Appendix – I

1.2.1 Percentage of programs in which Choice Based Credit System (CBCS)/elective course system has been implemented

Program code	Program Name	Course code	Number of Courses Course	Year of introduction
B.A.	Bachelor of Arts	BA-1 to 30	30	2016-17 to 2023-24
B.Sc.	Bachelor of Science	B.Sc-1 to 30	22	2016-17 to 2023-24
B.Com.	Bachelor of Commerce	B. Com-1 to 36	36	2016-17 to 2023-24
B.C.A.	Bachelor of Computer Application	BCA-1 to 40	40	2016-17 to 2023-24
B.C.C.A.	Bachelor of Commerce in Computer Application	BCCA-1 to 23	23	2016-17 to 2023-24
B.B.A.	Bachelor of Business Administration	BBA-1 to 23	23	2016-17 to 2023-24
P.G.D.C.C.A	Post Graduate Diploma in Computer Commercial Application	PGDCCA-1 to 8	8	2016-17 to 2023-24
P.G.D.C.S.A	Post Graduate Diploma Computer Science and Application	PGDCSA-1 to 8	8	2016-17 to 2023-24
M.A.	Master of Arts	MA-1 to 5	5	2016-17 to 2023-24
M.Com.	Master of Commerce	M.Com-1 to 16	16	2016-17 to 2023-24
M.C.M.	Master of Computer Management	MCM-1 to 16	16	2016-17 to 2023-24
M.Sc.	Master of Science	Msc-1 to 6	6	2016-17 to 2023-24

IQAC Coordinator
TAYWADE COLLEGE

Taywade College

Appendix – II

Faculty of Arts

Faculty of Commerce

राष्ट्रिय मुक्तहोले बगाउन थपिए विवरण

[illegible]

:: अभियुक्तमा ::

[illegible]

[illegible]

[illegible]

Faculty of Science

अधिसूचना

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

NOTIFICATION

No. Acad/140

Date: 4th June, 2014

To,

The Principal
of All the affiliated Science Colleges
of Rashtrasant Tukadoji Maharaj
Nagpur University, Nagpur

Subject: Direction No. 4 of 2014.

Sir/Madam,

I am forwarding herewith a copy of the Direction No. 4 of 2014 issued by the Hon'ble Vice-Chancellor under Section 14(8) of Maharashtra Universities Act, 1994 **"Direction governing examination leading to the Degree Of Bachelor of Computer Application (Three Years Degree Course – Semester Pattern)"** and Examination Scheme to be implemented from Academic Session 2014-2015.

You are requested to kindly bring it to the notice of all teachers and students of your college.

Thanking you.

Yours faithfully,

Encl. As above.

Sd/-
(Dr. A.V. Gomashe)
Registrar,
Rashtrasant Tukadoji Maharaj
Nagpur University, Nagpur

No. Acad/140 Nagpur dated the 4th June, 2014

Copy for information and necessary action along with the Direction and Scheme as mentioned above to :-

1. The Dean, Faculty of Science, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
2. The Chairman, Board of Studies in Computer Science, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
3. The Controller of Examinations, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
4. The Director, B.C.U.D., Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
5. The Deputy Registrar (Examinations) Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
6. The Deputy Registrar (Gen. Sec.) Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
7. The Asstt. Registrar (Stat. Exam.), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
8. The Asstt. Registrar (Acad.), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Appendix - III

Faculty of Arts

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY
Established by Government of Central Provinces Education Department Re-Notification No. 313 dated the 1st of August 1923 &
presently a State [Maharashtra] government University under Maharashtra Public Universities Act, 2016 (State 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 2019 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 (SS Plan) dated 31stJanuary 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 10th 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. 13 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&4th semesters of the Bachelor of Arts, semester pattern three year degree curriculum 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 Student External Students Examinations	External Students Supplementary Students Examinations
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 1st semester 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 examinations:-

(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 hereunder 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 to Semester	**The student should have attended the session satisfactorily and appeared for the examination.**	**Candidate should have passed in at least 30% 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. IInd semester	Semester I and Semester II examinations taken together.
D	B.A.IVth Semester	B.A. IIIrd 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 thexamination in general, provisions of Para 5, 8, 10 and 11 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 2008), 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.

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

Paper -I Code: 171	Compulsory English	Compulsory subject	Compulsory
Paper –II Code-172	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-173 to 175	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, Gandhism 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 271 to 275 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.

iii) 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 minimum 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:

a] 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.

b] 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.

c] The students who have passed the first year and the second year of the annual pattern shall be admitted to the VIth semester.

d] 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.

e] The candidates of old course (Yearly Pattern) who fail 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 ..../..../.....

HEAL

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 Assessment Marks Theory Internal				
	Th	Tu	Pra	Total	Time Hrs	Theory Max Marks	Internal Assessment/ Pract. Marks	Total	Total Passing Marks
Compulsory English	04	01*	—	III	3	80	20	100	40
Second Language	04	—	—	04	3	80	20	100	40

Optional Except ELT.	05	—	—	10	3	80	20	100	40
Eng. Literature	06	—	—	06	3	80	20	100	40
Practical Subjects like geography, music, etc.	09	—	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)

[1]One tutorial period consisting of 20 students per batch for Compulsory English

26. Guidelines forInternal 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.

n) 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.

o) The teacher shall announce the schedule of activity for internal assessment in advance in consultation with HOD / Principal.

p) 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 assessment : 10 marks – Evaluated by Internal

Practical Performance : 10 marks – Evaluated jointly by External & Internal

iii. Viva : 20 marks – Evaluated by External

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.

2. 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 Examinations 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 2016shall 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 : 9 / 11 / 2020.

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

DIRECTION "\" OF 2019

FACULTY OF HUMANITIES

Examination leading to the award of the degree of Master of Arts, (Choice Based Credit System) (Semester pattern) in the faculty of Humanities and Inter-Disciplinary Studies, Direction 2019".

Whereas, the Maharashtra Public Universities Act, 2016 (VI of 2017) (hereinafter the Act(VI of 2017) has come in to force in the State of Maharashtra with effect from 1st March 2017, repealing the Maharashtra Universities Act, 1994.

AND

Whereas, the Rashtrasant Tukadoji Maharaj Nagpur University (hereinafter the University), hitherto governed by the Maharashtra Universities Act, 1994, is now being governed by the Act (VI of 2017).

AND

Whereas, under section 34 (2) of the Act VI of 2017, the university shall have only four faculties specified in said section.

AND

Whereas, the composition of each faculty in the university is to be such as may be prescribed by the university and the university has issued Direction No.15 of 2017 prescribing the composition of each faculty in the university.

AND

Whereas, by virtue of the provisions of Direction No.15 of 2017 various subjects and their courses excluding the post graduation courses in the subjects of music and home economics under the former faculties of Arts and Social Sciences are now included in the faculty of Humanities and the post graduation courses of music and home economics are now included in the faculty of Inter Disciplinary Studies.

AND

Whereas, the university has issued Direction No.10 of 2016 prescribing certain common conditions for all the undergraduate and post graduate programmes/courses in the university.

AND

Whereas, the University Grants Commission, New Delhi vide letter No.D.Dis/F.1-1/2015(CM) dated 8th January 2015 recommended 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 had prepared the syllabi and had scheme of examination for the M.A. Course and recommended starting of the Choice Based Credit System in erstwhile Faculty of Arts from the academic session 2016-17.

AND

Whereas the Hon'ble Vice-Chancellor in exercise of his powers under section 14(7) of the Maharashtra Universities Act, 1994(since repealed), on behalf of the Board of Studies and Faculty, had considered, accepted and recommended to the 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

Whereas, the Academic Council in its meeting held on 8-6-2016 vide item No.4 (A & B) had considered, accepted and recommended to Management Council introduction of Choice Based Credit System and the draft syllabi for the Master of Arts programme along with the draft Direction;

AND

Whereas, The Management Council in its meeting held on 14-6-2016 vide item No.96 (A & B) had considered and accepted the said draft Direction;

AND

Whereas, the university had issued the Direction No.19 of 2018 introducing the Master of Arts (Choice Based Credit System) (Semester Pattern) programme in the former independent faculty of Social Science from the academic session 2018-19.

AND

Whereas, the university had issued the Direction No.50 of 2016 introducing the Master of Arts (Choice Based Credit System) (System pattern) program in the former independent Faculty of Arts from the Academic Session 2016-17.

AND

Whereas, by virtue of the provisions of the proviso to section 12(8) of the Act the Direction No.19 of 2018 and 50 of 2016 have lapsed, necessitating issuance of the fresh Direction;

AND

Whereas, the Board of Deans, in its meeting held on 13-10-2017 recommended amendment to Direction No.19 of 2018 and 50 of 2016;

AND

Whereas, the subject matter of this Direction is required to be governed by an Ordinance but the Ordinance making being a consuming exercise and there was an exigency to issue a fresh and consolidated Direction incorporating the provisions of Directions No.19 of 2018 and 50 of 2016, with suitable modification suggested by the Board of Deans, the Direction No.34 of 2017 was issued by the University which also has lapsed by virtue of the provisions of section 12(8) of the Act VI of 2017, necessitating issuance of a fresh Direction incorporating the provisions of Direction No.34 of 2017 (since lapsed) and also certain decisions of the Management Council and the Academic Council;

AND

Whereas, the Management Council in its meeting dt. 10th January 2019 vide item No.56 has taken a decision regarding absorption of the failure students of the old CBS courses into the new C.B.C.S. courses and the concerned Board of Studies in their meetings held between 25th February 2019 to 5th March 2019 have prepared the matchable schemes for absorption of failure student of the old CBC courses in the new C.B.C.S. courses, which has been approved by the Vice-

Chancellor, under section 12(2) of the Act VI of 2017, on behalf of the Faculties of Humanities and Inter-Disciplinary Studies, the Academic Council and the Management Council of the university.

Now, therefore, I Dr. Siddhartharaje P. Kane, Vice-Chancellor, Rashtrasant TukadojiMaharaj University Nagpur, in exercise of the powers conferred upon me under provision of section 12(8) of the Maharashtra Public Universities Act, 2016, do hereby issue following Directions –

1. This Direction shall be called 'Examination leading to the award of the degree of Master of Arts (Choice Based Credit System) (Semester pattern) in the faculty of Humanities and Inter Disciplinary Studies, Direction, 2019.

2. This Direction shall come into force with effect from the date of its issuance.

3. Scope

   i) This Direction shall also govern admission of the students to the I(one) and IVth semesters in the academic session 2019-19 and onwards.

   ii) It shall govern the Master of Arts programme in the following subjects

   History, economics, Political Science, Sociology, Philosophy, Psychology, Geography, Home Economics, Women's Studies & Development, Dr Ambedkar Thought, Public Administration, Buddhist Studies, Ancient Indian History Culture & Archaeology, Gandhian Thought, Travel & Tourism, Rashtrasant TukadojiMaharaj Thought, English, Marathi, Hindi, Urdu, Sanskrit, Pali & Prakrit, Arabic, Persian, Music, Linguistics and other Indian languages.

4. 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 examination

c) M.A Semester II examination

d) M.A Semester III examination

e) M.A Semester IV examination

5. The theory examination for Semesters 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

Table

Sr. No	Name of the examination	Regular Admitted External & Ex Students Examination	Regular Admitted External & Ex Students Examination
1	M.A Semester I & III	Winter	Summer
2	M.A Semester II & IV	Summer	Winter

6. Admission & Eligibility to the Course

a) Subject to the compliance with the provisions of this Direction and of other ordinances in force from time to time, an applicant for admission to Semester-I examination shall have passed the Bachelor Degree examination of this university or of any other statutory recognized university as equivalent to the Bachelor Degree of this university

b) The applicant who has passed Semester-I shall be eligible for admission to Semester-II subject to ATKT rules

c) The applicant who has passed Semester-II shall be eligible for admission to Semester-III subject to ATKT rules

d) The applicant who has passed Semester-III shall be eligible for admission to Semester-IV subject to ATKT rules

ATKT Rules: The ATKT rules for admission of the students shall be as per the provisions of Direction No.10 of 2016 as renewed and or modified from time to time

7. Without prejudice to other provisions of Ordinance No. 6, relating to the Examinations in general, provisions of Para 8, 8, 9, 10, 26, 31 and 32 of the said ordinance shall apply to every student admitted to this course

8. The fees for the tuition, examination, laboratory and other fees shall be as prescribed by the university from time to time.

9. For the external candidate the internal marks shall be assigned in proportion to the marks scored by the candidate in the external examination conducted by the university.

10. (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 language subjects.

11. 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 1 to 8 of this Direction.

12. 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 35% marks at the examination. This option will have to be exercised every time the application is submitted for any of the examination. Once this option is exercised, the option shall be binding on the examinee and it shall not be evoked in under any circumstances.

13. The classification of the examinee successful at the semester end 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.

14. The provisions of Ordinance No. 3 of 2007 for the award of grace marks for passing an examination securing higher grade in the subject(s) as updated from time to time shall apply to the examination under this Direction.

18 The names of the successful examinees 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 No. 6 relating to examinations in general.

19 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.

17 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.

18 Successful examinees at the M.A. Semester I, II, III & IV Examinations shall be entitled to receive a Statement of marks signed by the Director Board of Examinations and Evaluation of the University 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.

19 This course is based on Choice Based Credit System and therefore, it will also be regulated by guidelines and regulation given in appendices which are part of this Direction.

20 **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 from the Winter 2016 of 1st Semester, Summer 2017 of 2nd Semester, Winter 2017 of 3rd Semester and Summer 2018 of 4th Semester.

(c) 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 the Choice Based Credit System Semester Pattern directly. Similarly the candidates who are allowed to keep term will also be eligible for admission to Third Semester of the Choice Based Credit System.

(d) The failure students of the CBS course who have exhausted the permissible chances under clause (a) shall have to appear in the matching papers as per the scheme given in Appendix-IX onwards hereto.

21 **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. Similarly candidates who are allowed to keep term will not be eligible for admission to Third Semester of the Choice Based Credit System.

b) All Ex and External students of the annual pattern course will have the last chance in winter 2017 examination to successfully complete their course. On failure of such students to successfully complete their course within the permitted time they will have to opt for the Choice Based Credit System (Semester Pattern) by taking admission in the first semester.

22 If an examinee fails to pass the M.A. course governed by this Direction 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 exam of the same course.

23 **Guidelines for Students, Supervisors and Examiners**

i) 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.

ii) 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.

iii) 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.

a) The internal assessment marks shall be awarded by the concerned teacher.

b) 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.

24) **General guidelines for Internal Assessment are:**

a) The internal assessment marks assigned to each theory paper as mentioned in Appendix 4 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.

(j) 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.

k) 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.

l) 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.

25 Every student of the courses governed by this Direction shall have the option to select any foundation course from the list given in list 'B' only in para 25 herein from the academic session 2019-20.

26 One credit course of theory will be of one clock hour per week of 25 marks running for 15 weeks and four credit course of theory will be of four clock hours per week of 100 marks running for 15 weeks.

27 One credit course of practical will consist of two clock hours of laboratory exercise of 25 marks running for 15 weeks and four credit course of practical will consist of eight hours of laboratory exercise of 100 marks running for 15 weeks.

10 Practical Examination

i) 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.

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

iii) 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.

iv) 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.

v) The certificate template shall be as follows:

CERTIFICATE

Name of the college / institution _____

Name of the Department _____

This is to certify that the 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

29. **General Rules and Regulations regarding pattern of question paper and choice based credit system:**

i) Pattern of Question Paper

i) There will be four units in each paper.

ii) Maximum marks of each theory paper will be 80.

iii) Question paper will consist of five questions, each of 16 marks.

iv) Four questions will be on four units with internal choice (One question on each unit).

v) Fifth question will be compulsory with questions from each of the four

units having equal weightage and there will be no internal choice.

ii) 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:

Post Graduate	Semester	Core	Elective	Foundation	Total Credits
All Subject mention in the Direction Exhibit Practical Subject	I	08	08	—	16
	II	08	08	—	16
	III	08	04	04	16
	IV	08	04	04	16
		32	24	08	64

Explanatory terms:

i. **Core:** Major theory papers in the concerned subject as per respective Syllabus.

ii. **Elective:** Three papers will be specialization in the concerned subject, as per respective Syllabus.

iii. Foundation Course : Student can choose this paper from same or any other subject in the same faculty or any other faculty other than his main subject for post graduation. For example an M.A. Sociology student can have a foundation course paper from Sociology or Political Science or Economics or History or Marathi or Commerce or M.Sc. Math or any other subject as per available in the subject list of the foundation course in the Direction of Faculty and which will be available at nearest (if other college/department from his/her college/department. They should earn the credits from the respective college/departments.

(II) Subject wise list of M.A. CBCS Foundation Course (same subject):

The foundation courses mentioned in list 'A' are valid only for and till the academic session 2018-19. Thereafter i.e. from the academic session

2019-20 no student shall be allowed to opt for any of the foundation course mentioned in the list A

A. Subject wise list of M.A. CBCS Foundation Course (same subject) :

Sr. No.	Name of the subject	Foundation I	Foundation II
1	History	a. Indian under the Mughals (1526-1707 A.D.) or b. History of Science and Technology in Pre Colonial India	a. India under the Mughals (1526-1707 A.D.) or b. History of Science and Technology in Colonial India
2	Economics	1. Basic Statistics 2. Issues in Indian Economy 3. Managerial Economics 4. Research in Social Science	1. Money and Banking 2. Economics of Globalization 3. Urban & Rural Economy 4. Environment Development
3	Political Science	1. Public Policy in India 2. Reservation Policy in India 3. Development and Human Rights 4. Human Rights and Indian Constitution	
4	Sociology	a. Rural Society in India b. Urban Society in India c. Social Change in contemporary India d. Introductory Sociology e. Sociology of Environment	a. Rural Society in India-Issues and Problems b. Urbanization in India c. Contemporary Sociology d. Political Sociology e. Sociology of Demography
5	Philosophy	General Philosophy	Philosophy of Gender
6	Psychology	1. Clinical Psychology Practicum 2. Organization Psychology Practicum 3. Counseling Psychology Practicum	1. Clinical Psychology Practicum 2. Organizational Psychology Practicum 3. Counseling Psychology Practicum
7	Geography	Geographic Information System and Computer Mapping	Remote Sensing Techniques
8	Social work	Introduction to social work practicum - I	Application in Social Work Practice-II
9	Home Economics	(1) Choose any one of the	(1) Choose any one of the

		following subjects a. CH1 Resource Management b. CH-2 Human Development c. CH-3 Food and Nutrition d. CH-4 Textile and Clothing e. CH-5 Home Science Extension Education	following subjects a. CH1 Resource Management b. CH-2 Human Development c. CH-3 Food and Nutrition d. CH-4 Textile and Clothing e. CH-5 Home Science Extension Education
10	Mass Communication	1. Introduction to Mass Communication 2. Public Relations & Advertising	1. Electronic Media (Radio TV & Films) 2. News Reporting, Feature Writing & Photo Journalism
11	Women Studies & Development	Select any one i. Women's Education in India ii. Issues in Women's Empowerment iii. Women's Health care in India	Select any one i. Capacity Building of Women ii. Women's Movement in Uttarbihar iii. Women in Politics and Government
12	Dr. Ambedkar Thought	(4 Jaroje groups to the students) paper IV a. Research Methodology (A) b. Thought of Ambedkar	(5 Jaroje groups to the students) a. Research Methodology (B) b. Social Movements
13	Public Administration	Select any one 1. Introduction to Public Administration 2. Introduction to Indian Administration 3. Urban Governance	select any one 1. Emerging Trends in Public Administration 2. Contemporary Issues in Indian Administration 3. Human Rights Administration
14	Rashtrasant Tukadoji Maharaj Thought		
15	Buddhist Studies	Group A. Dr Ambedkar Thought Group B. Basic Principle of Buddhism	Group A. Basic Study of Buddhist Literature Group B. Buddhist Psychology
16	Ancient Indian History Culture & Archaeology	Cultural Heritage of India	Principles of Museology

17	Gandhian Thought	a. Gandhian Thought-I (4) b. Gandhian Approach to Rural Development (4) (Gandhian Thought Students)	a. Gandhian Thought-II (4) b. Gandhian Approach to Rural Development (4) (Gandhian Thought Students)
18	Library & Information Science	Fundamentals of Library and Information Science	Fundamentals of Information Science
19	Travel & Tourism	1. Introduction to Travel & Tourism 2. Tourism Services	1. Tourism Resources 2. Tourism Retail Sales Business

B. List of Foundation Subjects for Post Graduate Courses

Sr. No	Subject	Board	4th Papers of Semester -3	4th Papers of Semester-4
1	Mathematics	Mathematics	Mathematics-I	Mathematics-II
2	Physics	Physics	Physics-I	Physics-II
3	Chemistry	Chemistry	Chemistry-I	Chemistry-II
4	Bio Technology (Advance)	Bio Technology	Bio Technology-I	Bio Technology-II
5	Computer Science	Computer Science & Engineering	Computer Science-I	Computer Science-II
6	Environmental Science	Environmental Science	Environmental Science-I	Environmental Science-II
7	Botany	Botany	Botany-I	Botany-II
8	Zoology	Zoology	Zoology-I	Zoology-II
9	Statistics	Statistics	Statistics-I	Statistics-II
10	Business Management	Business Management	Business Management -I	Business Management -II
11	Accounts	Accounts & Statistics	Accounts & Statistics-I	Accounts & Statistics-II
12	Managerial Skill	Business Administration & Business Management	Managerial Skills-I	Managerial Skills-II
13	Education Technology & Management Skills	Education Technology & Management Skills	Education Technology & Management Skills-I	Education Technology & Management Skills-II
14	Communication Skill	English	Communication Skills-I	Communication Skills-II
15	Sanskrit	Sanskrit	Sanskrit-I	Sanskrit-II
16	German	Other Foreign Language	German-I	German-II
17	French	Other Foreign Language	French-I	French-II
18	Law	Law	Law-I	Law- II
19	Pharmaceutical Sciences	Pharmaceutical Sciences	Pharmaceutical Sciences-I	Pharmaceutical Sciences-II
20	Life skills	Education	Life Skills-I	Life Skills-II
21	Economics	Economics	Economics-I	Economics-II
22	Political Science	Political Science	Political Science-I	Political Science-II
23	Sociology	Sociology	Sociology-I	Sociology-II
24	Psychology	Psychology	Psychology-I	Psychology-II
25	Philosophy	Philosophy	Philosophy-I	Philosophy-II
26	History	History	History-I	History-II
27	Public	Public Admn	Public Admn -I	Public Admn -II

29	Buddha Studies	Buddha Studies	Buddha Studies-I	Buddha Studies-II
30	Gandhian Thought	Gandhian Thought	Gandhian Thought-I	Gandhian Thought-II
31	Dr. Ambedkar Thought	Dr. Ambedkar Thought	Dr. Ambedkar Thought-I	Dr. Ambedkar Thought-II
32	Rashtrasant Tukdoji Maharaj Thought	Rashtrasant Tukdoji Maharaj Thought	Rashtrasant Tukdoji Maharaj Thought-I	Rashtrasant Tukdoji Maharaj Thought-II
33	Travel & Tourism	Travel & Tourism	Travel & Tourism-I	Travel & Tourism-II
34	Personality Development	Human Development	Personality Development-I	Personality Development-II
35	Cosmetic Technology	Cosmetic Technology	Cosmetic Technology-I	Cosmetic Technology-II
36	Hospitality Management	Food Nut. & Cul. Tech.	Hospitality Mgt. -I	Hospitality Mgt. -II
37	Chemical Engineering	Chemical Engineering	Chemical Engineering-I	Chemical Engineering-II
38	Chemical Technology	Chemical Technology	Chemical Technology-I	Chemical Technology-II
39	Civil Engineering	Civil Engineering	Civil Engineering-I	Civil Engineering-II
40	Electrical Engineering	Electrical Engineering	Electrical Engineering-I	Electrical Engineering-II
41	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering-I	Mechanical Engineering-II
42	Electronics Engineering	Electronics Engineering	Electronics Engineering-I	Electronics Engineering-II
43	Pol. Policy	Pol. Policy	Pol. Policy-I	Pol. Policy-II

NOTE:

Internal Assessment: The internal assessment of the student for the foundation course in each semester shall be carried out in the department/college/institution where the student has joined for the foundation course. Such department/college/institution shall forward the internal marks of the student for onward transmission to the examination section alongwith internal marks of his other subjects for the concerned semester.

10) Credits: Semester Grade Point Average and Cumulative Grade Point Average:

i) 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 0-2-4 (L-T-P) means it has 2 Lectures, 1 Tutorial and 4 Practical in a week. This subject will have per credits (0x1 + 2x1 + 4x½ = 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.

ii) 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 25 marks	Letter Grade	Grade point
91 - 100	23-25	O+	10
81 - 90	21-22	A+	09
71 - 80	19-20	A	08
61 - 70	17-18	B+	07
51 - 60	15-16	B	06
41 - 50	13-14	C	05
31 - 40	11-12	P	04
0 - 30	0-10	F	0
Absent	0	Ab	0

- <u>Total marks obtained by the student will be mentioned on the mark sheet along with the grade.</u>

<u>iii) Computation of SGPA and CGPA</u>

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 (Si) = Σ(Ci) x Gi) / Σ Ci)

where Ci is the number of credits of the courses and Gi is the grade point scored by the student in the course

Illustration for SGPA

Course	Theory / Practical	Credits	Marks Obtained	Out of	Grade Point	Credit Letter	Credit Point (Credit x Grade Points)
Core	Paper 1	4	84	100	8	O	4x8= 32
Allied	Paper 2	4	68	100	7	B+	4x7=28
Elective	Paper 3	3	72	100	6	B	4x6=24
Foundation	Paper 4	3	47	100	5	C	4x5=20
	Total	14					104
		Thus SGPA = 104/14 = 6.79					

c. 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 16	Credit 18	Credit 16	Credit 18
SGPA 8.50	SGPA 7.83	SGPA 6.69	SGPA 8.31

Thus,

CGPA = $\frac{16 \times 8.50 + 18 \times 7.83 + 16 \times 5.69 + 18 \times 8.31}{68}$

$= 104.00 + 125.28 + 91.04 + 120.90 / 68 = 421.28 / 68 =$ **6.5825** i.e. **6.53**

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 CGPA, the HEIs may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

Dr. Siddhartha Nath Singh
Vice-Chancellor

Nagpur
Date 14/6/19

Appendix-I to 9

Scheme of Examination for the subjects of HISTORY, ECONOMICS, POLITICAL SCIENCE, SOCIOLOGY, PHILOSOPHY, PSYCHOLOGY, GEOGRAPHY, HOME ECONOMICS, WOMEN'S STUDIES & DEVELOPMENT, DR. AMBEDKAR THOUGHT, PUBLIC ADMINISTRATION, GUJARATI STUDIES, ANCIENT INDIAN HISTORY CULTURE & ARCHAEOLOGY, GANDHIAN THOUGHT, TRAVEL & TOURISM, KASHTKARANT SUKADOH, MARATHI, HINDI, URDU, SANSKRIT, PALI & PRAKRIT, ARABIC, PERSIAN, MUSIC, LINGUISTICS AND OTHER INDIAN LANGUAGES

Semester I & II for M.A. Programme in all subjects except Practical Subject

Code	Theory	Teaching Scheme (Hours/Week)			Credits	Examination Scheme				
		Th	Int. Ass.	Total		Duration in hrs.	Max. Marks		Total	Minimum Passing Marks
	Paper						External marks	Internal Assessment		
Core	1	4	—	4	4	3	80	20	100	40
Core	2	4	—	4	4	3	80	20	100	40
Elective	3	4	—	4	4	3	80	20	100	40
Foundation/Core/Elective	4	4	—	4	4	3	80	20	100	40
Total		16	—	16	16		320	80	400	

Note :- 1.Subject code and other details as per respective syllabus

2)In addition to the theory papers, students will be required to undertake Practical Work also (4 hours per week). They have to spin 500 grams of cotton during each Semester. Otherwise they will not be allowed to appear for the examination of Gandhian Thought Course

Semester III & IV for M.A. Programme in all subjects except Practical Subject

Code	Theory	Teaching Scheme (Hours/Week)			Credits	Examination Scheme				
		Th	Int. Ass.	Total		Duration in hrs.	Max. Marks		Total	Minimum Passing Marks
	Paper						External marks	Internal Assessment		
Core	1	4	—	4	4	3	80	20	100	40
Core	2	4	—	4	4	3	80	20	100	40
Elective	3	4	—	4	4	3	80	20	100	40
Foundation/Core/Elective	4	4	—	4	4	3	80	20	100	40
Total		16	—	16	16		320	80	400	

Note :- 1.Subject code and other details as per respective syllabus

2) In addition to the theory papers, students will be required to undertake Practical Work also (4 hours per week). They have to spin 500 grams of cotton during each Semester. Otherwise they will not be allowed to appear for the examination of Gandhian Thought Course.

3) Students should find work and Intern ship in any women's related NGO (Intern ship report) or Research Project for the M.A fourth semester is compulsory to the Women's Studies Course

Appendix-2

Scheme of teaching and Examination under Choice Based Credit Semester Pattern for

M.A. Psychology

Semester I

S. No.	Paper SEM I	SUB Code	Teaching Scheme (Hrs/Wk)			Credits	Examination Scheme					
			Th	Pr	Total		Duration (Hrs/Wks)	Max Marks		Total Marks	Min Passing Marks (40%) (Combined passing)	
								External	Internal			
1	I	CP-171	4		4	4	3	80	20	100	40	
2	II	RSPS 172	4		4	4	3	80	20	100	40	
3	III	PERS 173	4		4	4	3	80	20	100	40	
4	IV	ASP 174	4		4	4	3	80	20	100	40	
5	Pract	P-1P-L		14	14	8	14	160	40	200	80	
TOTAL			16	12	30	24	30	480	120	600	240	

Subject Code: 1=Semester I, T-1=Theory 1, P1=Practical 1.

CP=Cognitive Psychology, RMS=Research Method & Statistics, PERS = Personality Theories 1

ASP= Advanced Social Psychology, P=practical

M.A. Psychology

Semester II

S. No.	Paper No.	Sub Code	Teaching Scheme (Hrs/Wk)			Credits	Examination Scheme					
			Th	Pr	Total		Duration (Hrs/Wk)	Max Marks		Total Marks	Min Passing Marks (40%) (Combined passing)	
								External	Internal			
1	I	AGP-271	4		4	4	4	80	20	100	40	
2	II	RD-272	4		4	4	4	80	20	100	40	
3	III	PBSH-273	4		4	4	4	80	20	100	40	
4	IV	IBB-274	4		4	4	4	80	20	100	40	
5	Prac	P-271		14	14	8	14	160	40	200	80	
TOTAL			16	14	30	24	30	480	120	600	240	

Subject Code: 2=Semester 2, T 2=Theory 1, P 1=Practical 1,

AGP=Advanced General Psychology, RD=Research Designs, PSH III: Personality Theories 2nd, IBB= Issues in Social Behaviour in practice

M.A. Psychology – Semester IV (Stream – A) Optional Specialization(Clinical Psychology)

Sr. No.	Paper Title & Code	Unit Code	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th	Pr	Total		Duration (Hrs/Week)	Max Marks		Total Marks	Min Passing Marks (40%) (Combined passing)
								External	Internal		
1	Core – I	ABNP A-311	4		4	4	4	80	20	100	40
2	Core – II	PGB PSA A-312	4		4	4	4	80	20	100	40
3	Core – III Practical	ABP A-313a & PAGT A-313b	4		4	4	4	80	20	100	40
4	Core – IV Dissertation	FT Project A-314a OR FS-I A-314b	4		4	4	3	80	20	100	40
5	Viva	A A-315		10	10	3	10	100	40	100	50
TOTAL			16	10	30	24	30	480	120	600	250

Subject Code: A-CLINICAL PSYCHOLOGY, 3-Semester, T-1/Theory, P-2/Practical

ABP=Abnormal Psychology, PGBPT=Psychotherapy

Dissertation= Health Psychology, FBS Psychological Assessment & Specific Testing,

FOUNDATION * Foundation paper from other discipline is compulsory GENERAL PSYCHOLOGY, PSYCHOLOGY
PSYCHOLOGY -Any psychology students

6

M.A. Psychology : Semester- V (Division : B) Optional Specialization

(Organizational Psychology & Human Resource Management)

S.Y.	Paper Code & Name	Sub Code	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th	Tu	Total		Duration (Hrs/Min)	Max Marks		Total Marks	Min Passing Marks (40%) (Combined passing)
								Internal	External		
I	Core I	MBM B- 511	3		3	3	3	30	70	100	40
I	Core II	OB B-512	3		3	3	3	30	70	100	40
I	Core III / Elective I / Elective II	HR B-513a OR MBP B-513b	3		3	3	3	30	70	100	40
I	Core IV / Elective III / Elective IV	PP B-514a OR PA I B-514b	3		3	3	3	30	70	100	40
I	Project	P B-515		24	24	8	11	120	30	150	60
	TOTAL		15	24	39	20	26	240	310	550	220

Subject Code: 3rd Semester B. T.(1=Theory- 2,3-4=Practical)

MBM-Management of Personnel and Human Resources, OB=Organizational Behaviour,

Ele- Elective CB= Consumer Behaviour IRD= Industrial Psychology,

B.A. Psychology - Semester VI (Stream - C)

Optional Specialization (Counselling Psychology)

Sr.No	Paper Code No.	Sub Code	Teaching Scheme (Hrs/Wk)			Credits	Examination Scheme				
			Th	Pr	Tut		Duration (Hrs/Wks)	Marks Theory		Total Marks	Marks required for passing (Grade)
								External	Internal		
1	[illegible]	[illegible]	4		0	4	3	80	20	100	[illegible]
2	[illegible]	[illegible]	4		0	4	3	80	20	100	[illegible]
3	[illegible]	[illegible]	4		0	4	3	80	20	100	[illegible]
4	[illegible]	[illegible]	4		0	4	3	80	20	100	[illegible]
5	[illegible]	[illegible]		2	1	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL			16	2	1	19	12	320	80	400	[illegible]

Subject Code: 1=Semester, 2, 7, 1= Theory, 2, P, 1=Practical, 2,

[illegible]

[illegible]

M.A. Psychology : Semester IV (Division - A)

Optional Specialization (Clinical Psychology)

[illegible]

M.A. Psychology : Semester IV (Stream : B) (Internal Specialization

(Organizational Psychology & Human Resource Management)

Sr. No.	Paper Name & No.	Sub Code	Teaching Scheme (Hrs/Wk)			Credits	Examination Scheme				
			Th	Pr	Total		Th (Duration: 3Hrs/Wk)	Max. Marks: Theory		Total Marks	Min. Passing Marks (Th+Pr) (Combined Passing)
								Externals	Internals		
1	[illegible]	[illegible]	4		4	4	4	60	40	100	40
2	[illegible]	[illegible]	4		4	4	4	60	40	100	40
3	[illegible]	[illegible]	4		4	4	4	60	40	100	40
4	[illegible]	[illegible]	4		4	4	4	60	40	100	40
5	[illegible]	[illegible]		4	4	4	4	60	40	100	40
	TOTAL		16	04	20	20	20	300	200	500	200

Subject Code: A-Semester 4, B-Stream B, T (=Theory), P (=Practical).

OD=Organizational Development, EC= Employee Counselling

Elc: Elective I,ECO=Leadership and Communication in Organization, OCO=Organizational Culture and Organizational change.

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M.A. Psychology (Semester III (Group – I) Optional Specialization)

(Counselling Psychology)

Sr.No	Paper code	Unit (Topic)	Teaching Scheme (Hrs/Week)			Credits	Examination Scheme				
			Th	Pr	Tut		Duration (Hrs/Exam)	Theory Marks		Term Work Marks	Oral/Practical Marks
								Internal	University		
1		UNIT I	3		1	3	3	30	70	25	25
2		UNIT II	3		1	3	3	30	70	25	25
3		UNIT III	3		1	3	3	30	70	25	25
4		UNIT IV	3		1	3	3	30	70	25	25
5		UNIT V		4		4	3	30	70	25	25
TOTAL			15	04	05	19	18	150	350	125	125

Subject Code: 4=Semester 4, C-Group C, T-1=Theory-1, P-1=Practical-1.

PSI=Psychological Disorders, ISC= Intervention Strategies in Counselling,

Ele- Elective SAC= Social Areas of Counselling, PTI=Psychological Testing in Counseling and Guidance

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Appendix 3

RashtraSantTukadojiMaharaj Nagpur University, Nagpur.

M.A. Home Economics (Choice Based Credit System)

Semester I

Sr. No.	Paper	Subject	Teaching Scheme (Hrs/Week)			Credit (Hr./Th.= 1 Hr. Pr.= 1	Examination Scheme				
			Theory (Hours)	Practical/ Project (Hours)	Total (Hours)		Duration (Hours)	Max. Marks			Min. Passing Marks
								External Th. Marks	Pract./ Internal Marks.	Total Marks	
1	I	Resource Management	04	02	06	05	03	80	20	100	40
2	II	Human Development	04	02	06	05	03	80	20	100	40
3	III	Textile and Clothing	04	02	06	05	03	80	20	100	40
4	IV	Research Methods and Statistics	04	02	06	05	03	80	20	100	40
5		Textile and Clothing/Practical		04	08	04	03	80	20	100	40
		Total	16	12	32	24	15	400	100	500	200

RashtraSantTukadojiMaharaj Nagpur University, Nagpur.

M. A. Home Economics (Choice Based Credit System)

Semester II

Sr. No.	Paper	Subject	Teaching Scheme (Hrs/Week)			Credit	Examination Scheme				
			Theory (Hours)	Practical/ Project (Hours)	Total (Hours)	(Hr.Th.= 1 Hr. Pr.= 1	Duration (Hours)	Max. Marks		Total Marks	Min. Passing Marks
								External Th. Marks	Pract./ Internal Marks.		
1	I	Resource Management	04	02	06	05	03	80	20	100	40
2	II	Human Development	04	02	06	05	03	80	20	100	40
3	III	Textile and Clothing	04	02	06	05	03	80	20	100	40
4	IV	Research Methods and Statistics	04	02	06	05	03	80	20	100	40
5		Textile and Clothing(Practical)		04	04	04	03	60	20	80	40
		Total	16	12	28	24	15	460	140	500	240

Rashtra Sant Tukadoji Maharaj Nagpur University, Nagpur.

M.A. Home Economics (Choice Based Credit System)

Semester III

Sr. No.	Paper	Subject	Teaching Scheme (Hrs/Week)			Credit	Duration (Hours)	Examination Scheme			
			Theory (Hours)	Practicals (Hours)	Total (Hours)	(Hr./Th.= 1 Hr. Pr.=1		Max. Marks		Total Marks	Min. Passing Marks
								External Th. Marks	Pract./ Internal Marks		
1	311	Food and Nutrition(C1)	04	02	06	05	03	80	20	100	40
2	312	Family Dynamics (C2)	04	02	06	05	03	80	20	100	40
3	313	Consumer and The Market (Elective) (C3)	04	02	06	05	03	80	20	100	40
4	314	Home Science Extension Education (Elective)	04	02	06	05	03	80	20	100	40

Sr. No.	Paper	Subject	Teaching Scheme (Hrs./Week)			Credit		Examination Scheme			
			Theory (Hours)	Practicals (Hours)	Total (Hours)	1Hr.Th.= 1 2Hr. Pr.= 1	Duration (Hours)	Max. Marks			
								External Th. Marks	Pract./ Internal Marks.	Total Marks	Min. Passing Marks
A	III	Housing and Interior Decoration (Elective) (CBT)	04	02	06	05	03	80	20	100	40
B		Field and Institute Practical	--	03	03	02	03	80	20	100	40
C	IV	Choice Based Foundation Course I	04	02	06	05	03	80	20	100	40
		Total	08	07	15	12	09	240	60	300	120

Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

M.A. Home Economics (Choice Based Credit System)

Semester IV

Sr. No.	Paper	Subject	Teaching Scheme (Hrs/Week)			Credit	Duration (Hours)	Examination Scheme			
								Max. Marks			
			Theory (Hours)	Practicals (Hours)	Total (Hours)	1Hr. Th. = 1 2Hr. Pr. =1		External Th. Marks	Pract./ Internal Marks.	Total Marks	Min. Passing Marks
I	I	Food and Nutrition(CC)	04	02	06	05	03	80	20	100	40
II	II	Family Dynamics (CC)	04	02	06	05	03	80	20	100	40
III	III	Extension and The Media (Elective (CE))	04	02	06	05	03	80	20	100	40
IV	IV	Home Science Extension Education (Elective) (CE2)	04	02	06	05	03	80	20	100	40

Sr. No.	Paper	Subject	Teaching Scheme (Hrs/Week)			Credit (Hr. Th. = 1 Hr. Pr. = 1	Duration (Hours)	Examination Scheme			
			Theory (Hours)	Practicals (Hours)	Total (Hours)			Max. Marks			
								External Th. Marks	Pract./ Internal Marks.	Total Marks	Min. Passing Marks
5	III	Housing and Interior (Elective) (CE3)	04	02	06	05	03	80	20	100	40
6		Food and Nutrition Practical	--	04	04	04	03	80	20	100	40
7	IV	Choice Based Credit System Course ( )	04	02	06	05	03	80	20	100	40
		Total	16	12	32	24	15	400	100	500	200

Scheme of teaching and examination under semester pattern Choice Based Credit System (CBCS) for M.A. in Geography.

Semester-I for M.A. in Geography										
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme				
						Max Marks			Minimum Passing Marks	
		Th	Pract	Total		External Marks	Internal Th	Total Marks	Th	Pract
1.T-1	History Of Geographical Thoughts (Core)	4	-	4	4	80	20	100	40	
1.T-2	Oceanography (Core)	4	-	4	4	80	20	100	40	
1.T-3	Geomorphology (Core)	4	-	4	4	80	20	100	40	
1.T-4	Biogeography (Core)	4	-	4	4	80	20	100	40	
1.P-1	Practical-I (Core)	-	8	8	4	80	20	100	-	40
1.P-2	Practical-II (Core)	-	8	8	4	80	20	100		40
Seminar	Seminar	2	-	2	1		25	25	10	
	TOTAL	18	16	34	25	480	145	625	170	80

Semester-II for M.A. in Geography										
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme				
						Max Marks			Minimum Passing Marks	
		Th	Pract	Total		External Marks	Internal Th	Total Marks	Th	Pract
2.T-1	Research Methodology (Core)	4	-	4	4	80	20	100	40	
2.T-2	Environmental Geography (Core)	4	-	4	4	80	20	100	40	
2.T-3	Climatology (Core)	4	-	4	4	80	20	100	40	
2.T-4	Geography Of India (Core)	4	-	4	4	80	20	100	40	
2.P-1	Practical-III (Core)	-	8	8	4	80	20	100	-	40
2.P-2	Practical-IV (Core)	-	8	8	4	80	20	100		40
Seminar	Seminar	2	-	2	1		25	25	10	
	TOTAL	18	16	34	25	480	145	625	170	80

Semester-III for M.A. in Geography										
Code	Paper Name	Teaching scheme (Hours / Week)			Credits	Examination Scheme				
						Max. Marks		Total Marks	Minimum Passing Marks	
		Th	Pract	Total		External Marks	Internal Th		Th	Pract
3.T-1	Economic Geography-I(Core)	4	-	4	4	80	20	100	40	
3.T-2	Geography Of Rural Settlement(Core)	4	-	4	4	80	20	100	40	
3.T-3	Natural Disaster Management (Core)	4	-	4	4	80	20	100	40	
3.T-4	Urban Geography OR Agricultural Geography I (Elective)	4	-	4	4	80	20	100	40	
3.P-1	Practical-V (Core)	-	8	8	4	80	20	100	-	40
3.P-2	Practical-VI (Core)	-	8	8	4	80	20	100		40
Seminar	Seminar	2	-	2	1		25	25	10	
	TOTAL	**18**	**16**	**34**	**29**	**480**	**145**	**625**	**170**	**80**

Semester-IV for M.A. in Geography										
Code	Paper Name	Teaching scheme (Hours / Week)			Credits	Examination Scheme				
						Max. Marks		Total Marks	Minimum Passing Marks	
		Th	Pract	Total		External Marks	Internal Th		Th	Pract
4.T-1	Population Geography (Core)	4	-	4	4	80	20	100	40	
4.T-2	Geography Of Tourism(Core)	4	-	4	4	80	20	100	40	
4.T-3	Regional Planning & Development (Core)	4	-	4	4	80	20	100	40	
4.T-4	Social Geography OR Geography Of Water Resources (Elective)	4	-	4	4	80	20	100	40	
4.P-1	Practical-VII (Core)	-	8	8	4	80	20	100	-	40
4.P-2	Practical-VIII(Core)	-	8	8	4	80	20	100		40
Seminar	Seminar	2	-	2	1		25	25	10	
	TOTAL	**18**	**16**	**34**	**29**	**480**	**145**	**625**	**170**	**80**

Pattern of Question Paper

Examination P.G. Level Geography

M.A.(Part-I)- Semester-I & II

M.A.(Part-II)- Semester-III & IV

Time – Three Hours **Full Marks-80**

Instructions- 1) All Questions are compulsory.

2) All Question carry equal marks.

Que.No.1. Long answers questions with Internal Choice from any Unit for16 Marks of equal marking

Que.No.2. Long answers questions with Internal Choice from any Unit for16 Marks of equal marking

Que.No.3. Two Short answers question with Internal Choice from any Unit for 8X2=16 Marks of equal marking.

Que.No.4. Two Short answers question with Internal Choice from any Unit of 8X2=16 Marks of equal marking.

Que.No.5. Four very short answer question without internal choice 4 X 4 =16 Marks

Note: 1) One question from each unit.

2) Question No.5 should be asked from all 4 units.

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

M. A. IN TRAVEL AND TOURISM (MTT)

Semester: I

Paper Code No.	Subjects	Paper	Theory Teaching Hours/Week	Practical Hours/Week	End Sem Examination	Max Marks	Credits
Theory	Core & Elective Papers						
111	Tourism Fundamentals	I	4	-	80+20	100	4
112	Tourism Resources - India	II	4	-	80+20	100	4
113	Tourism Communication OR Tourism Studies	III	4	-	80+20	100	4
114	Fundamentals of Tourism Management OR International Tourism	IV	4	-	80+20	100	4
Practical :							
1P1	Seminar - Research Paper & Presentation	V	-	3	80+10	75	3
1P2	Training - Travel Planning	VI	-	3	80+10	75	3
1P3	Study Tour & Report Submission	VII	-	4	80+20	100	4

Semester: II

Paper Code No.	Subjects	Paper	Theory Teaching Hours/Week	Practical Hours/Week	End Sem Examination	Max Marks	Credits
Theory	Core & Elective Papers						
211	Tourism Transport Services	I	4	-	80+20	100	4
212	Tourism Resources - Asia & Pacific	II	4	-	80+20	100	4
213	Hospitality Services Management OR Human Resources Development	III	4	-	80+20	100	4
214	Tour Operations & Travel Agency Management OR Sustainable & Eco Tourism	IV	4	-	80+20	100	4
Practical :							
2S1	Seminar - Research Paper & Presentation	V	-	3	80+10	75	3
2P1	Training - CRM-Customer Relation Studies	VI	-	3	80+10	75	3
2P2	Tour Operation & Management - Report Submission	VII	-	4	80+20	100	4

Semester - III

Paper Code No.	Subjects	Paper	Theory Teaching Hours/Week	Practical Hours/Week	End Sem Examination	Max Marks	Credits
Theory	Core & Elective Papers						
331	Tourism Marketing	I	4	—	80+20	80	4
332	Tourism Resources - Europe	II	4	—	80+20	80	4
333 OR 333	Information Technology in Tourism OR Tourism Finance & Accounts	III	4	—	80+20	80	4
334	NSS / A Event Management	IV	4	—	80+20	80	4
Practical :							
3P3	Seminar - Research Paper & Presentation	X	—	3	40+10	50	2
3P1	Training - WTO Event	VI	—	3	40+10	50	2
3P2	Research Planning and Report Writing	VII	—	6	80+20	100	4
Theory : Foundation Paper :							
339	Foundation in Travel & Tourism - I OR Foundation paper from other subject	IV	4	—	80+20	100	4

Semester: IV

Paper Code No.	Subjects	Paper	Theory Teaching Hours/Week	Practical Hours/Week	End Sem Examination	Max Marks	Credits
Theory	**Core & Elective Papers**						
431	Research Methodology in Tourism	I	4	—	80+20	80	4
432	Tourism Resources - America & Africa	II	4	—	80+20	80	4
433 OR 433	Entrepreneurship Development in Tourism OR Tourism Planning & Development	III	4	—	80+20	80	4
434	Tourism Resources of Maharashtra	IV	4	—	80+20	80	4
Project:							
4P3	Project Report Viva-voce	V	—	12	160+40	200	8
Theory : Foundation Paper :							
439	Foundation in Travel & Tourism - II OR Foundation paper from other subject	IV	4	—	80+20	100	4

Appendix-6

The Course of Study and the Scheme of Examination of Music

Year / Sem	Subject	Paper	Title of the Paper	Inst. Hrs / Week	Credit	Maximum Marks		
						CIA	Univ. Exa.	Total
I Year I Sem	Core	1P1	Practical Test	4	4	20	80	100
	Core	1P2	Major Performance	4	4	20	80	100
	Core	1T1	Theory Paper I Swaras	4	4	20	80	100
	Core	1T2	Theory Paper II Ethics & Gramaka	4	4	20	80	100
				16	16			400
I Year II Sem	Core	2P1	Practical Test	4	4	20	80	100
	Core	2P2	Major Performance	4	4	20	80	100
	Core	2T1	Theory Paper I Swaras, ragas	4	4	20	80	100
	Core	2T2	Theory Paper II Alankaras, Ragas & Gramaka	4	4	20	80	100
				16	16			400
II Year III Sem	Core	3P1	Practical Test	4	4	20	80	100
	Core	3P2	Major Performance	4	4	20	80	100
	Elective	3T3(A)	Theory Paper I Swaras & Gramaka	4	4	20	80	100
		3T3(B)	**salaahe**	4	4	20	80	100
		3T3(C)	[illegible]	4	4	20	80	100
	SOUNDEDUCATION Core	3T4(A)	Theory Paper II Alankaras, Ragas	4	4	20	80	100
		3T4(B)	Basic concepts of music	4	4	20	80	100
		3T4(C)	Intervals between notes	4	4	20	80	100
		3T4(D)	Basic laya sadhana, Practice of Basic lessons	4	4	20	80	100

				36	36			400
II Year (I/Sem-	Core	4T1	[illegible]	4	4	20	80	100
	Core	4P2	[illegible]	4	4	20	80	100
	Elective	4T3(A)	[illegible]	4	4	20	80	100
		4T3(B)	[illegible]	4	4	20	80	100
		4T3(C)	[illegible]	4	4	20	80	100
	FOUNDATION	4T4(A)	[illegible]	4	4	20	80	100
	Diff	4T4(B)	Basic types of Indian Music	4	4	20	80	100
	Core	4T4(C)	Elementary study of Classical Music	4	4	20	80	100
		4T4(D)	Study of Raga concept, Study of Basic 4 taals	4	4	20	80	100
				36	36			400

Sem	Subject	Papers	Credit	Total Credit	Marks	Total Marks
I, II, III, IV Sem	Core	12	04	48	100	1200
III, IV Sem	Elective	02	04	08	100	200
III, IV Sem	Foundation	02	04	08	100	200
Total		16	—	64	—	1600

POST GRADUATE DEPARTMENT OF ANCIENT INDIAN HISTORY, CULTURE AND ARCHAEOLOGY

Rashtrasant Tukadoji Maharaj Nagpur University

Mahatma Jyotiba Fuley Academic Campus, Amravati Road, Nagpur- 440 033

M.A I, II, III, and IV Semesters

Syllabus, Scheme of Semesterwise Examination

(Choice Based Credit System) (CBCS)

For Regular Students

(To be effective from the Academic year 2019-20)

M. A. (SEMESTER- I)

(Group- A (Archaeology)

S. No.	Course	Paper Theory	Lectures hours/week + Assignment*	Credits	Maximum Marks Theory +Internals	Minimum marks
1T1	Core	Outline of Indian History Up to 13th Century CE	4	4	80 + 20 = 100	40
1T2	Core	Indian Historiography	4	4	80 + 20 = 100	40
1T3	Elective	Prehistory of India	4	4	80 + 20 = 100	40
		OR				
1T4		Ethno Archaeology	4			
1T5	Elective	Principles of Archaeology	4	4	80 + 20 = 100	40
		OR				
1T6		Archaeology of Vidarbha	4			
1P1		Practical / Field work**	4	4	80+20=100	40
1TW1		Training/ Workshop	2	2	50	20
1S1		Seminar/Conference	2	2	50	20
		TOTAL	32	24	400+200= 600	240

*Students should be asked to submit an Assignment on a topic for each of the four Core and Elective papers. The assignment can be a write-up or a presentation for the 20 marks allocated as part of Internal Assessment.

** 80 = Practical- Museum Display and 20= Viva-Voce

For Enclosed
25-5-19

20/5/19

Appendix-I Item No. 4.9

M. A. (SEMESTER- II)
Group- A (Archaeology)

S. No.	Course	Paper Theory	Lecture hours/week + Assignment*	Credits	Maximum Marks Theory +Internals	Minimum marks
2T1	Core	Epigraphy and Palaeography	4	4	80 + 20 = 100	40
2T2	Core	Indian Architecture	4	4	80 + 20 = 100	40
2T3	Elective	Proto-History of India	4	4	80 + 20 = 100	40
		OR				
2T4		Science and Archaeology	4			
2T5	Elective	Methods of Archaeology	4	4	80 + 20 = 100	40
		OR				
2T6		Post Excavation Analysis and Report Writing	4			
2P1		Practical / Field work**	4	4	80+20=100	40
2TW1		Training/ Workshop	2	2	50	
2S1		Seminar/Conference	2	2	50	
TOTAL			32	24	400+ 200= 600	240

Students should be asked to submit an Assignment on a topic for each of the four Core and Elective papers. The assignment can be a write-up or a presentation for the 20 marks allocated as part of Internal Assessment.
** 80 = Practical- Surveying, Drawing, Modelling, Photography and 20= Viva-Voce

P. Trivedi
28-5-19

28/5/19

M. A. (SEMESTER- III)

(Group- A (Archaeology))

S. No.	Course	Paper Theory	Lecture hours/week + Assignment*	Credits	Maximum Marks Theory +Internals	Minimum marks
TT1	Core	Indian Numismatics	4	4	80 + 20 = 100	40
TT2	Core	Research Methodology	4	4	80 + 20 = 100	40
TT3 TT4	Elective	Historical Archaeology **OR** Harappan Culture	4 4	4	80 + 20 = 100	40
TT5 TT6	Elective	Peninsular World **OR** Art & Architecture Of Vijayanagar	4 4	4	80 + 20 = 100	40
TP1		Practical / Field work**	4	4	80+20=100***	40
TTW1		Training/ Workshop	2	2	50	20
TI1		Seminar/Conference	2	2	50	20
TOTAL			32	24	4(4x 100)+ 4(50)	160

* Students should be asked to submit an Assignment on a topic for each of the four Core and Elective papers. The assignments can be a write-up or a presentation for the 25 marks allocated as part of Internal Assessment.

** 80 = Practical- Tour Report/Exploration/Excavation + 20= Viva-Voce

28-5-19

28/5/19

M. A. (SEMESTER- IV)

Group- A (Archaeology)

S. No.	Course	Paper Theory	Lecture hours/week + Assignment*	Credits	Maximum Marks Theory +Internals	Minimum marks
421	Core	Art and Iconography	4	4	80 + 20 = 100	40
422	Core	Heritage Conservation	4	4	80 + 20 = 100	40
423 **OR** 424	Elective	Iron Age in India **OR** Antiquarian Laws	4 4	4	80 + 20 = 100	40
425 **OR** 426	Elective	Museology **OR** Ancient Civilizations	4 4	4	80 + 20 = 100	40
427		Project**	8	8	200+++	80
TOTAL			32	24	400+200= 600	240

* Students should be asked to submit an Assignment on a topic for each of the four Core and Elective papers. The assignment can be a write-up or a presentation for the 20 marks allocated as part of Internal Assessment.

**Project on a topic related to archaeology under the supervision of any faculty of the Department.

(Project=100 + Viva-Voce=40, Total = 200 Marks

Appendix -9(A)

Absorption Scheme for Semester-I

Paper as per CBS सत्र १ (मराठी)		Alternative paper in new syllabus of CBCS	
101 अ	प्राचीन – मध्ययुगीन मराठी गद्य	4T1	मध्ययुगीन आधुनिक गद्य
101 आ	मराठी वैचारिक निबंध भाग–१	2T3 (A)	निबंध वाङ्मय
102	अर्वाचीन मराठी कविता (१८८५ ते १९४५)	2T2	आधुनिक कविता
103 अ	विशेष वाङ्मय प्रकार – नाटक स्वातंत्र्यपुर्व कालखंड	1T3 (iii)	नाटक
103 आ	विशेष वाङ्मय प्रकार – कादंबरी (स्वातंत्र्यपुर्व कालखंड)	1T3 (A)	कादंबरी
103 इ	लोकसाहित्य भाग – १	4T3(A)	लोकसाहित्य
103 ई	नवे वाङ्मय प्रवाह – (दलित, आंबेडकरवादी, स्त्रीवादी)	3T4 ©	(दलित, आंबेडकरवादी, साहित्य
104	साहित्यशास्त्र भाग–१	1T2	साहित्यशास्त्र

Appendix -9(B)

Absorption Scheme for Semester-II

CBCS सत्र २ (मराठी)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201 (अ)	अर्वाचीन मराठी गद्य	4T1	मध्ययुगीन आधुनिक गद्य
201 (आ)	मराठी वैचारिक निबंध भाग—२	2T3 (C)	वैचारीक साहित्य
202	महायुद्धोत्तर मराठी कविता (१९४५ ते २०००)	2T2	आधुनिक कविता
203 अ	विशेष वाङ्मय — नाटक (स्वातंत्र्यपूर्व कालखंड)	2T3 (B)	ललित गद्य प्रकार
203 आ	विशेष वाङ्मय कादंबरी (स्वातंत्र्यपूर्व कालखंड)	1T3 (C)	कथा
203 इ	लोकसाहित्य भाग — २	4T4 (C)	स्त्रीवादी साहित्य
203 ई	सर्वे वाङ्मय प्रवाह — (ग्रामीण व आदिवासी)	3T3 (A)	ग्रामीण साहित्य
204	साहित्यशास्त्र भाग—२	2T4 (C)	पाश्चात्य साहित्य सिद्धांत

Appendix -3(C)

Absorption Scheme for Semester-III

सत्र ३ (मराठी)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301	प्राचीन मध्ययुगीन कविता – भाग – १	3T1	मध्ययुगीन कविता
301 (अ)	विशेष ग्रंथकार – संत ज्ञानेश्वर	1T4 (A)	संत ज्ञानेश्वर
302(आ)	तौलनिक साहित्य – व्यास	4T3(B)	तौलनिक साहित्य व्यास
303	भाषाविज्ञान – भाग १	4T2	भाषाविज्ञान
304 (अ)	प्राचीन व मध्ययुगीन मराठी वाङ्मय तिहास (प्रारंभापासून इ. स. १८०० पर्यंत)	1T1	मध्ययुगीन मराठी साहित्याचा इतिहास
203 इ	संशोधनशास्त्र	2T4 (B)	संशोधनशास्त्र

Absorption Scheme for Semester-IV

सत्र ४ (मराठी)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401	प्राचीन मध्ययुगीन मराठी कविता भाग – २	3T3(B)	आदिवासी साहित्य
401 (अ)	विशेष ग्रंथकार – भालचंद्र नेमाडे	1T4 (B)	वि.वा. शिरवाडकर
402(आ)	भाषांतर मीमांसा	4T4(D)	अनुवादित भारतीय साहित्याचा अभ्यास
403	भाषाविज्ञान – भाग २	3T2	मराठीचा भाषीक अभ्यास
404 (अ)	अर्वाचीन मराठी वाङ्मय तिहास (इ.स.१८०० ते २०००)	2T1	आधुनिक मराठी साहित्याचा इतिहास
404 (आ)	साहित्य समीक्षा	2T4 (A)	साहित्य समीक्षा

Appendix -10(A)

Absorption Scheme for Semester-I (Hindi)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	हिन्दी साहित्य का इतिहास (आदिकाल से रीतिकाल तक)	1T1	हिन्दी साहित्य का इतिहास (आदिकाल से रीतिकाल तक
102	काव्यशास्त्र/ साहित्यशास्त्र के सिद्धान्त	1T2	भारतीय काव्यशास्त्र
103 (क)	आधुनिक काव्य	1T3(Sem-II)	आधुनिक काव्य
103 (ख)	हिन्दी निबंध साहित्य	1T4(B)	हिन्दी निबंध साहित्य
104 (क)	हिन्दी नाटक एवं रंगमंच	1T4(A)	हिन्दी नाटक एवं रंगमंच
104 (ख)	हिन्दी एकांकी	1T4(C)	हिन्दी एकांकी
104 (ग)	जीवनी और आत्मकथा	1T4(E)	जीवनी और आत्मकथा
104(घ)	हिन्दी की अन्य गद्य विधाएँ	1T4(F)	संस्मरण, रेखाचित्र और रिपोर्ताज

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	आधुनिक हिन्दी साहित्य का इतिहास	2T1	हिन्दी साहित्य का इतिहास(आधुनिक काल)
102	आलोचना : दृष्टि एवं प्रतिमान	2T2	हिंदी आलोचना :दृष्टि एवं प्रवृत्तियाँ
103 (क)	समकालीन कविता	3T3(B)Sem-III	हिंदी काव्यधारा
103 (ख)	समकालीन कथा साहित्य	3T4(C)Sem-III	हिंदी कहानी
104 (क)	कबीर	2T4(A)	कबीरदास
104 (ख)	प्रसाद	2T4(B)	जयशंकर प्रसाद
104 (ग)	प्रेमचंद	2T4(C)	प्रेमचंद
104(घ)	निराला	2T4(D)	सूर्यकांत त्रिपाठी निराला

Appendix -11(B)

Semester-III

Paper as per Old syllabus		Alternative paper in new syllabus	
301	The English Novel II	2T4(A)	The English Novel II
302	Literary Criticism Theory I	3T1	Literary Criticism and Theory I
303(A)	Twentieth Century American Literature	3T3(B)	Twentieth Century American Literature
303(B)	European Fiction	3T4(D)	European Fiction and Drama
303(C)	African American Literature	4T3(A)	African American Literature
304(A)	Research Methodology	4T3(D)	Research Methodology
304(B)	Teaching of English Language and Lit.	3T4(C)	English Language Teaching
304(C)	The History of English Language I	1T4C)	The History of English Language I

Absorption Scheme for Semester-IV

Paper as per Old syllabus		Alternative paper in new syllabus	
401	Literary Criticism Theory-II	2T4(A)	Literary Criticism and Theory-II
402	Victorian Twentieth Century Poetry	3T1	Twentieth Century Poetry
403(A)	Post colonialism and Literature	3T3(B)	Post colonialism and Literature-II
403(B)	Comparative Literature	3T4(D)	Comparative Literature
403(C)	African Literature	4T3(A)	African Literature
404(A)	Dalit Literature	4T3(D)	Dalit Literature
404(B)	Film Studies	3T4(C)	Film Studies
404(C)	The History of English Language II	1T4C)	The History of English Language II

Appendix -11(A)

Absorption Scheme for Semester-I

(ARABIC)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Classical Prose	1T1	Classical Prose
102	Classical Poetry	1T2	Classical Poetry
103	History of Arabic Literature upto Islamic Period	1T3	History of Arabic Literature Pre-Islamic to Umayyad Period
104	Grammar	1T4	Grammar

Absorption Scheme for Semester-II

(ARABIC)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Classical Prose	2T1	Classical Prose
102	Classical Poetry	2T2	Classical Poetry
103	History of Arabic Literature From Umavi Period to Abbasi Period.	2T3	History of Abbasid Literature
104	Rhetorics	2T4	Quran and Hadith Literature

Appendix -12(A)

Absorption Scheme for Semester-I

(PERSIAN)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	M.A., Part-I	1T1	M.A., Part-I
	Paper-I, Classical and Ornate Prose		Paper-I, Classical and Ornate Prose
	Paper-II Classical Poetry		Paper-II Classical Poetry
	Paper-III, Safi Literature (Poetry)		Paper-III, Safi Literature (Poetry)
	Paper-IV, History of Persian Language and literature		Paper-IV, History of Persian Language and literature(From origin upto saljooqui Period)

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	M.A., Part-I	2T1	
	Paper-I, Classical and Ornate Prose		Paper-I, Classical and Ornate Prose
	Paper-II Classical Poetry		Paper-II Classical Poetry
	Paper-III, Safi Literature (Poetry)		Paper-III, Safi Literature (Poetry)
	Paper-IV, History of Persian Language and literature		Paper-IV, History of Persian Language and literature(From Tatari, Taimuri & Mughal (India) upto Qachari Period.

Appendix -12(B)

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	M.A., Part-III	2T1	
	Paper-I, Modern Prose		Paper-I, Modern Prose
	Paper-II Modern Poetry		Paper-II Modern Poetry
	Paper-III, Special Study Ghalib)	Elective(A)	Paper-III, Special Study on Indian Persian Poet (Amin Khusran)
		(B)	Special Study on Indian Persian Poet ((Ghalib)
		©	Special Study on Indian Persian Poet (Abu Talib Kaleem)
	Paper-IV, Essay and Translation or Project	Foundation (A)	Paper-IV Communication skill in Persian
		(B)	A Critical study of Persian Translation works during Mughal Period.

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401	M.A. Part-II	4T1	M.A. Part-II
	Paper-I, Modern Prose		Paper-I, Modern Prose
	Paper-II Modern Poetry		Paper-II Modern Poetry
	Paper-III, Special Study Ghalib)	Elective(A)	Paper-III, Special Study on Persian Short stories of Jamal ZadehPoet (Amin Khusran)
		(B)	Special Study on Persian Drama of M. Qarqe Daghi
		©	Special Study on Prsian Novels of Mohd. Hejazi
	Paper-IV, Project	Foundation (A)	Paper-IV Essay Translation and letter
		(B)	Critical study on Indo Islamic art of calligraphy during Mughal Period in India.

Appendix -13(A)

Absorption Scheme for Semester-I

MUSIC

Paper as per Old Syllabus CBS	Alternative paper in new syllabus CBCS
Practical I : Practical Test	1P1 : Practical Text
Paper II : Majlis Performance	1P2 : Majlis Performance
Paper III : Theory Paper I (सिद्धान्त गायन)	1T3 : Theory Paperl (सिद्धान्त गायन)
Paper IV : Theory Paper II (द्वितीय गायनाभ्यास)	Paper IV : Theory Paper II (द्वितीय गायनाभ्यास)

Absorption Scheme for Semester II

Paper I : Practical Test	2P1: Paper I : Practical Test
Paper II : Majlis Performance	2P2 :Paper II : Majlis Performance
Paper III : Theory Paper I (सिद्धान्त गायन)	Paper III : Theory Paper I(सिद्धान्त गायन)
Paper IV : Theory Paper II(संगीतादिल विज्ञान व सुधाभ्यास)	2P3 :Paper IV : Theory Paper II(संगीतादिल विज्ञान व सुधाभ्यास)

Appendix -13(B)

Absorption Scheme for Semester-III

MUSIC

Paper I : Practical Test	Practical Test
Paper II : Majlis Performance	Majlis Performance
Paper III : Theory Paper I (क्रियात्मक ज्ञान व उपयोजित ज्ञान)	Theory Paper I (क्रियात्मक ज्ञान व उपयोजित ज्ञान)
Paper IV : Theory Paper II (संगीतातील सिध्दान्तरे)	Theory Paper II(संगीतातील सिध्दान्तरे)

Absorption Scheme for Semester-IV

MUSIC

Paper I : Practical Test	Practical Test
Paper II : Majlis Performance	Majlis Performance
Paper III : Theory Paper I (क्रियात्मक सौंदर्यशास्त्र)	Theory Paper क्रियात्मक ज्ञान व सौंदर्यशास्त्र)
Paper IV : Theory Paper II(संगीतातील संशोधन)	Theory Paper II(संगीतातील संशोधन)

Appendix -14(A)

M.A. Philosophy Part-I Sem-I

Absorption Scheme for Semester-I

Paper as per CBS		Alternative paper in new syllabus of CBCS	
Paper-I	Indian Ethics	1T1	Ethics (Indian)
Paper-II	Epistemology (Indian)	1T2	Epistemology (Indian)
Paper-III (i)	Metaphysics (India)	1T3 (i)	Metaphysics (Indian)
Or (ii)	Philosophical Problem	1T3 (ii) Or	Philosophical Problem
Or (iii)	Philosophy of Mind	1T3 (iii) Or	Philosophy of Mind
Paper-IV (i)	History pf Western Philosophy	1T4 (i)	History of Western Philosophy
Or (ii)	Philosophy of Religions	1T4 (ii)	Philosophy of Religion
Or (iii)	Modern Indian Thought	1T4 (iii)	Modern Indian Thought

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	Western Ethics	2T1	Ethics (Western)
202	Epistemology (Western)	2T2	Epistemology (Western)
203 (i)	Metaphysics (Western)	2T3 (i)	Metaphysics (Western)
Or (ii)	Philosophical Problem	2T3 (ii) Or	Philosophical Problem
Or (iii)	Philosophy of Mind	2T3 (iii) Or	Philosophy of Mind
204 (i)	History of Western Philosophy	2T4 (i)	History of Western Philosophy(Modern Western
Or (ii)	Philosophy of Religions	2T4 (ii) Or	Philosophy of Religion
Or (iii)	Modern Indian Thought	2T4 (iii) Or	Modern Indian Thought

Appendix -14(B)

M.A. Philosophy Part-II Sem-III

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301	Analytical Philosophy	3T1	Analytic Philosophy
302	Comparative Religion	3T2	Comparative Religion
303 (i)	Advanced Symbolic Logic	3T3 (i)	Advanced Symbolic Logic
Or (ii)	Philosophy of Value Education	1T3 (iv)	Philosophy of Value Education
Or (iii)	Plato	3T3 (ii)	Plato
304 (i)	Phenomenology & Existentialism	3T3 (vi)	Phenomencology
Or (ii)	Aesthetics	1T4 (iv)	Aesthetics
Or (iii)	Applied Ethics	3T3 (iii)	Applied Ethics

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401	Analytical Philosophy	4T1	Analytic Philosophy
402	Comparative Religion	4T2	Comparative Religion
403 (i) Or	Advanced Symbolic Logic	4T3 (i)	Advanced Symbolic Logic
Or (ii)	Philosophy of Value Education	2T3 (iv)	Philosophy of Value Education
Or (iii)	Plato	4T3 (ii)	Plato
404 (i) Or	Phenomenology & Existunilism	4T3 (vi)	Existentialism
Or (ii)	Aisthtics	2T4 (iv)	Aesthetics
Or (iii)	Applied Ethics	4T3 (iii)	Applied Ethics

Appendix -15(A)

Gandhian Thought

Absorption Scheme for Semester-I

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Basic Works of M. Gandhi I	1T1	Basic Works of Mahatma Gandhi-I
102	Philosophical Found Of Gandhian Thought-I	1T2	Philosophical Foundation Of Gandhian Thought
103	Gandhian Economic Thought I	1T3	Gandhian Economic Thought I
104	Political Thought of Mahatma Gandhi	1T4	Political Thought of Mahatma Gandhi

Gandhian Thought

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	Basic Works of M. Gandhi II	2T1	Basic Works of Mahatma Gandhi-II
202	Philosophical Foundation Of Gandhian Thought-II	2T2	Philosophical Foundation of Gandhian Thought II
203	Gandhian Economic Thought II	2T3	Gandhian Economic Thought II
204	Social Thought of Mahatma Gandhi	2T4	Sociall Thought of Mahatma Gandhi

Appendix -15(B)

Gandhian Thought

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301	Gandhi and his Contemporaries I	3T1	Gandhi and his Contemporaries I
302	Gandhian Approach to Rural Development-I	3T4 (B)	Gandhian Approach to Rural Development-I
303	Satyagraha I	3T3 (A)	Satyagraha I
304	Research Methodology	3T2	Research Methodology

Gandhian Thought

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301	Gandhi and his Contemporaries II	4T1	Gandhi and his Contemporaries II
302	Gandhian Approach to Rural Development-II	4T4 (B)	Gandhian Approach to Rural Development-II
303	Satyagraha II	4T3 (A)	Satyagraha II
304	Research Dissertation/Project	4T2	Research Project

Appendix -16(A)

Absorption Scheme for Semester-I(Rashtrasant Tukadoji Maharaj Thought)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	राष्ट्रसंताचे चरित्र आणि व्यक्तिमत्व भाग--१	1T1	राष्ट्रसंताचे चरित्र आणि व्यक्तिमत्व भाग--१
302	राष्ट्रसंताच्या जीवनकार्याची पार्श्वभूमी --स्वातंत्र्यपूर्व कालखंड	1T2	राष्ट्रसंताच्या जीवनकार्याची पार्श्वभूमी --स्वातंत्र्यपूर्व कालखंड
303	राष्ट्रसंताचे मराठी काव्य	1T3	राष्ट्रसंताचे मराठी काव्य
304	राष्ट्रसंताचे मराठी ग्रंथ साहित्य किंवा	1T4	राष्ट्रसंताचे मराठी ग्रंथ साहित्य किंवा
	राष्ट्रसंताचे हिंदी गद्य साहित्य	1T4	राष्ट्रसंताचे हिंदी गद्य साहित्य

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	राष्ट्रसंताचे साहित्य आणि व्यक्तिमत्व भाग--२	2T1	राष्ट्रसंताचे साहित्य आणि व्यक्तिमत्व भाग--२
	राष्ट्रसंताच्या जीवनकार्याची पार्श्वभूमी --स्वातंत्र्यपूर्व कालखंड	2T2	राष्ट्रसंताच्या जीवनकार्याची पार्श्वभूमी --स्वातंत्र्यपूर्व कालखंड
	राष्ट्रसंताचे हिंदी काव्य	2T3	राष्ट्रसंताचे हिंदी काव्य
	राष्ट्रसंताच्या साहित्याची समीक्षा किंवा	2T4	राष्ट्रसंताच्या साहित्याची समीक्षा किंवा
	राष्ट्रसंताचे आध्यात्मीक आणि भक्तिपर साहित्य.		राष्ट्रसंताचे आध्यात्मीक आणि भक्तिपर साहित्य.

Appendix -16(B)

Absorption Scheme for Semester-III

	Paper as per CBS	Alternative paper in new syllabus of CBCS	
301	राष्ट्रभाषेचे तत्त्वज्ञान भाग–१	3T1	राष्ट्रभाषेचे तत्त्वज्ञान भाग–१
	ग्रामगीता : बाह्य मंडळ महात्मा	3T2	ग्रामगीता : बाह्य मंडळ महात्मा
	(A) राष्ट्रभाषेची ऐतिहासिकाभाषी पार्श्वभूमी विषय	3T3 Elective	(B) राष्ट्रभाषेची ऐतिहासिकाभाषी संकल्पना विषय
	(C) महाराष्ट्राबाहेरील संत आणि राष्ट्रभाषा तुकडोजी महाराज		(D) महाराष्ट्राबाहेरील संत आणि राष्ट्रभाषा तुकडोजी महाराज
	(A) मराठी संत परंपरा आणि राष्ट्रसंत तुकडोजी महाराज, (ग्रा.गु.रा.तु.म. विद्यापीठाच्या नियमित विद्यार्थ्यांसाठी) विषय	3T4 Foundation Course	(B) मराठी संत परंपरा आणि राष्ट्रसंत तुकडोजी महाराज, (ग्रा.गु.रा.तु.म. विद्यापीठाच्या नियमित विद्यार्थ्यांसाठी) विषय
	(B) राष्ट्रभाषेचे व्याकरण, भाषिक आणि कार्य (अन्य अभ्यासक्रमाच्या विद्यार्थ्यांसाठी)		(B) राष्ट्रभाषेचे व्याकरण, भाषिक आणि कार्य (अन्य अभ्यासक्रमाच्या विद्यार्थ्यांसाठी)

Absorption Scheme for Semester-IV

	Paper as per CBS	Alternative paper in new syllabus of CBCS	
401	राष्ट्रभाषेचे तत्त्वज्ञान भाग–२	4T1	राष्ट्रभाषेचे तत्त्वज्ञान भाग–२
	ग्रामगीता : विद्यासंपदा	4T2	ग्रामगीता : विद्यासंपदा
	(A)भारतीय समाजसुधारक आणि राष्ट्रसंत विषय	4T3 Elective	(A)भारतीय समाजसुधारक आणि राष्ट्रसंत विषय
	(B)शोधप्रकल्प (राष्ट्रभाषेचे साहित्य अथवा जीवन– कार्य यावर आधारित किमान ५० पृष्ठांचा स्वतंत्र आकलन मांडणारा शोध प्रकल्प)		(B)शोधप्रकल्प (राष्ट्रभाषेचे साहित्य अथवा जीवन– कार्य यावर आधारित किमान ५० पृष्ठांचा स्वतंत्र आकलन मांडणारा शोध प्रकल्प)
	(A) राष्ट्रभाषेची कला संकल्पना (ग्रा.गु.रा.तु.म.विद्यापीठाच्या – नियमित विद्यार्थ्यांसाठी विषय	4T4 Foundation	(B) राष्ट्रभाषेची कला संकल्पना (ग्रा.गु.रा.तु.म.विद्यापीठाच्या – नियमित विद्यार्थ्यांसाठी विषय
	(B)राष्ट्रभाषेचे मराठी आणि हिंदी साहित्य, (अन्य अभ्यासक्रमाच्या विद्यार्थ्यांसाठी)		(B)राष्ट्रभाषेचे मराठी आणि हिंदी साहित्य, (अन्य अभ्यासक्रमाच्या विद्यार्थ्यांसाठी)

Appendix -17(A)

Absorption Scheme for Semester-I (History)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Historiography	1T1	Historiography
102	a) Indian under the sultanate period	1T2	India under company's rule 1757-1856
	b)India under Company's rule 1757-1856	1T3	Indian National Movement 1905-1947
103	a)India under the Mughals	1T4	Modern World 1914-1950
	b)Indian National Movement 1905-1947		
104	Modern world		

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	Trends and Theories of history	2T1	Trends and Theories of history
202	a) Society, Economy and Culture Under the Sultans	2T2	India under British rule: 1857-1905
	b)India under British rule 1857-1505	2T3	Independent India: 1948-2000
203	a)Society, Economy and Culture Under the Mughals	2T4	Contemporary world: 1951-2000
	b)Independent India: 1947-2000		
204	Contemporary world: 1950-2000		

Appendix -17(B)

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301	Emergence of Maratha Power in 17th Century	3T1	Emergence of Maratha Power in 17th Century
302	a)State in Ancient and Medieval India	3T2	State in Ancient and Medieval India
	b)Ecology and Environment	3T3 (Elective-i)	a)Economic History of India: 1757-1857
303	Economic History at India: 1757-1857		b)Ecology and Environment in India
304	History of Medieval Vidarbha	3T4 (Foundation work)	a)Concept of History (For the students of other disciplines)
			b)Medieval Vidarbha (For the students of History only)

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401	Expansion of Maratha Power: 1707-1818	4T1	Expansion of Maratha Power: 1707-1818
402	a)State in British India	4T2	State in British India
	b)Ecology and Indian Human Societies	4T3 (Course Elective-II)	a)Economic History of India: 1858-1947
403	Economic History of India:1858-1947		b)Ecology and Indian Human Societies
404	History of Modern Vidarbha	4T4 (Foundation Course-II)	a)Modern India 1857-1947 (For the students of Other disciplines
			b)History of Modern Vidarbha (For the students of history only)

Appendix -18

Absorption Scheme for Semester-I (Geography)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	History of Geographical Thoughts	1T1 1T2 1.1	History of Geographical Thoughts (Core)
102	Oceanography	1T2 1.2	Oceanography(Core)
103	Geomorphology	1T3 1.3	Geomorphology (Core)

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Research Methodology	2T1	Research Methodology (Core)
102	Environmental Geography	2T2 2.2	Environmental Geography (Core)
103	Climatology	2T3 2.3	Climatology (Core)

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Geography of Manufacturing & Transport	3T1	Economic Geography (Core)
102	Geography of Tourism	4T2	Geography of Tourism (Core)
103	Urban Geography or Agricultural Geography	3T4	Urban Geography or Agricultural Geography (Elective)

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401	Population Geography	4T1	Population Geography (Core)
402	Geography of Settlement	3T2	Geography of Rural Settlement (Core)
403	Regional Planning Or	4T3	Regional Planning & development (Core)
403	Social Geography	4T4	Social Geography

Appendix -19

Absorption Scheme for Semester-I (Home Economics)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Resource Management	171	Resource Management
	Human Development		Human Development
	Textile & Clothing		Textile & Clothing
	Research Methods and Statistics		Research Methods and Statistics

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	Resource Management	271	Resource Management
	Human Development		Human Development
	Textile & Clothing		Textile & Clothing
	Research Methods and Statistics		Research Methods and Statistics

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301	Food & Nutrition	Compulsory	Food & Nutrition
	Family Dynamics	Compulsory	Family Dynamics
	Consumer of the Market	Compulsory	Consumer of the Market
	Home Science Extension Education	Elective	Home Science Extension Education Or
	House and Interior	Elective	House and Interior

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401	Food & Nutrition	471 Compulsory	Food & Nutrition
	Family Dynamics	Compulsory	Family Dynamics
	Consumer of the Market	Compulsory	Consumer of the Market
	Home Science Extension Education	Elective	Home Science Extension Education Or
	House and Interior	Elective	House and Interior

Appendix -20(A)

Buddhist Studies

Absorption Scheme for Semester-I

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Semester -I	1T1	Semester-I
101- I	History of Buddhism in India-I	1t1	History of Buddhism in India-I
101-II	History of Buddhist Philosophy in India-I	1T2	History of Buddhist Philosophy in India-I
103-III A)	Buddhist Pali Literature-I	1T3 A)	Buddhist Pali Literature OR
B)	Buddhist Sanskrit Literature-	B)	Buddhist Sanskrit Literature
104-IV A)	Abhiddhamma Philosophy	1T4 A)	Abhiddhamma Philosophy OR
B)	Buddhist Logic	B)	Buddhist Logic

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201 (Compulsory)	History of Buddhism in India-II	2T1 Core Paper	History of Buddhism in India
202	History or Buddhist Philosophy in India-II	2T2	History of Buddhist Philosophy in India
Optional A) 203	Anupitak Sahitya OR	Optional A) Paper 2T3	Anupitak Sahitya OR
B)	Buddhist Sanskrit Literature	B)	Buddhist Sanskrit Literature
Optional A) 204	Abhiddhama Philosophy OR	Optional A) Paper 2T4	Abhiddhama Philosophy OR
B)	Buddhist Logic-II	B)	Buddhist Logic

Appendix -IV(B)

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301 Compulsory	Buddhist Vinaya	3T1	Buddhist Vinaya
302	Buddhist Education	3T2	Buddhist Education
Optional 303	A) Buddhism in Modern India-I	Elective Paper3T3	A) Revival or Buddhism to Modern India OR
	B) Buddhism in North East Asia-I		B) Buddhist Art & Architecture OR
			C) Buddhism in North East Asia
Optional 304	A) Buddhist Art & Architecture-I	Optional Paper3T4	A) Buddhism in South East-Asia
	B) Buddhism in South East Asia-I		B) Dr. Ambedkar Thoughts
		Foundation Paper3T4	Basic History of Buddhism

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401 Compulsory	Buddhist Vinaya-I	4T1 Core Paper	Buddhist Vinaya
402	Buddhist Education	4T2	Buddhist Education
Elective 403	A)Buddhism in Modern India-II	Elective 4T3	A)Revival Or Buddhism in Modern India OR
			B)Buddhist Art & Architecture OR
			C)Buddhism in North East-Asia
Elective 404	A) Buddhist Art & Architecture	Elective Paper 4T4	A) Buddhist in South East-Asia
	B) Buddhism in South East-Asia-II		B)Basic Study of Buddhist Literature
		Foundation Paper 4T4	Basic Principles of Buddhism

Appendix -21(A)

Pali - Prakrit

Absorption Scheme for Semester-I

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101	Semester -I	1T1	Semester-I
101-I	History of Pali Language and Literature	1t1	History of Pali Language and Literature
102	Sutter Literature : Dhammapad and Suttanipat	1T2	Sutter Literature : Dhammapad and Suttanipat
103	Vinaya Literature Mahavagya	1T3	Vinaya Literature Mahavagya
104	Grammar and Translation	1T4	Pali Grammar and Translation

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
201	Milind Panho-Ampitav Literature	2T1	Anupitak Literature-Milind Panho
202	Sutta Literature- Sabyita Nikay and Angultar Nikay	2T2	Sutta Literature-Sabyita Nikay and Angultar Nikay
203	Vinaya Literature - Cullavagga	2T3	Vinaya Literature - Cullavagga
204	Visuddhimagga (Sila Niddesa)-Anupitak Literature	2T4	Visuddhimagga (Sila Niddesa)-Anupitak Literature

Appendix -21(B)

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
301 Compulsory Paper	Sutta Literature-Digha Nikay and Majjhim Nikaya	Core Paper 3T2	Sutta Literature-Digha Nikay and Majjhim Nikaya
302	Pali Poetry-Thera gatha and Therigather	3T2	Pali Poetry-Thera gatha and Therigather
303	Abhidhamma Literature Abhidhamma-Dhasangane	Core Elective-I 3T3(A)	Abhidhamma Literature Abhidhamma-Dhasangane
		3T3 (B)	Vipassana in Modern age
		3T3 (C)	Psychology in Pali Literature
Optional 304	Vamsa Literature and Buddhist History	3T4 (A)	Vamsa Literature and Buddhist History
304	Abhi dhamma Pitak : Dhamma Sangini	3T4(B)	Pali Literature and Buddhist History
304	Atthakatha Literature		
		Foundation Paper 3T4	Buddha and Hits Teachings

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
401 Compulsory Paper	Sutta Literature: Digh Nikay, Majjhim Nikay	4T1 Core Paper	Sutta Literature: Digh Nikay, Majjhima Nikaya
402	Pali poetry : Khuddak Nikay (Pali Gatha)	4T2	Pali poetry : KhuddakaNikay (Pali Gatha)
403	Vinay Pitaka-Patimokkha	Core Elective 4T3 (A)	Vinay Pitaka-Patimokkha
		4T3 (B)	Modern Pali Literature
		4T3 (C)	Attharatha Literature
404	Abhidhamma Literature :Patthana	4T4- A)	Comparative Linguistics and Essay
404	Atthakatha Literature Samant Pasadika	4T4 B)	Propagation of Pali Literature
		Foundation 4T4	Pali Language and Literature

Appendix -22(A)

Absorption Scheme for Semester-I (Psychology)

Paper as per CBS		Alternative paper in new syllabus of CBCS	
101			
ICPT1 (1)	Cognitive Psychology	CR1T1	Cognitive Psychology
IRMSP2 (2)	Research Method Statistic & Psychological Testing	RMS-1T2	Research Method Statistic & Psychological Testing
IPER-1T-3 (3)	Personality Theories-I	PER-1T-3	Personality Theories-I
TASPT-4 (4)	Advanced Social Psychology	ASP-1T4	Advanced Social Psychology
1PP1	Psychology Practicum	P-1P1	Psychology Practicum

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
2 AGPI-1 (1)	Advanced General Psychology	AGP-2T1	Advanced General Psychology
2IIDT-2 (2)	Research Oesigns	RD-IT2	Research Designs
2PERIIT-3 (3)	Personality Theories-II	PERII2T3	Personality Theories-II
2ISBT4 (4)	Issuer in Social Behaviour	ISB-2T4	Issuer in Social Behaviour
2PP-1	Psychology Practium	P-2P1	Psychology Practium

Appendix -2(II)

Absorption Scheme for Semester-II

Paper as per CBS		Alternative paper in new syllabus of CBCS	
-	Stream A Clinical Psychology		
3 AABPT-1	Abnormal Psychology	ABBAZT1	Abnormal Psychological Assessment
3APDT-2	Psycho diagnosis Counsulting and	PAST A-3T4	And specific Testing Psychodiagnosis and
3ACPTI-3	Psychotherapy Health	PDZPTHA-3T2	Psychotherapy and
3AHPT-4	Psychology Clinical Psychology	4PB-3T3	Health Psychology Clinical Psychology Pratical
3APP1	Practical Stream : B Organizational Psychology and Human Research Management of	PA-3P1	
3BMPHRI-1	Research and Human Resource Organizational		Organizational
3BOBT-2	Behaviour Industrial	OBB-3T2	Behaviour Industrial
3BINDTT-3	Psychology	INDR-3T3b	Psychology
3BCBT-4	Consumer Behaviour	CBB-3T3a	Consumer Behaviour

Absorption Scheme for Semester-III

Paper as per CBS		Alternative paper in new syllabus of CBCS	
-			
3BPP1	Industrial Psychology Practical Stream : C Counselling Psychology Guidance and	PB-3P1	Organizational Psychology Practicum
3CGCPT-1	Counselling Psychology Educational	GCPC-3T1	Guidance and Counselling Psychology
3CECGT-2	and Career Guidance		Educational and
3CACGT-3	Assessment in Counselling and Guidance		Career Guidance Assessment in Counselling and Guidance
3CBCST-4	Counselling Skills		Basic Counseling skills
3CPP-1	Counselling Psychology Practicum		Counselling Psychology Practicum

Appendix -22(C)

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
-	Stream A: Clinical Psychology	-	
4APPt-1	Psychopathology Psychological	PPA-4T1	Psychopathology
4APIT-2	Testing in clinical Psychology	PTA-4T3b	Psychological Testing in clinical Psychology
4ATISI-3	Therapeutic International Strategies	TISA-4T2	Therapeutic International Strategies
4ACMMT-4	Community Mental Health and Medical Psychology	CMMA-4T3a	Community Mental Health and Medical Psychology
4APP-1	Clinical Psychology Practicum	PA-4P1	Clinical Psychology Practicum

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
-	Stream B: Organizational Psychology and Human Resource Management	-	
4, IBOOT-1	Organization Development	ODB-4T1	Organization Development
4BLCOT-2	Leadership and Communication in Organization	LCOB-4T3a	Leadership and Communication in Organization
4BOOOT-3	Organizational Culture, Organizational Learning and Organizational Change	OCO-B-4-T3b	Organizational Culture, Organizational Learning and Organizational Change

Appendix -22(D)

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
-		-	
4BECT-4	Employee Counselling	ECB-4T2	Employee Counselling
4BPP-1	Organizational Psychology Practicum	PB-4 P1	Organizational Psychology Practicum
	Stream C: Counselling Psychology		
4CPTCGT-1	Psychological Testing in Counselling and Guidance	PCGC-4T3b	Psychological Testing in Counselling and Guidance

Absorption Scheme for Semester-IV

Paper as per CBS		Alternative paper in new syllabus of CBCS	
-		-	
4CPDT-2	Psychological Disorders	PD-C-4T1	Psychological Disorders
4CTSCT-3	Intervention strategies in Cancelling	ISCC-4T2	Intervention strategies in Cancelling
4CSACT-4	Special Areas of Counselling	SACC-4T3a	Special Areas of Counselling
4CPP-1	Counselling Psychology Practicum	PC-4P1	Counselling Psychology Practicum

Appendix -23(A)

Absorption Scheme for Semester-I (Law)

Paper as per Old Course		Alternative paper in new syllabus of CBS	
1.1	General English Paper-I	1.1	English-I
1.2	Logic-I	1.2	Philosophy I
1.4	History	1.3	History I
1.3	Economics	1.4	Economics I
1.2	Political Science	1.5	Political Science I
3.1	Law of Contract-I	1.6	Law of Contract I

Absorption Scheme for Semester-II

Paper as per Old Course		Alternative paper in new syllabus of CBS	
2.1	English Paper-II	1.1	English-II
2.4	Logic Paper II	1.2	Philosophy II
2.4	History Paper II	1.3	History II
2.7	Economics Paper II	1.4	Economics II
2.2	Political Science Paper II	1.5	Political Science II
3.2	Law of Contract-II	1.6	Law of Contract II

Absorption Scheme for Semester-III

Paper as per Old Course		Alternative paper in new syllabus of CBS	
	English Paper-II	3.1	English-II
	Logic Paper II	3.2	Philosophy II
	History Paper II	3.3	History II
	Economics Paper II	3.4	Economics II
2.3	Political Science Paper III	3.5	Political Science II
3.3	Torts & Consumer Protection Laws	3.6	Law of Torts & Consumer Protection

Appendix -23[B]

Absorption Scheme for Semester-IV

Paper as per Old Course		Alternative paper in new syllabus of CBS	
		4.1	English IV
		4.2	Philosophy IV
		4.3	History IV
		4.4	Economics IV
		4.5	Political Science
3.7	Constitutional Law, Indian Constitution	4.6	Constitution-I

Absorption Scheme for Semester-V

Paper as per Old Course		Alternative paper in new syllabus of CBS	
		5.1	Constitution-II
		5.2	Legal Language & Legal writing
3.8	Legal Language & Legal writing Including General English	5.3	Family Law-I (Hindu Law)
		5.4	Major V
3.6	Law of Crimes	5.5	Law of Crimes
9.6	Computer Theory Practical	5.6 (1) 5.6 (2)	Computer (Th) Computer (Pr)

Appendix -23(C)

Absorption Scheme for Semester-VI

Paper as per Old Course		Alternative paper in new syllabus of CBS	
7.1	Jurisprudence	6.1	Jurisprudence
7.4	Company Law	6.2	Company Law
9.1	Environmental Law	6.3	Environmental Law
3.5	Family Law II Muslim Law	6.4	Family Law II (Muslim Law)
		6.5	Major VI
1.5	Sociology I	6.6	Sociology I

Absorption Scheme for Semester-VII

Paper as per Old Course		Alternative paper in new syllabus of CBS	
4.6	Labour Law	7.1	Labour Law I
		7.2	Human Rights
4.2	Property Law, including Transfer of Property & Easement Act	7.3	Transfer of Properties
		7.4	Cyber Law
4.5	Human Rights & Public International Law	7.5	Public International Law
2.6	Sociology Paper-II	7.6	Sociology II

Appendix -23(D)

Absorption Scheme for Semester-VIII

Paper as per Old Course		Alternative paper in new syllabus of CBS	
5.2	Cr Pc & Lamination Act	2.1	Civil Procedure code & Limitation Act
5.1	Cr Pc, JJA & Probation of offends Act	8.2	Cr Pc & Probation of offends Act & Juvenile Justice Act
5.3	Law of Evidence	8.3	Law of Evidence
		8.4	Labour Law-II
		8.5	Health Law
4.8	Trust, Equity & Fiduciary Relationship	8.6 1. 8.6 2.	Law of Trust/ Insurance law

Absorption Scheme for Semester-IV

Paper as per Old Course		Alternative paper in new syllabus of CBS	
9.2	Land Lard	9.1	Land Lard
5.5	Interpretation of Statutes	9.2	Interpretation of Statutes
9.3	Intellactional Property Law	9.3	Intellactional Property Law
8.4	Arbitration Law & Acternative Dispute Resolution	9.4	Clinical Paper-I ADR
3.5	Practical	9.5	Clinical Paper-II Prof. Ethics & Prof Account
		9.6 1) 9.6 2)	Criminology Penology

Appendix -23(E)

Absorption Scheme for Semester-X

Paper as per Old Course		Alternative paper in new syllabus of CBS	
5.6	Administrative	10.1	Administrative
4.7	Banking Law Including Negotiate Instruments Act	10.2	Banking Law
5.8	Taxation Laws	10.3	Law of Taxation
5.9	Drafting, Paddy & Convey acing	10.4	Clinical Paper-III Draft, Phalting & Colvenacing
5.9	Most Court, Pre-Trial Preparations & Participation in Trial Porridges.	10.5	Clinical paper IV Most Court & Internship
		10.6 1) 10.6 2)	Optional Paper International Trade Law/Women & Laws

Appendix -24(A)

Absorption Scheme for Semester-I (Political Science)

Paper as per Old Course		Alternative paper in new syllabus of CBS	
201 Paper-I	Modern Political Indian Political Thought	1T1	Modern Political Indian Political Thought
Paper-II	Indian Democracy & Political Process	1T2	Indian Democracy & Political Process
Paper-III	Comparatives Politics	1T3	Modern Political Ideology
Paper-IV	Public Administration	1T4	Fundamentals' of Foreign Policy

Absorption Scheme for Semester-II

Paper as per Old Course		Alternative paper in new syllabus of CBS	
201 Paper-I	Indian Administration	2T1	Western Political Thought
Paper-II	Pressure Groups and Social Movements	2T2	Political Anthropology
Paper-III	Policies & Maharashtra	2T3	Political Sociology
Paper-IV	International Relations	2T4	International Relations

Appendix -24(B)

Absorption Scheme for Semester-III

Paper as per Old Course		Alternative paper in new syllabus of CBS	
Paper-I	Research Methodology	3T1	Research Methodologys
Paper-II	Western Political Thought	3T2	Ancient Indian Political Thought
Paper-III	(a) International Law OR (b) Modern Political Ideology	3T3	(c) Globalization of its Impact on India (d) Major Issues in Contemporary Politics
Paper-IV	(a) Diplomacy & Foreign Policy (b) Policies of Developing Countries	3T4	(a) India and the world (b) Local Self Government

Absorption Scheme for Semester-IV

Paper as per Old Course		Alternative paper in new syllabus of CBS	
Paper-I	State Politics in India	4T1	State Politics in India
Paper-II	Human Rights : Problems & Prospects	4T2	International Human Rights : Problems & Prospects
Paper-III	(a) Political Sociology OR (b) Globalization & Its Impact on the Political System	4T3	(a) Human Rights & Indian Constitution (b) International Organisation
Paper-IV	(a) Political Anthropology OR (b) South Asian Political System	4T4	(a) Indian Constitution of its working (b) Development Administration

Faculty of Commerce

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

WHERAS, 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. ELIGIBILITYTO 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).
•

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. <u>CREDIT SYSTEM OF EVALUATION</u>

- 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.

Sd/-

Nagpur: **(Dr. S.P. Kane)**

Dated : 18.9.2018 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 heory Paper (TH)	Max Marks (IM)	Max Marks actical (PR)	Min Passin 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-	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)	Min 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
			Theory (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, Guajarati, 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	
	Core Group						
6T1	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

Sr. No.		Instruction Hours	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	*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-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	
	Internal Assessment	20	
	Total	100	40
Total		**600**	**240**

B.COM. Examination Semester–II

Subject	Examination Scheme	Maximum Marks	Minimum PassingMarks (Combined)
1. Statistics &.Business mathematics	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
2. Business Organization	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
3. Company Law	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
4. Business Economics-II	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
5. Compulsory English	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
6. Second Language	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
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	
	Internal Assessment	20	
	Total	100	40
2. Business Communication and Management	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
3. Business Law	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
4.Monetary Economics-I	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
5. Compulsory English	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
6.Second Language	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
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	
	Internal Assessment	20	
	Total	100	40
2. Skill Development	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
3. Income Tax	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
4.Monetary Economics-II	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
5. Compulsory English	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
6.Second Language	University Theory Examination	80	
	Internal Assessment	20	
	Total	100	40
Total		**600**	**240**

B.COM. Examination Semester–V

Subject	Examination Scheme	Maximum Marks	Minimum PassingMarks (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 PassingMarks (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 360Clock 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

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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	**5**
2.	Business Organization	**5**	**2.**	Business Communication and Management	**5**	**2**	Cost Accounting	**5**
						3	Indian Economy -I	**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** - I I 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**		**Core Group**	
						1.	Financial Accounting-V	**5**
2.	Business Management	**5**	**2.**	Skill Development.	**5**	**2.**	Cost Accounting	**5**
						3.	Indian Economy-II	**5**
3.	Secretarial Practice	**5**	**3.**	Income Tax	**5**	**4.**	**Elective Group**-I Human Resource Management **OR** Indirect Tax	**5**
4.	Business Economics – II	**5**	**4.**	Monetary Economics –II	**5**	**5.**	**Elective Group**- II Business Finance-II	**5**
							OR Industrial Law	**5**
							OR Advanced Statistics	
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 = 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.

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	TotalMaximumMarks	Total Minimum Marks	TotalMarks Obtained	Grade(G)	Gradepoints(GP)	Credit oftheCourse(C)	(Credit) X (Grade points)(CX GP)	SGPA=Σ CG/Σ 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	TotalMaximumMarks	TotalMarks Obtained	Grade(G)	Gradepoints(GP)	Credit oftheCourse(C)	(Credit) X (Grade points)(CX GP)	SGPA=Σ CG/Σ C
C-31	100	32	F	0	4	00	**SGPA** =102/24 =4**.24** **GradeF** **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

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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	IInd Language (Other Indian language as per syllabus) (Hindi, Marathi,etc.)	100	2	IInd 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	IInd Language (Other Indian language as per syllabus) (Hindi, Marathi,etc.)	100	2	IInd 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	Income Tax & Auditing	100	2.	Auditing Sem- V	80
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 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 OFCOMMERCE 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 Administratoin (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 existance 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 sutable 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 Adminstration (BBA)** – 4th Semester Examination,
(5) The **Bachelor of Business Adminstration (BBA)** – 5th Semester Examination and
(6) The **Bachelor of Business Adminstration (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 RashtrasantTukdojiMaharaj 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 2017shall 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 : 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 and for Project Work it will be 80.

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.

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:

a) Elective A - Financial Management
   a. Paper 1 – Fundamentals of Business Finance
   b. Paper 2 – Advanced Financial Management

b) Elective B - Human Resource Management
   a. Paper 1 – Fundamentals of Human Resource Management
   b. Paper 2 – Advanced Human Resource Management

c) Elective C - Marketing Management
   a. Paper 1 – Fundamentals of Marketing Management
   b. 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

(i) For Project worka 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.

(ii) The guide or the supervisor shall be appointed by the institute and should be full time approved faculty to BBA / MBAProgramme or PhD supervisor in Business Management.

(iii) **The External examiner shall be appointed from the list of full time approved teaching faculty of the BBA/MBAprogram by the University.**

(iv) **Each such External examiner shall examine a maximum of TWENTY students.**

(v) 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

instructionsissued by Universityat 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-

a. That the candidate has satisfactorily completed the Project work for not less than one session and

b. That the Project work is the result of the candidates 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 **beforeSemester-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:

(i) 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.**

(ii) 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
1st Semester	H.S.S.C/equivalent	-----	-------
2nd Semester	------	**1st Semester**	**-----**
3rd Semester	**-----**	**2nd Semester**	**4 subjects of 1st and 2nd Semesters taken together**
4th Semester	**-----**	**3rd Semester**	**As Above**
5th Semester	**1st and 2nd Semesters**	**4th Semester**	**4 subjects/ passing heads of 3rd and 4th Semesters taken together**
6th 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:

a. The question paper should be set in such a manner so as to cover the complete syllabus as prescribed by the University.

b. The Semester End examination shall be held as per the schedule notified by the University.

c. The question paper shall be of 80 marks & the time duration of the Semester End examination would be 3 hours.

d. 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.

e. Question no. Five shall include Four compulsory questions from any of the six units carrying 4 marks each.

f. 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 examinationsaccording 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 examinationhe/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.

5. 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.

6. 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.

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

Nagpur
Date : 29.08.2017

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 ofproduct, types of product, Product life cycle, Branding andpackaging, 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 RajanSaxena
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
5. House Pvt. Ltd.)
6. 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 b. Theory Question OR c. Numerical Question	8 Marks 8 Marks 16 Marks
2	II	a. Numerical Question b. Numerical Question	8 Marks 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. AgarwalaS.K.,Microeconomic Theory, Excel Books, New Delhi
2. Appannaiah, Reddy &Shanthi, BBM Semester Economics, 2006, Himalaya Publishing House, Mumbai.
3. Dholkia 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, PremL.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	Basic Grammar& Vocabulary : • 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 *Golden Harvest* • Words Often Confused	Reference Books: 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 MeeraBanerji (Trinity)
2	UNIT II	Business Communication • Memorandum Writing • Notice, Agenda and Minutes	1. Developing Communication Skills by Krishna Mohan and MeeraBanerji (Trinity)
		• Writing Advertisements for: Rent, Sale, Situations Vacant	2. Write Right by SaritaManuja (Macmillan/ Trinity)
3	UNIT III	Prose Items: • A Real Good Smile: Bill Naughton • What India Inc Wants: a. Our Muddled Generation: Dinesh Kumar b. Employers Look for Potential Employees, not Exam Results: Manish Sabharwal • The Thief: Ruskin Bond	Prescribed text : *Golden Harvest* by Orient BlackSwan

4	UNIT IV	Prose Items: • A Simple Philosophy: Seathl • Go, Kiss the World: SubrotoBagchi • My Struggle for an Education: Booker T. Washington	Prescribed text : *Golden Harvest* by Orient BlackSwan

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&VeenaElhance
2. Statistices : V. K. Kapoor – S. Chand & Sons
3. Statistics : B. New Gupta – SahityaBhavan 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 variab les, 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 BhauDaydar, “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
- SubbaRao, Personnel and Human Resources management, HPH.
- SeemaSanghi , 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
- SubbaRao, Personnel and Human Resources management, HPH.
- SeemaSanghi , 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 RajanSaxena, 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 RajanSaxena, 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. 16 OF 2018

(Issued under Provision of Section 12(8) of the Maharashtra Public Universities Act, 2016)

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

WHEREAS the Maharashtra Public Universities Act, 2016 is made applicable to the Universality w.e.f. 1st March 2017 (hereinafter referred to as the Act);

AND

Whereas, Section 12(8) of the act empowered the Vice-Chancellor to issue Direction for regulating the matter for which Statute / Ordinance / Regulations is not made or to amend the existing Statute / Ordinance / Regulations;

AND

Whereas, provision of section 12(8) provide that the Direction issued by the Vice-Chancellor shall automatically lapsed after 180 days.

AND

Whereas, Direction No. 24 of 2017 was issued by the Vice-Chancellor on 29.8.2017, which could not have been converted into the statute / Ordinance / Regulations within Six months.

AND

Whereas, Direction No. 24 of 2017 issued by the Vice-Chancellor on 29.8.2017 is required to be renewed for regulating the matter involved in the said direction.

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 (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 & Management on 5.4.2016.

AND

Whereas, the Special Task Committee in Computer Application in its meetings held on 5.4.2016 updated the existing syllabus 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 (Computer Application) (BCCA) Degree.

AND

Whereas, the **Vice-Chancellor, Rashtrasant Tukadoji Maharaj 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.

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 and 24 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 (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 (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. Siddharthvinayaka P. Kane, Vice-Chancellor, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur** in exercise of the powers conferred upon me under provision of section 12(8) of the Maharashtra Public Universities Act, 2016, do hereby issue following Directions to renew Direction No. 16 of 2018.

1. **This Direction shall be called " _____", Direction, 2018.**
2. **This Direction shall come into force with effect from the date of its issuance.**

THIS DIRECTION SHALL BE CALLED ¯DIRECTION GOVERNING THE EXAMINATION LEADING TO THE DEGREE OF BACHELOR OF COMMERCE (COMPUTER APPLICATION) (BCCA) (CREDIT BASE SEMESTER PATTERN) FACULTY OF COMMERCE & MANAGEMENT‖.

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

Part-I

(1) The Bachelor of Commerce (Computer Application) (BCCA) Semester-I Examination,
(2) The Bachelor of Commerce (Computer Application) (BCCA) Semester-II Examination,

Part-II

(3) The Bachelor of Commerce (Computer Application) (BCCA) Semester-III Examination,
(4) The Bachelor of Commerce (Computer Application) (BCCA) Semester-IV Examination,

Part-III

(5) The Bachelor of Commerce (Computer Application) (BCCA) Semester-V Examination,
(6) The Bachelor of Commerce (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 BCCA Semester - III Examination at the end of the Semester - III and BCCA 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) 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 thereto; 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.

Name of Examination	Candidate should have Passed in following Examinations	Candidate should have Completed the term and filled Examination Form
BCCA Semester - I	The Qualifying Examination mentioned in Paragraph – 4 (A)	-----
BCCA Semester - II	---	BCCA Semester – I
BCCA Semester - III	Passed 50% (5 passing heads) of Semester – I and Semester – II taken together.	BCCA Semester – II
BCCA Semester - IV	---	BCCA Semester – III
BCCA Semester - V	Passed BCCA Part – I (Semester – I & Semester – II) and Passed 50% (5 passing heads) of Semester – III and Semester – IV taken together.	BCCA Semester – IV
BCCA Semester - VI	----	BCCA 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, Direction No. 64 of 2016 and Direction No. 24 of 2017 shall stand repealed.

Sd/-

Nagpur

Dr. Siddharthvinayaka P. Kane,

Date : 1.8.2018

Vice-Chancellor,
Rashtrasant Tukadoji Maharaj
Nagpur University, Nagpur

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:

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.

(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				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													
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				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													
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				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													
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. Students should select any one subject from the SEC – I and any one subject from DSE – I compulsorily.
5. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
6. The practical shall be treated as a separate passing head.
7. Record should be prepared for Practical. Both Components should be included in Practical Record.
8. The candidate has to pass theory papers and Practical Paper separately.
9. 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.
10. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
11. 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				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													
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:

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. Students should select any one subject from the SEC – II and any one subject from DSE – II compulsorily.
5. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
6. The practical shall be treated as a separate passing head.
7. Record should be prepared for Practical. Both Components should be included in Practical Record.
8. The candidate has to pass theory papers, Practical Paper and Project separately.
9. 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.
10. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.
11. 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 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 re-examination 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 Bachelor of Commerce (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

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.

FORMULAE FOR CALCULATING SGPA:

$$= \frac{\sum Credits \times Grade\ Points}{\sum Credits}$$

Illustration for Calculation of SGPA

Sr. No.	Name of Subject	Credits	Marks obtained (out of 80)	Internal Assessment Marks (Out of 20)	Total Marks (Out of 100)	Grade Points	Credit Points (Credits X Grade Points)
1	English and Business Communication - I	4	43	17	60	6	24
2	Financial Accounting	4	52	18	70	7	28
3	Fundamentals of Computer	4	54	18	72	8	32
4	Programming in „C"	4	63	17	80	9	36
Total		16	212	70	282	30	120
Thus, SGPA = 120/16							7.7

FORMULAE FOR CALCULATING CGPA:

$$= \frac{\sum SGPA \times Total\ Credits}{\sum Total\ Credits}$$

Illustration for Calculation of CGPA

Semester	Total Credits	SGPA	SGPA X Total Credits
I	16	7.7	123.2
II	16	8.0	128.0
III	16	7.8	124.8
IV	16	7.5	120.0
V	16	7.8	124.8
VI	16	7.9	126.4
TOTAL	96	-	747.2

Thus, CGPA = 747.2/96 = **7.78**

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the Mark list/Transcript.

APPENDIX –A

QUESTION PAPER PATTERN

Bachelor of Commerce (Computer Application) (BCCA) Semester I / II / III / IV / V / VI (CBS) Examination

Subject Name
Paper – Course Code

Time: 3 Hours **Maximum Marks: 80**

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

Part - A

N. B. - 1. Each question carries 2 marks.
2. Answers should not more than 5 lines.

1. **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 3 marks.
2. Answers should not more than 10 lines.

2. **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 5 or 10 marks.

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

3. **Either**

(A)	Unit - I		5
(B)		**OR**	5
(C)			10

4. **Either**

(A)	Unit - II		5
(B)		**OR**	5
(C)			10

5. **Either**

(A)	Unit - III		5
(B)		**OR**	5
(C)			10

6. **Either**

(A)	Unit - IV		5
(B)		**OR**	5
(C)			10

QUESTION PAPER PATTERN OF ENGLISH AND BUSINESS COMMUNICATION - I

Bachelor of Commerce (Computer Application) (BCCA) Semester I (CBS) Examination

Subject: English and Business Communication - I
Paper – 1T1

Time: 3 Hours **Maximum Marks: 80**

N. B. - **a)** All questions are compulsory.
b) **LAQ -** Long Answer Questions to be answered in about 150 words
SAQ - Short Answer Questions to be answered in about 75 words approximately.

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)

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

3. A. ONE LAQ out of TWO from Unit III (10 × 1) = 10 Marks
B. TWO SAQs out of THREE from Unit III (5 x 2) = 10 Marks

4. A. THREE SAQs with internal choice from Prose Section of Unit IV (3x5 Marks)=15 Marks
B. ONE SAQ with internal choice from Poetry Section of Unit IV 05 Marks

QUESTION PAPER PATTERN OF ENGLISH AND BUSINESS COMMUNICATION - II

Bachelor of Commerce (Computer Application) (BCCA) Semester II (CBS) Examination

Subject: English and Business Communication - II
Paper – 2T1

Time: 3 Hours **Maximum Marks: 80**

N. B. - **a)** All questions are compulsory.
b) **LAQ -** Long Answer Questions to be answered in about 150 words
SAQ - Short Answer Questions to be answered in about 75 words approximately.

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) from Unit II 10 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 x 2) = 10 Marks

Q 4. A. THREE SAQs with internal choice from Prose Section of Unit IV (3x 5 Marks)=15 Marks
B. ONE SAQ with internal choice from Poetry Section of Unit IV 05 Marks

INTERNAL ASSESSMENT OF ENGLISH AND BUSINESS COMMUNICATION – I / II: 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.

1	**2 Assignments**	**6+6 = 12 Marks**
2	**Performance & Conduct**	**4 Marks**
3	**Attendance**	**4 Marks**
4	**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 - 6 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 - 6 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.

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 or 50% Marks should be deducted from total marks.
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 Semester _____ has satisfactorily completed the practical experiments prescribed by Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur 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 (Component – I)**	**Marks (Component – II)**
1.	Writing a Program or Problem (Algorithm & Flowchart)	20	20
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**

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 BCCA

- It is notified for general information of all concerned that the failure students of ***BCCA New Course (Annual Pattern introduced in 2014) shall be absorbed in the Credit Based Semester Pattern introduced from the session 2016-2017 Examination with the following scheme.***

1) The Failure students of **BCCA – I,** as per New Course (Annual Pattern introduced in 2014) **appeared in Sum 2016** should clear their backlog papers of BCCA – I, New Course (Annual Pattern introduced in 2014) **till Winter 2017 (i.e. Three attempts)**. If they fail to complete & pass till winter 2017, then they will have to appear in parallel papers of Semester Pattern introduced from 2016-17 as per absorption scheme indicated in Appendix - D.

2) The Failure students of **BCCA – II** as per New Course (Annual Pattern introduced in 2014) **appeared in Sum 2017** should clear their backlog papers of BCCA – II, New Course (Annual Pattern introduced in 2014) **till Winter 2018 (i.e. Three attempts)**. If they fail to complete & pass till winter 2018, then they will have to appear in parallel papers of Semester Pattern introduced from 2016-17 as per absorption scheme indicated in Appendix - D.

3) The Failure students of **BCCA - III** as per New Course (Annual Pattern introduced in 2014) **appeared in Sum 2018** should clear their backlog papers of BCCA – III New Course (Annual Pattern introduced in 2014) **till Winter 2019 (i.e. Three attempts)**. If they fail to complete & pass till winter 2019, then they will have to appear in parallel papers of Semester Pattern introduced from 2016-17 as per absorption scheme indicated in Appendix - D.

Admission Scheme for Annual Pattern Students (Backlog/Ex)

(Introduced in 2014)

Name of Examination	Candidate should have Passed in following Examinations	Candidate should have Completed the term and filled Examination Form
BCCA Semester - III	Passed 50% (4 passing heads) of BCCA Part – I (Annual Pattern introduced in 2014)	BCCA Part – I (Annual Pattern)
BCCA Semester - IV	---	BCCA Semester - III
BCCA Semester - V	Passed BCCA Part - I (Annual Pattern) AND Passed 50% (4 passing heads) of BCCA Part – II (Annual Pattern introduced in 2014)	BCCA Part - II (Annual Pattern)
BCCA Semester - VI	-	BCCA Semester - V

Clarification on Absorption Scheme

A student who has failed in one or more subjects of BCCA I and /or BCCA II and/or BCCA III (Introduced in 2014) shall be absorbed in the BCCA Program under this direction in the following manner:

a. The student has to take casual admission to Semester I and II by paying a nominal fee of Rs. 500 to the college as per the existing norms of the University
b. The student has to submit the University Examination Form for both the semester (I & II) and/or III & IV and/or V & VI for all the subjects under this Direction.
c. The subjects of all Semesters under this direction have been provided the equivalent subjects under the Direction No. 12 of 2014. A student shall get exemption in the subject/s under this direction, if he/she has passed equivalent subjects under Direction No. 12 of 2014.
d. A student shall not be required to appear and pass any subject under Direction No.12 of 2014 which does not have equivalent subject under this Direction.
e. A student has to pay the University Examination Fee along with the Examination Form only for the number of subjects he/she is appearing (The student shall not be asked to pay the examination fee for the subjects he/she securing exemption). The examination fee shall be as prescribed by the Competent Authority of R T M Nagpur University.
f. If the student has obtained exemption in all the subjects of a particular semester under this Direction, he/she has to submit the University Examination Form with a

Fee for one subject in order to generate Semester Pattern Marklists. This is the processing fee for marklists.

g. The Marklists of such absorbed students shall be prepared on following guidelines:
    i. The mark list shall be according to the Semester Pattern containing all the subjects of a particular semester.
    ii. The marks of the subject/s for which the student has availed exemption, shall be brought from the Annual Pattern Marklist of the student. In case, there are two different subjects in Semester Pattern having equivalence to only one subject in Annual Pattern e.g English, the marks obtained by the student in Annual Pattern shall be mentioned against both the equivalent subjects under Semester Pattern.
    iii. The marks obtained by a student in the subject/s he/she is actually appearing, shall be mentioned against those subject/s

APPENDIX –D

(A) BCCA Part – I

Old Course (Annual Pattern)➔New Course (Credit Based Semester Pattern)

Sr. No	Old Course (Annual Pattern)	Max. Marks	Sr. No	New Course (Credit Based Semester Pattern)	Max. Marks
Theory			**Theory**		
1	English & Business Communication	100	2T1	English and Business Communication - II	80
2	Principles of Business Management	100	2T2	Principles of Business Management	80
3	Financial Accounting	100	1T2	Financial Accounting	80
4	Information Systems	100	1T3	Fundamentals of Computer	80
5	Information Technology	100	2T4	E-Commerce and Web Designing	80
6	Introduction to Operating Systems	100	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 (Credit Based Semester Pattern)

Sr. No	Old Course (Annual Pattern)	Max. Marks	Sr. No	New Course (Credit Based Semester Pattern)	Max. Marks
Theory			**Theory**		
1	Statistics & Quantitative Techniques	100	4T1	Mathematics	80
2	Business Economics	100	3T2	Business Economics	80
3	Cost & Management Accounting	100	4T2	Business Law	80
4	Programming Skills (C Prog.)	100	3T3	Visual Basic Programming	80
5	E-Commerce & Web Designing	100	4T4	PHP & MySQL	80
6	MIS & System Analysis	100	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 (Credit Based Semester Pattern)

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

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 **five 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- I.**

   Note:
   - **i.** The students, who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional internal marks out of 20, should update in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - I.**
   - **ii.** The Students who already passed any subject of old course **B.Com. (Computer Application) (BCCA) Part – I with maximum theory marks 100, should be convert into its proportional Theory marks out of 80 and** proportional Internal marks out of 20 separately and should updated in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - I.**

4. 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.**

5. 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- II**.

   Note:
   - **i.** The students who will appear in parallel papers of **new course scheme** paper with maximum theory marks 80, will get proportional internal marks out of 20,

should update in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part–II.**

ii. The Students who already appeared and passed in any subject of old course **B.Com. (Computer Application) (BCCA) Part – II with maximum theory marks 100, should be convert into its proportional Theory marks out of 80 and** proportional Internal marks out of 20 separately and should update in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - II.**

6. 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- III**.

Note:

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

ii. The Students who already appeared and passed in any subject of old course **B.Com. (Computer Application) (BCCA) Part – III with maximum theory marks 100, should be convert into its proportional Theory marks out of 80 and** proportional Internal marks out of 20 separately and should update in **old course mark sheet** of **B.Com. (Computer Application) (BCCA) Part - III.**

APPENDIX- 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:

i. The Students who already appeared and passed in Practical of **old course B.Com. (Computer Application) (BCCA) Part – I 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 - I.

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- 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.

APPENDIX- 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.

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 SEMISTER 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 22nd July 1994 and has been amended from time to time,

AND

WHERAS, 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 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. ELIGIBILITYTO THECOURSE

- 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.(ComputerApplication) or B.B.A .Degree examination of Rashtrasant Tukdoji Maharaj Nagpur University or equivalent of any other recognized University.

- TheExaminationsforSemestersI,II,IIIandIVshallbeheldtwiceayearat Suchplacesandonsuchdatesasnotified bythe 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 are 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 **ALLOWEDTOKEEPTERM 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 Para5 of the direction.	-------
IISemester	---------	---------
IIISemester	----------	Semester I and II taken together i.e. 5 heads
IVSemester	----------	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 SYSTEMOF EVALUATION

- The M.COM. programme shall consist of **Fifteen** Papers or Subjects in old terminology and a project in any of are a 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.

Sd/-

Nagpur **Dr. S. P. Kane**

Date :21.6.2016 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
	Total		**240**	**320**	**80**	**400**	**16**

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
	Total		**240**	**320**	**80**	**400**	**16**

Semester-III

Course Code		Internal /University Examination	Total Hours	Marks			Credits
				Semester End Exam.	Internal Assessment	Total	
C31	**Core Group** 1. Advanced Management Accounting	Uni.	60	80	20	100	4
C 32	2. Statistical Techniques	Uni.	60	80	20	100	4
F 33	**Foundation Group- I** Direct Taxes **OR** Computer Application in Business	Uni.	60	80	20	100	4
E34	**Elective Group-I** Entrepreneurship Development **OR** Service Sector Management	Uni.	60	80	20	100	4
	Total		**240**	**320**	**80**	**400**	**16**

Semester-IV

Course Code		Instruction Hours	Marks			Credits
			Semester EndExam.	InternalAssessment	Total	
C41	**Core Group** International Business Environment	60	80	20	100	4
C42	Project	60	100	-	100	4
F43	**Foundation Group- II** Indirect Taxes **OR** Operations Research	60	80	20	100	4
E44	**Elective Group-II** E-Commerce **OR** Company Law	60	80	20	100	4
	Total	**240**	**340**	**60**	**400**	**16**

Summary of the Total Marks and Credits

Sr. No.		Instruction Hours	Marks			Credits
			Semester End Exam.	Internal Assessment	Total	
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
Total		**960**	**1300**	**300**	**1600**	**64**

- 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
1	**Internal assessment Total marks**	**20**
2	**Semester wise End Examination marks**	**80**
	Total marks per subject	**100**

M.COM. Examination Semester–I

Subject	Paper	Maximum Marks	Minimum Passing Marks
1. Advanced Financial Accounting	University Paper	80	
	Internal Assessment	20	
	Total	100	40
2. Indian Financial System	University Paper	80	
	Internal Assessment	20	
	Total	100	40
3.Managerial Economics	University Paper	80	
	Internal Assessment	20	
	Total	100	40
4. Marketing Management	University Paper	80	
	Internal Assessment	20	
	Total	100	40

M.COM. Examination Semester–II

Subject	Paper	Maximum Marks	Minimum Passing Marks
1. Research Methodology	University Paper	80	
	Internal Assessment	20	
	Total	100	40
2. Advanced Cost Accounting	University Paper	80	
	Internal Assessment	20	
	Total	100	40
3.Co-operation	University Paper	80	
	Internal Assessment	20	
	Total	100	40
4. Human Resource Management	University Paper	80	
	Internal Assessment	20	
	Total	100	40

M.COM. Examination Semester–III

Subject	Paper	Maximum Marks	Minimum Passing Marks
Core Group **1. Advanced Management Accounting**	University Paper	80	
	Internal Assessment	20	
	Total	100	40
2 Statistical Techniques	University Paper	80	
	Internal Assessment	20	
	Total	100	40
Foundation Group **3. Direct Taxes OR** **Computer Application in Commerce**	University Paper	80	
	Internal Assessment	20	
	Total	100	40
4.Entrepreneurship Development OR Service Sector Management	University Paper	80	
	Internal Assessment	20	
	Total	100	40

M.COM. Examination Semester–IV

Subject	Paper	Maximum Marks	MinimumPassing Marks
1. International Business Environment	University Paper	80	40
	Internal Assessment	20	
	Total	100	
2.Project	Project work (Evaluation by External Examiner)	50	20
	Project work (Evaluation by Internal Examiner)	50	20
3. Indirect Taxes **OR** **Operations Research**	UniversityPaper	80	40
	InternalAssessment	20	
	Total	100	
3.Entrepreneurship Development **OR** **Company Law**	UniversityPaper	80	40
	InternalAssessment	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
TOTAL	100

- 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.

Project shall carry 100 marks	**Marks**	
	Maximum	**Minimum Passing Marks**
Project work (Evaluation by External Examiner)	50	20
Project work (Evaluation by Internal Examiner)	50	20
Total	100	40

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 Hourduration** each. Each Theory Paper must cover minimum 60 Clock Hours of Teaching and 240Clock 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

Core Group	1. Advanced Management Accounting
	2. Statistical Techniques
Foundation Group I	3. Direct Taxes **OR** Computer Application in Commerce
Elective Group	4. Entrepreneurship Development **OR** Service Sector Management

Semester–IV

Core Group	1. International Business Environment
	2. Project
Foundation Group II	3. Indirect Taxes **OR** Operations Research
Elective Group	4. E - Commerce **OR** 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 = 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.
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 EndExam	Max.MarksInternal	TotalMaximumMarks	Total Minimum Marks	Marks Obtained Internal	TotalMarks Obtained	Grade(G)	Gradepoints(GP)	Credit oftheCourse(C)	(Credit) X (Grade points)(CX GP)	SGPA=ΣCG/ΣC
C-11	80	20	100	40	20	60	B	8	4	32	**SGPA** =136/16 =8**.5** **GradeA** **RESULT =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	
Total	**320**	**80**	**400**	**160**	**70**	**255**	**--**	**34**	**16**	**136**	

Illustrations of Calculation:- Fail

Subjects	Max.MarksSemester EndExam	Max.MarksInternal	TotalMaximumMarks	Marks ObtainedSemesterE	MarksObtained Internal	TotalMarks Obtained	Grade(G)	Gradepoints(GP)	Credit oftheCourse(C)	(Credit) X (Grade points)(CX GP)	SGPA=ΣCG/ΣC
C-31	80	20	100	28	12	40	F	0	4	00	**SGPA** =72/16 =4**.5** **GradeF** **RESULT =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	
Total	**320**	**80**	**400**	**159**	**57**	**216**	**--**	**18**	**16**	**72**	

Illustration for calculating CGPA

		MaximumSemester EndExam.	ObtainedatSemesterEnd Exam.	MaximumInternalAssessment	Obtainedat InternalAssessme	Total	ObtainedTotal	SGPA	TotalCreditPoints	SGPA X TotalCreditPoints	CGPA
1	Semester–I	320	185	80	70	400	255	9.12	16	146	**CGPA=596/64=9 .3125 GRADE=O**
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	
Total		1280	836	320	260	1600	1096	--	64	596	

Note:
According to traditional method the percentage would be = (1096/1600) x 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 ease 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.

APPENDIXIV

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

Core Group	1. Advanced Management Accounting
	2. Statistical Techniques
Foundation Group	3. Direct Taxes **OR** Computer Application in Commerce
Elective Group	4. Entrepreneurship Development **OR** Service Sector Management

Semester–IV

Core Group	1. International Business Environment
	2. Project
Foundation Group	3. Indirect Taxes **OR** Operations Research
Elective Group	4.E - Commerce **OR** Company Law

II. ABSORPTION SCHEME

Sr. No.	SUBJECT OF OLD COURSE BEFORE 2012-13	ALTERNATIVE SUBJECT OF NEW COURSE2012-13
1.	Management Concepts and Organizational Behavior	Human Resource Management
2	Advanced FinancialAccounting	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 SalesManagement	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 studentsof old course shall be given 05 attempts to pass their examination with old course starting from implementation of New Course.

I. ABSORPTIONSCHEME FOR COURSE AFTER 2012-13

Sr. No.	SUBJECT OF OLD COURSE AFTER 2012-13	ALTERNATIVE SUBJECT OF NEW COURSE OF 2016-17
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-operationand Rural Development	Co-operation
8.	Human Resource Management	Human Resource Management
9.	Advanced Management Accounting	Advanced Management Accounting
10.	TaxProcedures&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

DIRECTION NO.25 OF 2017

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 22nd 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 and Ordinance for the purpose of prescribing examinations leading to the degree of Master of Computer Management in the Faculty of Commerce and phasic repeal 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.

AND

Whereas, The Sub-committee submitted the Semester Draft Syllabus of MCM 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, RashtrasantTukadojiMaharaj 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 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 **MCMSemester – 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 **MCMSemester - 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 RashtrasantTukadojiMaharaj Nagpur University, Nagpur.

(D) An applicant of MCM Semester - IV Examination shall have appeared in Semester - III Examination.

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
Semester - III	PGDCCA /PGDCS/ MCM Semester-I	(Not applicable for PGDCCA/ PGDCS) Semester-II
Semester - IV	-----	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 43 of 2016 (Choice Based Credit System) shall stand repealed.

Sd/-

Nagpur **Dr. S. P. Kane**
Date : 29.08.2017 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
Theory								
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
Practical								
1P1	**Practical-I :**Programming in C & Operating Systems	P-I	8	100	50	Nil	Nil	4
1P2	**Practical-II :**Tally (ERP 9)& MS-Office	P-II	8	100	50	Nil	Nil	4
	Total		32	520				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) MCM Part-I

Semester – II

Course Code	Subjects	Paper	Teaching Scheme per weeks (hr)	End Sem Examination	Min Marks	Internal Assessment	Min Marks	Credits
Theory								
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
Practical								
2P1	**Practical-I :**Core Java	P-I	8	100	50	Nil	Nil	4
2P2	**Practical-II :** HTML, JavaScript	P-II	8	100	50	Nil	Nil	4
	Total		32	520				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.

(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
Theory								
3T1	Advance Database Management System	I	4	80	40	20	10	4
3T2	Principles & Techniques of Management	II	4	80	40	20	10	4
3T3	**Electives :** (i) PHP & MySQL (ii) VB.Net (iii) C#.Net	III	4	80	40	20	10	4
3T4	**Compulsory Foundation** (i) Research Methodology	IV	4	80	40	20	10	4
Practical								
3P1	**Practical- I :**SQL & PL/SQL	P-I	8	100	50	Nil	Nil	4
3P2	**Practical-II :**Electives	P-II	8	100	50	Nil	Nil	4
	Total		32	520				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.

(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
Theory								
4T1	ASP.Net	I	4	80	40	20	10	4
4T2	**Electives:** (i) Advance Java (ii) Android Programming (iii) Python	II	4	80	40	20	10	4
4T3	**Elective Foundation:** (i) Big Data &Hadoop (ii) Software Engineering (iii)Strategic Management	III	4	80	40	20	10	4
Practical								
4P1	**Practical-I:**ASP.Net	P-I	8	100	50	Nil	Nil	4
4P2	**Practical-II:**Electives	P-II	8	100	50	Nil	Nil	4
Project								
4P3	PROJECT	Project	8	100	50	-------	------	4
	Total		36	540				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.

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 bepermitted 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 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 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 = 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
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 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:

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 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.

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. **Either**

(A)	Unit - I		5
(B)			5
		OR	
(C)			10

Q4. **Either**

(A)	Unit - II		5
(B)			5
		OR	
(C)			10

Q5. **Either**

(A)	Unit - III		5
(B)			5
		OR	
(C)			10

Q6. **Either**

(A)	Unit - IV		5
(B)			5
		OR	
(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.

 # <u>Classification Of Marks on Project :-</u>

Report & Documentation	40
Viva voce (External)	40
Viva voce (Internal)	20
Total Marks	**100**

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

(B)<u>Practical and Classification of Marks on Practical</u>

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 completedthe practical experimentsprescribed by RashtrasantTukadojiMaharaj Nagpur University for the subject _____during the academic year _____.

Signature
Practical In-charge Head of the Department

Signature
Head of the Department

Signature
Internal Examiner

Signature
External Examiner

Date: _____

Classification Of Practical Marks :-

Practical – I		**Marks**
1.	Writing a Program or Problem (Algorithm & Flowchart)	40
2.	Execute on a computer	
3.	Taking Hard Copy	
Practical – II		
1.	Writing a Program or Problem (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 MCM

It is notified for general information of all concerned that the failure students of **MCM OldCourse (SemesterPattern)** 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 (Semester Pattern)	M. Marks	Sr. No	New Course CBCS Pattern (Choice Based Credit System)	Max Marks
Semester – I					
Theory			**Theory**		
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
Practical			**Practical**		
P - I	**Practical - I :** Programming in C & Operating Systems	100	1P1	**Practical - I :** Programming in C & Operating Systems	100
P - II	**Practical -II :** Tally & MS-Office	100	1P2	**Practical - II :** 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
Semester – II					
Theory			**Theory**		
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
Practical			**Practical**		
P - I	Practical-I : Visual Basic	100	2P1	**Practical-I :**Core Java	100
P - II	Practical-II : HTML, JavaScript	100	2P2	**Practical-II :** 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
Semester – III					
Theory			**Theory**		
I	Quantitative Techniques & OR	80	3T1	Advance Database Management System	80
II	Core Java	80	3T2	Principles & Techniques of Management	80
III	DBMS and oracle	80	3T3	**Electives :** (i) PHP & MySQL (ii) VB.Net (iii) C#.Net	80
IV	Research Methodology & Software Product & Project Management	80	3T4	**Compulsory Foundation** (i) Research Methodology	80
Practical			**Practical**		
P - I	Practical-I : Core Java	100	3P1	**Practical- I :**SQL & PL/SQL	100
P - II	Practical-II : Oracle	100	3P2	**Practical-II :**Electives	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
Semester – IV					
Theory			**Theory**		
I	Information Security & Cyber Laws	80	4T1	ASP.Net	80
II	PHP& My-SQL	80	4T2	**Electives:** (i) Advance Java (ii) Android Programming (iii) Python	80
III	Electives : (i) Advanced Java (ii) OOPS & C++ (iii) ASP.Net	80	4T3	**Elective Foundation:** (i) Big Data &Hadoop (ii) Software Engineering (iii)Strategic Management	80
Practical			**Practical**		
P - I	Practical-I : PHP& My-SQL	80	4P1	**Practical-I:**ASP.Net	100
P - II	Practical-II : Elective	100	4P2	**Practical-II:**Electives	100
Project			**Project**		
Proj	PROJECT	100	4P3	PROJECT	100

APPENDIX –E

MCM 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&PritiSinha, 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 ofFundamental 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 MCM-I to submit their Original Documents (Mark Sheet, Migration Certificate, TC etc) along with their balance fees up to 10th 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 10th 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 10th 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 MCM-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						
Total salary						

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 >= 10 and <= 100.
b) List the records whose rate is >= 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, 20% of sales dept. and balance for office)		10,000
13.Advertisement		6,000
14.Salary of Manager (30% of Factory, 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 expare on the capcity of 60%.

Particulars	Rs.
Semi variable exp:	
Maintenance & repairs	1,25,000
Labour	5,00,000
Sales dept. Expenses	1,50,000
Other overheads	1,25,000
	9,00,000
Variable Cost :	
Material	12,00,000
Labour	13,00,000
Other Expenses	2,00,000
	27,00,000
Fixed Cost :	
Wages & salaries	4,20,000
Rent & Taxes	2,80,000
Depreciation	3,50,000
Other overheads	4,50,000
	15,00,000
Total Cost	51,00,000

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.		89,000
		2,99,000
Semi-variable exp : (at 50% capacity)		
Maintenance & Repairs		25,000
Indirect Labour		99,000
Sales Department salaries		29,000
Sundry administration exp.		26,000
		1,79,000
Variable Exp. (at 50% capacities)		
Materials		2,40,000
Labour		2,56,000
Other expenses		38,000

5,34,000

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:-

Particualrs	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.
LabourRs. 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% Rs.	60% Rs.	70% Rs.
Variable Overheads			
A) Material	---	60,000	---
B) Labour	---	24,000	---
Semi-Variable Exp.			
1) Electric (20% fixed)	---	15,000	---
2) Repairs &Maint. (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:-

a) Out of total sale 20% sales in cash & balance will be collected in the next month.

b) Suppliers allowed the credit period of 2 months.

c) Wages and all other exp. will be paid in the following months.

d) Dividends to share holders& Bonus to employees will be paid in the month of mayRs. 10,000 &Rs. 15,000 Respectively.

e) 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.

f) 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 30thJune.

MonthSales	Materials	Wages	Overheads	
Jan	60,000	40,000	11,000	6,200
Feb.	56,000	48,000	11,600	6,600
Mar.	64,000	50,000	12,000	6,800
Apr.	80,000	56,000	12,400	7,200
May	84,000	62,000	13,000	8,600
June	76,000	50,000	14,000	8,000

a) Payment of material & overheads will be done in the following month.

b) Payment of wages will be done in the same month.

c) 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.

d) Dividend on Preference shares Rs. 30,000/- will be paid on 1st may.

e) The amount of share call each Rs. 25,000/- will be received on 1st April & of 1st June each.

f) Machines costing Rs. 10,000/- will be established in the month of January but payment will be done in the month of June.

g) The selling commission 5% will be paid in the following months of actual sales.

h) 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 Exp.	Wages Exp.	Manu. Exp.	Office Exp.	Selling Exp.
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 willbe received in the months of mayRs. 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 installments 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 marchRs. 10,000/- & Amount of share premium Rs. 2,000/- will be received with 2nd call.

5) Period allowed to customer for payment is1 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, sprint, gets, puts. **File input/output:**fprintf, facanf, 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&DipaliSrivastava, 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. HarshalArolkar, Simplifying C, Dreamtech Press.
3. Dr. S.Dey&MridulGhosh, Computer Fundamentals and C Programming, SPD.
4. YashwantKanetkar, 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 ofProgramming 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 foe x as;-
$S = x + x^2 + x^3 + x^4 + \ldots\ldots\ldots$

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!.....

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 tocreate 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, In 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. YashavantKanetkar, Unix Shell Programming, BPB Publications.

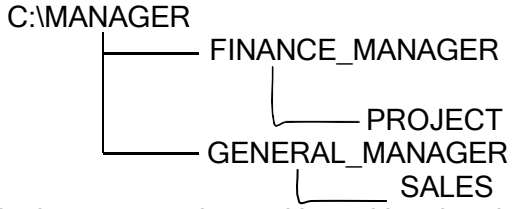
Reference Books:

1. Tanenbaum, Modern Operating Systems, PHI.
2. Stuart E. Madnick, John J. Donovan, Operating Systems, McGraw-Hill.
3. Dhananjay M. Dhamdhere, 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 ofIntroduction to Operating Systems

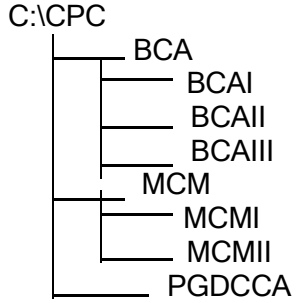
1. Make a directory naming VMV in DOS. Under that make three sub directories BCAI, BCA II, BCAIII. Also explain the commands used in making the directories and subdirectories in DOS.

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.txtto 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 tosearch 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 discursement.

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 andTally.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 ofComputerized 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 _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, girgaamchaupaty, 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 in Tally ERP9.

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
ProprietorsCapital	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 PvtLtd	Sundry Debtors	yes	310000
Bank of Baroda	Bank Accounts	No	102000

5. **Record the following vouchers in the books of Universal company ltd.**
   a. 04-04-2014 withdrawn Rs. 20000 from bank of india and transferred to petty cash book.
   b. 08-04-2014 paid 2000 from petty cash for buying stationery for office.
   c. 15-04-2014 made purchase from ultra tech cement ltd. Worth Rs. 45000
   d. 19-04-2014 issued cheque to ultra tech cement ltd for Rs. 45000
   e. 21-04-2014 sold goods worth of Rs. 75000 to civic centre association
   f. 25-04-2014 received a cheque from civic center association for Rs. 75000. The same was deposited in the bank on the same date.
   g. 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.**
   a. 02-04-2014 withdrawn RS. 10000 From bank of barodaand transeferred to petty cash book.
   b. 05-04-2014 paid 1000 from petty cash for office expenses.
   c. 11-04-2014 made purchase from Hindustan unilever ltd. Worth Rs. 33000
   d. 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 receivedcheque 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/- fromUltratech 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 Steelworth Rs. 450000 fromEmbee 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 trainingcentre.
b. Universal company Ltd. Made the payment after deducting the TDS amount.
c. On 27th 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 28thMay, 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. Akhileshstarted his business on 1st Jan. 2012 with Rs.5000, his transaction for the month were as following, prepare Cash A/C.

January 2012	Particular	Amt
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 :

Jan 2003	Particular	Amt	
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 RandhirKappor	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 :

Nov. 2003	Particular	Amt
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 Potdarfor 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 qtyRs. 32000
2. Cash received from sangamenterprisesRs. 15000
3. Goods purchase in cash bill no. 69 Rs. 35000
   a. B/W tv (sony) 4% 4 qtyRs. 20000
   b. Audio (onida) 4% 5 qtyRs. 15000
4. Goods sale on cash rs, 19000
   a. Color tv (lg) 4% 1 qtyRs. 15500

b. Audeo (onida) 4% 1 qtyRs. 3500

5. Goods purchase in cash from vikram enterprises bill no. 45 Rs. 40000
   a. Color tv (Lg) 4% 2 qtyRs. 20000
   b. Refrigerator (Videocon) 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 QtyRs. 5700
   c. Audio (onida) 4% 1 qtyRs. 3500
8. Cash paid to ravikulkarnirs. 1500
9. Cheque no. 159 paid to central engineering co. Rs 15000
10. Refrigerator purchase on cash Rs. 30000 form 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 lokmatRs. 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 qtyRs. 10000
    b. Washing machine (Samsung) 4% 1 qtyRs. 9100
    c. Refrigerator (Videocon) 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 WadiGodown
   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 wadigodown.
   a. Color tv (akai) 4% 2qty Rs.21000.
   b. Refrigerator (Videocon) 4% 1qty Rs. 11300
   c. Washing Machine (samsung) 4% 1qtyRs. 9200.
4. Goods purchase in cash from national Trading co. & store Nandanwangodown.
   a. Audio (Philips) 2qty 4% Rs.6000
   b. W/M (Samsung) 1qty 4% Rs. 10000
5. Credit sales to Ravina traders Rs. 51800 wadigodown.
   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 vikasenterprises 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 oncredit fromrama& 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 wadigodownRs 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 chequeRs. 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 nandanwangodown 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 (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.sahilRs. 2000/-
8. Withdrawn Rs. 4000/-
9. Paid insurance premium Rs. 200/-
10. Purchase table without vat Rs.2000/-

MCM 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. RashmiKanta Das, Core Java for Beginners, Vikas Publishing.
3. Joel Murach, Murach's Java Programming, ShroffPubishers.
4. SharanamShah &Vaishali Shah, Core Java 8 for Begineers, ShroffPubishers.
5. Patrick Naughton& Herbert Schildt, JAVA 2 – The Complete Reference 3/E, McGraw-Hill.
6. B. M. Harwani, Java for Professionals, ShroffPubishers.

Practical List ofCore 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 StringBufferclasss 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 URLand 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-

efficient, 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, Fundamentas 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, AlessandroVernet, Professional Web 2.0 Programming, Wiely.
2. Michael P. Papazoglou, Pieter M.A. Ribbers, e-Business, Wiely.
3. Brian P. Hogan, HTML5 and CSS3, Shroff Publishers.
4. Sandeep panda, AngularJS – Novice to Ninja, Shroff Publishers.

Practical List ofE-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.

<table>
<tr><td>CITY</td><td>TOWN</td></tr>
<tr><td rowspan="3">NAGPUR</td><td>SHANKAR NAGAR</td></tr>
<tr><td>DHARAMPETH</td></tr>
<tr><td>RAMDASPETH</td></tr>
<tr><td rowspan="3">BOMBAY</td><td>DADAR</td></tr>
<tr><td>V.T.</td></tr>
<tr><td>THANE</td></tr>
</table>

9. Write a program in HTML to illustrate the usage of COLUMN SPAN (COLSPAN) in the below given format.

<table>
<tr><td>NAME</td><td>LIVING CITY</td><td>COMPANY CITY</td></tr>
<tr><td>SUJEET</td><td colspan="2">CHHINDWARA</td></tr>
<tr><td>TAPAN</td><td>NAGPUR</td><td>BOMBAY</td></tr>
<tr><td>RAM</td><td colspan="2">BOMBAY</td></tr>
<tr><td>MOHAN</td><td colspan="2">BANGALORE</td></tr>
<tr><td>KRISHNA</td><td colspan="2">PUNE</td></tr>
<tr><td>MANGESH</td><td>BOMBAY</td><td>NAGPUR</td></tr>
<tr><td>AVINASH</td><td colspan="2">DELHI</td></tr>
</table>

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.
    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.

15. Write a program in HTML to demonstrate the usage of Image file with the below
    a) given specification.
    b) Background color of page is GREEN.
    c) The size of Image is 400 x 400 pixels.
    d) The Image should contain a border.
    e) Alternate text is ¯IMAGE NOT FOUND‖.
    f) 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.
    a) Background color is RED.
    b) The size of Image is 300 x 300 pixels.
    c) 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 5th 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.

MCM Part-II

Semester - III

Paper - I: Advance Database Management Systems (3T1)

UNIT – I

Introduction to Database Management System(DBMS) – Introduction, Why a Database, Characteristic of Data in a Database, Database Management System, Why DBMS, Types of Database Management System, Object-Oriented Model, Object-Relational Model, Deductive/Inference Model, Compression Between the various Database Model. **Introduction to Relational Database Management System(RDBMS)-** Introduction , RDBMS Terminologies, The Relational Data Structure, Relational Data Integrity, Relational Data Manipulations, Codd's Rule. **Database Architecture and Data Modeling** – Introduction, Conceptual, Physical and Logical Database Model, External or Logical Level. **Entity-Relationship Modeling**- Introduction, E-R Model, Components of an E-R Model, E-R Modeling Symbols. **Data Normalization-** Introduction, First Normal Form(1NF), Second Normal Form(2NF), Third Normal Form(3NF), Boyce-Codd Normal Form(BCNF), Fourth Normal Form(4NF), Fifth Normal Form(1NF), Domain-Key Normal Form(DKNF), Renormalizations. **Relational Algebra and Relational Calculus**- Relational Algebra, Relational Calculus.

UNIT – II

Introduction to Structured Query Language(SQL) – Introduction, History of SQL, Characteristic SQL, Advantages of SQL, SQL in Action, SQL Data Types and Literals, Types of SQL Commands, SQL Operators, Arithmetic Operators, Compression Operators, Logical Operators, Set Operators, Operators Precedence. **Tables, View and Index** – Tables, View , Index. **Nulls** – Introduction, Nulls in Action, When not to Use Nulls, Effect of Nulls, Null Indicators, Null and Compression Operator, Testing of Nulls, Tests of true, False and Unknown, BETWEEN, LIKE and IN Condition, ALL and ANY Condition, EXITS Condition, ORDERED BY Clause. **Query And Subqueries** - Query ,Subqueries. **Aggregate Function** – Introduction, General Rule, COUNT() and COUNT(*), SUM(), AVG(), MAX() and MIN(). **Insert, Update and Delete Operation** – Introduction, Insert Statement, Bulk Insert of Data, Update Statement, Delete Statement**Cursors** – Introduction, Cursor Operation, Cursor Positions, Cursor Coding Guideline. **Join And Union** - Join, Union.

UNIT – III

Programming with SQL- Introduction, Query Processing, Embedded SQL, Dynamic SQL. **Query-By-Example(QBL)** – Introduction, Select Query in QBE, Make-Table Query, DELETE Query, UPDATE Query, APPEND Query, QBE and SQL. **QUEL**- Introduction, Data Definition in QUEL, Data Retrieval in QUEL, Data UPDATE Operation in QUEL. **Triggers** – Introduction, What is Trigger?, Types of Triggers, Triggers Syntax, Combining Triggers Types, Setting Inserted Value, Disabling and Enabling Triggers, Replacing Triggers, Dropping Triggers, Advantages and Limitations of Triggers. **Introduction-** PL/SQL Blocks, PL/SQL Architecture, SQL Support, PL/SQL Variables, PL/SQL Data Types, PL/SQL Precompilers, Conditional And Sequential Control Statements, Control Statements, Cursors, Iterative Control Statements, PL/SQL Exceptions, PL/SQL Blocks, PL/SQL Triggers, Types Of Triggers, Procedures And Packages.

UNIT – IV

Data Ware House and Data Marts – Introduction, Data in the Data Ware House, Data Ware House, Design Issues, OLTP vs. Data Ware House, Configuration of Data Ware House Process, Data Ware House Components, Structure of Data Ware House, Data Ware House Life Cycle, Data Ware House Environment, Data Architecture Data Ware House Operation, How much Data?, Data Integration and Transformation Process. **Data Mining** - Introduction, What is Data Mining?, Evaluation of Data Mining, Data Mining Verification vs. Discovery, Tasks Solve by Data Mining, Advantages of Data Mining. On-Line Transaction Processing(OLTP) - Introduction, Designing Criteria OLTP Features, Practical Application of OLTP, Future trends in OLTP. **On-Line Analytical Processing(OLAP)** – Introduction, OPAP and OPAP, OLAP and Data Ware Housing, Use of OLAP, Benefits of OLAP, Evaluation of OLAP, OLAP Concept and Characteristic, Cood's OPLAP Product Evaluation Rules, Different Style of OLAP.

Text Book:

1. Alexis Leon, Mathews Leon, Database Management System, LeaonVikas.

Reference Books:

1. RiniChakrabarti, ShilbhadraDasgupta&Subhash K. Shinde, Advance Database Management System, Dreamtech Press.
2. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, Database System Concepts, McGraw-Hill.
3. G. K. Gupta, Database System Concepts, McGraw-Hill.
4. Dr. P. S. Deshpande, SQL & PL/SQL for Oracle 11g, Dreamtech Press.
5. Ivan Bayross, SQL, PL/SQL, BPB Publications.

Practical List ofSQL & PL/SQL

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	primary key
Name	varchar2	30	first letter must start with _A'
Address	varchar2	30	
City	varchar2	30	
DOB	date		
Phone	number	11	unique key
Class	varchar2	10	All upper letter
Marks	number	(10, 2)	Not null can't be 0

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 tablespace datauser 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.

11. Write an algorithm, draw a flowchart and develop a PL/SQL program to check given number is odd or even.

12. Write an algorithm, draw a flowchart and develop a PL/SQL program to check number is reverse or not.

13. Write an algorithm, draw a flowchart and develop a PL/SQL program to check number is palindrome or not.

14. Write an algorithm, draw a flowchart and develop a PL/SQL program to find the number is Armstrong or not.

15. Write an algorithm, draw a flowchart and develop a PL/SQL program to find the addition of all the number in the given range.

16. Write an algorithm, draw a flowchart and develop a PL/SQL program to find the number is prime or not.

17. Write an algorithm, draw a flowchart and develop a PL/SQL program to calculate factorial of a given number.

18. Write an algorithm, draw a flowchart and develop a PL/SQL program to generate Fibonacci series.

19. Write an algorithm, draw a flowchart and develop a PL/SQL program to insert a new element in a given position in the array.

20. Write an algorithm, draw a flowchart and develop a PL/SQL program to delete the duplicate element from the array.

21. Write an algorithm, draw a flowchart and develop a PL/SQL program to sort the data in ascending order.

22. Write an algorithm, draw a flowchart and develop a PL/SQL program to find reverse of a string.

23. Write an algorithm, draw a flowchart and develop a PL/SQL program to find palindrome of a string.

24. Write an algorithm, draw a flowchart and develop a PL/SQL program to calculate number of char, spaces, words from given string.

25. Write an algorithm, draw a flowchart and develop a PL/SQL program to find largest and smallest element of given array using function concept.

26. Write an algorithm, draw a flowchart and develop a PL/SQL program to print ASCII table.

27. Write an algorithm, draw a flowchart and develop a PL/SQL program to change sale_price of product_master table where pro_no is _C001' and insert records with date on which price was changed last in new_master table whose fields are prod_no, date, sale_price.

28. Write an algorithm, draw a flowchart and develop a PL/SQL program to accept the employee whose job is programmer and update the salary of the employee. Display how many rows are affected.

29. Write an algorithm, draw a flowchart and develop a PL/SQL program to display the name, dept, name and salary of first 10 employees getting the highest salary using explicit cursor.

30. Write an algorithm, draw a flowchart and develop a PL/SQL program to check whether emp_no of employees exists or not using procedure.

Paper - II: Principles & Techniques of Management (3T2)

UNIT – I

Concepts And Nature of Management, Evolution of Management Thought, Management Process, Social Responsibilities of A Business, Coordination,

UNIT – II

Nature and Process Of Planning, Methods And Types Of Plans, Forecasting And Decision Making, Management Information System, Organizing Functions.

UNIT – III

Departmentation And Organization Structure, Nature And Scope Of Staffing, Training And Development, Performance Appraisal And Problem.

UNIT – IV

Direction and Supervision, SUPERVISION, Motivation and Moral, MOTIVATION, MORAL, Leadership, Communication, Techniques of managerial control.

Text Book:

1. R.S.N. Pillai& S. Kala, Principles & Practice of Management, S. Chand.

Reference Books:

1. Chandra Bose, Principles of Management & Administration, PHI.
2. P C Tripathy& P N Reddy, Principles of Management, McGraw-Hill.
3. V.P. Michel, Principles of Management.
4. Mohan, Developing of Communication Skills.
5. Philip Kotlar, Marketing Management.
6. C. B. Memoria, Personnel Management.
7. AshaKaul, Business Communication, PHI.

Paper - III: Elective
Elective – I: PHP & My-SQL (3T3)

UNIT - I

Introducing PHP- Why PHP and MySQL?**,**What Is PHP?, What Is MySQL?.**Server-Side Scripting Overview**- Static HTML,Client-Side Technologies, What Is Server-Side Scripting Good For?**Learning PHP Syntax and Variables-** PHP Is Forgiving, HTML Is Not PHP, PHP's Syntax Is C-Like, Comments, Variables, Types in PHP: Don't Worry, Be Happy, Type Summary, The Simple Types, Output. **Learning PHP Control Structures and Functions-** Boolean Expressions, Branching, Looping, Alternate Control Syntaxes, Terminating Execution, Using Functions, Function Documentation, Defining Your Own Functions, Functions and Variable Scope, Function Scope.**Passing Information with PHP-**HTTP Is Stateless, GET Arguments, A Better Use for GET-Style URLs, POST Arguments, Formatting Form Variables, PHP Superglobal Arrays.**Learning PHP String Handling-** Strings in PHP, String Functions.**Learning Arrays-** The Uses of Arrays, What Are PHP Arrays?, Creating Arrays, Retrieving Values, Multidimensional Arrays, Inspecting Arrays, Deleting from Arrays, Iteration. **Learning PHP Number Handling-** Numerical Types, Mathematical Operators, Simple Mathematical Functions, Randomness.**PHP Gotchas-** Installation-Related Problems, Rendering Problems, Failures to Load Page, Parse Errors, Missing Includes, Unbound Variables, Function Problems, Math Problems.

UNIT - II

Introducing Databases and MySQL- What Is a Database?, Why a Database?, PHP-Supported Databases.**Installing MySQL**- Obtaining MySQL, Installing MySQL on Linux, Installing MySQL on Microsoft Windows.**Learning Structured Query Language (SQL)-** Relational Databases and SQL,SQL Standards, The Workhorses of SQL, Database Design, Privileges and Security.**Learning Database Administration and Design-** Basic MySQL Client Commands, MySQL User Administration, Backups, Replication, Recovery.**Integrating PHP and MySQL-** Connecting to MySQL, Making MySQL Queries, Fetching Data Sets, Getting Data about Data, Multiple Connections, Building in Error Checking, Creating MySQL Databases with PHP, MySQL Functions.**Performing Database Queries-** HTML Tables and Database Tables, Complex Mappings, Creating the Sample Tables.**Integrating Web Forms and Databases-** HTML Forms, Basic Form Submission to a Database, Self-Submission,Editing Data with an HTML Form.**Improving Database Efficiency-** Connections — Reduce, Reuse, Recycle, Indexing and Table Design, Making the Database Work for You. **MySQL Gotchas-** No Connection,

Problems with Privileges, Unescaped Quotes, Broken SQL Statements, Too Little Data, Too Much Data, Specific SQL Functions, Debugging and Sanity Checking.

UNIT - III

Introducing Object-Oriented PHP- What Is Object-Oriented Programming?, Basic PHP Constructs for OOP, Advanced OOP Features, Introspection Functions, Extended Example: HTML Forms, Gotchas and Troubleshooting, OOP Style in PHP. **Advanced Array Functions-** Transformations of Arrays, Stacks and Queues, Translating between Variables and Arrays, Sorting, Printing Functions for Visualizing Arrays.**Examining Regular Expressions-** Tokenizing and Parsing Functions, Why Regular Expressions?, Perl-Compatible Regular Expressions, Example: A simple link-scraper, Advanced String Functions. **Working with the File system-** Understanding PHP File Permissions, File Reading and Writing Functions, File system and Directory Functions, Network Functions, Date and Time Functions, Calendar Conversion Functions.**Working with Cookies and Sessions-** What's a Session?, Home-grown Alternatives, How Sessions Work in PHP, Sample Session Code, Session Functions, Configuration Issues, Cookies, Sending HTTP Headers, Gotchas and Troubleshooting. **Handing Exceptions with PHP-** Error Handling in PHP, Other Methods of Error Handling, Logging and Debugging.**Debugging PHP Programs-** General Troubleshooting Strategies, A Menagerie of Bugs, Using Web Server Logs, PHP Error Reporting and Logging, Error-Reporting Functions. **Learning PHP Style-** The Uses of Style, Readability, Maintainability, Robustness, Efficiency and Conciseness, HTML Mode or PHP Mode?, Separating Code from Design.

UNIT - IV

Sending E-Mail with PHP- Sending E-Mail with PHP, Sending Mail from a Form, **Integrating PHP and Java-** PHP for Java programmers, Integrating PHP and Java.**Integrating PHP and JavaScript**- Outputting JavaScript with PHP, PHP as a Backup for JavaScript, Static versus Dynamic JavaScript.**Integrating PHP and XML-** What Is XML?, Working with XML, Documents and DTDs, SAX versus DOM, DOM, SAX, SimpleXML API, A Sample XML Application, Gotchas and Troubleshooting. **Creating and Consuming Web Services with PHP**- The End of Programming as We Know It, REST, XML-RPC, SOAP, .NET, Current Issues with Web Services, Project: A REST Client. **Creating Graphics with PHP-** Your Options,HTML Graphic**s,** Creating images using gd, Gotchas and Troubleshooting.

Text Book:

1. Steve Suehring, Tim Converse & Joyce Park, PHP and MySQL, Wiely.

Reference Books:

1. Joel Murach& Ray Harris, murach's PHP and MySQL, Shroff Publishers.
2. Timothy Boronczyk, Elizabeth Naramore, Jason Gerner, Yann Le Scouarnec, Jeremy Stolz, Michael K. Glass, Beginning PHP6, Apache, MySQL Web Development, Wiley.
3. Jason Gilmore, Beginning PHP and MySQL.
4. Teach Yourself MySQL in 21 days – Techmedia.

Practical List of PHP & My-SQL

1. Write an algorithm, draw a flowchart and Write a PHP script to get the PHP version and configuration information.

2. Write an algorithm, draw a flowchart and Write a PHP script to print the Fibonacci series up to the entered range.

3. Write an algorithm, draw a flowchart and Write a PHP script to change the color of first character of a word.

4. Write an algorithm, draw a flowchart and Write a PHP script to test whether a number is greater than 30, 20 or 10 using ternary operator.

5. Write an algorithm, draw a flowchart and Write a PHP script to calculate the factorial of a number (non-negative integer) using functions.

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
    a) Transform a string all uppercase letters.
    b) Transform a string all lowercase letters.
    c) Make a string's first character uppercase.
    d) Make a string's first character of all the words uppercase.
9. Write an algorithm, draw a flowchart and Write a PHP script to display all the numbers between 200 and 250 that are divisible by 4.

10. Write an algorithm, draw a flowchart and Write a PHP class which displays an introductory message like "Hello All, Good Morning ", where "Morning" is an argument value of the method within the class.

11. Write an algorithm, draw a flowchart and Write a PHP Calculator class which will accept two values as arguments, then add them, subtract them, multiply them together, or divide them on request.

12. Write an algorithm, draw a flowchart and Write a PHP script to convert a date from yyyy-mm - dd to dd – mm-yyyy.

13. Write an algorithm, draw a flowchart and Write a PHP script to remove the whitespaces from a string.

14. Write an algorithm, draw a flowchart and Write a PHP function that checks if a string is all lower case.

15. Write an algorithm, draw a flowchart and Write a PHP script tocheck whether a entered string is palindrome or not.

16. Write an algorithm, draw a flowchart and Write a PHP script to print Fibonacci series using recursion.

17. 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.

18. Write an algorithm, draw a flowchart and Write a PHP script to replace the first 'the' of the following string with 'That' –
    Sample: 'the quick brown fox jumps over the lazy dog.'
    Expected Result: That quick brown fox jumps over the lazy dog.

19. Write an algorithm, draw a flowchart and Write a PHP script tocheck that emailid is valid or not.

20. 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.

21. Write a SQL statement to create simple table countries including columns country_id, country_name and region_id.

22. 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.

23. 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.

24. Write a SQL statement to insert a record with your own value into the table countries against each columns region_id.

25. Write a SQL statement to rename the table countries to country_new.

26. Write an algorithm, draw a flowchart and Write a PHP script to which will receive the data captured by the HTML form, display the name of the form and also display the message Data Entered Successfully on the HTML form page after performing the validations.

27. Write an algorithm, draw a flowchart and Write a PHP script to creating, retrieving and deleting data from the cookie using POST Method.

28. Write an algorithm, draw a flowchart and Write a PHP scriptto create, retrieve and deleting the session data.

29. Write an algorithm, draw a flowchart and Write a PHP script to navigate the HTML Page with the use of JavaScript and PHP.

30. Write an algorithm, draw a flowchart and Write a PHP script to create login form with the fields‘ username and password with validation.

31. Write an algorithm, draw a flowchart and Write a PHP script to send e-mail from a form.

32. Write an algorithm, draw a flowchart and Write a PHP script to demonstrate the use of REST.

33. Write an algorithm, draw a flowchart and Write a PHP script to demonstrate the use of SOAP.

34. Create a table in MySQL named Programmer having the fields‘ id, sex, age, Language, OS, and Country with constraint, insert up to 20 values and write a PHP Script to generate a Bar Graph according to specific column the user selected.

35. Write an algorithm, draw a flowchart and Write a PHP script to create a registration form having two buttons Submit and Reset with validations. The form data should be submitted in MySQL databasewith coding to integrate the MySQL with PHP.

Paper - III: Elective
Elective – II: VB. Net (3T3)

UNIT - I

Visual Basic .NET and the .NET Framework: The Common Language Runtime, Understanding Assemblies, The .NET Security Model. **The Visual Basic .NET Development Environment:** Working with the Visual Studio IDE, Creating a Visual Basic .NET Solution. **The Elements of Visual Basic .NET:** Visual Baisc .NET: The Foundation, Getting Started, Classes, Types, and Objects. **Visual Basic .NET Operators. Software Design, Conditional Structures, and Control Flow:** Control Flow,Conditional Statements,Loops, Pausing, Resuming, and Exiting Iteration.

UNIT - II

Methods: What is Method, Method Data, Method Access Characteristics, Properties, Introduction to Exception Handling, Design and Construction of Method. **Classes:** Class characteristics, Inheritance. **Exception Handling and Classes:** Structured Exception Handling, Exception Statements, Creating your own Exception Class. **Collections, Arrays, and Other Data Structures:** Stacks, Queues, Arrays, Jagged Arrays, Programming against Arrays, Array Exceptions.

UNIT – III

Advanced Interface Patterns:Adapter, Delegates, and Events: Adapters and Wrappers, Delegates, sorting Data with Delegates, Multicast Delegates. **Data Processing and I/O :** Data Processing, Working with Strings, Members of the String Class, Classic Visual Basic String Functions, String Formatting, Building Strings with String builder. Files and Directories, Streams.

UNIT – IV

Interfacing with the End User: Windows Form, Introduction to Threading, MDI Application, Components and Controls, Menus and Toolbars, Response to User Input, Collecting User Input, Presentation and Informational Controls, Drag and Drop. **Getting Ready to Release:** The System. Diagnostics Namespace, Enabling Debugging, Run-time Configuration Files, Working with the Debug Class, Tracing and Trace Class, Debugging with Visual Studio .NET, The Visual Studio .NET Compiler.

Text Book:

1. Jeffry R. Shapiro, The Complete Reference, Visual Basic .NET McGraw- Hill.

Reference Books:

1. Thearon Willis, Jonathan Crossland, Richard Blair, Beginning CB.Net 2003, Dreamtech Press, Wiley.
2. Francesco Balena, Programming Microsoft Visual Basic.net, Microsoft Press.
3. Jeffrey Kent, Visual basic.Net – A Beginner's Guide, McGraw- Hill.

Practical List ofVB. Net

1. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate the sum of all digits of a number.

2. Write an algorithm, draw a flowchart and develop a VB.NET console application to implement the sine series.

3. Write an algorithm, draw a flowchart and develop a VB.NET console application to remove all duplicate elements from an 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 Armstrong or not.

7. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate the decimal number from binary number.

8. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate the first 50 prime and unprimed numbers.

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 binary 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 and remove duplicate element.

13. Write an algorithm, draw a flowchart and develop a VB.NET console application to create jagged array and arrange data in ascending order.

14. Write an algorithm, draw a flowchart and develop a VB.NET console application to calculate day of the week from a date without using any in build function.

15. Write an algorithm, draw a flowchart and develop a VB.NET console application to demonstrate exception handling.

16. Write an algorithm, draw a flowchart and develop a VB.NET windows application to check the user id and password is valid or not.

17. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create a scientific calculator.

18. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create text editor.

19. Write an algorithm, draw a flowchart and develop a VB.NET windows application to generate stopwatch.

20. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create a start menu using status bar.

21. Write an algorithm, draw a flowchart and develop a VB.NET windows application to load the images & run Executable files using the file control.

22. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create trial version DLL.

23. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create a menu and perform any operation.

24. 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.

25. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create popup menu.

26. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create your own delegates.

27. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create data bound control for retrieving the data from database.

28. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create crystal report.

29. Write an algorithm, draw a flowchart and develop a VB.NET windows application to create different dialog box and perform any operation.

30. Write an algorithm, draw a flowchart and develop a VB.NET windows application to enter an e-mail ID into a textbox and check the e-mail ID is valid or not.

Paper - III: Elective
Elective – III: C#. Net(3T3)

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 Langue 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. **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

UNIT - II

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, TheSystem.Array Class, ArrayList Class. Manipulating Strings – Introduction, Creating String, String Methods, Inserting String, Comparing String, Finding String, Mutable String Arrays of String, Regular Expressions.**Structures and Enumerations** – Introduction, Structurs, Structs with Methods, Nested Structs, Difference between Classes and Structs, Enumerations, Enumerator Base Type, Enumerator type Conversion.

UNIT - III

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. **Interface: Multiple Inheritance** – 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.

UNIT - IV

Delegates and Events – Introduction, Delegates, Delegates Declaration, Delegates Methods, Delegates Instantiation, Using Delegates, Multicast Delegates, Events.**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. **Multithreading in C#** - Introduction, Understanding the System.Threading Namespace, Creating and Starting a Thread, Scheduling a Thread, Synchronizing Threads, Threading Pooling. **Window Form and Web-based Application Development on .NET** – Introduction, Creating Window Form, Customizing a Form, Understanding Microsoft Visual Studio 2005, Creating and Running a SimpleWinApp Windows Application, Overview of Design Patterns, Creating and Running a SimpleWinApp2 Windows Application, Web-based Application Errors.

Text Book:

1. E. Balagurusamy, Programming in C#, McGraw-Hill.

Reference Books:

1. Rod Stephens, C# 5.0 – Programmer's Reference, WroxA 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 year is a leap year or not.

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, To check the given number is Armstrong or not, To calculate the sum of all the digits of a number.

4. Write an algorithm, draw a flowchart and develop a C#.Net console application to print the Following Pattern:

```
      1
    2   2
  3   3   3
4   4   4   4
```

5. Write an algorithm, draw a flowchart and develop a C#.Net console application to display the following pattern-

   Computer

Compute
Comput
Compu
Comp
Com
Co
C

6. Write an algorithm, draw a flowchart and develop a C#.Net console application to print the Pascal Triangle.

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 second largest 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 separate character, digit and special symbols from an alpha numeric string and display them in ascending order sorting.

11. 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.

12. Write an algorithm, draw a flowchart and develop a C#.Net console application to withdraw, deposit & transfer money to the account using method overloading.

13. Write an algorithm, draw a flowchart and develop a C#.Net console application to overload unary operator _-' and perform subtraction operation.

14. 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.

15. Write an algorithm, draw a flowchart and develop a C#.Net console application to implement the concept of constructor overloading.

16. Write an algorithm, draw a flowchart and develop a C#.Net console application to implement the concept of hierarchical inheritance.

17. Write an algorithm, draw a flowchart and develop a C#.Net console application to implement the concept of interface.

18. Write an algorithm, draw a flowchart and develop a C#.Net console application to combine two delegates.

19. Write an algorithm, draw a flowchart and develop a C#.Net console application to display the priority of the thread.

20. Write an algorithm, draw a flowchart and develop a C#.Net console application to convert feet to inches using Delegates.
21. Write an algorithm, draw a flowchart and develop a C#.Net console application to copy the contents from one file to another file.

22. Develop a C#.Net windows application to design and develop a simple calculator.

23. Develop a C#.Net windows application to design and develop a simple Notepad.

24. Develop a C#.Net windows application to develop a Birthday Reminder programme.

25. Develop a C#.Net windows application to develop a Database Connectivity with all controls.

Paper - IV: Compulsory Foundation
Research Methodology(3T4)

UNIT – I

Research process, Problem and Hypothesis:

About Research - Introduction, Application of research, Definitions of research, Characteristics/Features of a good research, Types of research, Research Methods and Methodology, Research/Scientific Methods/Discovery, Research approaches, Application of research in management (Research applications in marketing management, Production management, Financial management, Human resource management, Current status of research in India), Limitations of research. **Research Process** - Defining and Formulating the Research Problem, Extensive Literature Survey, Development of the Working Hypothesis, Preparing the Research Designs, Determining the Sample Designs, Collecting the Data (Data Collection), Execution of the Project, Analysis of the Data, Hypothesis Testing and Verification, Generalization, Interpretation and drawing conclusions, Preparation of the report or writing the thesis. **Research Problem -** What is Research Problem?, Components of a research problem, Selection of a research problem, Technique involve in defining a research problem, Sources of problem, Research Proposal or Synopsis, Preparing synopsis for the research, Preparing research Plan. **Hypothesis -** Sources of hypothesis, Origin of hypothesis, Characteristics of a good hypothesis.

UNIT – II

Research Design and Sampling Design:

About Research Design - Introduction, Definition, Components of a research designs, Concepts related to research designs, Types of research designs. **Sampling Design –** Definition of sampling?, Features of the sampling technique, Essentials of an ideal sample, Types of sampling, Selecting/Calculating the sample size, Determination of sample size *n* When estimating the population mean, Some basic technologies of sampling, Common sampling distribution, Sampling theory.

UNIT – III

Data Collection, Preparation of Questionnaire and Schedule:

About Data Collection – Introduction, Primary data, Secondary data, Collection of primary data, Sources of secondary data, Creating a mechanism for gathering secondary data. **Questionnaire and Schedule –** Merits, Demerits, Formulation of Questionnaire, Various Method/ Technique for getting the Response, Construction of Questionnaire, Schedule, Types of Schedules, Difference between Questionnaire and Schedules, Types of Questions, Case Study Method.

UNIT – IV

Analysis of Data, Hypothesis Testing, Role of SPSS and Excel:

Analysis of Data -Introduction, Processing of data, Diagrammatic presentation in research, Scaling. **Role of Statistics -**Relational Statistics, Inferential Statistics(Inductive Statistics), Measures of Central Tendency, Types of central tendency or Average, Standard Deviation, Skewers, Correlation , Z-Test, t-Test or t-Distribution. **Research Hypothesis –** Introduction of Research hypothesis, The Rationale for Hypothesis Testing, A General Procedure for Hypothesis Testing, Steps Involved in Hypothesis Testing, Procedure for Testing Hypothesis, Two-Sides and One-Sided Tests. **Role of SPSS –** Introduction, The Variables view, Statistical Types in SPSS, The SPSS Interface, Running procedures from the Menus, SPSS output files.**Role of MS Excel -** Excel and Research, The Excel spreadsheet, The Spreadsheet - The Container, Parts of the Spreadsheet, Create a new File, Save a new file, Open an existing file, Close a file, Navigating the spreadsheet, A simple spreadsheet, Simple formulas, Insert row and columns, Sorting, Chart wizard, Using Excel to determine a confidence interval, Using Excel for t-test of hypothesis, The t-test for Dependent(and Matched-Pair) Samples, Using Excel for ANOVA, Using Excel for Correlation, Using Excel for Linear Regression, Using Excel for Chi-Square Tests.

Text Book:

1. MukulGupta ,Deepa Gupta, Research Methodology, PHI.

Reference Books:

1. Dr. C. R. Kothari, Research Methodology, New Age International (P Ltd) Publishers.
2. Dr. J. Y. Khan, Research Methodology, A. T. H. Publishing Corporation.
3. Dr. PrasantSarangi, Research Methodology, Taxmann s.
4. Briony J Oates, Researching Information Systems and Computing, SAGE Publications.
5. Uma Sekaran& Roger Bougie, Research Methods for Business, Wiley.
6. Dr. Vijay Upagade& Dr. ArvindShende, Research Methodology, S. Chand.

MCM Part-II

Semester - IV

Paper - I: ASP.Net (4T1)

UNIT – I

An introduction to ASP.NET programming: An introduction to web applications, An introduction to ASP.NET development. **How to develop a one-page web application:** How to work with ASP.NET web sites, How to use Visual Studio to build a web form, How to add validation controls to a form, How to add C# code to a form, How to test a web application. **How to use HTML5 and CSS3 with ASP.NET applications:** The Future Value application with CSS formatting, The HTML and CSS skills that you need. **How to develop a multi-page web application:** How to work with multi-page web sites, How to use session state. **How to test and debug ASP.NET applications:** How to test an ASP.NET web site, How to use the debugger, How to use the trace feature.

UNIT –II

How to use the standard server controls: How to use the common server controls, How to use the button controls, How to use the list controls. **How to use the validation controls:** Introduction to the validation controls, How to use the validators, Validation techniques. **How to work with state, cookies, and URL encoding:** How to use view state, How to use session state, How to use application state and caching, How to use cookies and URL encoding. **How to use master pages:** How to create master pages , How to create and develop content pages, How to customize content pages. **How to use themes:** An introduction to themes, How to work with themes and skins. **How to use site navigation and ASP.NET routing:** How to use the navigation controls, How to use ASP.NET routing, How to use the navigation controls with ASP.NET routing.

UNIT – III

An introduction to database programming: An introduction to relational databases, An introduction to ADO.NET 4.5, How to use the DataList control, How to use data binding, How to customize the GridView control, How to use the DetailsViewcontrol , How to use the FormView control. **How to use object data sources with ADO.NET:** An introduction to object data sources, How to create a data access class, A Category Maintenance application. **How to secure a web site:** An introduction to SSL, How to use a secure connection**. How to authenticate and authorize users:** An introduction to authentication, How to set up authentication and authorization, How to use the login controls. **How to use email, custom error pages, and back-button control:** How to send email, How to use custom error handling, How to handle the back-button problem.

UNIT – IV

How to configure and deploy ASP.NET applications: How to use the Web Site Administration Tool, An introduction to deployment, How to use one-click deployment, How to create and use a Setup program. **How to use ASP.NET Ajax:** An introduction to Ajax, An introduction to ASP.NET Ajax, How to use the ASP.NET Ajax server controls, An application that uses ASP.NET Ajax. **How to create and use WCF and Web API services:** An introduction to web services, How to create a WCF service, How to create

a web site that consumes a WCF service, How to create a Web API service, How to create a web site that consumes a Web API service. **An introduction to ASP.NET MVC:** An introduction to MVC, An introduction to ASP.NET MVC, How to work with views, How to work with controls and postbacks.

Text Book:

1. Mary Delamater & Anne Boehm, murach's ASP.Net Web Programming with C#, Shroff Publishers.

Reference Books:

1. ASP.Net Black Book, Kogent Learning Solutions Inc, Dreamtech Press.
2. Jason Gaylord, Christian Wenz, PranavRastogi, Todd Miranda, Scott Hanselman, Professional ASP.Net in C# & VB, Wrox A Wiley Brand.
3. ASP.Net with C#, Kogent Learning Solutions Inc, Dreamtech Press.

Practical List of ASP.NET

1. Create a page in ASP.NET using VB.NET or C# to display the following Web Controls:
   1. A button with text ¯click me‖. The button control must be in the center of the form.
   2. A label with a text hello
   3. A checkbox. The form name must be Web Controls.

2. Create a page in ASP.NET using VB.NET or C# that displays a button in green color and it should change into yellow when the mouse moves over it.

3. Create a page in ASP.NET using VB.NET or C# containing the following controls:
   1. A ListBox
   2. A Button
   3. An Image
   4. A Label

   The listbox is used to list items available in a store. When the user clicks on an item in the listbox, its image is displayed in the image control. When the user clicks the button,the cost of the selected item is displayed in the control.

4. Create a page in ASP.NET using VB.NET or C# that take a student name from the user, add that name in list-box control. And delete the chosen name from the list-box.

5. Create a page in ASP.NET using VB.NET or C# for book sales. Enter the quantity, title and price of the book. Calculate the extended price, discount (15%) and after discount, the actual price of the book. Show the summery of book sales. (Like total no of books, total discount given, total discounted amount and average discount.) You will need command buttons- calculate, clear sale.

6. Create a page in ASP.NET using VB.NET or C# using HTML Server controls that take user name, address, and city, state and country name from the user and display it.

7. Create a page in ASP.NET using VB.NET or C# using HTML Server controls that convert given currency into another selected currency. For that you need a drop-down-list.

8. Create a page in ASP.NET using VB.NET or C# to get a user input such as the boiling point of water and test it to the appropriate value using Compare Validator.

9. Create a page in ASP.NET using VB.NET or C# that uses a textbox for a user input name and validate it for RequiredField Validation.

10. Create a page in ASP.NET using VB.NET or C# that gets user input such as the user name, mode of payment, appropriate credit card. After the user enters the appropriate values the Validation button must validates the values entered.

11. Create a page in ASP.NET using VB.NET or C# to declare one TextBox control, one Button control, one Label control, and one RegularExpressionValidator control in an .aspx file. The submit() function checks if the page is valid. If it is valid, it returns "The page is valid!" in the Label control. If it is not valid, it returns "The page is not valid!" in the Label control. If validation fails, the text "The zip code must be 5 numeric digits!" will be displayed in the RegularExpressionValidator control.

12. Create a page in ASP.NET using VB.NET or C# to the database with ADO.NET for Inserting Data.

13. Create a page in ASP.NET using VB.NET or C# to the database with ADO.NET for Updating Data.

14. Create a page in ASP.NET using VB.NET or C# to the database with ADO.NET for Deleting Data.

15. Create a page in ASP.NET using VB.NET or C# to the database with ADO.NET for Search Data.

16. Create a page in ASP.NET using VB.NET or C# that contains a list of following technologies:
    - ASP.NET, ADO.NET, C#.
    - It also contains a textbox in which the user has to enter a name and a textarea in which the user has to enter his comments. When the Submit is clicked, the output should display the name entered in the textbox and the user-selection from the listbox. All the above should be displayed with the tracing for the page being enabled.

17. Create a page in ASP.NET using VB.NET or C# that generates the ―IndexOutOfRange‖ exception when a button is clicked. Instead of displaying the above exception, it redirects the user to a custom error page. All the above should be done with the trace for the page being enabled.

18. Create a page in ASP.NET using VB.NET or C# to create a simple Web Service that converts the temperature from Fahrenheit to Celsius, and vice versa create a simple Web Service that converts the temperature from Fahrenheit to Celsius, and vice versa. Also write an ASP program to consume this web service.

19. Create a page in ASP.NET using VB.NET or C# to create a proxy.

20. Create a page in ASP.NET using VB.NET or C# that has a form taking the user‟s name as input. Store this name in a permanent cookie & whenever the page is opened again, then value of the name field should be attached with the cookie‟s content.

21. Create a page in ASP.NET using VB.NET or C# to create a Session dictionary using object tag. In session-on start add keys for Time, UserAgent, RemoteIP& add appropriate values. Create a simple page to display the values.

22. Create a page in ASP.NET using VB.NET or C# to implement Session tracking using user authentication.

23. Create a page in ASP.NET using VB.NET or C# to delete all cookies of your web site that has created on the client's computer.

24. Create a page in ASP.NET using VB.NET or C# to run video.

25. Create a page in ASP.NET using VB.NET or C# forDynamic images uploading by the user using FileUpload control and setting the profile image by the user in a website.

Paper - II: Elective
Elective – I: Advance Java (4T2)

UNIT - I

Introducing Swing – JFC, The MVC Architecture, Applet, Window Panes, Important Classes of the javax.swing Package, Setting the Look and Feel of Components, An Applet with Swing Components. **Working with JDBC** - Introducing JDBC, Exploring JDBC Drivers, Exploring the Features of JDBC, Describing JDBC APIs, Exploring Major Classes and Interfaces, Exploring JDBC Processes with the java.sql Package, Working with Transactions. **Network Programming -**Networking Basics, Network Programming in Java Using the java.net Package, Establishing the two-way Communication between Server and Client, Retrieving a file at server, Learning the DatagramSocket and DatagramPacket Classes, Understanding the Content and Protocol Handlers.

UNIT - II

RMI, Naming Service, Serialization, and Internationalization - RMI Architecture, RMI Registry, Dynamic Code Loading in RMI, RMI API, Creating a Distributed Application, using RMI, Naming Services, Directory and Naming Services, Overview of JNDI, Object Serialization, Internationalization, Java and Internationalization, Internationalizing Web Applications. **Introducing the Java EE Platform** - Enterprise Application Concepts, Introducing the Java EE 6 Platform, HTTP Protocol, Exploring Web Application, Introducing Web and Application Servers. **Working with Servlets** - Exploring the Features of Java Servlet, Exploring New Features in Servlet 3.0, Exploring the Servlet API, Explaining the Servlet Life Cycle, Understanding Servlet Configuration, Creating a Sample Servlet, Creating a Servlet by using Annotation, Working with ServletConfig and ServletContext Objects, Working with the HttpServletRequest and HttpServletResponse Interfaces, Exploring Request Delegation and Request Scope, Describing a Session, Introducing Session Tracking, Exploring the Session Tracking Mechanisms, Using the Java Servlet API for Session Tracking.

UNIT - III

Introducing Event Handling and Filters - Introducing Events, Intoducing Event Handling, Working with the Types of Servlet Events, Introducing Filters, Exploring Filter API, Configuring a Filter, Creating a Web Application Using Filters, Using Initializing Parameter in Filters, Manipulating Responses, Discussing Issues in Using Threads with Filters. **Working with JavaServer Pages (JSP)** - Introducing JSP Technology, Exploring New Features of JSP 2.1, Listing Advantages of JSP over Java Servlet, Exploring the Architecture of a JSP Page, Describing the Life Cycle of a JSP Page, Working with JSP Basic Tags and Implicit Objects, Working with Action Tags in JSP, Exploring the JSP Unified EL, Using Functions with EL.

UNIT - IV

JSP Tag Extensions and Standard Tag Library - Exploring the Elements of Tag Extensions, Exploring the Tag Extension API, Working with Classic Tag Handlers, Working with Simple Tag Handlers, Working with JSP Fragments, Working with Tag Files, Introducing JSTL, Working with the Core Tag Library, Working with the XML Tag Library, Working with the Internationalization Tag Library, Working with the SQL Tag Library, Working with the Functions Tag Library. **Introducing Hibernate** - Introducing Hibernate, Exploring the Architecture of Hibernate, Downloading Hibernate, Exploring HQL, Understanding Hibernate O/R Mapping, Working with Hibernate, Implementing O/R Mapping with Hibernate.

Text Book:

1. Prof. M. T. Savaliya, Advance java Technology, Dreamtech Press.

Reference Books:

1. Dr. Ashwin Mehta, Sarika Shah, Advance Java for Students, Shroff Publishers.
2. Patrick Naughton& Herbert Schildt, The Complete Reference: Java 2, McGraw-Hill.
3. Joseph Weber, Using Java 2 Platform, Prentice Hall of India.
4. Uttam K. Roy, Advance Java Programming, Oxford University.
5. KanikaLakhani, Advance Java Programming, Katson Books.

Practical List of Advance Java

1. Write a Java program to develop an applet that draws a circle. The dimension of the applet should be 500 x 300 pixels. The circle should be centered in the applet and have a radius of 100 pixels. Display your name centered in a circle.(using drawOval() method).

2. Write a Java program to draw ten red circles in a vertical column in the center of the applet.

3. Write a Java programto developcalculator using Swing and also add image on Button.

4. Write a Java program to find the IP address or computer name of local machine.

5. Write a Java program with class GreetingClient is a client program that connects to a server by using a socket and sends a greeting, and then waits for a response.

6. Write a Java program that implements a simple client/server application.The client sends data to a server the server receives the data,uses it to produce a result and then sends the result back to the client.The client displays the result on the console. For ex the data send from the client is a numbers and the result produce by the server is the addition of that number.

7. Write a Java program to create an application that displays a frame with a menu bar. When a user selects any menu or menu item, display that selection on a text area in the center of the frame.

8. Write RMI application where client supplies data to withdraw and server response with new account balance. Provide your custom security policy for this application.

9. Write a Java program to developdatabase application that allows user to Insert, Update, Delete values in a Table and manages appropriate exception handling when wrong values are entered.

10. Write a Java program to present a set of choice for user to select a product and display the price of product.

11. Write a Java program to show validation of user using servlet.

12. Write a Java program to develop a simple servlet question answer application.

13. Write a Java program to pass any URL string and display all 4 elements of URL string.

14. Write a Java program to trap all the events of mouse listener interface.

15. Write a Java program to show validation of user using JSP.

16. Write a Java program to display message on browser using JSP.

17. Write a Java program to connect with the google.com and retrieve the html code of default web page.

18. Write a Java program to present a set of choices for a user to select stationary products and display the price of product after selection from the list.

19. Write a Java program to demonstrate typical editable table, describing employee details for a software company.

20. Write a Java program to trap all the events of key listener interface.

21. Write a Java program of calling one servlet by another servlet.

22. Write a Java program to develop a simple servlet calculator application.

23. Write a Java program to set scope of beans.

24. Write a Java program to create a JSP application that accepts registration details from the student and stores the details into the database table.

25. Write a Java program to develop a JSP application that authenticate user login as per the registration details. If login success then forward user to the index page otherwise show login failure message.

26. Write a Java program using split pane to demonstrate a screen divided into two parts contains a name of planets and another display the image of planet. When user selects the planet name from the left screen appropriate image of display in right screen.

27. Write a Java program to develop a web application to add items in the inventory using JSP.

28. Write a Java program to create a web form which processes servlet and demonstrates use of cookies and sessions.

29. Write a Java program to develop a simple JSP program for user login form with static and dynamic database.

30. Write a Java program to develop a JSP program to display the grade of a student by accepting the marks of five subjects.

Paper - II: Elective
Elective – II: Android Programming (4T2)

UNIT - I

Getting an Overview of Android Introducing Android -Listing the Version History of Android Platform, Discussing Android APIs, Describing the Android Architecture Application Framework, Exploring the Features of Android, Discussing about Android Applications, The Application Components, The Manifest File, The Command-Line Tools, Developing and Executing the First Android Application, Using Eclipse IDE to Create an Application, Running Your Application, Exploring the Application, Using Command-Line Tools. **Using Activities, Fragments and Intents in Android -**Working with Activities, Creating an Activity, Starting an Activity, Managing the Lifecycle of an Activity, Applying Themes and Styles to an Activity, Displaying a Dialog in the Activity, Hiding the Title of the Activity, Using Intents, Exploring Intent Objects, Exploring Intent Resolution, Exploring Intent Filters, Resolving Intent Filter Collision, Linking the Activities Using Intent, Fragments, Fragment Implementation, Finding Fragments, Adding, Removing, and Replacing Fragments, Finding Activity Using Fragment, Using the Intent Object to Invoke Built-in Application. **Working with the User Interface Using Views and ViewGroups -**Working with View Groups, The LinearLayout Layout, The RelativeLayout Layout, The ScrollView Layout, The TableLayout Layout, The FrameLayout Layout, The TabLayout Using the Action Bar, Working with Views, Using the TextView, Using the EditText View, Using the Button View, Using the RadioButton View, Using the CheckBox View, Using the ImageButton View, Using the ToggleButton View, Using the RatingBar View, Binding Data with the AdapterView Class, Using the ListView Class, Spinner, Using the Gallery View, Designing the AutoTextCompleteView, Implementing Screen Orientation, Anchoring the Views of the Current Activity, Customizing the Size and Position of the Views, Designing the Views Programmatically, Handling UI Events, Handling User Interaction with Activities, Handling User Interaction with the Views, Specialized Fragments, ListFragment, DialogFragment, PreferenceFragment, Creating Menus The Options Menu The Context Menu The SubMenus.

UNIT - II

Handling Pictures and Menus with Views -Working with Image Views, Displaying Images in the Gallery View, Displaying Images in the Grid View, Using the ImageSwitcher View, Designing Context Menu for Image View, Using the AnalogClock and DigitalClock Views, Embedding Web Browser in an Activity, Notifying the User Creating the Toast Notification, Creating the Status Bar Notification, Creating the Dialog Notification. **Storing the Data Persistently -**Introducing the Data Storage Options, Using Preferences, Using the Internal Storage Exploring the Methods Used for Internal Storage, Developing an Application to Save User Data Persistently in File, Using the External Storage Exploring the Methods Used for External Storage, Developing Application to Save File in SD Card, Using the SQLite Database Creating the Database Helper Class, Creating the Layout and Main Activity Class, Creating the Layout and Activity for the Insert Operation, Creating the Layout and Activity to Search a Record, Creating the Activity Class to Fetch All Records, Creating the Layout and Activity for the Update Operation, Creating the Layout and Activity for the Delete Operation, Executing the Database Operations, Working with Content Providers, Exploring the android.provider Package, Creating User-Defined Content Provider, Consuming User-Defined Content Provider. **Emailing and Networking in Android -**Building an Application to Send Email, Networking in Android, Getting an Overview of Networking Fundamentals, Checking Network Availability, Accessing Web Services Using HTTP

Post, Accessing Web Services Using the GET Method, Working with Binary Data and Text Files, Consuming JSON Services, Sockets Programming.

UNIT - III

Working with Location Services and Maps - Working with Google Maps, Exploring Google Maps External Library, Creating an Application Using Google Maps Android API, Disabling the Zoom Control Button, Changing the Map Type, Displaying the Specific Location and Adding Markers, Handling Map Gestures Interaction, Getting the Current Location of a User, Working with Geocoding and Reverse Geocoding. **Working with Graphics and Animation -**Working with Graphics, Drawing Graphics to Canvas, Using the Drawable Object, Referencing an Image File, Defining Drawable in XML, Using the Shape Drawable Object, Working with the Nine Patch Drawable Graphics, Understanding the Concept of Hardware Acceleration, Working with Animations, The Property Animation, View Animation Drawable Animation. Audio, Video and Camera - Role of Media Playback Using Media Player Media Formats Supported by Media Player, Preparing Audio for Playback, Preparing Video for Playback, Creating Application to Play Audio and Video Using MediaPlayer, Recording and Playing Sound, Use of Media Store Audio Recording Application, Creating a Sound Pool Using Camera for Taking Pictures, Creating Video Recording Application.

UNIT - IV

Threads and Services -Introducing Threads Worker Threads Using AsyncTask, Introducing Services Exploring Services Essentials, Understanding the Lifecycle of a Service, Exploring the Service Class, Introducing the Service Class, Creating a Bound Service. **Bluetooth, NFC and Wi-Fi -**Working with Bluetooth Exploring the Android Bluetooth APIs, Permissions Required to Access Bluetooth, Setting Up the Bluetooth for an Application, Identifying the Bluetooth-Enabled Devices, Querying the Paired Devices, Discovering Devices Creating an Application Using Bluetooth Functionality, Connecting the Devices Using Bluetooth for Data Transfer, Connecting as a Server Connecting as a Client Working with Bluetooth Low Energy, Working with NFC, Exploring the Basics of NFC, Developing an Application Using NFC, Working with Wi-Fi, Exploring the Wi-Fi APIs, Creating an Application Using Wi-Fi. **Telephony and SMS -**Handling Telephony Displaying Phone Information Application Receiving Phone Calls Application, Making Outgoing Phone Calls Application, Handling SMS Sending SMS Using SmsManager, Sending SMS Using Intent, Receiving SMS Using the BroadcastReceiver Object, Role of Default SMS Providers. Hardware Sensors - Introducing Sensors Exploring the Sensor Framework, Managing Various Sensor Configurations, Understanding the Sensor Coordinate System.

Text Book:

1. Rradeep Kothari, Android Application Development – Black Book, Dreamtech Press.

Reference Books:

1. Prasanna Kumar Dixit, Android, Vikas Publishing.
2. Dawn Griffiths & David Griffiths, Head First Android Development, Shroff Publishers.
3. Ed Burnette, Hello Android, Shroff Publishers.
4. Jerome DiMarzio, Android – A Programmer‘s Guide, McGraw-Hill.
5. Dave MacLean, SatyaKomatineni, Grant Allen, Pro Android 5, Apress.
6. Reto Meier, Professional Android Application Development, Wiley.

Practical List of Android Programming

1. Create ¯Hello World‖ android application. That will display ¯Hello World‖ in the middle of the screen in the red color with white background.

2. Write an android application to understand Activity, Intenta. Create sample application with login module.(Check username and password) and on successful login, go to next screen. And on failing login, alert user using Toast.Also pass username to next screen.

3. Create an android application that will change color of the screen and change the font size of text view using xml.

4. Create login android application where you will have to validate EmailID(UserName). Till the username and password is not validated, login button should remain disabled.

5. Create and login android application as above. On successful login, open browser with any URL.

6. Create an android application that will pass some number to the next screen, and on the next screen that number of items should be display in the list.

7. Create an android application that will change color of the screen, based on selected options from the menu.

8. Create an android application that will display toast(Message) on specific interval of time.

9. Create aandroid background application that will open activity on specific time.

10. Create an android application that will have spinner with list of animation names. On selecting animation name, that animation should affect on the images displayed below.

11. Create an android UI such that, one screen have list of all the types of cars.andon selecting of any car name, next screen should show Car details like : name , launched date ,company name, images(using gallery) if available, show different colors in which it is available.

12. Write an android application to read phonebook contacts using content providers and display in list.

13. Write an android application to read messages from the mobile and display it on the screen.

14. Create an android application to call specific entered number by user in the EditText.

15. Create an android application that will create database with table of User credential.
16. Create an android application to read file from asset folder and copy it in memory card.

17. Create an android application that will play a media file from the memory card.

18. Create an android application to make Insert,update, Delete and retrieve operation on the database.

19. Create an android application to read file from the sdcard and display that file content to the screen.

20. Create an android application to draw line on the screen as user drag his finger.

21. Create an android application to send message between two emulators.

22. Create an android application to take picture using native application.

23. Create an android application to pick up any image from the native application gallery and display it on the screen.

24. Create an android application to open any URL inside the application and clicking on any link from that URI should not open Native browser but that URL should open the same screen.

25. Create an android application that will create database with table of User credential.

Paper - II: Elective
Elective – III: Python (4T2)

UNIT - I

The Way of the Program - The Python Programming Language, What Is a Program?,What Is Debugging?, Syntax Errors, Runtime Errors, Semantic Errors, Experimental Debugging, Formal and Natural Languages, The First Program. **Variables, Expressions, and Statements -** Values and Types, Variables, Variable Names and Keywords, Operators and Operands, Expressions and Statements, Interactive Mode and Script Mode, Order of Operations, String Operations, Comments.**Functions -** Function Calls, Type Conversion Functions, Math Functions, Composition, Adding New Functions, Definitions and Uses, Flow of Execution, Parameters and Arguments, Variables and Parameters Are Local, Stack Diagrams, Fruitful Functions and Void Functions, Why Functions?, Importing with from.

UNIT - II

Conditionals and Recursion - Modulus Operator, Boolean Expressions, Logical Operators, Conditional Execution, Alternative Execution, Chained Conditionals, Nested Conditionals, Recursion, Stack Diagrams for Recursive Functions, Infinite Recursion, Keyboard Input. **Fruitful Functions -** Return Values, Incremental Development, Composition, Boolean Functions, More Recursion, Leap of Faith, One More Example, Checking Types. **Iteration -** Multiple Assignment, Updating Variables, The while Statement, break, Square Roots, Algorithms, Debugging. **Strings -** A String Is a Sequence, len, Traversal with a for Loop, String Slices, Strings Are Immutable, Searching, Looping and Counting, String Methods, The in Operator, String Comparison.

UNIT - III

Lists - A List Is a Sequence, Lists Are Mutable, Traversing a List, List Operations, List Slices, List Methods, Map, Filter, and Reduce, Deleting Elements, Lists and Strings, Objects and Values, Aliasing, List Arguments. **Dictionaries -** Dictionary as a Set of

Counters, Looping and Dictionaries, Reverse Lookup, Dictionaries and Lists, Memos, Global Variables, Long Integers.**Tuples -** Tuples Are Immutable, Tuple Assignment, Tuples as Return Values, Variable-Length Argument Tuples, Lists and Tuples, Dictionaries and Tuples, Comparing Tuples, Sequences of Sequences.

UNIT - IV

Files – Persistence, Reading and Writing, Format Operator, Filenames and Paths, Catching Exceptions, Databases, Pickling, Pipes, Writing Modules.**Classes and Objects -** User-Defined Types, Attributes, Rectangles, Instances as Return Values, Objects Are Mutable, Copying. **Classes and Functions –** Time, Pure Functions, Modifiers, Prototyping versus Planning.**Classes and Methods -** Object-Oriented Features, Printing Objects, Another Example, A More Complicated Example, The init Method, The __str Method, Operator Overloading, Type-Based Dispatch, Polymorphism, Debugging, Interface and Implementation. **Inheritance -** Card Objects, Class Attributes, Comparing Cards, Decks, Printing the Deck, Add, Remove, Shuffle, and Sort, Inheritance, Class Diagrams, Debugging, Data Encapsulation.

Text Book:

1. Allen B. Downey, Think Python, Shroff Publishers, O'Reilly.

Reference Books:

1. Charles Dierbach, Introduction to Computer Science using Python, Wiley.
2. Laura Cassell& Alan Gauld, Python Projects, Wrox A Wiley Brand.
3. 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 users 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.

4. Write a Python program that prompts the user to enter an upper or lower case letter and displays the corresponding Unicode encoding.

5. Write a Python programto 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 >=80
   Grade B: Percentage>=70 and <80
   Grade C: Percentage>=60 and <70
   Grade D: Percentage>=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 find factorial of the given number.

8. Write a Python program to find sum of the following series for n terms: 1 – 2/2! + 3/3! - - - - - n/n!

9. Write a Python program to calculate the sum and product of two compatible matrices.

10. Write a Python program to calculate the transpose of a matrix.

11. Write a Python program to determine how many times a given letter occurs in a provided string using recursion.

12. Write a Python program to calculate Fibonacci series 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, cosine, polynomial and exponential 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>=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. distancewrt time (s=u*t+0.5*a*t*t)
III. distancewrt velocity (s=(v*v-u*u)/2*a)

20. Write a Python program show a ball bouncing between 2 walls.

Paper - III: Elective Foundation
Elective Foundation – I: Big Data&Hadoop (4T3)

UNIT - I

Types of Digital Data -Classification of Digital Data.**Introduction to Big Data -** Characteristics of Data, Evolution of Big Data, Definition of Big Data, Challenges with Big Data, What is Big Data?, Other Characteristics of Data Which are not Definitional Traits of Big Data, Why Big Data?, Are We Just an Information Consumer or Do we also Produce Information?, Traditional Business Intelligence (BI) versus Big Data, A Typical

Data Warehouse Environment, A Typical Hadoop Environment, What is New Today?, What is changing in the Realms of Big Data?. **Big Data Analytics -**Where do we Begin?, What is Big Data Analytics?, What Big Data Analytics Isn't?, Why this Sudden Hype Around Big Data Analytics?, Classification of Analytics, Greatest Challenges that Prevent Businesses from Capitalizing on Big Data, Top Challenges Facing Big Data, Why is Big Data Analytics Important?, What Kind of Technologies are we looking Toward to Help Meet the Challenges Posed by Big Data?, Data Science, Data Scientist…Your New Best Friend!!!, Terminologies Used in Big Data Environments, Basically Available Soft State Eventual Consistency (BASE), Few Top Analytics Tools.

UNIT - II

The Big Data Technology Landscape -NoSQL (Not Only SQL), Hadoop.**Introduction to Hadoop -**Introducing Hadoop, Why Hadoop?, Why not RDBMS?, RDBMS versus Hadoop, Distributed Computing Challenges, History of Hadoop, Hadoop Overview, Use Case of Hadoop, Hadoop Distributors, HDFS (Hadoop Distributed File System), Processing Data with Hadoop, Managing Resources and Applications with Hadoop YARN (Yet another Resource Negotiator), Interacting with Hadoop Ecosystem. **Introduction to MongoDB -**What is MongoDB?,Why MongoDB?, Terms Used in RDBMS and MongoDB, Data Types in MongoDB, MongoDB Query Language.

UNIT - III

Introduction to Cassandra - Apache Cassandra - An Introduction, Features of Cassandra, CQL Data Types, CQLSH, Keyspaces, CRUD (Create, Read, Update and Delete) Operations, Collections, Using a Counter, Time to Live (TTL), Alter Commands, Import and Export, Querying System Tables, Practice Examples. Introduction to MAPREDUCE Programming – Introduction, Mapper, Reducer, Combiner, Partitioner, Searching, Sorting, Compression. Introduction to Hive - What is Hive?, Hive Architecture, Hive Data Types, Hive File Format, Hive Query Language (HQL), RCFile Implementation, SerDe, User-Defined Function (UDF).

UNIT - IV

Introduction to Pig - What is Pig?, The Anatomy of Pig, Pig on Hadoop, Pig Philosophy, Use Case for Pig: ETL Processing, Pig Latin Overview, Data Types in Pig, Running Pig
10.9 Execution Modes of Pig, HDFS Commands, Relational Operators, Eval Function, Complex Data Types, Piggy Bank, User-Defined Functions (UDF), Parameter Substitution, Diagnostic Operator, Word Count Example using Pig, When to use Pig?, When not to use Pig?, Pig at Yahoo!, Pig versus Hive. Jasper Report using Jasper soft - Introduction to Jasper Reports, Connecting to MongoDBNoSQL Database, Connecting to Cassandra NoSQL Database. Introduction to Machine Learning - Introduction to Machine Learning, Machine Learning Algorithms.

Text Book:

1. SeemaAcharya&SubhashiniChellappan, Big data and Analytics, Wiley.

Reference Books:

1. RadhaShankarmani& M. Vijayalakshmi, Big data Analytics, Wiley.
2. Chuck Lam, Hadoop in Action, Dreamtech Press.
3. Philip Kromer& Russell Jurney, Big Data for Chimps, Shroff Publishers, O'Reilly.
4. ChandrakantNaikodi, Managing Big Data, Vikas publishing.
5. Chriss Eaton, DirikDeroos, Tom Deutsch, George Lapis, Paul Zikopoulos, Understanding Big Data, McGraw-Hill.

Paper - III: Elective Foundation
Elective Foundation – II: Software Engineering (4T3)

UNIT - I

Introduction- The software engineering discipline evolution and impact, Programs Vs. software product, Why study software engineering?, Emergence of software engineering, Notable changes in software development practices, Computer systems engineering. **Software Life Cycle-** Why use a life cycle model?, Classical waterfall model, Interactive waterfall model, Prototyping model, Evolutionary model, Spiral model, Comparison of different life cycle models. **Software Product Management**- Responsibilities of a software project manager, Project planning, Matrices for project size estimation, Project estimation techniques, Empirical project techniques, COCOMO- A heuristic estimation technique, Halstead's software science- An analytical technique, Staffing level estimation, Scheduling, Organization and team structures, Staffing, Risk management, Software configuration management, Miscellaneous plans.

UNIT - II

Requirement Analysis and Specifications - Requirement gathering and specifications, Software requirement specification, Formal system development techniques, Axiomatic specification, Algebraic specification, Executable specification and 4GLs. **Software Design**- What is a software design?, Cohesion and coupling, Neat arrangement, Software design approaches, Object oriented Vs. function oriented design. **Function Oriented Software Design**- Overview of SA/SD methodology, Structured analysis, Data flow diagrams (DFDs), Extending DFD techniques to real-time systems, Structured design, Detailed design, Design review.

UNIT - III

Object Modeling Using UML - Overview of object oriented concept, Unified modeling language (UML), UML diagrams, Use case models, Class diagrams, Interaction diagrams, Activity diagrams, State chart diagrams. **Object Oriented Software Development-** Design pattern, A generalized object oriented analysis and design process, Odd goodness criteria.

UNIT - IV

Computer Aided Software Engineering- Case and its scope, Case environment, Case support in software life cycle, Other characteristics of case tools, Towards second generation case tools, Architecture of a case environment. **Software Maintenance-** Characteristics of software maintenance, Software reverse engineering, Software maintenance process model, Estimation of maintenance cost. **Software Reuse**- What can be reused?, Why almost no reuse so far?, Basic issue in any reuse program, A reuse approach, Reuse at organization level.

Text Book:

1. Rajib Mall, Fundamentals of Software Engineering, PHI.

Reference Books:

1. Rajesh Narang, Software EngineeringPrinciples & Practices, McGraw-Hill.
2. Roger Pressman, Software Engineering – A Practitioner Approach, McGraw-Hill.
3. Dr. Sajan Mathew, Software Engineering, S. Chand.
4. S. Thangasamy, Essentials of Software Engineering, Wiley-India.
5. PankajJalote, Software Engineering – A Precise approach, Wiley.

Paper - III: Elective Foundation
Elective Foundation – III: Strategic Management (4T3)

UNIT - I

Strategic Management - Introduction to strategic management, Strategic decision making, Strategic management process; Difference between Policy, Strategy and Tactics. Vision, Mission & goals, Preparation of Vision & Mission Statement; Organizational objectives, Hierarchy of objectives & strategies, setting of Objectives.

UNIT - II

Internal & Resource Analysis - SWOT analysis, Resource analysis- a) Organization capabilities & competitive advantage b) Value chain analysis; Concept of synergy – Core competency, Competitive analysis - Interpreting the five forces model, Competitors analysis.**External analysis -** Environment analysis a) Components of External environment b) Components of Internal environment c) Environmental scanning. Industry Analysis a) A Framework for industry analysis b) Michael Porter_s Analysis c) Usefulness of industry analysis.

UNIT - III

Strategy Formulation - Corporate Level Strategy: A) Growth-Concentration, Horizontal, Vertical, B) Diversification- Concentric, conglomerate. C) Expansion through Cooperation; Merger, Acquisitions, Joint ventures & strategic alliances D) Stability - Pause/proceed with caution, No change, Profit strategies. E) Retrenchment – Turnaround, Captive Company Strategy, Selling out Bankruptcy, Liquidation. **Portfolio Approach & Analysis -** a) Portfolio analysis, advantages & disadvantages, b) BCG Matrix c) General Electric_s Business Screen, d) Life cycle or Arthur D Little matrix, e) Balance scorecard. 7s Framework, Strategic Business Unit (SBUS), Merits & Demerits of SBU; Leadership, Power & organization culture.

UNIT - IV

Business Level Strategy & Functional Level Strategy - A) Business Level strategy- Competitive advantage, Low cost strategy, Differential strategy and Focus strategy, B) Functional level strategy - Operations strategy, Marketing strategy, Financial strategy, Human Resource strategy. Global strategy **-** Reasons for globalization, Global expansion strategy, International Portfolio Analysis; Market entry strategy, International strategy & competitive advantage.

Strategic Implementation Strategic Evaluation, Control & Continuous:
Improvement - Establishing strategic evaluation & control; The quality imperative: continuous Improvement to build customer value, Fundamentals of Six sigma approach for continuous improvement.

Text Book:

1. V. S. Ramaswami, S. Namaumari, Strategic Planning & Formulation of Corporate Strategy, Macmillan - Publication.

Reference Books:

1. Richard B Robinson, Strategic Management, McGraw-Hill.
2. Henry, Understanding Strategic Management, Oxford University Press.
3. R.M. Srivastava, Management Policy & Strategic Management, Himalaya Pub.
4. Chandrasekara, Anant Narayanan, Strategic Management, Oxford University Press.

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

DIRECTION NO. 26 OF 2017

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 22nd 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 GraduateDiploma 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.

Sd/-

Nagpur
Date : 29.08.2017

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
Theory								
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
Practical								
1P1	**Practical-I :**Programming in C & Operating Systems	P-I	8	100	50	Nil	Nil	4
1P2	**Practical-II :**Tally (ERP 9)& MS-Office	P-II	8	100	50	Nil	Nil	4
	Total		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
Theory								
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
Practical								
2P1	**Practical-I :**Core Java	P-I	8	100	50	Nil	Nil	4
2P2	**Practical-II :** HTML, JavaScript	P-II	8	100	50	Nil	Nil	4
Project								
2P3	Project	Project	8	100	50	Nil	Nil	4
	Total		40	620		80		28

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.

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 PGDCCA Examination prosecuting regular course of study shall not bepermitted 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 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 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 – IIExaminations 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
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.

nswers ot more th ords fo har questions
nd 600 ds 10 Ma qu res ively.

Q3.
(A)
(B)
Unit - I
OR
5
10

Q4. **Either**
(A)
(B)
Unit - II
OR
5
5
(C)
10

Q5. **Either**
(A)
(B)
Unit - III
OR
5
5
(C)
10

Q6. **Either**
(A)
(B)
Unit - IV
OR
5
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 & s

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
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, 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 PGDCCA Part _____ Semester _____ has satisfactorily completedthe practical experimentsprescribed by RastrashantTukdojiMaharaj Nagpur University for the subject _____during the academic year _____.

Signature
Practical In-charge Head of the Department

Signature
Head of the Department

Signature
Internal Examiner

Signature
External Examiner

Date: _____

Classification Of Practical Marks :-

Practical – I		**Marks**
1.	Writing a Program or Problem (Algorithm & Flowchart)	40
2.	Execute on a computer	
3.	Taking Hard Copy	
Practical – II		
1.	Writing a Program or Problem (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
Semester – I					
Theory			**Theory**		
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
Practical			**Practical**		
P - I	**Practical - I :** Programming in C & Operating Systems	100	1P1	**Practical - I :** Programming in C & Operating Systems	100
P - II	**Practical -II :** Tally & MS-Office	100	1P2	**Practical - II :** 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
Semester – II					
Theory			**Theory**		
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
Practical			**Practical**		
P - I	Practical-I : Visual Basic	100	2P1	**Practical-I :**Core Java	100
P - II	Practical-II : HTML, JavaScript	100	2P2	**Practical-II :** 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 10th 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 10th 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 10th 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						
Total salary						

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 >= 10 and <= 100.
b) List the records whose rate is >= 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, 20% of sales dept. and balance for office)	10,000
13. Advertisement	6,000
14. Salary of Manager (30% of Factory, 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 capcity of 60%.

Particulars	Rs.
Semi variable exp:	
Maintenance & repairs	1,25,000
Labour	5,00,000
Sales dept. Expenses	1,50,000
Other overheads	1,25,000
	9,00,000
Variable Cost :	
Material	12,00,000
Labour	13,00,000
Other Expenses	2,00,000
	27,00,000
Fixed Cost :	
Wages & salaries	4,20,000
Rent & Taxes	2,80,000
Depreciation	3,50,000
Other overheads	4,50,000
	15,00,000
Total Cost	51,00,000

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.	89,000
	2,99,000
Semi-variable exp : (at 50% capacity)	
Maintenance & Repairs	25,000
Indirect Labour	99,000
Sales Department salaries	29,000
Sundry administration exp.	26,000
	1,79,000
Variable Exp. (at 50% capacities)	
Materials	2,40,000
Labour	2,56,000
Other expenses	38,000
	5,34,000

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 :-

Particualrs	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% Rs.	60% Rs.	70% Rs.
Variable Overheads			
A) Material	---	60,000	---
B) Labour	---	24,000	---
Semi-Variable Exp.			
1) Electric (20% fixed)	---	15,000	---
2) Repairs & Maint. (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 :-

a) Out of total sale 20% sales in cash & balance will be collected in the next month.

b) Suppliers allowed the credit period of 2 months.

c) Wages and all other exp. will be paid in the following months.

d) Dividends to share holders & Bonus to employees will be paid in the month of may Rs. 10,000 & Rs. 15,000 Respectively.

e) 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.

f) 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 30th June.

MonthSales	Materials	Wages	Overheads	
Jan	60,000	40,000	11,000	6,200
Feb.	56,000	48,000	11,600	6,600
Mar.	64,000	50,000	12,000	6,800
Apr.	80,000	56,000	12,400	7,200
May	84,000	62,000	13,000	8,600
June	76,000	50,000	14,000	8,000

a) Payment of material & overheads will be done in the following month.

b) Payment of wages will be done in the same month.

c) 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.

d) Dividend on Preference shares Rs. 30,000/- will be paid on 1st may.

e) The amount of share call each Rs. 25,000/- will be received on 1st April & of 1st June each.

f) Machines costing Rs. 10,000/- will be established in the month of January but payment will be done in the month of June.

g) The selling commission 5% will be paid in the following months of actual sales.

h) 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	Manu. Exp.	Office 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 willbe 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 is1 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, sprint, gets, puts. **File input/output:** fprintf, facanf, 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 foe x as;-
    $S = x + x^2 + x^3 + x^4 + \ldots\ldots\ldots$

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!.....

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, In 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.

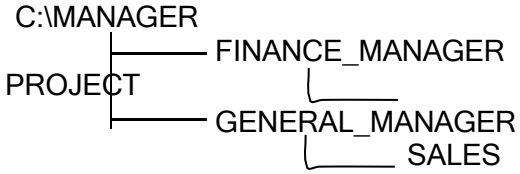
Reference Books:

1. Tanenbaum, Modern Operating Systems, PHI.
2. Stuart E. Madnick, John J. Donovan, Operating Systems, McGraw-Hill.
3. Dhananjay M. Dhamdhere, 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

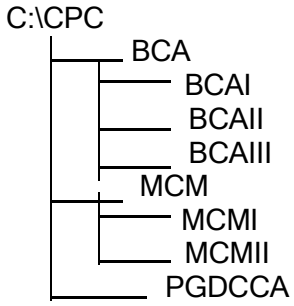
1. Make a directory naming VMV in DOS. Under that make three sub directories BCAI, BCA II, BCAIII. Also explain the commands used in making the directories and subdirectories in DOS.

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 discursement.

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 _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 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.**
   a. 04-04-2014 withdrawn Rs. 20000 from bank of india and transferred to petty cash book.
   b. 08-04-2014 paid 2000 from petty cash for buying stationery for office.
   c. 15-04-2014 made purchase from ultra tech cement ltd. Worth Rs. 45000
   d. 19-04-2014 issued cheque to ultra tech cement ltd for Rs. 45000
   e. 21-04-2014 sold goods worth of Rs. 75000 to civic centre association
   f. 25-04-2014 received a cheque from civic center association for Rs. 75000. The same was deposited in the bank on the same date.
   g. 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.**
   a. 02-04-2014 withdrawn RS. 10000 From bank of baroda and transeferred to petty cash book.
   b. 05-04-2014 paid 1000 from petty cash for office expences.
   c. 11-04-2014 made purchase from Hindustan unilever ltd. Worth Rs. 33000
   d. 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 27th 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 28th 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 1st Jan. 2012 with Rs.5000, his transaction for the month were as following, prepare Cash A/C.

January 2012	Particular	Amt
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 :

Jan 2003	Particular	Amt
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 :

Nov. 2003	Particular	Amt
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 enterprizes 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 Bazzar, 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 Pubishers.
4. Sharanam Shah & Vaishali Shah, Core Java 8 for Begineers, Shroff Pubishers.
5. Patrick Naughton & Herbert Schildt, JAVA 2 – The Complete Reference 3/E, McGraw-Hill.
6. B. M. Harwani, Java for Professionals, Shroff Pubishers.

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 StringBufferclasss 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 URLand 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 erroe 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, Fundamentas 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, AlessandroVernet, Professional Web 2.0 Programming, Wiely.
2. Michael P. Papazoglou, Pieter M.A. Ribbers, e-Business, Wiely.
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.
    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.

15. Write a program in HTML to demonstrate the usage of Image file with the below
    a) given specification.
    b) Background color of page is GREEN.
    c) The size of Image is 400 x 400 pixels.
    d) The Image should contain a border.
    e) Alternate text is ¯IMAGE NOT FOUND‖.
    f) 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.
    a) Background color is RED.
    b) The size of Image is 300 x 300 pixels.
    c) 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 5th 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.

Faculty of Science

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 12th 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, Micro-biology, 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.

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

Nagpur
Date : 2/5/2016

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	12	
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

Contd.

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

B. Sc. (Semester III; IV, V and VI)

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:

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. 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 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.	University for Issuance of mark list of semester pattern course. 5. University shall award internal marks in proportion to marks obtained in theory papers. 6. 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.	1. Candidate shall appear as an external student for the semester III and IV English and Zoology theory papers in the semester pattern. 2. 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. 3. 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. 4. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course. 5. University shall award internal marks in proportion to marks obtained in theory papers. 6. 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.	1. Candidate shall appear as an external student for the semester V and VI English and Zoology theory papers in the semester pattern. 2. 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. 3. Once the candidate clears the subjects in the semester pattern, Candidate shall be eligible to get semester pattern degree from the University. 4. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course. 5. University shall award internal marks in proportion to marks obtained in theory papers. 6. 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.	1. Candidate shall appear as an external student for the semester I and II Maths and Zoology theory papers in the semester pattern. 2. 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. 3. 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. 4. Candidate shall submit his original mark lists of annual pattern course to the University for Issuance of mark list of semester pattern course. 5. University shall award internal marks in proportion to marks obtained in theory papers. 6. 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 +	1. Candidate shall appear as an external student for the semester III and IV Hindi and Zoology theory papers in the semester pattern. 2. 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. 3. Candidate is also eligible to take fresh admission to semester V of the semester pattern course. 4. 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.	awarded with degree in semester pattern course. 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.

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

FACULTY OF SCIENCE AND TECHNOLOGY

DIRECTION NO. 28 OF 2019

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 & TECHNOLOGY)

(Issued under Section 12(8) of the Maharashtra Universities Act, 2016)

Whereas, Maharashtra Public Universities Act 2016 (VI of 2017) (hereinafter Act VI 6/2017) is made applicable to the University has come into force from 1st March 2017, (Herein after referred to as the Act) repealing the Maharashtra Universities Act, 1994;

AND

Whereas, Section 12(8) of the act empowered the Vice-Chancellor to issue Direction for regulating the matter for which Statute / Ordinance / Regulations is not made or to amend the existing Statute / Ordinance / Regulations.

AND

Whereas, proviso of section 12(8) provided that the Direction issued by the Vice-Chancellor shall automatically lapsed after 180 days.

AND

Whereas, Direction No. 5 of 2018 was issued by the Vice-Chancellor on 1.3.2018 which could not have been converted into the Statute / Ordinance / Regulations within six months.

AND

Whereas, Direction No. 5 of 2018 was issued by the Vice-Chancellor on 1.3.2018 is required to be renewed for regulating the matter involved in the said Direction.

Now, therefore, I, Dr. S. P. Kane, Vice Chancellor Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in exercise of powers conferred upon me under provisions of Section 12(8) of the Maharashtra Public Universities Act 2016, do hereby issue the following Direction to renew Direction No. of 2019.

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	Semesters 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 as have been time to time, the following applicant candidates shall be eligible for the admission to Master of Science and examination 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 and Application of RTM Nagpur University or any other statutory university 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)	For admission to the M. Sc. Semester I in Biochemistry, a candidate shall have offered Chemistry and Biochemistry as

	Semester-I	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 of main 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.U.M.S., and B. Pharm.

4 candidates shall have passed any one of the above examinations from Rajkumari Uakhili Vidyut Nagpur University or any other university / institute or board recognized by the U.G.C. or any other statutory authority / body of India.

7) Semester Examination

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	i) Students who have been admitted to this course in semester IV. 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 schemes' guidelines for the students and supervisors regarding Project Work Report are given in Appendix 04.

(Note: Subject to the Rules of ATKT as mentioned in para 9 of this document)

8) (M. Sc. (Tools) Applied Geology)

I	M. Sc. (Tools) 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
II	M. Sc. (Tools) Applied Geology) Semester II Examination	Students who have been admitted to this course in semester II.
C	M. Sc. (Tools) 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 AICTE as mentioned in para 9 of this direction)

9) As the AICTE rules for admission for the M. Sc. Course (Theory, Practical and Semester as separate passing head and no calculation fraction, if any, shall be ignored. I.e. If two third of the passing heads value to 3.01 or 3.77 or 3. 89 then it shall be considered as 3) 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	———	———

(9) The AICTE rules for admission for the M. Sc. (Tech) Applied Geology Course (Theory, Practical and Semester as separate passing head and no calculation fraction, if any, shall be ignored. I.e. If two third of the passing heads value to 3.01 or 3.77 or 3. 89 then it shall be considered as 3) shall be as given in the following table:

Admission to Semester	Candidate should have passed in all the subjects of the following examination of B.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	Semesters I and II	a) Passed Semester I and II examination And b) Two third of the passing heads of
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 revoked 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 7 Point Grade Grade 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 subjects as updated from time to time shall apply to the examination under this direction.

17) The names of the successful examinee passing the examination in a batch 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. (Textile 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 regulations given in appendices / annexure 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.

i. When the given five chances are exhausted, the candidates who are allowed to keep term shall be governed by "Equivalence of Syllabus showed between CBS & CBCS syllabus for drowsy students". Such candidates can switch over to CBCS pattern. However, for such switching over, they have to clear equivalent papers as shown in the annexure 13 of concerned subject to get admission to Third Semester of Part II of the Choice Based Credit System.

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.

i. When the given five chances are exhausted, the candidates who are allowed to keep term shall be governed by "Equivalence of Syllabus showed between CBS & CBCS syllabus for drowsy students". Such candidates can switch over to CBCS pattern. However, for such switching over, they have to clear equivalent papers as shown in the annexure 13 of concerned subject to get admission to Fifth Semester of Part III of the Choice Based Credit System.

d) The candidates who have not cleared third or fourth semester of Part II of the Credit Based Semester Pattern examination in the concerned subject shall be governed by "Equivalence of Syllabus showed between CBS & CBCS syllabus for drowsy students". Such candidates can switch over to CBCS pattern. However, for such switching over, they have to clear equivalent papers as shown in the annexure 13 of concerned subject to get Degree of M. Sc. under the Choice Based Credit System.

e) The candidates who have not cleared fifth or sixth semester of Part III of the Credit Based Semester Pattern examination in the concerned subject shall be governed by "Equivalence of Syllabus showed between CBS & CBCS syllabus for drowsy students". Such candidates can switch over to CBCS pattern. However, for such switching over, they have to clear equivalent papers as shown in the annexure 13 of concerned subject to get Degree of M. Sc. under the Choice Based Credit System.

(5) The exemption granted mentioned in this direction shall be implemented from Summer 2018 examination. The Foundation Course, Open Science Centre papers and Project shall be implemented from academic session 2018-19. The remaining part of syllabi shall be implemented in phasewise manner i.e. Semester I and II syllabi from academic session 2018-19 and Semester III & IV syllabi from academic session 2019-20 and so on.

(6) With the issuance of this Direction, the Direction No 54 of 2016 and 9 of 2018 (Choice Based Credit System) shall stand repealed.

Nagpur
Date:

Dr. S. P. Kane
Vice-Chancellor

Appendix-I

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	Duration of Exam (Hrs)	Examination Scheme				
							Max. Marks			Minimum Passing Marks	
		Th	Pract	Total			Theory/ Practical Marks	Internal Ass	Total Marks	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	
Field Core 1 & 2	Practical 1	-	8	8	4	12*	100**	-	100		40
Field Core 1 & 2	Practical 2	-	8	8	4	12*	100**	-	100		40
Seminar 1	Seminar 1	2	-	2	2			25	25	10	
	TOTAL	**18**	**16**	**34**	**29**		**520**	**105**	**625**	**170**	**80**

Semester II for M.Sc. Program in all subjects except Mathematics and M.Sc. (Twelve Applied Geology

Code	Name / 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
Unit V	Paper 5	4	-	4	4	3	80	20	100	40	
Unit VI	Paper 6	4	-	4	4	3	80	20	100	40	
Unit V	Paper 7	4	-	4	4	3	80	20	100	40	
Unit VI	Paper 8	4	-	4	4	3	80	20	100	40	
Pract. Unit V & VI	Practical 3	-	8	8	4	3 Hr*	100**	-	100		40
Pract. Unit V & VI	Practical 4	-	8	8	4	3 Hr*	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. (Textile) Applied Geology

Code		Teaching scheme (Hours / Week)				Examination Scheme					
							Max. Marks			Minimum Passing Marks	
	Theory / Practical	Th	Pract	Total	Credits	Duration in hrs	External Marks	External Sub	Total Marks	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 (Option-1)	Paper-11	4	-	4	4	3	80	20	100	40	
Interdisciplinary Course (Subject Elective)	Paper-12	4	-	4	4	3	80	20	100	40	
Practical-I (Core-9 & 10)	Practical-I	-	8	8	4	6 H	100**	-	100		40
Practical-II (Core-Elective-1)	Practical-II	-	8	8	4	6 H*	100**	-	100		40
Seminar-3	Seminar-3	2	-	2	2			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					
						Duration in hrs.	Max. Marks		Total Marks	Minimum Passing Marks	
		Th	Pract	Total			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 Elective 2	Paper 15	4	–	4	4	3	80	20	100	40	
Generic Elective 2 / Core (Subject Extension) 2	Paper 16	4	–	4	4	3	80	20	100	40	
Project Core 13, 14 & Elective 2	Practical T	–	8	8	4	3 Hr*	100**	–	100		40
Project	Project		8	8	3		100**	–	100		40
Seminar 1	Seminar 1	2	–	2	1			25	25	10	
	TOTAL	18	16	34	25		520	105	625	170	80

Note: Th – Theory, Pr – Practical/lab, * – If assigned, for two days.

** – The Practical and Project shall be evaluated by both the External and Internal Examiners in the respective Department / Center / Affiliated College as per guidelines appended with this direction.

1. In each semester, the student will have to choose a seminar on any topic relevant to the syllabus / subject encompassing the current 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/institute 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 institute or the possibilities of placements he / she will be attached to any of the national / reputed private

research institute / organization.

3. Internal Assessment Marks is 25 be as per appendix attached to this document.
4. **Foundation Course / Core (Subject Centric): for Details, refer Appendix 9.**
5. One credit of 25 marks for theory / tutorial will be of one clock hour per week, running for 15 weeks.
6. 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

Sr. No.	Theory / Practical	Teaching scheme (Hours / Week)		Credits			Examination Scheme				
							Duration in hrs	Max. Marks			Minimum Passing Marks
		Th.	Prac.	Theory	Int. Assessment	Total		External Marks	Internal Mk.	Total Marks	Th. & Ext.	Internal Mk.
1	Paper 1	5	5	4	1	5	3	100	25	125	50	
2	Paper 2	5	5	4	1	5	3	100	25	125	50	
3	Paper 3	5	5	4	1	5	3	100	25	125	50	
4	Paper 4	5	5	4	1	5	3	100	25	125	50	
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		Teaching scheme (Hours / Week)		Credits			Examination Scheme					
								Max. Marks			Minimum Passing Marks	
	Theory / Practical	Th	Total	Theory	Int. Assessment	Total	Duration in hrs	External Marks	Internal Ass	Total Marks	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 (Hours / Week)		Credits			Examination Scheme					
								Max. Marks			Minimum Passing Marks	
		Th	Tut/Lab	Theory	Int. Assessment	Total	Duration in hrs	External Marks	Internal Ass	Total Marks	External	Internal Ass
Core 11	Paper 11	5	0	4	1	5	3	100	25	125	50	
Core 12	Paper 12	5	0	4	1	5	3	100	25	125	50	
Core 13	Paper 13	5	0	4	1	5	3	100	25	125	50	
Core Elective 1	Paper 14	5	0	4	1	5	3	100	25	125	50	
Foundation Course 1 / Core Elective 2 (Subject Centric) 1	Paper 15	5	0	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 (Hours / Week)		Credits			Examination Scheme					
								Max. Marks			Minimum Passing Marks	
		Th	Tut	Theory	Int. Assessment	Total	Duration in hrs	External Marks	Internal Ass	Total Marks	Th External	Internal Ass
Core 14	Paper 14	5	1	4	1	5	3	100	25	125	50	
Core 15	Paper 15	5	1	4	1	5	3	100	25	125	50	
Core 16	Paper 16	5	1	4	1	5	3	104	25	129	50	
Core Elective 2	Paper 19	5	1	4	1	5	3	100	25	125	50	
Foundation Course / Core Elective 2	Paper 20	5	1	4	1	5	3	100	25	125	50	
	TOTAL	25	05	20	5	25		500	125	625	250	

External Assessment is for the purpose of internal assessment the department will conduct class tests, viva voce, regular evaluation of assignments. Marks obtained in students will be communicated to the University at the end of the semester.

Foundation Course / Core Elective Courses: See Details under Appendix V.

Appendix-I

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)			Credits	Examination Scheme						
						Duration in hrs	Max. Marks		Total Marks	Minimum Passing Marks		
		Th	Pract	Total			Internal Marks	Semester End		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 I	-	8	8	4	3 hr*	100**	-	100			40
Pract Core 3 & 4	Practical II		8	8	4	3 hr*	100**		100			40
Seminar I	Seminar	1	-	1	1			25	25	10		
		17/17.5/18	16	16	21			325	425	170		80

Semester II for M.Sc. Program in M.Sc. (Tech) Applied Geology											
Code		Teaching scheme (Hours / Week)				Examination Scheme					
							Max. Marks			Minimum Passing Marks	
	Theory / Practical	Th	Pract	Total	Credits	Duration in hrs.	External Marks	Internal Ass	Total Marks	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	6 h*	100**	-	100		40
Pract. Core 7 & 8	Practical 4	-	8	8	4	6 h*	100**	-	100		40
Technical 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 scheme (Hours / Week)			Credits	Examination Scheme					
						Duration in hrs.	Max. Marks		Total Marks	Minimum Passing Marks	
		Th	Pract	Total			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 11	Paper 11	4	–	4	4	3	80	20	100	40	
Core 12	Paper 12	4	–	4	4	3	80	20	100	40	
Pract. Core 9 & 10	Practical I	–	8	8	4	5 H^*	100 H^{**}	–	100		50
Pract. Core 11 & 12	Practical II	–	8	8	4	5 H^*	100 H^{**}	–	100		50
Seminar I	Seminar I	2	–	2	1			25	25	10	
	TOTAL	18	16	34	25		520	105	625	170	90

Semester IV for M.Sc. Program in M.Sc. (Tech) Applied Geology											
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme					
						Duration in hrs.	Max. Marks		Total Marks	Minimum Passing Marks	
		Th	Pract	Total			External Marks	Internal Marks		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 Hr*	100**	–	100		40
Pract. Core 15 & 16	Practical 8	–	8	8	4	3 Hr*	100**	–	100		40
Technical 3	Technical 3	2	–	2	1			25	25	10	
	TOTAL	18	16	34	25		320	105	425	170	80

Semester V for M.Sc. Program in M.Sc. (Tech) Applied Geology											
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme					
						Duration in hrs.	Max. Marks		Total Marks	Minimum Passing Marks	
		Th	Pract	Total			External Exam 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 I	Paper 19	4	-	4	4	3	80	20	100	40	
Generic Elective I / Core (Subject Centric) I	Paper 20	4	-	4	4	3	80	20	100	40	
Pract. Core 17 & 18	Practical 9		8	8	4	3 & 6	100		100		40
Pract. Core Elective I	Practical 10		8	8	4	3 & 6	100		100		40
Seminar I	Seminar I	1	-	1	2			25	25	10	
		17/15 AS	19	16	41	25		520	105	625	270	80

Semester VI for M.Sc. Program is M.Sc. (Tech) Applied Geology												
Code	Theory / Practical	Teaching scheme (Hours / Week)			Credits	Examination Scheme						
						Duration in hrs.	Max. Marks		Total Marks	Minimum Passing Marks		
		Th	Pract	Total			Internal Marks	External		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 Elective 2	Paper 23	4	–	4	4	3	80	20	100	40		
Foundation Course 2 / Core Elective 2	Paper 24	4	–	4	4	3	80	20	100	40		
Project Core 19, 20	Practical (1)	–	8	8	4	3 hr*	100**	–	100	–		40
Project Core Elective 2	Practical 2	–	8	8	4	3 hr*	100**	–	100	–		40
	Seminar	–	–	–	–	–	–	–	–	–		–
	TOTAL	16	16	32	20		520	160	600	170		80

Note: Th – Theory, Pr – Practical, * – to appear for two days.
** – The Practical will be evaluated by both the Internal and External Examiner on the appointed Programme / Course / Withdrawal offline as per guidelines approved under this Ordinance.

1. Seventh term: Set the student will have to choose a combination any topic selected in the syllabus / subject / paper from the lowest level and develop project on that field / subject. The topic of the course will be decided at the beginning of each semester as a modification with the supervising teacher. He / student has to follow the course which will be followed by the teacher. The course will consist of the following: (1) Project work (2) Seminar (3) Viva-voce. Note: (1) Project work is compulsory for all the students.
2. Foundation Course / Core Elective 2 / Core Elective 2 / Project / Viva-voce.

1. 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 OR Field Based Project Work:

Student can carry out Experimental / Field based Project Work on a related research topic of the subject (course). It need 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 need 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 views. 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 supervisor shall be able to guide not more than 15 (fifteen) students in the given examination. The supervisor shall declare in the practical exam marks which is the pending dating that is the last date granted more than 15 students in the given examination.

The supervisor for the Project Work shall be from the following:

A person shall be full time university (PG recognized faculty member in the relevant subject.

OR

A person shall be full time university approved faculty member in related subject having Ph. D. with 5 years teaching experience or OR not having Ph. D. but having 10 years teaching experience and teaching the relevant subject.

OR

Scientists of National Laboratories / Regional Research Laboratories who are approved by virtue of their appointments in such facilities by the Union Government / the State Government / Nagpur University / Other Universities recognized by UGC.

OR

A person appointed in PG on contractual / contributory basis, having NET / SET and approved by the University in the relevant subject and having 5 years teaching experience as contractual / contributory at PG level.

OR

University approved 3 to 5 faculty members in the relevant subject

The Project Work will carry total 100 marks and will be evaluated by both external and internal examiners in the respective Departments / Centers / Affiliated Colleges.

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	30 Marks	Evaluated jointly by External & Internal
For Viva-Voce	30 Marks	Evaluated by External examiner
Internal Assessment	30 Marks	Evaluated by Internal examiner
Total	100 Marks	

Appendix-B

Syllabus

Guidelines for Students, Supervisors and Examiners

The marks of the seminar shall be forwarded to the university within this 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 10 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 assignments 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 I shall be awarded on the basis of attendance and assignments like class test, 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 an 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 the / her students accordingly the method he / she proposes to adopt and the scheme of working 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.

Appendix T

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:

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. ... course ... during the academic year ... The candidate has satisfactorily completed the requirements prescribed by Rashtrasant Tukadoji Maharaj Nagpur University for the subject.

Dated: ...

Signature of the teacher who taught the candidate

Signature of the 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 & Nanotechnology I	Nanoscience & Nanotechnology II
	Atomic and Molecular Physics I	Atomic and Molecular Physics II
	Applied Electronics I	Applied Electronics 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)	Fluid Dynamics I	Fluid Dynamics II
	General Relativity	Cosmology
	Algebraic Topology I	Algebraic Topology II
	Non Linear Programming I	Non Linear Programming II
	Operation Theory	Advanced Algebra
M. Sc. (Statistics)	Mathematical Programming	Multivariate Analysis
	Numerical Analysis	Reliability Theory
	Bio-assay	Statistical Quality Control
	Demography	Statistical Inference
	Time Series Analysis	Stochastic Models in Finance
	Neural Networks	Design and Analysis of Algorithms
M. Sc. (Computer Science)	Multimedia Technology	Data Mining
	Artificial Intelligence	Cyber Security

M. Sc (Information Technology)	Soft Computing	Design and Analysis of Algorithm
	Distributed Database	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
	Mycology and Plant Pathology I	Mycology and Plant Pathology II
	Reproductive Biology of Angiosperms I	Reproductive Biology of Angiosperms II
	Plant Physiology I	Plant Physiology II
	Palynology - I	Palynology - 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
	Environmental Biology II	Environmental Biology IV
M. Sc. (Microbiology)	Microbial Enzymes, Fermentation and Ecology (MEE) I	Microbial Enzymes, Fermentation and Ecology (MEE) II
	Immunology (IM) I	Immunology (IM) II
M. Sc. (Biochemistry)	Biochemical & Environmental Toxicology	Research
	Nutritional Biochemistry	Applied Nutritional Biochemistry
M. Sc. (Biotechnology) I	Industrial Biotechnology I	Industrial Biotechnology II
	Environmental Biotechnology I	Environmental Biotechnology II
M. Sc. (Environmental Science) I	Water & Waste Management	Environment and Impact assessment and Legislation
	Natural Hazards and Disaster Management	Environmental Microbiology

Biology and Genetic Engineering	Plant Genetic Engineering I	Plant Genetic Engineering II
	Bioinformatics I	Bioinformatics II
M. Sc (Geology)	Mining Geology & Mineral Exploration	Exploration Geochemistry
	Applied & Industrial Micropalaeontology	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 - I
	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. Once the choice between Foundation Course / Core (Subject Centric) is made by the candidate, it can not be changed in Semester IV.

Part A:

Foundation Course:

1. 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 subject other than his / her main subject for postgraduation (Eg. 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). The exception to the above condition in some subjects is mentioned in the table below. If the candidate decides to opt for foundation course papers then he/she shall not be eligible to opt for a core (Subject Centric) papers in their respective subjects.
2. Once the candidate chooses foundation course paper of any one subject, then he / she can not change the subject in semester IV. (Eg. If a M. Sc. Biochemistry candidate has chosen foundation course paper from M. Sc. Mathematics, then he has to pursue the foundation course paper of M. Sc. Mathematics in Semester IV also).
3. Intake capacity for the foundation courses is listed in the table. However, in no case, the intake capacity shall be above the sanctioned capacity for the said course. This is applicable to affiliated colleges also. The intake capacity of the affiliated colleges shall be displayed by the respective college.
4. The affiliated colleges where there is only one postgraduate subject can allow the candidates to choose foundation courses in other subjects for which the affiliated college have undergraduate department / subjects. However, they have to fulfill the condition of eligible teachers as mentioned below.
5. Every year, the University shall add or delete (as the case may be) and prepare fresh list of foundation courses available in all faculties for the candidates admitted in semester I of the respective year. The list along with syllabi shall be displayed on the University website for the benefit of candidates.
6. The admission process shall begin and be completed within 30 days from the declaration of result of Semester I. The admission to foundation course shall be based on merit list prepared on percentage of the basis of marks obtained by the candidates at the graduation level.
7. Once the candidate opts for foundation course in any subject, there shall be no change allowed.
8. The following faculty will be considered eligible to teach set papers, internal examiners, valuators etc of the foundation courses in the subject.
   a. A person shall be full time permanent (F) recognized faculty member of the relevant subject.
   OR
   b. A person shall be full time recognized (F) recognized faculty member in the relevant subject.
   OR
   c. A person shall be full time recognized (F) recognized faculty member in the relevant subject who is at least [illegible] qualified and [illegible]

OR

d. A person appointed in PG on contractual / contributory basis, having NET / SET and approved by the University in the relevant subject and having 5 years teaching experience on contractual / contributory at PG level.
OR

e. University approved Ex-Faculty members in the relevant subject

9. The teaching process of the foundation courses shall be arranged in a manner that it shall not affect the teaching – learning process of the parent course.

List of Foundation Subjects for Post Graduate Courses

S. No.	Subject	Board	4th Papers of Semester-III i.e. 2?4 (Name of the Paper)	4th Papers of Semester-IV i.e. 4?4 (Name of the Paper)	Intake capacity at the University departments
1	Mathematics	Mathematics	Mathematics-I (Elementary Mathematics)	Mathematics-II (Elementary Discrete Mathematics)	60
2	Physics	Physics	Physics-I (Classical Physics)	Physics-II (Modern Physics)	15
3	Statistics	Statistics	Statistics-I (Applied Statistical Analysis)	Statistics-II (Applied Statistical Analysis)	30
4	Bio-Technology	Bio-Technology	Bio-Technology-I (Introductory Biotechnology)	Bio-Technology-II (Basic DNA Technology)	15
5	Computer Science	Computer Science & Engineering	Computer Science-I (Operating System)	Computer Science-II (Advanced Operating System)	30

	Science	Science	(Fundamentals of Environmental Science I)	(Fundamentals of Environmental Science II)	
7	Botany	Botany	Botany-I (General Botany)	Botany-II (Applied Botany)	37
8	Zoology	Zoology	Zoology-I (Basic Entomology)	Zoology-II (Applied & Industrial Entomology)	37
9	Statistics	Statistics	Statistics-I (Mathematical Statistics)	Statistics-II (Applied Statistics)	25
10	Business Management	Business Management	Business Management - I( )	Business Management - II( )	
11	Accountancy	Account & Statistics	Account & Statistics-I ( )	Account & Statistics-II ( )	
12	Managerial Skill	Commerce	Managerial Skills-I ( )	Managerial Skills-II ( )	
13	Education (Achology & Management Skills	Education and Commerce	Education Technology & Management Skills-I ( )	Education Technology & Management Skills-II ( )	
14	Communication Skill	English	Communication Skills-I ( )	Communication Skills-II ( )	
15	Sanskrit	Sanskrit	Sanskrit-I ( )	Sanskrit-II ( )	
16	Gujarati	Other Languages	Gujarati-I ( )	Gujarati-II ( )	
17	French	Other Languages	French-I ( )	French-II ( )	
18	Law	Law	Law-I ( )	Law-II ( )	

19	Pharmaceutical Sciences	Pharmaceutical Sciences	Pharmaceutical Sciences-I ( )	Pharmaceutical Sciences-II ( )	
20	Life skills	Education	Life Skills-I ( )	Life Skills-II ( )	
21	Economics	Economics	Economics-I ( )	Economics-II ( )	
22	Political Science	Political Science	Political Science-I ( )	Political Science-II ( )	
23	Sociology	Sociology	Sociology-I ( )	Sociology-II ( )	
24	Psychology	Psychology	Psychology-I ( )	Psychology-II ( )	
25	Philosophy	Philosophy	Philosophy-I ( )	Philosophy-II ( )	
26	History	History	History-I ( )	History-II ( )	
27	Public Administration	Public Administration	Public Admin -I ( )	Public Admin -II ( )	
28	Buddhist Studies	Buddhist Studies	Buddhist Studies-I ( )	Buddhist Studies-II ( )	
29	Gandhian Thoughts	Gandhian Thoughts	Gandhian Thoughts-I ( )	Gandhian Thoughts-II ( )	
30	Other Indian Thoughts	Other Indian Thoughts	Other Indian Thoughts-I ( )	Other Indian Thoughts-II ( )	
31	Buddhist (Pali) Literature	Buddhist (Pali) Literature	Buddhist (Pali) Literature-I ( )	Buddhist (Pali) Literature-II ( )	
32	Hindi/Urdu/Telugu	Hindi/Urdu/Telugu	Hindi/Urdu/Telugu-I ( )	Hindi/Urdu/Telugu-II ( )	

	Developmen	ent			
34	Cosmeto Technology	Cosmetic Technolo gy	Cosmeto Technology-I ( )	Cosmeto Technology-II ( )	
35	Hospitality Management	Hotel Management & Catering Technology	Hospitality Management -I ( )	Hospitality Management-II ( )	
36	Chemical Engineering	Chemical Engineering	Chemical Engineering-I ( )	Chemical Engineering-II ( )	
37	Chemical Technology	Chemical Technolo gy	Chemical Technology-I ( )	Chemical Technology-II ( )	
38	Civil Engineering	Civil Engineering	Civil Engineering-I ( )	Civil Engineering-II ( )	
39	Electrical Engineering	Electrical Engineeri ng	Electrical Engineering-I ( )	Electrical Engineering-II ( )	
40	Mechanical Engineering	Mechani cal Engineeri ng	Mechanical Engineering-I ( )	Mechanical Engineering-II ( )	
41	Electronics Engineering	Electroni cs Engineeri ng	Electronics Engineering-I ( )	Electronics Engineering-II ( )	
42	Fish Products	Fish Products	Fish Products-I ( )	Fish Products-II ( )	

Part III

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.

M. Sc. Subject	Core (Subject Centric) I in semester III (Sem V in case of M. Sc. (Tech) Applied Geology)	Core (Subject Centric) II in Semester IV (Sem VI in case of M. Sc. (Tech) Applied Geology)
M. Sc. (Physics)	Nanoscience & Nanotechnology	Experimental Techniques in Physics
	Quantum Computing	Communication Electronics
	Digital Electronics & Microprocessors	Electromagnetics
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
	Data Mining	Advanced Statistics
M. Sc. (Computer Science)	Mobile Computing	Parallel Computing
M. Sc. (Information Technology)	e-Health	Emergency Computing
M. Sc. (Electronics)	Multimedia	Mobile and Satellite Communication
M. Sc. (Botany)	Agrobiotechnology	Plant Biochemistry
M. Sc. (Zoology)	Wild Life & Animal Husbandry	Biochemical Characterization
M. Sc. (Microbiology)	Food & Dairy Microbiology (FDM)	Environmental Microbiology
M. Sc. (Biochemistry)	Medical Biochemistry I	Biochemical Techniques II

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)	Cytology & Genetics	Applied Genetics
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 – IV

Coding pattern

In each case the following coding pattern shall be used to describe the theory/practical/session components of a subject/Paper:-

(i) In the first Semester, the theory papers shall be coded as 111, 112, 113 and so on. Similarly the practical prescribed in the first Semester, shall be coded as 1P1, 1P2, 1P3 and so on, if practical is a component of the subject. Where however, a subject has no practical or a component and consists of theory part only the practicals shall be correspondingly coded. For e.g. the first subject/paper has got theory component only and no practical but the second subject/paper has got both theory as well as practical component then the second subject paper will have the following coding:

The theory component of the subject paper will be coded as 121 and so on and practical component will be coded as 2P1 and so on. Therefore, in this case third subject will be coded as 131. In other words a subject/paper consists only of practical component and there is no theory component in such a case there will not be corresponding theory code. For example, if the third subject/paper of a course does not have any theory component and there is only practical component, in this case the practical will be coded as 3P1 but there will not be 131. Therefore, the 2nd subject/paper having the theory component only will be coded as 131 directly.

(ii) Where there is a project, it shall be coded as 1P(P for e.g. If Faculty undertake two projects, it will be coded as 1P(P1&P2).

(iii) In the second and subsequent years the syllabus of subjects shall be in the same pattern as in the first year courses.

(iv) Where a subject is prescribed in one year and the same subject is there in the next year, the subject in the next year shall be coded in the same manner as in the first year.

181, 281, if seminars are prescribed in 1st and 2nd semesters respectively.

Appendix-II

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 set from 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 withdrawals are: Core, Core Practical, Core (Subject Centric), Core Elective, Core Elective Practical, 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 – MBT, AP, Fisheries, Entomology etc.
3. **Foundation Course / Core (Subject Centric):** For details, refer Appendix-V.
4. **Project / Review writing:** Project / Review writing to be undertaken IV (Semester VI in M.Sc. (Hons) Applied Geology, if applicable).
5. **Seminar:** The seminar in each semester shall be presented by the candidate in his / her precise departmental work.

Credits:

Credit is used to specify the course work to be assessed. It determines the number of hours of instruction 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 4 + 0 (T: P) means 4 hrs. Theory and 0 Practical or 0 work. That subject will have the credits (4x1 + 0x1 = 4). It should be declared pass in a subject, then he/she gets the credits associated with that subject. Regardless of the marks scored in a subject, student is given a Grade. Each grade has a grade point as follows:

Letter Grade	O	A+	A	B+	B	C	P	F	Ab
Grade Point	10	9	8	7	6	5	4	0	0

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
31-40	16-20	08-10	P	04
00-30	00-15	00-07	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).

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.

$$SGPA\ (Si) = \sum (Ci \times Gi) / \sum Ci$$

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.

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
Practical Core 1 & 2	Practical 1	4	89	100	9	A+	4x9=36
Project Core 3 & 4	Practical 2	4	91	100	9	A+	4x9=36
Seminar 1	Seminar 1	1	23	25	10	O	1x10=10
	Total	**25**					**230**

Then, SGPA = 230/25 = 9.4

ii. The CGPA is also calculated in the same manner taking into account all the courses undertaken by a student over all the semesters of a program, i.e.

CGPA = $\sum(Ci \times Si) / \sum Ci$

where 'i' 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
Credits : 25	Credits : 25	Credits : 25	Credits : 25
SGPA : 8.36	SGPA : 7.81	SGPA : 8.65	SGPA : 9.10

Then,

CGPA = $\frac{23 \times 8.66 + 25 \times 7.83 + 20 \times 5.69 + 33 \times 8.31}{100}$

$= \frac{711.3 + 195.75 + 142.45 + 137.73}{100} = \frac{787.25}{100} = 7.8725$ i.e. 7.87

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts. Ex: 7.376 = 7.38 or 7.3731 = 7.37 or 6.2168 = 6.32 etc.

Transcript (Format): Based on the above recommendations on Letter grades, grade points and SGPA and CGPA, the HEIs may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

Appendix 13

Workload Chart for M. Sc. Subjects in Faculty of Science & Technology

Note:

1. The M. Sc. Course is semester pattern comprising of total Four Semester Except M. Sc. Tech (Applied Geology) where it is of Six semesters
2. Sem I, III and V from June to Nov/Dec and Sem II, IV and VI from Dec/Jan to April
3. Each Theory or Practical or Tutorials or Seminar period is of One hour duration
4. Ref. Column No: 8 & 9 - the workload depends on Theory, Core Elective, Foundation Papers and Practical Batches, hence total workload can not be given

Sr. No.	Name of the subject as taught in University Syllabus	Year / Credits / Theory / Practical	Total No. of paper	Load Periods in a week				Total work load / Week	Remarks
				Theory (Hrs)	Practical Periods	Seminar / Project etc. / Theory periods	Total workload in Hours		
1	2	3	4	5	6	7	8	9	10
		Sem I	4	20	10	2			
		Sem III	4	16	10	2			
1	The etc.	Sem V	4	16	10	2			
		Sem VI	4	16	10	2			

AA

2	Chemistry	Sem I	4	16	16	2	[illegible]	[illegible]	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	[illegible]	[illegible]	
		Sem II	4	16	16	2	[illegible]	[illegible]	
		Sem IV	4	16	16	2	[illegible]	[illegible]	
3	Mathematics	Sem I	5	25	[illegible]	[illegible]	[illegible]	[illegible]	-No Practical-
		Sem III	5	25	[illegible]	[illegible]	[illegible]	[illegible]	
		Sem II	5	25	[illegible]	[illegible]	[illegible]	[illegible]	
		Sem IV	5	25	[illegible]	[illegible]	[illegible]	[illegible]	
1	Statistics	Sem I	4	16	16	2	[illegible]	[illegible]	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	[illegible]	[illegible]	
		Sem II	4	16	16	2	[illegible]	[illegible]	
		Sem IV	4	16	16	2	[illegible]	[illegible]	
4	Computer Science	Sem I	4	16	16	2	[illegible]	[illegible]	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	[illegible]	[illegible]	
		Sem II	4	16	16	2	[illegible]	[illegible]	
		Sem IV	4	16	16	2	[illegible]	[illegible]	
	Electronics	Sem I	4	16	16	2	[illegible]	[illegible]	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	[illegible]	[illegible]	
		Sem II	4	16	16	2	[illegible]	[illegible]	
		Sem IV	4	16	16	2	[illegible]	[illegible]	
	Environment Science	Sem I	4	16	16	2	[illegible]	[illegible]	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	[illegible]	[illegible]	
		Sem II	4	16	16	2	[illegible]	[illegible]	
		Sem IV	4	16	16	2	[illegible]	[illegible]	
	Electronics	Sem I	4	16	16	2	[illegible]	[illegible]	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	[illegible]	[illegible]	
		Sem II	4	16	16	2	[illegible]	[illegible]	
		Sem IV	4	16	16	2	[illegible]	[illegible]	

		Sem III	4	16	16	2	---	---	will not exceed by more than 11 students for Practical
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
9	Zoology	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
10	Microbiology	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
11	Biochemistry	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
12	Biotechnology	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
13	Environmental Sciences	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	

	Biology & Genetic Engineering	Sem III	4	16	16	2	---	---	will not exceed by more than 11 students for Practical
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
13	Geology	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
14	Medicinal Plants	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
15	Applied Earth Geology	Sem I	4	16	16	2	---	---	A batch will not exceed by more than 11 students for Practical
		Sem III	4	16	16	2	---	---	
		Sem V	4	16	16	2	---	---	
		Sem II	4	16	16	2	---	---	
		Sem IV	4	16	16	2	---	---	
		Sem VI	4	16	16	2	---	---	

Appendix – IV

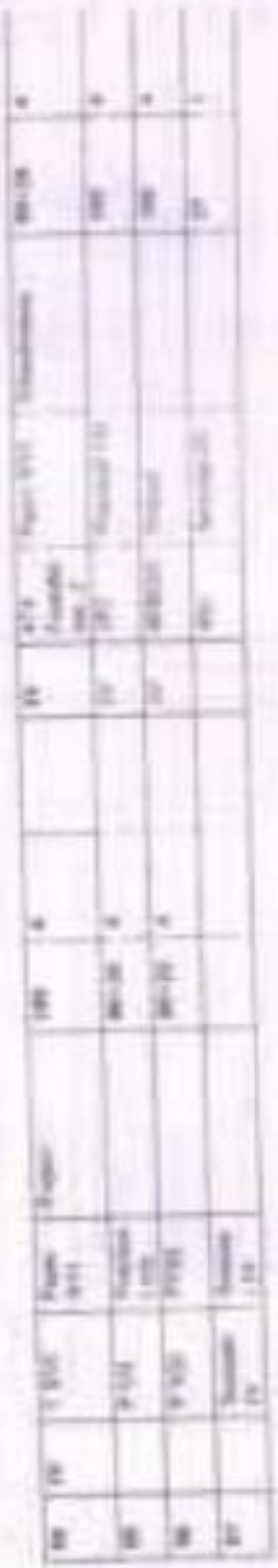
Equivalence of Syllabus showing between CBCS & UGC syllabus for Botanical Students

ANNEXURE M. Sc MEDICINAL PLANTS

Equivalent of Syllabus / papers between CBS & CBCS syllabus for Annexure students (CBS Pattern students introduced in the Year 2012-2013 in CBCS Pattern) introduced in the year 2013-14 at M.Sc Semester I and II and in the year 2014-15, at M.Sc Semester -III and Semester IV

	If the candidate has failed in any of the papers mentioned below s/he is described in Point no. 2) 'a', 'c', 'd', and 'e')								Then, the candidate shall appear and clear the papers shown in the respective row as equivalent paper				
	M.Sc. Medicinal Plants CBS Pattern Semester I								M.Sc. Medicinal Plants Choice Based Credit System(CBCS)				
Sr. No.	Semester	Code No.	Paper	Name of Paper	Total Marks	Credits	Equivalent to	Semester	Code No.	Paper	Subject	Total Marks	Credits
01	I	[illegible]	Paper I	Indian System of Medicine	100	4		I	[illegible]	Paper I	Indian System of Medicine	80+20	4
02	I	[illegible]	Paper II	Systematics of Plants	100	4		I	[illegible]	Paper II	Systematics of Plants	80+20	4
03	I	[illegible]	Paper III	Cell & Molecular Biology	100	4		I	[illegible]	Paper III	Cell & Molecular Biology	80+20	4
04	I	[illegible]	Paper IV	Modern Biological Techniques	100	4		I	[illegible]	Paper IV	Modern Biological Techniques	80+20	4
05	I	[illegible]	Practical I		40+20	4		I	[illegible]	Practical I		100	4
06	I	[illegible]	Practical II		80+20	4		I	[illegible]	Practical II		100	4
07	I	[illegible]	Seminar I	Seminar	25	1		I	[illegible]	Seminar I		25	1
	M.Sc. Medicinal Plants CBS Pattern Semester II								M.Sc. Medicinal Plants Choice Based Credit System (CBCS)				
01	II	[illegible]	Paper V	Fundamentals of Pharmacognosy	100	4		II	[illegible]	Paper V	Fundamentals of Pharmacognosy	80+20	4
02	II	[illegible]	Paper VI	Plant Biochemistry	100	4		II	[illegible]	Paper VI	Plant Biochemistry	80+20	4
03	II	[illegible]	Paper VII	Plant Metabolism and Development	100	4		II	[illegible]	Paper VII	Plant Metabolism and Development	80+20	4
04	II	[illegible]	Paper VIII	Natural Plant Products and Pharmacology-I	100	4		II	[illegible]	Paper VI	Natural Plant Products and Pharmacology-I	80+20	4

05	IX	P III	Practical III		00+100	4			12	[illegible]	[illegible]		100	4
06	IX	P IV	Practical IV		00+100	4			13	[illegible]	[illegible]		100	4
07	IX	[illegible]	Seminar I (T)		25	1			14	[illegible]	[illegible]		25	1
	M.Sc. Subject: Medicinal Plants ... CBS Pattern Semester								M.Sc. Subject: Medicinal Plants ... Choice Based Credit System (CBCS) Semester					
01	III	T IX	Paper IX	Natural Plant Products and Phytochemistry-II	100	4			19	[illegible]	[illegible]	Natural Plant Products and Phytochemistry-II	00+20	4
02	III	T X	Paper X	Medicinal Plant Biotechnology	100	4			20	[illegible]	[illegible]	Medicinal Plant Biotechnology	80+20	4
03	III	T XI	Paper XI	Pharmacognosy Pathology	100	4			21	[illegible]	[illegible]	Pharmacognosy Pathology	80+20	4
04	III	T XII	Paper XII	Immunology and Microbiology	100	4			22	[illegible]	[illegible]	Immunology and Microbiology	80+20	4
05	III	P V	Practical V		00+100	4			23	[illegible]	[illegible]		100	4
06	III	P VI	Practical VI		00+100	4			24	[illegible]	[illegible]		100	4
07	III	Seminar II	Seminar II		25	1			25	[illegible]	[illegible]		25	1
	M.Sc. Medicinal Plants. CBS. Pattern: Semester								M.Sc. Subject: Medicinal Plants Choice Based Credit System (CBCS)					
01	IV	T XIII	Paper XIII	Herbal Cosmetics	100	4			28	[illegible]	[illegible]	Herbal Cosmetics	80+20	4
02	IV	T XIV	Paper XIV	Herbal Drug Technology & Biopharmaceutics	100	4			29	[illegible]	[illegible]	Herbal Drug Technology & Biopharmaceutics	80+20	4
03	IV	T XV	Paper XV	Drug Standardization and Regulations	100	4			30	[illegible]	[illegible]	Drug Standardization and Regulations	80+20	4



ANNEXURE-II, Sc. Environmental Sciences

Equivalence of Syllabus / papers between CBS & CBCS syllabus for distance students (CBS) Pattern syllabus introduced in the Year 2013-2015 in CBCS Pattern introduced in the year 2015-16 at M.Sc. Semester I and II and in the year 2016-17, at M.Sc. Semester - III and Semester IV

(If the candidate has failed in any of the papers mentioned below you described in Point no. 7 'b', 'c', 'd', and 'e')						Equivalence to	Then, the candidate must appear and clear the paper shown in the opposite row as equivalent paper)					
M.Sc. Subject: Environmental Science CBS Pattern Semester - I							M.Sc. Environmental Science Choice Based Credit System (CBCS)					
S. No.	Code No.	Paper	Name of Paper	Total Marks	Credits		Note	Code No.	Paper	Name of Paper	Total Marks	Credits
(i)		Paper I	Environmental Chemistry	100	4		1	171	Paper I	Environmental Chemistry	60+ 20	4
(ii)		Paper II	Atmospheric Science	100	4		2	172	Paper II	Atmospheric Science	60+20	4
(iii)		Paper III	Environmental Biology	100	4		3	181	Paper III	Environmental Biology	60+10	4
(iv)		Paper IV	Environmental Microbiology and Biotechnology	100	4		4	174	Paper IV	Environmental Microbiology and Biotechnology	60+10	4
(v)		Practical I	Environmental Chemistry and Atmospheric Science	60+ 50	4		5	175	Practical I	Environmental Chemistry and Atmospheric Science	100	4
(vi)		Practical II	Environmental Biology, Environmental Microbiology and Biotechnology	60+10	4		6	183	Practical II	Environmental Biology, Environmental Microbiology and Biotechnology	100	4
(vii)		Seminar I		50	1			181	Seminar I		50	1
M.Sc. Subject: Environmental Science CBS Pattern Semester -II							M.Sc. Environmental Science Choice Based Credit System (CBCS)					
S. No.	Code No.	Paper	Name of Paper	Total Marks	Credits		Note	Code No.	Paper	Name of Paper	Total Marks	Credits
(i)		Paper V	Environmental Economics and Biodiversity	100	4		7	271	Paper V	Environmental Economics and Biodiversity	60+ 20	4
(ii)		Paper VI	Natural Resources Management	100	4		8	272	Paper VI	Natural Resources Management	60+10	4
(v)		Paper VII	Environmental Sampling and Research Methodology	100	4		9	273	Paper VII	Environmental Sampling and Research Methodology	60+20	4

[illegible]		Paper VIII	Analytical Techniques for Environmental Monitoring	100	4
[illegible]		Practical III	Environmental Evaluation and Management & Natural Resource management	Mini 50	4
[illegible]		Practical IV	Industrial chemistry & Analytical techniques	Mini 50	4
[illegible]		Seminar II		25	1

M.Sc. Subject: Environmental Science CBS Pattern , Semester -III

S. No.	Code No.	Paper	Name of Paper	Type Mini(s)	Credits
[illegible]		Paper IX	Water Supply and Resources	100	4
[illegible]		Paper X	Water and Water Treatment	100	4
[illegible]		Paper XI	Physico Chemical Treatment of Water & Waste Water	100	4
[illegible]		Paper XII	Biological process in waste water Treatment	100	4
[illegible]		Practical V	Water & Water Treatment Water Supply and Resources	Mini 50	4
[illegible]		Practical VI	Biological process in waste water Treatment	Mini 50	4
[illegible]		Seminar III		25	1

1	2214	Paper VIII	Analytical Techniques for Environmental Monitoring	Mini 50	4
2	2215	Practical III	Environmental Evaluation and Management & Natural Resource management	100	4
3	2216	Practical IV	Industrial chemistry & Analytical techniques	100	4
4	2217		Seminar II	25	1

M.Sc. Environmental Science I Years Based Credit System (CBCS)

Sem	Code No.	Paper	Name of Paper	Total Marks	Credits
[illegible]	[illegible]	Paper IX	ELECTIVE-II Water Supply and Resources	Mini 50	4
[illegible]	[illegible]	Paper X	ELECTIVE-II Water and Water Treatment	Mini 50	4
[illegible]	[illegible]	Paper XI	Physico Chemical Treatment of Water & Waste Water	Mini 50	4
[illegible]	[illegible]	Paper XII	Biological process in waste water Treatment	Mini 50	4
[illegible]	[illegible]	Practical V	ELECTIVE-II Water & Water Treatment OR ELECTIVE-II Water Supply and Resources	100	4
[illegible]	[illegible]	Practical VI	Physico-chemical treatment of water and waste water AND Biological process in waste water Treatment	100	4
[illegible]	[illegible]	Seminar III		25	1

M.Sc. Subject Environmental Science (Old) Pattern Semester (V)					
Sr. No.	Code No.	Paper	Name of Paper	Total Marks	Credits
01		Paper 4101	Air and Noise Pollution Control Technology	100	4
02		Paper 4102	Solid and Hazardous Waste Management	100	4
03		Paper 4103	Environmental Impact Assessment and Legislation	100	4
04		Paper 4104	Environment Management	100	4
05		Practical 105	Air and Noise Pollution Control Technologies, Solid, Hazardous Waste Management	50+50	4
06		Practical 106	Viva & Laboratory & Environmental Management	50+50	4
06		Project		100+100	4
07			Seminar (V)	100	4

M.Sc. Environmental Science (New) Board Credit System (50:50)					
Term	Code No.	Paper	Name of Paper	Total Marks	Credits
III	411	Paper 411	Air and Noise Pollution Control Technology	50+50	4
III	412	Paper 412	Solid and Hazardous Waste Management	50+50	4
III	413	Paper 413	ENVIRONMENTAL Impact Assessment and Legislation	50+50	4
III	414	Paper 414	ENVIRONMENTAL Management	50+50	4
III	415	Practical 415	Air and Noise Pollution Control Technologies, Solid, Hazardous Waste Management 415(1) & 415(2)	100	4
III	416	Practical 416	Air and Noise Pollution Control Technologies, Solid, Hazardous Waste Management 416(1) & 416(2)	100	4
III	417		Project	100	4
			Seminar III	50	2

ANNEXURE-II to Inaugural Notice

Equivalence of Syllabus / papers between CBS & CBCS syllabus for Distance students (CBS Pattern) students Introduced to the Year 2012-2013) as CBCS Pattern) introduced in the year 2013-14 at M.Sc Semester I and II and in the year 2014-15, at M.Sc Semester –III and Semester IV

If the candidate has failed in any of the papers mentioned below (As prescribed in Point no. 11 'a', 'c', 'e', and 'f')						Equivalence To	Then, the candidate shall appear and clear the papers shown in the respective row as registration papers					
M.Sc. Computer Science CBS Pattern : Semester- I							M.Sc. Computer Science (Choice Based Credit System) (CBCS)					
S. No.	Code No.	Paper	Name of Paper	Total Marks	Credits		Sem	Code No.	Paper	Name of Paper	Total Marks	Credits
01	Paper 1	Paper I	Discrete Mathematical Structures	100	4		I	151	Paper I	Discrete Mathematical Structures	80+20	4
02	Paper 2	Paper II	Programming in Java	100	4		I	152	Paper II	Programming in Java	80+20	4
03	Paper 3	Paper III	Digital Electronics and Microprocessor	100	4		I	153	Paper III	Digital Electronics and Microprocessor	80+20	4
04	Paper 4	Paper IV	Advanced DBMS and Administration	100	4		I	154	Paper IV	Advanced DBMS and Administration	80+20	4
05	Practical-I	Practical-I	Practical-I based on Theory papers I and II	80+20	4		I	155	Practical III	Practical-I based on Theory papers I and II	100	4
06	Practical-II	Practical-II	Practical-II based on theory papers I and II	80+20	4		I	156	Practical IV	Practical-II based on theory papers I and II	100	4
07		Seminar-I	Seminar-I	25	1		I		Seminar-II	Seminar-I	25	1
M.Sc. Computer Science CBS Pattern : Semester- II							M.Sc. Computer Science (Choice Based Credit System) (CBCS)					
S. No.	Code No.	Paper	Name of Paper	Total Marks	Credits		Sem	Code No.	Paper	Name of Paper	Total Marks	Credits
01	Paper 1	Paper V	Windows Programming using VC++	100	4		II	251	Paper V	Windows Programming using VC++	80+20	4
02	Paper 2	Paper VI	Theory of Computation and Compiler	100	4		II	252	Paper VI	Theory of Computation and Compiler Construction	80+20	4

06	Practical-II	Practical-VI	Practical-V based on Theory paper-3 and 4	50+50	4
07		Seminar-III	Seminar	25	1

M.Sc. Computer Science (CBS) Pattern :: Semester-IV

Sr. No.	Code No.	Paper	Name of Paper	Total Marks	Credits
01	Paper-1	Paper-XIII	Data Mining	100	4
02	Paper-2	Paper-XIV	Artificial Intelligence & Expert System	100	4
03	Paper-3	Paper-XV	Design and Analysis of Algorithms	100	4
04	Paper-4	Paper-XVI	Elective-I 1. Embedded System	100	4
05	Paper-5	Paper-XVII	Elective-II 1. Pattern Recognition	100	4
06	Paper-6	Paper-XVIII	Elective-III 1. Parallel Computing	100	4
07	Practical-I	Practical-VII	Practical-V based on Theory paper-3 to 5	50+50	4
08	Project	Project	Project	50+50	4
09			Seminar		

08		Paper-6	Practical-6 based on paper-11	100	4
09		Seminar-II	Seminar-II	25	1

M.Sc. Computer Science (Semester-I pattern Syllabus-CBCS)

Sr.No.	Code No.	Paper	Name of Paper	Total Marks	Credits
01	111	Paper-11	Data Mining	50+50	4
02	112	Paper-12	Artificial Intelligence & Expert System	50+50	4
03	113	Paper-13	Design and Analysis of Algorithms	50+50	4
04	114	Paper-14	Elective-I 1. Embedded System	50+50	4
05	115	Paper-15	Elective-II 1. Pattern Recognition	50+50	4
06	116	Paper-16	Elective-III 1. Parallel Computing	50+50	4
07	117	Practical	Practical-V based on Theory paper-3 to 5	100	4
08		Project	Project	100	4
09		Seminar	Seminar-II	25	1

ANNEXURE 'II' to Information Technology

Equivalence of Syllabus / papers between CBS & CBCS syllabus for Revision students (CBS Pattern students reinstated in the Year 2012-2013) in CBCS Pattern commenced in the year 2015-16 at M.Sc Semester I and II and in the year 2016-17 at M.Sc Semester III and Semester IV

If the candidate has failed in any of the papers mentioned below (s)he should appear in Paper no. 11 'A', 'B', 'C' and 'D'							Then, the candidate shall appear and clear the paper shown in the respective row as equivalent paper					
M.Sc. Information Technology CBS Pattern : Semester I							M.Sc. Information Technology Choice Based Credit System (CBCS)					
Sr. No.	Code No.	Paper	Name of Paper	Total Marks	Credits	Equivalence for	Sem.	Code No.	Paper	Name of Paper	Total Marks	Credits
01	Paper I	Paper I	Computer Architecture and Organization	100	4		I	111	Paper I	Computer Architecture and Organization	80+20	4
02	Paper II	Paper II	Advance Computing Skills (OOP and T	100	4		I	112	Paper II	Advanced Computing Skills (OOP and T	80+20	4
03	Paper III	Paper III	Distributed Operating System	100	4		I	113	Paper III	Distributed Operating System	80+20	4
04	Paper IV	Paper IV	Advanced Internet and Multimedia	100	4		I	114	Paper IV	Advanced Internet and Multimedia	80+20	4
05	Practical I	Practical I	Practicals / Viva on theory paper I and II	50+20	3		I	115	Practical I	Practicals / Viva on theory paper I and II	100	4
06	Practical II	Practical II	Practicals / Viva on theory paper III and IV	50+20	4		I	116	Practical II	Practicals / Viva on theory paper III and IV	100	4
07		Seminar I	Seminar I	25	1		I		Seminar I	Seminar I	25	1
M.Sc. Information Technology CBS Pattern : Semester II							M.Sc. Information Technology Choice Based Credit System (CBCS)					
Sr. No.	Code No.	Paper	Name of Paper	Total Marks	Credits	Equivalence for	Sem.	Code No.	Paper	Name of Paper	Total Marks	Credits

01	Paper 1	Paper 1	Windows Programming using VC++	100	4
02	Paper 2	Paper VI	Theory of Computation and Compiler Construction	100	4
03	Paper 3	Paper VII	Network Programming	100	4
04	Paper 4	Paper VIII	Open source Web Programming using PHP	100	4
05	Practical-I	Practical-III	Practical based on theory paper - VII	50+50	4
06	Practical-II	Practical-IV	Practical based on theory paper - VIII	50+50	4
07		Seminar-II	Seminar	50	2

08	211	Paper 1	Windows Programming using VC++	50+50	4
09	212	Paper 2	Theory of Computation and Compiler Construction	50+50	4
10	213	Paper 3	Network Programming	50+50	4
11	214	Paper 4	Open source Web Programming using PHP	50+50	4
12	221	Practical-I based on theory paper - VII		100	4
13	222	Practical-II based on theory paper - VIII		100	4
14		Seminar-II		50	2

M.Sc. Information Technology (IT) Pattern - Semester (II)

Sr.No.	Code No.	Paper	Name of Paper	Total Marks	Credits
01	Paper-1	Paper-15	Object oriented software and Testing	100	4
02	Paper-2	Paper-16	Software Engineering	100	4
03	Paper-3	Paper-17	Soft Computing	100	4
04	Paper-4	Paper-18	Elective-I 1. Distributed Database	100	4
05	Paper-5	Paper-19	Elective-II 1. Object Oriented Analysis and Design using UML	100	4
06	Paper-6	Paper-20	Elective-III 1. E-Commerce	100	4
07	Practical-I	Practical-V	Practical based on theory paper - 15 & 17	50+50	4

Examination Pattern

M.Sc. Information Technology (Semester Based Credit System) (IT-II)

Grade	Level No.	Paper	Name of Paper	Total Marks	Credits
09	221	Paper 5	Object oriented software and Testing	50+50	4
10	222	Paper 6	Software Engineering	50+50	4
11	223	Paper 7	Elective-I 1. Soft Computing	50+50	4
12	224	Paper 8	Elective-II 1. Distributed Database	50+50	4
13	225	Paper 9	Elective-III 1. E-Commerce	50+50	4
14	21	Paper 10	Practical-I based on theory paper - 15 & 17	50	2
15	22	Paper 11	Practical-II based on theory paper - 16 & 18	50	2
16		Seminar-II	Seminar	50	2