept of interface.
17. Write an algorithm, draw a flowchart and develop a C#.Net console application to combine two delegates.
18. Write an algorithm, draw a flowchart and develop a C#.Net console application to display the priority of the thread.
19. Write an algorithm, draw a flowchart and develop a C#.Net console application to convert feet to inches using Delegates.
20. Write an algorithm, draw a flowchart and develop a C#.Net console application to copy the contents from one file to another file.



## Paper - II: Python (6T2)

### UNIT - I

**Getting Started** -Introducing python, Installing python on windows, Installing python on Linux, Meeting the interpreter, Writing your first program, Employing variables, Obtaining user input, Correcting Errors. **Performing operations**-Doing arithmetic, Assigning values, Comparing Values, Assessing logic. , Examining Conditions, Setting precedence, casting data types, Manipulating bits. **Making statements** -Writing lists, Manipulating lists, Restricting lists, associating list elements, Branching with if, Looping while true, Looping over items, Breaking out of loops.

### UNIT - II

**Defining Functions**-Understanding scopes, Supplying arguments, Returning Values, Using callbacks, Adding placeholders, producing generators, Handling exceptions, Debugging assertions. **Importing Modules** - ,Storing functions, Owning function names, Interrogating the system, Performing mathematics, Calculating decimals, Telling the time, Running a timer, Matching patterns.

### UNIT - III

**Managing strings** -Manipulating strings, Formatting strings, Modifying strings, Accessing files, Reading and writing files, Updating file strings, Pickling data **Programming objects**, Encapsulating data, Creating instance objects, Addressing class attributes, Examining built-in attributes, Collecting garbage, Inheriting features, Overriding base methods, Harnessing polymorphism.

### UNIT - IV

**Processing requests**-Sending responses, Handling values, Submitting forms, Providing text areas, Checking boxes, Choosing radio buttons, Selecting options, Uploading files **Building interfaces**-Launching a window, Responding to buttons, Displaying messages, Gathering entries, Listing options, Polling radio buttons, Checking boxes, Adding images **Developing applications**- Generating random numbers, Planning the problem, Designing the interface, Assigning static properties, Initializing dynamic properties, Adding runtime functionality, Testing the program, Freezing the program, Deploying the application.

### Text Book:

1. Mike McGrath, Python in easy steps, McGraw-Hill.

### Reference Books:

1. Charles Dierbach, Introduction to Computer Science using Python, Wiley.
2. Laura Cassell& Alan Gauld, Python Projects, Wrox A Wiley Brand.
3. Allen B. Downey, Think Python, Shroff Publishers, O'Reilly.
4. Paul Greis, Jennifer Campbell, Jason Montojo, Practical Programming – An Introduction to Computer Science using Python, Shroff Publishers.

### Practical List of Python

1. Write a Python program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Write a Python program that allows the user to enter any integer base and integer exponent, and displays the value of the base raised to that exponent.
3. Write a Python program that prompts the user for a certain number of cities for the Travelling salesman Problem, and displays the total number of possible routes that can be taken.

Write a Python program <sup>th</sup>

4. <sup>at</sup> prompts the user to enter an upper or lower case letter and displays the corresponding Unicode encoding.
5. Write a Python program to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria:  
Grade A: Percentage  $\geq 80$   
Grade B: Percentage  $\geq 70$  and  $< 80$   
Grade C: Percentage  $\geq 60$  and  $< 70$   
Grade D: Percentage  $\geq 40$  and  $< 60$   
Grade E: Percentage  $< 40$
6. Write a Python program to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user using user-defined function.
7. Write a Python program to display the Fibonacci series in a given range.
8. Write a Python program to Print and evaluate the following series. The series is --  
$$\text{Sum} = (x) - (x^2/2!) + (x^3/3!) - (x^4/4!) + (x^5/5!) - \dots$$
9. Write a Python program to calculate the subtraction of two compatible matrices.
10. Write a Python program to calculate the addition of diagonal elements of a matrix.
11. Write a Python program to search a given string from the list of strings using recursion.
12. Write a Python program to calculate factorial of a given number using recursion.

### Visual Python

13. Write a Python program to create mathematical 3D objects –
  - I. curve
  - II. sphere
  - III. cone
  - IV. arrow
  - V. ring
  - VI. cylinder.
14. Write a Python program to read n integers and display them as a histogram.
15. Write a Python program to display sine and cosine curves.
16. Write a Python program to plot a graph of people with pulse rate p vs. height h. The values of p and h are to be entered by the user.

17. Write a Python program to calculate the mass  $m$  in a chemical reaction. The mass  $m$  (in gms) disintegrates according to the formula  $m=60/(t+2)$ , where  $t$  is the time in hours. Sketch a graph for  $t$  vs.  $m$ , where  $t \geq 0$ .
18. A population of 1000 bacteria is introduced into a nutrient medium. The population  $p$  grows as follows:  
 $P(t) = (15000(1+t))/(15+e)$   
 Where the time  $t$  is measured in hours. Write a Python program to determine the size of the population at given time  $t$  and plot a graph for  $P$  vs  $t$  for the specified time interval.
19. Input initial velocity and acceleration, and plot the following graphs depicting equations of motion:
  - I. velocity wrt time ( $v=u+at$ )
  - II. distance wrt time ( $s=u*t+0.5*a*t*t$ )
  - III. distance wrt velocity ( $s=(v*v-u*u)/2*a$ )
20. Write a Python program show a ball bouncing between 2 walls.

## Paper - II: Ruby on Rail (6T2)

### UNIT - I

**Introduction** - A Tour of Ruby, Try Ruby, A Sudoku Solver in Ruby. **The Structure and Execution of Ruby Programs** - Lexical Structure, Syntactic Structure, File Structure, Program Encoding, Program Execution. **Data types and Objects** - Numbers, Text, Arrays, Hashes, Ranges, Symbols, True, False, and Nil, Objects.

### UNIT - II

**Expressions and Operators** - Literals and Keyword Literals, Variable References, Constant References, Method Invocations, Assignments, Operators. **Statements and Control Structures** -Conditionals, Loops, Iterators and Enumerable Objects, Blocks, Altering Control Flow, Exceptions and Exception Handling, BEGIN and END, Threads, Fibers, and Continuations. **Methods, Procs, Lambdas, and Closures** - Defining Simple Methods, Method Names, Methods and Parentheses, Method Arguments, Procs and Lambdas, Closures, Method Objects, Functional Programming.

### UNIT - III

**Classes and Modules** - Defining a Simple Class, Method Visibility: Public, Protected, Private, Subclassing and Inheritance, Object Creation and Initialization, Modules, Loading and Requiring Modules, Singleton Methods and the Eigenclass, Method Lookup, Constant Lookup. **Reflection and Meta programming** - Types, Classes, and Modules, Evaluating Strings and Blocks, Variables and Constants, Methods, Hooks, Tracing, ObjectSpace and GC, Custom Control Structure, Missing Methods and Missing Constants, Dynamically Creating Methods, Alias Chaining, Domain-Specific Languages.

### UNIT - IV

**The Ruby Platform** – Strings, Regular Expressions, Numbers and Math, Dates and Times, Collections, Files and Directories, Input/Output, Networking, Threads and Concurrency. **The Ruby Environment** - Invoking the Ruby Interpreter, The Top-Level Environment, Practical Extraction and Reporting Shortcuts, Calling the OS, Security.

#### Text Book:

1. David Flanagan, Yukihiro Matsumoto, The Ruby Programming language, O'Reilly.

**Reference Books:**

1. Noel Rappin, Professional Ruby on Rails, Wrox.
2. Michael Fitzgerald, Ruby – Pocket Reference, O'Reilly.
3. Timothy Fisher, Ruby on Rails – Bible, Wrox.
4. Daniel Kehoe, Learn Ruby on Rails, Book One.
5. MichaelHartl, Ruby on Rail Tutorial,

**Practical List of Ruby on Rail**

1. Write a program of Ruby on Rail to find the largest number between three numbers.
2. Write a program of Ruby on Rail to swap the values of two variables with and without using third variable.
3. Write a program of Ruby on Rail to perform the following arithmetic operations using arithmetic operators in switch statement. The Arithmetic operations are addition (+), Subtraction (-), Multiplication (\*), Integer Division (/) Real Division (/), modulo (%) and Raise to power (^).
4. Write a program of Ruby on Rail to generate and print Fibonacci series of a given range.
5. Write a program of Ruby on Rail to calculate LCM & HCF of two numbers.
6. Write a program of Ruby on Rail to check the entered number is Armstrong number or not.
7. Write a program of Ruby on Rail to check the entered number is Palindrome or not.
8. Write a program of Ruby on Rail to perform parallel iteration with external iterators.
9. Write a program of Ruby on Rail to find factorial of given number using function.
10. Write a program of Ruby on Rail to find reverse of given number using function.
11. Write a program of Ruby on Rail to demonstrate class and object.
12. Write a program of Ruby on Rail to demonstrate after and every method.
13. Write a program of Ruby on Rail to demonstrate thread.
14. Write a program of Ruby on Rail to tracing method invocations with method\_missing.
15. Write a program of Ruby on Rail to perform attribute methods with define\_method.
16. Write a program of Ruby on Rail to perform Alias chaining for thread safety.
17. Write a program of Ruby on Rail to check the string is palindrome or not.
18. Write a program of Ruby on Rail to calculate number of characters, words and blank spaces from a sentence.
19. Write a program of Ruby on Rail to insert and modify the data into the database.
20. Write a program of Ruby on Rail to upload a file on the server.

## Paper - III: Entrepreneurship Development (6T3)

### UNIT - I

**Entrepreneurs:** Introduction, Evolution of the concept of Entrepreneur, Characteristics of successful Entrepreneurs, The charms of becoming Entrepreneur, The Entrepreneurial decision process, Functions of Entrepreneur, Need of Entrepreneur, Types of Entrepreneurs, Distinction between an Entrepreneur and a Manager, Entrepreneur, social Entrepreneur **Entrepreneurship:** Concept of Entrepreneurship, Growth of Entrepreneurship in India, Role of Entrepreneurship in economic development. **Women Entrepreneurship:** Concept of women Entrepreneur, Functions of women Entrepreneurs, Growth of women Entrepreneurship in India, Problems of women Entrepreneurs, Developing women Entrepreneurship. **Rural Entrepreneurship:** Meaning of rural Entrepreneurship, Need of rural Entrepreneurship, Rural Entrepreneurship/ Industrialization in retrospect, Problems of rural Entrepreneurship, How to develop Rural Entrepreneurship? **Tourism Entrepreneurship:** Meaning of tourism Entrepreneurship, The perspective, Tourism enterprise, Entrepreneur and Entrepreneurship, Policy Measures of Tourism Entrepreneurship in India.

### UNIT - II

**Agri-Preneurship:** Introduction, Need for developing Agri-Preneurship in India, Opportunities for developing Agri-Preneurship, Challenges involved in developing Agri-Preneurship. **Social Entrepreneurship:** Introduction, Meaning of Social Entrepreneurship, the Perspective of Social Entrepreneurship. **Family Business:** Introduction, Manning of family business, Types of family business, family business in India: A Historical Perspective, Advantages of family business, Disadvantages of family business, Major challenges faced by family business in India. **Factors affecting Entrepreneurship growth:** Factors affecting Entrepreneurship, Government Actions. **Entrepreneurial Motivation:** Meaning of Entrepreneurial Motivation, Motivational Cycle or Process, Theories of Entrepreneurial Motivation. **Entrepreneurial Competencies:** Meaning of Entrepreneurial Competency, Major Entrepreneurial Competencies, Developing Entrepreneurial Competencies.

### UNIT - III

**Entrepreneurship Development Programmes (EDPs):** Meaning of EDP, Need of EDPs, Objectives of EDPs, Entrepreneurship Development Programmes in India: A Historical Perspective, Course contents and curriculum of EDPs, Phase of EDP, Evaluation of EDPs, and Problems of EDPs. **Micro and small enterprises:** Small enterprise: Meaning & Definition, Micro & Macro units, Essentials, features & Characteristics, Relationship between Micro and Macro enterprises, Rationale behind Micro & small enterprises, Scope of Micro and Small Enterprises, Objectives of Micro enterprises, Enterprise & Society, Role of Micro enterprise in economic development, Quick Estimates of 4<sup>th</sup> All India Census of MSME, Package for promotion of Micro and Small-scale enterprise. **Opportunity Identification and Selection:** Need for Opportunity Identification and Selection, Environmental dynamics and change, Business opportunities in various sectors, Identification of business opportunity, Opportunity selection, Steps in setting up of a small business enterprise. **Formulation of Business Plans:** Meaning of business plan, Contents of business plan, Significance of business plan, Formulation of business plan, Planning Commission's Guidelines for formulating Project report 310, Network Analysis, Common Errors in business plan formulation.

### UNIT - IV

**Project Appraisal:** Concept of Project Appraisal, Methods of Project Appraisal, and Environmental clearance of SMEs. **Financing of Enterprise:** Meaning and need for financial planning, Source of Finance, Capital Structure, Capitalization, Term Loans, Sources of short-term Finance, Venture Capital, Export Finance. **Forms of business Ownership:** Sole Proprietorship, Partnership, Company, Cooperative, And Selection of an appropriate form of ownership structure, Ownership Pattern in Micro-sale Enterprise

in India: The Empirical Evidence. **Institutional Finance of entrepreneurs:** Need for institutional finance, Institutional Finance. **Institutional Support to Entrepreneurs:** Need for institutional support, Institutional Support to small Entrepreneurs.

### **Text Book**

1. Dr. S. S. Khanka, Entrepreneurial Development, S. Chand.

### **Reference Books**

1. Robert D. Hisrich, Mathew J. Manimala, Michael P. Peters, Dean A. Shepherd, Entrepreneurship, McGraw-Hill.
2. CA Dr. Abha Mathur, Business Entrepreneurship and Management, Taxmann.
3. Charles E. Bamford, Garry D. Bruton, Entrepreneurship – A Small Business Approach, McGraw-Hill.

## **Paper - III: Company Law and Secretarial Practice (6T3)**

### **UNIT - I**

**Introduction to Company Law :** Meaning And Scope Of Company Law, History Of Company Law In India, The Companies Act, 2013, Landmark Provisions Of New Act, Definitions Of Important Terms, Frequently Referred Provisions, Securities And Exchange Board Of India And Provisions Of Companies Act. **Nature of Companies:** Definition, Meaning Of Company, Characteristics of a Company, Principles of Separate Legal Existence, Lifting or Piercing the Corporate Veil, Body Corporate or Corporation, Compulsory Registration Of Associations/Partnerships. **Classification of Companies:** On The Basis Of Mode Incorporation, On The Basis Of Number Of Members, On The Basis Of Liability Of Members, On The Basis Of Control, On The Basis Of Ownership, On The Basis Of Access To Capital Market, Other Companies. **Private and One Person Company :** Private Company, Privileges And Exemptions Of Private Companies, Distinction Between A Private And A Public Company, Conversion Of A Private Company Into A Public Company, Conversion Of A Public Company Into A Private Company, One Person Company, Provisions For The Formation Of OPC, Change /Alteration Of Nominee, Contract By A OPC With The Member, Privileges Of a OPC Over a MPC, Distinction Between a OPC and a MPC, cessation of OPC, conversion of OPC into a Public Or A Private Company, Conversion Of A Private Company Into a OPC.

### **UNIT - II**

**Formation and Incorporation of Company :** Promotion Of A Company, Promoter , Legal Position Of A Promoter, Functions Of Promoter, Duties Of Promoter, Liabilities Of The Promoter, Remuneration Of The Promoters, Registration And Incorporation Of Company, Commencement Of Business, Integrated Process Of Incorporation, Incorporation On Incorrect Information: Implications, Effects Of Incorporation Of Company, Preliminary/ Pre-Incorporation Contracts. **Memorandum of Association:** Meaning And Definition, Framing The Memorandum, Contents Of The Memorandum, The Name Of The Company/Name Clause, The Registered Office/Place Clause, Object Of The Company And The Object Clause, The Liability Of Members Or The Liability Clause, The Capital Or The Capital Clause, The Subscribers Clause, The Nomination Clause, Alteration Of The Memorandum, Alteration Of The Name Or The Name Clause, Procedure Of Change In Name, Alteration Of Place Or Registered Office Clause, Alteration In Objects And The Object Clause, Alteration Of Liability Or The Liability Clause, Alteration Of Capital Or Capital Clause. **Articles of Association:** Definition And Meaning , Forms And Formalities Of Articles, Provision With Respect To Contents Of Articles, Relation Between The Memorandum And The Articles, Distinction Between The Memorandum And The Articles, Effects Of Memorandum And Articles, Alteration Of Articles, Procedure Of Alteration, Restrictions Or Limitations On Alteration, , Doctrine Of Constructive Notice, Doctrine Of Indoor Management.

### UNIT - III

**Share Capital:** Concept Of Share Capital, Kinds Of Share Capital, Alteration Of Capital Or Capital Clause, Further Issue Of Capital, Further Issue Of Shares To Existing Shareholders, Issue Of Shares To Employees Of The Company, Issue Of Share To Any Person On Preferential Basis, Global Depository Receipts, Sweat Equity Shares, Capitalization Of Profits/Bonus Shares, Restriction On Purchase Of Own Shares, Buy-Back Of Own Securities By A Company, Conversion Of Debentures Or Loans Into Shares, Reduction Of Share Capital. **Securities / Share:** Definition And Nature Of Share, Distinction Between Share And Stock, Kinds Of Share, Redemption Of Preference Share, Voting Rights Of Shareholders /Members, Variation Of Shareholders Rights, Price Of Issue Of Shares, Issue At Par, Share/Security Certificate, Issue Of Share Certificate, Effects Of Share Certificate, Issue Of Renewed Or Duplicate Certificate, In Case Of Exchange Of Existing Certificate, Calls On Shares /Securities, Forfeiture Of Shares. **Deposits, Loans, Investments and Related Party Transactions** : Acceptance Of Deposits, Acceptance Of Deposits From Members Only, Deposits By Eligible Companies Or Public Deposits, Loan To Directors, Investment By Companies, Loan By Companies Or Intercompany Loans, Investments In Own Name, Disclosure Of Interest By Director, Related Party And Relative, Related Party Transactions.

### UNIT - IV

**Directors Position, Appointment And Removal:** Definition Of Directors, Position Of Director In A Company, Composition Of Board Of Directors, Number Of Directorship, Methods Of Appointment Of Directors, Some Other Provisions As To Directors Appointment, Appointment/Reappointment Of Rotational Directors, Appointment Of Directors By Board, Director Identification Number, Disqualifications For Director, Vacation Of Office Of Director, Resignation Of Director, Removal Of Directors. **Company Secretary** : Definition Of Company Secretary, Company Secretary In Practice, Provisions As To Appointment Of Company Secretary, Provision And Role Of Company Secretary, Importance Of Company Secretary, Functions Of Company Secretary, Duties Of Company Secretary, Rights Of Company Secretary, Legal Liabilities Of Company Secretaries, Removal /Dismissal Of Company Secretary, Secretarial Audit For Bigger Companies. **Company Meetings** : Annual General Meetings, Report On Annual General Meetings, Extraordinary General Meetings, Persons Entitled To Call EGM, Notice, Quorum, Proxy, Resolutions, Etc., Circulation Of Members Resolution, Class Meetings, Certain Other Secretarial Standards.

### Text Book

1. RatanNolakha, Company law and Practice, Vikas Publishing House Pvt. Ltd.

### Reference Books

1. Dr. Ashok Sharma, Company Law & Secretarial Practice, V. K. (India) Enterprises.
2. P. P. S. Gogna, A Text Book of Company Law, S. Chand.
3. Dr.M.R.Sreenivasan, Company Law & Secretarial Practice,Margham Publications.
4. Dr. G. K. Kapoor, Sanjay Dhamija, Company Law and Practices, Taxmann.
5. Arun Kumar, Rachana Sharma, Secretarial Practice& Company Law, Atlantic.
6. Appannaiah, Reddy, Prabhudev, Company Law & Secretarial Practice, Himalaya Pub.House.



**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR**  
**FACULTY OF ARTS**  
**DIRECTION NO. 50 OF 2016**

**DIRECTION RELATING TO THE EXAMINATION LEADING TO THE DEGREE OF  
MASTER OF ARTS, SEMESTER PATTERN (CHOICE BASED CREDIT SYSTEM)  
(FACULTY OF ARTS)**

**(Issued under Section 14(8) of the Maharashtra Universities Act, 1994)**

**Whereas**, Maharashtra Universities Act, 1994 (hereinafter referred to as Act) has come into force from 22<sup>nd</sup> July, 1994 and was amended from time to time,

AND

**Whereas**, the University Grants Commission, New Delhi vide letter No.D.O.No.F-1-1/2015 (CM) dated 8<sup>th</sup> January 2015 regarding reforms pertaining to the introduction of Choice Based Credit System at the earliest from the academic session 2015-16 to provide option to students and also seamless mobility across the institutions.

AND

**Whereas**, the Special Task Force Committee in all the Arts subjects prepared the syllabi and scheme of examination for the M.A. course and recommended for starting of the Choice Based Credit System in Faculty of Arts from the academic session 2016-17.

AND

**Whereas** the Hon'ble Vice Chancellor under 14/7 on behalf of the Board of Studies and Faculty has considered, accepted and recommended to Academic Council, the policy decision regarding introduction of Choice Based Credit System and the draft syllabi of M.A. Semester-I to IV with draft direction and other details.

AND

**Whereas**, the Academic Council in its meeting held on 08/06/2016 vide item No. 4(A & B) has considered, accepted and recommended to Management Council, for M.A. along with draft direction and other details.

AND

**Whereas**, the Management Council in its meeting held on 14/06/2016 vide item No. 99 (A & B) has considered, accepted the draft direction and other details.

AND

**Whereas**, the new draft direction and scheme of examination as per semester pattern is to be implemented from the Academic Session 2016-17 for M.A. semester I and onwards which is to be regulated by this direction and as such there is no existence and framing of an Ordinance for the above examination is a time consuming process.

AND

**Whereas**, the admission of students in the Choice Based Credit System at M.A. Semester I and onwards are to be made in the Academic Session 2016-17.

AND

**Whereas**, ordinance making is a time consuming process, therefore, I, Dr. S. P. Kane, Vice Chancellor Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of powers vested under Section 14(8) of the Act do hereby issue the following Direction.

1. This Direction may be called "Direction relating to examinations leading to the Degree of Master of Arts, Semester Pattern (Choice Based Credit System).



2. The direction shall come into force from the date of its issue by Hon'ble Vice Chancellor and shall remain in force till the relevant ordinance comes into being in accordance with the provisions of the Act.

3. The duration of the M.A. course shall be of two academic years consisting of four semesters with the University examinations at the end of each semester namely:

- a) M.A. Semester I Exam
- b) M.A. Semester II Exam
- c) M.A. Semester III Exam
- d) M.A. Semester IV Exam

4. The theory examination of Semester-I, II, III and IV shall be conducted by the University and shall be held separately at the end of each semester at such places and dates as may be decided and notified by the University and shall be held as per the schedule given in the Table below.

| Sr. No. | Name of the examination | Main Examination | Supplementary Examination |
|---------|-------------------------|------------------|---------------------------|
| 1       | Semester I & III        | Winter           | Summer                    |
| 2       | Semester II & IV        | Summer           | Winter                    |

#### **ELIGIBILITY TO THE COURSE:**

6. Subject to the compliance with the provisions of this Direction and of other Ordinance in force from time to time an applicant to semester I examination shall have passed the Bachelor Degree examination of this University or any other statutory recognized University as equivalent to the Bachelor Degree of this University.

7. Semester Examinations:

|   |                               |                                                                                                                                    |
|---|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| A | M.A. Semester I Examination   | Students who have fulfilled the eligibility criteria as mentioned in Section 6 and have been admitted to this course in Semester I |
| B | M.A. Semester II Examination  | Students who have been admitted to this course in semester II.                                                                     |
| C | M.A. Semester III Examination | Students who have been admitted to this course in semester III.                                                                    |
| D | M.A. Semester IV Examination  | Students who have been admitted to this course in semester IV                                                                      |

(Note: Subject to the Rules of ATKT as mentioned in para 8 of this direction)

- 8) A) The ATKT rules for admission for the M.A. Course (Theory and Internal Assessment as separate passing head and on calculation fraction, if any, shall be ignored) shall be as given in the following table

| Admission to Semester | Candidate should have passed in all the subjects of the following examination of R.T.M. Nagpur University | Candidate should have passed at least 50% of the passing heads of the following examinations |
|-----------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Semester I            | As provided in the para 6 of the direction                                                                | -----                                                                                        |
| Semester II           | -----                                                                                                     | -----                                                                                        |
| Semester III          | -----                                                                                                     | Semester I and II taken together                                                             |
| Semester IV           | -----                                                                                                     | -----                                                                                        |

- 9) Without prejudice to other provisions of Ordinance no. 6 relating to the examination in general, provisions of Para 5, 8, 9, 10, 26, 31 and 32 of the said ordinance shall apply to every student admitted to this course.
- 10) The fees for the tuition, examination, laboratory and other fees shall be as prescribed by the university from time to time.
- 11) (a) The scope of the subjects shall be as prescribed in the syllabus.  
(b) The medium of instruction and examination shall be English, Hindi, Marathi, Urdu, Arabic, Persian, Sanskrit, Pali and Prakrit,
- 12) The number of papers and maximum marks assigned to each paper and minimum marks / grade, an examinee must obtain in order to pass the examination shall be as prescribed in appendices appended with this direction.
- 13) The examinee at each of the examination shall have option of not being declared successful at the examination in case he / she does not secure a minimum of grade equivalent to 55% marks at the examination. This option will have to be exercised every time the application is submitted to any of the examinations. Once this option is exercised, the option shall be binding on the examinee and it shall not be evoked in under any circumstances.
- 14) The classification of the examinee successful at the semester and examinations and at the end of final semester examination shall be as per the rules and regulations of Choice Based Credit System as prescribed in appendices, appended with this direction.
- 15) The provisions of Ordinance no. 3 of 2007 for the award of grace marks for passing an examination, securing higher grade in subject(s) as updated from time to time shall apply to the examination under this direction.
- 16) The names of the successful examinee passing the examination as a whole in the minimum prescribed period and securing the grades equivalent to first and second division shall be arranged in order of merit as provided in ordinance 6 relating to examination in general.
- 17) Successful examinees at the end of M.A. Semester-IV Examination who obtained CGPA above 7.51 shall be placed in First Division with distinction, those obtaining CGPA from 6.00 to 7.50 shall be placed in First Division, those obtaining CGPA from 4.50 to 5.99 shall be placed in Second Division and those obtaining CGPA from 4.00 to 4.49 shall be placed in Third Division.
- 18) No candidate shall be admitted to an examination under this direction, if he / she has already passed the same examination of this university or of any other university.
- 19) Successful examinees at the M.A. Semester I, II, III, & IV Examinations shall be entitled to receive a Certificate signed by the Controller of Examination of University (COE) and successful examinees at the end of M.A. Semester IV examination shall, on payment of prescribed fees, receive a Degree in the prescribed format, signed by the Vice-Chancellor.
- 20) This course is based on Choice Based Credit System and therefore, it will be also regulated by guidelines and regulation given in appendices which are part of this direction.
- 21) Absorption scheme for failure students of the credit based semester pattern:
  - a) While switching over to Choice Based Credit System, the failure students of credit based semester pattern will be given **Five** chances to clear the examination.
  - b) The candidates who have cleared first and second semester of Part I of the Credit Based Semester Pattern examination in the concerned subject shall get admission to Third Semester of Part II of the Choice Based Credit System directly. However, candidates who are allowed to keep term will not be eligible for admission to Third Semester of Part II of the Choice Based Credit System unless they clear all the papers and practical (where applicable) of first and second semester of Part I of the Credit Based Semester Pattern examination.

22) Absorption scheme for failure students of annual pattern:

The candidates who have cleared first year of annual pattern shall get admission to Semester III of the Choice Based Credit System directly. However, candidates who are allowed to keep term will not be eligible for admission to Third Semester of the Choice Based Credit System unless they clear all the papers and practical of First year of the annual pattern examination.

23) If an examinee failed to pass the M.A. Degree with five successive years from the date of his/her first admission to particular programme he/she shall be declared as 'Not fit for the Course' (NFC) and he/she will not be allowed to appear further for any exam of the same course.

24) Every applicant for admission to the examination shall offered one of the following subject, viz.-  
--

(1) English (2) Marathi (3) Hindi (4) Sanskrit (5) Urdu (6) Gujarathi (7) Pali and Prakrit (8) Persian (9) Arabic (10) Linguistics (11) Music (12) Bengoli (13) German (14) French (15) Russian.

25) With issuance of this direction No.50 of 2016. The Direction No. 13 of 2016 shall stand repealed.

Nagpur :

Dated : 21/06/2016

Dr. Shidharth Vinayak Kane

Vice-Chancellor

**Appendix-1**

| Semester I & II for M.A. Programme in all subjects except music and fine arts |        |                                 |             |       |         |                     |                       |                    |       |                             |             |
|-------------------------------------------------------------------------------|--------|---------------------------------|-------------|-------|---------|---------------------|-----------------------|--------------------|-------|-----------------------------|-------------|
| Code                                                                          | Theory | Teaching Scheme<br>(Hours/Week) |             |       | Credits | Examination Scheme  |                       |                    |       |                             |             |
|                                                                               |        | Th                              | Int.<br>Ass | Total |         | Duration<br>in hrs, | Max. Marks            |                    | Total | Minimum<br>Passing<br>Marks |             |
|                                                                               | Paper  |                                 |             |       |         |                     | Externa<br>l<br>marks | Internal<br>Assmnt |       | Th                          | Int.<br>Ass |
| Core                                                                          | 1      | 4                               | --          | 4     | 4       | 3                   | 80                    | 20                 | 100   | 32                          | 08          |
| Core                                                                          | 2      | 4                               | --          | 4     | 4       | 3                   | 80                    | 20                 | 100   | 32                          | 08          |
| Elective                                                                      | 3      | 4                               | --          | 4     | 4       | 3                   | 80                    | 20                 | 100   | 32                          | 08          |
| Elective                                                                      | 4      | 4                               | --          | 4     | 4       | 3                   | 80                    | 20                 | 100   | 32                          | 08          |
|                                                                               |        | 16                              | --          | 16    | 16      |                     | 320                   | 80                 | 400   | ---                         | ---         |

| Semester III & IV for M.A. Programme in all subjects except music and fine arts |        |                                 |             |       |         |                     |                   |                    |       |                             |     |
|---------------------------------------------------------------------------------|--------|---------------------------------|-------------|-------|---------|---------------------|-------------------|--------------------|-------|-----------------------------|-----|
| Code                                                                            | Theory | Teaching Scheme<br>(Hours/Week) |             |       | Credits | Examination Scheme  |                   |                    |       |                             |     |
|                                                                                 |        | Th                              | Int.<br>Ass | Total |         | Duration<br>in hrs, | Max. Marks        |                    | Total | Minimum<br>Passing<br>Marks |     |
|                                                                                 | Paper  |                                 |             |       |         |                     | External<br>marks | Internal<br>Assmnt |       |                             | Th  |
| Core                                                                            | 1      | 4                               | --          | 4     | 4       | 3                   | 80                | 20                 | 100   | 32                          | 08  |
| Core                                                                            | 2      | 4                               | --          | 4     | 4       | 3                   | 80                | 20                 | 100   | 32                          | 08  |
| Elective                                                                        | 3      | 4                               | --          | 4     | 4       | 3                   | 80                | 20                 | 100   | 32                          | 08  |
| Foundation                                                                      | 4      | 4                               | --          | 4     | 4       | 3                   | 80                | 20                 | 100   | 32                          | 08  |
|                                                                                 |        | 16                              | --          | 16    | 16      |                     | 320               | 80                 | 400   | ---                         | --- |

1. Internal Assessment Marks will be as per appendix 2 attached in this direction.

**Appendix 2****Internal Assessment and Distribution of Marks**

| Maximum Marks | Presentation in Seminar | Assignment (On the Topic other than that of the presentation made in the seminar) | Viva Voce based on the submitted assignment | Participation in departmental activities |
|---------------|-------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------|
| 20            | 05                      | 05                                                                                | 05                                          | 05                                       |

**Guidelines for Students, Supervisors and Examiners**

In each semester the student will have to deliver a seminar on any topic relevant to the syllabus / subject encompassing the recent trends and development in that field / subject. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervising teachers. The student has to deliver the seminar which will be followed by discussion. The seminar will be open to all the teachers of the department, invitees, and students.

The students should submit the assignment properly bound in two copies to the head of the department. The said shall be evaluated by the concerned supervisor / head of the department.

The marks of the Internal Assessment shall be forwarded to the university within due period through head of the Department. The record of the seminar and assignment should be preserved till the declaration of the final result.

1. The internal assessment marks shall be awarded by the concerned teacher.

2. The internal assessment shall be completed by the College / University at least 15 days prior to the final examination of each semester. The Marks shall be sent to the University immediately after the Assessment in the prescribed format.

**3. General guidelines for Internal Assessment are:**

a) The internal assessment marks assigned to each theory paper as mentioned in Appendix 1 shall be awarded on the basis of assignments like class test, attendance, home assignments, study tour, visit to educational institutions and research organizations, field work, group discussions or any other innovative practice / activity.

b) There shall be one assignment (as described above) per Theory paper.

c) There shall be no separate / extra allotment of work load to the teacher concerned. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.

d) The concerned teacher / department / college shall have to keep the record of all the above activities until six months after the declaration of the results of that semester.

e) At the beginning of each semester, every teacher / department / college shall inform his / her students unambiguously the method he / she propose to adopt and the scheme of marking for internal assessment.

f) Teacher shall announce the schedule of activity for internal assessment in advance in consultation with HOD / Principal.

g) Final submission of internal marks to the University shall be before the commencement of the University Theory / Practical examinations whichever is later.

4. **Foundation Course:** Student can choose this paper from any other subject other than his / her main subject for postgraduation.

5. One credit of 25 marks for theory will be of one clock hour per week, running for 15 weeks.

6. One credit of 25 marks for practical will be of two clock hour per week, running for 15 weeks.

### Appendix 3

#### Practical Examination

1. Each practical carries 100 marks. For the examination, the distribution of the marks shall be as follows:

|                                           |                                                       |
|-------------------------------------------|-------------------------------------------------------|
| a. Record / Journal / Internal assessment | : 20 marks – Evaluated by Internal                    |
| b. Practical Performance                  | : 60 marks – Evaluated jointly by External & Internal |
| c. Viva-voce                              | : 20 marks - Evaluated by External                    |

NOTE: Practical performance shall be jointly evaluated by the External and Internal Examiner. In case of discrepancy, the External Examiner's decision shall be final.

2. Practical exam shall be of 3 to 8 hours duration for one or two days, depending on subject and number of students.
3. The Practical Record of every student shall carry a certificate as shown below, duly signed by the teacher-in-charge and the Head of the Department.
4. If the student fails to submit his / her certified Practical Record duly signed by the Teacher-In-Charge and the Head of the Department, he / she shall not be allowed to appear for the Practical Examination and no Marks shall be allotted to the student.

5. The certificate template shall be as follows:

#### **C E R T I F I C A T E**

Name of the college / institution \_\_\_\_\_

Name of the Department: \_\_\_\_\_

This is to certify that this Practical Record contains the bonafide record of the Practical work of Shri / Shrimati / Kumari \_\_\_\_\_ of M.A.. \_\_\_\_\_  
\_\_\_\_\_ Semester \_\_\_\_\_ during the academic year \_\_\_\_\_. The candidate has satisfactorily completed the experiments prescribed by Rashtrasant Tukdoji Maharaj Nagpur University for the subject \_\_\_\_\_

Dated \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Signature of the teacher who taught the examinee

1. \_\_\_\_\_
2. \_\_\_\_\_

Head of the Department

#### **Appendix-4**

**General Rules and Regulations regarding pattern of question paper and choice based credit system:**

##### ***A) Pattern of Question Paper***

1. There will be four units in each paper.
2. Maximum marks of each theory paper will be 80
3. Question paper will consist of five questions, each of 16 marks.
4. Four questions will be on four units with internal choice (One question on each unit).
5. Fifth question will be compulsory with questions from each of the four units having equal weightage and there will be no internal choice.

##### ***B) Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)***

M.A. Program shall consist of four semesters, wherein the student has to complete certain number of credits as indicated in Table 1. Each subject (or course) has fixed number of credits. The types of subject subheads are: Core, Electives, Foundation Course, Seminar and Assignment.

Among the 64 credits which candidate needs to complete and clear for M.A. in any concerned subjects, at least 56 credits must be taken from the parent department where he / she is registered for M.A. Course. The remaining 08 credits may be taken from any other department of university or affiliated colleges offering foundation courses of PG programs.

Table 1: Credit Requirements for Post Graduate Studies

| PG                       | Semester | Core | Elective | Foundation | Total Credits |
|--------------------------|----------|------|----------|------------|---------------|
| All M.A.<br>Except Music | I        | 08   | 08       | ----       | 16            |
|                          | II       | 08   | 08       | ----       | 16            |
|                          | III      | 08   | 04       | 04         | 16            |
|                          | IV       | 08   | 04       | 04         | 16            |
|                          |          | 32   | 24       | 08         | 64            |

**Explanatory terms:**

1.**Core:** Major theory papers in the concerned subject.

2.**Core Elective:** These papers will be specialization in the concerned subject.

3.**Foundation Course:** Student can choose this paper from any other subject other than his main subject for postgraduation. For Ex. An M.A. English student can take such a foundation course paper from Political Science or Economics or History or Marathi subject.

4..**Internal Assessment:** The assessment in each semester shall be carried out in candidate's parent department only.

**Credits:**

It is a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work / field work per week.

For example a subject with 6-2-6 (L-T-P) means it has 3 Lectures, 1 Tutorial and 6 Practical in a week. This subject will have ten credits ( $6 \times 1 + 2 \times \frac{1}{2} + 6 \times \frac{1}{2} = 10$ ). If a student is declared pass in a subject, then he/she gets the credits associated with that subject. Depending on the marks scored in a subject, student is given a Grade. Each grade has got certain grade points as follows:

| Letter Grade | O  | A+ | A  | B+ | B  | C  | P  | F | Ab |
|--------------|----|----|----|----|----|----|----|---|----|
| Grade Point  | 10 | 09 | 08 | 07 | 06 | 05 | 04 | 0 | 0  |

A student obtaining Grade F shall be considered failed and will be required to reappear for the examination.

**Valuation pattern:**

Every credit is for 25 marks and valuation and grade points will be given as per following pattern.

| Marks obtained in Theory / Practical of 100 marks | Marks obtained in Theory / Practical of 50 marks | Letter Grade | Grade point |
|---------------------------------------------------|--------------------------------------------------|--------------|-------------|
| 91-100                                            | 46-50                                            | O            | 10          |
| 81-90                                             | 41-45                                            | A+           | 09          |
| 71-80                                             | 36-40                                            | A            | 08          |
| 61-70                                             | 31-35                                            | B+           | 07          |
| 51-60                                             | 26-30                                            | B            | 06          |
| 41-50                                             | 21-25                                            | C            | 05          |
| = 40                                              | =20                                              | P            | 04          |
| <40                                               | <20                                              | F            | 0           |
| Ab                                                | Ab                                               | Ab           | 0           |

- **Total marks obtained by the student will be mentioned on the mark sheet along with the grade.**

### **Computation of SGPA and CGPA**

Following is the procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

$$\text{SGPA (Si)} = \Sigma(\text{Ci} \times \text{Gi}) / \Sigma \text{Ci}$$

where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

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### **Illustration for SGPA**

| Code                              | Theory / Practical | Credits   | Marks Obtained | Out of | Grade Point | Grade Letter | Credit Point (Credit x Grade Point) |
|-----------------------------------|--------------------|-----------|----------------|--------|-------------|--------------|-------------------------------------|
| Core                              | Paper 1            | 4         | 84             | 100    | 9           | O            | 4x9=36                              |
| Core                              | Paper 2            | 4         | 68             | 100    | 7           | B+           | 4x7=28                              |
| Elective                          | Paper 3            | 4         | 52             | 100    | 6           | B            | 4x6=24                              |
| Foundation                        | Paper 4            | 4         | 47             | 100    | 5           | C            | 4x5=20                              |
|                                   | <b>Total</b>       | <b>16</b> |                |        |             |              | <b>108</b>                          |
| Thus, <b>SGPA = 108/16 = 6.75</b> |                    |           |                |        |             |              |                                     |

### **Course of Study**

| Year /Sem           | Subject  | Paper  | Title of the paper                     | Ins. Hrs/ Week | Credit | Maximum Marks |           |       |
|---------------------|----------|--------|----------------------------------------|----------------|--------|---------------|-----------|-------|
|                     |          |        |                                        |                |        | CIA           | Uni. Exam | Total |
| I Year<br><br>I Sem | Core     | 101    | English Poetry from Chaucer to Milton  | 4              | 4      | 20            | 80        | 100   |
|                     | Core     | 102    | English Renaissance Theatre (1562-642) | 4              | 4      | 20            | 80        | 100   |
|                     | Elective | 103(A) | Indian Writing in English-I            | 4              | 4      | 20            | 80        | 100   |
|                     | Elective | 103(B) | Indian Diasporic Fiction               | 4              | 4      | 20            | 80        | 100   |
|                     | Elective | 103(C) | Indian Writing In Translation          | 4              | 4      | 20            | 80        | 100   |
|                     | Elective | 103(D) | Indian Literary Criticism              | 4              | 4      | 20            | 80        | 100   |



|            |            |        |                                                       |    |    |    |     |     |
|------------|------------|--------|-------------------------------------------------------|----|----|----|-----|-----|
|            | Elective   | 104(A) | The English Novel - I                                 | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 104(B) | Comparative Literature                                | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 104(C) | History of English Language - I                       | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 104(D) | The English Prose – I                                 | 4  | 4  | 20 | 80  | 100 |
|            |            |        |                                                       | 16 | 16 | 80 | 320 | 400 |
|            |            |        |                                                       |    |    |    |     |     |
| I<br>Year  | Core       | 201    | Restoration and Eighteenth Century English Literature | 4  | 4  | 20 | 80  | 100 |
|            | Core       | 202    | Modern English Drama                                  | 4  | 4  | 20 | 80  | 100 |
| II<br>Sem  | Elective   | 203(A) | Nineteenth Century American Literature                | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 203(B) | Post Colonialism and Literature-I                     | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 203(C) | African Literature                                    | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 203(D) | Literature and Gender                                 | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 204(A) | The English Novel - II                                | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 204(B) | Cultural Studies                                      | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 204(C) | History of English Language II                        | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 204(D) | The English Prose – II                                | 4  | 4  | 20 | 80  | 100 |
|            |            |        |                                                       | 16 | 16 | 80 | 320 | 400 |
|            |            |        |                                                       |    |    |    |     |     |
| II<br>Year | Core       | 301    | Literary Criticism and Theory-I                       | 4  | 4  | 20 | 80  | 100 |
|            | Core       | 302    | Romantic and Victorian Poetry                         | 4  | 4  | 20 | 80  | 100 |
| III<br>Sem | Elective   | 303(A) | English Comedies                                      | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 303(B) | Twentieth Century American Literature                 | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 303(C) | The English Novel - III                               | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 303(D) | Post Colonialism and Literature II                    | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 304(A) | Modern Indian Thought                                 | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 304(B) | History of English Literature - I                     | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 304(C) | English Language Teaching – I                         | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 304(D) | European Fiction and Drama                            | 4  | 4  | 20 | 80  | 100 |
|            |            |        |                                                       | 16 | 16 | 80 | 320 | 400 |
|            |            |        |                                                       |    |    |    |     |     |
| II<br>Year | Core       | 401    | Literary Criticism and Theory-II                      | 4  | 4  | 20 | 80  | 100 |
|            | Core       | 402    | Twentieth Century Poetry                              | 4  | 4  | 20 | 80  | 100 |
| IV<br>Sem  | Elective   | 403(A) | African American Literature                           | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 403(B) | Dalit Literature                                      | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 403(C) | Indian Writing in English – II                        | 4  | 4  | 20 | 80  | 100 |
|            | Elective   | 403(D) | Film Studies                                          | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 404(A) | Research Methodology                                  | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 404(B) | History of English Literature – II                    | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 404(C) | English Language Teaching – II                        | 4  | 4  | 20 | 80  | 100 |
|            | Foundation | 404(D) | Environment and Ecocriticism                          | 16 | 16 | 80 | 320 | 400 |

ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a program, i.e.

$$\text{CGPA} = \Sigma (\text{Ci} \times \text{Si}) / \Sigma \text{Ci}$$

where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

#### Illustration for CGPA

| Semester 1                | Semester 2                | Semester 3                | Semester 4                |
|---------------------------|---------------------------|---------------------------|---------------------------|
| Credit : 16<br>SGPA: 6.50 | Credit : 16<br>SGPA: 7.83 | Credit : 16<br>SGPA: 5.69 | Credit : 16<br>SGPA: 6.31 |

Thus,

$$\text{CGPA} = \frac{16 \times 6.50 + 16 \times 7.83 + 16 \times 5.69 + 16 \times 6.31}{64}$$

$$= 104.00 + \frac{125.28 + 91.04 + 100.96}{64} = \frac{421.28}{64} = \mathbf{6.5825} \quad \text{i.e. } \mathbf{6.58}$$

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts. Ex. 7.0765 = 7.08 or 6.5168 = 6.52 etc.

Transcript (Format): Based on the above recommendations on Letter grades, grade points and SGPA and CCPA, the HEIs may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.



**RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR**

**Direction No. 40 of 2016**

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF  
MASTER OF COMMERCE (CREDIT BASE SEMESTER PATTERN) FACULTY OF  
COMMERCE**

(Issued under section 14(8) of the Maharashtra University Act 1994)

WHEREAS, Maharashtra University act No. xxxv of 1994 has come into force with effect from 22<sup>nd</sup> July 1994 and has been amended from time to time,

AND

WHEREAS, the University Grants Commission, New Delhi vide letter no. D.O. No. F-2/2008/(XI Plan), Dated 31<sup>st</sup> January 2008 regarding new initiatives under the XI Plan-Academic reforms in the University has suggested for improving quality of higher education and to initiate the Academic reform at the earliest.

AND

WHEREAS, faculty of commerce act its meeting held on 14.2.2012 has decided to update the existing syllabus for award of the degree of Master of Commerce commensurate with the curricula existing in the various universities in India and with a view to include the latest trends in the commerce stream as well as to design it to suit to the needs of the industries and corporate houses,

AND

WHEREAS, University Grants Commission, New Delhi has prescribed the Model Curriculum for award of the Postgraduate degree in the Faculty of commerce and directed to implement the same from the academic session 2012-2013,

AND

WHEREAS, Chairman of all the Board of Studies in the Faculty of Commerce in their meeting held on 24.2.2016 prepared the Scheme of Credit Based Semester pattern for conduct of the M.Com. Examination,

AND

WHEREAS, Board of Studies viz. (1) Business Administration and Business Management, (2) Commerce, (3) Accounts and Statistics, (4) Business Economics and (5) Ad-hoc Board in Computer Application in its meetings held on 24.2.2016 respectively updated the existing syllabi and recommended some modifications in the scheme of examination for post graduate courses,

AND

WHEREAS, Dean of Commerce has consented to the changes in the syllabus and the scheme of examination for the award of M.Com Degree,

AND

WHEREAS the Vice-Chancellor, Nagpur University, Nagpur approved the recommendations so made by the Special Task Committee in the Faculty of Commerce duly concurred by the Coordinator, Faculty of Commerce as required under Section 38 (a) of the Act on

AND

WHEREAS As per the Advice of the Vice Chancellor, Coordinator, Faculty of Commerce & Coordinator, Special Task Committee in the meeting held on 4.1.2016 constituted sub-committee for syllabus restructuring of M.Com with CBCS pattern.

The Sub-committee submitted the Draft Syllabus of M.Com with CBCS pattern in meeting held on 24.02.2016.

AND

WHEREAS, ordinance making involve a time consuming process, Now, therefore, I, Dr. S. P. Kane, Vice-Chancellor, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of the powers vested in me under Section 14(8) of the Maharashtra University Act of 1994 do hereby issue the following direction:

- This direction shall be called “DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF MASTER OF COMMERCE (CREDIT BASED CHOICE SYSTEM) FACULTY OF COMMERCE RASHTRASANT TUKDOJI MAHARAJ NAGPUR UNIVERSITY NAGPUR”.
- The Direction shall come in to force with effect from the date of its issuance by Honourable Vice-Chancellor.
- The duration of the course shall be of two academic years consisting of the four semesters with university examination at the end of each semester namely
  - M.ComSemesterI Examination
  - M.ComSemesterIIExamination
  - M.ComSemesterIIIExamination
  - M.ComSemesterIVExamination

The examination shall be held at such places and on such dates which are notified by the University.

## **I. ELIGIBILITY TO THE COURSE**

- The duration of M.Com. Course shall be of Two years consisting Semester-I & II in first year and Semester-III & IV in second year.
- Subject to compliance with the provisions of this direction and of other ordinances in force from time to time, an applicant for admission to this course shall have passed B.Com., B.Com.(Computer Application) or B.B.A .Degree examination of Rashtrasant Tukdoji Maharaj Nagpur University or equivalent of any other recognized University.
- The Examinations for Semesters I, II, III and IV shall be held twice a year at such places and on such dates as notified by the University.
- The fees for examination shall be as prescribed by the Rashtrasant Tukdoji Maharaj Nagpur University from time to time.
- Applicant for the examination pursuing a regular course of study leading to the Master Degree in Commerce shall not be permitted to join any other course in this University or any other University simultaneously.
- **ATKT Rules** for Admission for the M.Com Course –An unsuccessful examinee at the any semester examination shall be **ALLOWED TO KEEP TERM in accordance to**

**The following table:**

| Admission to Semester | Candidate should have passed in all the subjects of the following examinations of R.T.M. Nagpur University | Candidate should have passed at least two third of the passing heads of following examinations |
|-----------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| I Semester            | As provided in Para 5 of the direction.                                                                    | -----                                                                                          |
| II Semester           | -----                                                                                                      | -----                                                                                          |
| III Semester          | -----                                                                                                      | Semester I and II taken together i.e. 5 heads                                                  |
| IV Semester           | -----                                                                                                      | Semester I , II and III taken together i.e. 8 heads                                            |

**For providing teaching facility in the subjects of Foundation and Elective Groups minimum requirement of student is 5.**

## **II. CREDIT SYSTEM OF EVALUATION**

- The M.COM. programme shall consist of **Fifteen** Papers or Subjects in old terminology and a project in any of are related to commerce as opted by the student.

With the issuance of this Direction, The Direction No 1 of 2014 (Credit based Semester Pattern) shall stand repealed.

Nagpur  
Date :21.6.2016

Sd/-  
**Dr. S. P. Kane**  
Vice-Chancellor

**Subjects offered, contact hours, credits attached and allocation of marks shall be as follows:**

### **APPENDIX-I**

**Scheme of teaching and examination under credit based semester system for M.Com Course.**

#### **Semester-I**

| CourseCode |                               | Internal /University Exam. | Total Hours | Marks              |                    |            | Credits   |
|------------|-------------------------------|----------------------------|-------------|--------------------|--------------------|------------|-----------|
|            |                               |                            |             | Semester End Exam. | InternalAssessment | Total      |           |
| C11        | Advanced Financial Accounting | Uni.                       | 60          | 80                 | 20                 | 100        | 4         |
| C12        | Indian Financial System       | Uni.                       | 60          | 80                 | 20                 | 100        | 4         |
| C13        | Managerial Economics          | Uni.                       | 60          | 80                 | 20                 | 100        | 4         |
| C14        | Marketing Management          | Uni.                       | 60          | 80                 | 20                 | 100        | 4         |
|            | <b>Total</b>                  |                            | <b>240</b>  | <b>320</b>         | <b>80</b>          | <b>400</b> | <b>16</b> |

#### **Semester-II**

| Course Code |                           | Internal /University Exam. | Total Hours | Marks              |                     |            | Credits   |
|-------------|---------------------------|----------------------------|-------------|--------------------|---------------------|------------|-----------|
|             |                           |                            |             | Semester End Exam. | Internal Assessment | Total      |           |
| C21         | Research Methodology      | Uni.                       | 60          | 80                 | 20                  | 100        | 4         |
| C22         | Advanced Cost Accounting  | Uni.                       | 60          | 80                 | 20                  | 100        | 4         |
| C23         | Co-operation              | Uni.                       | 60          | 80                 | 20                  | 100        | 4         |
| C24         | Human Resource Management | Uni.                       | 60          | 80                 | 20                  | 100        | 4         |
|             | <b>Total</b>              |                            | <b>240</b>  | <b>320</b>         | <b>80</b>           | <b>400</b> | <b>16</b> |

### **Semester-III**

| Course Code |                                                                                                   | Internal /University Examination | Total Hours | Marks              |                     |            | Credits   |
|-------------|---------------------------------------------------------------------------------------------------|----------------------------------|-------------|--------------------|---------------------|------------|-----------|
|             |                                                                                                   |                                  |             | Semester End Exam. | Internal Assessment | Total      |           |
| C31         | <b>Core Group</b><br>1. Advanced Management Accounting                                            | Uni.                             | 60          | 80                 | 20                  | 100        | 4         |
| C 32        | 2. Statistical Techniques                                                                         | Uni.                             | 60          | 80                 | 20                  | 100        | 4         |
| F 33        | <b>Foundation Group- I</b><br>Direct Taxes<br><b>OR</b><br>Computer Application in Business       | Uni.                             | 60          | 80                 | 20                  | 100        | 4         |
| E34         | <b>Elective Group-I</b><br>Entrepreneurship Development<br><b>OR</b><br>Service Sector Management | Uni.                             | 60          | 80                 | 20                  | 100        | 4         |
|             | <b>Total</b>                                                                                      |                                  | <b>240</b>  | <b>320</b>         | <b>80</b>           | <b>400</b> | <b>16</b> |

**Semester-IV**

| Course Code |                                                                                   | Instruction Hours | Marks            |                     |            | Credits   |
|-------------|-----------------------------------------------------------------------------------|-------------------|------------------|---------------------|------------|-----------|
|             |                                                                                   |                   | Semester EndExam | Internal Assessment | Total      |           |
| C41         | <b>Core Group</b><br>International Business Environment                           | 60                | 80               | 20                  | 100        | 4         |
| C42         | Project                                                                           | 60                | 100              | -                   | 100        | 4         |
| F43         | <b>Foundation Group- II</b><br>Indirect Taxes<br><b>OR</b><br>Operations Research | 60                | 80               | 20                  | 100        | 4         |
| E44         | <b>Elective Group-II</b><br>E-Commerce<br><b>OR</b><br>Company Law                | 60                | 80               | 20                  | 100        | 4         |
|             | <b>Total</b>                                                                      | <b>240</b>        | <b>340</b>       | <b>60</b>           | <b>400</b> | <b>16</b> |



**Summary of the Total Marks and Credits**

| <b><u>Sr. No.</u></b> |              | <b><u>Instruction Hours</u></b> | <b><u>Marks</u></b>       |                            |              | <b><u>Credits</u></b> |
|-----------------------|--------------|---------------------------------|---------------------------|----------------------------|--------------|-----------------------|
|                       |              |                                 | <b>Semester End Exam.</b> | <b>Internal Assessment</b> | <b>Total</b> |                       |
| 1                     | Semester-I   | 240                             | 320                       | 80                         | 400          | 16                    |
| 2                     | Semester-II  | 240                             | 320                       | 80                         | 400          | 16                    |
| 3                     | Semester-III | 240                             | 320                       | 80                         | 400          | 16                    |
| 4                     | Semester-IV  | 240                             | 340                       | 60                         | 400          | 16                    |
| <b>Total</b>          |              | <b>960</b>                      | <b>1300</b>               | <b>300</b>                 | <b>1600</b>  | <b>64</b>             |

- The Semester End written examination of all subjects shall be conducted by the University.
- The performance of the learners will be evaluated in two components ,One component will be the continuous assessment by the College/Department (**Internal assessment**) carrying 20% marks and the second component will be the **Semester wise end Examination** carrying 80% marks. The allocation of marks for the Internal Assessment and Semester end Examination for all subjects except Project will be as shown below:

|                                |                                                                                                            |            |
|--------------------------------|------------------------------------------------------------------------------------------------------------|------------|
| 1a                             | Two periodical class tests                                                                                 | 08 marks   |
| 1b                             | An assignment/ Viva/ Group Discussion /Seminar based on curriculum to be assessed by the teacher concerned | 08 marks   |
| 1c                             | Over all conduct as a responsible learner                                                                  | 04 marks   |
| <b>1</b>                       | <b>Internal assessment Total marks</b>                                                                     | <b>20</b>  |
| <b>2</b>                       | <b>Semester wise End Examination marks</b>                                                                 | <b>80</b>  |
| <b>Total marks per subject</b> |                                                                                                            | <b>100</b> |

**M.COM. Examination Semester–I**

| Subject                                 | Paper               | Maximum Marks | Minimum Passing Marks |
|-----------------------------------------|---------------------|---------------|-----------------------|
| <b>1. Advanced Financial Accounting</b> | University Paper    | 80            |                       |
|                                         | Internal Assessment | 20            |                       |
|                                         | Total               | 100           | 40                    |
| <b>2. Indian Financial System</b>       | University Paper    | 80            |                       |
|                                         | Internal Assessment | 20            |                       |
|                                         | Total               | 100           | 40                    |
| <b>3. Managerial Economics</b>          | University Paper    | 80            |                       |
|                                         | Internal Assessment | 20            |                       |
|                                         | Total               | 100           | 40                    |
| <b>4. Marketing Management</b>          | University Paper    | 80            |                       |
|                                         | Internal Assessment | 20            |                       |
|                                         | Total               | 100           | 40                    |

**M.COM. Examination Semester–II**

| Subject                             | Paper               | Maximum Marks | Minimum Passing Marks |
|-------------------------------------|---------------------|---------------|-----------------------|
| <b>1. Research Methodology</b>      | University Paper    | 80            |                       |
|                                     | Internal Assessment | 20            |                       |
|                                     | Total               | 100           | 40                    |
| <b>2. Advanced Cost Accounting</b>  | University Paper    | 80            |                       |
|                                     | Internal Assessment | 20            |                       |
|                                     | Total               | 100           | 40                    |
| <b>3.Co-operation</b>               | University Paper    | 80            |                       |
|                                     | Internal Assessment | 20            |                       |
|                                     | Total               | 100           | 40                    |
| <b>4. Human Resource Management</b> | University Paper    | 80            |                       |
|                                     | Internal Assessment | 20            |                       |
|                                     | Total               | 100           | 40                    |

**M.COM. Examination Semester–III**

| Subject                                                                                           | Paper               | Maximum Marks | Minimum Passing Marks |
|---------------------------------------------------------------------------------------------------|---------------------|---------------|-----------------------|
| <b>Core Group</b><br><br><b>1. Advanced Management Accounting</b>                                 | University Paper    | 80            |                       |
|                                                                                                   | Internal Assessment | 20            |                       |
|                                                                                                   | Total               | 100           |                       |
| <b>2 Statistical Techniques</b>                                                                   | University Paper    | 80            |                       |
|                                                                                                   | Internal Assessment | 20            |                       |
|                                                                                                   | Total               | 100           |                       |
| <b>Foundation Group</b><br><br><b>3. Direct Taxes OR<br/>Computer Application in<br/>Commerce</b> | University Paper    | 80            |                       |
|                                                                                                   | Internal Assessment | 20            |                       |
|                                                                                                   | Total               | 100           |                       |
| <b>4. Entrepreneurship<br/>Development<br/>OR Service<br/>Sector<br/>Management</b>               | University Paper    | 80            |                       |
|                                                                                                   | Internal Assessment | 20            |                       |
|                                                                                                   | Total               | 100           |                       |

**M.COM. Examination Semester–IV**

| Subject                                                       | Paper                                          | Maximum Marks | Minimum Passing Marks |
|---------------------------------------------------------------|------------------------------------------------|---------------|-----------------------|
| <b>1. International Business Environment</b>                  | University Paper                               | 80            | 40                    |
|                                                               | Internal Assessment                            | 20            |                       |
|                                                               | Total                                          | 100           |                       |
| <b>2. Project</b>                                             | Project work (Evaluation by External Examiner) | 50            | 20                    |
|                                                               | Project work (Evaluation by Internal Examiner) | 50            | 20                    |
| <b>3. Indirect Taxes<br/>OR<br/>Operations Research</b>       | University Paper                               | 80            | 40                    |
|                                                               | Internal Assessment                            | 20            |                       |
|                                                               | Total                                          | 100           |                       |
| <b>3. Entrepreneurship Development<br/>OR<br/>Company Law</b> | University Paper                               | 80            | 40                    |
|                                                               | Internal Assessment                            | 20            |                       |
|                                                               | Total                                          | 100           |                       |
|                                                               |                                                |               |                       |

- Marks of internal assessment awarded on the basis of tests, assignment etc as determined by the teacher in the respective subject and moderated by the Head of the University Department/Principal and shall be communicated to the University before the commencement of the Semester End examinations.
- Project Work will be compulsory for each student appearing at the semester-IV(M.Com.) Examination.

Project shall carry 100 marks as follows:

|              | Marks      |
|--------------|------------|
| Project work | 50         |
| Viva-voce    | 50         |
| <b>TOTAL</b> | <b>100</b> |

- For Project work a batch of **TWENTY** students per guide /supervisor has to be allotted by the respective College/ University Department.
- A copy of Project work (Printed) shall be submitted to College/ University Department. Fifteen Days prior to the date of commencement of Semester-IV Examination, which will be retained by the college/Department for internal evaluation purpose.
- A Candidate shall submit with his/her project work, a certificate from the Guide to the effect that the candidate has satisfactorily completed the Project work and that the Project work is the result of the candidate's own work.
- Candidate shall submit his declaration that the Project is the result of his own research work and the same has not been previously submitted to any examination of this University or any other University. The Project shall be liable to be rejected and /or cancelled if found otherwise.
- The Project work shall be evaluated through seminar and Viva-voce at the College/ Department by one internal examiner appointed by the Principal/Head of the Department and one external examiner appointed by University.

| <b>Project shall carry 100 marks</b>           | <b>Marks</b>   |                              |
|------------------------------------------------|----------------|------------------------------|
|                                                | <b>Maximum</b> | <b>Minimum Passing Marks</b> |
| Project work (Evaluation by External Examiner) | 50             | 20                           |
| Project work (Evaluation by Internal Examiner) | 50             | 20                           |
| <b>Total</b>                                   | <b>100</b>     | <b>40</b>                    |

## APPENDIX-II

### I. GENERAL RULES AND REGULATIONS

The scope of the subject, percentage of passing in theory and project will be governed as per following rules:

- In order to pass at the Semester I, II, III & IV examinations an examinee shall obtain not less than 40% marks in each paper. This is to say that out of total 100 marks student should score 40 marks jointly in university examination (80 Marks) and internal examination (20 marks) except in project of IV Semester. The examinee shall have to obtain minimum 40 marks out of 100 in evaluation of project and 50% (200 out of 400 Marks) aggregate in each Semester wise End Examination.
- The results of successful candidates at the end of semester-IV shall be classified on the basis of aggregate marks obtained in all the four semesters.
- The candidates who pass all the semester examinations in the first attempt are eligible for ranks.
- The results of the candidates who have passed the Semester-IV examination but not passed the lower semester examinations shall be declared as NCL (not completed lower semester examinations). Such candidates shall be eligible for the Degree only after successful completion of all the lower semester examinations.
- Percentage of marks for declaring class:  
Distinction- 75% (and above).  
First Class- 60% and above but less than 75%. Second  
Class- 50% and above but less than 60%.
- An unsuccessful examinee at the any semester wise end examination shall be eligible for re-examination on payment of a fresh Examination fee prescribed by the University.

### II. TEACHING NORMS FOR THEORY PAPERS AND PROJECT:

- For all Theory Papers there shall be **FOUR Periods Per week per Subject of One Hour duration** each. Each Theory Paper must cover minimum 60 Clock Hours of Teaching and 240 Clock Hours per Semester for all the 4 Papers. One Credit subject of Theory will be of 1 Clock Hour per week of 25 marks running for 15 weeks and 4 Credit Course of Theory will be of 4 Clock Hours per week of 100 Marks running for 15 weeks.
- For Project work/Research work a batch of Maximum 20 students per guide /supervisor has to be allotted by the College/ University Department. FOUR periods per week of one hour duration shall be the work load allotted for project guidance for 20 students.
- The Project guide /supervisor must possess M.Phil. or Ph.D. degree of Faculty of Commerce or should be a Full time approved Teacher
- No person shall be admitted to this Programme, if he has already passed the same Programme or an Programme of any other statutory University (which has been recognized as equivalent to this programme.)
- A candidate who fails in any of the semester examinations may be permitted to take the examinations again at a subsequent appearance as per the syllabus and scheme of examination in vogue at the time the candidate took the examination for the first time. This facility shall be limited to the following two years.
- Examinee successful at the Semester I, II, III and IV examinations shall, on payment of the prescribed fee, receive a Degree in the prescribed form signed by the Vice-Chancellor.
- Qualification of Teacher shall be as per U.G.C. and State Government norms.

### APPENDIX- III

## Rashtrasant Tukdoji Maharaj Nagpur University

### I. SYLLABUS FORM.COM.EXAMINATION

#### Semester-I

|                               |
|-------------------------------|
| Advanced Financial Accounting |
| Indian Financial System       |
| Managerial Economics          |
| Marketing Management          |

#### Semester-II

|                           |
|---------------------------|
| Research Methodology      |
| Advanced Cost Accounting  |
| Co-operation              |
| Human Resource Management |

#### Semester-III

|                           |                                                                           |
|---------------------------|---------------------------------------------------------------------------|
| <b>Core Group</b>         | 1. Advanced Management Accounting                                         |
|                           | 2. Statistical Techniques                                                 |
| <b>Foundation Group I</b> | 3. Direct Taxes<br><b>OR</b><br>Computer Application in Commerce          |
| <b>Elective Group</b>     | 4. Entrepreneurship Development<br><b>OR</b><br>Service Sector Management |

#### Semester-IV

|                            |                                                       |
|----------------------------|-------------------------------------------------------|
| <b>Core Group</b>          | 1. International Business Environment                 |
|                            | 2. Project                                            |
| <b>Foundation Group II</b> | 3. Indirect Taxes<br><b>OR</b><br>Operations Research |
| <b>Elective Group</b>      | 4. E - Commerce<br><b>OR</b><br>Company Law           |



## II. CONVERSION OF MARKS TO GRADES AND CALCULATIONS OF GPA (GRADE POINT AVERAGE) AND CGPA (CUMULATIVE GRADE POINT AVERAGE) :

In the Credit and Grade Point System, the assessment of individual Subjects in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

### Abbreviations and Formulae Used

G : Grade

GP : Grade Points

C : Credits

CP : Credit Points

CG : Credits X Grades (Product of credits & Grades)

SGPA =  $\Sigma CG$ : Sum of Product of Credits & Grades points /  $\Sigma C$ : Sum of Credits points

SGPA : Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

CGPA : Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

While calculating the CG the value of Grade Point 1 shall be consider Zero (0) in case of learners who failed in the concerned course/s i.e. obtained the marks below 40. After calculating the SGPA for an individual semester and the CGPA for entire programme, the value can be matched with the grade in the Grade Point table as per the Five (05) Points Grading System and expressed as a single designated GRADE such as O,A,B,C,, F.(Fail).

| Marks      | Grade           | Grade Points |
|------------|-----------------|--------------|
| 75& above  | O (Outstanding) | 10           |
| 65-74      | A (Very Good)   | 09           |
| 55-64      | B (Good)        | 08           |
| 50-54      | C (Average)     | 07           |
| 49 & Below | F (Fail)        | 0Failed      |

**Note: -**

- Consider Grade Points equal to Zero for (C x G) calculations of failed Learner/s in the concerned course/s.
- If the learner fails to score 200 out of 400 marks in aggregate then the subjects in which he/she has scored 50 or more marks shall be exempted. He/she shall have to appear for all subjects in which he/she has failed to score 50 or more marks. In such case his/her internal evaluation marks out of 20 shall be retained and he/she shall have to appear for Semester End examination of 80 marks and shall have to score-
  - More than 40% marks including internal marks scored in each of the subject in which he/she has failed to score 50 or more marks.

AND

- He /she shall have to score a total of 200 marks out of 400 in aggregate after adding up of the marks scored in exempted subject/subjects.
- Total marks (Internal + Semester End Examination) obtained by the student shall be converted into Grades and Five Point Grade points as above.

**The illustration for the conversion of marks into grades in a course and semester**  
**Illustrations of Calculation:- Pass**

| Subjects     | Max.MarksSemester<br>EndExam | Max.MarksInternal | TotalMaximumMarks | Total Minimum Marks | Marks Obtained Internal | TotalMarks Obtained | Grade(G)  | Grade(GP) | Credit oftheCourse(C) | (Credit)<br>X<br>(Grade<br>points)(<br>CX<br>GP) | SGPA= $\Sigma$ CG/ $\Sigma$ C                                             |
|--------------|------------------------------|-------------------|-------------------|---------------------|-------------------------|---------------------|-----------|-----------|-----------------------|--------------------------------------------------|---------------------------------------------------------------------------|
| C-11         | 80                           | 20                | 100               | 40                  | 20                      | 60                  | B         | 8         | 4                     | 32                                               | <b>SGPA</b><br>=136/16<br>=8.5<br><b>GradeA</b><br><b>RESULT</b><br>=PASS |
| C-12         | 80                           | 20                | 100               | 40                  | 17                      | 50                  | C         | 7         | 4                     | 28                                               |                                                                           |
| C-13         | 80                           | 20                | 100               | 40                  | 15                      | 75                  | O         | 10        | 4                     | 40                                               |                                                                           |
| C-14         | 80                           | 20                | 100               | 40                  | 18                      | 70                  | A         | 9         | 4                     | 36                                               |                                                                           |
| <b>Total</b> | <b>320</b>                   | <b>80</b>         | <b>400</b>        | <b>160</b>          | <b>70</b>               | <b>255</b>          | <b>--</b> | <b>34</b> | <b>16</b>             | <b>136</b>                                       |                                                                           |

**Illustrations of Calculation:- Fail**

| Subjects     | Max.MarksSemester<br>EndExam | Max.MarksInternal | TotalMaximumMarks | Marks<br>ObtainedSemesterE | MarksObtained Internal | TotalMarks Obtained | Grade(G)  | Grade(GP) | Credit oftheCourse(C) | (Credit)<br>X<br>(Grade<br>points)(<br>CX<br>GP) | SGPA= $\Sigma$ CG/ $\Sigma$ C                                            |
|--------------|------------------------------|-------------------|-------------------|----------------------------|------------------------|---------------------|-----------|-----------|-----------------------|--------------------------------------------------|--------------------------------------------------------------------------|
| C-31         | 80                           | 20                | 100               | 28                         | 12                     | 40                  | F         | 0         | 4                     | 00                                               | <b>SGPA</b><br>=72/16<br>=4.5<br><b>GradeF</b><br><b>RESULT</b><br>=FAIL |
| C-32         | 80                           | 20                | 100               | 31                         | 10                     | 41                  | F         | 0         | 4                     | 00                                               |                                                                          |
| C-33         | 80                           | 20                | 100               | 40                         | 20                     | 60                  | B         | 8         | 4                     | 32                                               |                                                                          |
| C-34         | 80                           | 20                | 100               | 60                         | 15                     | 75                  | O         | 10        | 4                     | 40                                               |                                                                          |
| <b>Total</b> | <b>320</b>                   | <b>80</b>         | <b>400</b>        | <b>159</b>                 | <b>57</b>              | <b>216</b>          | <b>--</b> | <b>18</b> | <b>16</b>             | <b>72</b>                                        |                                                                          |

### Illustration for calculating CGPA

|              |              | Maximum Semester<br>End Exam. | Obtained at Semester<br>End Exam. | Maximum Internal/As<br>essment | Obtained at<br>Internal Assessment | Total | Obtained Total | SGPA | Total Credit Points | SGPA<br>X<br>Total Credit Points | CGPA                                        |
|--------------|--------------|-------------------------------|-----------------------------------|--------------------------------|------------------------------------|-------|----------------|------|---------------------|----------------------------------|---------------------------------------------|
| 1            | Semester-I   | 320                           | 185                               | 80                             | 70                                 | 400   | 255            | 9.12 | 16                  | 146                              | <b>CGPA=596/64=9.3125</b><br><b>GRADE=O</b> |
| 2            | Semester-II  | 320                           | 233                               | 80                             | 60                                 | 400   | 293            | 9.5  | 16                  | 152                              |                                             |
| 3            | Semester-III | 320                           | 185                               | 80                             | 70                                 | 400   | 255            | 9.12 | 16                  | 146                              |                                             |
| 4            | Semester-IV  | 320                           | 233                               | 80                             | 60                                 | 400   | 293            | 9.5  | 16                  | 152                              |                                             |
| <b>Total</b> |              | 1280                          | 836                               | 320                            | 260                                | 1600  | 1096           | --   | 64                  | 596                              |                                             |

#### Note:

According to traditional method the percentage would be =  $(1096/1600) \times 100 = 68.5$ , and according to CGPA calculation Grade is O which is equivalent to 75-100 percent.

Provision of Direction No.44 of 2001 governing the award of grace marks for passing an examination, securing higher Grades shall apply to the examination

### III. REJECTION OF RESULT:

- The candidate shall have an option of being NOT DECLARED SUCCESSFUL in either of the semester end examination if he/she fails to secure minimum 55% aggregate marks in that semester. This option can be opted only through prescribed format forming a part of Examination application form for semester end examination. It shall be applicable only to 80 marks Semester end examination and the internal evaluation marks out of 20 shall not be changed/ altered in any case. If the candidate opts for this option then it shall be irrevocable.
- The candidate who fails in one or more subjects of a semester may be permitted to reject the result of the whole examination of that semester. Rejection of result subject-wise shall not be permitted. A candidate who rejects the results shall appear in the examination of that semester in the subsequent examination.
- Rejection shall be exercised only once in each semester and the rejection once exercised cannot be revoked.
- Application for rejection along with payment of the prescribed fee shall be submitted to the University through the college along with the original statement of marks within 30 days from the date of publication of the result.
- The candidate who rejects the result is eligible for only class and not for ranking.

#### **IV. IMPROVEMENT OF RESULT::**

- The candidate who has passed in all the papers of a semester may be permitted to improve the result by reappearing for the whole examination of that semester.
- The reappearance shall be permitted only once in each semester.
- The reappearance for the examination of any semester is permitted during the subsequent examination of that semester.
- Application for reappearance along with payment of prescribed fee shall be submitted to the University through the college along with the original statement of marks within 30 days from the date of publication of the result.
- The candidate passes in all the subjects in the reappearance, higher of the two aggregate marks secured by the candidate shall be awarded to the candidate for that semester. In case the candidate fails in the reappearance, candidate shall retain the first appearance result.
- A candidate who has appeared for improvement is eligible for class only and not for ranking.
- Internal assessment marks shall be shown separately in the marks card. A candidate who has rejected the result or who, having failed, takes the examination again or who has appeared for improvement shall retain the internal assessment marks already obtained.

#### **V. GUIDELINES FOR SETTING QUESTION PAPERS:**

- .The question paper should be set in such a manner so as to cover the complete syllabus as prescribed by the University.
- .The numerical questions in any of the subjects shall be set in ENGLISH only and the candidate shall have to answer such questions in ENGLISH only. The candidate may answer non-numerical questions in ENGLISH, MARATHI or HINDI.
- The duration of the Semester wise End Examination shall be 3.00 Hours per course.
- The Question paper for all subjects of all semesters except Project of semester IV shall comprise of 5 Questions of 16 marks each.
- 
- The internal evaluation of all subjects shall be done at College/ Department by the respective subject teacher.

## APPENDIX IV

### I. SUBJECTS FOR M.Com. EXAMINATION

#### Semester –I

|                               |
|-------------------------------|
| Advanced Financial Accounting |
| Indian Financial System       |
| Managerial Economics          |
| Marketing Management          |

#### Semester –II

|                           |
|---------------------------|
| Research Methodology      |
| Advanced Cost Accounting  |
| Co-operation              |
| Human Resource Management |

#### Semester–III

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| <b>Core Group</b>       | 1. Advanced Management Accounting                                         |
|                         | 2. Statistical Techniques                                                 |
| <b>Foundation Group</b> | 3. Direct Taxes<br><b>OR</b><br>Computer Application in Commerce          |
| <b>Elective Group</b>   | 4. Entrepreneurship Development<br><b>OR</b><br>Service Sector Management |

#### Semester–IV

|                         |                                                       |
|-------------------------|-------------------------------------------------------|
| <b>Core Group</b>       | 1. International Business Environment                 |
|                         | 2. Project                                            |
| <b>Foundation Group</b> | 3. Indirect Taxes<br><b>OR</b><br>Operations Research |
| <b>Elective Group</b>   | 4.E - Commerce<br><b>OR</b><br>Company Law            |

## II.ABSORPTION SCHEME

| <b><u>Sr.<br/>No.</u></b> | <b><u>SUBJECT OF OLD COURSE<br/>BEFORE 2012-13</u></b> | <b><u>ALTERNATIVE SUBJECT<br/>OF NEW COURSE 2012-13</u></b> |
|---------------------------|--------------------------------------------------------|-------------------------------------------------------------|
| 1.                        | Management Concepts and Organizational Behavior        | Human Resource Management                                   |
| 2.                        | Advanced Financial Accounting                          | Advanced Financial Accounting                               |
| 3.                        | Managerial Economics                                   | Managerial Economics                                        |
| 4.                        | Business Tax And Tax Planning                          | Tax Procedure And Practice                                  |
| 5.                        | E-Commerce                                             | Computer Application In Commerce                            |
| 6.                        | Marketing Management                                   | Marketing Management                                        |
| 7.                        | Industrial Economics                                   | Managerial Economics                                        |
| 8.                        | Agriculture Economics And Co-Operation                 | Co-Operation And Rural Development                          |
| 9.                        | Public Finance                                         | Managerial Economics                                        |
| 10.                       | Advanced Cost Accounting                               | Advanced Cost Accounting                                    |
| 11.                       | Financial Institutions and Markets                     | Indian Financial System                                     |
| 12.                       | Securities Analysis And Portfolio Management           | Indian Financial System                                     |
| 13.                       | Advertising And Sales Management                       | Marketing Management and                                    |
| 14.                       | International Marketing                                | International Business Environment                          |
| 15.                       | International Business Environment And Marketing       | International Business Environment                          |
| 16.                       | Foreign Trade Policy, Procedure                        | International Business Environment And Documentation        |
| 17.                       | Business Environment Domestic And International        | International Business Environment                          |
| 18.                       | Banking And Insurance Law And Practice                 | Service Sector Management                                   |
| 19.                       | Advanced Management Accounting                         | Advanced Management Accounting                              |
| 20.                       | Computer Application In Business                       | Computer Application In Commerce                            |
| 21.                       | Financial Management                                   | Advanced Management Accounting                              |
| 22.                       | Statistical Analysis                                   | Statistical Techniques                                      |
| 23.                       | Applied Operations Research                            | Statistical Techniques                                      |
| 24.                       | Dissertation                                           | Project                                                     |
| 25.                       | Economics of Labor                                     | Managerial Economics                                        |
| 26.                       | Advanced Banking                                       | Service Sector Management                                   |

The students of old course shall be given 05 attempts to pass their examination with old course starting from implementation of New Course.

#### **I. ABSORPTION SCHEME FOR COURSE AFTER 2012-13**

| <b><u>Sr. No.</u></b> | <b><u>SUBJECT OF OLD COURSE AFTER 2012-13</u></b> | <b><u>ALTERNATIVE SUBJECT OF NEW COURSE OF 2016-17</u></b> |
|-----------------------|---------------------------------------------------|------------------------------------------------------------|
| 1.                    | Advanced Financial Accounting                     | Advanced Financial Accounting                              |
| 2.                    | Indian Financial System                           | Indian Financial System                                    |
| 3.                    | Managerial Economics                              | Managerial Economics                                       |
| 4.                    | Marketing Management                              | Marketing Management                                       |
| 5.                    | Research Methodology                              | Research Methodology                                       |
| 6.                    | Advanced Cost Accounting                          | Advanced Cost Accounting                                   |
| 7.                    | Co-operation and Rural Development                | Co-operation                                               |
| 8.                    | Human Resource Management                         | Human Resource Management                                  |
| 9.                    | Advanced Management Accounting                    | Advanced Management Accounting                             |
| 10.                   | Tax Procedures & Practice                         | Direct Taxes                                               |
| 11.                   | Computer Application in Commerce                  | Computer Application in Commerce                           |
| 12.                   | Service Sector Management                         | Service Sector Management                                  |
| 13.                   | Statistical Techniques                            | Statistical Techniques                                     |
| 14.                   | International Business Environment                | International Business Environment                         |
| 15.                   | Entrepreneurship Development                      | Entrepreneurship Development                               |
| 16.                   | Project                                           | Project                                                    |

The students of old course shall be given 05 attempts to pass their examination with old course starting from implementation of New Course.





**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR**  
**FACULTY OF SCIENCE**  
**DIRECTION NO. 54 OF 2016**

**DIRECTION RELATING TO THE EXAMINATION LEADING TO THE DEGREE OF  
MASTER OF SCIENCE, SEMESTER PATTERN (CHOICE BASED CREDIT SYSTEM) AND  
DEGREE OF MASTER OF SCIENCE AND TECHNOLOGY (APPLIED GEOLOGY).  
SEMESTER PATTERN, (CHOICE BASED CREDIT SYSTEM)  
(FACULTY OF SCIENCE)**

(Issued under Section 14(8) of the Maharashtra Universities Act, 1994)

**Whereas**, Maharashtra Universities Act, 1994 (hereinafter referred to as Act) has come into force from 22<sup>nd</sup> July, 1994 and was amended from time to time,

AND

**Whereas**, the University Grants Commission, New Delhi vide letter No.D.O.No.F-1-1/2015 (CM) dated 8<sup>th</sup> January 2015 regarding reforms pertaining to the introduction of Choice Based Credit System at the earliest from the academic session 2015-16 to provide option to students and also seamless mobility across the institutions.

AND

**Whereas**, the Board of Studies in all the Science subjects in their meeting held during 24.4.2015 prepared the syllabi and scheme of examination for the M. Sc. and M. Sc. (Tech) Applied Geology course and recommended for starting of the Choice Based Credit System in Faculty of Science from the academic session 2015-16,

AND

**Whereas**, the faculty of Science in its meeting held on 20.5.2015 vide item No. 16 , has considered, accepted and recommended to Academic Council, the policy decision regarding introduction of Choice Based Credit System and the draft syllabi of M. Sc. Semester-I to IV (Semester I to VI for M. Sc. (Tech) Applied Geology) with draft direction and other details.

AND

**Whereas**, the Academic Council in its meeting held on 8/6/2016 vide item No. 100 has considered, accepted and recommended to Management Council, for M.Sc. along with draft direction and other details.

AND

**Whereas**, the Management Council in its meeting held on 14/6/2016 vide item No. 100-A , has considered, accepted the draft direction and other details.

AND

**Whereas**, the new draft direction and scheme of examination as per semester pattern is to be implemented from the Academic Session 2015-16 for M.Sc. semester I and onwards which is to be regulated by this direction and as such there is no existence and framing of an Ordinance for the above examination is a time consuming process.

AND

**Whereas**, the admission of students in the Choice Based Credit System at M.Sc. Semester I and onwards are to be made in the Academic Session 2015-16.

AND

**Whereas**, ordinance making is a time consuming process, therefore, I, Dr. S. P. Kane, Vice Chancellor Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of powers vested under Section 14(8) of the Act do hereby issue the following Direction.

1. This Direction may be called "Direction relating to examinations leading to the Degree of Master of Science, Semester Pattern (Choice Based Credit System) and Degree of Master of Science and Technology (Applied Geology), Semester Pattern, (Choice Based Credit System)
2. The direction shall come into force from the date of its issue by Hon'ble Vice Chancellor and shall remain in force till the relevant ordinance comes into being in accordance with the provisions of the Act.
3. The duration of the M. Sc. course shall be of two academic years consisting of four semesters with the University examinations at the end of each semester namely:
  - a) M. Sc. Semester I Exam
  - b) M. Sc. Semester II Exam
  - c) M. Sc. Semester III Exam
  - d) M. Sc. Semester IV Exam
4. The duration of the M. Sc. (Tech) Applied Geology course shall be of three academic years consisting of six semesters with the University examinations at the end of each semester namely:
  - a) M. Sc. Semester I Exam
  - b) M. Sc. Semester II Exam
  - c) M. Sc. Semester III Exam
  - d) M. Sc. Semester IV Exam
  - e) M. Sc. Semester V Exam
  - f) M. Sc. Semester VI Exam

5. The theory examination of Semester-I, II, III, IV, V and VI shall be conducted by the University and shall be held separately at the end of each semester at such places and dates as may be decided and notified by the University and shall be held as per the schedule given in Table below.

| Sr. No. | Name of the examination | Main Examination | Supplementary Examination |
|---------|-------------------------|------------------|---------------------------|
| 1       | Semester I, III & V     | Winter           | Summer                    |
| 2       | Semester II, IV&VI      | Summer           | Winter                    |

**ELIGIBILITY TO THE COURSE:**

6. Subject to their compliance with the provisions of this direction and of other ordinances in force from time to time, the following applicant candidates shall be eligible for the admission to Master of Science and examinations thereof

|   |                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | For M. Sc. (Physics) Semester-I                        | For admission to the M. Sc. Semester I in Physics, a candidate shall have offered Physics as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                                                                                                                                                                                                     |
| B | For M. Sc. (Chemistry) Semester-I                      | For admission to the M. Sc. Semester I in Chemistry, a candidate shall have offered Chemistry / Industrial Chemistry as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                                                                                                                                                                          |
| C | For M. Sc. (Mathematics) Semester-I                    | For admission to the M. Sc. Semester I in Mathematics, a candidate shall have offered Mathematics as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                                                                                                                                                                                             |
| D | For M. Sc. (Statistics) Semester-I                     | For admission to the M. Sc./M.A. Semester I in Statistics, a candidate shall have offered Statistics/Maths as one of the subjects at the qualifying B.Sc./B.A. Examination.                                                                                                                                                                                                                                                                                                                                                                               |
| E | For M. Sc. (Computer Science) Semester-I               | For admission to the M. Sc. Semester I in Computer Science, a candidate shall have offered Computer Science as one of the optional subjects of study and examination at B.Sc. degree or B.Sc./ B.E. examination with Post B.Sc. diploma course in Computer Science of RTM Nagpur University or any other statutory university and Application or B.Sc. with optional subjects Computer Maintenance / B.Sc. (Information Technology) / B.C.A.                                                                                                              |
| F | For M. Sc. (Information Technology) Semester-I         | For admission to the M. Sc. Semester I in Information Technology, a candidate must have Mathematics at 10+2 level and shall have passed B.Sc. (Computer Science) / B.Sc. (Information Technology) / B.Sc. (with Information Technology as the optional subject) / Bachelor of Computer Application (BCA)/ B.Sc. with optional subjects Mathematics, Computer Maintenance, Computer Science / B.Sc. with Electronics / Computer Maintenance as one of the subject .                                                                                        |
| G | For M. Sc. (Electronics) Semester-I                    | For admission to the M. Sc. Semester I in Electronics, a candidate shall have offered Electronics / Computer Maintenance as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                                                                                                                                                                      |
| H | For M. Sc. (Botany) Semester-I                         | For admission to the M. Sc. Semester I in Botany, a candidate shall have offered Botany as one of the subjects at the qualifying B.Sc. Examination / B.Sc. (Agriculture) with Botany is one of the subject.                                                                                                                                                                                                                                                                                                                                               |
| I | For M. Sc. (Zoology) Semester-I                        | For admission to the M. Sc. Semester I in Zoology, a candidate shall have offered Zoology as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                                                                                                                                                                                                     |
| J | For M. Sc. (Microbiology) Semester-I                   | For admission to the M. Sc. Semester I in Microbiology, a candidate shall have offered Microbiology / Biotechnology as a subject of study and examination at B.Sc. degree.                                                                                                                                                                                                                                                                                                                                                                                |
| K | For M. Sc. (Biochemistry) Semester-I                   | For admission to the M. Sc. Semester I in Biochemistry, a candidate shall have offered Chemistry and Biochemistry as subjects of study and examination at B.Sc. degree.                                                                                                                                                                                                                                                                                                                                                                                   |
| L | For M. Sc. (Biotechnology) Semester-I                  | For admission to the M. Sc. Semester I in Biotechnology, a candidate shall be all Life Science graduates / Veterinary / Fishery Sciences / Pharmacy / Engineering Technology / Medicine (MBBS) / B.D.S. graduates / B.Sc. Agriculture.                                                                                                                                                                                                                                                                                                                    |
| M | For M. Sc. (Environmental Science) Semester-I          | For admission to the M. Sc. Semester I in Environmental Science, a candidate shall have offered Environmental Science as one of the subjects at the qualifying B.Sc. Examination and B.Sc. Agriculture Science but having Environmental Science is one of the subject.                                                                                                                                                                                                                                                                                    |
| N | For M. Sc. (Molecular Biology and Genetic Engineering) | For admission to the M. Sc. Semester I in Molecular Biology and Genetic Engineering, the candidates who have passed the B.Sc. Examination in at least second division with any one or more subjects of life sciences / biological sciences / candidates who have passed B.Sc. with Biotechnology as one of the subjects in second division / candidates who have passed the B. Pharm. Examination in at least second division / candidates who have passed the graduation degree in agriculture / fisheries / veterinary sciences Examination in at least |

|   |                                              |                                                                                                                                                                                                                                                                                                                                                                                      |
|---|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                              | second division.                                                                                                                                                                                                                                                                                                                                                                     |
| O | For M. Sc. (Geology) Semester-I              | For admission to the M. Sc. Semester I in Geology, a candidate shall have offered Geology as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                                |
| P | For M. Sc. (Tech) Applied Geology Semester-I | For admission to the M. Sc. (Tech) Semester I in Applied Geology, a candidate shall have offered Geology as one of the subjects at the qualifying B.Sc. Examination.                                                                                                                                                                                                                 |
| Q | For M. Sc. (Medicinal Plants) Semester-I     | For admission to the M. Sc. Semester I in Medicinal Plants, a candidate shall have offered Botany as one of the subjects as one of the subjects at the qualifying B.Sc. Examination and any one of the following: Zoology, Chemistry, Biochemistry, Horticulture, Biotechnology, Microbiology and Agricultural Microbiology OR B. Sc. Agriculture, B.A.M.S., B.H.M.S., and B. Pharm. |

Candidates shall have passed any one of the above examinations from Rashtrasant Tukadoji Maharaj Nagpur University or any other statutory University of India or abroad, recognized by the UGC or any other concerned apex regulatory authority / body of India.

#### 7) Semester Examinations

|   |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | M. Sc. Semester I Examination   | Students who have fulfilled the eligibility criteria as mentioned in Section 6 and have been admitted to this course in Semester I.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| B | M. Sc. Semester II Examination  | Students who have been admitted to this course in semester II.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| C | M. Sc. Semester III Examination | Students who have been admitted to this course in semester III.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| D | M. Sc. Semester IV Examination  | <p>i) Students who have been admitted to this course in semester IV.</p> <p>Every student shall submit two copies of the project report (typed and properly bound) for the Fourth Semester to the Concerned Department at least one month prior to the commencement of the final practical examination through the Head of the Department / Centre / the Principal of the college concerned along with the certificate signed by the supervisor and declaration by the candidate towards original work which is not submitted to any university or organization for award of the degree. The scheme/ guidelines for the students and supervisors regarding Project Work Report are given in Appendix 04</p> |

(Note: Subject to the Rules of ATKTK as mentioned in para 9 of this direction)

#### 8) [M. Sc. (Tech) Applied Geology]

|   |                                                         |                                                                                                                                     |
|---|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| A | M. Sc. (Tech) Applied Geology] Semester I Examination   | Students who have fulfilled the eligibility criteria as mentioned in Section 6 and have been admitted to this course in Semester I. |
| B | M. Sc. (Tech) Applied Geology] Semester II Examination  | Students who have been admitted to this course in semester II.                                                                      |
| C | M. Sc. (Tech) Applied Geology] Semester III Examination | Students who have been admitted to this course in semester III.                                                                     |
| D | M. Sc. (Tech) Applied Geology] Semester IV Examination  | Students who have been admitted to this course in semester IV.                                                                      |
| E | M. Sc. (Tech) Applied Geology] Semester V Examination   | Students who have been admitted to this course in semester V.                                                                       |
| F | M. Sc. (Tech) Applied Geology] Semester VI Examination  | Students who have been admitted to this course in semester VI.                                                                      |

(Note: Subject to the Rules of ATKT as mentioned in para 9 of this direction)

- 9) A) The ATKT rules for admission for the M. Sc. Course (Theory, Practical and Seminar as separate passing head and on calculation fraction, if any, shall be ignored) shall be as given in the following table

| Admission to Semester | Candidate should have passed in all the subjects of the following examination of R.T.M. Nagpur University | Candidate should have passed at least two third of the passing heads of the following examinations |
|-----------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Semester I            | As provided in the para 6 of the direction                                                                | -----                                                                                              |
| Semester II           | -----                                                                                                     | -----                                                                                              |
| Semester III          | -----                                                                                                     | Semester I and II taken together                                                                   |
| Semester IV           | -----                                                                                                     | -----                                                                                              |

B) The ATKT rules for admission for the M. Sc. (Tech) Applied Geology Course (Theory, Practical and Seminar as separate passing head and on calculation fraction, if any, shall be ignored) shall be as given in the following table-

| Admission to Semester | Candidate should have passed in all the subjects of the following examination of R.T.M. Nagpur University | Candidate should have passed at least two third of the passing heads of the following examinations                        |
|-----------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Semester I            | As provided in the para 6 of the direction                                                                | -----                                                                                                                     |
| Semester II           | -----                                                                                                     | -----                                                                                                                     |
| Semester III          | -----                                                                                                     | Semester I and II taken together                                                                                          |
| Semester IV           | -----                                                                                                     | -----                                                                                                                     |
| Semester V            | Semester I and II                                                                                         | a) Passed Semester I and II examination<br>And<br>b) Two third of the passing heads of Semester III and IV taken together |
| Semester VI           | -----                                                                                                     | -----                                                                                                                     |

- 10) Without prejudice to other provisions of Ordinance no. 6 relating to the examination in general, provisions of Para 5, 8, 9, 10, 26, 31 and 32 of the said ordinance shall apply to every student admitted to this course.
- 11) The fees for the tuition, examination, laboratory and other fees shall be as prescribed by the university from time to time.
- 12) (a) The scope of the subjects shall be as prescribed in the syllabus.  
(b) The medium of instruction and examination shall be English.
- 13) The number of papers and maximum marks assigned to each paper and minimum marks / grade, an examinee must obtain in order to pass the examination shall be as prescribed in appendices appended with this direction.
- 14) The examinee at each of the examination shall have option of not being declared successful at the examination in case he / she does not secure a minimum of grade equivalent to 55% marks at the examination. This option will have to be exercised every time the application is submitted to any of the examinations. Once this option is exercised, the option shall be binding on the examinee and it shall not be evoked in under any circumstances.
- 15) The classification of the examinee successful at the semester and examinations and at the end of final semester examination shall be as per the rules and regulations of Choice Based Credit System as prescribed in appendices, appended with this direction.
- 16) The provisions of direction no. 3 of 2007 for the award of grace marks for passing an examination, securing higher grade in subject(s) as updated from time to time shall apply to the examination under this direction.
- 17) The names of the successful examinee passing the examination as a whole in the minimum prescribed period and securing the grades equivalent to first and second division shall be arranged in order of merit as provided in ordinance 6 relating to examination in general.
- 18) Successful examinees at the end of M. Sc. Sem-IV Examination (Sem VI for M. Sc. (Tech) Applied Geology) who obtained CGPA above 7.51 shall be placed in First Division with distinction, those obtaining CGPA from 6.00 to 7.50 shall be placed in First Division, those obtaining CGPA from 4.50 to 5.99 shall be placed in Second Division and those obtaining CGPA from 4.00 to 4.49 shall be placed in Third Division.
- 19) No candidate shall be admitted to an examination under this direction, if he / she has already passed the same examination of this university or of any other university.
- 20) Successful examinees at the M. Sc. Sem I, II, III, & IV ((Sem I, II, III, IV, V & VI for M. Sc. (Tech) Applied Geology) Examinations shall be entitled to receive a Certificate signed by the Controller of Examination of University (COE) and successful examinees at the end of M. Sc. Sem IV (Sem VI for M. Sc. (Tech) Applied Geology) examination shall, on payment of prescribed fees, receive a Degree in the prescribed format, signed by the Vice-Chancellor.
- 21) This course is based on Choice Based Credit System and therefore, it will be also regulated by

guidelines and regulation given in appendices which are part of this direction.

22) Absorption scheme for failure students of the credit based semester pattern:

- a) While switching over to Choice Based Credit System, the failure students of credit based semester pattern will be given **Five** chances to clear the examination.
- b) The candidates who have cleared first and second semester of Part I of the Credit Based Semester Pattern examination in the concerned subject shall get admission to Third Semester of Part II of the Choice Based Credit System directly. However, candidates who are allowed to keep term will not be eligible for admission to Third Semester of Part II of the Choice Based Credit System unless they clear all the papers and practical of first and second semester of Part I of the Credit Based Semester Pattern examination.
- c) The candidates who have cleared Third and Fourth semester of Part II of the Credit Based Semester Pattern examination in the concerned subject shall get admission to Fifth Semester of Part III of the Choice Based Credit System directly. However, candidates who are allowed to keep term will not be eligible for admission to Fifth Semester of Part III of the Choice Based Credit System unless they clear all the papers and practical of Third and Fourth semester of Part II of the Credit Based Semester Pattern examination.

23) Absorption scheme for failure students of annual pattern:

- a. The candidates who have cleared first year of annual pattern shall get admission to Semester III of the Choice Based Credit System directly. However, candidates who are allowed to keep term will not be eligible for admission to Third Semester of the Choice Based Credit System unless they clear all the papers and practical of First year of the annual pattern examination.
- b. For M. Sc. Tech Applied Geology course, the candidates who have cleared second year of annual pattern shall get admission to Semester V of the Choice Based Credit System directly. However, candidates who are allowed to keep term will not be eligible for admission to fifth Semester of the Choice Based Credit System unless they clear all the papers and practical of First and Second year of the annual pattern examination.

24) With the issuance of this Direction, The Direction No 10 of 2015 (Choice Based Credit System), Direction No 17 of 2013 for M. Sc. Medicinal Plants, The Direction No 14 of 2012 (Credit based Semester Pattern) & Direction No. 14 of 2010 (M. Sc. Molecular Biology & Genetic Engineering) & Ordinance No. 49 (Annual Pattern) shall stand repealed.

Nagpur  
Date :30.6.2016

Sd/-  
**Dr. S. P. Kane**  
Vice-Chancellor

### Appendix-1

**Scheme of teaching and examination under semester pattern Choice Based Credit System (CBCS) for M.Sc. Program in all subjects except Mathematics and M.Sc. (Tech) Applied Geology**

| Semester I for M.Sc. Program in all subjects except Mathematics and M.Sc. (Tech) Applied Geology |                    |                                |       |       |         |                    |                |              |             |                       |       |
|--------------------------------------------------------------------------------------------------|--------------------|--------------------------------|-------|-------|---------|--------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                                                             | Theory / Practical | Teaching scheme (Hours / Week) |       |       | Credits | Examination Scheme |                |              |             |                       |       |
|                                                                                                  |                    | Th                             | Pract | Total |         | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                                                                  |                    |                                |       |       |         |                    | External Marks | Internal Ass |             | Th                    | Pract |
| Core 1                                                                                           | Paper 1            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 2                                                                                           | Paper 2            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 3                                                                                           | Paper 3            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 4                                                                                           | Paper 4            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Pract. Core 1 & 2                                                                                | Practical 1        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Pract. Core 3 & 4                                                                                | Practical 2        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Seminar 1                                                                                        | Seminar 1          | 2                              | -     | 2     | 1       |                    |                | 25           | 25          | 10                    |       |
|                                                                                                  | TOTAL              | 18                             | 16    | 34    | 25      |                    | 520            | 105          | 625         | 170                   | 80    |

| Semester II for M.Sc. Program in all subjects except Mathematics and M.Sc. (Tech) Applied Geology |                    |                                |       |       |         |                    |                |              |             |                       |       |
|---------------------------------------------------------------------------------------------------|--------------------|--------------------------------|-------|-------|---------|--------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                                                              | Theory / Practical | Teaching scheme (Hours / Week) |       |       | Credits | Examination Scheme |                |              |             |                       |       |
|                                                                                                   |                    | Th                             | Pract | Total |         | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                                                                   |                    |                                |       |       |         |                    | External Marks | Internal Ass |             | Th                    | Pract |
| Core 5                                                                                            | Paper 5            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 6                                                                                            | Paper 6            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 7                                                                                            | Paper 7            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 8                                                                                            | Paper 8            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Pract. Core 5 & 6                                                                                 | Practical 3        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Pract. Core 7 & 8                                                                                 | Practical 4        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Seminar 2                                                                                         | Seminar 2          | 2                              | -     | 2     | 1       |                    |                | 25           | 25          | 10                    |       |
|                                                                                                   | TOTAL              | 18                             | 16    | 34    | 25      |                    | 520            | 105          | 625         | 170                   | 80    |

| Semester III for M.Sc. Program in all subjects except Mathematics and M.Sc. (Tech) Applied Geology |                    |                                |       |       |         |                    |                |              |             |                       |       |
|----------------------------------------------------------------------------------------------------|--------------------|--------------------------------|-------|-------|---------|--------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                                                               | Theory / Practical | Teaching scheme (Hours / Week) |       |       | Credits | Examination Scheme |                |              |             |                       |       |
|                                                                                                    |                    | Th                             | Pract | Total |         | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                                                                    |                    |                                |       |       |         |                    | External Marks | Internal Ass |             | Th                    | Pract |
| Core 9                                                                                             | Paper 9            | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 10                                                                                            | Paper 10           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core Elective 1                                                                                    | Paper 11           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Foundation Course 1 / Core (Subject Centric) 1                                                     | Paper 12           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Pract. Core 9 & 10                                                                                 | Practical 5        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Pract. Core Elective 1                                                                             | Practical 6        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Seminar 3                                                                                          | Seminar 3          | 2                              | -     | 2     | 1       |                    |                | 25           | 25          | 10                    |       |
|                                                                                                    | TOTAL              | 18                             | 16    | 34    | 25      |                    | 520            | 105          | 625         | 170                   | 80    |

| Semester IV for M.Sc. Program in all subjects except Mathematics and M.Sc. (Tech) Applied Geology |                    |                                |       |       |         |                    |                |              |             |                       |       |
|---------------------------------------------------------------------------------------------------|--------------------|--------------------------------|-------|-------|---------|--------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                                                              | Theory / Practical | Teaching scheme (Hours / Week) |       |       | Credits | Examination Scheme |                |              |             |                       |       |
|                                                                                                   |                    | Th                             | Pract | Total |         | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                                                                   |                    |                                |       |       |         |                    | External Marks | Internal Ass |             | Th                    | Pract |
| Core 11                                                                                           | Paper 13           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 12                                                                                           | Paper 14           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core Elective 2                                                                                   | Paper 15           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Foundation Course 2 / Core (Subject Centric) 2                                                    | Paper 16           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Pract. Core 11, 12 & Elective 2                                                                   | Practical 7        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Project                                                                                           | Project            |                                | 8     | 8     | 4       |                    | 100**          | -            | 100         |                       | 40    |
| Seminar 4                                                                                         | Seminar 4          | 2                              | -     | 2     | 1       |                    |                | 25           | 25          | 10                    |       |
|                                                                                                   | TOTAL              | 18                             | 16    | 34    | 25      |                    | 520            | 105          | 625         | 170                   | 80    |

Note: Th = Theory; Pr = Practical/lab, \* = If required, for two days.

\*\* = The Practical and Project shall be evaluated by both the External and Internal Examiner in the respective Department / Center / Affiliated College as per guidelines appended with this direction.

1. In each semester, the student will have to deliver a seminar on any topic relevant to the syllabus / subject encompassing the recent trends and development in that field / subject. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervising teachers. The student has to deliver the seminar which will be followed by discussion. The seminar will be open to all the teachers of the department, invitees, and students.
2. The student will have to carry out the project work (based on guidelines appended to this direction)

- in lieu of practical in the fourth semester in the department or depending on the availability of placement; he / she will be attached to any of the national / regional / private research institute / organization.
- Internal Assessment Marks will be as per appendix attached in this direction.
  - Foundation Course / Core (Subject Centric): for Details, refer Appendix 9.
  - One credit of 25 marks for theory / tutorial will be of one clock hour per week, running for 15 weeks.
  - One credit of 25 marks for practical / project / seminar will be of two clock hour per week, running for 15 weeks.

## Appendix-2

### Scheme of teaching and examination under semester pattern Choice Based Credit System (CBCS) for M.Sc. Program in Mathematics

| Semester I for M.Sc. Program in Mathematics |                    |                                   |       |         |                 |       |                    |                |              |             |                       |               |
|---------------------------------------------|--------------------|-----------------------------------|-------|---------|-----------------|-------|--------------------|----------------|--------------|-------------|-----------------------|---------------|
| Code                                        | Theory / Practical | Teaching scheme<br>(Hours / Week) |       | Credits |                 |       | Examination Scheme |                |              |             |                       |               |
|                                             |                    | Th                                | Total | Theory  | Int. Assessment | Total | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |               |
|                                             |                    |                                   |       |         |                 |       |                    | External Marks | Internal Ass |             | Th. External          | Internal Ass. |
| Core 1                                      | Paper 1            | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 2                                      | Paper 2            | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 3                                      | Paper 3            | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 4                                      | Paper 4            | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 5                                      | Paper 5            | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
|                                             | TOTAL              | 25                                | 25    | 20      | 5               | 25    |                    | 500            | 125          | 625         | 250                   |               |

| Semester II for M.Sc. Program in Mathematics |                    |                                |       |         |                 |       |                    |                |              |             |                       |               |
|----------------------------------------------|--------------------|--------------------------------|-------|---------|-----------------|-------|--------------------|----------------|--------------|-------------|-----------------------|---------------|
| Code                                         | Theory / Practical | Teaching scheme (Hours / Week) |       | Credits |                 |       | Examination Scheme |                |              |             |                       |               |
|                                              |                    | Th                             | Total | Theory  | Int. Assessment | Total | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |               |
|                                              |                    |                                |       |         |                 |       |                    | External Marks | Internal Ass |             | Th. External          | Internal Ass. |
| Core 6                                       | Paper 6            | 5                              | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 7                                       | Paper 7            | 5                              | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 8                                       | Paper 8            | 5                              | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 9                                       | Paper 9            | 5                              | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 10                                      | Paper 10           | 5                              | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
|                                              | TOTAL              | 25                             | 25    | 20      | 5               | 25    |                    | 500            | 125          | 625         | 250                   |               |



| Semester III for M.Sc. Program in Mathematics  |                    |                                   |       |         |                 |       |                    |                |              |             |                       |               |
|------------------------------------------------|--------------------|-----------------------------------|-------|---------|-----------------|-------|--------------------|----------------|--------------|-------------|-----------------------|---------------|
| Code                                           | Theory / Practical | Teaching scheme<br>(Hours / Week) |       | Credits |                 |       | Examination Scheme |                |              |             |                       |               |
|                                                |                    | Th                                | Total | Theory  | Int. Assessment | Total | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |               |
|                                                |                    |                                   |       |         |                 |       |                    | External Marks | Internal Ass |             | Th. External          | Internal Ass. |
| Core 11                                        | Paper 11           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 12                                        | Paper 12           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 13                                        | Paper 13           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core Elective 1                                | Paper 14           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Foundation Course 1 / Core (Subject Centric) 1 | Paper 15           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
|                                                | TOTAL              | 25                                | 25    | 20      | 5               | 25    |                    | 500            | 125          | 625         | 250                   |               |

| Semester IV for M.Sc. Program in Mathematics   |                    |                                   |       |         |                 |       |                    |                |              |             |                       |               |
|------------------------------------------------|--------------------|-----------------------------------|-------|---------|-----------------|-------|--------------------|----------------|--------------|-------------|-----------------------|---------------|
| Code                                           | Theory / Practical | Teaching scheme<br>(Hours / Week) |       | Credits |                 |       | Examination Scheme |                |              |             |                       |               |
|                                                |                    | Th                                | Total | Theory  | Int. Assessment | Total | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |               |
|                                                |                    |                                   |       |         |                 |       |                    | External Marks | Internal Ass |             | Th. External          | Internal Ass. |
| Core 14                                        | Paper 16           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 15                                        | Paper 17           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core 16                                        | Paper 18           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Core Elective 2                                | Paper 19           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
| Foundation Course 2 / Core (Subject Centric) 2 | Paper 20           | 5                                 | 5     | 4       | 1               | 5     | 3                  | 100            | 25           | 125         | 50                    |               |
|                                                | TOTAL              | 25                                | 25    | 20      | 5               | 25    |                    | 500            | 125          | 625         | 250                   |               |

\*Internal Assessment: For the purpose of internal assessment the department will conduct three tests (with equal weight of marks). Best two scores of a student in these tests will be considered to obtain the internal assessment score of that student.

Foundation Course / Core (Subject Centric): for Details, refer Appendix 9.

### Appendix-3

#### Scheme of teaching and examination under semester pattern Choice Based Credit System (CBCS) for M.Sc. (Tech) Applied Geology

| Semester I for M.Sc. Program in M.Sc. (Tech) Applied Geology |                    |                                |       |       |    |                    |                  |                |              |             |                       |       |
|--------------------------------------------------------------|--------------------|--------------------------------|-------|-------|----|--------------------|------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                         | Theory / Practical | Teaching scheme (Hours / Week) |       |       |    | Examination Scheme |                  |                |              |             |                       |       |
|                                                              |                    | Th                             | Pract | Total |    | Credits            | Duration in hrs. | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                              |                    |                                |       |       |    |                    |                  | External Marks | Internal Ass |             | Th                    | Pract |
| Core 1                                                       | Paper 1            | 4                              | -     | 4     | 4  | 3                  | 80               | 20             | 100          | 40          |                       |       |
| Core 2                                                       | Paper 2            | 4                              | -     | 4     | 4  | 3                  | 80               | 20             | 100          | 40          |                       |       |
| Core 3                                                       | Paper 3            | 4                              | -     | 4     | 4  | 3                  | 80               | 20             | 100          | 40          |                       |       |
| Core 4                                                       | Paper 4            | 4                              | -     | 4     | 4  | 3                  | 80               | 20             | 100          | 40          |                       |       |
| Pract. Core 1 & 2                                            | Practical 1        | -                              | 8     | 8     | 4  | 3-8*               | 100**            | -              | 100          |             | 40                    |       |
| Pract. Core 3 & 4                                            | Practical 2        | -                              | 8     | 8     | 4  | 3-8*               | 100**            | -              | 100          |             | 40                    |       |
| Seminar 1                                                    | Seminar 1          | 2                              | -     | 2     | 1  |                    |                  | 25             | 25           | 10          |                       |       |
|                                                              | TOTAL              | 18                             | 16    | 34    | 25 |                    | 520              | 105            | 625          | 170         | 80                    |       |

| Semester II for M.Sc. Program in M.Sc. (Tech) Applied Geology |                    |                                      |       |       |         |                    |                   |                 |             |                          |       |
|---------------------------------------------------------------|--------------------|--------------------------------------|-------|-------|---------|--------------------|-------------------|-----------------|-------------|--------------------------|-------|
| Code                                                          | Theory / Practical | Teaching<br>scheme (Hours<br>/ Week) |       |       | Credits | Examination Scheme |                   |                 |             |                          |       |
|                                                               |                    | Th                                   | Pract | Total |         | Duration in hrs.   | Max. Marks        |                 | Total Marks | Minimum<br>Passing Marks |       |
|                                                               |                    |                                      |       |       |         |                    | External<br>Marks | Internal<br>Ass |             | Th                       | Pract |
| Core 5                                                        | Paper 5            | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 6                                                        | Paper 6            | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 7                                                        | Paper 7            | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 8                                                        | Paper 8            | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Pract.<br>Core 5 & 6                                          | Practical 3        | -                                    | 8     | 8     | 4       | 3-8*               | 100**             | -               | 100         |                          | 40    |
| Pract.<br>Core 7 & 8                                          | Practical 4        | -                                    | 8     | 8     | 4       | 3-8*               | 100**             | -               | 100         |                          | 40    |
| Seminar 2                                                     | Seminar 2          | 2                                    | -     | 2     | 1       |                    |                   | 25              | 25          | 10                       |       |
|                                                               | TOTAL              | 18                                   | 16    | 34    | 25      |                    | 520               | 105             | 625         | 170                      | 80    |

| Semester III for M.Sc. Program in M.Sc. (Tech) Applied Geology |                    |                                      |       |       |         |                    |                   |                 |             |                          |       |
|----------------------------------------------------------------|--------------------|--------------------------------------|-------|-------|---------|--------------------|-------------------|-----------------|-------------|--------------------------|-------|
| Code                                                           | Theory / Practical | Teaching<br>scheme (Hours<br>/ Week) |       |       | Credits | Examination Scheme |                   |                 |             |                          |       |
|                                                                |                    | Th                                   | Pract | Total |         | Duration in hrs.   | Max. Marks        |                 | Total Marks | Minimum<br>Passing Marks |       |
|                                                                |                    |                                      |       |       |         |                    | External<br>Marks | Internal<br>Ass |             | Th                       | Pract |
| Core 9                                                         | Paper 9            | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 10                                                        | Paper 10           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 11                                                        | Paper 11           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 12                                                        | Paper 12           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Pract.<br>Core 9 &<br>10                                       | Practical<br>5     | -                                    | 8     | 8     | 4       | 3-8*               | 100**             | -               | 100         |                          | 40    |
| Pract.<br>Core 11 &<br>12                                      | Practical<br>6     | -                                    | 8     | 8     | 4       | 3-8*               | 100**             | -               | 100         |                          | 40    |
| Seminar 3                                                      | Seminar<br>3       | 2                                    | -     | 2     | 1       |                    |                   | 25              | 25          | 10                       |       |
|                                                                | TOTAL              | 18                                   | 16    | 34    | 25      |                    | 520               | 105             | 625         | 170                      | 80    |

| Semester IV for M.Sc. Program in M.Sc. (Tech) Applied Geology |                    |                                |       |       |         |                    |                |              |             |                       |       |
|---------------------------------------------------------------|--------------------|--------------------------------|-------|-------|---------|--------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                          | Theory / Practical | Teaching scheme (Hours / Week) |       |       | Credits | Examination Scheme |                |              |             |                       |       |
|                                                               |                    | Th                             | Pract | Total |         | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                               |                    |                                |       |       |         |                    | External Marks | Internal Ass |             | Th                    | Pract |
| Core 13                                                       | Paper 13           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 14                                                       | Paper 14           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 15                                                       | Paper 15           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 16                                                       | Paper 16           | 4                              | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Pract. Core 13 & 14                                           | Practical 7        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Pract. Core 15 & 16                                           | Practical 8        | -                              | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Seminar 4                                                     | Seminar 4          | 2                              | -     | 2     | 1       |                    |                | 25           | 25          | 10                    |       |
|                                                               | TOTAL              | 18                             | 16    | 34    | 25      |                    | 520            | 105          | 625         | 170                   | 80    |

| Semester V for M.Sc. Program in M.Sc. (Tech) Applied Geology |                    |                                    |       |       |         |                    |                |              |             |                       |       |
|--------------------------------------------------------------|--------------------|------------------------------------|-------|-------|---------|--------------------|----------------|--------------|-------------|-----------------------|-------|
| Code                                                         | Theory / Practical | Teaching scheme<br>(Houurs / Week) |       |       | Credits | Examination Scheme |                |              |             |                       |       |
|                                                              |                    | Th                                 | Pract | Total |         | Duration in hrs.   | Max. Marks     |              | Total Marks | Minimum Passing Marks |       |
|                                                              |                    |                                    |       |       |         |                    | External Marks | Internal Ass |             | Th                    | Pract |
| Core 17                                                      | Paper 17           | 4                                  | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core 18                                                      | Paper 18           | 4                                  | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Core Elective 1                                              | Paper 19           | 4                                  | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Foundation Course 1 / Core (Subject Centric) 1               | Paper 20           | 4                                  | -     | 4     | 4       | 3                  | 80             | 20           | 100         | 40                    |       |
| Pract. Core 17 & 18                                          | Practical 9        | -                                  | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Pract. Core Elective 1                                       | Practical 10       | -                                  | 8     | 8     | 4       | 3-8*               | 100**          | -            | 100         |                       | 40    |
| Seminar 5                                                    | Seminar 5          | 2                                  | -     | 2     | 1       |                    |                | 25           | 25          | 10                    |       |
|                                                              | TOTAL              | 18                                 | 16    | 34    | 25      |                    | 520            | 105          | 625         | 170                   | 80    |

| Semester VI for M.Sc. Program in M.Sc. (Tech) Applied Geology |                    |                                      |       |       |         |                    |                   |                 |             |                          |       |
|---------------------------------------------------------------|--------------------|--------------------------------------|-------|-------|---------|--------------------|-------------------|-----------------|-------------|--------------------------|-------|
| Code                                                          | Theory / Practical | Teaching<br>scheme (Hours<br>/ Week) |       |       | Credits | Examination Scheme |                   |                 |             |                          |       |
|                                                               |                    | Th                                   | Pract | Total |         | Duration in hrs.   | Max. Marks        |                 | Total Marks | Minimum<br>Passing Marks |       |
|                                                               |                    |                                      |       |       |         |                    | External<br>Marks | Internal<br>Ass |             | Th                       | Pract |
| Core 19                                                       | Paper 21           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core 20                                                       | Paper 22           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Core<br>Elective 2                                            | Paper 23           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Foundation<br>Course 2 /<br>Core<br>(Subject<br>Centric) 2    | Paper 24           | 4                                    | -     | 4     | 4       | 3                  | 80                | 20              | 100         | 40                       |       |
| Pract.<br>Core 19,<br>20                                      | Practical<br>11    | -                                    | 8     | 8     | 4       | 3-8*               | 100**             | -               | 100         |                          | 40    |
| Pract.<br>Core<br>Elective 2                                  | Practical<br>12    | -                                    | 8     | 8     | 4       | 3-8*               | 100**             | -               | 100         |                          | 40    |
| Seminar 6                                                     | Seminar<br>6       | 2                                    | -     | 2     | 1       |                    |                   | 25              | 25          | 10                       |       |
|                                                               | TOTAL              | 18                                   | 16    | 34    | 25      |                    | 520               | 105             | 625         | 170                      | 80    |

Note: Th = Theory; Pr = Practical/lab, \* = If required, for two days.

\*\* = The Practical shall be evaluated by both the External and Internal Examiner in the respective Department / Center / Affiliated College as per guidelines appended with this direction.

1. In each semester, the student will have to deliver a seminar on any topic relevant to the syllabus / subject encompassing the recent trends and development in that field / subject. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervising teachers. The student has to deliver the seminar which will be followed by discussion. The seminar will be open to all the teachers of the department, invitees, and students.
2. Internal Assessment Marks will be as per appendix attached in this direction.

3. Foundation Course / Core (Subject Centric): for Details, refer Appendix 9.
4. One credit of 25 marks for theory / tutorial will be of one clock hour per week, running for 15 weeks.
5. One credit of 25 marks for practical / project / seminar will be of two clock hour per week, running for 15 weeks.

#### **Appendix-4**

##### **Project Work Scheme / Guidelines for the Students, Supervisors and Examiners**

Every student is required to carry out a project work in semester IV. The project can be of following types. A) Experimental Project Work; OR B) Field Based Project Work; OR C) Review writing based Project Work.

##### ***Experimental Project Work and Field Based Project Work:***

Student can carry out Experimental / Field Based Project Work on a related research topic of the subject /course. It must be an original work and must indicate some degree of experimental work / Field work. On the basis of this work, student must submit the Project Report (typed and properly bound) in two copies at least one month prior to commencement of the final Practical / lab Examination of Semester IV or VI as applicable. The project report shall comprise of Introduction, Material and Methods, Results, Discussion, Summary, Conclusion and, References along with the declaration by the candidate that the work is original and not submitted to any University or Organization for award of the degree and certificate by the supervisor and forwarded through Head / Course-coordinator / Director of the Department / Centre or the Principal of the College

##### ***Review writing based Project Work.***

Student can carry out review writing Based Project Work on a related topic of the subject / course. It must be a review of topic based on research publications. Student shall refer peer reviewed original research publications and based on findings, write a summary of the same. The pattern of review writing shall be based on reputed reviews published in a standard, peer reviewed journals. On the basis of this work, student must submit the Project Report (typed and properly bound) in two copies at least one month prior to commencement of the final Practical / lab Examination of Semester IV or VI as applicable. The project report shall comprise of Abstract, Introduction, detailed review, Discussion, Summary, Conclusion and, References along with the declaration by the candidate that the work is original and not submitted to any University or Organization for award of the degree and certificate by the supervisor and forwarded through Head / Course-coordinator / Director of the Department / Centre or the Principal of the College

The supervisors for the Project Work shall be from the following.

A person shall be an approved faculty member in the relevant subject.

OR

Scientists of National Laboratories / Regional Research Laboratories who are approved by dint of their appointments in such facilities by the Union Government / the State Government / Nagpur University / Other Universities recognized by UGC.

The Project Work will carry total 100 marks and will be evaluated by both external and internal examiner in the respective Department / Center / Affiliated College.

The examiners will evaluate the Experimental Project Work taking into account the Coverage of subject matter, Arrangement and presentation, References, etc.

|                          |                                                       |
|--------------------------|-------------------------------------------------------|
| For written Project work | : 40 Marks – Evaluated jointly by External & Internal |
| Presentation             | : 20 Marks – Evaluated jointly by External & Internal |
| For Viva-Voce            | : 20 Marks – Evaluated by External examiner           |
| Internal Assessment      | : 20 Marks – Evaluated by Internal examiner           |

|       |             |
|-------|-------------|
| Total | : 100 Marks |
|-------|-------------|

## **Appendix-5**

### **Seminar**

#### **Guidelines for Students, Supervisors and Examiners**

In each semester (Except M. Sc. Mathematics), the student will have to deliver a seminar on any topic relevant to the syllabus / subject encompassing the recent trends and development in that field / subject. The topic of the seminar will be decided at the beginning of each semester in consultation with the supervising teachers. The student has to deliver the seminar which will be followed by discussion. The seminar will be open to all the teachers of the department, invitees, and students.

The students should submit the seminar report typed and properly bound in two copies to the head of the department. The said shall be evaluated by the concerned supervisor / head of the department. The marks of the seminar shall be forwarded to the university within due period through head of the Department. The record of the seminar should be preserved till the declaration of the final result.

## **Appendix 6**

### **Internal Assessment:**

1. The internal assessment marks shall be awarded by the concerned teacher.
2. The internal assessment shall be completed by the College / University at least 15 days prior to the final examination of each semester. The Marks shall be sent to the University immediately after the Assessment in the prescribed format.
3. For the purpose of internal assessment the University Department / College shall conduct one to three assignments described below. Best two scores of a student in these tests shall be considered to obtain the internal assessment score of that student.
4. General guidelines for Internal Assessment are:
  - a) The internal assessment marks assigned to each theory paper as mentioned in Appendix 1 shall be awarded on the basis of assignments like class test, attendance, home assignments, study tour, industrial visits, visit to educational institutions and research organizations, field work, group discussions or any other innovative practice / activity.
  - b) There shall be one to three assignments (as described above) per Theory paper.
  - c) There shall be no separate / extra allotment of work load to the teacher concerned. He/ She shall conduct the Internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
  - d) The concerned teacher / department / college shall have to keep the record of all the above activities until six months after the declaration of the results of that semester.
  - e) At the beginning of each semester, every teacher / department / college shall inform his / her students unambiguously the method he / she propose to adopt and the scheme of marking for internal assessment.
  - f) Teacher shall announce the schedule of activity for internal assessment in advance in consultation with HOD / Principal.
  - g) Final submission of internal marks to the University shall be before the commencement of the University Theory / Practical examinations whichever is later.

## Appendix 7

### Practical Examination

- Each practical carries 100 marks. For the examination, the distribution of the marks shall be as follows:
  - Record / Journal / Internal assessment : 20 marks – Evaluated by Internal
  - Practical Performance : 60 marks – Evaluated jointly by  
External & Internal
  - Viva-voce : 20 marks - Evaluated by External

NOTE: Practical performance shall be jointly evaluated by the External and Internal Examiner.  
In case of discrepancy, the External Examiner's decision shall be final.
- Practical exam shall be of 3 to 8 hours duration for one or two days, depending on subject and number of students.
- The Practical Record of every student shall carry a certificate as shown below, duly signed by the teacher-in-charge and the Head of the Department.
- If the student fails to submit his / her certified Practical Record duly signed by the Teacher-In-Charge and the Head of the Department, he / she shall not be allowed to appear for the Practical Examination and no Marks shall be allotted to the student.
- The certificate template shall be as follows:

### CERTIFICATE

Name of the college / institution \_\_\_\_\_

Name of the Department: \_\_\_\_\_

This is to certify that this Practical Record contains the bonafide record of the Practical work of Shri / Shrimati / Kumari \_\_\_\_\_ of M. Sc. \_\_\_\_\_  
\_\_\_\_\_ Semester \_\_\_\_\_ during the academic year \_\_\_\_\_. The candidate has satisfactorily completed the experiments prescribed by Rashtrasant Tukdoji Maharaj Nagpur University for the subject \_\_\_\_\_

Dated \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_

Signature of the teacher who taught the examinee

- \_\_\_\_\_
- \_\_\_\_\_

Head of the Department

## Appendix 8

### Subject wise Core Elective Papers:

| M. Sc. Subject                  | Core elective paper to be opted in sem III (Sem V in case of M. Sc. (Tech) Applied Geology) | Core elective paper to be opted in sem IV (Sem VI in case of M. Sc. (Tech) Applied Geology) |
|---------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| M. Sc. (Physics)                | Materials Science I                                                                         | Materials Science II                                                                        |
|                                 | X-ray I                                                                                     | X-ray II                                                                                    |
|                                 | Nanoscience and Nanotechnology I                                                            | Nanoscience and Nanotechnology II                                                           |
|                                 | Atomic and Molecular Physics I                                                              | Atomic and Molecular Physics II                                                             |
|                                 | Applied Electronics I                                                                       | Applied Electronics II                                                                      |
|                                 | Methods of Theoretical Physics I                                                            | Methods of Theoretical Physics II                                                           |
|                                 | Nonlinear Dynamics I                                                                        | Nonlinear Dynamics II                                                                       |
| M. Sc. (Chemistry)              | Nuclear Chemistry I                                                                         | Nuclear Chemistry II                                                                        |
|                                 | Environmental Chemistry I                                                                   | Environmental Chemistry II                                                                  |
|                                 | Polymer Chemistry I                                                                         | Polymer Chemistry II                                                                        |
|                                 | Medicinal Chemistry I                                                                       | Medicinal Chemistry II                                                                      |
| M. Sc. (Mathematics)            | Complex Analysis                                                                            | Dynamical Systems                                                                           |
|                                 | Functional Analysis                                                                         | Partial Differential Equations                                                              |
|                                 | Mathematical Methods                                                                        | Advanced Numerical Methods                                                                  |
| M. Sc. (Statistics)             | Mathematical Programming                                                                    | Operations Research                                                                         |
|                                 | Computer Programming                                                                        | Reliability Theory                                                                          |
|                                 | Survival Analysis                                                                           | Data Mining                                                                                 |
|                                 | Bioassay                                                                                    | Time Series Analysis                                                                        |
| M. Sc. (Computer Science)       | Neural Network                                                                              | Design and Analysis of Algorithm                                                            |
|                                 | Multimedia Technologies                                                                     | Embedded System                                                                             |
|                                 | ASP.NET                                                                                     | Pattern Recognition                                                                         |
| M. Sc. (Information Technology) | Soft Computing                                                                              | Design and Analysis of Algorithm                                                            |
|                                 | Distributed Databases                                                                       | Cloud Computing                                                                             |
|                                 | Object Oriented Analysis and Design using UML                                               | Mobile Computing                                                                            |
| M. Sc. (Electronics)            | Digital signal Processing                                                                   | Microwave and Optical Communication                                                         |
|                                 | Digital Image Processing                                                                    | Computer Communication                                                                      |
| M. Sc. (Botany)                 | Molecular Biology and Plant Biotechnology I                                                 | Molecular Biology and Plant Biotechnology II                                                |
|                                 | Reproductive Biology of Angiosperms- I                                                      | Reproductive Biology of Angiosperms- II                                                     |
|                                 | Advanced Phycology and Hydrobiology I                                                       | Advanced Phycology and Hydrobiology II                                                      |
|                                 | Mycology and Plant pathology I                                                              | Mycology and Plant pathology II                                                             |
|                                 | Palaeobotany I                                                                              | Palaeobotany II                                                                             |
|                                 | Palynology I                                                                                | Palynology II                                                                               |
|                                 | Plant Physiology I                                                                          | Plant Physiology II                                                                         |
| M. Sc. (Zoology)                | Entomology II                                                                               | Entomology IV                                                                               |
|                                 | Fish & Fisheries II                                                                         | Fish & Fisheries IV                                                                         |
|                                 | Mammalian Reproductive Physiology (MRP) II                                                  | Mammalian Reproductive Physiology (MRP) IV                                                  |
|                                 | Animal Physiology II                                                                        | Animal Physiology IV                                                                        |
|                                 | Cell Biology II                                                                             | Cell Biology IV                                                                             |
|                                 | Fresh Water Zoology II                                                                      | Fresh Water Zoology IV                                                                      |
|                                 | Aquaculture II                                                                              | Aquaculture IV                                                                              |
|                                 | Environmental Biology II                                                                    | Environmental Biology IV                                                                    |
|                                 | Sericulture II                                                                              | Sericulture IV                                                                              |
| M. Sc. (Microbiology)           | Microbial Diversity, Evolution and Ecology (MDEE) I                                         | Microbial Diversity, Evolution and Ecology (MDEE) II                                        |
|                                 | Bioinformatics (BIF) I                                                                      | Bioinformatics (BIF) II                                                                     |
| M. Sc. (Biochemistry)           | Biochemical & Environmental Toxicology                                                      | Clinical Research                                                                           |
|                                 | Nutritional Biochemistry                                                                    | Applied Nutritional Biochemistry                                                            |
| M. Sc. (Biotechnology)          | Industrial Biotechnology I                                                                  | Industrial Biotechnology II                                                                 |
|                                 | Environmental Biotechnology I                                                               | Environmental Biotechnology II                                                              |
| M. Sc. (Environmental)          | Water & Water Treatment                                                                     | Environmental Impact assessment                                                             |



|                                                    |                                               |                                                |
|----------------------------------------------------|-----------------------------------------------|------------------------------------------------|
| Science)                                           |                                               | and Legislation                                |
|                                                    | Water supply and resources                    | Environmental Management                       |
| M. Sc. (Molecular Biology and Genetic Engineering) | Molecular Diagnostics Methods                 | Molecular Diagnostics                          |
|                                                    | Plant Genetic Engineering I                   | Plant Genetic Engineering II                   |
|                                                    | Bioinformatics I                              | Bioinformatics II                              |
| M. Sc. (Geology)                                   | Mining Geology & Mineral Exploration          | Exploration Geochemistry                       |
|                                                    | Applied & Industrial Micropaleontology        | Quaternary Geology & Limnogeology              |
|                                                    | Petroleum Exploration                         | Basin Analysis & Sequence Stratigraphy         |
|                                                    |                                               | Marine Geology & Oceanography                  |
| M. Sc. (Tech) Applied Geology                      | Exploration Geochemistry                      | Petroleum Exploration                          |
|                                                    | Quaternary Geology & Limnogeology             | Basin Analysis & Sequence Stratigraphy         |
|                                                    |                                               | Marine Geology & Oceanography                  |
| M. Sc. (Medicinal Plants)                          | Natural Plant Products and Phytochemistry - I | Natural Plant Products and Phytochemistry – II |
|                                                    | Forensic & Industrial Botany - I              | Forensic & Industrial Botany – II              |

## Appendix 9

**Foundation Course / Core (Subject Centric):** Student can choose either Foundation course paper or Core (Subject Centric) paper at the beginning of Semester III. Once the choice between Foundation Course / Core (Subject Centric) is made by the candidate at the beginning of Semester III, it can not be changed in Semester IV.

Part A:

**Foundation Course:** (Candidate can opt for any one foundation course paper as shown below in the semester III and IV (Semester V & VI in case of M. Sc. (Tech) Applied Geology). However, Student shall opt for this paper from any other subject other than his / her main subject for postgraduation (Ex. A candidate pursuing M. Sc. Mathematics can opt for foundation course papers mentioned in other M. Sc. Subjects except papers mentioned under M. Sc. Mathematics). If the candidate decides to opt for foundation course papers then he/she shall not be eligible to opt for Core (Subject Centric) papers in their respective subjects).

List of foundation courses available:

| M. Sc. Subject                                     | Foundation Course I in semester III<br>(Sem V in case of M. Sc. (Tech) Applied Geology) | Foundation Course II in Semester IV<br>(Sem VI in case of M. Sc. (Tech) Applied Geology) |
|----------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| M. Sc. (Physics)                                   | Fundamentals of Spectroscopy                                                            | Spectroscopic applications                                                               |
|                                                    | Fundamentals of Nanoscience and Nanotechnology                                          | Optics and Optical Instruments                                                           |
| M. Sc. (Chemistry)                                 | Applied Analytical Chemistry I                                                          | Applied Analytical Chemistry II                                                          |
| M. Sc. (Mathematics)                               | Elementary Mathematics                                                                  | Elementary Discrete Mathematics                                                          |
|                                                    | Elementary Mathematical Methods                                                         | Fuzzy Mathematics II                                                                     |
|                                                    | Elementary Numerical Methods                                                            | Linear Programming                                                                       |
|                                                    | Fuzzy Mathematics I                                                                     | MATLAB Programing                                                                        |
| M. Sc. (Statistics)                                | Foundation course in Mathematical Statistics                                            | Foundation course in Applied Statistics                                                  |
| M. Sc. (Computer Science)                          | Operating system concepts                                                               | Advances in information technology                                                       |
|                                                    | Principles of Management                                                                | Banking Operations And Services                                                          |
|                                                    | E-Business                                                                              | Information Security And Cyber Law                                                       |
| M. Sc. (Information Technology)                    | Operating system concepts                                                               | Advances in information technology                                                       |
|                                                    | Principles of Management                                                                | Enterprise Resource Planning                                                             |
|                                                    | E-Business                                                                              | Information Security And Cyber Law                                                       |
| M. Sc. (Electronics)                               | Basic Electronics                                                                       | PC and PC Interfacing                                                                    |
| M. Sc. (Botany)                                    | General Botany                                                                          | Applied Botany                                                                           |
| M. Sc. (Zoology)                                   | Elementary Zoology                                                                      | Applied Zoology                                                                          |
|                                                    | Basic Entomology                                                                        | Applied & Industrial Entomology                                                          |
|                                                    | Fresh Water Fisheries                                                                   | Applied Fresh Water Fisheries                                                            |
|                                                    | Human Physiology                                                                        | Applied Human Physiology                                                                 |
| M. Sc. (Microbiology)                              | General Microbiology                                                                    | Advanced Microbiology                                                                    |
| M. Sc. (Biochemistry)                              | Biomolecules and Basic Metabolism                                                       | Enzyme Technology                                                                        |
| M. Sc. (Biotechnology)                             | Introductory Biotechnology                                                              | Molecular Biotechnology                                                                  |
| M. Sc. (Environmental Science)                     | Fundamentals of Environmental Science-I                                                 | Fundamentals of Environmental Science -II                                                |
| M. Sc. (Molecular Biology and Genetic Engineering) | Molecular Biology                                                                       | Recombinant DNA Technology and Plant Genetic Engineering                                 |
| M. Sc. (Geology)                                   | Introduction to Geology                                                                 | Paleobiology                                                                             |
| M. Sc. (Tech) Applied Geology                      | Introduction to Geology                                                                 | Paleobiology                                                                             |
| M. Sc. (Medicinal Plants)                          | Fermentation Technology                                                                 | Ethnobotany                                                                              |

Part B:

**Core (Subject Centric):** (Candidate can opt for this paper as shown below in the semester III and IV (Semester V & VI in case of M. Sc. (Tech) Applied Geology) in their main subject of postgraduation only (Ex. A candidate pursuing M. Sc. Mathematics can opt for Core (Subject Centric) papers from M. Sc. Mathematics ONLY). If the candidate decides to opt for Core (Subject Centric) papers in their main subject of postgraduation then he/she shall not be eligible to opt for foundation course papers neither in their own subject nor in any other subject).

List of Core (Subject Centric) course available in the respective subject:

| <b>M. Sc. Subject</b>                              | <b>Core (Subject Centric) I in semester III (Sem V in case of M. Sc. (Tech) Applied Geology)</b> | <b>Core (Subject Centric) II in Semester IV (Sem VI in case of M. Sc. (Tech) Applied Geology)</b> |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| M. Sc. (Physics)                                   | Solid Earth Geophysics                                                                           | Nonlinear Geophysics                                                                              |
|                                                    | Nanoscience & Nanotechnology                                                                     | Experimental Techniques in Physics                                                                |
|                                                    | Quantum Computing                                                                                | Communication Electronics                                                                         |
|                                                    | Digital Electronics & Microprocessor                                                             | Electroacoustics                                                                                  |
| M. Sc. (Chemistry)                                 | Spectroscopy I                                                                                   | Spectroscopy II                                                                                   |
| M. Sc. (Mathematics)                               | Operation Research I                                                                             | Operation Research II                                                                             |
| M. Sc. (Statistics)                                | Industrial Process and Quality Control                                                           | Industrial Statistics                                                                             |
|                                                    | Demography                                                                                       | Acturial Statistics                                                                               |
|                                                    | Statistical Ecology                                                                              | Stochastic Models in Finance                                                                      |
|                                                    | Statistical Genetics                                                                             | Statistical Pattern Recognition                                                                   |
| M. Sc. (Computer Science)                          | Mobile Computing                                                                                 | Parallel Computing                                                                                |
|                                                    | Digital & Cyber Forensics                                                                        | Mobile & Cyber Forensics                                                                          |
| M. Sc. (Information Technology)                    | CORBA                                                                                            | Enterprise Computing                                                                              |
|                                                    | Digital & Cyber Forensics                                                                        | Mobile & Cyber Forensics                                                                          |
| M. Sc. (Electronics)                               | Mechatronics                                                                                     | Mobile and Satellite Communication                                                                |
| M. Sc. (Botany)                                    | Aesthetic Botany                                                                                 | Plant Resources                                                                                   |
| M. Sc. (Zoology)                                   | Wild Life & Avian Biology                                                                        | Radiation & Chronobiology                                                                         |
| M. Sc. (Microbiology)                              | Drugs & Disease Management (DDM)                                                                 | Vaccines & Delivery Systems                                                                       |
| M. Sc. (Biochemistry)                              | Bioresearch Techniques I                                                                         | Bioresearch Techniques I                                                                          |
| M. Sc. (Biotechnology)                             | Diagnostic Medical Biotechnology                                                                 | Therapeutic Medical Biotechnology                                                                 |
| M. Sc. (Environmental Science)                     | Advanced Water & Waste Water Treatment                                                           | Disaster Management                                                                               |
| M. Sc. (Molecular Biology and Genetic Engineering) |                                                                                                  |                                                                                                   |
| M. Sc. (Geology)                                   | Environmental Geology & Engineering Geology                                                      | Fuel Geology (Coal, Petroleum & Nuclear)                                                          |
| M. Sc. (Tech) Applied Geology                      | Environmental Geology & Geohazards                                                               | Geodesy & Mapping                                                                                 |
| M. Sc. (Medicinal Plants)                          | Cultivation & Utilization of Medicinal Plants                                                    | Cultivation & Utilization of Aromatic Plants                                                      |

## Appendix-10

### General Rules and Regulations regarding pattern of question paper, absorption scheme and choice based credit system:

#### A) Pattern of Question Paper

1. There will be four units in each paper.
2. Maximum marks of each theory paper will be 80 (In M. Sc. Mathematics, each paper will be of 100 marks)
3. Question paper will consist of five questions, each of 16 marks (In M. Sc. Mathematics, each question will be of 20).
4. Four questions will be on four units with internal choice (One question on each unit).
5. Fifth question will be compulsory with questions from each of the four units having equal weightage and there will be no internal choice.

#### B) Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

M. Sc. Program shall consist of four semesters, wherein the student has to complete 100 credits. Each subject (or course) has fixed number of credits. The types of subject subheads are: Core, Core Pract, Core (Subject Centric), Core Elective, Core Elective Pract, Foundation Course, Seminar and Project / Review writing.

#### Explanatory terms:

1. **Core:** Major theory papers in the concerned subject.
2. **Core Elective:** These papers will be specialization in the concerned subject. Ex. Zoology – MRP, AP, Fisheries, Entomology etc.
3. **Foundation Course / Core (Subject Centric):** For details, refer Appendix 9.
4. **Project / Review writing:** Project / Review writing is in semester IV (Sem VI in Geology).
5. **Seminar:** The seminar in each semester shall be presented by the candidate in his / her parent department only.

#### Credits:

It is a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work / field work per week.

For example a subject with 6-2-6 (L-T-P) means it has 6 Lectures, 2 Tutorial and 6 Practical in a week. This subject will have ten credits ( $6 \times 1 + 2 \times \frac{1}{2} + 6 \times \frac{1}{2} = 10$ ). If a student is declared pass in a subject, then he/she gets the credits associated with that subject. Depending on the marks scored in a subject, student is given a Grade. Each grade has got certain grade points as follows:

| Letter Grade | O  | A+ | A  | B+ | B  | C  | P  | F | Ab |
|--------------|----|----|----|----|----|----|----|---|----|
| Grade Point  | 10 | 09 | 08 | 07 | 06 | 05 | 04 | 0 | 0  |

A student obtaining Grade F shall be considered failed and will be required to reappear for the examination.

#### Valuation pattern:

Every credit is for 25 marks and valuation and grade points will be given as per following pattern.

| Marks obtained in Theory / Practical of 100 marks | Marks obtained in Theory / Practical of 50 marks | Marks obtained in Theory / Practical of 25 marks | Letter Grade | Grade point |
|---------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------|-------------|
| 91-100                                            | 46-50                                            | 23-25                                            | O            | 10          |
| 81-90                                             | 41-45                                            | 20-22                                            | A+           | 09          |
| 71-80                                             | 36-40                                            | 18-19                                            | A            | 08          |
| 61-70                                             | 31-35                                            | 15-17                                            | B+           | 07          |
| 51-60                                             | 26-30                                            | 13-14                                            | B            | 06          |
| 41-50                                             | 21-25                                            | 11-12                                            | C            | 05          |
| = 40                                              | =20                                              | =10                                              | P            | 04          |
| <40                                               | <20                                              | <10                                              | F            | 0           |
| Ab                                                | Ab                                               | Ab                                               | Ab           | 0           |

#### Computation of SGPA and CGPA

Following is the procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

- The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e

$$SGPA (S_i) = \frac{\sum (C_i \times G_i)}{\sum C_i}$$

where  $C_i$  is the number of credits of the  $i$ th course and  $G_i$  is the grade point scored by the student in the  $i$ th course.

Illustration for SGPA

| Code                            | Theory / Practical | Credits   | Marks Obtained | Out of | Grade Point | Grade Letter | Credit Point (Credit x Grade Point) |
|---------------------------------|--------------------|-----------|----------------|--------|-------------|--------------|-------------------------------------|
| Core 1                          | Paper 1            | 4         | 91             | 100    | 10          | O            | 4x10=40                             |
| Core 2                          | Paper 2            | 4         | 89             | 100    | 9           | A+           | 4x9=36                              |
| Core 3                          | Paper 3            | 4         | 50             | 100    | 5           | C            | 4x5=20                              |
| Core 4                          | Paper 4            | 4         | 78             | 100    | 8           | A            | 4x8=32                              |
| Pract. Core 1 & 1               | Practical 1        | 4         | 89             | 100    | 9           | A+           | 4x9=36                              |
| Pract. Core 3 & 4               | Practical 2        | 4         | 85             | 100    | 9           | A+           | 4x9=36                              |
| Seminar 1                       | Seminar 1          | 1         | 23             | 25     | 10          | O            | 1x10=10                             |
|                                 | <b>Total</b>       | <b>25</b> |                |        |             |              | <b>210</b>                          |
| Thus, <b>SGPA =210/25 = 8.4</b> |                    |           |                |        |             |              |                                     |

ii. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a program, i.e.

**CGPA = Σ (Ci x Si) / Σ Ci**

where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

Illustration for CGPA

| Semester 1                | Semester 2                | Semester 3                | Semester 4                |
|---------------------------|---------------------------|---------------------------|---------------------------|
| Credit : 25<br>SGPA: 8.46 | Credit : 25<br>SGPA: 7.83 | Credit : 25<br>SGPA: 5.69 | Credit : 25<br>SGPA: 6.31 |

Thus,

**CGPA =  $\frac{25 \times 8.46 + 25 \times 7.83 + 25 \times 5.69 + 25 \times 6.31}{100}$**

**=  $\frac{211.5 + 195.75 + 142.45 + 157.75}{100} = \frac{707.25}{100} = 7.0725$  i.e. **7.07****

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts. Ex. 7.0765 = 7.08 or 7.0755 = 7.07 or 6.5168 = 6.52 etc.

Transcript (Format): Based on the above recommendations on Letter grades, grade points and SGPA and CCPA, the HEIs may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.



**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY**

**DIRECTION NO. 43 OF 2016**

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF  
MASTER OF COMPUTER MANAGEMENT (MCM)  
Choice Based Credit System (CBCS)**

**WHEREAS** the Maharashtra Universities Act No. XXXV of 1994 has come into force with effect from 22<sup>nd</sup> July, 1994.

**AND**

**WHEREAS** the amendment to the said Act came to be effected from 2016-2017.

**AND**

**WHEREAS** the Faculty of Commerce at its meeting held on 14.2.2012 have decided to update and upgrade the existing syllabus for the award of the degree of Master of Computer Management commensurate with the curricula existing in the various Universities in India and with a view to include the latest trends in the commerce stream as well as to design it to suit to the needs of the industries and corporate houses as provided under Section 38(a) of the Act.

**AND**

**WHEREAS** the Coordinator of the Faculty of Commerce concurred with the recommendations of the Special Task Committee in Computer Application in the Faculty of Commerce .

**AND**

**WHEREAS** the Special Task Committee in Computer Application in its meetings held on 24.2.2016 updated the existing syllabi and recommended some modifications in the scheme of examination for postgraduate courses,

**AND**

**WHEREAS** the Coordinator, Faculty of Commerce has consented to the changes in the syllabus and the scheme of examination for the award of Master of Computer Management Degree,

**AND**

**WHEREAS** the Vice-Chancellor, Nagpur University, Nagpur approved the recommendations so made by the Special Task Committee in the Faculty of Commerce duly concurred by the Coordinator, Faculty of Commerce as required under Section 38 (a) of the Act .

AND

**WHEREAS** it is expedient to provide an Ordinance for the purpose of prescribing examinations leading to the degree of Master of Computer Management in the Faculty of Commerce and phasing out of Ordinance No. 21 of 1994 governing the existing course of Master of Computer Management.

AND

**WHEREAS** As per the Advice of the Vice Chancellor, Coordinator, Faculty of Commerce & Coordinator, Special Task Committee (Computer Application) in the meeting held on 4.1.2016 constituted sub-committee for syllabus restructuring of MCM with Semester pattern.

The Sub-committee submitted the Semester Draft Syllabus of MCM in meeting held on 24.2.2016.

Now, therefore, I, Dr. S. P. Kane, Vice-Chancellor, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of the powers vested in me under Section 14(8) of the Maharashtra University Act of 1994 do hereby issue the following direction:

**This direction shall be called “DIRECTION REGARDING EXAMINATIONS LEADING TO THE MASTER OF COMPUTER MANAGEMENT Choice Based Credit System (CBCS) IN THE FACULTY OF COMMERCE, RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR”.**

1. There shall be FOUR examinations leading to the degree of Master of Computer Management namely:

**Part-I**

- (1) The Master of Computer Management (MCM) Semester - I Examination,
- (2) The Master of Computer Management (MCM) Semester - II Examination,

**Part-II**

- (3) The Master of Computer Management (MCM) Semester - III Examination,
- (4) The Master of Computer Management (MCM) Semester - IV Examination,

2. The duration of the Degree Course under this shall be of two academic years. The MCM Semester - I Examination at the end of the first Semester and MCM Semester - II Examination at the end of the Second Semester in First Year and MCM Semester - III Examination at the end of the Semester - III and MCM Semester - IV Examination at the end of Semester - IV in Second Year.
3. The Examinations Specified in above paragraph (i.e., Paragraph – 2) above shall be held twice a year (Winter + Summer) at such places and on such dates as may be fixed by the University.
4. The details of the procedure for admission as well as eligibility for examination of:
  - (A) An applicant of the **MCM Semester – I** Examination shall have :
    - (i) Obtained a Bachelor degree of this University or an equivalent Bachelor Degree of any statutory University in any faculty.
    - (ii) Prosecuted a regular course of study for not less than one Semester in any recognized institution or college affiliated to the R. T. M. Nagpur University where the course will be conducted.
  - (B) An applicant of the **MCM Semester - II** Examination shall have :
 

Appeared MCM Semester – I Examination of this University
  - (C) An Applicant of MCM Semester - III Examination shall have passed MCM Semester - I and appeared in Semester - II Examination.

**OR**

Passed PGDCCA/Post B.Sc. Diploma in Computer Science & Application of  
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

- (D) An applicant of MCM Semester - IV Examination shall have passed MCM Semester - I, Semester - II or equivalent Diploma and appeared in Semester - III Examination.

| <b>Admission to Semester</b> | <b>Candidate should have passed in following examinations</b> | <b>Candidate should have competed the term and filled examination form</b> |
|------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|
| Semester - I                 | Degree Examination                                            | -                                                                          |
| Semester - II                | -                                                             | Semester – I                                                               |
| Semester - III               | PGDCCA /PGDCS/<br>Semester-I                                  | (Not applicable for<br>PGDCCA/ PGDCS)<br>Semester-II                       |
| Semester - IV                | Semester-I & II                                               | Semester - III                                                             |



5. Without prejudice to the other provisions of Ordinance No. 6 relating to the Examinations in General, the provisions of Paragraphs 5, 7, 8, 10, 26 and 31 of the said Ordinance shall apply to every collegiate candidate.
6. The fees for the examination shall be as prescribed by the Management Council from time to time and whenever any change is made in the fees prescribed for any particular examination that shall be notified through a notification for information of the examinees concerned.

With the issuance of this Direction, The Direction No 24 of 2012 (Credit based Semester Pattern) shall stand repealed.

Nagpur  
Date :21.6.2016

**Sd/-**  
**Dr. S. P. Kane**  
Vice-Chancellor

## 7. Teaching and Examination Scheme

### Master of Computer Management (MCM)

#### (A) MCM Part-I

##### Semester – I

| Course Code      | Subjects                                                 | Paper | Teaching Scheme per weeks (hr) | End Sem Examination | Min Marks | Internal Assessment | Min Marks | Credits |
|------------------|----------------------------------------------------------|-------|--------------------------------|---------------------|-----------|---------------------|-----------|---------|
| <b>Theory</b>    |                                                          |       |                                |                     |           |                     |           |         |
| 1CMT1            | Fundamental of Information Technology                    | I     | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 1CMT2            | Programming in C & OOPs Concept                          | II    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 1CMT3            | Introduction to Operating Systems                        | III   | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 1CMT4            | Computerized Accounting (Tally ERP 9)                    | IV    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| <b>Practical</b> |                                                          |       |                                |                     |           |                     |           |         |
| 1CMP5            | <b>Practical-I</b> :Programming in C & Operating Systems | P-I   | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| 1CMP6            | <b>Practical-II</b> :Tally (ERP 9)& MS-Office            | P-II  | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
|                  | <b>Total</b>                                             |       | 32                             | 520                 |           |                     |           | 24      |

#### Notes:

1. Duration of one Theory/Practical period is 1 hour.
2. The candidate has to pass theory papers and practical paper separately.
3. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.
4. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
5. The odd semester may be scheduled from July to December and even semester from January to June.

## (B) MCM Part-I

### Semester – II

| Course Code      | Subjects                                 | Paper | Teaching Scheme per weeks (hr) | End Sem Examination | Min Marks | Internal Assessment | Min Marks | Credits |
|------------------|------------------------------------------|-------|--------------------------------|---------------------|-----------|---------------------|-----------|---------|
| <b>Theory</b>    |                                          |       |                                |                     |           |                     |           |         |
| 2CMT1            | Management Information Systems           | I     | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 2CMT2            | Core Java                                | II    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 2CMT3            | Quantity Techniques & Operation Research | III   | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 2CMT4            | E-Commerce and Web Designing             | IV    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| <b>Practical</b> |                                          |       |                                |                     |           |                     |           |         |
| 2CMP5            | <b>Practical-I</b> :Core Java            | P-I   | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| 2CMP6            | <b>Practical-II</b> : HTML, JavaScript   | P-II  | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
|                  | <b>Total</b>                             |       | 32                             | 520                 |           |                     |           | 24      |

### Notes:

1. Duration of one theory/practical period is 1 hour.
2. The candidate has to pass theory papers and practical paper separately.
3. One credit is equivalent to one hour of teaching or two hours of practical Work per week.
4. Each semester will consist of 15 – 18 weeks of academic Work equivalent to 90 actual teaching days.
5. The odd semester may be scheduled from July to December and even semester from January to June.

## (C) MCM Part-II

### Semester – III

| Course Code      | Subjects                                                             | Paper | Teaching Scheme per weeks (hr) | End Sem Examination | Min Marks | Internal Assessment | Min Marks | Credits |
|------------------|----------------------------------------------------------------------|-------|--------------------------------|---------------------|-----------|---------------------|-----------|---------|
| <b>Theory</b>    |                                                                      |       |                                |                     |           |                     |           |         |
| 3CMT1            | Advance Database Management System                                   | I     | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 3CMT2            | Principles & Techniques of Management                                | II    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 3CMT3            | <b>Electives :</b><br>(i) PHP & MySQL<br>(ii) VB.Net<br>(iii) C#.Net | III   | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 3CMT4            | <b>Compulsory Foundation</b><br>(i) Research Methodology             | IV    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| <b>Practical</b> |                                                                      |       |                                |                     |           |                     |           |         |
| 3CMP5            | <b>Practical-I</b> :SQL & PL/SQL                                     | P-I   | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| 3CMP6            | <b>Practical-II</b> :Electives                                       | P-II  | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
|                  | <b>Total</b>                                                         |       | 32                             | 520                 |           |                     |           | 24      |

### Notes:

1. Duration of one theory/practical period is 1 hour.
2. The candidate has to pass theory papers and practical paper separately.
3. One credit is equivalent to one hour of teaching or two hours of practical work per week.
4. Each semester will consist of 15 – 18 weeks of academic work equivalent to 90 actual teaching days.
5. The odd semester may be scheduled from July to December and even semester from January to June.

## (D) MCM Part-II

### Semester – IV

| Course Code      | Subjects                                                                                                      | Paper   | Teaching Scheme per weeks (hr) | End Sem Examination | Min Marks | Internal Assessment | Min Marks | Credits |
|------------------|---------------------------------------------------------------------------------------------------------------|---------|--------------------------------|---------------------|-----------|---------------------|-----------|---------|
| <b>Theory</b>    |                                                                                                               |         |                                |                     |           |                     |           |         |
| 4CMT1            | ASP.Net                                                                                                       | I       | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 4CMT2            | <b>Electives:</b><br>(i) Advance Java<br>(ii) Android Programming<br>(iii) Python                             | II      | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 4CMT3            | <b>Elective Foundation:</b><br>(i) Big Data &Hadoop<br>(ii) Software Engineering<br>(iii)Strategic Management | III     | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| <b>Practical</b> |                                                                                                               |         |                                |                     |           |                     |           |         |
| 4CMP4            | <b>Practical-I:</b> ASP.Net                                                                                   | P-I     | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| 4CMP5            | <b>Practical-II:</b> Electives                                                                                | P-II    | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| <b>Project</b>   |                                                                                                               |         |                                |                     |           |                     |           |         |
| 4CMP6            | PROJECT                                                                                                       | Project | 8                              | 100                 | 50        | -----               | -----     | 4       |
|                  | <b>Total</b>                                                                                                  |         | 36                             | 540                 |           |                     |           | 24      |

### Notes:

1. Duration of one theory/practical period is 1 hour.
2. The candidate has to pass theory papers and practical paper separately.
3. One credit is equivalent to one hour of teaching or two hours of practical work per week.
4. Each semester will consist of 15 – 18 weeks of academic work equivalent to 90 actual teaching days.
5. The odd semester may be scheduled from July to December and even semester from January to June.

8. In order to pass the examination, an examinee shall obtain not less than 50 % marks in each of the theory papers and each of the practical and the project and Internal Assessment (Sessional) separately.
- (A) An examinee who is unsuccessful in the examination shall be eligible for admission to the subsequent examinations on payment of a fresh fee prescribed for the examination together with the conditions of the ordinance in force from time to time.
9. (A) The scope of the subjects and pattern of examination shall be as indicated insyllabi.
- (B) The Medium of instructions and examinations shall be in ENGLISH only.
10. Applicant for MCM Examination prosecuting regular course of study shall not be permitted to join any other course in this or any other University.

11. **ASSESSMENT**

- The final total assessment of the candidates is made in terms of an internal assessment (Sessional) and an external assessment for each course.
- For each paper, 20 marks will be based on internal assessment and 80 marks for semester end examination (external assessment), unless otherwise stated.
- The division of the 20 marks allotted to internal assessment of theory papers should be based on class test, attendance, project assignments, seminar, power point presentation, fieldwork, group discussions or any other innovative practice / activity as determined by the teacher in respective subject and moderated by Head of the Institute/Principal.
- There shall be no separate / extra allotment of workload to the concerned teacher. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
- At the beginning of each semester, every teacher shall inform his / her students unambiguously the method he / she propose to adopt and the scheme of marking for internal assessment with the prior permission of HOD / principal.

- An unsuccessful examinee at any internal shall be eligible for reexamination on payment of fresh examination fee prescribed by the University as per the respective directions.
- The internal marks will be communicated to the University at the end of each semester, but before the semester end examinations. These marks will be considered for the declaration of the results.
- The record of internal marks, evaluation & result should be maintained for a period of one year by respective institute/college for verification by competent authority.
- The maximum and minimum marks which each subject carries in MCM Semester - I, Semester - II, Semester - III and Semester - IV Examination are as indicated in Paragraph 7. A, B, C and D respectively.
- A copy of Project work shall be submitted to college prior to commencement of Semester - IV Examination for Evaluation by Internal and External Examiner appointed as per University rules.
- Candidate shall submit his/her declaration that the Project is a result of his/her own work and the same has not been previously submitted to any examination of this University or any other University.
- The Practical Examination of each Semester will be conducted by Internal and External Examiner appointed as per University rules.
- The old course students shall be absorbed as per the absorption scheme mentioned in Appendix D.
- If an examinee failed to pass the MCM Degree within five successive years from the date of his/her first admission to particular programme he/she shall be declared as **“Not Fit for the Course” (NFC)** and he/she will not be allowed to appear further for any examination of the course.

#### **STANDARD OF PASSING**

- Every candidate must secure 50% marks in each head of passing.
- The passing marks for external examination will thus be 40 out of 80 and for internal examination, 10 out of 20 and aggregate marks taking both together will be 50 marks.
- There shall be no internal marks in Practical and Project Examination.

11. (A) There shall be no classification of examinees successful at the MCM Semester-I, Semester – II, Semester - III and Semester-IV Examinations whereas SGPA will be notified.

**\* Conversion of Marks to Grades and Calculations of SGPA (Grade Point Average) and CGPA (Cumulative Grade Point Average):** In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

**Abbreviations and Formulae Used**

**G:** Grade

**GP:** Grade Points

**C:** Credits

**CP:** Credit Points

**CG:** Credits X Grades (Product of credits & Grades)

**SGPA =  $\Sigma CG$ :** Sum of Product of Credits & Grades points /  $\Sigma C$ : Sum of Credits points

**SGPA:** Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

**CGPA:** Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

After calculating the SGPA for an individual semester and the CGPA for entire programme, the value can be matched with the grade in the Grade Point table as per the ten (10) Points Grading System and expressed as a single designated GRADE such as O, A+, A, B+, B, etc.

| Marks        | Grade            | Grade Points |
|--------------|------------------|--------------|
| 85 and above | O (Outstanding)  | 10           |
| 75 - 84      | A+ (Distinction) | 9            |
| 71 - 74      | A (Very Good)    | 8            |
| 61 - 70      | B+ (Good)        | 7            |
| 55 - 60      | B(Above Average) | 6            |
| 50 - 54      | C (Average)      | 5            |
| 40 - 49      | P (Pass)         | 4            |



|         |             |   |
|---------|-------------|---|
| 00 - 39 | F (Fail)    | 0 |
|         | AB (Absent) | 0 |

A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

- (B) Division at the MCMSemester - IV Examination shall be declared based on the aggregate marks at the MCMSemester - I, Semester – II, Semester - III and Semester - IV Examination taken together and the CGPA will be calculated and notified.
- (C) Successful examinees at the MCM Semester - IV Examination shall be awarded division based on CGPA as follows:

| <b>CGPA Range</b> | <b>Final Grade</b> | <b>Equivalent Class/ Division</b> |
|-------------------|--------------------|-----------------------------------|
| 9.01 to 10.00     | O                  | First Division (Outstanding)      |
| 8.01 to 9.00      | A+ (Distinction)   | First Division(Distinction)       |
| 7.01 to 8.00      | A(Very Good)       | First Division (Very Good)        |
| 6.01 to 7.00      | B+(Good)           | First Division (Good)             |
| 5.55 to 6.00      | B(Above Average)   | Second Division (Above Average)   |
| 5.00 to 5.54      | C(Average)         | Second Division (Average)         |
| 4.00 to 4.99      | P (Pass)           | Pass                              |
| 0                 | F (Fail)           | Fail                              |
| 0                 | AB(Absent)         | Absent                            |

12. Successful examinees in the MCMSemester Examination shall be awarded Distinction in each subject in which examinees obtain 75% or more marks in that subject at the respective Examination.
13. Unsuccessful examinees at the above examinations can be readmitted to the same examination on payment of a fresh fee and such other fees as may be prescribed by university.
14. Provisions of ordinance No 3 of 2007, relating to the award of grace marks for passing an examination, securing higher division / class and for securing distinction in subject(s) shall be applicable.

15. Notwithstanding anything to the contrary in this Direction, no person shall be admitted to an examination under this Ordinance, if he/ she has already passed the same examination or an equivalent examination of any other University.
16. Examinees successful at MCMSemester - I, Semester - II, Semester-III and Semester-IV Examination shall on payment of the prescribed fees receive a Degree in the prescribed form signed by the Vice-Chancellor.
17. This Scheme shall come into force from the academic session 2016-17.
18. The Provisions of Ordinance No. 21 of 1994 governing the existing course for Master of Computer Management stands repealed physically on implementation of this Direction.

## APPENDIX –A

### QUESTION PAPER PATTERN

#### **First / Second / Third / Fourth Semester Master of Computer Management (MCM) Examination Choice Based Credit System (CBCS)**

**Subject Name  
Paper - I**

**Time: 3 Hours**

**Total Marks: 80**

- N. B. - a) Draw well labeled diagram wherever necessary.  
b) All questions are compulsory.

#### **Part - A**

- N. B. – 1. Each question carries two marks.  
2. Answers should not more than five lines.

- |      |            |            |
|------|------------|------------|
| 1. } | Unit - I   | 8 x 2 = 16 |
| 2. } |            |            |
| 3. } | Unit - II  |            |
| 4. } |            |            |
| 5. } | Unit - III |            |
| 6. } |            |            |
| 7. } | Unit - IV  |            |
| 8. } |            |            |

#### **Part - B**

- N. B. – 1. Each question carries three marks.  
2. Answers should not more than ten lines.

- |      |            |            |
|------|------------|------------|
| 1. } | Unit - I   | 8 x 3 = 24 |
| 2. } |            |            |
| 3. } | Unit - II  |            |
| 4. } |            |            |
| 5. } | Unit - III |            |
| 6. } |            |            |
| 7. } | Unit - IV  |            |
| 8. } |            |            |

### Part - C

N. B. – 1. Each question carries five marks.

2. Answers should not more than 400 words for 5 marks questions and 600 words for 10 Marks questions respectively.

1. **Either**

- |     |   |          |           |    |
|-----|---|----------|-----------|----|
| (A) | } | Unit - I | <b>OR</b> | 5  |
| (B) |   |          |           | 5  |
| (C) |   |          |           | 10 |

2. **Either**

- |     |   |           |           |    |
|-----|---|-----------|-----------|----|
| (A) | } | Unit - II | <b>OR</b> | 5  |
| (B) |   |           |           | 5  |
| (C) |   |           |           | 10 |

3. **Either**

- |     |   |            |           |    |
|-----|---|------------|-----------|----|
| (A) | } | Unit - III | <b>OR</b> | 5  |
| (B) |   |            |           | 5  |
| (C) |   |            |           | 10 |

4. **Either**

- |     |   |           |           |    |
|-----|---|-----------|-----------|----|
| (A) | } | Unit - IV | <b>OR</b> | 5  |
| (B) |   |           |           | 5  |
| (C) |   |           |           | 10 |

## **APPENDIX –B**

### **(A) Project and Classification of Marks on Project**

Towards the end of the second year of study, a student will be examined in the course “Project Work”.

- a. Project Work may be done individually or in groups (Maximum 3 students) in case of bigger projects. However if project is done in groups, each student must be given a responsibility for a distinct module and care should be taken to monitor the progress of individual student.
- b. The Project Work should be done using the tools covered in Master of Computer Management.
- c. The Project Work should be of such a nature that it could prove useful or be relevant from the commercial / management angle.
- d. The project work will carry 100 marks.
- e. Project Work can be carried out in the Institute or outside with prior permission of the Institute.
- f. The external viva-voce examination for Project Work would be held as per the Examination Time Table of the second year of study, by a panel of one external and one Internal Examiner.

#### **Types of Project**

As majority of the students are expected to work out a project in some industry/research and development laboratories/educational institutions/software export companies, it is suggested that the project is to be chosen which should have some direct relevance in day-today activities of the candidates in his/her institution. The Applications Areas of project - Financial/Marketing/Database Management System/ Relational Database Management System/E-Commerce /Internet/ Manufacturing/ web Designing / Scientific / ERP etc.

#### **Project Proposal (Synopsis)**

The project proposal should be prepared in consultation with the guide. The project guide must be a person having minimum Qualification MCM/ M.Sc. (Computer Science + Information

Technology)/ M.Sc. (Mathematics /Electronics/Statistics/Physics + Post B.Sc. Diploma in Computer Science& Application)/MCA. The project proposal should clearly state the objectives and environment of the proposed project to be undertaken. It should have full details in the following form:

***Format of Synopsis for Desktop Application***

1. Title of the Project.
2. Objectives of the Project.
3. Project Category (DBMS/RDBMS/OOPSetc.).
4. Tools/Platform and Languages to be used.
5. Complete Structure of the System:
  - i. Numbers of Modules and its Description.
  - ii. Modular Chart / System Chart.
  - iii. Data Structures or Tables.
  - iv. Process Logic of each Module.
  - v. Types of Report Generation.
6. References.

**Note:** Synopsis should not be more than 3-4 pages.

***Format of Synopsis for Web Application***

1. Title of the Project.
2. Objectives of the Project.
3. Project Category (DBMS/RDBMS/OOPSetc.).
4. Tools/Platform and Languages to be used.
5. Complete Structure of the System:
  - i. Number of pages and links their short description.
  - ii. Use / Information of Pages.
  - iii. Feedback Form (if any).
6. References.

**Note:** Synopsis should not be more than 3-4 pages.

**Project Report Formulation**

Front Page.

College Certificate Page.

Declaration Page.

Acknowledgment Page.

Project Profile.

Index or Content Page.

- i. \*Contents \_\_\_\_\_.

Appendices

- i. List Figures, Tables& Charts.
- ii. Approved copy of Synopsis.

Glossary

**\* Contents.**

- i. Introduction.
- ii. Objectives.
- iii. Preliminary System Analysis.
  - Preliminary Investigation.
  - Present System in Use.
  - Flaws in Present System.
  - Need of New System.
  - Feasibility Study.
  - Project Category.
- iv. Software Engineering Paradigm Applied
  - Modules
  - System / Modular Chart.
- v. Software & Hardware Requirement Specification.
- vi. Detailed System Analysis.
  - Data Flow Diagram.
  - Numbers of Modules and Process Logic.
  - Data Structures and Tables.
  - Entity-Relationship Diagram.
- vii. System Design.
  - Form Design.
  - Source Code.
  - Input screen & Output Screen.
- viii. Testing & Validation Checks.
- ix. System Security Measures.
- x. Implementation, Evaluation and Maintenance.
- xi. Future Scope of the project.
- xii. Suggestion & Conclusion

- xiii. Bibliography& References.

**Note :-**

- i. A Student is expected to complete the Assignments based on Syllabus of Practical subjects and submit the same in the form of a files (assignment Record) at the end of Academic Session for the evaluation purpose.
- ii. A student should submit internal assessment of each theory paper prescribed by the subject teacher.
- iii. A Student is expected to deliver a seminar on any course curricular subject / latest trends in IT relevant subject per semester for internal assessment.

**# Classification Of Marks on Project :-**

|                        |            |
|------------------------|------------|
| Report & Documentation | 40         |
| Viva voce (External)   | 40         |
| Viva voce (Internal)   | 20         |
| <hr/>                  |            |
| <b>Total Marks</b>     | <b>100</b> |

The marks of Project shall be notified as a whole out of 100 in Foil/C-Foil.

**(B)Practical and Classification of Marks on Practical**

1. Practical exam shall be of 4 hours duration.
2. The Practical Record of every student shall carry a certificate as shown below, dulysigned by the teacher-in-charge and the Head of the Department.
3. If the student fails to submit his / her certified Practical Record duly signed by theTeacher-In-Charge and the Head of the Department, he / she shall not be allowed toappear for the Practical Examination and no Marks shall be allotted to the student.
4. After Viva-Voce and evaluation of practical records of a student by the Internal & External Examiner, both examiners should sign on the certificate of practical records.
5. The certificate template shall be as follows:



**Name of the college / Institution**

**Name of the Department:**

## **CERTIFICATE**

This is to certify that Mr./Mrs./Ms. \_\_\_\_\_  
of class MCM Part \_\_\_\_\_ Semester \_\_\_\_\_ has satisfactorily completed the practical  
experiments prescribed by Rastrashant Tukdoji Maharaj Nagpur University for the subject  
\_\_\_\_\_ during the academic year \_\_\_\_\_.

Signature  
**Practical In-charge Head of the Department**

Signature

Signature  
**Internal Examiner**

Signature  
**External Examiner**

Date: \_\_\_\_\_

# **Classification Of Practical Marks :-**

| <b>Practical – I</b>    |                                                         | <b>Marks</b> |
|-------------------------|---------------------------------------------------------|--------------|
| 1.                      | Writing a Program or Problem<br>(Algorithm & Flowchart) | 40           |
| 2.                      | Execute on a computer                                   |              |
| 3.                      | Taking Hard Copy                                        |              |
| <b>Practical – II</b>   |                                                         |              |
| 1.                      | Writing a Program or Problem<br>(Algorithm & Program)   | 20           |
| <b>Viva Voce</b>        |                                                         | 20           |
| <b>Practical Record</b> |                                                         | 20           |
| <b>Total Marks</b>      |                                                         | <b>100</b>   |

The marks of Practical shall be notified as a whole out of 100 in Foil/C-Foil.

## APPENDIX –C

### Absorption Scheme MCM

It is notified for general information of all concerned that the failure students of **MCM Old Course (Semester Pattern)** shall be absorbed in the **New Course CBCS Pattern** introduced from the session 2016-2017 Examination with the following scheme.

- 1) The Failure students of **MCM – I (Semester – I & Semester - II) and MCM – II (Semester – III & Semester - IV)** as per Old Course (Semester Pattern) **appeared in Sum 2016** should clear their backlog papers of MCM – I (Semester – I & Semester - II) and MCM – II (Semester – III & Semester - IV) Old Course (Semester Pattern) **till Winter 2017**. If they fail to complete & pass till Winter 2017, then they will have to appear in parallel papers of New Course CBCS Pattern (Choice Based Credit System) as per absorption scheme indicated in Appendix - D.
- 2) The Failure students of **MCM – II (Semester – III)** as per Old Course (Semester Pattern) **appeared in Winter 2016** should clear their backlog papers of MCM – II (Semester - III) Old Course (Semester Pattern) **till Summer 2018**. If they fail to complete & pass till Summer 2018, then they will have to appear in parallel papers of New Course CBCS Pattern (Choice Based Credit System) as per absorption scheme indicated in Appendix - D.
- 3) The Failure students of **MCM – II (Semester – IV)** as per Old Course (Semester Pattern) **appeared in Summer 2017** should clear their backlog papers of MCM – II (Semester - IV) Old Course (Semester Pattern) **till Winter 2018**. If they fail to complete & pass till Winter 2018, then they will have to appear in parallel papers of New Course CBCS Pattern (Choice Based Credit System) as per absorption scheme indicated in Appendix - D.

## APPENDIX –D

### (A) MCM Part – I (Semester - I)

**Old Course (Semester Pattern)→New Course CBCS Pattern (Choice Based Credit System)**

| Sr. No              | Old Course<br>(Semester Pattern)                            | M. Marks | Sr. No           | New Course CBCS<br>Pattern (Choice Based<br>Credit System)  | Max Marks |
|---------------------|-------------------------------------------------------------|----------|------------------|-------------------------------------------------------------|-----------|
| <b>Semester – I</b> |                                                             |          |                  |                                                             |           |
| <b>Theory</b>       |                                                             |          | <b>Theory</b>    |                                                             |           |
| I                   | Fundamental of Information Technology                       | 80       | 1CMT1            | Fundamental of Information Technology                       | 80        |
| II                  | Programming in C                                            | 80       | 1CMT2            | Programming in C & OOPs Concept                             | 80        |
| III                 | Introduction to Operating Systems                           | 80       | 1CMT3            | Introduction to Operating Systems                           | 80        |
| IV                  | Computerized Accounting (Tally)                             | 80       | 1CMT4            | Computerized Accounting (Tally ERP 9)                       | 80        |
| <b>Practical</b>    |                                                             |          | <b>Practical</b> |                                                             |           |
| P - I               | <b>Practical - I</b> : Programming in C & Operating Systems | 100      | 1CMP5            | <b>Practical - I</b> : Programming in C & Operating Systems | 100       |
| P - II              | <b>Practical -II</b> : Tally & MS-Office                    | 100      | 1CMP6            | <b>Practical - II</b> : Tally (ERP 9) &Ms-Office            | 100       |

**(B) MCM Part – I (Semester - II)**

**Old Course (Semester Pattern)→New Course CBCS Pattern (Choice Based Credit System)**

| Sr. No               | Old Course (Semester Pattern)                           | M. Marks | Sr. No           | New Course CBCS Pattern (Choice Based Credit System) | Max Marks |
|----------------------|---------------------------------------------------------|----------|------------------|------------------------------------------------------|-----------|
| <b>Semester – II</b> |                                                         |          |                  |                                                      |           |
| <b>Theory</b>        |                                                         |          | <b>Theory</b>    |                                                      |           |
| I                    | Management Information Systems and Software Engineering | 80       | 2CMT1            | Management Information Systems                       | 80        |
| II                   | Visual Basic Programming                                | 80       | 2CMT2            | Core Java                                            | 80        |
| III                  | Principles & Techniques of Management                   | 80       | 2CMT3            | Quantity Techniques & Operation Research             | 80        |
| IV                   | E-Commerce and Web Designing                            | 80       | 2CMT4            | E-Commerce and Web Designing                         | 80        |
| <b>Practical</b>     |                                                         |          | <b>Practical</b> |                                                      |           |
| P - I                | Practical-I : Visual Basic                              | 100      | 2CMP5            | <b>Practical-I</b> :Core Java                        | 100       |
| P - II               | Practical-II : HTML, JavaScript                         | 100      | 2CMP6            | <b>Practical-II</b> : HTML, JavaScript               | 100       |

**(C) MCM Part – II (Semester - III)****Old Course (Semester Pattern) → New Course Pattern (Choice Based Credit System)**

| Sr. No                | Old Course (Semester Pattern)                                | M. Marks | Sr. No           | New Course Pattern (Choice Based Credit System)                      | Max Marks |
|-----------------------|--------------------------------------------------------------|----------|------------------|----------------------------------------------------------------------|-----------|
| <b>Semester – III</b> |                                                              |          |                  |                                                                      |           |
| <b>Theory</b>         |                                                              |          | <b>Theory</b>    |                                                                      |           |
| I                     | Quantitative Techniques & OR                                 | 80       | 3CMT1            | Advance Database Management System                                   | 80        |
| II                    | Core Java                                                    | 80       | 3CMT2            | Principles & Techniques of Management                                | 80        |
| III                   | DBMS and oracle                                              | 80       | 3CMT3            | <b>Electives :</b><br>(i) PHP & MySQL<br>(ii) VB.Net<br>(iii) C#.Net | 80        |
| IV                    | Research Methodology & Software Product & Project Management | 80       | 3CMT4            | <b>Compulsory Foundation</b><br>(i) Research Methodology             | 80        |
| <b>Practical</b>      |                                                              |          | <b>Practical</b> |                                                                      |           |
| P - I                 | Practical-I : Core Java                                      | 100      | 3CMP5            | <b>Practical- I :SQL &amp; PL/SQL</b>                                | 100       |
| P - II                | Practical-II : Oracle                                        | 100      | 3CMP6            | <b>Practical-II :Electives</b>                                       | 100       |

**(D) MCM Part – II (Semester - IV)**

**Old Course (Semester Pattern)→New Course Pattern (Choice Based Credit System)**

| Sr. No               | Old Course (Semester Pattern)                                  | M. Marks | Sr. No           | New Course Pattern (Choice Based Credit System)                                                               | Max Marks |
|----------------------|----------------------------------------------------------------|----------|------------------|---------------------------------------------------------------------------------------------------------------|-----------|
| <b>Semester – IV</b> |                                                                |          |                  |                                                                                                               |           |
| <b>Theory</b>        |                                                                |          | <b>Theory</b>    |                                                                                                               |           |
| I                    | Information Security & Cyber Laws                              | 80       | 4CMT1            | ASP.Net                                                                                                       | 80        |
| II                   | PHP& My-SQL                                                    | 80       | 4CMT2            | <b>Electives:</b><br>(i) Advance Java<br>(ii) Android Programming<br>(iii) Python                             | 80        |
| III                  | Electives : (i) Advanced Java<br>(ii) OOPS & C++ (iii) ASP.Net | 80       | 4CMT3            | <b>Elective Foundation:</b><br>(i) Big Data &Hadoop<br>(ii) Software Engineering<br>(iii)Strategic Management | 80        |
| <b>Practical</b>     |                                                                |          | <b>Practical</b> |                                                                                                               |           |
| P - I                | Practical-I : PHP& My-SQL                                      | 80       | 4CMP4            | <b>Practical-I:</b> ASP.Net                                                                                   | 100       |
| P - II               | Practical-II : Elective                                        | 100      | 4CMP5            | <b>Practical-II:</b> Electives                                                                                | 100       |
| <b>Project</b>       |                                                                |          | <b>Project</b>   |                                                                                                               |           |
| Proj                 | PROJECT                                                        | 100      | 4CMP6            | PROJECT                                                                                                       | 100       |



**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY**

**DIRECTION NO. 26 OF 2016**

**DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF  
POST GRADUATE DIPLOMA IN COMPUTER COMMERCIAL APPLICATIONS (PGDCCA)  
Choice Based Credit System (CBCS)**

**WHEREAS** the Maharashtra Universities Act No. XXXV of 1994 has come into force with effect from 22<sup>nd</sup> July, 1994

**AND**

**WHEREAS** the amendment to the said Act came to be effected from 2016-2017

**AND**

**WHEREAS** the Faculty of Commerce at its meeting held on 14.2.2012 have decided to update and upgrade the existing syllabus for the award of the degree of Post Graduate Diploma in Computer Commercial Applications (PGDCCA) commensurate with the curricula existing in the various Universities in India and with a view to include the latest trends in the commerce stream as well as to design it to suit to the needs of the industries and corporate houses as provided under Section 38(a) of the Act.

**AND**

**WHEREAS** the Coordinator of the Faculty of Commerce concurred with the recommendations of the Special Task Committee in Computer Application in the Faculty of Commerce.

**AND**

**WHEREAS** the Special Task Committee in Computer Application in its meetings held on 24.2.2016 updated the existing syllabi and recommended some modifications in the scheme of examination for postgraduate courses,

**AND**

**WHEREAS** the Coordinator, Faculty of Commerce has consented to the changes in the syllabus and the scheme of examination for the award of Post Graduate Diploma in Computer Commercial Applications (PGDCCA),

**AND**

**WHEREAS** the Vice-Chancellor, Nagpur University, Nagpur approved the recommendations so made by the Special Task Committee in the Faculty of Commerce

duly concurred by the Coordinator, Faculty of Commerce as required under Section 38 (a) of the Act .

AND

**WHEREAS** As per the Advice of the Vice Chancellor, Coordinator, Faculty of Commerce & Coordinator, Special Task Committee (Computer Application) in the meeting held on 24.2.2016 constituted sub-committee for syllabus restructuring of PGDCCA with Semester pattern.

AND

Whereas, The Sub-committee submitted the Semester Draft Syllabus of PGDCCA in meeting held on 24.2.2016.

AND

**Whereas**, the Sub-committee submitted the Semester Draft Syllabus of BCCA in meeting held on 5.4.2016.

AND

**Whereas**, the University has issued Direction to 15 of 2017 dealing with the composition of the four faculties created by the Act, where under the existing different faculties of the University have been merged into the four new faculties created by the Act, by which the erstwhile independent faculty of “Law” has been merged in the new faculty of “Humanities” under the Act;

AND

Whereas, the University has issued Direction No. 13 of 2017 prescribing “conditions for conduct of undergraduate and post graduate examinations based on credit based/choice based credit system, in all faculties, Direction, 2017” on 06/06/2017, prescribing certain conditions relating to maximum and minimum passing marks in the theory /practical subjects prescribed in the semester of a course, the maximum theory and practical subjects in a semester, rules of exemption and ATKT, and also the coding pattern for the subjects in each semester of the course, necessitating appropriate changes in the existing Directions governing the undergraduate and post graduation courses in all the faculties of the University;

AND

**WHEREAS** it is expedient to provide an Ordinance for the purpose of prescribing examinations leading to the degree of Bachelor of Commerce (B.Com. (Computer Application))(BCCA) in the Faculty of Commerce and phasic repeal of Ordinance No. 21 of 1994 governing the existing course of Bachelor of Commerce (B.Com. (Computer Application))(BCCA) but the Ordinance making is a consuming process and there is an exigency necessitating exercise of powers by the Vice-Chancellor under section 12(8) of the Act;

Now, therefore, I, Dr. S. P. Kane, Vice-Chancellor, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of the powers vested in me under Section 14(8) of the Maharashtra University Act of 1994 do hereby issue the following direction:



This direction shall be called “**DIRECTION REGARDING EXAMINATIONS LEADING TO THE POST GRADUATE DIPLOMA IN COMPUTER COMMERCIAL APPLICATIONS (PGDCCA) IN THE FACULTY OF COMMERCE, RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR**”.

1. There shall be TWO examinations leading to the degree of Post Graduate Diploma in Computer Commercial Applications (PGDCCA) namely:

**Part-I**

(1) The Post Graduate Diploma in Computer Commercial Applications (PGDCCA) Semester - I Examination,

(2) The Post Graduate Diploma in Computer Commercial Applications (PGDCCA) Semester - II Examination,

2. The duration of the Post Diploma Course under this shall be of one academic years. The PGDCCA Semester - I Examination at the end of the first Semester and PGDCCA Semester - II Examination at the end of the Second Semester in First Year.
3. The Examinations Specified in above paragraph (i.e., Paragraph – 2) above shall be held twice a year (Winter + Summer) at such places and on such dates as may be fixed by the University.

4. The details of the procedure for admission as well as eligibility for examination of:

(A) An applicant of the **PGDCCASemester – I** Examination shall have :

- (i) Obtained a Bachelor degree of this University or an equivalent Bachelor Degree of any statutory University in any faculty.
- (ii) Prosecuted a regular course of study for not less than one Semester in any recognized institution or college affiliated to the R. T. M. Nagpur University where the course will be conducted.

(B) An applicant of the **PGDCCASemester - II** Examination shall have :

Appeared PGDCCA Semester – I Examination of this University

| Admission to Semester | Candidate should have passed in following examinations | Candidate should have competed the term and filled examination form |
|-----------------------|--------------------------------------------------------|---------------------------------------------------------------------|
| Semester - I          | Degree Examination                                     | -                                                                   |
| Semester - II         | -                                                      | Semester – I                                                        |

5. Without prejudice to the other provisions of Ordinance No. 6 relating to the Examinations in General, the provisions of Paragraphs 5, 7, 8, 10, 26 and 31 of the said Ordinance shall apply to every collegiate candidate.

6. The fees for the examination shall be as prescribed by the Management Council from time to time and whenever any change is made in the fees prescribed for any particular examination that shall be notified through a notification for information of the examinees concerned.

With the issuance of this Direction, The Direction No 44 of 2016 (Choice Based Credit System) shall stand repealed.

Nagpur  
Date : 29.08.2017

**Sd/-**  
**Dr. S. P. Kane**  
Vice-Chancellor

## 7. Teaching and Examination Scheme

### Post Graduate Diploma in Computer Commercial Applications (PGDCCA)

#### (A) PGDCCA Part-I

##### Semester – I

| Course Code      | Subjects                                                 | Paper | Teaching Scheme per weeks (hr) | End Sem Examination | Min Marks | Internal Assessment | Min Marks | Credits |
|------------------|----------------------------------------------------------|-------|--------------------------------|---------------------|-----------|---------------------|-----------|---------|
| <b>Theory</b>    |                                                          |       |                                |                     |           |                     |           |         |
| 1T1              | Fundamental of Information Technology                    | I     | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 1T2              | Programming in C & OOPs Concept                          | II    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 1T3              | Introduction to Operating Systems                        | III   | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 1T4              | Computerized Accounting (Tally ERP 9)                    | IV    | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| <b>Practical</b> |                                                          |       |                                |                     |           |                     |           |         |
| 1P1              | <b>Practical-I</b> :Programming in C & Operating Systems | P-I   | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| 1P2              | <b>Practical-II</b> :Tally (ERP 9)& MS-Office            | P-II  | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
|                  | <b>Total</b>                                             |       | 32                             | 520                 |           | 80                  |           | 24      |

#### Notes:

1. Duration of one Theory period is 1 hour and of Practical period is 2 hour.
2. The candidate has to pass theory papers and practical paper separately.
3. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.
4. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
5. The odd semester may be scheduled from July to December and even semester from January to June.

## (B) PGDCCA Part-I

### Semester – II

| Course Code      | Subjects                                 | Paper   | Teaching Scheme per weeks (hr) | End Sem Examination | Min Marks | Internal Assessment | Min Marks | Credits |
|------------------|------------------------------------------|---------|--------------------------------|---------------------|-----------|---------------------|-----------|---------|
| <b>Theory</b>    |                                          |         |                                |                     |           |                     |           |         |
| 2T1              | Management Information Systems           | I       | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 2T2              | Core Java                                | II      | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 2T3              | Quantity Techniques & Operation Research | III     | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| 2T4              | E-Commerce and Web Designing             | IV      | 4                              | 80                  | 40        | 20                  | 10        | 4       |
| <b>Practical</b> |                                          |         |                                |                     |           |                     |           |         |
| 2P1              | <b>Practical-I</b> :Core Java            | P-I     | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| 2P2              | <b>Practical-II</b> : HTML, JavaScript   | P-II    | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
| <b>Project</b>   |                                          |         |                                |                     |           |                     |           |         |
| 2P3              | Project                                  | Project | 8                              | 100                 | 50        | Nil                 | Nil       | 4       |
|                  | <b>Total</b>                             |         | 40                             | 620                 |           | 80                  |           | 28      |

#### Notes:

- Duration of one Theory period is 1 hour and of Practical period is 2 hour.
- The candidate has to pass theory papers and practical paper separately.
- One credit is equivalent to one hour of teaching or two hours of practical Work per week.
- Each semester will consist of 15 – 18 weeks of academic Work equivalent to 90 actual teaching days.
- The odd semester may be scheduled from July to December and even semester from January to June.
- In order to pass the examination, an examinee shall obtain not less than 50 % marks in each of the theory papers and each of the practical and the project and Internal Assessment (Sessional) separately.
  - An examinee who is unsuccessful in the examination shall be eligible for admission to the subsequent examinations on payment of a fresh fee prescribed for the examination together with the conditions of the ordinance in force from time to time.
- The scope of the subjects and pattern of examination shall be as indicated insyllabi.

(B) The Medium of instructions and examinations shall be in ENGLISH only.

10. Applicant for PGDCCA Examination prosecuting regular course of study shall not be permitted to join any other course in this or any other University.

11. **ASSESSMENT**

- The final total assessment of the candidates is made in terms of an internal assessment (Sessional) and an external assessment for each course.
- For each paper, 20 marks will be based on internal assessment and 80 marks for semester end examination (external assessment), unless otherwise stated.
- The division of the 20 marks allotted to internal assessment of theory papers should be based on class test, attendance, project assignments, seminar, power point presentation, fieldwork, group discussions or any other innovative practice / activity as determined by the teacher in respective subject and moderated by Head of the Institute/Principal.

| Sr. No                                 | Parameters                                                               | Max. Marks |
|----------------------------------------|--------------------------------------------------------------------------|------------|
| 1                                      | Internal Marks on the basis of Class Attendance                          | 05         |
| 2                                      | Internal Marks on the basis of Class Assignment / Test                   | 05         |
| 3                                      | Internal Marks on the basis of Students Seminar / Students Lecture Forum | 05         |
| 4                                      | Internal Marks on Students Overall Performance                           | 05         |
| <b>Total Internal Assessment Marks</b> |                                                                          | <b>20</b>  |

- There shall be no separate / extra allotment of workload to the concerned teacher. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
- At the beginning of each semester, every teacher shall inform his / her students unambiguously the method he / she propose to adopt and the scheme of marking for internal assessment with the prior permission of HOD / principal.
- An unsuccessful examinee at any internal shall be eligible for reexamination on payment of fresh examination fee prescribed by the University as per the respective directions.
- The internal marks will be communicated to the University at the end of each semester, but before the semester end examinations. These marks will be considered for the declaration of the results.
- The record of internal marks, evaluation & result should be maintained for a period of one year by respective institute/college for verification by competent authority.

- The maximum and minimum marks which each subject carries in PGDCCA Semester – I and Semester - II Examination are as indicated in Paragraph 7. A and B respectively.
- A copy of Project work shall be submitted to college prior to commencement of Semester - II Examination for Evaluation by Internal and External Examiner appointed as per University rules.
- Candidate shall submit his/her declaration that the Project is a result of his/her own work and the same has not been previously submitted to any examination of this University or any other University.
- The Practical Examination of each Semester will be conducted by Internal and External Examiner appointed as per University rules.
- If an examinee failed to pass the PGDCCA Post Diploma within three successive years from the date of his/her first admission to particular programme he/she shall be declared as **“Not Fit for the Course” (NFC)** and he/she will not be allowed to appear further for any examination of the course.

#### **STANDARD OF PASSING**

- Every candidate must secure 50% marks in each head of passing.
  - The passing marks for external examination will thus be 40 out of 80 and for internal examination, 10 out of 20 and aggregate marks taking both together will be 50 marks.
  - There shall be no internal marks in Practical and Project Examination.
11. (A) There shall be no classification of examinees successful at the PGDCCASemester – I and Semester – IIE examinations whereas SGPA will be notified.

**\* Conversion of Marks to Grades and Calculations of SGPA (Grade Point Average) and CGPA (Cumulative Grade Point Average):** In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows:-

#### **Abbreviations and Formulae Used**

**G:** Grade

**GP:** Grade Points

**C:** Credits

**CP:** Credit Points

**CG:** Credits X Grades (Product of credits & Grades)

**SGPA =  $\Sigma CG$ :** Sum of Product of Credits & Grades points /  $\Sigma C$ : Sum of Credits points

**SGPA:** Semester Grade Point Average shall be calculated for individual semesters.  
(It is also designated as GPA)

**CGPA:** Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

After calculating the SGPA for an individual semester and the CGPA for entire programme, the value can be matched with the grade in the Grade Point table as per the ten (10) Points Grading System and expressed as a single designated GRADE such as O, A+, A, B+, B, etc.

| Marks        | Grade            | Grade Points |
|--------------|------------------|--------------|
| 85 and above | O (Outstanding)  | 10           |
| 75 - 84      | A+ (Distinction) | 9            |
| 71 - 74      | A (Very Good)    | 8            |
| 61 - 70      | B+ (Good)        | 7            |
| 55 - 60      | B(Above Average) | 6            |
| 50 - 54      | C (Average)      | 5            |
| 00 - 49      | F (Fail)         | 0            |
|              | AB (Absent)      | 0            |

A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

- (B) Division at the PGDCCASemester - II Examination shall be declared based on the aggregate marks at the PGDCCASemester – I and Semester – II Examination taken together and the CGPA will be calculated and notified.
- (C) Successful examinees at the PGDCCA Semester - II Examination shall be awarded division based on CGPA as follows:

| CGPA Range    | Final Grade      | Equivalent Class/ Division      |
|---------------|------------------|---------------------------------|
| 9.01 to 10.00 | O                | First Division (Outstanding)    |
| 8.01 to 9.00  | A+ (Distinction) | First Division(Distinction)     |
| 7.01 to 8.00  | A(Very Good)     | First Division (Very Good)      |
| 6.01 to 7.00  | B+(Good)         | First Division (Good)           |
| 5.55 to 6.00  | B(Above Average) | Second Division (Above Average) |
| 5.00 to 5.54  | C(Average)       | Second Division (Average)       |
| 0.00 to 4.99  | F (Fail)         | Fail                            |
| 0             | AB(Absent)       | Absent                          |

12. Successful examinees in the PGDCCASemester Examination shall be awarded Distinction in each subject in which examinees obtain 75% or more marks in that subject at the respective Examination.

13. Unsuccessful examinees at the above examinations can be readmitted to the same examination on payment of a fresh fee and such other fees as may be prescribed by university.
14. Provisions of ordinance No 3 of 2007, relating to the award of grace marks for passing an examination, securing higher division / class and for securing distinction in subject(s) shall be applicable.
15. Notwithstanding anything to the contrary in this Direction, no person shall be admitted to an examination under this Ordinance, if he/ she has already passed the same examination or an equivalent examination of any other University.
16. Examinees successful at PGDCCASemester – I and Semester - II Examination shall on payment of the prescribed fees receive a Degree in the prescribed form signed by the Vice-Chancellor.
17. This Scheme shall come into force from the academic session 2016-17.
18. The Provisions of Ordinance No. 21 of 1994 governing the existing course for Post Graduate Diploma in Computer Commercial Applications (PGDCCA) stands repealed physically on implementation of this Direction.



# APPENDIX –A

## QUESTION PAPER PATTERN

### **First / Second / Third / Fourth Semester Post Graduate Diploma in Computer Commercial Applications (PGDCCA) Examination Choice Based Credit System (CBCS)**

**Subject Name**

**Paper - I**

**Time: 3 Hours**

**Total Marks: 80**

- N. B. - a) Draw well labeled diagram wherever necessary.  
b) All questions are compulsory.

#### **Part - A**

- N. B. – 1. Each question carries two marks.  
2. Answers should not more than five lines.

**Q1.**

**8 x 2 =**

**16**

- A. } Unit - I  
B. }  
C. } Unit - II  
D. }  
E. } Unit - III  
F. }  
G. } Unit - IV  
H. }

#### **Part - B**

- N. B. – 1. Each question carries three marks.  
2. Answers should not more than ten lines.

**Q2.**

**8 x 3 =**

**24**

- A. } Unit - I  
B. }  
C. } Unit - II  
D. }  
E. } Unit - III  
F. }  
G. } Unit - IV  
H. }

#### **Part - C**

- N. B. – 1. Each question carries five marks.

2. Answers should not more than 400 words for 5 marks questions and 600 words for 10 Marks questions respectively.

|     |               |   |            |    |
|-----|---------------|---|------------|----|
| Q3. | <b>Either</b> |   |            |    |
|     | (A)           | } | Unit - I   | 5  |
|     | (B)           |   |            | 5  |
|     | (C)           |   |            | 10 |
|     |               |   | <b>OR</b>  |    |
| Q4. | <b>Either</b> |   |            |    |
|     | (A)           | } | Unit - II  | 5  |
|     | (B)           |   |            | 5  |
|     | (C)           |   |            | 10 |
|     |               |   | <b>OR</b>  |    |
| Q5. | <b>Either</b> |   |            |    |
|     | (A)           | } | Unit - III | 5  |
|     | (B)           |   |            | 5  |
|     | (C)           |   |            | 10 |
|     |               |   | <b>OR</b>  |    |
| Q6. | <b>Either</b> |   |            |    |
|     | (A)           | } | Unit - IV  | 5  |
|     | (B)           |   |            | 5  |
|     | (C)           |   |            | 10 |
|     |               |   | <b>OR</b>  |    |

## APPENDIX –B

### **(A) Project and Classification of Marks on Project**

Towards the end of the second year of study, a student will be examined in the course “Project Work”.

- Project Work may be done individually or in groups (Maximum 3 students) in case of bigger projects. However if project is done in groups, each student must be given a responsibility for a distinct module and care should be taken to monitor the progress of individual student.
- The Project Work should be done using the tools covered in Post Graduate Diploma in Computer Commercial Applications (PGDCCA).

- c. The Project Work should be of such a nature that it could prove useful or be relevant from the commercial / management angle.
- d. The project work will carry 100 marks.
- e. Project Work can be carried out in the Institute or outside with prior permission of the Institute.
- f. The external viva-voce examination for Project Work would be held as per the Examination Time Table of the second year of study, by a panel of one external and one Internal Examiner.

### **Types of Project**

As majority of the students are expected to work out a project in some industry/research and development laboratories/educational institutions/software export companies, it is suggested that the project is to be chosen which should have some direct relevance in day-to-day activities of the candidates in his/her institution. The Applications Areas of project - Financial/Marketing/Database Management System/ Relational Database Management System/E-Commerce /Internet/ Manufacturing/ web Designing / Scientific / ERP etc.

### **Project Proposal (Synopsis)**

The project proposal should be prepared in consultation with the guide. The project guide must be a person having minimum Qualification MCM/ M.Sc. (Computer Science + Information Technology)/ M.Sc. (Mathematics /Electronics/Statistics/Physics + Post B.Sc. Diploma in Computer Science& Application)/MCA. The project proposal should clearly state the objectives and environment of the proposed project to be undertaken. It should have full details in the following form:

#### ***Format of Synopsis for Desktop Application***

1. Title of the Project.
2. Objectives of the Project.
3. Project Category (DBMS/RDBMS/OOPSetc.).
4. Tools/Platform and Languages to be used.
5. Complete Structure of the System:
  - i. Numbers of Modules and its Description.
  - ii. Modular Chart / System Chart.
  - iii. Data Structures or Tables.
  - iv. Process Logic of each Module.
  - v. Types of Report Generation.
6. References.

**Note:** Synopsis should not be more than 3-4 pages.

#### ***Format of Synopsis for Web Application***

1. Title of the Project.
2. Objectives of the Project.

3. Project Category (DBMS/RDBMS/OOPSetc.).
4. Tools/Platform and Languages to be used.
5. Complete Structure of the System:
  - i. Number of pages and links their short description.
  - ii. Use / Information of Pages.
  - iii. Feedback Form (if any).
6. References.

**Note:** Synopsis should not be more than 3-4 pages.

### **Project Report Formulation**

Front Page.

College Certificate Page.

Declaration Page.

Acknowledgment Page.

Project Profile.

Index or Content Page.

- i. \*Contents \_\_\_\_\_.

Appendices

- i. List Figures, Tables& Charts.
- ii. Approved copy of Synopsis.

Glossary

#### **\* Contents.**

- i. Introduction.
- ii. Objectives.
- iii. Preliminary System Analysis.
  - Preliminary Investigation.
  - Present System in Use.
  - Flaws in Present System.
  - Need of New System.
  - Feasibility Study.
  - Project Category.
- iv. Software Engineering Paradigm Applied
  - Modules
  - System / Modular Chart.
- v. Software & Hardware Requirement Specification.
- vi. Detailed System Analysis.
  - Data Flow Diagram.
  - Numbers of Modules and Process Logic.
  - Data Structures and Tables.
  - Entity-Relationship Diagram.
- vii. System Design.
  - Form Design.
  - Source Code.

- Input screen & Output Screen.
- viii. Testing & Validation Checks.
- ix. System Security Measures.
- x. Implementation, Evaluation and Maintenance.
- xi. Future Scope of the project.
- xii. Suggestion & Conclusion
- xiii. Bibliography & References.

**Note :-**

- i. A Student is expected to complete the Assignments based on Syllabus of Practical subjects and submit the same in the form of a files (assignment Record) at the end of Academic Session for the evaluation purpose.
- ii. A student should submit internal assessment of each theory paper prescribed by the subject teacher.
- iii. A Student is expected to deliver a seminar on any course curricular subject / latest trends in IT relevant subject per semester for internal assessment.

**# Classification Of Marks on Project :-**

|                        |            |
|------------------------|------------|
| Report & Documentation | 40         |
| Viva voce (External)   | 40         |
| Viva voce (Internal)   | 20         |
| <hr/>                  |            |
| <b>Total Marks</b>     | <b>100</b> |

The marks of Project shall be notified as a whole out of 100 in Foil/C-Foil.

**(B) Practical and Classification of Marks on Practical**

1. Practical exam shall be of 4 hours duration.
2. The Practical Record of every student shall carry a certificate as shown below, duly signed by the teacher-in-charge and the Head of the Department.
3. If the student fails to submit his / her certified Practical Record duly signed by the Teacher-In-Charge and the Head of the Department, he / she shall not be allowed to appear for the Practical Examination and no Marks shall be allotted to the student.
4. After Viva-Voce and evaluation of practical records of a student by the Internal & External Examiner, both examiners should sign on the certificate of practical records.
5. The certificate template shall be as follows:

Name of the college / Institution

Name of the Department:

## CERTIFICATE

This is to certify that Mr./Mrs./Ms. \_\_\_\_\_  
of class PGDCCA Part \_\_\_\_\_ Semester \_\_\_\_\_ has satisfactorily completed the  
practical experiments prescribed by Rastrashant Tukdoji Maharaj Nagpur University for the  
subject \_\_\_\_\_ during the academic year \_\_\_\_\_.

Signature  
Practical In-charge Head of the Department

Signature

Signature  
Internal Examiner

Signature  
External Examiner

Date: \_\_\_\_\_

# **Classification Of Practical Marks :-**

| Practical – I    |                                                         | Marks |
|------------------|---------------------------------------------------------|-------|
| 1.               | Writing a Program or Problem<br>(Algorithm & Flowchart) | 40    |
| 2.               | Execute on a computer                                   |       |
| 3.               | Taking Hard Copy                                        |       |
| Practical – II   |                                                         |       |
| 1.               | Writing a Program or Problem<br>(Algorithm & Program)   | 20    |
| Viva Voce        |                                                         | 20    |
| Practical Record |                                                         | 20    |
| Total Marks      |                                                         | 100   |

The marks of Practical shall be notified as a whole out of 100 in Foil/C-Foil.

## APPENDIX –C

### Absorption Scheme PGDCCA

It is notified for general information of all concerned that the failure students of **PGDCCA Old Course (Semester Pattern)** shall be absorbed in the **New Course CBCS Pattern** introduced from the session 2016-2017 Examination with the following scheme.

- 1) The Failure students of **PGDCCA (Semester – I & Semester - II)** as per Old Course (Semester Pattern) **appeared in Sum 2016** should clear their backlog papers of PGDCCA (Semester – I & Semester - II) **till Winter 2017**. If they fail to complete & pass till Winter 2017, then they will have to appear in parallel papers of New Course CBCS Pattern (Choice Based Credit System) as per absorption scheme indicated in Appendix - D.

## APPENDIX –D

### (A) PGDCCA (Semester - I)

Old Course (Semester Pattern) → New Course CBCS Pattern (Choice Based Credit System)

| Sr. No              | Old Course (Semester Pattern)                               | M. Marks | Sr. No           | New Course CBCS Pattern (Choice Based Credit System)        | Max Marks |
|---------------------|-------------------------------------------------------------|----------|------------------|-------------------------------------------------------------|-----------|
| <b>Semester – I</b> |                                                             |          |                  |                                                             |           |
| <b>Theory</b>       |                                                             |          | <b>Theory</b>    |                                                             |           |
| I                   | Fundamental of Information Technology                       | 80       | 1T1              | Fundamental of Information Technology                       | 80        |
| II                  | Programming in C                                            | 80       | 1T2              | Programming in C & OOPs Concept                             | 80        |
| III                 | Introduction to Operating Systems                           | 80       | 1T3              | Introduction to Operating Systems                           | 80        |
| IV                  | Computerized Accounting (Tally)                             | 80       | 1T4              | Computerized Accounting (Tally ERP 9)                       | 80        |
| <b>Practical</b>    |                                                             |          | <b>Practical</b> |                                                             |           |
| P - I               | <b>Practical - I :</b> Programming in C & Operating Systems | 100      | 1P1              | <b>Practical - I :</b> Programming in C & Operating Systems | 100       |
| P - II              | <b>Practical -II :</b> Tally & MS-Office                    | 100      | 1P2              | <b>Practical - II :</b> Tally (ERP 9) & Ms-Office           | 100       |

### (B) PGDCCA (Semester - II)

Old Course (Semester Pattern) → New Course CBCS Pattern (Choice Based Credit System)

| Sr. No               | Old Course (Semester Pattern)                           | M. Marks | Sr. No        | New Course CBCS Pattern (Choice Based Credit System) | Max Marks |
|----------------------|---------------------------------------------------------|----------|---------------|------------------------------------------------------|-----------|
| <b>Semester – II</b> |                                                         |          |               |                                                      |           |
| <b>Theory</b>        |                                                         |          | <b>Theory</b> |                                                      |           |
| I                    | Management Information Systems and Software Engineering | 80       | 2T1           | Management Information Systems                       | 80        |

|                  |                                       |     |                  |                                          |     |
|------------------|---------------------------------------|-----|------------------|------------------------------------------|-----|
| II               | Visual Basic Programming              | 80  | 2T2              | Core Java                                | 80  |
| III              | Principles & Techniques of Management | 80  | 2T3              | Quantity Techniques & Operation Research | 80  |
| IV               | E-Commerce and Web Designing          | 80  | 2T4              | E-Commerce and Web Designing             | 80  |
| <b>Practical</b> |                                       |     | <b>Practical</b> |                                          |     |
| P - I            | Practical-I : Visual Basic            | 100 | 2P1              | <b>Practical-I</b> :Core Java            | 100 |
| P - II           | Practical-II : HTML, JavaScript       | 100 | 2P2              | <b>Practical-II</b> : HTML, JavaScript   | 100 |



## APPENDIX – C

### PGDCCA Part-I

#### Semester-I

#### Paper - I: Fundamental of Information Technology (1T1)

##### Unit – I

**Computers:** Introduction to computers, Characteristics of computer, Evolution of computer, Generations of computer, Basic organization of computer system (Block Diagram), Functioning of computer, Concept of system. **Number system:** non-positional number systems, Positional number systems, Conversion from one number system to another, Fraction numbers. **Computer codes:** BCD, EBCDIC, ASCII, Unicode, Collating sequence. **Computer arithmetic:** Need of binary, Binary arithmetic.

##### Unit – II

**Processor & memory:** Central processing unit (CPU), Components of CPU (CU, ALU, Instruction set, Registers, Processor speed, Type of processor), Main memory, Types of memory. **Secondary storage devices:** Sequential & direct access devices, Magnetic tapes, Magnetic disks, Optical disks, Memory storage devices, Mass storage devices, Data backup, On-line, Near line and Off-line storage, Hierarchical storage devices(HSS), Input-output devices.

##### Unit – III

**Computer software:** Define software, Types of software, Logical system architecture, Firmware, Middleware, Acquiring software, Software development life cycle (SDLC), Software engineering, CASE tools. **System implementation & operation:** Software testing & debugging (Types of program errors, Testing a program, Debugging a program for syntax errors & logical errors, Difference between testing & debugging), Software documentation, Software deployment, System evaluation, Software maintenance. **Business data processing:** Meaning of data processing, Data storage hierarchy, Standard methods of organizing data, File management system, Database management system.

##### Unit – IV

**Data communication and computer networks:** Basic elements of a communication system, Data transmission modes, Data transmission speed, Data transmission media, Digital & analog data transmission, Data transmission services, Multiplexing techniques, Switching techniques, Routing techniques, Network topologies, Types of network, Communication protocols, Network interface card (NIC), OSI model, Ernet working tools, Wireless Networks. **Multimedia:** What is multimedia, Multimedia components, Multimedia applications, and media center computer. **Classification of computers:** Notebook computers (Laptops), Personal computer (PCs), Workstations, Mainframe systems, Super computers, Client & server computers, Handheld computers (Tablet PC, PDA/Pocket PC, Smartphone).

##### Text Book:

1. P. K. Sinha & Priti Sinha, Computer Fundamentals, BPB Publication.

**Reference Books:**

1. Madhulika Jain, Shashank Jain, Satish Jain, Information Technology Concepts, BPB Publication.
2. B. Ram, Computer Fundamentals (Architecture & organization), New Age International Publisher.
3. Turban, Rainer, Potter, Introduction to Information Technology, Wiley India Edition.
4. Peter Norton, Introduction to Computers, McGraw-Hill Education.
5. S. Jaiswal, I.T. Today, Encyclopedia.

**Practical List of Fundamental of Information Technology**

- A1. Use a contemporary letter template of MS-WORD and provide information about launching of new products of a company.  
Also write down the steps to perform above in MS-WORD.
- A2. Use a professional letter template of MS-WORD and write an application to the principal for two days leave.  
Also write down the steps to perform above in MS-WORD.
- A3. Using Mail Merge of MS-WORD, write a letter to the students of PGDCCA-I to submit their Original Documents (Mark Sheet, Migration Certificate, TC etc) along with their balance fees up to 10<sup>th</sup> March 2008 in the office of the college during office timings morning 8:00 AM to 5:00 PM.  
Also write down the steps to perform above in MS-WORD.
- A4. Using Mail Merge of MS-WORD, write a letter to your friends, invite them on your Birth Day Party on 10<sup>th</sup> March 2008 at the Venue- B04, Amar Apartment, Narendranagar, Nagpur-440021  
Also write down the steps to perform above in MS-WORD.
- A5. Using Mail Merge of MS-WORD, write a letter to all the selected candidate for their final interview on 10<sup>th</sup> March 2008 at the Centre Point College, 7 Nawab Layout, Tilaknagar, Nagpur-10 at 11:00 AM along with all original documents and 2 passport size photographs.  
Also write down the steps to perform above in MS-WORD.
- A6. Draw and Analyze the DFD of Book Issuing System of College Library in MS-PowerPoint.  
Also write down the steps to perform above in MS-POWERPOINT.
- A7. Draw and Analyze the DFD of Hotel Management System in MS-PowerPoint.  
Also write down the steps to perform above in MS-POWERPOINT.
- A8. Draw and Analyze the DFD of Examination Management System in MS-PowerPoint.  
Also write down the steps to perform above in MS-POWERPOINT.
- A9. Create a Mark-Sheet of PGDCCA-Part I using MS-Excel. Mark-Sheet format should be as per below. Fill the information about 10 students.

| Roll No. | Name of Student | IT (100) | ICP (100) | IOS (100) | C (100) | MIS&SA (100) | Practical -I (100) | Practical-II (100) | Total Marks (Out of 700) | % age |
|----------|-----------------|----------|-----------|-----------|---------|--------------|--------------------|--------------------|--------------------------|-------|
| 1        |                 |          |           |           |         |              |                    |                    |                          |       |

Draw a pie chart for above Mark-sheet

Also write down the steps to perform above operation in MS-EXCEL.

- A10. Create a Employee Payment Sheet using MS-Excel. Employee Payment Slip format should be as per below. Fill the information about 10 employees.

| Sr.No.              | Name of Employee | Basic Salary | HRA 5% | TA 7% | DA 9% | Gross Salary |
|---------------------|------------------|--------------|--------|-------|-------|--------------|
| 1                   |                  |              |        |       |       |              |
| <u>Total salary</u> |                  |              |        |       |       |              |

Draw a bar chart for above Employee Payment Sheet

Also write down the steps to perform above operation in MS-EXCEL.

- A11. Create the following Product sheet in MS-EXCEL and perform the operation given below:

| Sr.No. | Product Name | Company Name        | Country   | Quantity | Rate     |
|--------|--------------|---------------------|-----------|----------|----------|
| 1      | Butter       | Amul India Ltd      | India     | 20       | Rs.19.00 |
| 2      | Milkmaid     | Amul India Ltd      | India     | 10       | Rs.35.00 |
| 3      | Tea          | Hindustan Lever Ltd | Malaysia  | 15       | Rs.40.00 |
| 4      | Biscuits     | Parle Ltd           | India     | 32       | Rs.12.00 |
| 5      | Papad        | Haldiram Ltd        | India     | 12       | Rs.10.00 |
| 6      | Chocolate    | Cadbury Ltd         | Australia | 150      | Rs.15.00 |
| 7      | Paneer       | Amul India Ltd      | India     | 23       | Rs.25.00 |
| 8      | Bournvita    | Cadbury Ltd         | Australia | 20       | Rs.45.00 |
| 9      | Poppins      | Parle Ltd           | India     | 27       | Rs.6.00  |
| 10     | Sauce        | Amul India Ltd      | India     | 16       | Rs.21.00 |

a) Sort by Product Name, by company name, by country in ascending order.

b) Sort by Country in descending order.

Also write down the steps to perform above operation in MS-EXCEL.

- A12. Create the following Product sheet in MS-EXCEL and perform the operation given below:

| Sr.No. | Product Name | Company Name        | Country   | Quantity | Rate     |
|--------|--------------|---------------------|-----------|----------|----------|
| 1      | Butter       | Amul India Ltd      | India     | 20       | Rs.19.00 |
| 2      | Milkmaid     | Amul India Ltd      | India     | 10       | Rs.35.00 |
| 3      | Tea          | Hindustan Lever Ltd | Malaysia  | 15       | Rs.40.00 |
| 4      | Biscuits     | Parle Ltd           | India     | 32       | Rs.12.00 |
| 5      | Papad        | Haldiram Ltd        | India     | 12       | Rs.10.00 |
| 6      | Chocolate    | Cadbury Ltd         | Australia | 150      | Rs.15.00 |
| 7      | Paneer       | Amul India Ltd      | India     | 23       | Rs.25.00 |
| 8      | Bournvita    | Cadbury Ltd         | Australia | 20       | Rs.45.00 |
| 9      | Poppins      | Parle Ltd           | India     | 27       | Rs.6.00  |
| 10     | Sauce        | Amul India Ltd      | India     | 16       | Rs.21.00 |

a) List only those records whose country ="India".

b) List only those records whose company name="Amul".

Also write down the steps to perform above operation in MS-EXCEL.

- A13. Create the following Product sheet in MS-EXCEL and perform the operation given below:

| Sr.No. | Product Name | Company Name        | Country   | Quantity | Rate     |
|--------|--------------|---------------------|-----------|----------|----------|
| 1      | Butter       | Amul India Ltd      | India     | 20       | Rs.19.00 |
| 2      | Milkmaid     | Amul India Ltd      | India     | 10       | Rs.35.00 |
| 3      | Tea          | Hindustan Lever Ltd | Malaysia  | 15       | Rs.40.00 |
| 4      | Biscuits     | Parle Ltd           | India     | 32       | Rs.12.00 |
| 5      | Papad        | Haldiram Ltd        | India     | 12       | Rs.10.00 |
| 6      | Chocolate    | Cadbury Ltd         | Australia | 150      | Rs.15.00 |
| 7      | Paneer       | Amul India Ltd      | India     | 23       | Rs.25.00 |
| 8      | Bournvita    | Cadbury Ltd         | Australia | 20       | Rs.45.00 |
| 9      | Poppins      | Parle Ltd           | India     | 27       | Rs.6.00  |
| 10     | Sauce        | Amul India Ltd      | India     | 16       | Rs.21.00 |

a) List the records whose quantity is  $\geq 10$  and  $\leq 100$ .

b) List the records whose rate is  $\geq$  Rs. 35.00.

Also write down the steps to perform above operation in MS-EXCEL.

- A14. By the help of following information prepare cost sheet for the month of March 1980: Rs.

|                                       |        |
|---------------------------------------|--------|
| 1. Stock (1-3-1980)                   |        |
| a) Raw Materials                      | 25,000 |
| b) Finished goods                     | 17,360 |
| 2. Stock (31-3-1980)                  |        |
| a) Raw Materials                      | 26,250 |
| b) Finished goods                     | 15,750 |
| 3. Raw material purchased             | 21,900 |
| 4. Work-in-progress (1-3-80)          | 8,220  |
| 5. Work-in-progress (31-3-80)         | 9,100  |
| 6. Sale of finished goods             | 72,310 |
| 7. Direct wages                       | 17,150 |
| 8. Unproductive Wages                 | 830    |
| 9. Factory Expenses                   | 8,340  |
| 10. Office and management expenses    | 3,160  |
| 11. Selling and distribution expenses | 4,210  |

Prepare cost sheet and find out following information:

1) Total Cost 2) Cost of goods sold 3) Profit on sold out goods

Also write down the steps to perform above operation in MS-EXCEL.

- A15. Following information is received from the books of a factory:

|                                       |        |
|---------------------------------------|--------|
| 1. Closing stock of raw materials     | 25,150 |
| 2. Closing stock of finished goods    | 14,650 |
| 3. Raw materials purchased            | 20,800 |
| 4. Work in progress (1-1-78)          | 8,220  |
| 5. Work in progress (31-12-78)        | 8,000  |
| 6. Opening stock of raw material      | 24,000 |
| 7. Opening stock of finished goods    | 16,200 |
| 8. Sale of finished goods             | 62,800 |
| 9. Office expenses                    | 2,150  |
| 10. Selling and Distribution expenses | 4,000  |
| 11. Direct wages                      | 16,000 |
| 12. Factory expenses                  | 9,000  |

Prepare cost sheet and find out the following items:

- 1) Cost of materials consumed      2) Production Cost      3) Cost of goods sold
- 4) Net profit.

Also write down the steps to perform above operation in MS-EXCEL.

- A16. By the help of following information prepare a statement of cost and in that statement indicate prime cost, works cost, office cost (production cost) and cost of goods sold, for the half year ending 30th June, 1978. Production 500 units.

|                                                  |        |
|--------------------------------------------------|--------|
| 1. Material consumed                             | 30,000 |
| 2. Direct Wages                                  | 40,000 |
| 3. Direct Expenses                               | 4,000  |
| 4. Works on Cost Expenses                        |        |
| a) Unproductive wages                            | 9,000  |
| b) Factory lighting and heating                  | 11,000 |
| c) Factory rent, rates and insurance             | 3,000  |
| d) Factory Director's fees                       |        |
| e) Depreciation of machinery                     | 1,500  |
| f) Factory stationery                            | 375    |
| g) Factory cleaning                              | 400    |
| h) Depreciation of loose tools                   | 900    |
| i) Indirect material                             | 500    |
| j) Estimating expenses                           | 500    |
| 5. Office expenses (Office overhead)             |        |
| a) Director fees                                 | 3,000  |
| b) Office printing and stationery                | 750    |
| c) Legal Expenses                                | 500    |
| d) Depreciation of office building               | 800    |
| e) Bank fee                                      | 75     |
| f) Salary of office employees                    | 5,000  |
| 6. Selling and Distribution expenses             |        |
| a) Selling commission                            | 1,000  |
| b) Rent of warehouse                             | 1,800  |
| c) Bad debt                                      | 150    |
| d) Advertisement                                 | 500    |
| e) Depreciation and maintenance of delivery vans | 700    |

Also write down the steps to perform above operation in MS-EXCEL.

- A17. Prepare cost sheet by the help of following information and find out (i) Prime cost (ii) Factory cost (iii) Total Cost; (iv) Net Profit.

|                                             |          |
|---------------------------------------------|----------|
| 1. Raw Material purchased                   | 66,000   |
| 2. Direct wages                             | 52,500   |
| 3. Indirect wages                           | 2,750    |
| 4. Stock of Raw Materials (1-9-83)          | 75,000   |
| 5. Stock of Raw material (30-9-83)          | 91,500   |
| 6. Stock of finished goods (1-9-83)         | 54,000   |
| 7. Stock of finished goods (30-9-83)        | 31,000   |
| 8. Stock of work in progress (1st Sep.83)   | 28,000   |
| 9. Stock of work in progress (30th sept.83) | 35,000   |
| 10. Sales                                   | 2,11,000 |
| 11. Rent, rates and electric of factory     | 15,000   |
| 12. Depreciation of machinery               | 3,500    |
| 13. Carriage inward                         | 1,500    |
| 14. Sundry factory exp.                     | 10,000   |
| 15. Travelling wages and commission         | 6,500    |
| 16. Office rent and rates                   | 2,500    |
| 17. Sundry Office expenses                  | 6,500    |
| 18. Advertisement                           | 3,500    |
| 19. Carriage outward exp.(exp. on sale)     | 2,500    |

Also write down the steps to perform above operation in MS-EXCEL.

A18. By the help of following information prepare cost sheet for the year 1976.

|                                                                                              |        |
|----------------------------------------------------------------------------------------------|--------|
| 1. Opening Stock (1-1-1976)                                                                  |        |
| a) of Raw Materials                                                                          | 22,000 |
| b) of Unfinished goods                                                                       | 5,000  |
| c) of Finished goods                                                                         | 10,000 |
| 2. Closing Stock: (31-12-76)                                                                 |        |
| a) of Raw Materials                                                                          | 2,350  |
| b) of Unfinished goods                                                                       | 3,000  |
| c) of Finished goods                                                                         | 2,000  |
| 3. Direct Wages                                                                              | 30,000 |
| 4. Direct Expenses                                                                           | 10,000 |
| 5. Material Purchased                                                                        | 70,500 |
| 6. Carriage Inward                                                                           | 2,000  |
| 7. Factory on cost                                                                           | 70,000 |
| 8. Factory Supervision                                                                       | 8,800  |
| 9. Office Rent                                                                               | 6,000  |
| 10. Factory Rent                                                                             | 9,000  |
| 11. Rent of sales department                                                                 | 6,000  |
| 12. Lighting bill (out of this 30% of factory,<br>20% of sales dept. and balance for office) | 10,000 |
| 13. Advertisement                                                                            | 6,000  |
| 14. Salary of Manager (30% of Factory,<br>40% of Sales dept. and balance for office)         | 37,000 |
| 15. Profit 10% on total cost.                                                                |        |

Also write down the steps to perform above operation in MS-EXCEL.

A19. Following information is available from the books of Zenith manufacturing company as on 31st Dec. 1974.

|                                                          |          |
|----------------------------------------------------------|----------|
| 1. Salary of Drawing room staff                          | 6,500    |
| 2. Salary of distribution department                     | 12,600   |
| 3. Outward carriage expenses                             | 4,300    |
| 4. Cash discount                                         | 2,900    |
| 5. Inward carriage exp. on purchase                      | 7,150    |
| 6. Bad debts written off                                 | 6,500    |
| 7. Machine repairing                                     | 4,450    |
| 8. Rent, taxes and insurance (Factory)                   | 8,500    |
| 9. Rent, taxes and insurance (office)                    | 2,000    |
| 10. Sales                                                | 4,61,100 |
| 11. Stock of Raw material (31-12-73)                     | 62,800   |
| 12. Stock of Raw material (31-12-74)                     | 48,000   |
| 13. Material Purchased                                   | 1,85,000 |
| 14. Travelling Expenses                                  | 2,100    |
| 15. Salary and Commission of travelling agent            | 7,700    |
| 16. Productive wages                                     | 1,26,000 |
| 17. Depreciation of machinery & equipment                | 6,500    |
| 18. Depreciation of office furniture                     | 300      |
| 19. Director fee                                         | 6,000    |
| 20. Gas and Water (Factory)                              | 1,200    |
| 21. Gas and Water (Office)                               | 400      |
| 22. Salary of manager (3/4 for factory & 1/4 for office) | 10,000   |
| 23. General Expenses                                     | 3,400    |
| 24. Income tax                                           | 1,500    |
| 25. Dividend                                             | 1,000    |

Prepare cost sheet and indicate the following items:-

1) Materials Consumed (2) Prime cost (3) Factory on cost and factory cost (4) General and selling overhead (5) Total cost (6) Net profit (7) Percentage of factory on cost to wages (8) percentage of general overhead to factory cost.

Also write down the steps to perform above operation in MS-EXCEL.

- A20. From the given information prepare Flexible budget for the capacity 70%, 80% & 100 % & show the results.

The sales for the above capacity would be 50,00,000/-, 60,00,000/-, 85,00,000 respectively. Fixed expenses will be constant at all capacities. Semi variable will be constant between 55% to 75% capacity.

It will be increased by 10% between the capacity 75% to 90% & will be increased by 20% between the capacity 90% & 100%. Following exp are on the capacity of 60%.

| Particulars           | Rs.              |
|-----------------------|------------------|
| Semi variable exp:    |                  |
| Maintenance & repairs | 1,25,000         |
| Labour                | 5,00,000         |
| Sales dept. Expenses  | 1,50,000         |
| Other overheads       | <u>1,25,000</u>  |
|                       | <u>9,00,000</u>  |
| Variable Cost :       |                  |
| Material              | 12,00,000        |
| Labour                | 13,00,000        |
| Other Expenses        | <u>2,00,000</u>  |
|                       | <u>27,00,000</u> |
| Fixed Cost :          |                  |
| Wages & salaries      | 4,20,000         |
| Rent & Taxes          | 2,80,000         |
| Depreciation          | 3,50,000         |
| Other overheads       | <u>4,50,000</u>  |
|                       | <u>15,00,000</u> |
| Total Cost            | <u>51,00,000</u> |

Also write down the steps to perform above operation in MS-EXCEL.

- A21. The following data is taken from the manufacturing record of a company for 1/2 year period.

|                                       |                 |
|---------------------------------------|-----------------|
| Fixed expenses:                       |                 |
| Wages & salaries                      | 84,000          |
| Rent, rates & taxes                   | 56,000          |
| Depreciation                          | 70,000          |
| Sundry administration Exp.            | <u>89,000</u>   |
|                                       | <u>2,99,000</u> |
| Semi-variable exp : (at 50% capacity) |                 |
| Maintenance & Repairs                 | 25,000          |
| Indirect Labour                       | 99,000          |
| Sales Department salaries             | 29,000          |
| Sundry administration exp.            | <u>26,000</u>   |
|                                       | <u>1,79,000</u> |
| Variable Exp. (at 50% capacities)     |                 |
| Materials                             | 2,40,000        |
| Labour                                | 2,56,000        |
| Other expenses                        | <u>38,000</u>   |
|                                       | <u>5,34,000</u> |

Assume that the fixed expenses remain constant for all levels of production. Semi- Variable expenses remain constant between 45% & 65% of capacity. Increasing by 10% between 65% & 80% capacity & by 20% between 80% & 100% of capacity. Sales at various levels are :-

| Capacity | Rs.       |
|----------|-----------|
| 60%      | 10,00,000 |

|      |            |
|------|------------|
| 75%  | 12,00,000  |
| 90%  | 15,00,000  |
| 100% | 17,00,000. |

Prepare Flexible budget for the above capacity.

Also write down the steps to perform above operation in MS-EXCEL.

- A22. The following budget is prepared for 10,000 units. Per unit cost will be as under :-

| Particulars                   | P.U. (Rs.) |
|-------------------------------|------------|
| Material                      | 60         |
| Wages                         | 55         |
| Fixed cost (2,00,000)         | 20         |
| Variable expenses             | 5          |
| Selling expenses (10% fixed)  | 15         |
| Administration exp. (90,000)  | 9          |
| Distribution exp. (20% fixed) | 15         |

Prepare budget for 7,500 & 6,500 units.

Also write down the steps to perform above operation in MS-EXCEL.

- A23. The following figures are available from sales & cost forecast of M/s ALANKAR & Co. for the year ended 31st.Dec. 1990 at 50% (5,000 units) capacity. Prepare a profit forecast statement through flexible budget at 60%, 75%, 90% & 100% capacity assuming that

- 1) The fixed expenses remain constant for all levels of production & sales.
- 2) Selling price between 50% & 75% capacity is Rs. 25/- per unit.
- 3) Semi variable expenses will remain unchanged at 50% & 65% capacity but will increase by 10% between 65% to 80% capacity & by 30% between 80% & 100% capacity.
- 4) At 90% level (capacity) material Cost increase by 5% & Selling Price is reduced by 5%.
- 5) At 100% level both material & labour cost increase by 10% & selling Price is reduced by 8%.
- 6) Semi variable expenses are Rs. 50,000 /-
- 7) Fixed expenses are Rs. 50,000/-
- 8) Variable expenses are :  

Material Rs. 5 p.u.  
Labour Rs. 2 p.u.  
Direct Exp. Rs. 1 p.u.

Also write down the steps to perform above operation in MS-EXCEL.

- A24. Prepare Flexible budget & find out overhead rate.

| Particulars                           | 50%<br>Rs. | 60%<br>Rs. | 70%<br>Rs. |
|---------------------------------------|------------|------------|------------|
| Variable Overheads                    |            |            |            |
| A) Material                           | ---        | 60,000     | ---        |
| B) Labour                             | ---        | 24,000     | ---        |
| Semi-Variable Exp.                    |            |            |            |
| 1) Electric (20% fixed)               | ---        | 15,000     | ---        |
| 2) Repairs & Maint.<br>(20% variable) | ---        | 7,500      | ---        |
| Fixed Expenses                        |            |            |            |
| a) Depreciation                       | ---        | 20,000     | ---        |
| b) Rent & tax                         | ---        | 2,250      | ---        |
| c) Insurance                          | ---        | 2,500      | ---        |
| d) Salary                             | ---        | 15,000     | ---        |
| e) Indirect wages                     | ---        | 8,000      | ---        |
| Budgeted Direct labour hours          | ---        | 30,000     | ---        |



Also write down the steps to perform above operation in MS-EXCEL.

- A25. Estimated cash balance on 1st may 1990 Rs. 2,50,000 From the following information Prepare Cash budget for the month of may, June, July 90.

| Month | Sales  | Purchase | Wages | Manu. Exp. | Office Exp. | Selling Exp. |
|-------|--------|----------|-------|------------|-------------|--------------|
| March | 50,000 | 30,000   | 6,000 | 5,000      | 4,000       | 3,000        |
| April | 56,000 | 32,000   | 6,500 | 5,500      | 4,000       | 3,000        |
| May   | 60,000 | 35,000   | 7,000 | 6,000      | 4,000       | 3,500        |
| June  | 80,000 | 40,000   | 9,000 | 7,500      | 4,000       | 4,500        |
| July  | 90,000 | 40,000   | 9,500 | 8,000      | 4,000       | 4,500        |

Adjustments :-

- Out of total sale 20% sales in cash & balance will be collected in the next month.
- Suppliers allowed the credit period of 2 months.
- Wages and all other exp. will be paid in the following months.
- Dividends to share holders & Bonus to employees will be paid in the month of may Rs. 10,000 & Rs. 15,000 Respectively.
- An order of machine is given, the cost of which is Rs. 80,000, Machine will be received in the month of June & payment will be done in same month.
- Income tax will be paid Rs. 25,000/- in the month of July.

Also write down the steps to perform above operation in MS-EXCEL.

- A26. From the following information Prepare Cash budget for the 3 months ending 30<sup>th</sup> June.

| Month | Sales | Materials | Wages  | Overheads |
|-------|-------|-----------|--------|-----------|
| Jan   |       | 60,000    | 40,000 | 11,000    |
| Feb.  |       | 56,000    | 48,000 | 11,600    |
| Mar.  |       | 64,000    | 50,000 | 12,000    |
| Apr.  |       | 80,000    | 56,000 | 12,400    |
| May   |       | 84,000    | 62,000 | 13,000    |
| June  |       | 76,000    | 50,000 | 14,000    |

- Payment of material & overheads will be done in the following month.
- Payment of wages will be done in the same month.
- Terms & conditions of sales as under :- Half amount of credit sales will be recovered in following months & balance amount will be recovered in the next month of the following month.
- Dividend on Preference shares Rs. 30,000/- will be paid on 1st may.
- The amount of share call each Rs. 25,000/- will be received on 1st April & of 1st June each.
- Machines costing Rs. 10,000/- will be established in the month of January but payment will be done in the month of June.
- The selling commission 5% will be paid in the following months of actual sales.
- On 1st April Expected Cash balances Rs. 20,000/-

Also write down the steps to perform above operation in MS-EXCEL.

- A27. From the following information Prepare Cash budget for 3 months commencing from 1st June. On 1st June Cash balance is Rs. 1,00,000/-

| Month | Sales  | Purchase | Wages | Manu. Exp | Selling & Admn. exp. |
|-------|--------|----------|-------|-----------|----------------------|
| April | 80,000 | 41,000   | 5,600 | 3,900     | 10,000               |
| May   | 76,500 | 40,500   | 5,400 | 4200      | 1400                 |
| June  | 78500  | 38500    | 5400  | 5100      | 15000                |
| July  | 90,000 | 37,000   | 4,800 | 5,100     | 17000                |
| Aug.  | 95,500 | 35,000   | 4,700 | 6,000     | 13000                |

Additional Information :-

- 1) Commission on sales 5% will be paid after 2 months of the sales. ( This commission is in addition of Selling Exp.)
- 2) Machine Costing Rs. 65,000/- will be purchased in the month of April but payment will be done in the month of August.
- 3) Dividend of last year Rs. 15,000/- will be paid in the month of July.
- 4) Lag time allowed to customers for the payment is 2 months, and 2 months credit period allowed from suppliers.

Also write down the steps to perform above operation in MS-EXCEL.

A28. Budgeted information given as under :-

| Month | Sales    | Purchases | Wages<br>Exp. | Manu.<br>Exp. | Office<br>Exp. | Selling |
|-------|----------|-----------|---------------|---------------|----------------|---------|
| Mar.  | 50,000   | 30,000    | 5,000         | 1,000         | 1,000          | 6,000   |
| April | 60,000   | 35,000    | 6,000         | 4,000         | 2,000          | 7,000   |
| May   | 70,000   | 37,000    | 7,000         | 2,000         | 3,000          | 8,000   |
| June  | 80,000   | 42,000    | 8,000         | 4,000         | 3,000          | 9,000   |
| July  | 90,000   | 60,000    | 9,000         | 3,000         | 2,000          | 15,000  |
| Aug   | 1,00,000 | 70,000    | 11,000        | 4,000         | 1,000          | 20,000  |

Additional Information :-

- 1) Cash balance on 1st may Rs. 80,000/-
- 2) 20% sales in cash & out of total Credit sales 50% amount Recovered in the following month & balances 50% in the next month of the following month.
- 3) Suppliers allowed a credit period of 2 months.
- 4) Lag time for wages 1/2 month.
- 5) Delay in payment of office expenses 1 month.
- 6) Delay in payment of manufacturing exp. 1 month.
- 7) Amount of shares call money will be received in the months of may Rs. 50,000/-
- 8) Payment of tax will be done in July Rs. 80,000/-.
- 9) Machine will be purchased in June Rs. 20,000/-.

Prepare Cash Budget for May, June, & July.

Also write down the steps to perform above operation in MS-EXCEL.

A29. A newly established Company wants to prepare Cash budget for four months ending on 30th June.

| Month | Sales  | Materials | Wages | Overheads | Selling&Admn. Exp |
|-------|--------|-----------|-------|-----------|-------------------|
| Jan   | 20,000 | 20,000    | 4,000 | 3,200     | 800               |
| Feb.  | 22,000 | 14,000    | 4,400 | 3,300     | 900               |
| Mar.  | 24,000 | 14,000    | 4,600 | 3,300     | 800               |
| Apr.  | 26,000 | 12,000    | 4,600 | 3,400     | 900               |
| May   | 28,000 | 12,000    | 4,800 | 3,500     | 900               |
| June  | 30,000 | 16,000    | 4,800 | 3,600     | 1,000             |

Adjustment :-

- 1) Expected Cash balance on 1st March Rs. 10,000/-.
- 2) A machinery is Purchased for Rs. 30,000/- payment will be done in two equal instalments March & April.
- 3) Selling Commission 5% on total sales & this commission will be paid in the following months of actual sales.
- 4) Amount of 2nd call will be received in the month of march Rs. 10,000/- & Amount of share premium Rs. 2,000/- will be received with 2nd call.
- 5) Period allowed to customer for payment is 1 month.
- 6) Remaining all other exp. will be paid in the following months.
- 7) The delay in the payment of wages 1/2 month.
- 8) You may presume that 50% sales are in cash.

9) Suppliers allowed period of 2 months for payment.

Also write down the steps to perform above operation in MS-EXCEL.

A30. By the help of following information prepare cost sheet for the month of March 1980:

|                                       |        |
|---------------------------------------|--------|
| 1. Stock (1-3-1980)                   |        |
| a) Raw Materials                      | 25,000 |
| b) Finished goods                     | 17,360 |
| 2. Stock (31-3-1980)                  |        |
| a) Raw Materials                      | 26,250 |
| b) Finished goods                     | 15,750 |
| 3. Raw material purchased             | 21,900 |
| 4. Work-in-progress (1-3-80)          | 8,220  |
| 5. Work-in-progress (31-3-80)         | 9,100  |
| 6. Sale of finished goods             | 72,310 |
| 7. Direct wages                       | 17,150 |
| 8. Unproductive Wages                 | 830    |
| 9. Factory Expenses                   | 8,340  |
| 10. Office and management expenses    | 3,160  |
| 11. Selling and distribution expenses | 4,210  |

Prepare cost sheet and find out following information:

1) Total Cost 2) Cost of goods sold 3) Profit on sold out goods

Also write down the steps to perform above operation in MS-EXCEL.

## Paper - II: Programming in C& OOP's Concepts (1T2)

### UNIT – I

Design methods, Programming language, Translators, Introduction to C, C character set and keywords, Escape sequence, Constants and variables, Data types, Conversion specification, Input and output statements in C, Operators and expressions (Arithmetic, Relational, Logical, Assignment, Ternary, Bit Wise and Increment & Decrement Operator). **Storage class:** Automatic, Static, External, Register. **Control statement:** If-else, Looping statements (while, do- while and for loop), Switch, Go-to, Use of break and continue statements.

### UNIT – II

**Function:** Arithmetic and string library function, User defined functions, Function definition & declaration, Function call, Return statement, Function arguments, use of void, Types of function, Function with call by value and call by reference, Recursion.

**Arrays:** Declaration, Referring individual elements, Entering data in to an array, Reading data from array, Array initialization, Printing of array, Searching, Sorting and merging of array. **Pointer:** Introduction to pointer, Pointer and function, pointer and structure, Pointer and array, Pointer and string. **Dynamic memory allocation:** Sizeof ( ), malloc ( ), calloc ( ), realloc ( ), free ( ).

### UNIT – III

**String:** String manipulation using string library function, **Structure:** Declaration structure, initializing structure, Structure variables, accessing structure elements, Arrays of structure, Array within structure. **Unions:** Concept and applications. **Files:** Concept of file, Modes of files, Open and close, Creation and reading of files, Character input/output function, Formatted input/output function, String input and output: sscanf, sprintf, gets, puts. **File input/output:** fprintf, fscanf, getc, putc, and **Block read/write:** fread, fwrite, random access to files, Other file function, command line argument.

## **UNIT – IV**

Introduction to OOP, Characteristics of OOP's, Advantages & disadvantages of OOP's, Steps in developing the OOP Program, Object Oriented Languages, Importance of C++, Classes and objects, Member function, Concept of overloading, Inheritance & types of inheritance, Data abstraction, Data encapsulation, Concept of polymorphism and virtual function, Namespace and exception handling.

### **Text Books:**

1. S. K. Shrivastava & Dipali Srivastava, C in Depth, BPB Publication.
2. D. Ravichandran, Programming with C++, McGraw-Hill.

### **Reference Books:**

1. Steve Oualline, Practical C Programming, SPD, O'Reilly.
2. Harshal Arolkar, Simplifying C, Dreamtech Press.
3. Dr. S. Dey & Mridul Ghosh, Computer Fundamentals and C Programming, SPD.
4. Yashwant Kanetkar, Let Us C, BPB Publication.
5. Veugopal Prasad, Mastering C, McGraw-Hill.
6. Balguruswamy, Programming in ANSI C, McGraw-Hill.
7. E. Balguruswamy, Object Oriented Programming with C++, McGraw-Hill.

### **Practical List of Programming in C& OOP's Concepts**

1. Write an algorithm, draw a flowchart and develop 'C' program to compute the factors of a given number.
2. Write an algorithm, draw a flowchart and develop 'C' program to interchange the values of two numbers without using any temporary variable.
3. Write an algorithm, draw a flowchart and develop 'C' program to calculate and find the nature of roots of given quadratic equation.
4. Write an algorithm, draw a flowchart and develop 'C' program to check given number is prime number.
5. Write an algorithm, draw a flowchart and develop 'C' program to calculate LCM & HCF of two numbers.
6. Write an algorithm, draw a flowchart and develop 'C' program to reverse an n digit number.
7. Write an algorithm, draw a flowchart and develop 'C' program to calculate sum of odd digits and product of even digits of a given n digit number.
8. Write an algorithm, draw a flowchart and develop 'C' program to check a given number is an Armstrong number.
9. Write an algorithm, draw a flowchart and develop 'C' program to convert a decimal number into its equivalent binary number.
10. Write an algorithm, draw a flowchart and develop 'C' program to display the Fibonacci series of n terms.

11. Write an algorithm, draw a flowchart and develop 'C' program to print the following output:-
 

```

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1

```
12. Write an algorithm, draw a flowchart and develop 'C' program to display the following pattern;-
 

```

1 1
1 2 2 1
1 2 3 3 2 1
1 2 3 4 3 2 1

```
13. Write an algorithm, draw a flowchart and develop 'C' program to calculate the series of n terms for x as;-  
 $S = x + x^2 + x^3 + x^4 + \dots$
14. Write an algorithm, draw a flowchart and develop 'C' program to calculate the sum of the n terms of the series;-  
 $S = 1/2! + 2/3! + 3/4! + 4/5! + \dots$
15. Write an algorithm, draw a flowchart and develop 'C' program to display the following pattern:-
 

```

 1
 2 3 2
 3 4 5 4 3
 4 5 6 7 6 5 4
 5 6 7 8 9 8 7 6 5

```
16. Write an algorithm, draw a flowchart and develop 'C' program to insert an element in an array at appropriate position.
17. Write an algorithm, draw a flowchart and develop 'C' program to sort the given array using bubble sort.
18. Write an algorithm, draw a flowchart and develop 'C' program to find the transpose of a given matrix.
19. Write an algorithm, draw a flowchart and develop 'C' program to check whether the given word is palindrome or not.
20. Write an algorithm, draw a flowchart and develop 'C' program to count vowels in given word using switch statement.

21. Write an algorithm, draw a flowchart and develop 'C' program to count number of letters, words and blank spaces in a given line.
22. Write an algorithm, draw a flowchart and develop 'C' program to find largest and smallest element of given array using function concept.
23. Write an algorithm, draw a flowchart and develop 'C' program to find factorial of given number using recursion function.
24. Write an algorithm, draw a flowchart and develop 'C' program to find reverse of digits of given number using recursion concept.
25. Write an algorithm, draw a flowchart and develop 'C' program to swap the values of two array using user defined function. Use the concept "Call by Value" and "Call by Reference".
26. Write an algorithm, draw a flowchart and develop 'C' program to find and replace a numeric value from an array using function and pointer.
27. Write an algorithm, draw a flowchart and develop 'C' program to Create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.
28. Write an algorithm, draw a flowchart and develop 'C' program to create a file "abc.txt" and store the text. Copy the content from "abc.txt" to another file "xyz.txt" using putc() and getc() function. Also read the content of both files.
29. Write an algorithm, draw a flowchart and develop 'C' program to write and read the 'n' records as an entire block (structure) on a file using fwrite() and fread(). The block structure contains Roll Number and Name of the Students.
30. Write an algorithm, draw a flowchart and develop 'C' program to copy the content of one file to another file by using command line argument.

### **Paper-III: Introduction to Operating Systems (1T3)**

#### **UNIT – I**

**Introduction** – What operating systems do, Computer system organization, Computer system architecture, Operating system architecture, Operating system operations, Process management, Memory management, Storage management, Protection & Security, Kernel data structures, Computing environments, Open source operating systems. **System Structures** – Operating system services, User and operating system interface, system calls, types of system calls.

#### **UNIT – II**

**Process Management** – Process concept, Process Scheduling, Operations on processes, Interprocess Communication. Deadlocks – Deadlock characterization, Deadlock prevention, Deadlock Avoidance. **Memory Management Strategies** – Background, Swapping, Contiguous memory Allocation, Segmentation, Paging. **File System** – File concept, File system mounting, File sharing.

## **UNIT – III**

### **Introduction to Disk Operating System (DOS)**

- File types, Directory Structure
- Booting - Warm and Cold Booting
- Types of DOS commands (Internal and External)
- Introduction of Autoexe and Config files.
- Directory commands: DIR, MD, RD, TREE, PATH, SUBST ETC.
- Wild card Definitions
- Commands related to file management: COPY, DEL, ERASE, REN, ATTRIB, XCOPY, BACKUP and RESTORE .
- General commands: TYPE DATE, TIME, PROMPT etc.
- batch commands, wild card characters & its use.

## **UNIT – IV**

### **Introduction to Unix overview**

- File systems and structure of directories and file
- File Oriented Commands – Cat, op, ln mv, rm etc.
- File Permissions
- Directory Oriented commands – ls, mkdir, rmdir, cd, pwd etc.
- Inter user connection commands – write, mail, used, at, wall etc.
- Common commands – skill, date, wo, sleep, who ps.
- Unix Utility Commands – grep, pr, cut, paste, sort, lp shutdown, halt, sys, tar, find etc.
- Basics of shell scripts
- Writing shell scripts, running scripts, using variables, controlling the flow of statement
- Introduction of Linux.

### **Text Books:**

1. Abraham Silberschatz, Peter Galvin, Gerg Gagne, Operating System Concepts, Wiley.
2. Robert M. Thomas, DOS 6 & 6.2, BPB Publications.
3. Yashavant Kanetkar, Unix Shell Programming, BPB Publications.

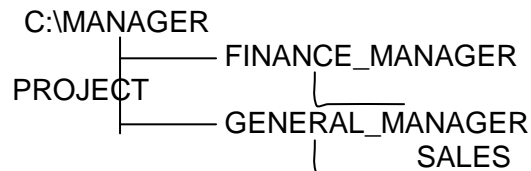
### **Reference Books:**

1. Tanenbaum, Modern Operating Systems, PHI.
2. Stuart E. Madnick, John J. Donovan, Operating Systems, McGraw-Hill.
3. Dhananjay M. Dhamdhare, Operating Systems, McGraw-Hill
4. Sumitabha Das, Unix Concepts & Applications, McGraw-Hill.
5. Kernighan & Pike, The Unix Programming Environment, PHI.
6. Christopher Negus, Ubuntu Linux Toolbox, Wiley.
7. S. Jaiswal, DOS / Unix & Windows: IT Today, Encyclopedia.
8. Burnett, Using Linux: Tackett, PHI.
9. MS-DOS Manual.

### **Practical List of Introduction to Operating Systems**

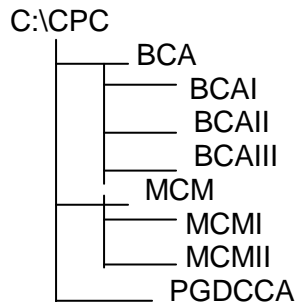
1. Make a directory naming VMV in DOS. Under that make three sub directories BCAI, BCA II, BCAIII. Also explain the commands used in making the directories and subdirectories in DOS.

2. Using Tree Command in DOS make the following tree diagram



Also explain the commands used in making the above tree diagram.

3. Using tree command in DOS makes the following tree diagram



Also explain the commands used in making the above tree diagram.

4. Make a file named “compute.txt” in DOS and write the definition and characteristics of computer in that file. Rename the file compute.txt to computer.txt. Also explain the commands used in making the file and renaming file. Explain the difference between copy and ren Command.
5. Make a file named “compute.txt” in DOS and write the definition and characteristics of computer in that file. Copy the contents of file compute.txt to computer.txt. Also explain the commands used in making the file and copying the contents of one file to another file.
6. Make a file named file1.txt in DOS and enter the following text in that file.  
WWW can be defined as a set of standards for storing, retrieving, formatting and displaying information using client/server architecture, graphical user interfaces and a hypertext language that enables dynamic link to documents. World Wide Web is a repository of information spread all over the world and linked together.
7. Write a shell script in UNIX to calculate area of a triangle.
8. Write a shell script in UNIX to calculate area and circumference of a circle.
9. Write a shell script in UNIX to calculate the simple interest.
10. Write a shell script in UNIX to calculate the total marks and percentage of five subjects.
11. Write a shell script in UNIX to calculate largest and smallest number among three numbers.
12. Write a shell script in UNIX to calculate the gross salary of an employee. The salary includes – Basic Salary, HRA (20% of Basic Salary), DA (20% of Basic Salary) and CCA (10% of Basic Salary).
13. Write a shell script in UNIX to enter the two strings and then compare the two strings. If strings are equal then display the message “Strings are Equal” else “Strings are not Equal”.



14. Write a shell script in UNIX to check whether the given file is directory or ordinary file.
15. Write a shell script in UNIX to check entered character is in uppercase or in lowercase.
16. Write a shell script in UNIX to check whether the entered number is EVEN or ODD.
17. Write a shell script in UNIX to check whether the entered number is prime or not.
18. Write a shell script in UNIX to print the Fibonacci series.
19. Write a shell script in UNIX to calculate the factorial of a given number.
20. Write a shell script in UNIX to calculate reverse a number.
21. Write a shell script in UNIX to find sum of digits of a number.
22. Write a shell script in UNIX to implement Break statement.
23. Write a shell script in UNIX to search whether element is present is in the list or not.
24. Write a shell script in UNIX to copy contents of one file to another.
25. Write a shell script in UNIX to count number of files in a directory.
26. Write a shell script in UNIX to implement FCFS Algorithm.

#### **Paper - IV: Computerized Accounting (TALLY ERP 9) (1T4)**

##### **UNIT - I**

**Accounting Basics** - Defining the need for accounting, Defining accounting, Exploring the branches of accounting, Describing the functions of accounting, Listing the advantages of accounting, Listing the limitations of accounting, Explaining important terms in accounting, Exploring the concepts of accounting, Understanding the conversions of accounting, Describing an account and its types, Explaining the rules of debit and credit, Describing a journal, Describing a ledger, Describing trial balance, Describing a financial entries, Understanding adjustment entries.

**Introduction to Tally.ERP 9** – Features of Tally, Enhancement in Tally.ERP 9, Installation procedure of Tally.ERP 9, Opening Tally.ERP 9, Components of the Tally.ERP 9 window, Creating a Company.

##### **UNIT - II**

**Stock and Godown in Tally.ERP 9** – Stock groups, Stock categories, Stock items, Units of measure, Godowns. **Group, Ledgers, Vouchers and Orders** – Introducing groups, Introducing ledgers, Introducing vouchers, Introducing purchase orders, Introducing a sales order, Introducing invoices.

##### **UNIT - III**

**Reports in Tally.ERP 9** – Working with balance sheet, Working with profit & loss A/c report, Working with stock summary report, Understanding ratio analysis, Working with trial balance report, Working with day book report. **Payroll** – Exploring payroll in Tally.ERP 9, Required features to create a pay slip, Description of payroll info, Working

with payroll vouchers, Defining payroll reports, working with statements of payroll report, Describing salary disbursement.

#### **UNIT - IV**

**Taxation** – Indian Tax Structure, Tax deducted at source in Tally.ERP 9, Create a Tax Ledger, TDS Vouchers, Printing a TDS Challan, Tax collected at source in Tally.ERP 9, TCS reports in Tally.ERP 9, Calculating VAT in Tally.ERP 9, VAT Classification, VAT Vouchers, VAT Reports in Tally.ERP 9, Service Tax.

#### **Text Book:**

1. Vikas Gupta, Business Accounting with MS Excel and Tally.ERP 9 Course Kit, Dreamtech Press.

#### **Reference Books:**

1. Computerized Accounting using Tally ERP 9, Sahaj Enterprise, Tally Education Private Ltd (TEPL).
2. Vishnu Priya Singh, Tally 9.
3. K. K. Nadhani, Accounting with Tally, BPB Publication.
4. K. K. Nadhani and A.K. Nadhani, Tally Tutorial, BPB Publication.
5. Anthony R. N. and J. S. Richard, Accounting Principles, Irwin Inc.

### **Practical List of Computerized Accounting (TALLY ERP 9)**

#### **1. Create a company in Tally ERP 9 with the following details:**

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Name of company               | Universal Company Ltd.                             |
| Address                       | 1804, world Tower, AB road, Baner, Pune<br>_411080 |
| Country                       | India                                              |
| State                         | Maharashtra                                        |
| Contact number                | 7894561230                                         |
| Mobile number                 | 7741258963                                         |
| Email-Id                      | info@universalmfg.co.in                            |
| Books beginning from          | 01-04-2015                                         |
| Financial year Beginning from | 01-04-2015                                         |

#### **2. Create a company in Tally ERP 9 with the following details:**

|                               |                                                                    |
|-------------------------------|--------------------------------------------------------------------|
| Name of company               | Sambhav trading Company                                            |
| Address                       | a/512, palm court, girgaam chaupaty, charni<br>road, Mumbai-400007 |
| Country                       | India                                                              |
| State                         | Maharashtra                                                        |
| Contact number                | 022-22886512                                                       |
| Mobile number                 | 9898745555                                                         |
| Email-Id                      | enquiry@sambhav.com                                                |
| Books beginning from          | 01-04-2014                                                         |
| Financial year Beginning from | 01-04-2014                                                         |

**3. Create the following ledgers in the books of universal company ltd in Tally ERP 9.**

| Name of ledger           | Under (group)    | Bill wise details set to | Opening balance |
|--------------------------|------------------|--------------------------|-----------------|
| Share capital            | Capital account  | No                       | 15,00,000       |
| Purchase account         | Purchase account | No                       | Nil             |
| Sales accounts           | Sales accounts   | No                       | Nil             |
| Ultra tech cement ltd    | Sundry creditors | yes                      | 270000          |
| Building                 | Fixed assets     | No                       | 1200000         |
| Computers                | Fixed assets     | No                       | 50000           |
| Office furniture         | Fixed assets     | No                       | 175000          |
| Cash in hand             | Cash accounts    | No                       | 20000           |
| Civic centre association | Sundry debtors   | yes                      | 290000          |
| Bank of india            | Bank accounts    | No                       | 80000           |
| Petty cash               | Cash in hand     | No                       | 50000           |

**4. Create the following ledgers in the books of universal company ltd in Tally ERP 9.**

| Name of ledger           | Under (group)    | Bill wise details set to | Opening balance |
|--------------------------|------------------|--------------------------|-----------------|
| Proprietors Capital      | Capital Account  | No                       | 10,00,000       |
| Purchase Account         | Purchase Account | No                       | Nil             |
| Sales Accounts           | Sales Accounts   | No                       | Nil             |
| Hindustan Lever Ltd      | Sundry creditors | yes                      | 355000          |
| Land and Building        | Fixed Assets     | No                       | 850000          |
| Computers and Peripheral | Fixed Assets     | No                       | 30000           |
| Office Furniture         | Fixed Assets     | No                       | 75000           |
| Cash in hand             | Cash Accounts    | No                       | 18000           |
| Tahuraa Traders Pvt Ltd  | Sundry Debtors   | yes                      | 310000          |
| Bank of Baroda           | Bank Accounts    | No                       | 102000          |

**5. Record the following vouchers in the books of Universal company ltd.**

- 04-04-2014 withdrawn Rs. 20000 from bank of india and transferred to petty cash book.
- 08-04-2014 paid 2000 from petty cash for buying stationery for office.
- 15-04-2014 made purchase from ultra tech cement ltd. Worth Rs. 45000
- 19-04-2014 issued cheque to ultra tech cement ltd for Rs. 45000
- 21-04-2014 sold goods worth of Rs. 75000 to civic centre association
- 25-04-2014 received a cheque from civic center association for Rs. 75000. The same was deposited in the bank on the same date.
- 30-04-2014 paid staff salary of Rs. 9800 from petty cash.

**6. Record the following vouchers in the books of Sambhav Trading Co. Pvt. Ltd.**

- 02-04-2014 withdrawn RS. 10000 From bank of baroda and transeferred to petty cash book.
- 05-04-2014 paid 1000 from petty cash for office expences.
- 11-04-2014 made purchase from Hindustan unilever ltd. Worth Rs. 33000
- 13-04-2014 Issued cheque to Hindustan Unilever Ltd. For Rs. 20000

- e. 14-04-2014 Made purchase from Hindustan Unilever Ltd. Worth Rs. 26000
- f. 18-04-2014 Issued cheque of Rs. 38000 to Hindustan Unilever Ltd.
- g. 21-04-2014 sold goods worth of Rs. 90000 to Tahuraa Traders Pvt Ltd.
- h. 22-04-2014 received a cheque from Tahuraa Traders Pvt Ltd. For Rs. 75000 .  
The same was deposited in the bank on the same date.
- i. 23-04-2014 sold goods worth of rs. 85000 to Tahuraa Traders Pvt Ltd.
- j. 25-04-2014 received cheque from Tahuraa Traders Pvt Ltd. From Rs.75000.  
The same was deposited in the bank on the same date.
- k. 30-04-2014 Paid staff salary of Rs. 7200 from petty cash.

**7. Create cost centers Project A and Project B under primary cost category and record the following transaction in the books of sambhav trading company**

- a. On 07-09-2014, purchased Cement worth Rs. 1, 50,000/- from Ultratech cement Ltd. That will be shared equally between Project A and Project B . A credit period of 30 days was provided.
- b. Record transaction on 09-09-2014 for the purchase of Steel worth Rs. 450000 from Embee Enterprises. Allocate Rs. 50000 to Project A and the the rest to Project B . a credit period of 45 days was allowed.

**8. Create cost centers Mumbai and Pune under primary cost category and record the following transaction in the books of Universal co. Limited**

- a. On 05-10-2014, purchases done worth Rs. 2, 50,000/- from Hindustan Unilever Ltd. That will be shared equally between Mumbai and Pune.
- b. Record transaction on 09-10-2014 for the purchase worth Rs. 600000 from Hindustan Unilever Ltd. Allocate Rs. 250000 to Mumbai and the rest to Pune. . a credit period of 45 days was allowed.
- c. On 18-10-2014 record a transaction for the sale on Super technologies for Rs. 1575000/- of which 1200000 would be allocated to Mumbai branch and the rest to Pune.
- d. On 22-10-2014 one more sales entry was made for 1600000 to Super technologies of which 10,00,000 was allocated to pune branch and the rest to Mumbai.

**9. Record the following transaction in the books of Universal Co. Ltd.**

- a. On May 11, 2014 they received a bill no. May /005/2014 for a sum of Rs. 125000/- from M/s. Rajesh shah and Co., architects for consultancy towards designing their office and training centre.
- b. Universal company Ltd. Made the payment after deducting the TDS amount.
- c. On 27<sup>th</sup> May 2014, company received bills no May/015/2014 for a sum of Rs. 75000 from M/s Rajesh shah and co., architects for consultancy.
- d. On 28<sup>th</sup> May, company made the payment after deducting TDS.

**10. Journalize the following Transaction in the books of Mr. Anil for the month of March 2012 and prepare Trial balance**

| March 2010 | Particular                | Amt   |
|------------|---------------------------|-------|
| 1          | Start business with cash  | 80000 |
| 3          | Purchase goods for cash   | 5000  |
| 4          | Purchase goods from Akash | 9000  |
| 6          | Sold goods to Vikas       | 7000  |
| 7          | Return goods to Akash     | 700   |
| 9          | Goods return by Vikash    | 400   |
| 11         | Cash paid to Raman        | 4000  |
| 17         | Withdrew from Bank        | 10000 |
| 20         | Wage paid                 | 1000  |

**11. Akhilesh started his business on 1<sup>st</sup> Jan. 2012 with Rs.5000, his transaction for the month were as following, prepare Cash A/C.**

| <b>January 2012</b> | <b>Particular</b>                           | <b>Amt</b> |
|---------------------|---------------------------------------------|------------|
| 1                   | Bought goods on credit from Sachine & Sons  | 5000       |
| 5                   | Paid salary                                 | 500        |
| 10                  | Sold to Roy                                 | 2000       |
| 15                  | Cash sales                                  | 2200       |
| 19                  | Cash Purchase                               | 3000       |
| 25                  | Deposit in Bank                             | 1000       |
| 27                  | Goods returned to Sachine & Sons            | 500        |
| 31                  | Cash Withdrawn by Akhilesh for personal use | 500        |

**12. Journalize the following transactions in the books of Sudhir Kumar 2003 and prepare a Trial Balance :**

| <b>Jan 2003</b> | <b>Particular</b>                            | <b>Amt</b> |
|-----------------|----------------------------------------------|------------|
| 1               | Sudhir Commenced business with cash          | 40000      |
| 3               | Purchased goods for cash                     | 500        |
| 5               | Sold goods for cash                          | 300        |
| 6               | Purchased one Motor Car for cash             | 15000      |
| 9               | Sold Machinery for cash                      | 9000       |
| 11              | Purchased a Building on credit from Narendra | 20000      |
| 15              | Sold Furniture on credit to Randhir Kappor   | 9500       |
| 17              | Paid Cartage                                 | 110        |
| 22              | Received Commission                          | 50         |
| 27              | Cash Sales                                   | 1200       |
| 29              | Cash Purchase                                | 600        |
| 30              | Received on account from Ahmed               | 350        |
| 31              | Paid cash to Sunitkumar on account           | 190        |

**13. Journalize the following transactions in the books of Royal & Co. and prepare a Trial Balance :**

| <b>Nov. 2003</b> | <b>Particular</b>                                    | <b>Amt</b> |
|------------------|------------------------------------------------------|------------|
| 1                | Cash invested in Business                            | 150000     |
| 2                | Cash deposited In to SBI Current A/C                 | 30000      |
| 3                | Goods Purchased in cash                              | 20000      |
| 4                | Goods Sold in cash                                   | 12000      |
| 5                | Commission received Rs. 500 from Sushma Traders      |            |
| 6                | Goods Sold on credit to Roshan                       | 25000      |
| 7                | Goods return from Roshan                             | 5000       |
| 8                | Depreciation charged on Machine @ 12% for four month |            |
|                  | Machine Cost                                         | 45000      |
| 10               | Cheque received from Roshan                          | 10000      |
| 11               | Salary Paid                                          | 1500       |

**14. Journalize the following transaction in the books of Sanjay Potdar for the month of March 2012.**

1. Ashok starts business with Rs. 100000/-
2. Purchase machinery for Rs. 50000/ and furniture for Rs. 10000
3. Paid amount for rent Rs. 1000/
4. Deposits Rs.,. 10000/- in Bank
5. Purchase of goods for Rs. 20000/ from Mr. Ram on credit.
6. Sold goods to Mr. Rakesh for Rs. 10000/
7. Rs. 5000/ withdraws from bank for personal use.
8. Withdraws Rs. 1000/ for office use.
9. Received cash from Mr. Rakesh.
10. Paid to Mr. Ram.

**15. Record the following transaction in the books of Raj enterprises.**

1. Goods purchase from "Kirti sales" on credit Bill no. 115 Rs. 62000
  - a. Color tv (lg) 4% 3qty Rs. 30000
  - b. Washing machine (samsung) 4% 4 qty Rs. 32000
2. Cash received from sangam enterprises Rs. 15000
3. Goods purchase in cash bill no. 69 Rs. 35000
  - a. B/W tv (sony) 4% 4 qty Rs. 20000
  - b. Audio (onida) 4% 5 qty Rs. 15000
4. Goods sale on cash rs, 19000
  - a. Color tv (lg) 4% 1 qty Rs. 15500
  - b. Audeo (onida) 4% 1 qty Rs. 3500
5. Goods purchase in cash from vikram enterprises bill no. 45 Rs. 40000
  - a. Color tv (lg) 4% 2 qty Rs. 20000
  - b. Refrigerator (vedeocon) 4% 2qty Rs. 20000
6. Cheaque no. received from ravi agency Rs. 10000 and deposited in state bank.
7. Credit sale to vijay enterprises bill no. 93 Rs.17200
  - a. Washing machine (samsung) 4% 1qty Rs. 8000
  - b. B/W tv (sony) 4% 1 Qty Rs. 5700
  - c. Audio (onida) 4% 1 qty Rs. 3500
8. Cash paid to ravi kulkarni rs. 1500
9. Cheque no. 159 paid to central engineering co. Rs 15000
10. Refrigerator purchase on cash Rs. 30000 fom k k agency 3 qty (videocon) 4%
11. Office rent paid in cash Rs. 1700
12. Received cheque from vijay enterprises Rs. 10000 & deposited in canara bank.
13. Bill received from lokmat Rs. 1500 bill no.5
14. Amount received from vaishali agency in cash rs. 5000 & cheque no. 336791 Rs. 10000 only. Cheque deposited in state bank.
15. Cash sale to telco ltd. Rs. 29900
  - a. Color tv (Lg) 4% 1 qty Rs. 10000
  - b. Washing machine (samsung) 4% 1 qty Rs. 9100
  - c. Refrigerator (vedeocon) 4% 1qty Rs. 10800
16. Cheque deposited in canara bank Rs.5000
17. Cash withdrawn from bank Rs. 34000

**16. Record the following transaction in the books of Maharashtra Traders.**

1. Opening stock for Wadi Godown
  - a. Akai color Tv 4% 10 qty Rs.10500 each.
  - b. Refrigerator (videocon) 7qty 12000 each.
  - c. Washing machine (samsung) 5 qty 8000 each
  - d. Audio (Philips) 4% 2Qty 2000
  - e. Onida color tv 4% 5 qty 12000 each
  - f. B/W tv (akai) 4% 5 qty 18000
2. Opening stock for nandanwan godown
  - a. Akai color tv 2 qty 10500 each
  - b. refrigerator (videocon) 3qty 12000 each
  - c. Audio (Philips) 3 qty 1000 each.
3. Cash sale to Bhagwandas Co. Rs. 41500 in wadi godown.
  - a. Color tv (akai) 4% 2 qty Rs.21000.
  - b. Refrigerator (Vedeocon) 4% 1qty Rs. 11300
  - c. Washing Machine (samsung) 4% 1 qty Rs. 9200.

4. Goods purchase in cash from national Trading co. & store Nandanwan godown.
  - a. Audio (Philips) 2qty 4% Rs.6000
  - b. W/M (Samsung) 1qty 4% Rs. 10000
5. Credit sales to Ravina traders Rs. 51800 wadi godown.
  - a. Refrigerator (vedeocon) 2qty 4% Rs. 22000.
  - b. W/M (Samsung) 1qty 4% Rs.8300
  - c. Color tv (akai) 2qty 4% 21500
6. Cheque received from vikas enterprises Rs. 20000 & deposited in state bank.
7. Cash withdrawn from state bank cheque no. 16 Rs. 15000/-
8. Received loan from state bank Rs. 10,00,000/- invensted in business, interest 10%.
9. Cheque paid to kirti sales rs. 25000/-
10. Goods purchase on credit from rama & sons Rs. 44000 store nandanwan.
  - a. W/M (Lg) 3 qty 4% Rs. 24000
  - b. Refrigerator (videocon) 1qty 4% Rs. 10000.
  - c. Color tv (onida) 1qty 45 Rs. 10000
11. Akai color TV purchase in cash Rs. 20000 2qty 4% Rao store in nandanwan.
12. Paid salary Rs. 10000
13. Paid bank loan Rs. 8,00,000
14. Cash sale on wadi godown Rs 42000\
  - a. Audio 2 qty 4% Rs.7000
  - b. w/m (s.s.) 2qty 4% Rs. 17000
  - c. b/w tv (akai) 3qty 4% Rs. 18000
15. Paid to rama & sons by cheque rs. 18000 chq. No. 1152.
16. Paid electric bill Rs. 10000
17. Total cash sale after allowing discount Rs. 1000.
18. Paid total balance loan on state bank.
19. Advertisement exp. Rs.10000
20. Carriage exp. Rs. 5000
21. Purchase furniture for nandanwan godown Rs.28000 in cash.
22. Withdrawn for personal use Rs, 10000.

**17. Record the following transaction in the books of Rathore Traders.**

1. Goods purchase from sohan & sons Rs. 20000/-
  - a. Gold 10gm (12.5%) rs. 10000/-
  - b. Silver 1kg (12.5%) Rs.10000/-
2. Goods purchase from sagar computer Rs. 25000/-
  - a. Monitor (compaq) 1qty 5000/- 4%
  - b. Cpu (intel) 1qty 15000/- 4%
  - c. Speaker (Logitex) 1qty 5000/- each
3. Goods sold on cash Rs. 22000/-
  - a. Gold (12.5%) 10gm 12000/-
  - b. Silver(12.5%) 1kg 10000/-
4. Withdrawn 400/- Rs. From canara bank.
5. Cash given to sagar computers Rs. 24000/- in full settlement.
6. Cheque given to mr. sohan & sons. Rs 20000.
7. Salary given to mr. sahil Rs. 2000/-
8. Withdrawn Rs. 4000/-
9. Paid insurance premium Rs. 200/-
10. Purchase table without vat Rs.2000/-

# PGDCCA Part-I

## Semester-II

### Paper - I: Management Information Systems (2T1)

#### UNIT - I

##### **Strategic View of MIS:**

**Management information system in a digital firm:** Management Information System (MIS): Concept, Definition, Role of MIS, Impact of the MIS, MIS and the user, Management as a control system, MIS: A support to the management, Management effectiveness and MIS, Organization as a System, MIS: Organization Effectiveness, MIS for a digital firm. **E-Business Enterprise:** A digital firm - Introduction, Organization of business in a digital firm, E-Business, E-Commerce, E-Communication, E-Collaboration, Real Time Enterprise.

**Strategic Management Of Business Performance:** Concept of corporate planning, Essentiality of strategic planning, Development of the business strategies, Types of strategies, Short range planning, Tools of planning, Strategic analysis of business, Balance score card, Score card and dash board, MIS: Strategic business planning.

**Information security challenges in E-Enterprises:** Introduction, Security threats and vulnerability, Controlling security threats and vulnerability, Managing security threat in E-Business, Disaster management, Information security.

#### UNIT - II

##### **Basic of Management Information Systems:**

**Decision-Making:** Concept, Process, Decision analysis by analytical modeling, **Behavioral concepts in Decision - Making,** Organizational Decision Making.

**Information, Knowledge, Business Intelligence:** Information concepts, Information: A quality product, Classification of the information, Methods of data and information collection, Value of the information, General model of a human as an information processor, Summary of information concept and their implications, Knowledge and knowledge management systems, Business intelligence MIS and the information and knowledge. **System Engineering: Analysis And Design:** System concepts, System control, Types of system, Handling system complexity, Classes of systems, General model of MIS, The need for system analysis, System analysis of the existing system, System analysis of a new requirement, System development model, Structured system analysis and design (SSAD), Object oriented analysis (OOA), System development through OOT: A use case model, OOSAD development life cycle.

#### UNIT – III

**Development process of MIS:** Development of long range plans of the MIS, Ascertaining the class of information, Determining the information requirement, Development and implementation of the MIS, Management of information quality in MIS, Organization for development of MIS, MIS: Development Process Model. **Strategic**

**Design of MIS:** Strategic management of the business, Why strategic design of MIS?, Balance score card, Score card, and dash board, Strategic design of MIS, Development process steps for strategic design(SD) of MIS, illustrating SD of MIS for Big Bazaar, Strategic management of business and SD of MIS, Business strategy determination, Business strategy implementation. **Business Process Re-Engineering (BPR):** Introduction, Business process, Process model of organization, Value stream model of the organization, What delays the Business Process? Relevance of information technology (IT), MIS and BPR.



## UNIT - IV

### Applications of Management Information Systems to E-Business:

**Application in manufacturing sector:** Introduction, Personnel management (PM), Financial management (FM), Production management (PM), Raw material management(RMM), Marketing management, Corporate overview. **Application in**

**Service Sector:** Introduction to service sector, Creating a distinctive service, Service concept, Service process cycle and analysis, Customer service design, Service management system , MIS application in service industry, MIS: Service industry.

**Decision support systems and knowledge management: Decision support systems (DSS):** Concept and philosophy, Group decision support system(GDSS), DSS application in E-Enterprise, Knowledge management , Knowledge management systems, Knowledge based expert system (KBES), MIS and the benefits of DSS.

**Enterprise Management Systems:** Enterprise management systems(Ems), Enterprise resource planning (ERP) system, ERP models and modules, Benefits of the ERP, ERP product evaluation, ERP implementation, Supply chain management (SCM), Information management in SCM, Customer relationship management (CRM), EMS and MIS.

### Text Book:

1. Waman S. Jawadekar, Management Information Systems, McGraw-Hill.

### Reference Books:

1. D. P. Goyal, Management Information Systems, Vikas Publishing.
2. D. P. Nagpal, Management Information Systems, S. Chand.
3. S. Sadagopan, Management Information Systems, PHI.
4. A. K. Gupta, Management Information Systems, S. Chand.
5. Mahesh Halale, Management Information Systems, Himalaya publishing house.
6. Kanter, Managing with Information, PHI.

## Paper - II: Core Java (2T2)

### UNIT - I

**Java Evolution** - Java history, Java features, How java differ from C and C++, Java and internet, Java and world wide web, Web browsers, Hardware and software requirements, Java support systems, Java environment. **Overview of Java Language** – Introduction,

Simple Java programs, More of Java, An application with two classes, Java program structure, Java tokens, Java statements, Implementing a Java program, Java virtual machine, Command line arguments, Programming style. **Constants, Variables, and**

**Data Types** – Introduction, Constants, Variables, Data Types, Declaration of variables, Giving value to variables, Scope of variables, Symbolic constants, Type casting, Getting values of variables, Standards default values. **Operators and Expressions** -

Introduction, Arithmetic operators, Relational operators, Logical operators, Assignment operators, Increment and decrement operators, Conditional operators, Bitwise operators, Special operators, Arithmetic expression, Evaluation of expression, Precedence of arithmetic operators, Type conversion in expression, Operator precedence and associativity, Mathematical functions. **Decision Making and Branching** – Introduction,

Decision making with If Statement, Simple If statement, The If...Else statement, Nesting of If...Else statement, The Else If ladder, The switch statement, The? : Operators. **Decision Making and Looping** – Introduction, The while statement, The do statement,

The for statement, Jumps in loops, Labeled loops.

## UNIT - II

**Classes, Objects and Methods** – Introduction, Defining a class, Fields declaration, Methods declaration, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods, Inheritance: Extending a class, Overriding methods, Final variables and methods, Final classes, Finalizer methods, Abstract methods and classes, Methods with varargs, Visibility Controls. **Arrays, Strings and Vectors** – Introduction, One-Dimensional Array, Creating an array, Two-Dimensional Array, Strings, Vectors, Wrappers classes, Enumerated types, Annotations. **Interfaces: Multiple Inheritance** – Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Accessing interface variables.

## UNIT - III

**Packages: Putting Classes Together** – Introduction, Java API Packages, Using system packages, Naming conventions, Creating packages, Accessing a package, Using a package, Adding a class to package, Hiding classes, Static import. **Multi Threaded Programming** – Introduction, Creating threads, Extending the thread class, Stopping and blocking a thread, Life cycle of thread, Using thread methods, Thread exception, Thread priority, Implementing the 'Runnable' interface, Inter-thread communication. **Managing Errors and Exceptions** – Introduction, Types of errors, Exceptions, Syntax of exceptions handling code, Multiple catch statements, Using finally statements, Throwing our own exceptions, Improved exception handling in Java ES 7, Using exceptions for debugging.

## UNIT - IV

**Applet Programming** – Introduction, How applet differ from application, Preparing to write applet, Building applet code, Applet life cycle, Creating an executable applet, Designing a web page, Applet tag, Adding applet to HTML file, Running the applet, More about applet tag, Passing parameters to applet, Aligning the display, More about HTML tags, Displaying numerical values, Getting input from the user, Event handling. **Graphics Programming** – Introduction, The graphics class, Lines and rectangles, Circles and ellipses, Drawing arcs, Drawing polygons, Line graphs, Using controls loops in applets, Drawing bar charts, Introduction to AWT packages, Introduction to swing. **Managing Input / Output Files in JAVA** – Introduction, Concepts of streams, Streams classes, Bytes streams classes, Character streams classes, Using streams, Other useful I/O classes, Using the file classes, Input / Output exception, Creation of files, Reading/Writing character, Reading/Writing bytes, Handling primitive data types, Concatenating and buffering files, Random access file, Interactive input and output, Other stream classes. **JAVA Collections** – Introduction, Overview of interfaces, Overview of classes, Overview of algorithm.

### Text Book:

1. E. Balagurusamy, Programming with Java, McGraw-Hill.

### Reference Books:

1. Dr. R. NageswaraRao, Core Java – An Integrated Approach, Dreamtech Press.
2. Rashmi Kanta Das, Core Java for Beginners, Vikas Publishing.
3. Joel Murach, Murach's Java Programming, Shroff Publishers.
4. Sharanam Shah & Vaishali Shah, Core Java 8 for Beginners, Shroff Publishers.
5. Patrick Naughton & Herbert Schildt, JAVA 2 – The Complete Reference 3/E, McGraw-Hill.
6. B. M. Harwani, Java for Professionals, Shroff Publishers.

## Practical List of Core Java

1. Write an algorithm, draw a flowchart and develop a Java program to find the sum of any number of integers entered as command line arguments.
2. Write an algorithm, draw a flowchart and develop a Java program to perform addition, subtraction, multiplication and division using switch case statement.
3. Write an algorithm, draw a flowchart and develop a Java program to find the factorial of a given number.
4. Write an algorithm, draw a flowchart and develop a Java program to display the following pattern –

```
 *
 * * *
 * * * * *
* * * * * *
```

5. Write an algorithm, draw a flowchart and develop a Java program to learn use of single dimensional array by defining the array dynamically.
6. Write an algorithm, draw a flowchart and develop a Java program to convert a decimal number to binary number.
7. Write an algorithm, draw a flowchart and develop a Java program to find the sum of any number of integers interactively, i.e., entering every number from the keyboard, whereas the total number of integers is given as a command line argument.
8. Write an algorithm, draw a flowchart and develop a Java program to Write a program that show working of different functions of String and StringBuffer classes like setCharAt(), setLength(), append(), insert(), concat() and equals().
9. Write an algorithm, draw a flowchart and develop a Java program to create a distance class with methods where distance is computed in terms of feet and inches, how to create objects of a class and to see the use of this pointer.
10. Write an algorithm, draw a flowchart and develop a Java program to show that during function overloading, if no matching argument is found, then java will apply automatic type conversions (from lower to higher data type).
11. Write an algorithm, draw a flowchart and develop a Java program to show the use of static functions and to pass variable length arguments in a function.
12. Write an algorithm, draw a flowchart and develop a Java program to demonstrate the concept of boxing and unboxing.
13. Write an algorithm, draw a flowchart and develop a Java program to find the area of rectangle using constructor.
14. Write an algorithm, draw a flowchart and develop a Java program to demonstrate the method overloading concept.
15. Write an algorithm, draw a flowchart and develop a Java program to find even, odd, factorial of a number using inheritance.
16. Write an algorithm, draw a flowchart and develop a Java program to demonstrate the Interfaces.

17. Write an algorithm, draw a flowchart and develop a Java program to create a multilevel package and also creates a reusable class to generate Fibonacci series, where the function to generate Fibonacci series is given in a different file belonging to the same package.
18. Write an algorithm, draw a flowchart and develop a Java program that creates illustrates different levels of protection in classes/subclasses belonging to same package or different packages.
19. Write an algorithm, draw a flowchart and develop a Java program to create your own exception types to handle situation specific to your application (Hint: Define a subclass of Exception which itself is a subclass of Throwable).
20. Write an algorithm, draw a flowchart and develop a Java program to implement the concept of loading & displaying images.
21. Write an algorithm, draw a flowchart and develop a Java program to demonstrate the animation.
22. Write an algorithm, draw a flowchart and develop a Java program to demonstrate multithread communication by implementing synchronization among threads (Hint: you can implement a simple producer and consumer problem).
23. Write an algorithm, draw a flowchart and develop a Java program to create URL object, create a URLConnection using the openConnection() method and then use it examine the different components of the URL and content.
24. Write an algorithm, draw a flowchart and develop a Java program to implement a simple datagram client and server in which a message that is typed into the server window is sent to the client side where it is displayed.
25. Write an algorithm, draw a flowchart and develop a Java program that creates a Banner and then creates a thread to scrolls the message in the banner from left to right across the applet's window.
26. Write an algorithm, draw a flowchart and develop a Java program to get the URL/location of code (i.e. java code) and document(i.e. html file).
27. Write an algorithm, draw a flowchart and develop a Java program to demonstrate different mouse handling events like mouseClicked(), mouseEntered(), mouseExited(), mousePressed, mouseReleased() and mouseDragged().
28. Write an algorithm, draw a flowchart and develop a Java program to demonstrate different keyboard handling events.
29. Write an algorithm, draw a flowchart and develop a Java program to generate a window without an applet window using main() function.
30. Write an algorithm, draw a flowchart and develop a Java program to display the following output using applet -  

A  
A P  
A P P  
A P P L  
A P P L E  
A P P L E T

## Paper - III: Quantity Techniques & Operation Research (2T3)

### UNIT - I

**Introduction to statistics** - Origin and growth of statistics, meaning of statistics, Definitions of statistics, Characteristics of statistics, Main division of statistics, Nature of statistics: a Science or an Art, Scope of statistics, relation of statistics to other sciences, Function of statistics, Importance of statistics, Limitations of statistics, Distrust Misuse of statistics, Statistical thinking, statistical inferences. **Measures of central Tendency or Averages** - Definition and meaning of average, Qualities of good average, Types of averages, Arithmetic mean, median, Mode, geometric mean, harmonic mean, Relation among mean, median and mode, Relation among arithmetic mean, geometric mean and harmonic mean, Quartiles, deciles, and percentiles. **Measures of dispersion** - Definition of dispersion, meaning of dispersion, purpose of dispersion, quartiles of a good Measures of dispersion, Measures of dispersion, range, quartile deviation or semi-inter quartile range, mean deviation or average deviation, standard deviation or root-mean square deviation, co-efficient of variation, variance, combined standard deviation, relation among quartile deviation, mean deviation and standard deviation, Lorenz curve—graphical presentation of dispersion.

### UNIT - II

**Correlation Analysis** - Meaning of correlation, definition of correlation, usefulness of correlation analysis, types of correlation, co-efficient of correlation, measurement of correlation, probable error of co-efficient of correlation, standard error of co-efficient of correlation, co-efficient of determination, correlation ratio. **Regression Analysis** - Introduction, meaning of regression, definition of Regression, usefulness of Regression analysis, types of Regression, Regression lines, Regression equation, Regression co-efficients, standard error of estimate (SEE), ratio of variation, galton graph, limitations of Regression analysis, distinguish between correlation and Regression. **Probability Analysis** - Introduction, meaning of Probability, properties of Probability, importance of Probability, Probability related events, theorems of Probability, fundamental rules of Probability, calculation of Probability.

### UNIT - III

**Operation Research: An Introduction** – Operation Research – Quantitative approach to decision making, The history of Operation Research, Definition of Operation Research, Characteristics of Operation Research approach, Applications of Operation Research, Computer software for Operation Research. **Linear Programming: Application & Model Formulation** – Introduction, Structure of linear programming model, Advantage of using linear programming, Limitations of linear programming, Application areas of linear programming, General mathematical model of linear programming problem, Guidelines on linear programming model formulation, Example of linear programming model formulation. **Linear Programming: The Graphical Method** – Introduction, Important definitions, Graphical solution methods of LP problem. **Linear Programming: The Simplex Method** – Introduction, Standard form of an LP problem, Simplex algorithm (Maximization & Minimization Case), Types of linear programming solutions.

**Transportation Problem** – Introduction, Mathematical model of transportation problem, Methods of finding initial solution. **Assignment Problem** – Introduction, Mathematical

model of statement assignment problem, Solution methods of assignment problem (Hungarian Method).

#### UNIT - IV

**Decision Theory and Decision Trees** – Introduction, Steps of decision making process, Types of decision making environments, Decision making under uncertainty, Decision making under risk, Decision trees analysis, Decision making with utilities. **Theory of Games** - Introduction, Two Person zero sum games, Pure strategies (Minimax and minimum principles): games with saddle point, Mixed strategies: game without saddle point, The rules of dominance, Solution methods for games without saddle point. **Project management: PERT and CPM** – Introduction, Basic difference between PERT and CPM, Phases of project management, PERT/CPM network components and precedence relationships, Critical path analysis, Project scheduling with uncertain activity times, Project time-cost trade-off, Updating of the project progress. **Replacement and Maintenance Models** – Introduction, Types of failure, Replacement of items whose efficiency deteriorates with time, Replacement of items that fail completely, Other replacement problems.

#### Text Book:

1. E. Narayanan Nadar, Statistics, PHI.
2. J. K. Sharma, Operation Research – Theory & applications, Macmillan.

#### Reference Books:

1. P. N. Arora, S. Arora, Statistics, S. Chand.
2. Richard A. Johnson & Gouri K. Bhattavharyya, Statistics – Principles and Methods, Wiley.
3. S. C. Gupta, V. K. Kapoor, Fundamentals of Mathematical Statistics, S. Chad & Sons.
4. Ken Black, Applied Business Statistics, Wiley.
5. Ravindran, Phillips & Solberg, Operation Research – Principles & Practice, Wiley.
6. R. Panneerselvam, Operations Research, PHI.
7. Prem Kumar Gupta, D. S. Hira, Operations Research, S. Chand.

#### Paper - IV: E-Commerce & Web Designing (2T4)

#### UNIT - I

**Introduction-** Electronic Commerce And Physical Commerce, The DIGITAL Phenomenon, Looking At E-Commerce From Different Perspectives, Different Types Of E-Commerce, Some E-Commerce Scenarios, Changes Brought By E-Commerce, Advantages Of E-Commerce, Myths About E-Commerce Development And Implementation, System Model And Road Map Of This Book. **Internet And World Wide Web-** An Overview Of The Internet, Brief History Of The Web, Web System Architecture, Uniform Resource Locator, Overview Of The Hypertext Transfer Protocol, Hypertext Transfer Protocol (HTTP), Generation Of Dynamic Web Pages, Cookies, HTTP/1.1, Example. **Client Side Programming-** Important Factors In Client-Side Or Web Programming, Web Page Design And Production, Overview Of HTML, Basic Structure Of An HTML Document, Basic Text Formatting, Links, Images, ImageMap, Tables, Frames, Form, Cascading Style Sheets, Javascript.

## UNIT - II

**Server-Side Programming I: Servlet Fundamentals-** Revisiting The Tree-Tier Model, Common Gateways Interface (CGI), Active Server Page (ASP), Overview Of Java Servlet, Java Servlet Architecture, Overview Of Servlet API, Building The Virtual Bookstore- Step By Step, Your First Servlet- Welcome To VBS, Compilation And Execution Of Servlets, An Interactive Servlet Program Example: Topics Of Interest, Topics Of Interest: Cookie Approach.

**Server-Side Programming II: Database Connectivity-** Introduction, Relational Database Systems, JDBC Perspectives, A JDBC Program Example: Simple Servlet Book Query, An Advance Book Query: Servletbookquerymulti, Advanced JDBC Servlet: VBS Advance Book Search Engine. **Server-Side Programming III: Session Tracking-** Introduction, Traditional Session Tracking Techniques, The Servlet Session Tracking Techniques, The Servlet Session Tracking API, A Practical Case: VBS Shopping Cart.

**Basic Cryptography Enabling E-Commerce-** Security Concern, Security Requirements, Encryption, Two Basic Principles For Private Key Encryption, The Key Distribution Problem, Diffie-Hellman Key Exchange Protocol, Public Key Encryption, RSA Encryption Algorithm, Hybrid Encryption, Other Public Key Encryption Methods, Stream Cipher And Block Cipher, Message Digest, Message Authentication Code, Digital Signature, Digital Signature Standard, Authentication.

## UNIT - III

**Internet Security-** IPSec protocol, setting up associations, the authentication header (AH) service, the encapsulating security payload (ESP) service, preventing replay attack, application of IPSec: virtual private network, firewalls, different types of firewalls, example of firewall system, secure socket layer (SSL), putting everything together.

**Advanced techniques for e-commerce-** introduction to mobile agents, WAP: the enabling technology for mobile commerce, XML (eXtensible Markup Language), Data mining.

## UNIT - IV

**Internet Payment System-** Characteristics Of Payment System, 4C Payment Methods, SET Protocol For Credit Card Payment, E-Cash, E-Check, Micropayment System, Overview Of Smart Card, Overview Of Mondex, Putting It All Together For Payment In The VBS. **Consumer Oriented E-Commerce-** Introduction, Traditional Retailing And E-Retailing, Benefits Of E-Retailing, Key Success Factors, Models Of E-Retailing, Features Of Retailing, Developing A Consumer-Oriented E-Commerce System, The PASS Model.

**Business Oriented Commerce- Features** Of B2B E-Commerce, Business Model, Integration. **E-Services-** Categories Of E-Services, Web-Enabled Services, Matchmaking Services, Information-Selling On The Web, E-Entertainment, Auctions And Other Specialized Services, Traditional Versus Internet Advertising, Internet Advertising Techniques And Strategies, Business Models For Advertising And Their Revenue Streams, Pricing Models And Measurement Of The Effectiveness Of Advertisements, Web Publishing- Goals And Criteria, Web Site Development Methodologies, Logical Design Of The User Interface I- Abstract User Interface, Logical Design Of The User Interface II- Flow Of Interaction, Usability Testing And Quality Assurance, Web Presence And Visibility.

**Text Book:**

1. Henry Chan, Raymond Lee, Tharam Dillon, & Elizabeth Chang, E-Commerce – Fundamentals and Applications, Wiley.

**Reference Books:**

1. Eric van der Vlist, Danny Ayers, Erik Bruchez, Joe Fawcett, Alessandro Vernet, Professional Web 2.0 Programming, Wiley.
2. Michael P. Papazoglou, Pieter M.A. Ribbers, e-Business, Wiley.
3. Brian P. Hogan, HTML5 and CSS3, Shroff Publishers.
4. Sandeep panda, AngularJS – Novice to Ninja, Shroff Publishers.

**Practical List of E-Commerce & Web Designing**

1. Write a program in HTML to illustrate the use of Formatting tags => BOLD, ITALIC, UNDERLINE, SUPERScript, SUBScript, AND STRIKETHROUGH.
2. Write a paragraph centrally aligned and change the color of text to BLUE and Background to YELLOW. The size of the font should be 6.
3. Write a program in HTML to illustrate the below given formats.
  - a) The page should contain a paragraph which is centrally aligned.
  - b) FIRST line of the paragraph should be BOLD and ITALIC.
  - c) STRIKEOUT the Second Line.
  - d) Underline and change the color to RED, of the third line.
  - e) Change the font size of the fourth Line to 5.
  - f) Change the color of the text to GREEN.
  - g) Two horizontal lines below the paragraph.
4. Write a program in HTML to link two files.
  - a) The name of the first file is LINK1.HTML and that of second file is LINK2.HTML.
  - b) LINK2.HTML should contain a Back link also.
5. Write a program in HTML to Design a Table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY.
6. Write a program in HTML to design a Table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY. The table should also contain the below given specifications.
  - a) Table should contain BORDER.
  - b) Background color of the Table should be GREEN.
  - c) Color of the Text should be BLUE.
  - d) Text should be centrally aligned in the cell.
7. Write a program in HTML to Design a Table containing 5 columns and 4 rows. The name of the columns should be ENO, NAME, DESIGNATION, SALARY and CITY. Illustrate the usage of cell padding and cell spacing. Also align the Table to the CENTRE of the page.



8. Write a program in HTML to illustrate the usage of ROWSPAN in the below given format.

| CITY   | TOWN          |
|--------|---------------|
| NAGPUR | SHANKAR NAGAR |
|        | DHARAMPETH    |
|        | RAMDASPETH    |
| BOMBAY | DADAR         |
|        | V.T.          |
|        | THANE         |

9. Write a program in HTML to illustrate the usage of COLUMN SPAN (COLSPAN) in the below given format.

| NAME    | LIVING CITY | COMPANY CITY |
|---------|-------------|--------------|
| SUJEET  | CHHINDWARA  |              |
| TAPAN   | NAGPUR      | BOMBAY       |
| RAM     | BOMBAY      |              |
| MOHAN   | BANGALORE   |              |
| KRISHNA | PUNE        |              |
| MANGESH | BOMBAY      | NAGPUR       |
| AVINASH | DELHI       |              |

10. Write a program in HTML to divide the screen horizontally into two sections.
11. Write a program in HTML to divide the screen vertically into two sections.
12. Write a program in HTML to divide the Screen into 4 sections.
13. Write a program in HTML to demonstrate the usage of Marquee text with the below given Specifications.  
Marquee text is INTERNATIONAL COLLEGE.  
Color of text is BLUE.  
Background color is YELLOW.  
Size of Text is 7.  
Direction is LEFT to RIGHT.
14. Write a program in HTML to demonstrate the use of the Marquee Text with the below given Specifications.
- Marquee Text is INTERNATIONAL COLLEGE.
  - Text color is BLUE.
  - Repeat the Marquee Text five Times.
  - Make use of SCROLLAMOUNT.
  - Make use of SCROLLDELAY.
15. Write a program in HTML to demonstrate the usage of Image file with the below
- given specification.
  - Background color of page is GREEN.
  - The size of Image is 400 x 400 pixels.
  - The Image should contain a border.
  - Alternate text is "IMAGE NOT FOUND".
  - Image should appear on the centre of the page.
16. Write a program in HTML to Demonstrate the usage of Image file with the below given specifications.
- Background color is RED.
  - The size of Image is 300 x 300 pixels.
  - The image should contain a BORDER.

- d) Alternate Text is "IMAGE is NOT FOUND".
  - e) Vertical space should be 100 pixels.
  - f) Horizontal space should be 350 pixels.
17. Write a program in Java Script which should prompt the user to enter the result of Question-"What is the result of 10+10?". The user will be given a chance to answer the question. If the answer is correct then the program should raise a message-"Congratulations". If the answer is wrong then the program should again ask the same question. If the answer is correct then the message should be -"Cleared in the second round" else another message should be generated specifying -" Sorry, try next time" and the program should exit. Note – Make use of If. Else.
  18. Write a program in Java Script which should prompt the user to enter the result of question –" What is the Result of 10 +10?. At the most the user will get 5 chances to answer the question. If the user gives the correct answer during the attempts then the program should exit the loop by raising a message-"Congratulations ". Otherwise, whenever the answer is wrong the program should alert the user that the answer is wrong. Even during the 5<sup>th</sup> attempt, if the answer is wrong then it should raise another alert message also specifying- "Sorry- Try Next Time". (Use Loop, Prompt and Alert).
  19. Write a program in Java Script which prompt the user to enter the Result of Question- " What is the Result of 10+10?.  
The program should repeat the question in two cases-
    - a. If the user is wrong.
    - b. And he wants to continue.
 The program should exit the loop in two cases-
    - b) If the answer is correct.
    - c) If the answer is wrong but the user doesn't want to continue.
    - d) (Use odd Looping, Prompt, Alert and Confirm Dialog Boxes).
  20. Write a program in Java Script which raises a Message:"  
"Welcome To Our Website" as soon as the Site is loaded. It should also display a message: -"Thank You " when the user switch over from the page.
  21. Write a program in Java Script to check the username. If the user name is correct, the program should give an alert message-: "Welcome" along with user name else the program should alert the user specifying that the user name is wrong. Use DOM and onchange event.
  22. Write a suitable program in Java Script which displays a message depending on the radio button being clicked using DOM and onclick event.
  23. Write a program in Java Script to count the number of elements in a forms elements array. Check the number of elements returned against the number of form elements described between < Form> and </Form> tag in HTML page that is running in the browser. Recognize that number of elements in the array match the number of elements described between <FORM> and </FORM> tag in HTML page exactly.
  24. Write a program in Java Script to check whether the form is filled or not. If one of the elements is not filled then display an alert message to fill the particular element using DOM and BUTTON.
  25. Write a program in Java Script to check whether the form is completely filled or not. If one of the elements is not filled then display an alert message to fill the particular element using DOM and onsubmit event.