SYLLABUS

FOR

B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)

(Semester: III)

Examinations: 2018-19

GURU NANAK DEV UNIVERSITY AMRITSAR

INDEX OF SEMESTER–III

SEMESTER–III
POLITICAL SCIENCE

INDIAN CONSTITUTION

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:

Section–A: The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

Section–B: The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

UNIT–I

1. Constitution Assembly and making of India's Constitution.
2. Basic features of the Indian Constitution.
3. Preamble and its importance.
4. Nature of Indian Federalism and Centre-State Relations.

UNIT–II

1. Fundamental Rights, features, kinds and evaluation.
2. Fundamental Duties.
3. Directive Principles of the State Policy.

UNIT–III

1. **Parliament:** Composition, Powers and Role.
2. **President:** Election, Powers and Position.
3. **Indian Cabinet and Prime Minister:** Election, Powers, Position and Changing Role.
4. **Supreme Court and High Court:** Composition, Powers and Role.

UNIT–IV

1. **Governor:** Appointment, Powers and Role.
2. **State Legislature:** Composition, Powers and Role.
3. **Council of Ministers and Chief Minister:** Election, Powers, Position and Role.

Books Recommended:

1. G. Austin, *The Indian Constitution: Corner Stone of a Nation,* Oxford, Oxford University Press, 1966.
2. G. Austin, *Working of a Democratic Constitution: The Indian Experience,* Oxford University Press, 2000, Delhi.
3. D.D. Basu, *An Introduction to the Constitution of India,* New Delhi, Prentice Hall, 2008.
4. C.P. Bambhri, *The Indian State Fifty Years,* New Delhi, Shipra, 1997.
5. P. Brass, *Politics of India Since Independence,* Hyderabad, Orient Longman, 1990.
6. P. Brass, *Caste, Faction and Parties in Indian Politics,* Vol. II, Delhi, Chanakya Publications 1984-1985.
7. P. Brass, *Ethnic Groups and the State,* London, Croom, Helm, 1995.
8. P. Brass, *Language, Religion and Politics in North Indian,* London, Cambridge University Press, 1974.
9. B.L. Fadia, *State Politics in India,* Vol. II, New Delhi, Radiant Publishers, 1984.
10. F.R. Frankel, *India's Political Economy 1947-1977,* The Gradual Revolution, Oxford, Oxford University Press, 1978.
11. R. Kothari, *State against Democracy: In Search of Human Governance,* Delhi, Ajanta, 1988.
12. R. Kothari, *Politics in India,* New Delhi, Orient Longman, 1970.
13. R. Kothari, *Party System and Election Studies,* Bombay, Asia Publishing House, 1967.
14. I. Narain (ed.), *State Politics in India,* Meerut, Meenakshi Parkashan, 1967.
15. M.V. Pylee, *Constitutional Government in India*, Bombay, Asia Publishing House, 1977.
16. M.V. Pylee, *An Introduction to the Consutitution of India,* New Delhi, Vikas, 1998.
17. S.P. Verma and C.P. Bhambari (ed.), *Election and Political Consciousness in India*, Meerut, Meenakshi Parkashan, 1967.
18. B.L. Fadia, *Indian Government and Politics,* Agra, Sahitya Bhavan Publications, 2008.
19. A.S. Narang, *Indian Government and Politics,* New Delhi, Gitanjali, 1999.
20. *Indian Journal of Political Sciences*
21. *Punjab Journal of Politics*
22. Seminar
23. Lloyd I. Rudolph and Susanne Hoeba Rudolph, *Explaining Indian Democracy: A Fifty-Year Perspective, 1956-2006,* Vol. I, II, III, New Delhi, OUP, 2008.
24. Francine Frankel, *India's Political Economy: 1947-2004,* New Delhi, OUP, 2006.
25. Madhav Khosla, *The Indian Constitution*, Oxford, 2012
26. Sudhir Krishnaswamy, *Democracy and Constitutionalism in India : the Study of Basic Structue,* Oxford,2011
27. P.M Bakshi, *The Constitution of India,* Universal, 2007.
28. J.C Johari, *The Constitution of India*, Sterling, 2007
29. Brij Kishore Shasma, *Introduction to the Constitution of India*, PHI, 2009

SEMESTER–III
HISTORY

HISTORY OF INDIA (AD 1707-1947)

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setter:

Section–A: The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

Section–B: The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

UNIT–I

1. **Foundation of British Rule:** Advent of the British; Battles of Plassey and Buxar, Clive and Warren Hastings; Subsidiary Alliance Policy, Doctrine of Lapse.

2. **The Uprising of 1857:** Causes, Spread of the Uprisings, Nature and aftermath.

UNIT–II

3. **Economic Changes:** Agriculture, British commercial policies and the impact on the trade balance; Destruction of indigenous industries; the growth of modern industry; The drain theory.

4. **Growth of Education and Political Organization:** New education; Rise of the middle classes, Political institutions; **Socio Religious Movements :** Brahmo Samaj, Arya Samaj, Rama Krishana Mission, Prarthna Samaj, Theosophical Society, Aligarh Movement.

UNIT–III

5. **The Revolutionary Terrorism:** Partition of Bengal and its impact; Revolutionary Terrorism in Bengal, Maharashtra and the Punjab, Impact on the National Movement.

6. **The Phase of Non-Co-operation :** Emergence of Gandhi; The Jallianwala Bagh Massacre and its impact; Khilafat agitation; the Non-cooperation Movement; Withdrawal and impact; the Swarajists; The Simon Commission; **The Phase of Civil Disobedience :** The programme and the course of the Civil Disobedience Movement, the Round Table Conferences; Communal Award; Poona-pact; Withdrawal of Civil Disobedience Movement

UNIT–IV

7. **Constitutional Development:** The Minto-Morley Reforms of 1909, The Act of 1919 and Dyarchy; Government of India Act, 1935 and Provincial Autonomy.

8. **Towards Partition and Independence :** Growth of communal politics; Lahore resolution, Cripps proposals; Quit India Movement; the INA Trials, Interim Government and Elections; Cabinet Mission towards Independence.

Suggested Reading:

1. Bipan Chandra, *History of Modern India*, Orient Longman, Hydrabad, 2009.
2. Sarkar, Sumit, *Modern India (1885-1947)*, Orient Longman, New Delhi, 1983.
3. Bose, Sugata and Ayesha Jalal, *Modern South Asia: History, Culture, Political Economy*, OUP, New Delhi, 2004.
4. Bandyopadhyay, Sekhar, *From Plassey to Partition: A History of Modern India*, Orient Longman, Hydreabad, 2004.
5. Datta, Kali Kinkar, *A Social History of Modern India*, Macmillan, New Delhi, 1975.
6. Bannerjee, A.C., *The New History of Modern India (1707-1947)*, K.P.Bagchi, Calcutta, 1983.
7. Burton, Stein, A History of India, OUP, New Delhi, 2003.
8. Desai, A.R., *Social Background of Indian Nationalism*, Popular Prakashan, Bombay, 1966.
9. Misra, B.B., *The Indian Middle Classes: Their Growth in Modern Times*, OUP, London, 1978
10. Jones, Kenneth, *Socio-Religious Movements in India*, CUP, Cambridge, New Delhi, 1989.
11. Chopra, P.N. et al, *A Social, Cultural and Economic History of India: Modern India*, Vol. III, Macmillan, New Delhi, 1974.
12. Chaudhuri, M.K., (ed.), *Trends of Socio-Economic Change in India (1871-1961)*, IIAS, Simla, 1969.
13. Choudhary, Sukhbir, *Peasants' and Workers' Movements in India, 1905-1929*, PPH, New Delhi, 1971.

SEMESTER–III
JOURNALISM AND MASS COMMUNICATION

WRITING FOR PRINT MEDIA
(THEORY)

Time: 3 Hours **Max Marks: 100**
Theory Marks: 80
Practical Marks: 20

Instructions for the Paper Setters:
Section–A shall consists of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks. **10x2=20**
Section–B shall consists of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks. **8x5=40**
Section–C shall consists of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks.
10x2=20

News: Writing a news story; chronological, logical and inverted pyramid styles, Headlines: Types of headlines. Leads; Types of leads, Sources of News, Elements of News. Organisational setup of a news paper office; Role of editor, a sub-editor and news editor.
How to produce a news paper
How to get a news paper registered
Qualities of a journalist
Functions of the Press
Printing Process
New Technology in Print Media
Editing the news story: editing symbols
Various departments of a newspaper office and their hierarchy.
Middles
Editorial, columns and letter to editor
Web Journalism

(PRACTICAL)

(20 Marks)

Writing news stories in various news writing styles
Writing features and articles
Writing letter to editor and getting it published

Books Recommended:-

1. Newspaper Editing: K.M. Srivastava, Sterling Publishers Pvt. Ltd. (1987).
2. Newspaper Management: Golab Kothari, Intercultural Open University (1995).

SEMESTER–III
MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)

SOUND & SCRIPT WRITING FOR MEDIA
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 80
Practical Marks: 20

Instructions for the Paper Setters:
Section–A shall consists of 10 questions carrying 2 marks for each question. All questions will be compulsory. Each question will carry 2 marks with the total weightage of section being 20 marks.

10x2=20

Section–B shall consists of 10 questions. Candidates will be required to attempt any 8 questions. Each question will carry 5 marks. The total weightage of this section being 40 marks.

8x5=40

Section–C shall consists of 4 questions. Candidates will be required to attempt any 2 questions. Each question will carry 10 marks. The total weightage of this section being 20 marks.

10x2=20

Question Paper will be set in English only but the medium of examination will be English, Punjabi and Hindi.

Sound:
* Meaning
* Characteristics
* Propagation
* Acoustic Reverberation

Microphones:
* Selection of Microphones
* Types of Microphones

MAGNETIC RECORDING PRINCIPLES

Audio Cables & Connectors (Types & Uses)
Noise & Distortion
Dope Sheet/Exposure Sheet
Sound Recordist's role in production crew
Audio console

Script Writing
- Basics
- Elements of Good Script Writing
- Role of Writer
- Structure of Script

Subject Research (Idea, Visualisation & Script Sources of Information)
Formats of Script Writing
Story Board

SEMESTER–III

MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)

(PRACTICAL)

Marks: 20

Writing script for various radio formats.

Visit to sound recording studio.

Practical acquaintance with sound equipments.

Books Recommended

1.	Writing scripts for TV Radio and Film,	Willis, Edgor	Chicago, Halt and Rinchart. 1981.
2.	Basics of Video Sound	Das Lyver	Focal Press

Note: Practicals to be conducted by External Examiner.

SEMESTER–III
SOCIOLOGY

SOCIETY IN INDIA

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:

Section–A: The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

Section–B: The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

Unit–I

(a) Indian Society: Features and Unity in Diversity.

(b) Caste: Features, Functions, Changing patterns, Difference between caste and class.

Unit–II

(a) Social Issues: Communalism, Casteism, Gender and Human Rights.

Unit–III

(a) Marriage: Meaning, Types, Functions and Changes.

(b) Family: Meaning, Types, Functions and Changes.

(c) Kinship: Meaning and Terminology.

Unit–IV

(a) Society in India: Rural, Urban and Tribal.

Recommended Books:

1. Abraham, M. Francis: *Contemporary Sociology*, Oxford University, New Delhi, 2006.
2. Ghurye, G.S.: *Caste & Race in India*, Popular, Bombay, Punjabi Translations by N.S. Sodhi, Panjabi University, Patiala, 1962.
3. Hutton, J.H.: *Caste in India—Its Nature, Functions and Origin*, Oxford University Press, Delhi 1980.
4. Jayaraman, Raja: *Caste & Class, Dynamics of Inequality in Indian Society*, Hindustan Publishing Corporation, 1981.
5. Kapadia, K.M.: *Marriage and Family in India*, Oxford University Press, Calcutta, 1996.
6. Kapila, S: *A Textbook of Sociology*, Part-I & II, New Academic House, Jalandhar, 1990-91.
7. Kothari, Rajni (ed): *Caste in Indian Politics*, Orient Longman, Delhi, 1973.
8. Mandelbaum, David G.*: Society in India*, Popular Prakashan, Bomaby, 1972.
9. Mukerji, D.P.: *Diversities: Essays in Economics, Sociology and Social Problems*, Manak, New Delhi, 2002.
10. Maclver, R.M. & Page, Charles H.: *Society- An Introductory Analysis*, Macmillan, London, 1974.
11. Ahuja, Ram. 1999, *Society in India*. Jaipur: Rawat.
12. Atal, Yogesh. 2006, *Changing Indian Society*. Jaipur: Rawat.
13. Sharma, K.L. 2007, *Indian Social Structure and Change*. Jaipur: Rawat.

SEMESTER–III
PSYCHOLOGY

EXPERIMENTAL PSYCHOLOGY-I
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Pass Marks: 35% of the subject **Theory Marks: 75**
(Theory and Practical Separately) **Practical Marks: 25**

Instructions for the Paper Setters:

The question paper will consist of three sections: A, B and C.

Section–A: It will consist of 10 very short answer type questions with answers to each question up to five lines in length. All questions will be compulsory. Each question will carry 1½ marks; total weightage of the section being 15 marks.

Section–B: It will consist of short answer type questions with answers to each question up to two pages in length. Six questions will be set by the examiner and four will be attempted by the candidates. Each question will carry 9 marks: total weightage of the section being 36 marks.

Section–C: It will consist of essay type questions with answer to each question up to five pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 12 marks, total weightage of the section being 24 marks. The questions are to be set to judge the candidates' basic understanding of the concepts.

Note:

1. The use of Non-Programmable calculators and Statistical Tables are allowed in the examination.
2. Only one numerical question is to be set either of nine marks (from Section–B) or of twelve marks (from Section–C).

Experimental Psychology: Introduction and Nature of Experimental Method Name, Advantage and Disadvantage.

Variables: Types of Variables, Stimulus, Organismic and Response Variables, Process of experimentation-manipulation and control of variables, Concept of within and between Experimental Designs.

Sensation: Types of sensations, Visual sensation; structure and functions of the eye. Theories of colour vision (Young-Helmholtz. Opponent-Process & Evolutionary). Auditory sensation: Structure and functions of the Ear-Theories of hearing. Brief introduction to cutaneous sensation, olfactory sensation and gustatory sensation.

Perceptual Processes: Selective Attention, Nature and factors affecting perception, Principles of perception (organisation), perception of form; contour and contrast, figure-ground differentiation, perceptual set.

Perception of Movement: Image-Retina and Eye-Head movement system, Apparent movement, Induced movement, Auto Kinetic movement.

Perception of Space: Monocular and Binocular cues for space perception. Perceptual constancies lightness, brightness, size and shape.

Illusions: Types, causes and theories

Statistics: Normal Probability Curve, Its nature and characteristics (Numericals of Areas under NPC only)

References:

1. D. Amato, M.H.R. (2001): Experimental Psychology, Tata McGraw Hill, New Delhi.
2. Garrett, H.E. and Woodworth, R.S. (1969): Statistics in Psychology and Education. Vikils, Feffer and Simons Pvt. Ltd.
3. Kerlinger, P.N. (1988): Foundation of Behavioural Research, Surjeet Publications, New Delhi.
4. Postman, L. and Egan. J.P.: Experimental Psychology, Harper and Row, New York.
5. Schiffman, H.R. (1982): Sensation and Perceptions, John Willey and Sons.
6. Woodworth, R.S. and Schlosberg, H. (1954): Experimental Psychology, Holt, Rinehart and Winston, Inc.
7. Solso, R.L. (2007): Experimental Psychology: A Case Approach Pearson Education, New Delhi.
8. Sternberg, R.J. (2007): Cognitive Psychology, Thomson Wads Worth.

SEMESTER–III
PSYCHOLOGY

(PRACTICAL)

Marks: 25

Instructions for the Practical Examination:

Students are supposed to perform five practicals out of 6 mentioned in the syllabus. Practical examination will be of 3 hours duration. External examiner will conduct the practical examination. The students will perform one practical in the exam carrying 25 marks. Evaluation of the practical would be done on the basis of write-up of file book (5 Marks), performance and viva-voce (20 Marks) relating to the practicals. In case students have not completed 5 practicals, the examiner will deduct marks at the rate of 5 for each left practical out of total evaluation of the student. No reappear will be allowed in the practical examination. Fail in the practical will be considered fail overall in the subject.

Five Practicals have to be performed out of the following:

1. Role of set in perception.
2. Span of Attention/Division of Attention.
3. Muller-Lyer Illusion
4. Figure-groun diferentiatin
5. Paired Associate learning.
6. Reaction Time (Simple Vs. choice RT or Auditory Vs. Visual RT)

SEMESTER–III
DEFENCE AND STRATEGIC STUDIES

EVOLUTION OF WARFARE OUTSIDE INDIA
(THEORY)

Time: 3 Hours **Max .Marks: 100**
Theory Marks: 80
Practical Marks: 20

Instructions for the Paper Setters:

Section A: The examiner shall set 10 short answer type questions from the entire syllabus and the candidates will attempt 7 questions carrying 4 marks each. Answer to each question shall not exceed half of the page. The total weightage of this section shall be 28 marks.

Section–B: The examiner shall set 8 questions from the entire syllabus–two from each Unit. The candidate shall attempt four questions, one from each Unit. Each question shall carry 13 marks. The total weightage of this Unit shall be 52 marks.

Note: *Practicals are only meant for the regular students. For the private students the two papers shall be of* ***100 marks each****. For the private students, each question in Section B will be of 18 marks.*

Unit—I

1. **Military Organisations and techniques of fighting of Macedonians and Persians with particular reference to the Battle of Arbela, 331 B.C.**
   (a) Military organisations of Macedonians and Persians.
   (b) Battle of Arbela
      (i) Introduction
      (ii) Opposing forces and their deployment.

2. **Military organizations and techniques of fighting of Romans and Carthaginians with particular reference to the Battle of Cannae 216 B.C.:**
   (a) Military organisations of Romans and Carthaginians.
   (b) Battle of Cannae
      (i) Introduction
      (ii) Opposing forces and their deployment.
      (iii) Description of the battle.
      (iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).

3. **Military organizations and techniques of fighting of Romans and Barbarians with particular reference to the Battle of Adrianople 378. A.D. : Military organizations and techniques of fighting of Romans and Barbarians.**
   (a) Military organisations of Romans and Barbarians.
   (b) Battle of Adrianople
      (i) Introduction
      (ii) Opposing forces and their deployment.
      (iii) Description of the battle.
      (iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).

Unit–II

4. **Military organizations and techniques of fighting of the English and Romans with particular reference to the Battle of Hastings 1066 AD. :**
   a) Military organisation of the English and Romans.
   b) Battle of Hastings
      (i) Introduction
      (ii) Opposing forces and their deployment.
      (iii) Description of the battle.
      (iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).
5. **The Mongol art of war under Changez Khan and Taimur**
   a) Organisation of Mongol Army.
   b) Mongol Art of War.

Unit—III

6. **Industrial Revolution and its impact**
   a) Impact on Society
   b) Impact on weapons for land and naval warfare
   c) Impact on means of communications
   d) Impact on tactics for land and naval warfare.
7. **Napoleonic Warfare**
   a) Elements of Napoleonic Warfare.
   b) Principles of Napoleonic Warfare.

Unit—IV

8. **Naval Warfare with particular reference to the Battle of Trafalgar 1805 A.D. :**
   a) Background of the English and Franco-Spanish rivalry for naval supremacy.
   b) Battle of Trafalgar.
      (i) Opposing forces and their deployment.
      (ii) Description of the battle.
      (iii) Analysis (strategy, tactics, application of principles of War and causes of defeat and victory).
9. **American Civil War (1861-65)**
      i) Introduction
      ii) Causes
      iii) Events in brief
      iv) The Character of the Civil War
      v) Tactical development

SUGGESTED READINGS:

1.	Das, S.T. (1970)	An Introduction to the Art of War , Sagar Publishers, New Delhi.
2.	Dupuy, R.Earnest (1970)	The Encyclopedia of Military History, MacDonald, London.
3.	Fuller, J.F.C. (1960)	Conduct of War, Army Publishers, New Delhi.
4.	Fuller, J.F.C. (1959)	The American Civil War, Natraj Publishers, Dehradun.
5.	Fuller, J.F.C. (1958)	The Generalship of Alexander The Great, Natraj Publishers, Dehradun.
6.	Fuller, J.F.C. (1971)	Armament and History, Sagar Publishers, New Delhi.
7.	Fuller, J.F.C. (1954)	The Decisive Battle of the Western World Vol.I & II, Eyre and Spottiswoode, London.
8.	Montgomery, Viscount (1968)	A History of Warfare, William Collins, London.
9.	Ropp, Theodore (2000)	War in the Modern World, The John Hopkins University Press Baltimore.
10.	Sarkar, J.N. (1960)	Military History of India, M.C, Sarkar, Calcutta.
11.	Sheppard, E.W. (1966)	The Study of Military History, Natraj Publishers, New Delhi.

SEMESTER–III
DEFENCE AND STRATEGIC STUDIES

(PRACTICAL)

Time: 3 Hrs. **Marks: 20**

Written: 10

Discussion: 05

Record & Viva-Voce: 05

Instructions for the Examiners:

1. Examiners are required to set a question paper containing 10 marks of 1 hour duration in which he is supposed to set at least 3 questions of 5 marks each and students are required to attempt any two.
2. In the written practical Examination, choice in questions may be given to the students. The question paper is to be set at least half an hour before the examination.
3. Each student should be asked to deliver a talk/make short presentation for 5–10 minutes on any of the given topics.
4. Examiners should devote reasonable time for Viva–Voce Test and assess the practical record of a student.
5. For practical paper one group of Students will not comprise of more than 20 students at a time.

A. WRITTEN TEST **Marks: 10**

1. Liquid Prismatic Compass (LPC): Features and functions of its various parts.

Attempt following exercise on the LPC:

a. To determine magnetic north.
b. Setting of the Map.
c. To find out the bearing of a point from other point situated on the ground.
d. To determine one's and enemy's position on the map by resection and intersection methods with the help of compass.
e. To set the compass in a particular direction for night march

2. Determination of individual compass error.

B. TOPICS FOR DISCUSSION/PRESENTATION: **Marks: 05**

a. Historical Warfare
b. Modern Warfare
c. Impact of Industrial Revolution on Warfare

C. RECORD & VIVA-VOCE **Marks: 05**

SEMESTER–III
GEOGRAPHY

RESOURCES AND ENVIRONMENT: WORLD PATTERNS
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 70
Practical Marks: 30

Note: Instructions for the Paper Setters:

1. A compulsory question containing 15 short answer type questions will be set covering the whole syllabus. The students will attempt any 10 parts in about 40-50 words each. Each part will carry 3 marks (Total 30 marks).
2. The whole syllabus will be divided into 4 units. Eight questions will be out of the whole syllabus, 2 from each unit. The students will be required to attempt one question from each unit. These will be in addition to the compulsory question at serial number 1. Each question will carry 10 marks (40 marks)
3. Special credit will be given to suitable use of maps and diagrams.
4. In Unit–II question will focus on general aspects of the topic instead of on any individual resources.
5. Stencil outline maps are allowed.

Objective:

1. To understand concept of resources and their interface with environment;
2. To examine use and misuse of various resources, and analyse future prospects;
3. To study various methods and approaches of conservation and management of natural resources;
4. To understand the quantitative and qualitative aspects of human resources in spatial perspectives and the associated environmental problems.

Course Contents:

UNIT–I

Environment and Resources:

Meaning, nature and components of environment. Nature and definition of Resources. Resources environment interface.

Classification of Resources: Biotic and abiotic, Exhaustible and inexhaustible, Potential and Developed, Agricultural and Pastoral, Mineral and Industrial.

UNIT–II

Utilization of Natural Resources:

Distribution availability, utilization and conservation of water, minerals (in general) and energy resoruces; their economic and environmental significance and sustainability.

Types and distribution of forests—their economic and environmental significance and conservation.

Types and distribution of fisheries—their economic and environmental significance and conservation.

Major soil types and their distribution; problems of soil erosion and soil conservation.

UNIT–III

Human Resources: Number, Growth, Distribution and Density.
Population Resources Relationship: Population- Resource Regions of the world.

UNIT–IV

Environment: Natural and Human, Man-environment relationship—determinism, Possibilism, ecology.
Biodiversity: Loss of natural and agro-biodiversity.
Environmental Issues: Pollution; food security; deforestation; conservation of wild life.

Books Recommended:

1. Agarwal, A. et.al. : The Citizen's Fifth Report, Centre for Science and Environment, New Delhi, 1999.
2. Chandna, R.C.: A Geography of Population, Kalyani Publishers, Ludhiana, 2014.
3. Chawla, I.N.: Geography of Resources, Bharat Prakashan, Jalandhar, latest edition.
4. Hartshorne Truman A and W. Alexander: Economic Geography, Prentice Hall, 1988, 3rd John Edition.
5. Kates, R.W. & Burton, I (Eds.): Geography, Resources and Environment, Vol. I & II, University of Chicago Press, Chicago, 1986.
6. Naresh Kumar: Environmental Studies, Sharma Publishers, Jalandhar 2009.
7. Trewartha, G.T.: A Geography of Pupulation— World Patterns. John Wiley and Sons, New York, 1969.
8. Zelinsky, Wilbur: A Prologue to Population Geography, Prentice Hall, New Jersey, 1966.
9. Zimmerman E.W.: World Resources and Industries, Harpar, New York.
10. Chandna, R.C.: Environmental Geography Kalyani Publishers, Ludhiana, 2014.
11. Chawla. I.N.,: Resources & Environmental Bharat Publishers, Jalandhar.
12. Singh, J.S. & Singh, S.P. & Gupta S.R. (Eds.): Ecology Environment and Resources Conservation, Anamaya Publishers, New Delhi, 2008.

SEMESTER–III
GEOGRAPHY
CARTOGRAPHIC REPRESENTATION OF GEOGRAPHIC DATA
(PRACTICAL)

Time: 3 Hours **Max. Marks: 30**
Written Paper of 3 Hours: 15 Marks
Practical Record (File): 08 Marks
Viva: 07 Marks

Objective:
1. To apprise the students with symbolization of different types of geographical data and depiction of various spatial data.
2. To provide training in application of various graphical methods of depicting geographic data.

Course Contents:

Unit–I

Symbolization of Geographical Data:
a) **Point Symbols:** Dot, circle, sphere.
b) **Line Symbols:** Isopleths and flow lines.
c) **Areas Symbols:** Choropleth.

Unit–II

a) Cartographic Representation of: Population data (distribution, density, growth, migration and literacy)
b) Agriculture data (land utilization, distribution of crops, percentage of cropped area and irrigated areas).
c) Industrial data (distribution, employment and production)
d) Transport data (traffic flow).

Note:
1. A compulsory question containing 10 short answer type questions will be set covering the whole syllabus. The students will attempt 6 short answer type questions in about 25–30 words each. Each short answer type question will carry ½ mark (Total 3 marks).
2. The whole syllabus will be divided into 2 units. Eight questions will be set out of the whole syllabus, four from each unit. The students will be required to attempt two questions from each unit. Each question will carry 3 marks. These will be in addition to the compulsory question at serial number 1. (Total 12 marks)
3. Evaluation of Practical Record will be done at the time of viva-voice examination.
4. A minimum of 16 sheet are to be prepared by each student.
5. In case, the candidate has applied for improvement, he/she should be required to make a fresh practical note book.
6. For practical classes, the number of students in one group shall not exceed fifteen.

Books Recommended:
Essential Readings:
1. Khullar, D.R.: Essentials of Practical Geography, New Academic Publishing Co., Mai Hiran Gate, Jalandhar, 2000.
2. Robinson, A.H.: Elements of Cartography, John Wiley, New York, 1995.
3. Singh, Gopal: Mapwork & Practical Geography, Vikas Publishing House Pvt. Ltd., New Delhi, 1995.
4. Singh, R.L. & Singh Raghunandan: Mapwork and Practical Geography, Central Book Depot, Allahabad, 1993.
Further Readings:
1. Birch, T.W.: Maps Topographical & Statistical; Clarendon Press, Oxford, 1949.
2. Garnett, A.: Geographical Interpretation of Topographical Maps, George Harrap & Co., London, 1953.
3. Monkhosue, F.J.: Maps and Diagrams, Methuen & Co., London, 1994 (reprint).

SEMESTER–III
PUBLIC ADMINISTRATION
PERSONNEL ADMINISTRATION IN INDIA

Time: 3 Hours **Max. Marks: 100**

Note:- Instructions for the Paper Setters / Examiners:

Each Question Paper may consist of two sections as follows:

Section–A: The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

Section–B: The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

UNIT–I

Introduction:
Meaning, Nature and Scope of Personnel Administration.
Characteristics of Public Personnel Administration in India.
Functions and Significance of Personnel Administration.
Public Services and their role in Administrative System.

UNIT–II

Civil Services in India: Role and rationale of All India Services.
Recruitment: Meaning, Methods
Promotion: Meaning, Principles.
Training: Meaning, Objectives and Types, Training System in India.

UNIT–III

Personnel Agencies:
Functions and Role of Department of Personnel and Public Grievances, Union Public Service Commission, State Public Service Commissions & Staff Selection Commissions.

UNIT–IV

Employer—Employee Relations and Working Conditions:
Employee's participation in Management.
Rights of Public Servant, Conduct and Discipline.
Integrity in Public Services - Problem of Corruption.
Lok Pal and Lok Ayukta. Central Vigilance Commission.

Suggested Readings:

1. Government of India, Report on Personnel Administration, New Delhi, 1970.
2. Glenn O. Stahl: Public Personnel Administration, 7th Ed., Oxford IBH Publication Compo, New Delhi, 1977.
3. Goel S.L. and Shalini Rajneesh, Public Personnel Administration: Theory and Practice, Deep and Deep Publications, New Delhi, 2002.
4. Indian Institute of Public Administration, Personnel Administration, New Delhi, 1970.
5. Sahib Singh and Sawinder Singh, Public Personnel and Financial Administration, New Academic Publisher, 2002.
6. Sinha V.M., Personnel Administration, R.B.S.A., Publisher, Jaipur, 1985.

SEMESTER–III

WOMEN EMPOWERMENT

WOMEN EMPOWERMENT: BROAD ISSUES

Time: 3 Hrs. **Max. Marks: 100**

Instructions for the Paper Setters:

Section–A: The examiner shall set 10 short answer type questions covering entire syllabus and the candidates will have to attempt 8 questions of 2 marks each. Answer to each question shall be approximately of 50 words. The total weightage of this section shall be 16 marks.

Section–B: The examiner shall set 8 questions, by selecting 2 questions out of each unit. The candidate shall attempt any 6 questions in all by selecting atleast one question from each unit. Each question shall carry 14 marks. The total weightage of this section shall be 84 marks.

UNIT-I

Women Empowerment and role of Social Institutions:-

1. **Women Empowerment:** Meaning and Efforts.
2. Role of Social Institutions (Family, educational institutions, media, press and Khap Panchayats.

UNIT-II

Women Empowerment: Commissions and Govt. Policies:-

1. Commissions and bodies for gender equality: central, State and local.
2. Recent policies of Government of India for Women Empowerment.

UNIT-III

Women Empowerment: Patriarchy, Matriarchy and Social Movements

1. Patriarchy and Matriarchy- Ideology practice and Women Rights.
2. Social and Religious Movements for Women Rights.

UNIT-IV

Women Empowerment: Legal Rights

1. **Women, Work and Livelihood:** Sexual Harassment at work place.
2. **Women and Legal Rights:** Matrimonial, Property and old Age Rights.

SEMESTER–III
ECONOMICS

MACRO ECONOMICS

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters/Examiners:-

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

UNIT–I

Distinction between Micro and Macro Economics; Determination of Income and Employment : Classical and Keynesian models; Say's Law of Market and aggregate demand and aggregate supply.

Consumption functions; average (short-run and long run) and marginal propensity to consume; static and dynamic multipliers.

UNIT–II

Investment: Meaning, Demand schedules and factors affecting investment decision. Marginal Efficiency of Capital. Accelerator, multiplier-accelerator interaction.

Trade cycles-meaning, characteristics and phases. Samuelson and Hicks Models of trade cycles.

UNIT–III

Money: Its functions and role. Money and Capital Markets (Introductory). Quantity Theory of Money. Fisher's and Cambridge's equations. Liquidity preference theory.

Banking: Definitions of banks. Credit creation and credit control.

UNIT–IV

Inflation: Concept, Causes and cures. Inflation-unemployment Trade-off (only Phillips' contribution).

Macroeconomic Policies: Fiscal policy – meaning, objectives and instruments.

Monetary policy – meaning, objectives and instruments.

Recommended Texts:

1. Shapiro, E. Macroeconomic Analysis, Harcourt, Brach and World, New York, 1978.
2. Dernaburg, T.F. and MC Dougall D.M., Macroeconomics : the Measurement, Analysis and Control of Aggregate Economic Activity, McGraw-Hill, Kogakusha, Tokyo, 1972.
3. Gupta, S.B. Monetary Economics : Institutions, Theory and Policy, S. Chand, New Delhi, 2000.

SEMESTER–III

INDUSTRIAL ECONOMICS–III

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters/Examiners:-
Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

UNIT–I

Organisational forms of the firm; Ownership, Control and management and goal conflict in a firm; alternative objectives of the firm; active and passive firm.

UNIT–II

Market Structure: Buyer's concentration; entry conditions and economies of scale; Market structure and association.

UNIT–III

Market conduct : Investment decisions: Theory and evidence; Financial decisions : retention pay-out ratio; advertising costs, profitability and market structure

UNIT–IV

Industrial performance : Industrial productivity, efficiency and capacity utilization – concept and measurement; firm size, optima and their reconciliation.

Recommended Texts

1. Devine. P.A. et. al. : An Introduction to Industrial Economics.
2. Koutosoyianinis. A. : Modern Microeconomics.
3. Barthwal R.R. : Industrial Economics, An Introductory text Book.
4. Hay, D.A. and D.J. Morris : Industrial Economics : Theory and Evidence, Oxford University Press, London.

SEMESTER–III

QUANTITATIVE TECHNIQUES–III

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper-Setters/Examiners:

(i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
(ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

UNIT–I

Differentiation: Maxima and Minima of Functions, Partial derivatives, Higher order partial derivatives.

UNIT–II

Integration (Excluding Trigonometric and Inverse Functions): Indefinite Integrals; Integration by Partial Fractions; Integration by substitution; Integration by parts; Definite Integrals.
Application of Integration in Consumer Surplus and Producer Surplus.

UNIT–III

Matrices: Definition, Types, Addition, Subtraction and Multiplication of Matrices, Scaler Multiplication, Transposition, Determinants and their Properties, Minors and Co-factors, Rank of a Matrix, Inverse of a Matrix, Crammer's Rule for Solution of Simultaneous system of equations. Applications of matrices in economics.

UNIT–IV

Linear Programming: Formulation of problem, Assumptions, Graphical solution, Simplex method. Use of Artificial Variables, Dual Simplex method.
Input-Output Analysis: Basic concepts, Input-Output tables for closed and open economies, Leontief Basic Input-Output Model, Simple Applications of Input-Output Analysis.

Recommended Texts:

1. Yamane Taro: Mathematics for Economics, Prentice Hall of India, New Delhi, 1995.
2. Allen R.G.D.: Mathematical Analysis for Economists, ELBS and Macmillan Press, 1971.
3. Chaing, A.: Fundamental Methods of Mathematical Economics.

SEMESTER–III
AGRICULTURAL ECONOMICS & MARKETING

AGRICULTURAL ECONOMICS–II

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters/Examiners:-

Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

UNIT–I

Institutional Changes, land reforms, consolidation of holdings, abolition of intermediaries, ceiling on land-holdings-need, nature and evaluation with special reference to India.

New Agricultural Technology, its nature, role adoption and impact on output, employment and income distribution.

UNIT–II

Agricultural Price-Policy, demand and supply of Agricultural products. Evolution of price policy function, objectives, instruments, impact on income, output and employment.

UNIT–III

Agricultural Finance-Need for agricultural credit, agencies, role of finance in developing agriculture, role of Co-operative, Commercial Banks, RRBS, Role of NABARD.

Self help groups, joint liability groups. Service Area Approach, Lead Bank scheme, Kisan Credit Card. Growth in Agricultural credit, Repayment performance, Principals of credit worthiness.

UNIT–IV

Agricultural taxation case for agriculture taxation, case for special treatment, effect of agricultural taxation on economic development, agricultural taxation in India.

Readings:

1. A.S. Kahlon and: Agricultural Price Policy in India, D.S. Tyagi Allied Publishers, New Delhi (1983).
2. Rajbans Kaur: Agricultural Price Policy in Economic Development, Kalyani Publishers, New Delhi (1975).
3. P.C. Josh: Land Reforms in India – Trends and Perspectives, Allied Publishers, Bombay (1976).
4. C.B. Memoria: Agricultural Problems of India, Kitab Mahal (1985).

SEMESTER–III
RURAL DEVELOPMENT
RURAL DEVELOPMENT–III

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters/Examiners:-
Paper Setters will set 9 questions in all.

Question No. 1 will be compulsory comprising 10 short questions covering the entire syllabus, each question carrying 2 marks to be answered in upto 5-7 lines or 50-70 words. Total weightage of marks assigned to of this section will be 20 marks.

The Paper Setters will set 2 questions from each of I-IV units. The Candidates will attempt 4 questions selecting one from each unit. Each question from Unit I-IV will be of 20 marks. Candidates should answer each question upto 5-7 pages. Total weightage of this section will be 80 marks.

UNIT–I

Marketing concepts and types, Importance and features; Defects and consequences; Co-operative Marketing; Government and marketing; Sales Promotion.
Agricultural Exports: Agro Processing; Present Position, Problems and Policy.

UNIT–II

Agricultural Prices: Market forces and Government intervention; Trends and causes of Rise and Fluctuations; Stabilisation and Policy, Buffer-Stocks and Imports.

UNIT–III

Rural Indebtedness: Nature, magnitude and consequences; Causes and remedial measure. Commercial Banks, Magnitude of help, Assessment of performance; Regional Rural Banks.

UNIT–IV

Cooperative Credit: Importance and Growth, Weaknesses and Improvements. Students should be given an elementary exposure to the subject.

Suggested Readings:

1. A.N. Aggarwal: Problems, Progress and Prospects, Indian Agriculture, 419 to 465 pages on Marketing.
2. A.N. Aggarwal: Rural Economy of India, Kundan Lal.
3. Sadhu and Singh: Fundamentals of Agricultural Economics, 227 to 251 pages on Agricultural Marketing.
4. K.B. Mukherjee: Agricultural Marketing in India.
5. Kohl, Richard L.: Marketing of Agricultural Products, Prentice Hall of India, 2002.
6. S.S. Acharya: Agricultural Marketing in N.D. Aggarwal: India, Third Edition, Oxford and IVth Pubilshers, New Delhi, 1999.

B.A./B.Sc. (Semester System) *(12+3 System of Education) (Semester–III) (Session 2018-19)*
(Faculty of Economics & Business)

SEMESTER–III

OFFICE MANAGEMENT AND SECRETARIAL PRACTICE (VOCATIONAL)

OFFICE PRACTICE
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 60
Practical Marks: 40

Note: The candidates are allowed to use simple (Non-Scientific) Calculators.

Section–A: The examiner will set 8 short questions from the entire syllabus. The candidate will have to attempt 6 questions out of 8 questions. Each question carrying 2 marks
(6x2=12 Marks)

Section–B: The examiner will set 8 long questions in four parts, 2 questions from each unit. The candidate will have to attempt 4 questions selecting at least one from each unit. Each question carrying 12 marks.
(4x12=48Marks)

UNIT–I

Office: Meaning, Function, Importance, Concept of an Organization, Centralisation Vs. Decentralisation of Office Services, Principal departments of a Modern Office-correspondence, Typing and Duplicating, Filing, Mailing, General Office.

Filing and Indexing: Meaning and Importance of Filing, Essentials of a Good Filing System, Centralized vs. Decentralised Filing System, Methods of Filing Equipments.

UNIT–II

Office Applications and Machines: Types of commonly used appliances and machines-duplicator, accounting mechanism calculator addressing machines, punch card machines, franking machines, weighing and folding machines, sealing machine, dictaphonecheque protector, cash register, coin sorter, time recorder and such other machines.

Modern Office Machines: Computer Word Processor, Scanner their operation and use in the office set up. Introduction of computer-Importance, History and Types of Computers, Hardware and Software, Computer Operation. Word Processor-Concept of word processing, creating and editing documents, taking print out DO'S and DON'T'S in details from application point of view. Scanner-Introduction of Scanner, its importance and use in offices.

UNIT–III

Mailing Department: Meaning and Importance of Mail, Centralisation of Mail, Handling of work-its advantages, mail room equipment, sorting table and racks, letter openers, time and date stamps, postal franking machine, addressing machine, mailing scales, post offices guide.

Handling Mail: Inward Mail-Receiving, sorting, opening, recording, marking, distributing.

Outward Mail: Folding of letters, preparation of envelopes, sorting, scaling, weighing, stamping, entering, letter sent book or peon book, despatching rail parcel service, air mail service, courier service.

UNIT–IV

Office Correspondence: Essentials of a good letter, drafting of business letter, Enquiry, quotation, order, advice, making payment, trade reference, complaints, circular letters, follow up letters, official letters, semi officials.

Assisting Visitors: Office etiquetes, effective use of language, preparation of appointment schedules and maintaining visitors' diary furnishing desired information, instructing co-workers.

SEMESTER–III

OFFICE MANAGEMENT AND SECRETARIAL PRACTICE (VOCATIONAL)

OFFICE PRACTICE
(PRACTICAL)

Marks: 40

1. Filing and Indexing:
   Practice in filing and indexing-alphabeticals numerically, arranging files subjectwise, searching a particular file, transforming of old files for future references, weeding out of records, developing card indexing system for the college library.
2. Computer Software as MS Office, Windows-98 etc. beobliqued with typewriter e-mail for practical on Recording of Inward outward mail.....
3. Recording of inward/outward mail—e-mail.
4. Or Windows-98/Electric Typewriter.
5. Drafting of the following (on the basis of actual information)
   - Application for a job
   - Interview letter
   - Appointment letter
   - Letter of enquiry
   - Office notes
   - Office order
   - Issue of tenders
6. Recording of inward/outward mail.

Suggested Reading Materials:

1. Office Practice Made Simple W.H. Allen Publishers by G.Whitehead 1974.
2. Office Management and Commercial Correspondence,. By BalrajDuggal 1998. Published by KitabMahal.
3. Office Management and Secretarial Practice, Gyan Publishers House, Delhi by V.P. Singh.
4. Business Correspondence and Office Practice by Thakkar Publication, Bombay, Nagamia and Bhal.
5. Business Communication by Doctor and Doctor Seth Publication, Bombay-4.
6. Commercial Correspondence by Majumdar.
7. Modern Commercial Correspondence by R.S.Sharma.
8. Modern Commercial Correspondence by Chandgadkar& Tele. Vikas Publications, Pune.
9. Secretarial Practice by A.H. Mehta & others.
10. Office Management and Commercial Correspondence by BalrajDuggal 1998. Published by KitabMahal, 1998.
11. Office Procedure & Secretarial Practice, O.P. Kuthiala, Pritam Publications.
12. Office Management R.K. Sharma, Sharma K. Gupta-Kalyani Publishers L. Sush (Nayar, 2003).
13. Office Management R.K. Choopra, Himalaya Publishing House, 2000.
14. Drafing& Office Procedure, Edgar Thrope.
15. Office Management by MarityenJuled Manning Crisp Publications, 2001.
16. Complete Office Handbook: Third Edition by SusonJaderstrom, 2002.

SEMESTER–III

TRAVEL AND TOURISM

MANAGEMENT OF TRAVEL AND TOURISM

Time: 3 Hrs. **Marks: 100**

Instructions for the Paper Setters:

The Theory Paper consists of two Parts—A and B (short questions and long questions).

Part–A: The examiner will set 12 short questions, 3 questions from each section of 02 marks. The candidate will have to attempt 10 questions out of 12 questions.

(10x02=20 Marks)

Part–B: The examiner will set 8 long questions, 2 questions from each section of 20 marks. The candidate will have to attempt 4 questions out of 8 questions.

(04x20=80 Marks)

UNIT–I

Strategic Planning and Strategic Marketing: Business Environment, Alliances - Market Sharing, Takeovers and Mergers

Operations Management: Booking, Reservation, Blocking, Reconfirmation.

UNIT–II

Project Planning: Conceptualizing a Project**,** Project Cycle.Techno-economic survey.

Project Review: Need for a project review**,** Project appraisal and evaluation**,** Destination Development

UNIT–III

Financial Management: Financial statements, Financial ratios and performance, Credit system. Commission, Direct sales.

Banking and Forex: Banking Operations, Forex Management, Money Transfers.

UNIT–IV

New Trends in Tourism: Health tourism. Ski resorts and Adventure sports, Heritage tours and Eco-tourism, Rural tourism and Space tourism

Event Management and MICE: Role of events for promotion of tourism, Ganga Mahotsava, LucknowMahotsava and TajMahotsava**,** Concept of MICE, Conference/conventions and exhibitions.

Suggested Readings:

1. Harris, P. (1995). *Accounting and Finance for the International Hospitality Industry,* Butterworth Heinemann: UK.
2. Harrison, D. (ed) (1992). *Tourism and the Less Developed Countries,* Wiley: UK.
3. Goodall, B. and Ashworth, G. (eds.) (1988). *Marketing in the Tourism Industry: The Promotion of Destination Region,* UK.
4. O.Cornnor, P. (1996). *Using Computers in Hospitality*, Cassell: UK.
5. *National Geographic* and *Discovery*, Channel Programs.

SEMESTER–III
TOURISM AND HOTEL MANAGEMENT
(VOCATIONAL)

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:

Section–A: It will consist of 10 very short answer questions with answers to each questions up to five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage being 20 marks.

Section–B: It will consist of short answer questions with answer to each question upto *two pages* in length. Twelve questions will be set by the examiner and eight will be attempted by the candidate. Each question will carry five marks. The total weightage of the section shall being 40 marks.

Section–C: It will consist of essay type questions with answers to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry 20 marks: total weightage of the section being 40 marks

Introduction: This paper is for the basic understanding of Tourism and Hospitality Industry and Hotel Management. Relationship between Tourism, Airlines and Hospitality Industry and for the basic understanding of Hotel Management

UNIT–I

Front Office: Types of Hotels**,** Pre-registration activities, Registration, Post registration activities, Front Office Salesmanship, Front Office procedures for Emergencies, Calculation of Room position, Job description of Front Office Cashier and Front Office Assistant**,** Foreign Currency, Night Auditor and its duties

UNIT–II

House Keeping: Role of Housekeeping in hospitality industry, Classification of Equipments, Cleaning Agents and Types; House Keeping Surpervision—Importance, Checklist, typical areas usually neglected where special attention is required; Storage facilities and conditions, Cleaning procedures—Cleaning of occupied room, Cleaning of just vacated room, Inspection, Second Service, Replenishment of supplies and lines, Room checklist.

UNIT–III

Food and Beverage Service: Sectors of Food & Beverage, French Classical Menu, Food and their Accompaniments, Restaurants and their subdivisions—Coffee Shop, Room Service, Bars, Banquets, Discotheques, Grill Room, Snack Bar, Night Club, Back area of Food and Beverage service—Still Room, Wash Up, Plate Room, Kitchen Stewarding; Classification of Crockery, Cultery, Glassware, Hollowware, Flatware; Maintenance of Equipments.

UNIT–IV

Food and Beverage Production: Classification of Raw Materials; Foundation ingredients—Meaning, Action of Heat on Carbohydrates, Fats, Protiens, Minerals and Vitamins; Preparation of Ingredients; Classification of Equipments; Stocks—Meaning, Uses, Types, Points to be observed while preparing stocks; Sauces—Meaning, types and Recipies; Staff Arrangement in Kitchen.

Note: Industrial Training for one month.

SEMESTER–III

TAX PROCEDURE AND PRACTICE (VOCATIONAL)

REGULATORY FRAMEWORK-DIRECT TAXES

Time: 3 Hours **Max. Marks: 100**

Note: The candidates are allowed to use simple (Non- Scientific) calculators.
Instructions for the Paper Setters:

The question paper covering the entire course shall be divided into three sections as follows:-
SECTION–A: This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.
SECTION–B: This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.
SECTION–C: This section will consist of essay type questions with answers to each question upto 5 pages. Four questions, will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

UNIT–I

Regulatory Framework: An overview of Income Tax Act, 1961 and Income Tax Rules, 1962, Income Tax Authorities. Important Definitions, Basis of Charge and Incidence of Tax
Permanent Account No.: Procedure for obtaining Permanent Account No. (PAN)—Filling and filing of application under Form No.49A.
Payment of Tax: Tax deducted at source, Advance Tax, Self Assessment Tax.

UNIT–II

Tax Deducted at Source: Filling and filing of applications from for obtaining TDS number under Form No.49B obligation of the person making payment, who and when the person is liable to deduct tax at source. Procedure and rate of Tax deducted at source on various payments.

Employers Obligations:
Stage I: Certificate to be issued to the recipient's-filing and issue of the various TDS Forms (16,16A and 16B).
Stage II: Deposit of tax deducted at source-filling and filing of the challan and deposit of tax.
Stage III: Submission of returns of TDS under Form No.24, Form No.26, 26A, 26B, 26C, 26D, 26E
Recipient's Obligations:
To obtain TDS certificate from payer; filling and filing of relevant certificates for lower or no deduction of tax at source (Form No.13C, 14, 14B, 15, 15A, 15AA, 15B, 15D, 15E, 15F, 15G, 15H, 151).

(B) Advance Tax: Who is liable to pay advance tax, computation of advance tax, instalment and due date of Advance Tax, Interest payable by the assessee. Filing of challan and deposit of Advance Tax

UNIT–III

Return of Income: Who is liable to file return of income, time limit, return of loss, Belated Return, Revised Return, Defective Return, Return by whom to be signed, filling and filing of Return of Income Tax under :

Assessment Procedures: Inquiring before assessment. Assessment under Section 143 (1), Self-assessment Tax, Regular Assessment under Section 143 (2), Best Judgment assessment, income escaping Assessment, issue of notice where income has escaped assessment. Time limit for Notice, Time limit for completion of assessment and reassessment.

UNIT–IV

Post Assessment Procedures: Refund - Who can claim refund, Form No. 30 for Refund, Time Limit for claiming refund, Refund of appeal, interest on refunds; Rectification of mistake(s); Appeals and revisions: When an assessee can file appeal, appellate authorities, procedure for filing appeal, filling and filing of Form No.35, Form No.36, Time limit for filing appeal, Revision by Income-Tax Commissioner.

Penalities & Procedure: Procedure for imposing penalities, waiver of penalty, nature of default and penalities imposable.

Transfer of Immoveable Property; Filling and filing of Form No.37EE, Form No.37G, Form No. 37-I Tax clearance certificate and exemption certificate procedure and filling and filing of Form No. 31

References:-

1. Gaur, V.P. and D.B. Narang (2007), Income-Tax Law & Practice, Kalyani Publications, Ludhiana.
2. Prasad, Bhagwati (2006), Direct Taxes Law & Practice, Wihshwa Prakashan, New Delhi.
3. Sinhaima, V.K. and K. Sanghaima (2007) Direct Taxes Law and Practice Taximann Publications (P) Ltd. New Delhi, 2004.
4. Shrivastava M. (1981) Physical Policy & Economic Development in India, Chugh Publications, Alahabad.
5. Mehrotra H.C. and P. Mehrotra 2007. Income Tax Law & Accounts, Sahitya Bahawan Publications, Agra.
6. Taxman's in Director Tax Law as amended by Firance Act 2007. Taxman Allied Services (P) Ltd. New Delhi, 2004.
7. www.incometaxindia.gov.in

SEMESTER–III

ADVERTISING, SALES PROMOTIONS AND SALES MANAGEMENT
ADVERTISING–II (VOCATIONAL)

Time: 3 Hours **Max. Marks: 100**

On the Job Training of 4 weeks

The following pattern of setting of quesiton paper shall be observed.

Instructions for the Paper Setters:

Section–A: This section will consist of 8 very short answer questions with answer to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being 16 marks.

Section–B: This section will consist of short answer questions with answer to each question upto two pages. Nine questions will be set by the examiners and the candidates will be expected to attempted six question. Each question will carry eight marks, total weightage of the section being 48 marks.

Section C: This section will consist of essay type questions with answers to each question upto 5 pages. Four questions will be set by the examiner and the candidates will be expected to attempt two questions. Each question will carry 18 marks; total weightage of the section being 36 marks.

UNIT–I

Advertising Media: Types of Media-Print Media (News Paper and Magazines, Pamphlets, posters and brouchures), electronic media (Radio, Television, Audio Visuals, Cassettes), other Media (Direct Mail outdoor media), their characteristics, merits and limitations.

Media scene in India. Problems of reaching rural audience and markets. Exhibitions and mela. Press Conference.

UNIT–II

Media Planning: Selection of Media category, their reach, frequency and impact. Cost and other factors influencingthe choice of media. Media scheduling.

UNIT–III

Evaluation of advertising effectiveness. Importance and difficulties. Methods of measuring advertising effectiveness. Pre-testing and post-testing. Communication effect. Sales effects. Regulation of advertising in India. Misleading and deceptive advertising and false claims.

UNIT–IV

Advertising Agencies: Their role and importance in advertising. Their organisation patterns, Functions, Selection of advertising agency. Agency commission and fee. Advertising Department, its functions and organization.

Suggested Reading:

Same as for paper-2 (relevant chapters).

A consolidated Report on **'On the Job Training'** shall be prepared by every student and must be submitted in the college. The consolidated Report will be evaluated by the external examiner and shall be given the grades as follows:

O - Outstanding
A - Very Good
B - Good
C - Average
D - Unsatisfactory

In case, the training report is rated as unsatisfactory, the candidate shall have to submit it again incorporating the changes suggested by the examiner, within one month from the date of intimation to the candidate by the concerned college.

Note: The candidates are allowed to use simple (Non- Scientific) calculators.

SEMESTER–III

COMMERCE

BANKING & INSURANCE

Time: 3 Hours **Max. Marks: 100**
Teaching Hours: 80 Periods of 45 Minutes each.

Note: 1. The candidates are allowed to use simple (Nonscientific) calculators.

2. The question paper covering the entire course shall be divided into three sections as follows:

Section–A: It will consist of 10 very short answer type questions with answers to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage being **20 marks**.

Section–B: It will consist of short answer type question with answer to each question upto two pages in length. Twelve questions will be set by the examiner and eight will be attempted by the candidates. Each question will carry six marks. The total weightage of the section shall be **48 marks**.

Section–C: It will consist of essay type questions with answer to each question upto 5 pages in length. Four questions will be set by the examiner and the candidates will be required to attempt two. Each question will carry sixteen marks, total weightage of the section being **32 marks.**

UNIT–I

Introduction to Banking: Definition, types and functions of Banks. Brief outlines of the history of Indian Banking, Banker customer relations.
Deposit Mobilization: Types of deposits, Procedure of opening a bank account. Types of account holders, Trends in deposit mobilisation in India.

UNIT–II

Loans and Advances: Forms of loans, overdraft, cash credit, joint financing, Hire purchase advances, Bills purchased/discounted. Principles of sound lending.Application for a bank loan.Analysis of credity worthiness of borrower, security and margin requirements.Modes of creating charges.Pledge, hypothecation, simple and equitable mortgages, Guarantees and indemnities.Trends in bank lending in India, Credit creation system by commercial bank.

UNIT–III

Negotiable Instruments: Cheques-crossing and endorsements, payments of cheques, stop payment instruction, role of clearing house, Collection of cheques.Dishonour of cheques, Bills of Exchange-Discounting of Bills, Inland Remittances. Demand Draft, mail transfers, Telegraphic transfers etc.

UNIT–IV

Insurance: Definition and advantages of insurance, kinds of insurance and forms of insurance organisation. Essentials of insurance contract, basic principles of insurance.Utmost good faith, insurable interest, indemnity subrogantion, contribution, proximate cause. Introduction to general insurance-growth of general insurance, functions of insurance and contracts of insurance, Basic principles. Fire insurance, Introduction, standard form policy, scope of cover.

Books Recommended:

1. Dorfman, "Introduction to Risk Management and Insurance", 8th Edition, Prentice Hall of India, 2007.
2. Rejda, "Principles of Risk Management and Insurance", Pearson Eduacation, 2007.
3. Tripathy and Pal, "Insurance and Risk Management", Prentice Hall of India, 2007.
4. Gupta P.K. "Insurance and Risk Management", Himalaya Publishing House, 2007.
5. Paul Justin and Suresh Padamalatha, "Management of Banking and Financial Services", Pearson Education, 2007.
6. Shekhar K.C. and SekharLakshmy, "Banking Theory and Practice", Vikas Publications, 2007.

SEMESTER–III

TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)
TOURISM & MARKETING

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:
Section–A: It will consist of 15 questions from the entire syllabus of the paper with answer to each question should up to 50 words. Students will be required to attempt any 10 questions. Each question will carry 2 marks. This section will be of 20 marks
Section–B: It will consist of 8 essay type questions, 2 from each unit with answer to each question should up to 5 pages. Students will be required to attempt any 4 questions. Each question will carry 20 marks. This section will be of 80 marks.

Note:– The candidates are allowed to use simple (Non–Scientific) Calculators.

UNIT–I
Marketing: Concept, Nature, Classification and Characteristics of services and their marketing implications developing marketing strategies for services firms.

UNIT–II
Linkages in Tourism and other sectors (Travel, Agency, Accommodation, Food, Nutrition, Catering).

UNIT–III
Tour Packaging : Concept, Characteristics, Methodology Consideration

UNIT–IV
Pricing of Tour Packing, Designing and Printing of Tour Brouchure.

Suggested Readings:
1. Kotler, Philip Marketing Management, Universal Publications, New Delhi, 2006.
2. Maccarthy, D.K.J.basic Marketing–A Management Approach, 2005.
3. Douglas Foster Travel and Tourism Management, 1985.
4. Negi, M.S.Tourism and Hotellering, 1997.
5. Wahab, S.Grampter, L Tourism Marketing: Tourism International Press & Roth Fibbs. London, 1976.
6. Stephan F. Witt & Louis Tourism Marketing and Management Handbook, Moutinch Prentice Hall, New York 1985.
7. Renal, A, Nykiel Marketing in Hospitality Industry (2nd Ed.) Van Nostrend Reinhold, 1986.
8. Hunter Mountaining Monument (Tourism in Your Business), Canadian Hotel and Restaurant Ltd., 1984.

SEMESTER–III

MATHEMATICS

PAPER–I: ANALYSIS

Time: 3 Hours **Marks: 50**

Instructions for the Paper Setters:

1. Syllabus of this paper is split into two Parts: Section–A and Section–B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

Section–A

Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion. Series of non-negative terms. Comparison tests. Cauchy's integral tests. Ratio tests. Cauchy's root test. Raabe's test, logarithmic test. Demorgan's and Bertrand's tests. Kummer's test, Cauchy Condensation test, Gauss test, Alternating series. Leibnitz's test, absolute and conditional convergence.

Section–B

Partitions, Upper and lower sums. Upper and lower integrals, Riemann integrability. Conditions of existence of Riemann integrability of continuous functions and of monotone functions. Algebra of integrable functions. Improper integrals and statements of their conditions of existence. Test of the convergence of improper integral, beta and gamma functions.

Books Recommended:

1. Malik, S.C.: Mathematical Analysis, Wiley Eastern Ltd. (1991).
2. Apostal, T.M.: Mathematical Analysis, Addison Wesley Series in Mathematics (1974).
3. Narayan, S.: Integral Calculus, Sultan Chand & Sons.

SEMESTER–III

MATHEMATICS

PAPER–II: ANALYTICAL GEOMETRY

Time: 3 Hours **Marks: 50**

Instructions for the Paper Setters:

1. Syllabus of this paper is split into two Parts: Section–A and Section–B. Five questions will be set from each Section.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time for Mathematics would be six periods per week for each paper.

Section–A

Transformation of axes, shifting of origin, Rotation of axes, The invariants, Joint equation of pair of straight lines, equations of bisectors, Parabola and its properties. Tangents and normal, Pole and polar, pair of tangents at a point, Chord of contact, equation of the chord in terms of mid point and diameter of conic.

Section–B

Ellipse and hyperbola with their properties. Tangents and normal, Pole and polar. pair of tangents at a point, Chord of contact, Identifications of curves represented by second degree equation (including pair of lines). Intersection of three planes, condition for three planes to intersect in a point or along a line or to form a prism. Change of axes, Shift of origin, rotation of axes. Sphere, Section of a sphere by a plane, spheres of a given circle. Intersection of a line and a sphere. Tangent line, tangent plane, power of a point w.r.t. a shpere, radical planes.

Books Recommended

1. Gorakh Prasad and H.C. Gupta: Text Book on Coordinate Geometry.
2. S.L. Loney: The Elements of Coordinate Geometry, Macmillan and Company, London.
3. Narayan, S.: Analytical Solid Geometry, Sultan Chand & Sons (2005).
4. Kreyszig, E.: Advanced Engineering Mathematics.
5. Thomos, G.B. and Finney, R.L.: Calculus and Analytic Geometry.

SEMESTER–III

STATISTICS

PAPER–I: ADVANCED PROBABILITY-I

Time: 3 Hours **Marks: 35**

Instructions for the Paper Setters:

1. Question paper will consist of two sections Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non–Programmable calculators.

Section–A

Two dimensional random variables, their joint probability mass function and joint probability density function, marginal and conditional probability distributions, independent random variables. Expected value of real valued function of two-dimensional random variables

Section–B

Covariance, correlation coefficient, conditional expectation and regression of the means. Bivariate normal distribution, marginal and conditional probability distributions associated with the bivariate normal distribution. Chebyshev's inequality and its applications.

Book Recommended:

1. Meyer, P.L. Introductory Probability and Statistical Applications, Addison—Wesley, (1970).
2. Ross, S.A., First Course in Probability, Pearson Education, 2007.

Books Suggested for Supplementary Reading:

1. Biswal, P.C., Probability and Statistics, Prentice Hall of India, 2007.
2. Miller, I and Miller, M., Mathematical Statistics with Applications, Seventh Edition, Pearson Education, 2007.
3. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

SEMESTER–III

STATISTICS

PAPER–II: STATISTICAL INFERENCE–I

Time: 3 Hours **Marks: 35**

Instructions for the Paper Setters:

1. Question paper will consist of two sections Section A and Section B. Each section will consist of five questions, carrying equal marks each, set from corresponding section of the syllabus.
2. The student will attempt five questions in all selecting at least two questions from each section.
3. Teaching time would be six periods per week for this paper.
4. The candidates are allowed to use Non–Programmable calculators.

Section–A

Point estimation, estimator and estimates, criteria for good estimators, unbiasedness, consistency, efficiency and sufficiency (only the definitions and examples), Minimum variance unbiased estimator, Methods of estimation: moments and maximum likelihood method of estimation, interval estimation and interval estimate of the mean of a normal distribution.

Section–B

Neyman and Pearson's theory of testing hypothesis, the concepts of statistical hypothesis, two types of errors, critical region, significance level, power and power function. Most powerful test, The Neyman Pearson theorem (only the statement) and its applications for testing a simple hypothesis against a simple alternative.

Book Recommended:

1. Goon. A.M., Gupta. M.K. and Dasgupta B., Fundamentals of Statistics, Vol.I & II, World Press, 2005.
2. Gupta, S.C. and Kapoor, V.K., Fundamentals of Mathematical Statistics, Sultan Chand and Company, 2007.

Books Suggested for Supplementary Reading:

1. Hogg. R.V. and Mckean, J.W. and Craig. A.T., Introduction to Mathematical Statistics, Pearson Education, 2007.
2. Miller, I and Miller, M., Mathematical Statistics with Applications, Pearson Education, 2007.

SEMESTER–III

STATISTICS

PAPER-III: - Practical based on PAPER–II: STATISTICAL INFERENCE–I

Time: 2 Hours **Marks: 30**

Teaching time for practical paper would be one hour per week.

List of practical exercises

1. Exercises on unbiased, consistent, efficient and sufficient estimators
2. Exercises on methods of estimation
3. Exercises on interval estimation
4. Exercises on two types of errors, critical region, significance level,
5. Exercises on Most powerful test,

Students are required to prepare a practical note book with at least 15 exercises based upon the above list. At the end of semester, there is a practical examination jointly conducted by two examiners (one is internal and other one is external). External examiner is appointed by the university and the internal examiner is appointed by the principal of the concerned college. This practical examination will cover a written test followed by a viva-voce to test the practical knowledge of students about the contents. The candidates are allowed to use Non–Programmable calculators. The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15

SEMESTER–III
CHEMISTRY (ORGANIC CHEMISTRY–A)
(THEORY)

Time: 3 Hrs. **Marks: 35**
45 Hrs (3 Hrs/week)
The question paper shall consist of two parts as detailed below:-

Part-A (Compulsory)

It shall consist of 8 very short answer type questions (Q. No. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed 1/3rd of the page. Each question will be carrying one Mark. **(8 x 1 = 8 Marks)**

Part-B

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. No. 9 to 17) from the entire syllabus. Each Section will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question carries 4½ marks. **(6 x 4½ = 27 Marks)**

Section–I

I. Stereochemistry of Organic Compounds (15 Hrs.)

Concept of isomerism. Types of isomerism. Optical isomerism, elements of symmetry, molecular chirality, enantiomers, stereogenic centre, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogenic centres, diastereomers, threo and erythro diasteremers, meso compounds, resolution of enantiomers, inversion, retention and racemization. Relative and absolute configuration, sequence rules, D & L and R & S systems of nomenclature. Geometric isomerism–determination of configuration of geometric isomers. E & Z system of nomenclature. Conformational isomerism–conformational analysis of ethane and n–butane; conformation of cyclohexane, axial and equatorial bonds, conformation of mono substituted cyclohexane derivatives. Newman projection and Sawhorse formulae, Fischer and flying wedge formulae. Difference between configuration and conformation.

Section–II

II. Alcohols (8 Hrs.)

Classification and nomenclature. Monohydric alcohols—nomenclature. Acidic nature. Reactions of alcohols. Dihydric alcohols—nomenclature, methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [$Pb(OAC)_4$] and [HIO_4] and pinacol-pinacolone rearrangement.

III. Phenols (7 Hrs.)

Nomenclature, structure and bonding, Preparation of phenols, physical properties and acidic character, Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion. Reactions of phenols—electrophilic aromatic substitution, acylation and carboxylation. Mechanisms of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Reimer Tiemann reaction.

Section–III

IV. Aldehydes and Ketones (15 Hrs.)

Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides, synthesis of aldehydes and ketones using 1,3-dithianes, synthesis of ketones from nitriles and from carboxylic acids. Physical properties. Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condens a t ions. Condensation with ammoni a and its derivatives. Witting reaction. Mannich reaction. Use of acetals as protecting group. Oxidation of aldehydes, Baeyer-Villiger oxidation of Ketones, Cannizzaro reaction. MPV, Clemmensen, Wolff-Kishner, $LIAIH_4$ and $NaBH_4$ reductions. Halogenation of enolizable ketones. Halogenation of enoliable ketones.

Books Suggested:-

1. Morrison, R.T., Boyd, R.N., Organic Chemistry; 6th edition, Pubs: Prentice-Hall, 1992.
2. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
3. Mukherji, S.M., Singh, S.P., Kapoor, R.P., Organic Chemistry; Pubs: Wiley Eastern Limited, 1985, Vol. I, II, III.
4. Solomons, T.W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
5. Carey, F.A., Organic Chemistry; 4th edition, Pubs: McGraw-Hill, 2000.
6. Streitwieser, A., Clayton, Jr., Heathcock, H., Introduction to Organic Chemistry; 3rd edition, Pubs: Macmillan Publishing Company, 1989.
7. University General Chemistry, C.N.R. Rao, Macmillan.

SEMESTER–III
CHEMISTRY (PHYSICAL CHEMISTRY–B)
(THEORY)

Time: 3 Hrs. **Marks: 35**
45 Hrs (3 Hrs/week)
The question paper shall consist of two parts as detailed below:-

Part-A (Compulsory)

It shall consist of 8 very short answer type questions (Q. No. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed 1/3rd of the page. Each question will be carrying one Mark. **(8 x 1 = 8 Marks)**

Part-B

It shall consist of three sections (Section I, II & III). It shall consist of 9 questions (Q. No. 9 to 17) from the entire syllabus. Each Section will consist of 3 questions from each Unit of syllabus. The maximum length of each question may not exceed 5 pages. The candidate will attempt two questions from each section. Each question carries 4½ marks. **(6 x 4½ = 27 Marks)**

Section–I

1. Thermodynamics-I **15 Hrs.**

Definition of thermodynamic terms: System, surroundings etc. Types of systems, intensive and extensive properties. State and path functions and their differentials. Thermodynamic process. Concept of heat and work.

First Law of Thermodynamics: Statement, definition of internal energy and enthalpy. Heat capacity, heat capacities at constant volume and pressure and their relationship. Joule's law-Joule-Thomson coefficient and inversion temperature, Calculation of w,q,dU & dH for the expansion of ideal gases under isothermal and adiabatic conditions for reversible process.

Thermochemistry: Standard state, standard enthalpy of formation-Hess's Law of heat summation and its applications. Heat of reaction at constant pressure and at constant volume. Enthalpy of neutralization. Bond dissociation energy and its calculation from thermo-chemical data, temperature dependence of enthalpy. Kirchhoff's equation.

Section–II

II. Thermodynamics-II & III **15 Hrs.**

Second Law of Thermodynamics: Need for the law, different statements of the law, Carnot cycle and its efficiency, Carnot theorem. Thermodynamic scale of temperature.

Concept of Entropy : Entropy as a state function, entropy as a function of V & T, entropy as a function of P & T, entropy change in physical change, Clausius inequality, entropy as a criteria of spontaneity and equilibrium. Entropy change in ideal gases and mixing of gases.

Third Law of Thermodynamics: Nernst heat theorem, statement and concept of residual entropy, evaluation of absolute entropy from heat capacity data. Gibbs and Helmholtz functions; Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities, A & G as criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change, Variation of G and A with P,V and T.

Section–III

Equilibrium

III. Chemical Equilibrium **5 Hrs.**

Equilibrium constant and free energy. Thermodynamic derivation of law of mass action. Determination of K_p, K_c, K_a and their relationship, Clausius-Clapeyron equation, applications.

IV Introduction to Phase Equilibrium **10 Hrs.**

Statement and meaning of the terms-phase, component and degree of freedom, derivation of Gibbs phase rule, phase equilibria of one component system-water, CO_2 and S systems. Phase equilibria of two component systems-solid-liquid equilibria, simple eutectic-Bi-Cd, Pb-Ag systems, desilverisation of lead. Solid solutions-compound formation with congruent melting point (Mg-Zn) and incongruent melting point, ($NaCl$-H_2O), $FaCl_3$-H_2O) and $CuSO_4$-H_2O) system. Freezing mixtures, acetone-dry ice. Non-ideal system-azeotropes-HCl-H_2O and ethanol-water system. Partially miscible liquids Phenol-water, trines-thylamin-water, Nicotine-water System. Lower and upper consulate temperature, Effect of impurity on consolute temperature, immiscible liquids, steam distillation. Nernst distribution law-thermodynamic derivation and applications.

Books Suggested:-

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Puri, B.R., Sharma, L.R., Pathania, M.S., Principles of Physical Chemistry; 43rd edition, Pubs: Vishal Publishing Co., 2008.
3. Barrow, G.M., Physical Chemistry; 6th edition, Pubs: McGraw Hill Inc, 1996.
4. Rao, C.N.R., University General Chemistry; Pubs: Macmillan India, 1985.
5. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
6. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
7. Dogra, S.K., Dogra, S., Physical Chemistry Through Problems; Pubs: Wiley Eastern Limited, 1991.
8. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd., 2002.
9. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
10. Metz, C.R., Theory and Problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book company, 1989.

SEMESTER–III
CHEMISTRY

(PRACTICAL)

Duration: 3½ Hrs. **Marks: 30**
6 Period/Week

Quantitative Analysis
Volumetric Analysis

a. Determination of acetic acid in commercial vinegar using NaOH.
b. Determination of alkali content-antacid tablet using HCI.
c. Estimation of calcium content in chalk as calcium oxalate by permanganometry.
d. Estimation of hardness of water by EDTA.
e. Estimation of ferrous and ferric by dichromate method.
f. Estimation of copper using sodiumthiosulphate.

Gravimetric Analysis

Analysis of Cu as CuSCN and Ni as Ni (dimethylgloxime)

Organic Chemistry Laboratory Techniques
Thin Layer Chromatography

Determination of Rf values and identification of organic compounds.
a. Separation of green leaf pigments (spinach leaves may be used).
b. Preparation and separation of 2, 4. dinitrophenylhydrazones of acetone, 2-butone, 2-Butanone, hexan-2 and 3-one using toluene and light petroleum (40 : 60).
c. Separation of a mixture of dyes using cyclohexane and ethyl acetate (8.5:1.5).

Practical Examination

1) Volumetry / Gravimetry	16
2) Thin Layer chromatography	07
3) Viva-Voce	04
4) Note Book	03

Books Suggested:-

1. Vogel's Textbook of Quantitative Inorganic Analysis (revised), J. Bassett, R.C. Denney, G.H. Jeffery and J. Mandham, ELBS.
2. Standard Methods of Chemical. Analysis, W.W. Scott: The Technical Press.
3. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
4. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
5. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
6. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
7. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.

SEMESTER–III
PHYSICS

PAPER-A
STATISTICAL PHYSICS & THERMODYNAMICS
(THEORY)

Time: 3 Hours **Marks: 35**
Total Teaching Hrs: 45(3h/week)
Pass Marks: 35%

Instructions for the Paper Setters:-
There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt o*ne from each section. All questions carry equal marks.*

UNIT–I

Basic ideas of Statistical Physics, Scope of Statistical Physics, Basic ideas about probability, Distribution of four distinguishable particles into compartments of equal size. Concept of macrostates, microstates, Thermodynamic Priobability, Effects of constraints on the system. Distribution of n particles in two compartments. Deviation from the state of maximum probability. Equilibrium state of dynamic system. Distribution of distinguishable n particles in k compartments of unequal sizes.

UNIT–II

Phase space and division into elementary cells. Three kinds of statistics. The basic approach in three statistics. Maxwell Boltzman (MB) statistics applied to an ideal gas in equilibrium. Experimental verification of law of distribution of molecular speeds. Need for Quantum Statistics – B.E. Statement of planck's law of Radiation Wien's Displacement and Stefan's law. Fermi Dirac (FD) statistics. Comparison of M.B, B.E and F.D statistics.

UNIT–III

Statistical definition of entropy, Change of entropy of system, additive naturwe of entropy, Law of increase of entropy, Reversible and irreversible processes, and their examples, work done in reversible process, examples of increase in entropy in natural processes, entropy and disorder, Brief review of Terms, Laws of Thermodynamics, Carnot Cycle, Entropy changes in carnot cycle, Applications of thermodynamics to thermoelectric effect, change of entropy along reversible path in P-V diagram. Heat death of universe.

UNIT–IV

Derivation of Maxwell Thermodynamics relations, Cooling produced by adiabatic stretching, Adiabatic Compression, change of internal energy with volume, Specific heat and constant pressure and constant volume. Expression for C_P-C_v, Change of state and Claypron equation.

Text Reference Books:-

1. Statistical Physics and Thermodynamics, V.S. Bhatia (Sohan Lal Nagin Chand), Jalandhar.
2. A Treatise on Heat, M.N. Saha & b.N. Srivastava (The Indian Press Pvt. Ltd., Allhabad), 1965.
3. Statistical Mechanics: An Introductory Text, Bhattacharjee, J.K. (Allied Pub., Delhi), 2000.
4. Statistical Physics, Bhattacharjee, J.K. (Allied Pub., Delhi) 2000.
5. Statistical Mechanics, B.B. Laud, (Macmillan India Ltd.) 1981.

SEMESTER–III
PHYSICS

PAPER–B: OPTICS
(THEORY)

Time: 3 Hours **Marks: 35**
Total Teaching Hrs: 45(3h/week)
Pass Marks: 35%
Instructions for the Paper Setters:
There will be five sections. Section A will consist of seven short answer type questions covering the whole syllabus and is compulsory. Sections B, C, D and E will consist of two questions each. The candidates are required to attempt one from each section. All questions carry equal marks.

UNIT–I

Interference of Light:
Superposition of light waves and interference, young's double slit experiment, Distribution of intensity in young's double slit experiment, Conditions for sustained interference pattern, Coherent sources of light, Temporal and spatial coherence, Mathematical analysis of temporal coherence, Interference pattern by division of wave front, Fresnel Biprism, Fresnel double mirror, Llyod's single mirror, Displacement of fringes,

UNIT–II

Interference by Division of Amplitude:
Change of phase on reflection, Interference in thin films due to reflected and transmitted light, Need for extended source for interference by division of amplitude, Fringes of equal inclination and equal. Thickness non reflecting films, Newton's Rings.
Michelson Interferometer, Fabry Perot interferometer and etalon. Distribution of intensity in Fabry Perot fringes.

UNIT–III

Diffraction:

Huygen's fresnel theory, half-period zones, Zone plate, Distinction between fresnel and fraunhoffer diffraction. Fraunhoffer diffraction at rectangular and circular apertures, Effect of diffraction in optical imaging, Resolving power of telescope in diffraction grating, its use as a spectroscopic element and its resolving power, Resolving power of microscope. Resolving power of fabry-perot interferometer.

UNIT–IV

Polarization:

Plane Polarized light, Elliptically polarized light, wire grid polarizer, Sheet polarizer, Maul's Law, Brewester Law, Polarization by reflection, Scattering, Double reflection, Nicol prism, Retardation plates, Production Analysis of polarized light, Quarter and half wave plates.

Text Reference Books:-
1. Fundamentals of Optics, F.A. Jenkins and Harvey E White, (Mcgraw Hill) 4th Edition, 2001.
2. Optics, Ajoy Ghatak, (McMillan Indian) 2nd Edition, 7th Reprint, 1997.
3. Optics, Born and Wolf, (Pergamon Press) 3rd Edition, 1965.

SEMESTER–III
PHYSICS

(PRACTICAL)

General Guidelines for Practical Examination: (4.5h/week)

I. The distribution of marks is as follows : **Marks: 30**
   i) One experiment **15 Marks**
   ii) Brief Theory **5 Marks**
   iii) Viva–Voce **5 Marks**
   iv) Record (Practical file) **5 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session. Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

1. To determine refractive index of glass and liquid using spectrometer.
2. To determine the Cauchy's constants.
3. To study the refractive index of a doubly refracting prism.
4. To set up Newton's rings to determine wavelength of sodium light.
5. To determine the wavelength by using plane diffraction grating (Use Hg source)
6. To determine dispersive power of plane diffraction grating.
7. To determine resolving power of a telescope.
8. To determine resolving power of a grating.
9. To measure an accessible (Horizontal and vertical) height using sextant.
10. To measure inaccessible height by using sextant.
11. Verify laws of probability distribution by throwing of similar coins.

SEMESTER–III

HOME SCIENCE

CLOTHING TEXTILES (PART–I)
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Periods/week: 6 **Theory Marks: 50**
Practical Marks: 50

Instructions for the Paper Setters:
The question paper will consist of five sections: A,B,C,D and E. Section A, B,C & D will have two questions from the respective sections of the syllabus & will carry 10 marks each. Section E will consist of 5 short answer type questions covering the entire syllabus uniformly carrying 2 marks each.

Instructions for the Candidates:
Candidates are required to attempt one question each from the section A,B,C & D of the question paper and entire section E.

Section–A

1. Equipments & supplies in clothing: Construction—their use & care

II. Sewing Machine:

(a) Parts of Sewing Machine and its accessories
(b) Common defects in sewing machine and their remedies
(c) Care of Sewing Machines

Section–B

I. Recording of Body measurements. Care to be taken while taking body measurement.
II. Different methods of developing a design—Drafting, Pattern making, Draping (in brief) their advantages and disadvantages.

Section–C

1. Classification of textile fibers
2. Manufacture (in Brief) & properties of different fibers.
   a) Cotton b) Linen
   c) Silk d) Wool
   e) Nylon f) Polyester
   g) Rayon Viscose & Acetate

Section–D

1. Application of colour on fabric Dyeing–simple dyeing of cotton Resist Dyeing–Tie Dye and Batik
2. Printing.
   a) Block Printing.
   b) Screen Printing.
   c) Roller Printing
3. Methods of Laundry/Washing.

SEMESTER–III

HOME SCIENCE

CLOTHING TEXTILES (PART–I)
(PRACTICAL)

Time: 4 Hours **Marks: 50**
Periods/week: 6

Clothing Practical: Make samples of the following:

a) Tacking, hemming, buttonhole stitch, fasteners.
b) Seams-counter seam, run and fell, French seam.
c) Processes- continuous wrap, two piece placket opening, pleats, geathers into band, tucks.
d) Embrodry-10 fancy embroidery stitches.
   Drafting of the following:
   a) Childs bodice block.
   b) Sleeves- plain and puff sleeve.
   c) Collars-flat and raised peter pan, cape collar, baby collar.

Drafting and Stitching of:

a) Bloomer
b) Childs frock gathered.

Textile Practical:

1. Testing of Cotton, Wool & Silk, Nylon by Burning test.
2. Simple house hold dyeing of cotton fabric 12"x12".
3. Preparation of an article of Tie and Dye.
4. Preparation of article of block printing.

Instructions for the Practical Examiner:

There will be one practical exam consisting of two parts i.e clothing and textiles.
The division of marks and time will be as follows:

Clothing- 2 hrs 30 min.

a. Drafting and stitching of garment-10 marks
b. Sample / Embroidery-5 marks
c. File and scheme work-10 marks

Textiles Practical -1 hr 30 min

a. Block printing / tie and dye-10 marks
b. Identification of fibers-5 marks
c. File and viva-10 marks

SEMESTER–III

COSMETOLOGY (VOCATIONAL)

PAPER–A
(THEORY)

Time: 3 Hrs. **Total Marks: 100**
Periods/Week-6 **Theory Marks: 40**
Practical Marks: 60

Instructions for the Paper Setter:

Set 7 questions of 10 marks each. Students are required to attempt 4 questions.
Paper setter can divide question in short of 5 marks each.

Content:

1. Hair
a) Composition and Structure of Hair
b) Division & Forms of Hair
c) Hair Growth & Regeneration
d) Disorders & Disease of the hair and scalp
e) PH scale with diagram

2. Health and Diet
a) Basic Introduction of nutrients Carbohydrates, Protein, Fat, Vitamin A, D, C & B Complex, Calcium, Iron, only their main functions related to skin and hair. Food Sources.
b) Role of Water for healthy skin
c) Concept of Balanced Diet – 5 food groups principles of meal planning
d) Overweight and Underweight causes and dietary management

SEMESTER–III

COSMETOLOGY (VOCATIONAL)

(PRACTICAL)

Time: 4 Hrs **Marks: 60**
Periods/week: 6

Content:

1. Hair Care

a) Types of shampoos and procedure of shampoo
b) Hair rinses and hair conditions
c) Hair spa acc. to scalp
d) Corrective hair and scalp treatment :
Treatment for dry, oily scalp, dandruff treatment, hair fall treatment with the help of steamer, vibrator, heat, high frequency

2. Hair Styling

a) Basic Techniques and equipments used in styling
b) Principle of Hair Design
c) Shapes of Head, headlines, texture and density
d) Different thermal hairstyles with the help of thermal equipments

SEMESTER–III
CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)

PAPER–A: KITCHEN SANITATION AND FOOD HYGIENE (THEORY)

Time: 3 Hrs. **Marks: 40**
Pds-4 pds/week

1. Theory paper will be of 3 hrs. duration.
2. Question paper should cover all the topics of the syllabus.
3. There will be 8 questions in all student need to attempt 5 questions (8 marks for each)
4. Question 1 is compulsory. Which contains short answer type question.

Objectives:

1) To provide knowledge about kitchen planning its equipment storage and sanitation.
2) To provide knowledge about food hygiene throughout the meal production and service process

Course Content:

1) **Kitchen Planning:** Size and type, Developing kitchen plan, designing kitchen - drainage, water supply, floors, walls, ceilings, ventilation and lighting and safety.
2) **Storage:** Location, types, sanitation, safety and security of stores.
3) **Equipments:** Classification, Selection, Material Used, Design, Installation Operation, Safety and Care.
4) **Dishwashing and Cleaning of Kitchen & Service Area:** Process and Unit, Use of Water, Detergent and Abrasive, Sterilization & Disinfectant Products Method & Use, Sanitizers.
5) **Safety at Work:** Causes of Accident, Safety Procedure & Training.
6) Safety in Food Procurement, Storage, Handling & Preparation, Control of Spoilage, Safety of Left Over Foods.
7) Hygiene of Food Handling During Receiving Storage, Preparation, Cooking, Serving, Holding, Cleaning and Disposal.
8) Personal Hygiene of Food Handlers - Dress, Grooming, Health & Habits.
9) Waste product handling: Planning for waste disposal. Solid wastes and liquid wastes
10) Control of infestation – rodent, flies & cockroaches control, use of pesticides.
11) Food adulteration laws and standard in India.

Reference Book

1) Mohini Sethi, Surjeet Malhan, Catering Management An Integrated Approach, New Age international (P) limited, New Delhi.

SEMESTER–III

CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)
PAPER–B: QUANTITY FOOD PRODUCTION AND SERVICE
(THEORY)

Time: 3 Hrs. **Marks: 40**
Pds-4 pds/week

Instructions for the Paper Setter:
1. Theory paper will be of 3 hrs duration.
2. Question paper should cover all the topics of the syllabus.
3. There will be 8 questions in all
4. Students need to attempt 5 questions (8 marks for each question)
5. Question 1 is compulsory which contains short answer type question.

Objectives:
1. To understand the application of basic principles to bulk production of the food.
2. To develop skills in menu planning, and standardization of receipts for bulk preparation.

Course Content

1. Aims and objectives of different food service outlets
   (a) Commercial (b) Institutional
2. Foods recommended for use in canteen, lunchroom and kiosks.
3. Menu planning, importance, factors, types A’ La Carte and Table 'd hote, construction, writing and display.
4. Introduction to Indian Cuisine-North, South, East & West
5. Food production process - collecting ingredients, weighing and measuring, preparation of food, Some large quantitycooking technique. Effective use of left over food.
6. Quality in food service - Quantitative, sensory and nutritional quality in brief.
7. Food Service - Style of different types of service waiter, banquet, restaurant, room service, self service, buffet service, tray service, plate service.
8. Planning of service area, Table sizes and decor of service area.
9. Introduction of different Table Service Ware - Chinaware, Flatware and Cutlery, Glassware, Hollowware.

Reference Book:

1. Mohini Sethi, Surjeet Malhan, Catering Management An Integrated Approach.
2. New Age International (P) Limited Publisher Jalandhar.
3. Food and Beverage Service - Text book by Manoj Kumar Yadav.

SEMESTER–III

CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)
PAPER–B: QUANTITY FOOD PRODUCTION AND SERVICE
(PRACTICAL)

Time: 3 Hrs. **Marks: 20**
Pds-6 pds/week.

Note:– paper will be set on the spot by the examiner.

Instructions for the Paper Setters.

1. **Planning Menu: 5 Marks.**
2. **Cooking 2 dishes from Menu: 10 Marks.**
3. **Table Laying: 5Marks.**

1) Laying of tablets for different meals & Menus.

   a) A' La Carte b) Table Hote c) Buffet

2) Napkin Folding.

3) Plan menu & cook receipe for lunch, High tea and Dinner party for special occasion.

4) Standardize receipe for bulk preparation. (at least for 20 person)

5) Daily and occasional cleaning of kitchen equitments, utensils counter, floor and cupboards.

6) Visit to Hotel / Canteen / Community / Kitchen / Café (2 Visits)

Note:- If there are more number of student then cafeteria can be started from this session.

SEMESTER–III

FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)

FUNDAMENTALS OF TEXTILES
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Periods/week: 3 **Theory Marks: 40**
Practical Marks: 60

Instructions for the Paper Setters:-
Examiner to set total 8 questions, two questions from each unit.
Students will attempt 1 question from each unit; each question will carry 10 Marks.

UNIT–I

a) Introduction to Textiles and Its Importance in Fashion Designing
b) Classification of Textile Fibers and Terminology–Fibre, Filament, Yarn, Fabric Grey Goods, Fiber Length, Elasticity, Evenness, Moisture Absorption, Fiber Strength

UNIT–II

Properties & Manufacturing Process of Natural Fiber
a) Cotton
b) Wool
c) Silk

UNIT–III

Properties and Manufacturing Process of Artificial Fiber
a) Nylon
b) Rayon
c) Spandex

UNIT–IV

Brief Study of the Following Yarns:
a) Classification of Yarns – Carded and Combed, Woolen and Worsted, Filament and Spun
b) Simple, Novelty, Bulk/Textured

SEMESTER–III

FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)

PATTERN MAKING AND GARMENT CONSTRUCTION (PRACTICAL)

Time: 5 Hours **Marks: 60**
Periods/week: 2x6

Instructions for the Paper Setters:

Q. 1 from Part-A carrying 20 marks.
Q. 2 from Part-B carrying 30 marks
Q. 3 from File and scheme 10 marks

PART–A

1. Pattern Making

I. Dart Manipulation by Flat Pattern (2-3 exercises under each heading)

a) Shifting of darts
b) Combining darts
c) Converting darts into gathers
d) Converting darts into seam lines

II. Drafting and Adaptation

a) Skirts-Basic Skirt, Peg Skirt, Pleated Skirt, Flared Skirt, Gathered With Yoke
b) Tops-Cowl Neckline, Turtle Neckline

PART–B

2. Construction

I) Design and Construct Tops with – Cowl and Turtle Neckline
II) Design and Construct an Adult Skirt
III) Traditional Embroidery-Phulkari, Kashmiri

SEMESTER–III

EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL) (THEORY)

Time: 3 Hrs. **Maximum Marks: 100**
Lectures/week: 6 **Theory Marks: 60**
Practical Marks: 40

Instructions for the Paper Setters:-
Ten Questions will be set; students are required to attempt any 6, carrying 10 marks each.

Objectives:-
1. To gain knowledge and insight regarding principles of early childhood care and education.
2. To develop the skills and techniques to plan activities in ECCE centers of different types.

Course Contents:-
Need, Importance and objectives of Early Childhood Education.
Early childhood stimulation at home and school.
Quality of home environment
Historical Prospective of early childhood education
Contribution of Agencies to ECCE in India
Early Childhood Education Programmes in India and Abroad

Essentials of Setting up Early Childhood Education Centers – Building and physical facilities, staff, size of class, supervision and curriculum

Types of Preschool Programmes – Kindergarten type, Montessori, Nursery, Open type, Pre basic, Balwadi, Anganwadi, Day care centers

Contribution of Agencies to ECCE in India- ICDS-UNICEF, NCERT

SEMESTER–III

EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL) (PRACTICAL)

Time: 3 Hrs. **Marks: 40**
Lectures/week: 4

Instructions for the Paper Setters:
Paper will be set on the spot by the examiner

Distribution of Marks

Written Practical Test:	10 Marks
Practical File:	5 Marks
Oral Examination:	5 Marks
Class Performance:	10 Marks
Article/Activity Material:	10 Marks

Course Contents:

A visit to a "model" early childhood educational centre to observe curriculum implementation, indoor and outdoor activities and equipments.

Preparation of curriculum calendar (for one academic session) daily time table and detailed activity plan (for each day).

Developing an educational kit for enhancing conceptual aspects among pre-school children.

Activities for enhancing language development in pre school children.

SEMESTER–III

FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)

FSQC-5: FOOD PROCESSING AND PACKAGING (THEORY)

Time: 3 Hours **Max. Marks: 75**

Instructions for the Paper Setters**:** Question paper will cover both the main topics and divided into three parts. Each part will contain at least two questions and students will be asked to attempt five questions in all with at least one from each part and not more than two from any part.

PART-I

1. Physical principles underlying food processing operations including thermal processing, ionising radiation, refrigeration, freezing, dehydration, etc.
2. Chemical principles in food processing, chemical changes in food that affect the texture, colour, flavour, odour, stability and nutritive quality during processing and storage.
3. Fats and Oils: Types and sources of fats and oils (animal and vegetable) Processing uses, storage, cost and nutritional aspects.
4. Sugar and Sugar Products: Different forms of sugar, (sugar, jaggery, honey syrup) manufacture, selection, storage and use preserves.
5. Salt types, uses in the diet.
6. Convenience Foods. Tea, coffee, chocolate and cocoa powder.
7. Processing cost and nutritional aspects.

PART-II

8. Fermentation technology, Enrichment and Fortification Technology. High protein food technology.
9. Quality control in food industry-methods of evaluation and control of the various aspects of quality of raw materials manufacturing process, the testing of finished products.
10. Spices and flavour
11. Preservatives and additives.
12. Extruded foods.
13. Food Irradiation.

PART-III

14. Packaging of Foods.

15. Packaging function

16. Approaches to packaging development, Specification and Quality Control, Interaction of Food & Packaging.

1) Evaluation of Food Packages

2) Importance of Packages

3) Packaging criteria, appearance protection, function cost, materials & forms of packaging.

4) Packaging methods & performances.

5) Packaging specification & control of packaging quality.

6) Food & Food package interaction.

7) Food packaging & laws

8) Packaging evaluation-package life theory and testing packaging materials.

9) Self life testing.

Recommended Books:

1. Technology of Cereal, Legumes and Oil Seeds – Chakrobarty S. Deor for IBH Pub.

2. Cereal Tech. – Kent.

3. Preservation of Fruits and Vegetables – Girdhari Lal.

4. Dairy Tech. – Sukumar De.

5. Waste Treatment.

6. Food Packaging Sacharow and Griffir Avi. Publising Co.

7. Packaging Management. Briston & Neill. Gower Press.

8. Food & Packaging Interaction. Hotchikess American Chemical Society.

9. Packaging for Climatic Protection Cains, Oswin Paine.

SEMESTER–III

FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)

FSQC-6: FOOD PROCESSING & PACKAGING (PRACTICAL)

Max. Marks: 25

List of Practicals:

1. Determination of physical characteristics of cereals.
2. Milling of wheat into flour.
3. Determination of wet & dry gluten contents.
4. Determination of free fatty acids in flour and rice bran.
5. Milling of rice.
6. Parboiling of rice.
7. Identification of packaging materials.
8. To estimate the shelf life of packaged food.
9. To determine grease resistance of packaging material.
10. Determination of water vapor transmission rate of various packaging materials.
11. To find out the porosity of tin plate.
12. To find out the tin coating weight.
13. To find out the uniformity and amount of wax on wax paper.
14. To see the chemical resistance of packaging materials.
15. Visits to various industries dealing with food packaging material like, paper board and metal.

SEMESTER–III

FINE ARTS
(DRAWING & PAINTING)

PAPER–A (THEORY)

Time: 3 Hrs. **Marks: 50**

Work Load:

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Note: Instructions for the Paper Setters:

(a) The question paper will cover the entire syllabus.

(b) Questions should be based on world famous painting and sculptures whose slides are easily available.

(c) Question paper should cover the syllabus uniformly.

(d) The paper setter should set the paper in two sections, A and B.

(e) The division of the marks will be as under:

Section–A: 25 marks for 25 objective questions. Each question carries 1 mark.

Section–B: 25 marks for 5 questions. The examiner will set 8 questions. The candidate will attempt 5 questions of 5 marks each.

1. **Classical Sculptures:**
   - **The Guptas**:

   (A) **Mathura**:

   (i) Standing Buddha

   (ii) Vishnu

(B) **Sarnath**:

(i) Seated Buddha

(ii) Buddha from Sultanganj

2. Postclassical Sculptures:

- **Ellora**:

  (i) Ravana shaking mount Kailasha

  (ii) Abduction of Sita

- **Elephanta**:

  (i) Trimurti

  (ii) Marriage of Shiva and Parvati

- **Mahaballipuram**:

  (i) Descent of the Ganges

  (ii) Mahisasurmardini

3. Chola Bronzes:

(i) Parvati

(ii) Shiva Natraja

(iii) Kali

SEMESTER–III

FINE ARTS
(DRAWING & PAINTING)

PAPER–B
(PRACTICAL)

DESIGN 2D & 3D

Time: 5 Hrs. **Marks: 25**

Work Load:

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Study of 2-dimensional and 3-dimensional designs based on Folk forms. Any folk motif with proper shading is a 2-D design and cardboard pasted on handmade sheet in form of various folk motifs is a 3-D design- this is only an example; any other materials can also be used to create 3-D.

Medium: Poster colours

Size: ½ Imperial

SEMESTER–III

FINE ARTS
(DRAWING & PAINTING)

PAPER–C
(PRACTICAL)
HEAD STUDY (MALE/FEMALE)

Time: 5 Hrs. **Marks: 25**

Work Load:

Theory	-	3 periods per week.
Practical	-	9 periods per week.
Total	-	12 periods per week.

Rendering of ***Head*** (Male/Female head) from life or cast. Emphasis should be given on structure, volume, proportion, light, shade and texture in Monochromatic colour scheme.

Medium: Any medium

Size: ½ Imperial

Candidates will submit-

(i) 5 sheets of each paper.

(ii) Sketch book containing 50 sketches.

SEMESTER–III

HISTORY OF ART

Time: 3 Hours **Max. Marks: 100**

Note: Instructions for the Paper Setters:
(a) The question paper should cover entire syllabus. It will contain subjective answer questions.
(b) The paper-setter should set 12 questions in all. Students will attempt 10 questions of 10 marks each.

Part – I

History of Indian Painting from earliest time to C 9th Century A.D. to C.1800 A.D .Development of miniature painting: Eastern India, Western India, Mughals, Rajasthan-Mewar, Bundi, Kishangarh, Pahari-Basohali, Guler, Gandharas, Kangra.

Part – II

History of Indian Sculpture under the sunga Gandhara and Guptas- Mathura, Somnath, Deogarh, Ajanta.

SEMESTER–III

GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL) (THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Theory Marks: 50
Practical Marks: 50

Section–A: 2 Marks for 10 short answer questions. All the questions are compulsory.
2x10=20 Marks

Section–B: The examiner will set 5 questions. The candidate will attempt 3 questions of 10 Marks each.
3x10=30 Marks

1. Introducton to Stone setting.
2. Different styles of stone setting like Prong, Bezel, Chennal etc.
3. Introduction: Ruby, cat's eye, Pearl, Zircon, coral, Emerald, Topaz, Sapphire

SEMESTER–III

GEMOLOGY AND JEWELLERY DESIGN VOCATIONAL)
(PRACTICAL)

Time: 6 Hrs **Marks: 50**

Development of a design of a Pendent, Broche, Armlet, etc using mark-making, Bead-making, Twisting, stone-setting techniques.

Exercise on:

1. Mark making
2. Filling
3. Sowing
4. Puzzle work
5. Tube making

SEMESTER–III
STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)

PHOTO JOURNALISM
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 50
Practical Marks: 50

Instructions for the Paper Setters:

1. Total number of questions to be set: 26
2. Total number of questions to be attempted: 20
3. Question Paper will be divided in three parts objective.
4. Section– A will consist of 10 objective type questions. All questions will be compulsory. Each question will carry 1 (one) mark. **(Total: 10 Marks)**
5. Section– B will consist of 12 short answer type questions. Student will attempt 8 (eight) questions. Each question will carry 3 (three) marks. **(Total: 24 Marks)**
6. Section–C will consist of 4 essay answer type questions. Student will attempt 2 (Two) questions. Each question will carry 8 (eight) marks. **(Total: 16 Marks)**

Course Contents:

1. Scope of Photo Journalism. Importance of Picture & Magazine in News Program.
2. Reporting through Photos. (News of Parliament Sports, Development Stories, Features and Interviewing etc).
3. Photo-Visualisation of Audience Tastes, Needs and Newsfall.
4. Equipment for Photo-Journalism (Choice of right equipment i.e. Lens, Camera, Flash raw, Stock for a particular assignment).
5. Introduction and Practice of Rapid Development Finishing, Drying.

Suggested Readings:

Sr. No.	Book Name	Author
1.	The Photographers Manual	John Frama
2.	Close-Up Photography	Johathan Hilton

SEMESTER–III
STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)

STILL PHOTOGRAPHY & CAMERA ACCESSORIES (PRACTICAL)

Time: 6 Hours

Practical Marks: 50

Instructions for the Paper Setters:

1. The Paper will be set by the External Examiner on the spot considering the syllabus.
2. Creative Work on the part of the students is to be emphasized.
3. Technical Competence is expected. The students should also use Updated and Latest Techniques in his/her work.
4. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. and can be evaluated by the Examiner on Computer or Laptop.
5. Extra weightage will be given for creative and professional approach.

Instructions for Students:

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Students are not allowed to use previous clicked Photographs.
3. Sizes of photographs will be given by External Examiner as per requirement.

Course Contents:

1. Shutter types – Their limitations.
2. Circle of Confusion, its Effect on Sharpness.
3. Techniques of Photographing Action.
4. Aperture and its effect, Aberration, Resolution, Depth of Field, Depth of Focus.
5. Lenses/Optical Materials, Lens Coating, Plastics/Glass, Normal Standard, Tele Lens, Wide, Zoom, Micro, Macro Lens, Laws Governing Depth of Field.
6. Supplementary Lenses.
7. Basic Reprography / Digital Camera.
8. Flash-type, Working, Exposure.
9. Exposure: Method of Estimations, Types of Exposure Meters & their Comparison, Reciprocity Failure.
10. Types of Films & their Characteristics Filters: Types, Use, Optical Limitation, Filter Factor.

Suggested Readings:

Sr. No.	Book Name	Author
1.	Digital Photography Special Effects	Michael Freeman
2.	The Essential Photography Manual	Tim Daly
3.	The Everything Digital Photography	School

SEMESTER–III
APPLIED ART

ART APPRECIATION & ADVERTISING
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 50
Practical Marks: 50

Instructions for the Paper Setters:

1. No. of questions to be set : 35
2. No. of questions to be attempted: 25
3. The questions are to be equally distributed among all the topics of the Syllabus.
4. Each question will carry 2 (Two) marks.

Course Contents:

1. Introduction to Advertising.
2. Types of Advertising.
3. Different Medias of Advertising.
4. Brochure (Pamphlet, Handbill, Folder, Leaflet, Catalogue, Booklet).
5. Newspaper v/s Magazine.
6. Poster and its types.
7. Scope of Commercial Art.
8. Commercial Art and Society.
9. Qualities of a Layout.

Suggested Readings:

Sr. No.	Book Name	Author
1.	A Handbook of Advertising Techniques	Tommy Harrison
2.	Ogilvy on Advertising	David Ogilvy
3.	Advertising as a Career	Subrate Banerjee

SEMESTER–III
APPLIED ART

LAYOUT (PRACTICAL)

Time: 6 Hours **Marks: 50**

Medium: Layout & Illustration
Size:
Newspaper: Columns x Cms
Magazine: 81/2" x 11"
Illustration: ¼ imperial

Instructions for the Paper Setters:
1. The paper will be set by the Examiner on the spot considering the syllabus.
2. Imaginative and Creative work on the part of the students is to be emphasized. Imagination and Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Students will have to complete Five Projects during the course.
4. Students can use Magazines/Books/Newspapers as reference for their Class Work & Examination.
5. Topic for the Examination will be set by the external examiner on the spot after consultation with the Class Teacher.
6. Extra weightage will be given for creative and professional approach.

Instructions for Students:
1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.

Course Contents:
Prepare Commercial and Educational Layouts
Black & White for Newspaper & Coloured (Multicolour) Layout for Magazine.
Prepare Illustration based on Stories, Drawing of Objects, Birds and Animals, different scenes etc.

Note: Limited Reference while preparing rough visual is allowed

SEMESTER–III
SCULPTURE

(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 50
Practical Marks: 50

Note: Instructions for the Paper Setters:

1. The paper setter should set 12 questions in all and students shall attempt 10 questions.
2. Each question will be of 5 marks

Chapter:-

(1) Indus Valley Sculptures and seals.

(2) Mauryan Dynesty (Sculptures and Pillars)

(3) Introduction of Stupa, Vihara and Chaitya.

(4) Shunga Dynesty (Bharhut Stupa)

(5) Sanchi Stupa

SCULPTURE

(PRACTICAL)

Time: 6 Hrs. **Marks: 50**

(1) Low Relief Sculpture in Terracotta (Total No-1 Based on Birds/Animals/ Human Figures (Min Size 8x8 inches)

(2) Head study in clay, Modeling from life Size, these works should be produced in plaster of pairs (Total Number of works -2)

Books Recommended:

1.	S.K.Sarswati	A survey of Indian Sculptures.
2.	Stella Krmisch	Indian Sculptures.
3.	Roy C. Craven	Indian Art A Concise History
4.	S.M Asgar Ali Kadvi	Moorti Kala ka Itihas
5.	Benjamin Rowland	The Pelican History of Art
6.	Dr. G.K. Aggarwal	Shilpa Drashan.
7.	Dr Gyacharu Tripathi	Prachin Bharat Ki Kala

SEMESTER–III
MUSIC (VOCAL)
(THEORY)

Total Marks: 100
Theory: 3 Hours **Theory Marks: 50**
Practical: 20 Min. for each student **Practical Marks: 50**

Teaching Work load:
Theory: 3 Periods per week **Practical: 9 Periods per week**

Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as Base Instrument in Vocal Music (Practical).
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. The paper setter will set **Eight** questions in all. 1st question will consist of 10 objective type questions which will be compulsory to all carrying1 mark each. The candidate may be asked to attempt **Five** questions in all.
5. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
6. Candidate can take Tabla subject along with Music Vocal or Music Inst.
7. Non-Detail Raga: Dhanasai, Tirath, Madhmat Sorey

SEMESTER–III

MUSIC (VOCAL)
(THEORY)

Time: 3 Hours **Marks: 50**

1. Historical Development of Indian Music during 14th to 17th century with special reference to Akbar Period.
2. Definition and explanation of the following Musical Terms: Alap, Bol Alap, Bol Baant, Upaj.
3. Deatiled Study of Tanpura and Sahayak Naad.
4. Detailed knowledge of Dhrupad & Dhammar Styles of Singing.
5. Varieties of Tanas.
6. Description and notation of the following Ragas: Bhimplasi, Des and Vrindavani Sarang.
7. Description and notation of the following Talas: Ektal and Sooltal.
8. Contribution and Life Sketches of the following musicians: Vinayak Rav Patwardhan, Bade Ghulam Ali Khan, Pt. Bheem Sen Joshi.
9. Importance of Laya and Taal in music.
10. Salient features of Kirtan Chaunkis in special context of Gurmat Sangeet.

SEMESTER–III

MUSIC (VOCAL)
(PRACTICAL)

Time: 20 Minutes **Marks: 50**

1. Ability to play five alankars on the Harmonium based on the Kafi Thata.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Bhimplasi, Des and Vrindavani Sarang.
4. One Lakshan Geet in Prescribed Raga.
5. One Dhrupad with Dugan Laykari in any of the prescribed Ragas.
6. Ability to recite Ektal and Sooltal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Brief Knowledge of following Ragas: Dhnashri, Sorath and Madhmaad Sarang.
8. Ability to play theka of Rupak Tala on tabla.
9. Ability to play Dhun of any Folk Song of Punjab on Harmonium/any instrument.

Books Recommended:

1. Bharatiya Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chander Srivastava.
3. Sangeet Shastra Darpan Part – II (Punjabi) published by PunjabiUniversity, Patiala.
4. Sangeet Vishard, Sangeet Karayalya, Hathras.
5. Sangeet Shastra Darpan, Shanti Govardhan.
6. Hamare Sangeet Rattan, Sangeet Karyalaya, Hathras.
7. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
8. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
9. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
10. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

SEMESTER–III

MUSIC (INSTRUMENTAL)
(THEORY)

Total Marks: 100

Theory: 3 Hrs. **Theory Marks: 50**

Practical: 20 Min. for each student **Practical Marks: 50**

Teaching work load:

Theory: 3 periods per week **Practical: 9 periods per week**

Instructions given to the examiners are as under:–

1. There should not be more than fifteen students in a batch for practical examination.
2. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
3. The paper setter will set eight questions in all.1st question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions in all.
4. The External Examiner will set question paper for practical on the spot.
5. Candidate can take both subjects .i.e Instrumental music and Vocal music as elective subjects.
6. Candidate can take Tabla subject along with instrumental music or vocal music.

SEMESTER–III
MUSIC (INSTRUMENTAL)

(THEORY)

Time: 3 Hours **Marks: 50**

1. Historical development of Indian Music during medieval period i.e. from 12^{th} to 15^{th} century.
2. Detailed study of "Naad"
3. Life Sketch and Contribution of Ustad Inayat Khan & Ustad Abdul Halim Zafar Khan.
4. Techniques and Methods of tuning of Sitar.
5. Brief knowledge of the following:– Meend, Ghaseet, Kan, Krintan, Khatka.
6. Description and notation of the prescribed Ragas: Bhimplasi, Asawari and Des.
7. Brief knowledge of the following Ragas: Kafi, Jaunpuri and Sorath
8. Brief knowledge of the following Talas: Ektal & Sooltal.
9. Classification of Instruments used in Gurmat Sangeet.
10. Contribution of Guru Nanak Dev Ji towards Indian Music.

Books Recommended:

1. Rag Parichay (Part 1,2,3) by H.C. Shrivastav.
2. Sangeet Shastar Darpan (Part I & II) by Shanti Govardhan.
3. Sangeet Visharad, Sangeet Karyala Hathras.
4. Hamare Sangeet Ratan, Luxmi Narayan Garg, Sangeet Karayalaya, Hathras
5. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh
6. Sangeet Subodh by Dr. Davinder Kaur.
7. Punjab ki Sangeet Parampara by Geeta Paintal.
8. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, Chandigarh.
9. Sangeet Roop by Dr., Davinder Kaur, Patiala.
10. Bhartiya Sangeet ka Itihas by Umesh Joshi.
11. Bhartiya Sangeet ke Vadhya, Dr. Lal Mani Mishra.
12. Nibandh Sangeet, Sangeet Karyala, Hathras.

SEMESTER–III
MUSIC (INSTRUMENTAL)

(PRACTICAL)

Time: 20 Minutes **Marks: 50**

1. Ability to play ten Alankars on Sitar in the swaras of Kafi Thaat.
2. One Maseetkhani Gat in any of ragas prescribed in the Course. (Bhimplasi, Asawari and Des)
3. One Razatkhani Gat in each of the prescribed raga with Toras and Jhaala.
4. Ability to recite on hand, the Talas, Ektal & Sooltal in Ekgun & Dugun Layakaris.
5. Ability to play theka of Rupak Tala on Tabla.
6. Ability to sing a Cinematic song with any instrument.
7. Brief Knowledge of the following Non–detailed Ragas: Kafi, Jaunpuri and Sorath.

SEMESTER–III

INDIAN CLASSICAL DANCE
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Periods/week: 3 **Theory Marks: 50**
Practical Marks: 50

Instructions given to the examiners are as under:-

1 There should not more than fifteen students in a batch for practical examination.
2. Harmonium will be allowed as accompaniment to perform Nagma.
3. Separate practical paper should be set for each class from practical Paper-'B' of prescribed syllabuson the spot.
4. The paper setter will set eight questions.1st question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each. The candidate may be asked to attempt five questions.

Course Contents:

1. Study of Tandava and Lasya.
2. Knowledge of characteristics of Kathak Nritya.
3. Study of the Kathakali Dance with its historical background, style costumes and music etc.
4. Knowledge of Samyukta Hastas according to Abhinaya Darpan with their uses in Dance.
5. Knowledge of the Folk Dance of Uttar Pradesh
6. Biography and contribution of the following Dance Gurus in their respective field ofspecialization.
   i) Uday Shankar
   ii) Shambhu Maharaj
7. Essay on:
   i) Relation of Dance with other fine arts.
   ii) Dancing: A Door to Devine
8. Notation of:

(i) Ektaal (Matra-12)

a)Tatkar in Thah, Dugun & Chougun Layakaries.

b) Thaat- 2

c) Tehai-1

d) Amad-1

e) Salami-1

f) Tora-2

g) Paran-1

h) Chakardar Paran -1

i) Kavit-1

(ii) Sooltaal (Matra-10)

a)Tatkar in Thah, Dugun & Chougun Layakaries.

b) Thaat- 2

c) Tehai-1

d) Amad-1

e) Salami-1

f) Tora-2

g) Paran-1

h) Chakardar Paran -1

i) Kavit-1

9. Discription and Notation of the following Talas in Thah, Dugun, Tigunand Chaugun layakaries:

   (i)Ektaal (ii) Sooltaal (iii) Choutaal.

10. Notation of Nagma in:

    (i) Ektaal (ii) Sooltaal

SEMESTER–III

INDIAN CLASSICAL DANCE
(PRACTICAL)

Time: 20 Minutes **Marks: 50**
Periods/week: 9

Instructions for Examiner: The Examiner will set practical paper on the spot.

1. Ektaal (Matra-12)
    a)Tatkar in Thah, Dugun & Chougun Layakaries.
    b) Thaat- 2
    c) Tehai-1
    d) Amad-1
    e) Salami-1
    f) Tora-2
    g) Paran-1
    h) Chakardar Paran -1
    i) Kavit-1

2. Sooltaal (Matra-10)
    a)Tatkar in Thah, Dugun & Chougun Layakaries.
    b) Thaat- 2
    c) Tehai-1
    d) Amad-1
    e) Salami-1
    f) Tora-2
    g) Paran-1
    h) Chakardar Paran -1
    i) Kavit-1

3. Practical demonstration of two Gat Nikas
4. Padhant of all the Practical material mentioned above.
5. Ability to demonstrate Theka of Ektaal, Choutaal and Sooltaal by hand in Ekgun, Dugun, and Chaugun layakaries.
6. Practical demonstration of Samyukta Hastas according to Abhinaya Darpan.
7. Ability to play Theka of Ektaal on Tabla.
8. Ability to sing A Bhajan by Harmonium.

Books Recommended:

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.

2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers, New Delhi, 2006.

3. Atihasik Pripeksh Mein Kathak Nritya, Maya Taak, Knishka Publishers, New Delhi, 2005.

4. Nibandh Sangeet, Laxmi Narayan Garg, Sangeet Karyalaya, Hathras, 2004.

5. Kathak Nritya Shiksha Part-1, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP)

SEMESTER–III

TABLA
(THEORY)

Total Marks: 100

Theory: 3 Hours **Theory Marks: 50**
Practical: 20 Minutes for each student **Practical Marks: 50**

Teaching work load:
Theory 3 periods per week. **Practical – 9 periods per week.**

Instructions given to the examiners are as under:

1. There should not be more than fifteen students in a batch for practical examinations.
2. Harmonium will be allowed as accompaniment to perform the Nagma.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for practical paper should also be sent.
4. The paper–setter will set eight questions. The candidate will be asked to attempt five questions. 1st question will consist of 10 objective type questions which will be compulsory to all carrying 1 mark each.
5. Candidate can take Tabla subject with Vocal or Instrumental Music (Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai, Rabab, Saranda, Taus, Santoor and any other Swar Vadhya to the played on the basis of Indian Classical Music).

SEMESTER–III

TABLA
(THEORY)

Time: 3 Hours **Marks: 50**

1. Define and Explain the following terms:
    a. Tabla Vadak
    b. Sangat Kar
    c. Theka
    d. Tihai

2. Detailed knowledge of Gharanas of Tabla and Pakahawaj :
    a. Delhi
    b. Punjab
    c. Ajarara

3. Life Sketch:
    a. Pt. Kanthe Maharaj
    b. Pt. Anokhe Lal
    c. Ahmed Jaan Tharikwa

4. Essay on the place of Tabla in Khayal Gayan Shally.

5. Define Paran. Explain Chakardar Paran in detail with notation of one Chakardar Paran in Rupak Tal.

6. Use of Tabla in Music Therapy.

7. Notation and description of the following:–
    a. Rupak: Laggis (three), Mukhra (two), Tihai (two), Chakardar Paran (One).
    b. Jhap Tal: Two Kayadas with five Paltas each, Two Tukara's, Two tihaais
    c. Ekltal: One Peshkar, One Paran, One Chakardar Tihaai.

8. Define the following terms-Jori, Shaan, Sath, Mukaa in context to Gurmat Sangeet.

9. Comparative study of the following Taals:–
   Jhaptal-Sooltal, Ektal-Chaartal

SEMESTER – III

TABLA
(PRACTICAL)

Time: 20 Minutes **Marks: 50**

1. Tala Prescribed: Rupak, Jhaptal, Ektal.
2. Rupak: Laggis (three), Mukhra (two), Tihai (two), Chakardar Paran (One).
3. Jhap Tal: Two Kayadas with five Paltas each, Two Tukara's, Two tihaais
4. Ekltal: One Peshkar, One Paran, One Chakardar Tihaai.
5. Ability to play Nagma on Harmonium in Jhaptal.
6. Ability to play Theka of Sooltaal.
7. Practice of playing the above Taals with Vocal and Instrumental performance.
8. Tuning of Tabla.
9. Ability to play Saath Ke Bol of Gurmat Sangeet tradition.

Books Recommended:

1. Sangeet Visharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal Misher Knishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Mani Mishra, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vashishath, Sangeet Karyalaya Hathras, 1994.
6. Tal Parichay Part –I to IV, Harish Chandra Srivastav, Sangeet Karyalaya, Hathras.
7. Tal Prakash, Bhagwat Saran Sharma, Sangeet Karyalaya, Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita, Chitragupta, Radha Publication, New Delhi, 1992.

SEMESTER–III
COMPUTER SCIENCE

COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS (THEORY)

Time: 3 Hours **Max. Marks: 100**
4 Hours/week **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters:

(i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
(ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
(iii) The students can use only Non Programmable & Non Storage Type Calculator.

UNIT–I

Introduction:

1 Numerical methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
2 Non-linear Equations, Iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bisection, False position Method, Newton Raphson-method.
3 Simultaneous Solution of Equations, Gauss Elimination Method Gauss Jordan method. Gauss Siedel Method, Matrix Inversion Method.

UNIT–II

4 Interpolation and Curve Fitting, Lagrangian Polynomials, Newtons Methods: Forward Difference Method, Backward Difference Method Divided Difference Method.
5 Numerical Integration and Different Tryaperzoidal Rule, Simpson's 1/3 Rule Simpson's 3/8 Rule.

Numerical differentiation by Polynomial Fit Statistical Techniques

1 Measure of Central Tendency, Preparing frequency distribution table, Mean Arithmetic, Mean geometric, Mean harmonic, Mean median Mode.
2 Measure of dispersion, Skewness and Kurtosis Range, Mean deviation, Standard deviation, co-efficient of variation, Moments Skewness Kurtosis.

UNIT–III

1. Correlation Bivariate Distribution Multivariate distribution.
2. Regression B.C., Linear Regression, Multiple Regression.
3. Trend Analysis least square fit linear trend, Non-linear trend
   Y=axb
   Y=abx
   Y=acx
   Polynomial fit: Y=a+alX+ea^2x2+a^nxn+n

Books Recommended:

1 B.S. Grewal: *Numerical Methods for Engineering*, Sultan Chand Publications.

2 V. Rajaraman: *Computer Oriented Numerical Methods*, Prentice Hall of India Private Ltd., New Delhi.

SEMESTER–III
COMPUTER SCIENCE

COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS LAB. (PRACTICAL)

Marks: 25

2 Hours/week

Practical based on Computer Oriented Numerical and Statistical Methods

SEMESTER–III

INFORMATION TECHNOLOGY (VOCATIONAL)

OOPS Using C++
(THEORY)

Time: 3 Hours **Max. Marks: 100**
4 Hours/week **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters:

(i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.

(ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.

(iii) The students can use only Non Programmable & Non Storage Type Calculator.

UNIT–I

Evolution of OOP, OOP Paradigm, Advantage of OOP, Characteristics of the object oriented language-objects, classes, Inheritance, Reusability, User Defined data types, Polymorphism and operator overloading. Identifiers and Keywords, Constants, c++ operators, type conversion, variable Declaration, Statements and Expressions, Input and output, conditional expression, loop statements, breaking control statements.

Defining a function, types of functions, storage class specifiers, recursions.

UNIT–II

Arrays, structures, pointers and structures, unions, classes, member, functions, objects, arrays of class objects, pointer and classes, constructors, destructors, inline member functions, static class member, friend function, dynamic memory allocation.

UNIT–III

Inheritance, single inheritance, types of base classes, type of derivations, multiple inheritance, container classes, member access control, Functions overloading , operator overloading, polymorphism, virtual functions, pure virtual functions, opening and closing of files, Stream State member functions.

References:

1 C++; A Beginner's Guide by "Schildt, Herbert", Edition 2002, McGraw Hill.
2 Turbo C++ by "Lafore Robert", Edition First, 1991, Reprint, 2007, Galgotia Publication.
3 Bruce Eckel, "Thinking in C++", First Edition.
4 Let us C++, "Yeshwant Kanetkar", First Edition, 2006, BPB Publication.

SEMESTER–III

INFORMATION TECHNOLOGY (VOCATIONAL)

OOPS Using C++
(PRACTICAL)

Marks: 25

4 Hours/week

Practical based on OOPS Using C++

SEMESTER–III

COMPUTER MAINTENANCE (VOCATIONAL)

MICROPROCESSOR & ASSEMBLY LANGUAGE (THEORY)

Time: 3 Hours **Max. Marks: 100**
4 Hours/week **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters:

(i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.

(ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.

(iii) The students can use only Non Programmable & Non Storage Type Calculator.

UNIT–I

Introduction to Micro Computer System: Microprocessor Definition, Evolution, Microprocessor as a CPU, Single chip Micro Computers, Organization of a Micro Processor Based System.

8-Bit Microprocessor: Introduction of 8085, ALU (Timing & Control Unit, Registers, Data & Address Bus, Pin Configuration, Intel 8085, Instruction), Instruction Cycles (Fetch Operation, execute Operation, Machine Cycle & State, Instruction & Data Flow), Timing Diagram (Timing Diagram for OP Code, Fetch, Cycle, Memory Read, I/O Road Memory and I/O write).

UNIT–II

Interfacing I/O Devices: Basic Interfacing Concepts, Interfacing, Output Display Interfacing Output Devices, Memory Mapped I/O.

Instruction Set of Intel 8085: Introduction Instruction & Data Format, Addressing Modus, Statrs Flags, Intel 8085 Instruction.

Peripheral Devices & their Interfacing: Memory & I/O Interfacing, Data Transfer Schemes, Interrupt of Intel 8085, Programmable DMA Controller, Programmable Interrupt Controller, Intel 8529.

UNIT–III

16-Bit Microprocessor: Intel 8086/8088 pin Diagram, Architecture, Minimum & Maximum Modes, Bus Cycles, Memory Bus Status Codes, Memory Control Signals, Read/Write Cycle.

I/O Interface of 8086/8088 Microprocessor: Introduction, Types of I/O, Isolated I/O Interfaces, I/O Data Transfers, I/O Instruction, I/O Bus Cycles, I/O Hand Shaking Memory Mapped I/O. 8237A Programmable DMA Controller.

Assembly Language Programs Using 8085 Instructions

References:

1. B. Ram**:** Fundamental of Microprocessor & Micro Computers, Dhanput Rai, 5th Edition, 2001.
2. R.S. Gaonkar: Microprocessor Architecture for 8085, 3rd Edition, PRI, 1997.
3. Avtar Singh: 8088 & 8086 Microprocessor, Prentice Hall, 2002, 6th Edition.

SEMESTER–III

COMPUTER MAINTENANCE (VOCATIONAL)

(PRACTICAL)

Marks: 25

2 Hours/week

List of Practicals Based on Microprocessor & Assembly Language

1 To study the architecture of 8088 microprocessor.
2 To study the addressing modes of 8086.
3 To add two binary numbers each of 16-bit long.
4 To add two binary numbers each of 8-bit long.
5 To find maximum number in the given string (16 bytes long) and store it at location 0510.
6 To sort a string of a number of 8-bytes in descending order.
7 To multiply an ASCII string of 8 number by a single ASCII digit.
8 To divide a string of unpacked ASCII digits.

SEMESTER–III

COMPUTER APPLICATION (VOCATIONAL)

OPERATING SYSTEM
(THEORY)

Time: 3 Hours **Max. Marks: 100**
4 Hours/week **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters:

(i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.

(ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.

(iii) The students can use only Non Programmable & Non Storage Type Calculator.

UNIT–I

1 What is an Operating System - Evolution of OS Machine Language, Assembly, Compiler, Interpreter.

2 Types of Operating Systems with Examples
  a) Single User Systems
  b) Multi User Systems : Unix, Xenix, Vax/VMS.

3 Functions of Operating System
  a) Memory Management (Fixed Sized partition, Variavle Sized Partition, Dynamic Memory Management with Reallocation Technique, Paging Demand Paging Techniques).
  b) CPU Management (For come First served, Shortest Job First, Round Robin Policy).
  c) File Management.
  d) I/O Device Management.
  e) Command Interpreter.
  f) Data Management.
  g) Programme Developing Tools.
  h) Time Sharing.
  i) Security.
  j) Communication

4 Booting a System.

5 Features and Benefits of Unix.

UNIT–II

1. Unix System (Multi-programming, time-sharing, multitasking).
2. Components of Unix (Kernel, Shell).
3. UNIX file system (Data Block, list, super block, boot block).
4. Types of Files (Ordinary, Directory and Special Files).
5. Types of users in UNIX - levels of users (0-2).

UNIT–III

1. Login and Logout from Unix Session.
2. Types of Shells (Bourne, c-shell, r-shell).
3. Shell as a command inte, clear.
4. Simple Directory and File Commands Cat, is, in, chmod, mail, who, whoami, cal, pwd, date, ps, mkdir, cd, rmdir, rm, tput, clear.
5. Piping, filters, batch processing, shell programming (echo, read, case constructs)
6. Editors (vi): Commands for opening, inserting, modifying, deleting and saving files.

References:

1. "UNIX Basics", Ian Darwin TCP Informatics January, 2005.
2. "Basics of Os Unix and Shell Programming", Isrd, Tata McGraw-Hill Education, 01-Aug-2006.
3. "UNIX in a Nutshell": System V Edition: A Desktop Quick Reference for System V Release 4 and Solaris 2.0 by Daniel Gilly, The staff of O'Reilly Media, O'Reilly Media Inc.

SEMESTER–III

COMPUTER APPLICATION (VOCATIONAL)

OPERATING SYSTEM
(PRACTICAL)

Marks: 25

2 Hours/week

Practical based on Operating System

SEMESTER–III

AUTOMOBILE MAINTENANCE (VOCATIONAL)
(THEORY)

Time: 3 Hours
Periods per week Theory: 6 **Theory Marks: 60**

Section–A: It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks i.e. (2 marks); total weightage of the section being 10 Marks.

Section–B: It will consist of short answer questions with answer to each question upto 2 pages in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 4 marks; total weightage of the section being 20 marks.

Section–C: It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry 15 marks; total weightage of the section being 30 marks.

UNIT–I

Automatic Electrical Systems: Basic Automotive Circuits, Starting motor, Starting Devices, Bendix starting Drive, Overrunning clutch drive, Solinoid shift systems, Starting motor troubleshooting.

UNIT–II

Generator: Generator principles, Generation of Alternating currents, Generation of direct current, Generator construction, generator output control, Cut out relay, Regulator, Alternator type generator, Generating Systems troubleshooting.

UNIT–III

Ignition Systems: Introduction, Qualities of a good ignition system, Battery ignition system, Components of battery ignition system, Ignition coil, Condenser, Contact breaker, Distributer, Ignition Advance, Methods of ignition advance, Spark plug, Classification Sparking Plugs, Spark Plug Gap, Magneto Ignition System, Rotating Armature Type, Rotating magnet type, Low and high tension types, Special type of magneto, Ignition System troubleshooting.

SEMESTER–III

AUTOMOBILE MAINTENANCE (VOCATIONAL)
LAB – I
(PRACTICAL)

Time: 3 Hours **Marks: 40**
Periods per week: Practical: 4 Hrs.

1. Self Stater opening from the Voh and Refitting
2. Dynmo/Alternator Dismentling and Assembling.
3. Ignition Timing with the Engine.
4. Engine fault Diagonising.

References:

1. Basic Automobile Engineering (Punjabi Edition) written by C.P. Nakra, Published by Dhanpat Rai and Sons, Jalandhar, (Delhi).
2. Royal Basic Automobile Engineering written by R.K. Kalia. (Punjabi Edition).

SEMESTER–III

REFRIGERATION & AIR CONDITIONING (VOCATIONAL)
PAPER–E (THEORY)

Time: 3 Hours **Marks: 30**
Teaching Hours: 6

Instructions for the Paper Setters:

Section–A: It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

Section–B: It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

Section–C: It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

UNIT – I

Compressors: Introduction, Types Hermetic, Semi Hermetic open compressors. Centrifugal & Rotary Compressors: construction features and volumetric Efficiencies. Multicylinder Compression & Capacity control.

UNIT – II

Compressor Lubrication: Methods of Lubrication & the properties of a Lubricating oil Identifications of sources of problem in operation Value failure, Shaft Seals 3– way Values cylinder to head gascats.

UNIT – III

Condensers: Definition, Basic Principle, Types of Condenser: Air cooled Condenser, Water Cooled Condenser, Evaporative Condenser and their Constructional features. Comparison between Waters & Air cooled condenser & their Advantages & disadvantages.

SEMESTER–III

REFRIGERATION & AIR CONDITIONING (VOCATIONAL)
PAPER–F (THEORY)

Time: 3 Hours **Marks: 30**
Teaching Hours: 6

Instructions for the Paper Setters:

Section–A: It will consist of 5 very short answer questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry half mark i.e. (1 mark); total weightage of the section being 5 Marks.

Section–B: It will consist of short answer questions with answer to each question upto 1 page in length. Eight questions will be set by the examiner and 5 will be attempted by the candidates. Each question will carry 2 marks; total weightage of the section being 10 marks.

Section–C: It will consist of essay type question with answer to each question upto 5 pages in length. Four questions will be set by the examiner & candidates will be required to attempt two. Each question will carry seven and half marks; total weightage of the section being 15 marks.

UNIT – I

Cooling Towers: Definition, types: natural & Mechanical Draft, cooling pond, shell & tube shell of coil chillers. Fouling & de–scaling of condensers. Brine System.

UNIT – II

Expansion Devices: Capillary Tube, Constant Pressure, Thermo Static Exp. Values, Sizing of Capillary. Standard Sizes, testing & adjustment of expansion devices. High & Low sides float value. Refrigerant receivers. Dryers Filters.

UNIT – III

Refrigeration & Air Conditioning System Practice: Piping layout Selection of pip material & size for various Refrigerant, Methods of joining, flairing & brazing System, euacuation, depyartation, charging balancing, leak testing, Use of Selenoid values pressure equalizers.

SEMESTER–III

REFRIGERATION & AIR CONDITIONING (VOCATIONAL)

PRACTICAL: LAB–II

Time: 2 Hours **Marks: 40**
Period Per week Practical: 4

List of Experiments:

1. To Study the various control devices e.g. Thermostat, Relays & dryers etc.
2. To Study the vapour compression System.
3. To assemble & Operate a small vapour compression system.
4. To Study an electrolux Refrigerator.
5. To Study the Window Type Air Conditioner, Split Type air Conditioner.
6. To Study Ammonia–Water Plant.

List of Books Recommended:

Name of Book	**Author**	**Publisher**
Refrigeration & Air Conditioning	S.C. Arora	Dhanpat Rai
Refrigeration & Air Conditioning	Dowkundwar Khurmi	Katson Publication
Refrigeration & Air Conditioning	Sarao, Gaabi Singh	Satya Prakashan.

SEMESTER–III

INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT (VOCATIONAL)

SOFTWARE ENGINEERING

Time: 3 Hours **Max. Marks: 100**

Note:-

1. **In theory eight questions are to be set in all. The candidates are required to attempt five of them. All questions are to be of equal marks.**
2. **The students can use only Non–Programmable & Non–Storage Type Calculators.**

UNIT–I

1. **Introduction to Software**: Definition, Software characteristics, Software components, Software Applications.
2. **Introduction to Software Engineering**: Definition, Software Engineering Paradigms, waterfall method, prototyping, interactive Enhancement, The Spiral model, Fourth Generation Technique.
3. **Software Metrics**: Role of Metrics and measurement, Metrics for software productivity and Quality.

UNIT–II

4. **Software Requirement Specification (SRS)**: Problem analysis, structuring information, Data flow diagram and data dictionary, structured analysis, Characteristics and component of (SRS).
5. **Planning a Software Project**: Cost estimation, uncertainties in cost estimation, Project scheduling and milestones, Software & Personal Planning
6. **System Design**: Design Objectives, Design Principles, Top Down and Bottom–up techniques, Structure Design, Structure Charts, Design Methodology.

UNIT–III

7. **Detailed Design**: Module specification, Specifying functional module, specifying data abstraction, PDL and Logic/Algorithm Design.
8. **Coding**: Coding by Top–down and Bottom–up, Structured Programming, Information Hiding, Programming style, Internal Documentation.
9. **Testing**: Level of testing, Test cases and test criteria, Functional Testing, Structural Testing.

References:-

1. Software Engineering, Roger S. Pressman.
2. Integrated Approach to Software Engineering, Pankaj Jalote.

SEMESTER–III

RELIGIOUS STUDIES
ਧਰਮ ਅਧਿਐਨ
(ਸਾਮੀ ਧਰਮ)

ਸਮਾਂ 3 ਘੰਟੇ **ਕੁਲ ਅੰਕ:100**
ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75% **ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35**

ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ:
ਪੇਪਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ: ੳ, ਅ, ੲ, ਸ, ਅਤੇ ਹ। ਭਾਗ ੳ, ਅ, ੲ, ਸ ਵਿਚੋਂ 2–2 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਇਕ–ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੋਵੇਗਾ ਅਤੇ ਹਰ ਇਕ ਪ੍ਰਸ਼ਨ ਦੇ 15 ਅੰਕ ਹੋਣਗੇ। ਭਾਗ ਹ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹੋਣਗੇ, ਜਿਹੜੇ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋ ਹੋਣਗੇ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 4–4 ਅੰਕ ਹੋਣਗੇ।

ਪ੍ਰੀਖਿਆਰਥੀ ਲਈ ਹਦਾਇਤਾਂ:
ਭਾਗ ੳ, ਅ, ੲ, ਸ ਵਿਚੋਂ ਕੇਵਲ ਇਕ–ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਹੈ ਅਤੇ ਭਾਗ ਹ ਦੇ ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਜ਼ਰੂਰੀ ਹਨ।

ਭਾਗ (ੳ): ਯਹੂਦੀ ਧਰਮ

1. ਯਹੂਦੀ ਧਰਮ ਦਾ ਇਤਿਹਾਸ: ਮੁੱਢਲੀ ਜਾਣ–ਪਛਾਣ
2. ਪੈਗੰਬਰ ਮੂਸਾ: ਜੀਵਨ ਦੇ ਸਿੱਖਿਆਵਾਂ
3. ਯਹੂਦੀ ਧਰਮ–ਗ੍ਰੰਥ: ਤੋਰਾਹ (The Law), ਨਬੀ (The Prophets), ਕੈਥੂਬੀਮ (The Writings) ਬਾਰੇ ਸੰਖੇਪ ਜਾਣਕਾਰੀ।

ਭਾਗ (ਅ): ਈਸਾਈ ਮੱਤ

1. ਈਸਾਈ ਚਰਚ:ਆਰੰਭ ਅਤੇ ਪਾਸਾਰ(ਨਵੇਂ ਨੇਮ ਦੀ ਪੰਜਵੀਂ ਪੁਸਤਕ ਰਸੂਲਾਂ ਦੇ ਕਰਤਬ ਅਨੁਸਾਰ)
2. ਯਸੂ ਮਸੀਹ: ਜੀਵਨ ਤੇ ਸਿੱਖਿਆਵਾਂ
3. ਨਵਾਂ ਨੇਮ (New Testament) : ਤਿੰਨ ਮੁੱਖ ਭਾਗ
   (i) ਮੱਤੀ ਦੀ ਅੰਜੀਲ (Gospel of Mathew): ਸੰਖਿਪਤ ਜਾਣਕਾਰੀ
   (ii) 21 ਪੱਤਰ (Epistles) ਸੰਤ ਪਾਲ ਅਤੇ ਦੂਜੇ ਸੰਤਾਂ ਦੇ
   (iii) ਪ੍ਰਕਾਸ਼ ਦੀ ਪੋਥੀ (Apocalypse)

ਭਾਗ (ੲ): ਇਸਲਾਮ

1. ਇਸਲਾਮ ਧਰਮ: ਮੁੱਢਲੀ ਜਾਣ–ਪਛਾਣ, ਪਿਛੋਕੜ, ਆਰੰਭ ਅਤੇ ਵਿਕਾਸ, ਇਸਲਾਮ ਤੋਂ ਪਹਿਲਾਂ ਅਰਬ ਦੀ ਧਾਰਮਿਕ ਅਤੇ ਸਮਾਜਿਕ ਸਥਿਤੀ
2. ਪੈਗੰਬਰ ਮੁਹੰਮਦ: ਜੀਵਨ, ਸਿੱਖਿਆਵਾਂ, ਇਸਲਾਮ ਦੇ ਪੰਜ ਥੰਮ: ਈਮਾਨ,ਸਲਾਤ, ਰੋਜ਼ਾ, ਹੱਜ,ਜ਼ਕਾਤ
3. ਪਵਿੱਤਰ ਕੁਰਾਨ: ਸੰਪਾਦਨਾ ਅਤੇ ਬਣਤਰ

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ਭਾਗ (ਸ) : ਪਾਰਸੀ ਮੱਤ

1. ਪਾਰਸੀ ਧਰਮ: ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ, ਸਮਕਾਲੀ ਸਮਾਜਿਕ ਅਤੇ ਧਾਰਮਿਕ ਅਵੱਸਥਾ, ਜਲਾਵਤਨੀ ਅਤੇ ਭਾਰਤ ਵਿਚ ਆਗਮਨ
2. ਜਰਤੁਸ਼ਤ: ਜੀਵਨ, ਸਿੱਖਿਆਵਾਂ, ਨੇਕੀ-ਬਦੀ ਦਾ ਸਿੱਧਾਂਤ, ਪਰਿਵਾਰਿਕ ਅਤੇ ਸਮਾਜਿਕ ਭਾਈਚਾਰੇ ਦੀ ਬਣਤਰ
3. ਪਾਰਸੀ ਧਰਮ-ਗ੍ਰੰਥ: ਅਹੁਰ ਮਾਜ਼ਦਾ,ਅਹਰਮਨ ਅਤੇ ਜੰਦ-ਅਵੇਸਤਾ ਦੀ ਸੰਖੇਪ ਜਾਣਕਾਰੀ

ਭਾਗ (ਹ) : ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 10 ਪ੍ਰਸ਼ਨ

ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:

ENGLISH:

1. Ali, K. *A Study of Islamic History,* Mullick Brothers, Calcutta, 1971.
2. Ansari, M. Abdul Haq, *Islam,* Punjabi University, Patiala, 1969.
3. Buck, Harry M., *People of the Lord, The History, Scripture and faith of ancient Israel*, The Macmillan, 1966.
4. *Christianity,* Punjabi University, Patiala, 1969.
5. Clark, Denmise E., *Jesus Christ- His Life and Teachings*, , Madarsa Road, Kashmiri Gate, Delhi, 1654.
6. Foster, John ,*Church History,* ISPCK, New Delhi, 2013.
7. Greenless, Duncan, *The Gospel of Zorathustra*, Adyar Publication, Madras, 1968.
8. Guillame, Alfred, & Arnold Thomas (Ed.), *The Legacy of Islam,* Oxford University, London, 1960.
9. Hindson, David F., *History of Israel*, ISPCK, Delhi, 2007.
10. Hitti, P.K., *History of Arabs*, Macmillan, London, 1977.
11. M.N., Dhalla, *History of Zoroastrianism* K.R. Cama Oriental Institute, Bombay, 1997.
12. Pickthal, M.M., *The Meaning of the Glorious Koran,* George Allan and Unwin, 1969.

Punjabi:

1. ਗੁਲਵੰਤ ਸਿੰਘ, *ਇਸਲਾਮ ਅਤੇ ਸੂਫ਼ੀਵਾਦ,* ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1994.
2. ਜੀ. ਆਰ. ਸਿੰਘ ਅਤੇ ਸੀ. ਡਬਲਿਊ ਡੇਵਿਡ, *ਯਹੂਦੀ ਧਰਮ ਪ੍ਰਸਿੰਤਯ ਧਰਮ*, ਲਖਨਊ ਪਬਲਿਸ਼ਿੰਗ ਹਾਊਸ, ਲਖਨਊ.
3. ਜੋਸ਼ੀ, ਐੱਲ.ਐੱਮ., *ਵਿਸ਼ਵ ਧਰਮ ਸੰਗ੍ਰਹਿ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1971.
4. ਤਾਲਿਬ, ਗੁਰਬਚਨ ਸਿੰਘ (ਸੰਪਾ.), *ਸੰਸਾਰ ਦੇ ਕੁਝ ਪ੍ਰਮੁੱਖ ਧਰਮ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1985.
5. ਧਾਲੀਵਾਲ, ਤੇਜਿੰਦਰ ਕੌਰ, *ਯਹੂਦੀ ਅਤੇ ਈਸਾਈ ਧਰਮ : ਇਕ ਜਾਣ-ਪਛਾਣ*, ਗ੍ਰੇਸ਼ੀਅਸ ਪਬਲੀਕੇਸ਼ਨ, ਪਟਿਆਲਾ, 2009.
6. *ਬਾਈਬਲ (ਪੰਜਾਬੀ ਅਨੁਵਾਦ)*, ਬਾਈਬਲ ਸੁਸਾਇਟੀ ਆਫ਼ ਇੰਡੀਆ, ਬੰਗਲੌਰ, 1976.
7. ਮੈਸੀ, ਜੇਮਜ਼, *ਮਸੀਹੀਅਤ: ਇਕ ਪਰਿਚਯ*, ਫਕੀਰ ਸਿੰਘ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ, 1976.

SEMESTER–III

PHILOSOPHY

DEDUCTIVE LOGIC AND APPLIED ETHICS (OPT. I)
(Only for Regular Students)

Lectures to be delivered: 6+4=10 per week **Marks: 100**
Time: 3 Hours **Theory Marks: 80**
Pass Marks: 35% **Practical Marks: 20**

Note: Instructions for the Paper-Setters:

The question paper will consist of five Sections: A, B, C, D & E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15 marks each. Section E will consist of 10 short answer type questions which will cover the entire syllabus uniformly and will carry 20 marks. Each short answer type question will be of 2 marks. There will be a separate paper for practical related to the subject. For it there will be four lectures in a week besides the theory lectures. The focus of these lectures would be on the applied aspect of the course and the students will prepare a presentation on the basis of their observations of specific problems related with Applied Ethics. A teacher from the affiliated colleges will evaluate the students on the basis of presentation and the Viva-Voce before/after the theory examination and will award the marks out of 20 marks.

Instructions for the Candidates:
Candidates are required to attempt one question each from the sections A, B, C & D of the question paper and the entire section E

Section–A

1. Definition, Nature and Utility of Western Logic.
2. Laws of Thought: Identity, Contradiction, Excluded Middle, Law of Sufficient Reason and their Characteristics.
3. Terms: Kinds, Connotation, Denotation and Relation between Connotation and Denotation.

SEMESTER–III

Section–B

4. Proposition: Classification of Propositions, Four-fold division of Propositions.
5. Immediate Inference: Square of Opposition of Proposition, Contradiction, Contrary, Sub-Contrary, Subalteration.
6. Mediate Inference: Rules of Validity and Fallacies of Categorical Syllogism.

Section–C

7. Applied Ethics: Nature, Scope and Uses.
8. De-ontological Approach to Moral Action: Immanuel Kant, Bhagavat Gita.
9. Teleological Approach to Moral Action: J.S. Mill, Bentham.

Section–D

10. Medical Ethics & Legal Ethics
11. Educational Ethics
12. Bussiness Ethics

Recommended Readings:

English Books

1. Beauchamp T.L. & J.E. Childress, (Jr.), *Principles of Biomedical Ethics,* 2nd Ed., Oxford University Press, Oxford, 2001
2. Copi, I.M., *Introduction to Logic*, 6th ed., New York, Macmillan, 1982.
3. Singer, Peter, *Practical Ethics,* Cambridge University Press, 1993.
4. Titus, Harold H., *Ethics for Today,* Eurasia Publishing House, New Delhi, 1966.

Punjabi Books

1. ਵਜ਼ੀਰ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ, *ਤਰਕ ਗਿਆਨ ਦੇ ਮੁਢਲੇ ਨੇਮ*, (ਭਾਗ–1) (ਨਿਗਮਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
2. ਸ਼ਰਮਾ, ਪੀ.ਏ. ਅਤੇ ਵਜ਼ੀਰ ਸਿੰਘ, *ਤਰਕ ਗਿਆਨ ਦੀ ਜਾਣ–ਪਛਾਣ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

SEMESTER–III

PHILOSOPHY

DEDUCTIVE LOGIC AND SOCIAL PHILOSOPHY (OPT. II)
(Only for Private Students)

Time: 3 Hours **Max. Marks: 100**
Lecture to be delivered: 6 per week
Pass Marks: 35%

Note: Instructions for the Paper Setters:

The Question paper will consist of five Sections: A, B, C, D & E. Sections A, B, C, D and E will have two questions from the respective sections of the syllabus and will carry 15 marks each. Section E will consist of 10 short answer type questions which will cover the entire syllabus uniformly and will carry 40 marks in all, each short answer type question carrying 4 marks.

Instructions for the Candidates:
Candidates are required to attempt one question each from the Sections A, B, C and D of the question paper and the entire section E.

Section–A

1. Definition, Nature and Utility of Western Logic.
2. Laws of Thought: Identity, Contradiction, Excluded Middle, Law of Sufficient Reason and their Characteristics.
3. Terms: Kinds, Connotation, Denotation and Relation between Connotation and Denotation.

Section–B

4. Proposition: Classification of Propositions, Four-fold division of Propositions.
5. Immediate Inference: Square of Opposition of proposition, Contradiction, Contrary, Sub-Contrary, Subalteration.
6. Mediate Inference: Rules of Validity and Fallacies of Categorical Syllogism.

SEMESTER–III

Section–C

7. Social Philosophy: Nature, Scope and Importance of Social Philosophy.
8. Social Philosophy and Ethics.
9. Social Philosophy and Political Science.

Section–D

10. Plato's Theory of State
11. Theories about Origin of Society: Organic Theory, Social Contract Theory and Idealistic Theory
12. Social Progress : Meaning and Factors

Recommended Readings:

English Books

1. Bech, Robert N., *Handbook of Social Philosophy*, 1969.
2. Copi, Griving.M. *Introduction to Logic*, 6th, New York, Macmillan, 1982.
3. Daya Krishan, *Social Philosophy: Past and Future,* Indian Institute of Advanced Study, Shimla, 1969.
4. Quinton, Anthony (Ed.), *Political Philosophy,* Oxford University Press, London, 1973.
5. Sharma, Ram Nath, *Overview of Philosophy,* Lucky Star, Delhi, 1983.

Punjabi Books:

1. ਵਜ਼ੀਰ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ, *ਤਰਕ ਗਿਆਨ ਦੀ ਜਾਣ-ਪਛਾਣ :* (ਭਾਗ-1) (ਨਿਗਮਨ), ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

Hindi Books:

1. ਗੌਤਮ, ਸਤਿਆਪਾਲ, *ਸਮਾਜ ਦਰਸ਼ਨ*, ਹਰਿਆਣਾ ਸਾਹਿਤਯ ਅਕੈਡਮੀ, ਪੰਚਕੁਲਾ।
2. ਮੇਕੇਂਜੀ, ਜੇ.ਐਸ., *ਸਮਾਜ ਦਰਸ਼ਨ ਕੀ ਰੂਪ ਰੇਖਾ*, ਰਾਜਕਮਲ, ਪਟਨਾ।

SEMESTER–III

ZOOLOGY

Paper	**Maximum Marks**		**Hours of Teaching**	
	Theory Marks	**Practical Marks**	**Theory**	**Practical**
			Credit hrs. (60 min. each)	**per Week**
ZOO-IIIA (Evolution)	35	__	3 Hrs	__
ZOO-IIIB **(**Biodiversity-III)	35	__	3 Hrs	__
PRACTICAL–III (RELATED TO ZOO-IIIA and ZOO-IIIB)	__	30	__	4½ Hrs

SEMESTER–III

ZOOLOGY
ZOO-III A: Evolution
(THEORY)

Max. Time: 3 Hrs. **Max Marks: 35**

Instructions for the Paper Setters:

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

UNIT-I

Introduction to evolution
Evidences of organic evolution
Theories of organic evolution

UNIT-II

Origin of life
Concept of micro, macro and mega-evolution
Concept of Species
Speciation

UNIT-III

Fossils, its types and significance
Evolutionary rate
Origin & Extinction of reptiles
Evolution of man (in Brief)

UNIT-IV

Migration & Parental Care in Pisces
Flight adaptation & Bird migration
Adaptive radiations like scales & fins in fish, poison apparatus in snakes and dentition in Mammals.

Suggested Readings:-

1. Avers, C. J.(1989). Evolution Process and Pattern in Evolution, Oxford University, Press, New York, Oxfor.
2. Ayala, F. J. and Valentine J. W. (1979). Evolving the theory and Process of Organic Evolution, Benjamin Cumming.
3. Bhamarah, H.S.(1993), Juneka K., Cytogenetics & Evolution, Anmol Publication Pvt. Ltd.
4. Brookfield, A. P. (1986). Modern aspects of Evolution. Hutchinson London, Melbourne.
5. Colbert. E.H.(1989), Evolution of Vertebrates, (2nd ed), Wiley Eastern Ltd.
6. Dobzhansky, Ayala, Stebbins & Valentine(1952), Evolution W.H. Freeman.
7. Gallow, P. (1983). Evolutionary principles. Chapman and Hall.
8. Freeman, S. and Herron, Jon C. (2007). Evolutionary analysis, Pearson Prentice Hall, New Jersey.
9. Futuyma, D. J. (1998), Evolutionary Biology, Sinauer Assoc. Inc. Pub. USA.
10. Meglitsch, P. A. (1991), Invertebrate Zoology (3rd ed), Oxford University Press.
11. Minkoff, E. C. (1983), Evolutionary Biology, Addison Wesley Pub. Co., London.
12. Wen-Hsiung Li (1997), Molecular Evolution, Sinauer associates Inc.Pub. USA.

SEMESTER–III
ZOOLOGY
ZOO-III B: Biodiversity-III
(Chordates)
(THEORY)

Max. Time: 3 Hrs. **Max Marks: 35**

Instructions for the Paper Setters:

1. Question paper should be set strictly as per the topics in the syllabus.
2. The question paper will comprise of two sections.
3. Section A will be compulsory and will have 7 short answer type questions (one mark each).
4. Section B will have 8 questions including two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. All questions shall have equal marks. (7 marks each)

UNIT-I

Urochordata: External features and affinities of *Herdmania*
Cephalochordata: Type study-*Amphioxus*

UNIT-II

Cyclostomata: External Characters of *Petromyzon*
Affinities of Cyclostomata

Pisces: Type study-*Labeo*

UNIT-III

Amphibia: Type study-Frog
Reptilia: Type study-*Uromastix*

UNIT-IV

Aves: Type study-Pigeon
Mammals: Type study-Rat

Suggested Reading Material:-

1. Dhami, P.S. & Dhami J.K. (1998), Vertebrates, R. Chand & Co., New Delhi.
2. Goodrich, E. S. (1958), Structure and Development of Vertebrates, Vol. I and II. D. E. Publication, New York.
3. Hildebrand, M. and Goslow. Jr. G.E. (2001), Analysis of Vertebrates Structure, John Wiley, N. Y.
4. Jollie, M. (1968), Chordate Morphology, Reinhold, New York.
5. Kardong, K. V. (1995), Vertebrates – Comparative Anatomy, Function, Evolution. W.B.C. Pub. , Oxford.
6. Kent, G. C. and Carr, R. K. (2001), Comparative Anatomy of the Vertebrates (9^{th} ed), McGraw Hill Higher Education, New York.
7. Linzey, D. (2001), Vertebrate Biology, McGraw Hill Publishing Company, New York.
8. Pough, F. H., Heiser, J. B. and McFarland, W. N. (1990), Vertebrate Life (3^{rd} ed), Macmillan Pub. Co., New York.
9. Young, J. Z. (1982), The Life of Vertebrates, New York.
10. Parker, T.J. and Haswell, W.A (1981) Text Book of Zoology, Vol. II (Vertebrates), ELBS and Macmillian Press Ltd.

SEMESTER–III

ZOOLOGY
Practical-III (Related to ZOO-IIIA and ZOO-IIIB)

Time: 3hrs. **Marks: 30**

Important Note for Practical:-

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines (D.O.No. F. 14-6/2014(CPP-II) dated 01-08-2014) the dissections should not be conducted. The guidelines on this issue are available on the UGC website: www.ugc.ac.in

I. Classification up to order level, except in case of Pisces and Aves where classification up to subclass level, habits, habitat, external characters and economic importance (if any) of the following animals is required :

Urochordata : *Herdmania, Molgula, Pyrosoma, Doliolum, Salpa & Oikopleura.*

Cephalochordata : *Amphioxus.* Study of the following prepared slides:
T.S. *Amphioxus* through various regions, Pharynx of *Amphioxus*

Cyclostomata : *Myxine, Petromyzon & Ammocoetes* Larva.

Chondrichthyes : *Zygaena* (hammer head shark), *Pristis* (saw fish), *Narcine (electric ray), Trygon, Rhinobatus and Chimaera* (rabbit fish).

Actinoptergii : *Polypterus, Acipenser, Lepidosteus, Muraena, Mystus, Catla, Hippocampus, Syngnathus, Exocoetus, Anabas, Diodon, Tetradon, Echeneis and Solea.*

Dipneusti (**Dipnoi**) : *Protopterus* (african lung fish)

Amphibia : *Uraeotyphlus, Necturus, Amphiuma, Amblystoma* and its Axolotl Larva, *Triton, Salamandra, Hyla, Rhycophorus*

Reptilia : *Hemidactylus, Calotes, Draco, Varanus, Phrynosoma, Chamaeleon, Typhlops, Python, Eryx, Ptyas, Bungarus, Naja, Hydrus, Vipera, Crocodilus, Gavialis, Chelone* (turtle) and *Testudo* (tortoise),Differences in nonpoisonous and poisonous snakes.

Aves : *Casuarius, Ardea, Anas, Milvus, Pavo, Eudynamics, Tyto* and *Alcedo.*

Mammalia : *Ornithorynchus, Echidna, Didelphis, Macropus, Loris, Macaca, Manis, Hystrix, Funambulus, Panthera, Canis, Herpestes, Capra, Pteropus.*

II. Study of the following systems with the help of charts/models/videos:
Herdmania : General anatomy
Labeo : Digestive and reproductive systems, heart, afferent and branchial arteries, cranial nerves and internal ear.
Chick : Digestive, arterial, venous and urino-genital systems.
White Rat : Digestive, arterial, venous and urino-genital systems.

Study of permanent slides of whole mount of Pharynx of *Herdmania* and *Amphioxus.* Cycloid scales of *Labeo,* blood smear of mammal, Histology of rat/rabbit (compound tissues)

Demonstration of evolutionary phenomena like homology, analogy, mimicry, crypsis.
Study of evolution of horse/elephant/man.

Study of fossils.

Assignment

Note:- Some changes can be made in the practicals depending on the availability of material.

Guidelines for conduct of Practical Examination:

1. Draw a labelled sketch of the system of the given animal & explain it to the Examiner. 4
2. Identify and classify the specimens upto order level. Write a short note on habitat, special features, feeding, habits and economic importance of the specimens. 8
3. Idendify and write a note on the evolutionary phenomenon in the given specimen. 4
4. Identify the slides/specimens, give two reasons for identification. 5
5. Assignment 4
6. Viva-voce & Practical file. 5

SEMESTER–III
BOTANY
PAPERA– STRUCTURE, DEVELOPMENT AND REPRODUCTION IN FLOWERING PLANTS–I (THEORY)

Time: 3 Hrs.
Theory Lectures: 3 Hours/Week

Max. Marks: 35

Instructions for the Paper Setters:
There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer–type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

Unit 1

The basic body plan of a flowering plant-modular type of growth. diversity in plant form in annuals, biennials and perennials; trees-largest and longest-lived. branching pattern; monopodial and sympodial growth; canopy architecture.

Unit 2

The Shoot System: The shoot apical meristem and its histological organization; meristematic and permanent tissue, formation of internodes. Cambium and its functions; formation of secondary xylem.

Unit 3

A general account of wood structure in relation to conduction of water and minerals; characteristics of growth rings, sapwood and heart wood; role of woody skeleton; secondary phloem-structure function relationships; periderm.

Unit 4

Leaf: Origin, development, arrangement and diversity in size and shape; internal structure in relation to photosynthesis and water loss; adaptations to water stress; senescence and abscission.

Suggested Readings:

1. Beck, C.B. (2010). An Introduction to Plant Structure and Development: Plant anatomy for the Twenty First Century (2nd Edition). Cambridge University Press, UK.
2. Cutler, D. F., Botha, T. and Stevenson, D. M. (2007). Plant Anatomy: An Applied Approach. Blackwell Publishing, Oxford, UK.
3. Dickison, W.C. (2000). Integrative Plant Anatomy. Academic Press, California, USA.
4. Mauseth, J.D. (1988). Plant Anatomy, The Benjamin/Cummings Publishing Company Inc., Menlo Park, California, USA.
5. Peau, K (1977) Anatomy of Seed Plants, 3rd edition. John Wiley & Sons, New York.
6. Raven, P.H., Evert, R.F. and Eichhorn, S.E. (1999). Biology of Plants, 5th edition. W.H. Freeman and Co., Worth Publishers, New York.
7. Rudall, P. J. (2007). Anatomy of Flowering Plants: An Introduction to Structure and Development (3rd Edition). Cambridge University Press, UK.
8. Thomas, P. (2000) Trees: Their Natural History, Cambridge University Press, Cambridge

SEMESTER–III
BOTANY
Paper–III B: STRUCTURE, DEVELOPMENT AND REPRODUCTION IN FLOWERING PLANTS–II (THEORY)

Time: 3 Hrs.
Theory Lectures: 3 Hours/Week

Max. Marks: 35

Instructions for the Paper Setters:
There will be a total of nine questions. Question No. 1 will be compulsory and questions in this will be of short answer–type (3–4 lines). The remaining 8 questions will be set from equal distribution of the syllabus out of which candidates will be required to attempt 4 questions. All questions (including Q. No. 1) will have equal marks i.e. 7 each.

Unit 1

The Root System: The root apical meristem; differentiation of primary and secondary tissues and their roles; structural modification for storage, respiration, reproduction and for interaction with microbes.

Unit 2

Vegetative Reproduction: various methods of vegetative propagation. Detailed study and types of grafting and budding, economic aspects. Flower: A modified shoot; structure, development and varieties of flower; functions;

Unit 3

Structure of anther and pistil; the male and female gametophytes; types of pollination; attractions and reward for pollinators; (sucking and foraging types); pollen-pistil interaction self incompatibility.

Unit 4

Double fertilization: formation of seed endosperm and embryo : fruit development and maturation Significance of Seed: Suspended animation; ecological adaptation; unit of genetic recombination with reference to reshuffling of genes and replenishment; dispersal strategies.

Suggested readings:

1. Bhojwani, S.S. and Bhatnagar, S.P. (2000). The Embryology of Angiosperms, 4th revised and enlarged edition. Vikas Publishing House, Delhi.
2. Hartmann, H.T. and Kestler, D.E. (1976). Plant Propagation: Principles and Practices, 3rd edition, Prentice Hall of India Pvt. Ltd., New Delhi.
3. Mauseth, J.D. (1988). Plant Anatomy, The Benjamin/Cummings Publishing Company Inc., Menlo Park, California, USA.
4. Peau, K. (1977). Anatomy of Seed Plants, 3rd edition. John Wiley & Sons, New York.
5. Pegeri, K. and Vander Pijl (1979). The Principles of Pollination Biology, Pergamon Press, Oxford.
6. Raven, P.H., Evert, R.F. and Eichhorn, S.E. (1999). Biology of Plants, 5th edition. W.H. Freeman and Co., Worth Publishers, New York.

SEMESTER–III

BOTANY Botany Practicals–III (Based on Papers–III A and III B)

Practical Marks: 30
Practical Hours: 4½ Hours/week

Suggested Laboratory Exercises

1. Study of any commonly occurring dicotyledonous plant (for example Solanum nigrum or Kalanchoe) to the body plan, organography and modular type of growth.
2. Life forms exhibited by flowering plants (by a visit to a forest or a garden, Study of treelike habit in cycads, bamboo, banana, traveller's tree (Revenala madagascariensis) and Yucca and comparison with true trees as exemplified by conifers and dicotyledons.
3. L.S. Shoot tip to study the cytohistological zonation and origin of leaf primordia.
4. Monopodial and sympodial types of branching in stems (especially rhizomes).
5. Anatomy of primary and secondary growth in monocots and dicots using free hand razor technique (Solanum, Boerhavia, Helianthus, Mirabilis, Nyctanthus, Draceana, Maize) hand sections (or prepared slides). Structure of secondary phloem and xylem. Growth rings in wood, Microscopic study of wood in T.S., T.L.S. and R.L.S.
6. Field study of diversity in leaf shape, size, thickness, surface properties. Internal structure of leaf. Structure and development of stomata (using epidermal peels of leaf).
7. Anatomy of the root. Primary and secondary structure.
8. Examination of a wide range of flowers available in the locality and methods of their pollination.
9. Structure of anther, microsporogenesis (using slides) and pollen grains (using whole mounts). Pollen viability using in vitro pollen germination.
10. Structure of ovule and embryo sac development using serial sections from permanent slides.
11. Nuclear and cellular endosperm. Embryo development in monocots and dicots (using permanent slides/dissections).
12. Simple experiments to show vegetative propagation (leaf cuttings in Bryophyllum. Sansevieria, Begonia; stem cuttings in rose, Salix, money plant, Sugarcane and Bougainvillea).
13. Germination of non-dormant and dormant seeds.

Suggested Readings (for laboratory exercises):

1. Bhojwani, S.S. and Bhatnagar, P. (2000). The Embryology of Angiosperms (4th revised and enlarged edition), Vikas Publishing House, New Delhi.
2. Mauseth, J.D. (1988). Plant Anatomy, The Benjamin/Cumminas Publishing Co., Inc., Mehlo Park, California, USA.
3. Raven, P.H., Evert, R.F. and Eichhorn, S.E. (1992). Biology of Plants (5th Edition). Worth Publishers, New York.
4. Steeves, T.A. and Sussex, I.M. (1989). Patterns in Plant Development (2nd Edition). Cambridge University Press, Cambrid.

SEMESTER–III
ESL 221 Environmental Studies (Compulsory)
(Student can opt this Paper whether in 3rd or 4th Semester)

Time: 3 Hrs. **Max. Marks: 100**

Teaching Methodologies
The Core Module Syllabus for Environmental Studies includes class room teaching and field work. The syllabus is divided into 8 Units [Unit-1 to Unit-VII] covering 45 lectures + 5 hours for field work [Unit-VIII]. The first 7 Units will cover 45 lectures which are class room based to enhance knowledge skills and attitude to environment. Unit-VIII comprises of 5 hours field work to be submitted by each candidate to the Teacher in-charge for evaluation latest by 15 December, 2018.

Exam Pattern: **End Semester Examination- 75 marks**
Project Report/Field Study- 25 marks [based on submitted report]
Total Marks- 100

The structure of the question paper being:

Part-A, Short answer pattern with inbuilt choice – **25 marks**
Attempt any five questions out of seven distributed equally from Unit-1 to Unit-VII.
Each question carries 5 marks. Answer to each question should not exceed 2 pages.

Part-B, Essay type with inbuilt choice – **50 marks**
Attempt any five questions out of eight distributed equally from Unit-1 to Unit-VII. Each question carries 10 marks. Answer to each question should not exceed 5 pages.

Project Report / Internal Assessment:

Part-C, Field work – **25 marks [Field work equal to 5 lecture hours]**
The candidate will submit a hand written field work report showing photographs, sketches, observations, perspective of any topic related to Environment or Ecosystem. The exhaustive list for project report/area of study are given just for reference:

1. Visit to a local area to document environmental assets: River / Forest/ Grassland / Hill / Mountain / Water body / Pond / Lake / Solid Waste Disposal / Water Treatment Plant / Wastewater Treatment Facility etc.
2. Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
3. Study of common plants, insects, birds
4. Study of tree in your areas with their botanical names and soil types
5. Study of birds and their nesting habits
6. Study of local pond in terms of wastewater inflow and water quality
7. Study of industrial units in your area. Name of industry, type of industry, Size (Large, Medium or small scale)
8. Study of common disease in the village and basic data from community health centre
9. Adopt any five young plants and photograph its growth
10. Analyze the Total dissolved solids of ground water samples in your area.
11. Study of Particulate Matter ($PM_{2.5}$ or PM_{10}) data from Sameer website. Download from Play store.
12. Perspective on any field on Environmental Studies with secondary data taken from Central Pollution Control Board, State Pollution Control Board, State Science & Technology Council etc.

UNIT–I

The multidisciplinary nature of environmental studies
Definition, scope and importance, Need for public awareness

(2 lectures)

UNIT–II

Natural Resources: Renewable and non-renewable resources:

Natural resources and associated problems.

a. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
b. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
d. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
e. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
f. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles.

(8 Lectures)

UNIT–III

Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, ocean estuaries)

(6 Lectures)

UNIT–IV

Biodiversity and its conservation

- Introduction – Definition: genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity: consumptive use, productive use, social, ethical aesthetic and option values
- Biodiversity at global, national and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts
- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

(8 Lectures)

UNIT–V

Environmental Pollution

Definition

- Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution
- Solid waste management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides

(8 Lectures)

UNIT–VI

Social Issues and the Environment

- From unsustainable to sustainable development
- Urban problems and related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies.
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation
- Consumerism and waste products
- Environmental Protection Act, 1986
- Air (Prevention and Control of Pollution) Act, 1981
- Water (Prevention and control of Pollution) Act, 1974
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness

(7 Lectures)

UNIT–VII

Human Population and the Environment

- Population growth, variation among nations
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights
- Value Education
- HIV / AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and Human Health
- Case Studies

(6 Lectures)

UNIT–VIII

Field Work

- Visit to a local area to document environmental assets river/forest/grassland/hill/mountain
- Visit to a local polluted site – Urban / Rural / Industrial / Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems-pond, river, hill slopes, etc

(Field work equal to 5 lecture hours)

References:-

1. Bharucha, E. 2005. Textbook of Environmental Studies, Universities Press, Hyderabad.
2. Down to Earth, Centre for Science and Environment, New Delhi.
3. Heywood, V.H. & Waston, R.T. 1995. Global Biodiversity Assessment, Cambridge House, Delhi.
4. Joseph, K. & Nagendran, R. 2004. Essentials of Environmental Studies, Pearson Education (Singapore) Pte. Ltd., Delhi.
5. Kaushik, A. & Kaushik, C.P. 2004. Perspective in Environmental Studies, New Age International (P) Ltd, New Delhi.
6. Rajagopalan, R. 2011. Environmental Studies from Crisis to Cure. Oxford University Press, New Delhi.
7. Sharma, J. P., Sharma. N.K. & Yadav, N.S. 2005. Comprehensive Environmental Studies, Laxmi Publications, New Delhi.
8. Sharma, P. D. 2009. Ecology and Environment, Rastogi Publications, Meerut.
9. State of India's Environment 2018 by Centre for Sciences and Environment, New Delhi
10. Subramanian, V. 2002. A Text Book in Environmental Sciences, Narosa Publishing House, New Delhi.

SEMESTER–III
MICROBIOLOGY

MICROBIAL NUTRITION AND METABOLISM
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 75
Practical Marks: 25

Instructions for the Paper Setters:
There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks**.**

UNIT–I

1. Nutrition, requirements for growth of Microorganisms, Nutrients and accessory constituents, medium designing.

UNIT–II

2. Transport of nutrients across the cell membrane, active transport, passive transport, diffusion and group translocation for the transport of nutrients across the membrane.

UNIT–III

3. Growth and metabolism, catabolism and energy, Pathways, for breakdown of glucose (glycolysis, Kreb's cycle fermentation, pentose phosphate pathways), gluconeogenesis, assimilation of nitrogen energy metabolism in aerobic and anaerobic microorganisms, metabolism of starch & cellulose by bacteria.

UNIT–IV

4. Laws of thermodynamics, entrophy, enthalpy and free energy of reaction standard, oxidative phosphorylation, Electron transport, respiratory chains of bacteria. Biosynthesis of nucleic acids, for synthsis of purine and pyrimidine nucleotides. Enzymes, kinetics, Michaelis Menten equation and allosteric enzymes.

Books Recommended:

1. Pleczar, M.J., Chan, E.C.S. Krieg. N.R., 1993, Microbiology, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
2. Stanier, R.Y., Ingraham, J.L., Wheelis, M.L. and Painter, P.R., 1986, General Microbiology, MacMillan Education Ltd., Publishers.
3. Power, C.B. and Dangniwala, H.F.1992, General Microbiology, Volume I and II, Himalaya Publishing House, New Delhi.
4. Sharma, P.D.1997, Microbiology, Rastogi Publications, Meerut.

SEMESTER–III

MICROBIOLOGY

(PRACTICAL)

Time: 4 Hours **Marks: 25**

1. Isolation and enumeration of total bacteria from soil by pour plating and spread plating.
2. Distinction between fermenting and non-fermenting microorganisms.
3. Effects of various concentrations of carbon source on microbial growth.
4. Effects of various concentrations of nitrogen source on microbial growth.
5. Effect of temperature on microbial growth.
6. Effect of pH on microbial growth.

SEMESTER–III

INDUSTRIAL MICROBIOLOGY (VOCATIONAL)
MICROBIAL PHYSIOLOGY
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 75
Practical Marks: 25

Instructions for the Paper Setters:
There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice, one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

UNIT–I

Brief account of forms (viz.cell wall, cell membrane, nucleus ribosome) and their function in microbes, salient properties of water as biological solvent, pH homeostasis, buffers.

UNIT–II

Structural properties of membranes. Transport across cell membrane diffusion, gaseous, exchange, osmosis, plasmolysis, passive and active transport, biochemical factors regulating the transport, role of ionophores, group translocation across membrane. Laws of thermodynamics, entropy, enthalpy and free energy of reaction standard Redox potential, hydrolysis of energy rich intermediates and ATP. Respiratory electron transport and protonpump chemiosmotic theory. Oxidative phosphorylation (ATP synthesis).

UNIT–III

Photosynthetic microbes, oxygenic/non oxygenic reaction centres, electron transport, photophosphorylation, Calvin Cycle, (dark reaction), phospheonol carboxylase photorespiration and it's significance. Effect of light, temperature, pH, CO2 concentration, on photosynthesis, Measurement of net phosphosynthetic yield. Respiratory pathway, breakdown of carbohydrates though glycolysis, Kreb's cycle fermentation, pentose phosphate pathways, oxidative and substrate level phosphorylation, significance of Kreb's cycle, gluconeogenesis, regulation of glycogenesis and glycogenolysis.

UNIT–IV

Nitrogen fixation in symbiotoc and free living system, photosynthetic and non photosynthetic system, oxygen and hydrogen regulation of nitrogen fixation, nitrification, denitrification and ammonifying bacteria, pathway of nitrate assimilation in photosynthetic and non photosynthetic system, transamination and deamination reactions.

Books Recommended

1. Microbial Physiology (2004) by Moat, A.G.and Foster, J.W., John Wiley and Sons.
2. Comprehensive Biotechnology, 1984, Vol.I to IV, Ed., Moo Young, Pergamon Press. Mocrobial Technology, 1977, Ed., H.J.Peppler, Reinhold Publishing Company, New York.
3. Pelezar, M.J.Reid, R.D.and Chan,E.C.S., 1993, Microbiology, Vth Edition, McGraw Hills.
4. Lehninger, A (2002), Biochemistry, Worth Publication, U.S.A.
5. Peppler, H.J.and Periman, D., 1976, Microbial Technology, Vol.I., Microbial Processes Academic Press.

SEMESTER–III
INDUSTRIAL MICROBIOLOGY (VOCATIONAL)

(PRACTICAL)

Time: 4 Hours **Marks: 25**

1. Growth curve of Bacteria and fungi in shake flask using, Optical density, Biomass and Cell numbers
2. Effect of pH on the growth of Bacteria and fungi.
3. Effect of temperature on the growth of fungi/bacteria.
4. Isolation of micro organisms from air.
5. Isolation of micro organisms from soil.
6. Isolation of micro organisms from water.

SEMESTER–III
MICROBIAL & FOOD TECHNOLOGY

BASIC FOOD MICROBIOLOGY
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 75
Practical Marks: 25

Instructions for the Paper Setters:
There will be a total of 9 questions. Question No. 1 will be compulsory and will be of short answer type (3-4 lines). However no multiple choice one-word answer type questions shall be set. The remaining 8 questions will include 2 questions from each unit. Candidates will be required to attempt one question from each of the four units. They will have to attempt five questions in all and all questions will carry equal marks.

UNIT–I

Food as a substrate for microorganisms, intrinsic and extrinsic factors affecting the growth of various microorganisms in foods. Microorganisms important in food microbiology-bacteria, yeasts and molds, sources of contamination in Foods.

UNIT–II

Fermented foods, origin of fermentation as a method of preparing indigenous foods, bread, dahi, dosa, idli, dhokla, etc.

UNIT–III

Principles of food preservation and spoilage, asepsis, anaerobic conditions, aseptic packaging, preservation methods, high temperature, low temperature, drying, chemical preservatives.

UNIT–IV

Spoilage of various milk and milk products, cereal and cereal products, vegetable and fruits, meat and meat products, canned foods. Food poisoning and food infection, staphylococcal, Clostridium and Salmonella intoxications.

Books Recommended:

1. Frazier, W.C. and Westhoff, D.C. 1978. Food Microbiology, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Banwart, G.J., 1987. Basic Food Microbiology. CBS Publishers and Distributions, New Delhi.
3. Power, C.B. and Dagniwals, H.F. 1992. General Microbiology. Volume II, Himalaya Publishing House, New Delhi.

SEMESTER–III
MICROBIAL & FOOD TECHNOLOGY

(PRACTICAL)

Time: 4 hours **Marks: 25**

1) To study microbiological quality of raw milk, pasteurized milk & dry milk by methylene blue reduction test & standard plate count.
2) To examine the micro flora of various foods like bread, raw milk, cheese, fruits & cereals.
3) To prepare the fermented food sauerkraut & study its microbiology & spoilage characteristics.
4) To isolate & recognize the microorganisms responsible for the fermentation of yoghurt.
5) To determine & compare the effect of deep freezing & refrigeration on the viability of microorganisms.

SEMESTER–III
BIOINFORMATICS (VOCATIONAL)

INTRODUCTION TO BIOINFORMATICS AND BIOLOGICAL DATABASES (THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Credit Hours: 6 **Theory Marks: 75**
Practical MarksL 25

Instructions for the Paper Setters and Candidates:
1. There will be a total of 9 questions.
2. Question 1 will be compulsory and will be of 10 short answer type. **(1½ X10=15)**
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks **(15x4=60)**

UNIT–I

Introduction to Bioinformatics: History of Bioinformatics, milestones, objectives and applications of Bioinformatics. Genome sequencing projects, Human genome sequencing project and its applications.
Genomics and Proteomics: Basic concept and analysis, Functional and comparative genomics: definition and applications.
Introduction and Applications: Transcriptomics, Metablomics, Pharmacogenomics and population genomics.

UNIT–II

Introduction to Biological Databases, Type and kind of biological databases, Introduction to ASN1 and NCBI data Model: Why specialized data model is required for biological sequences. Open access bibliographic resources and literature databases: PubMed, BioMed Central.
Database Retrieval and Deposition Systems- SRS, Entrez, Bankit, Webin, Seqin, Sakura, AutoDep etc.
Sequence Formats: FASTA, Genbank, PIR, EMBL.

UNIT–III

Nucleic Acid Sequence Databases: GenBank, EMBL, DDBJ; **Protein Sequence Databases:** Uniprot-KB: SWISS-PROT, TrEMBL, UniParc
Gemone Databases: Viral Genomes; Archeal and Bacterial Genomes; Ensembl Genome Project and TIGR, Eukaryotic genomes with special reference to model organisms (Yeast, Drosophila, *C. elegans*, Rat, Mouse, Human, plants such as *Arabidopsis thaliana*, Rice, etc.).

UNIT–IV

Structural Databases: PDB, PDBsum, NDB etc.; **Motifs and Pattern Databases:** PROSITE, Pfam etc.; **RNA Databases:** RNABase, SCOR. **Carbohydrates and Lipid Databases:** GlycoSuiteDB, LIPIDAT.

Database for Searching Homologous Sequences: FASTA, BLAST.

Recommended Books:

1 Durbin R. and Eddy S. (1998). Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids. *Cambridge University Press.*

2 Higgins D. And Taylor W. (2000). Bioinformatics: Sequence Structure & Data Banks: A Practical Approach. *Oxford University Press, USA.*

3 Ewens W. J. and Grant G. R. (2001). Statistical Methods in Bioinformatics: An Introduction. *Springer Verlag.*

4 Lesk A. M. (2002). Introduction to Bioinformatics. *Oxford University Press.*

5 Krane D. E. and Raymer M. L. (2002). Fundamental Concepts of Bioinformatics.

6 *Benjamin Cummings.*

7 Orengo C.A., Jones D.T. and Thornton J.M. (2003). Bioinformatics: Genes Proteins.

SEMESTER–III
BIOINFORMATICS (VOCATIONAL)

LAB IN INTRODUCTION TO BIOINFORMATICS AND BIOLOGICAL DATABASES (PRACTICAL)

Time: 3 Hrs. **Marks: 25**
Credit Hours: 4½

1 Study of NCBI, EBI and ExPasy data Repositories.
2 Study of Nucleic acid and protein databases: GenBank, EMBL, DDBJ, SWISS PROT,
3 INTERPRO, UNIPROT.
4 Study of Various human, plants and animal databases: Ensembl Genome project, TIGR
database, Flybase, Maize GDB etc.
5 Study of Structural databases: PDB, PDBsum, NDB etc.
6 Study of Motifs and Pattern Databases: PROSITE, Pfam, etc.
7 Study of RNA databases: RNABase, SCOR
8 Carbohydrates and lipid databases: GlycoSuiteDB, LIPIDAT
9 Database Retrieval and deposition systems: SRS, Entrez, Bankit, Seqin, Webin, AutoDep.
10 Database for Searching Homologous Sequences: FASTA, BLAST.

SEMESTER–III

BIOTECHNOLOGY (VOCATIONAL)

IMMUNOLOGY AND ANIMAL TISSUE CULTURE (THEORY)

Time: 3 Hours **Max. Marks: 100**
Credit Hours/week: 6 **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters and Candidates:

1. There will be a total of 9 questions
2. Question 1 will be compulsory and will be of 10 short answer type. **(1½ x10=15)**
3. The remaining 8 questions shall include 2 questions from each unit. Candidates shall be required to attempt 1 question from each unit. All questions shall have equal marks. **(15x4=60)**

UNIT–I

Types of Immunity-Innate and Adaptive; Lymphoid Cells, Heterogeneity of Lymphoid Cells; T-Cells; B-Cells, Null Cells; Monocytes, Polymorphs, Primary and Secondary Lymphoid Organs-Thymus, Bursa of Fabricius, Spleen, Lymph Nodes, Lymphatic System, MUCOSA Associated Lymphoid Tissue (MALT), Lymphocyte Traffic.

UNIT–II

Humoral Immune Response: Antigen and Antibody and their characteristics, Antigen-Antibody Interaction, Cell Mediated Immunity : Role of MHC and T-Cell Receptor Complex, Origin of Diversity in Immune System, Effector Mechanisms, Immunity to Infectious Diseases.

UNIT–III

History of Development of Cell Culture, the Natural Surroundings of Animal Cells, Metabolic Capability of Animal Cells, Simulating Natural Conditions for Growing Animal Cells, Importance of Growth Factors of the Serum.

UNIT–IV

Primary Culture, Anchorage and Non-Anchorage Dependent Cell Cultures, Secondary Culture, Transformed Animal Cells, Established/Continuous Lines, Commonly used Animal Cell Lines : Their Origin and Characteristics, Growth Kinetics of Cells in Culture.

Books Recommended:

1. Austyn, J.M. and Wood K.J. (1993), Principles of Cellular and molecular Immunology, Oxford University Press Inc. New York
2. Britch, J.R. and Lennox, E.S. (1995), Monoclonal Antibodies Principles and Application, Wiley Liss.
3. Strites D.P., Terr. A.I. & Parslow T.G. (1997), Medical Immunology, 9th Ed., PHI, Cambridge.
4. Kanfmann, S.H.E., Sher A., Ahmed, R. (2002). Immunology of Infections Diseases, ASM Press, Washington
5. Kuby, J. (2007), Immunology, 6TH Edition. W.H. Freeman and Company, New York
6. Paul, W. E. (2008), Fundamental Immunology, 5th Ed., Raven Press, New York
7. Roitt, I.M. Peter. J., Scamus. J. Martin, Dennis. R. Burton (2011), Essential Immunology, Grower Medical Publishing , New York

SEMESTER–III

BIOTECHNOLOGY (VOCATIONAL)

IMMUNOLOGY AND ANIMAL TISSUE CULTURE (PRACTICAL)

Time: 3 Hrs. **Marks: 25**

Credit Hours/week: 4½

Immunology

1. Blood Group testing.
2. Separation of serum from blood.
3. Separation of plasma from blood.
4. Enumeration of T-cells by E-rosetting method.
5. Separation of macrophages from Blood and testing by dye exclusion method.
6. Double immune Diffusion.

Animal Tissue Culture

1. Glass Ware sterilization.
2. Media sterilization.
3. Laboratory sterilization.
4. Sources of contamination and decontamination measures.
5. Preparation of Hanks Balanced salt solution.
6. Preparation of Minimal Essential Growth medium.

SEMESTER–III

EDUCATION

SOCIOLOGICAL FOUNDATIONS OF EDUCATION

Time: 3 hours **Max. Marks: 100**

Instructions for the Paper Setters:

Note: (i) The question paper will consists of five Units: I, II, III, IV & V. Units I, II, III & IV will have two questions each carrying 20 marks. The students are to attempt one question from each unit approximately in 1000 words. Unit –V consists of 10 short answer type questions to be set from their entire syllabus and will carry 20 marks in all. Each short answer type question carries 2 marks, to be attempted in 8 to 10 lines.

UNIT–I

1. Meaning, nature & scope of Sociology.
2. Meaning , nature & scope of Educational Sociology

UNIT–II

1. Relationship between sociology & Education.
2. Impact of sociology on different aspects of Education.

UNIT–III

1. Home & school as agencies of Education.
2. Community & Mass-medias as agencies of Education

UNIT–IV

1. Education for National Integration
2. Education for Democratic Citizenship

UNIT–V

This Unit (V) will consist of 10 short type questions to be set from the entire syllabus of first four Units (I, II, III, IV)

Books Recommended:

1. Dash., D.N. — Philosophical and Sociological Foundation of Education, Dominant Publisher, New Delhi, 2005.
2. Prasad and Chandra — Sociological Foundations of Education, Deepak KSK Publishers, Delhi, 2006.
3. Sodhi, T.S. — Philosophical and Sociological Foundations of Education, Bawa Publications, Patiala, 2007.
4. Taneja, V.R. — Foundation of Education, Chandigarh, Mahindra Capital, Punjab, 2006.
5. Saxena Swaroop, N.R. — Education In Emerging India Chaturvedi Sikha Society, R.Lall Book Depot, Meerut, 2005.

SEMESTER–III

HUMAN RIGHTS

SOCIETAL ISSUES OF HUMAN RIGHTS IN INDIA

Time: 3 Hours **Max. Marks: 100**

Instructions for the Paper Setters:

The question paper will consist of five sections A,B,C,D and E.Section A,B,C and D will have two questions from the respective portion of the syllabus and will carry 20 marks each.Section E will consist of 10 short answer type questions to be set from the entire syllabus i.e. sections A,B,C & D and will carry 20 marks in all ,such short answer type questions carry 2 marks.

Instructions for the Candidates:

Candidates are required to attempt one question each, from sections A,B,C and D of the question paper and the entire section E. The candidates are required to answer the short questions in not less than 50 words.

UNIT–I

Concepts and Approaches: Concept of Societal Problems and Human Rights.

UNIT–II

Theoretical approaches to Social problems and Social Changes.

UNIT–III

Social Problems: Causes and Types: Problems of Hierarchy. Problems of Minorities,Scheduled Caste and Scheduled Tribes;Population Explosion; Problems of Aged and Disabled; and Problems of Women.

UNIT–IV

Offence involving Human Rights; and Rights of Accrued, Rights of Inmates of Persons and Custodial Homes.

UNIT–V

Rights to Legal Aid, Punishments and Human Rights; and Reforms in Police and Jails.

Recommended Books:

1. Syed Mehartaj Begum, Human Rights in India: Issues and Perspectives, A.P.H. Publishers, New Delhi.
2. Sahu, Asima, Human Rights Violations and the Law, Pointer Publishers, Jaipur.
3. Naseema C., Human Rights Education, Kanishka Publishers, New Delhi.
4. Subbian Adaikkalam, Human Rights: Philosophy Promotion Protection and Perspective.
5. Kumar, Bindal, (2000), Problems of Working Children, APH Publication, New Delhi.
6. Dikshit, R.C., (1998), Human Rights and the Law, Universal and Indian, Deep and Deep, New Delhi.
7. Jha, R.C., (1995), Resurrecting: Human Right in India, Sheridan Book Company, New Delhi
8. Bava, Noorjahan, (ed), (2000), Human rights and Criminal Justice Administration in India, New Delhi: Uppal Publishing House.
9. Ghosh, S.K., (1993), Torture and Rape in Police Custody: Asish Publishing House, New Delhi.
10. Sharma, A.K. (1995) "Human Rights Violations of Street Children and Child Labor in New Delhi", In B. P. Singh Seghal (ed.) Human Rights in India: Problems and Perspectives, Deep and Deep, New Delhi.
11. Singh, S.K., (1994), Bonded Labor and the La, Deep and Deep. New Delhi.

SEMESTER–III

DAIRY FARMING (VOCATIONAL)
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 50
Practical Marks: 50

Instructions for the Paper Setter:

1. Question paper should be set strictly according to the syllabus and in the Punjabi Language.
2. The language of questions should be straight and simple.
3. Theory paper shall consist of three parts:
   (a) Ten short compulsory questions of 1 mark each requiring replies up to five lines each (Total marks: 10x1=10 marks).
   (b) Ten questions of 3 marks each requiring short replies shall be asked. The candidate has the choice to attempt eight questions (Total marks 8x3=24).
   (c) Four questions of descriptive type requiring five pages for each answer shall be asked. The candidate has the choice to attempt two questions. (Total marks : 08x02=16)
4. The question paper should cover the whole syllabus.

General: Factors affecting quality and quantity of milk production. Essentials of clean milk production. Sources of contamination of milk. Milking machine. Importance of milk chilling.

Housing: The main objectives of housing, advantages of proper housing, factors affecting construction of dairy farm building, methods of housing dairy animals; advantages and disadvantages of various methods of housing; housing requirements of dairy animals.

Feeding: Food nutrients, functions of various nutrients in animal body. Energy value of feeds, Factors affecting nutritive value of feeds. Requirements of nutrients in different steges of age, production, season and pregnancy. Formulation of rations, feed, pellets, Transportation and storage of cattle feed, hay and wheat bhusa enrichment. Availability of forages in different seasons. Schedule of feeding dairy animals.

SEMESTER–III

DAIRY FARMING (VOCATIONAL)
(PRACTICAL)

Time: 3 Hours **Marks: 50**

Note: Preparation of Practical Notebook on the basis of work done in the laboratory practical, Weekly write-up of daily job assignments is compulsory.

1. Visits to Dairy farms having machine milking, fodder harvesting, feed mixing etc., Veterinary hospitals, Milk collection centre and milk plant.
2. Identification of various feedstuffs, medicines, chemicals, equipment, instruments, photographs related to dairy farming.

SEMESTER–III

RSL-201 RUSSIAN

PAPER–I (WRITTEN) (APPLIED GRAMMAR)

Time: 3 Hrs. **Max. Marks: 80**

Grammar

Questions based on all the topics covered in the lessons in the prescribed text book.

1. Declension of nouns in all the cases in singular as plural.
2. Declension of personal pronouns.
3. Usage of perfective as well as perfective aspect of the verbs.
4. Conjugation of verbs in the present tense.
5. Present as well as future tense of the verb.
6. Declension of adjectives in all the cases.
7. Verbs of motion with prefixes. **Marks: 25**

Translation, Composition & Comprehension

- Translation from English into Russian (Unseen sentences or a passage comprising not more than 200 words) **Marks: 15**
- Translation from Russian into English/Hindi/Punjabi. (seen passage comprising not more than 150 words) **Marks: 15**
- Comprehension (Seen Text) **Marks: 10**
- Composition (one out of any three topics) **Marks: 15**

Topics: My friend; My family; City; My University; My work; An Off Day; Our Library.

Note: Glossary of difficult words may be given for translation purpose in the question paper.

SEMESTER–III

RUSSIAN

PAPER–II (ORAL)

Max. Marks 20

- Reading of a text **Marks: 05**
- Dictation **Marks: 05**
- Conversation **Marks: 05**
- Retelling of a small text in Russian **Marks: 05**

Prescribed Text-Book:

"RUSSIAN" – by Wagner V.N. & Ovsienko Y.G. (Lessons 31 to 40)

Recommended Books:

1. Langenscheidt Pocket Russian Dictionary.
2. Russian for Indians by H C Pande.

SEMESTER–III

FRL–201 FRENCH
PAPER–I (WRITTEN) (COMPOSITION & GRAMMAR)

Time: 3 Hrs. **Max. Marks: 80**

1. A Dialogue in French of about one page on the topics covered in the Textbook. **Marks: 10**
2. Questions on applied grammar. (Exercises from the textbook) **Marks: 20**
3. Short answer questions from the lessons covered in the textbook. **Marks: 10**

   The general questions are based on the vocabulary of the text book.

   (five out of the ten to be attempted).

Translation

1. Translation from French into English. **Marks: 10**
2. Translation from English into French. **Marks: 10**
3. Summary of one of the poems studied. **Marks: 10**
4. Conte De Fée – La belle au bois dormant- Charles Perrault. **Marks: 10**

NOTE: Glossary of difficult words may be given for translation purpose in the question paper.

SEMESTER–III

FRL–201 **FRENCH**

PAPER–II: (ORAL)

Max. Marks: 20

- Reading of a text **Marks: 05**
- Dictation **Marks: 05**
- Conversation **Marks: 05**
- Oral Comprehension **Marks: 05**

Prescribed Textbook:

"CONNEXIONS-II" (Units 1-6) by Regine Merieux & Yves Loiseau, Published by Didier

Recommended Book :

Nouveau Sans Frontières I1 by Philippe Dominique & Jacky Girardet

- Conte De Fée –La belle au bois dormant- Charles Perrault
- Poetry –Dejeuner du Matin (Prévert)

Le Renard et le corbeau (Fontaine)

La Blanche Neige (Appollinaire)

SEMESTER–III

URDU

URL–201: (PROSE AND POETRY)

Time: 3 Hours **Max. Marks: 100**

COURSE OF STUDIES

Prose and Poetry:

Explanation of Verses

Translation of Prose

Introduction to Literary contribution of the following poets and prose writers:

Poets: Mir Taqi Mir, Asad-ullah-Khan Ghalib, Nazir Akbarabadi, Brij Narain Chakbast & Jigar Muradabadi

Prose Writers: (Sir Syed Ahmad Khan, Mohamad Hussain Azad, Altaf Husain Hali, Munshi Prem Chand and Rashid Ahmad Siddiqui)

Units and Theme

1. Passages for Translation (Four out of Five)	**5x4=20 Marks**
2. Stanzas for explanation (Four out of Five)	**5x4=20 Marks**
3. Theme/ Summary/ Central Idea of a Poem or Lesson	**10x1=10 Marks**
4. Word meanings	**10x1=10 Marks**
5. Questions on poets studied (Two out of four)	**20x2=40 Marks**

Book Prescribed:

Naqoosh-e-Adab published by Education Book House, A.M.U. Market, Aligarh.

Books Recommended:

1. Mukhtasar Tarikh-Adab-e- Urdu by Aijaz Husain, Education Book House, A.M.U. Market, Aligarh.

2. Urdu Zaban-o-Adab ka Khaka by Khushhal Zaidi, Edara Bazme Khizre Rah, 80- Ghaffar Manzil Jamianagar, New Delhi, 110025.

SEMESTER–III

PERSIAN

PRL–201: PROSE AND POETRY

Time: 3 Hours **Max. Marks: 100**

COURSE OF READING

Prose:

Azan-e-Maghrib by Saeed Nafisi (Page-171)

Khana-e-Pidari by Saeed Nafisi (Page-178)

Khud-Kushi by Mohammad Hijazi (Page-199)

Eidi by Mohammad Hijazi (Page-205)

Poetry:

a) Ghazaliyat -e- Hafiz

Agar An Turk Shirazi Badast Arad Dile Mara

Dil Miravad z Dastam Sahib Dilan Khudara

Saqi Banoor -e-Bade Bar Afroz Jam-e-Ma. (Pages 4-8)

b) Ghazaliyat-e-Khusrau

Jaan Z tan Burdi-o-Dar Jani Hanuz

Madeh Pindam Keh Man Dar Sene Sauda-e-Digar Daram

Janan Shabi Bakoo-e-Ghariban Maqam Kun (Pages 24-25)

Qasida Mlik-ush-Sho'ara Bahar (Jughad-e-jang)

1. Fughan z Jughad-e-Jang-o- Marghwai-o. (Pages-54-59)

Masnavi-Maulana Room

Bishno Az Nai Choon Hikayat Mee Kunad

Hikayat Ashiq Shudan-e-Badshah Bar Kaneezak

Zahir Shudan-e-Ijz -e-Hakiman Az Mo'alija-e-Kaneezak

Badshah b Dargah-e-Khuda-o-Khwab Didan Shah Wali Ra (Pages 117-133)

UNITS AND THEME

1. Passages for Translation (Four out of Five) **5x4=20 Marks**
2. Stanzas for explanation (Four out Five) **5x4=20 Marks**
3. Theme/ Summary/ Central Idea of a Poem or Lesson **10x1=10 Marks**
4. Word Meanings **10x10=10 Marks**
5. Questions on life and works of poets studied (Two out of four) **20x2=40 Marks**

Book Prescribed:

Nisab-e-Jadeed-e-Farsi, Published by Jyed Press Ballimaran Delhi-6 and available from Maktaba Jamia, Urdu Bazaar, Jama Masjid, Delhi-6

Books Recommended:

1. Jadid Farsi Shai'ri by Dr. Mohd. Taqi Ali Abidi
2. Jadid Farsi Shai'ri by Dr. Munib-ur-Rehman
3. Asari Farsi Shai'ri by Dr. Syed Ahsan- uz-Zafar
4. Masnaviyat-e-fani Kashmiri by Iraq Raza Zaidi.

SEMESTER–III

SANSKRIT (ELECTIVE)
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le;&3 ?k.Vs i.kkZad&100

i'u&i= dk ek/;e fgUnh gksxkA mÙkj lLd`r@fgUnh@iatkch@vaxzsth esa gks ldrs gSA

ikB;Øe &

¼d½ Loluok lonÙke~ ¼Hkkx½ % pkS[kEck lLd`r izdk'ku] okjk.klh] 1983] 50 vad

i'uksa dk fy, fu/kkfjr fcUnq &
1- Loluok lonÙke~
¼d½ vad lkj
¼[k½ ik=&fp=.k
¼x½ uk;d&ukf;dk
¼?k½ dFkk&oLrq
¼M-½ ukV~; dyk
¼p½ jl&;ksftuk------bR;kfnA

¼[k½ 0;kdj.k lfU/k 10 vad

¼x½ /kkrq :i ¼yV~] ykV~] yV~] y³] fof/kfy³ ydkjksa esa½ 20 vad
¼d½ Hokfnx.k & j{k] ik] ueA
¼[k½ vnkfnx.k & vlA
¼x½ rqnkfnx.k & rqn] flp] iPN] epq] feyA
¼?k½ rukfnx.k & dA
¼³½ pqjkfnx.k & pqj] dFk] Hk{k] fpUr] jpA

¼?k½ rf)r izR;; 10 vad
Ro] ry] e;V~] rjik] reikA

¼³½ NUn 10 vad
vuq"Vqi] o'kLFk] bUnzo tk] mikUnzo tk] mi tkfr] ekfyuh] fo|Uekyk] olUr frydkA

i'ui= fuekZ.k funsZ'k &

I Loluokn lonÝke esa 10 i'u vfrlf{kIr mÝkjksa dh fy;s iNs tk;sxsA ftuesa ls 5 dk mÝkj nsuk gksxkA 2x5 = 10

II Loluokn lonÝke esa 8 i| ndj 4 dh ljykFkZ iNs tk,sA izR;sd ds 5 vad gksxsA 5x4 = 20

III Loluokn lonÝke esa 4 lfDr;k ndj 2 dh lgk;rk 0;k[;k iNh tk,A izR;sd ds 5 vad gksxsA 2x5 = 10

IV Loluokn lonÝke esa lEcfU/kr 2 cMs i'u ndj fdlh ,d dk mÝkj nsus dk dgk tk,A bldsa 10 vad gksxsA i| ndj 4 dh ljykFkZ iNs tk,A 1x10 = 10

V blesa 0;ogkj lfU/k ls lfU/k@lfU/k foPNsn ij vk/kkfjr 10 i'u esa ls 5 dk mÝkj iNsk tk,A izR;sd ds 2 vad gSA 2x5 = 10

VI 8 /kkrq ndj 4 dk :i fy[kus ds fy, dgk tk,sA izR;sd /kkrq ds :i ds fy, 5 vad gSA 5x4 = 20

VII 10 'kCnksa ds lkFk fu/kkfjr rf)r izR;; ndj 5 dk rf)rkUr :i fy[kok;s tk;sxsA izR;sd rf)rkUr 'kCn ds 2 vad gksxsA 2x5 = 10

VIII 4 NUn ndj 2 iNs tk,sxsA izR;sd ds 5 vad gksxsA 5x2 = 10

SEMESTER–III

FUNCTIONAL SANSKRIT
(VOCATIONAL)

Time: 3 Hours **Max. Marks: 100**

ukV & i=’u i= fgUnh e gkxkA

i=’u i= fuekZ.k funsZ’k

भाग क में 5 प्रश्न देकर 3 का उत्तर देने के लिए कहा जाये। 3 x 20 = 60
भाग ख में 7 प्रश्न देकर 4 का उत्तर देने के लिए कहा जाये। 4 x 10 = 40

ikB;Øe &

lLdkj fof/k;k
lheUrku;u
tkrde
ukedj.k
d.kZo/k
vUuik’kue
pMkde
fo|kjEHk
miu;u
lekorZu
vUR;f"V
lcf/kr lLdkjksa dk egÙo

SEMESTER–III

ENGLISH (COMPULSORY)

Time: 3 Hours **Max. Marks: 50**

Texts Prescribed:

1. *Making Connections* by Kenneth J. Pakenham, 2nd Edn. CUP
2. *Moments in Time: An Anthology of Poems*, GNDU, Amritsar
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP

Course Contents:

1. *Making Connections* by Kenneth J. Pakenham, 2nd Edn. CUP: Unit-I and Unit-II
2. *Moments in Time*: Poems at Sr. No. 1-6
3. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP: Units 98-145

Instructions for the Paper-Setter and Distribution of Marks:
The paper setters should avoid questions of theoretical nature on English Grammar.

The question paper will consist of three sections and distributions of marks will be as under:
SECTION–A: 16 Marks
SECTION–B: 20 Marks
SECTION–B: 14 Marks

SECTION–A

I. TWENTY (20) questions on the usage of grammar related to units 98-145 of *English Grammar in Use* will be set for the students to attempt any SIXTEEN (16) of these questions. **(1x16=16 Marks)**

SECTION–B

2. TWO (2) questions (with sub parts) based on strategies and skill development exercises as given before and after reading essays in UNIT-I & UNIT-II of the prescribed text book *Making Connections* will be set. The number of items in each question will be 50% more than what a student will be expected to attempt so that the question provides internal choice. **(6x2=12 Marks)**
3. THREE (3) questions on central idea, theme, tone and style etc. of three poems from the prescribed textbook, *Moments in Time* will be set. The students will be required to attempt any TWO of these questions. **(4x2=8 Marks)**

SECTION–C

4. ONE question (with internal choice) requiring students to explain a stanza with reference to context will be set. The stanzas for explanation will be taken from the poems prescribed in the syllabus **(1x7=7 Marks)**
5. One question requiring the students to write an essay on ONE of the TWO given topics will be set. **(1x7=7 Marks)**

SEMESTER–III
ENEGLISH (ELECTIVE)

Time: 3 Hours **Max. Marks: 100**

Books Prescribed:
1. *Animal Farm* by George Orwell
2. *Fresh Showers*, G.N.D.U. Amritsar
3. *New Directions* (Part 1-3)
4. *Better Pronunciation of English* by J.D. O'Connor

Course Contents:
1. *Animal Farm*—Complete Text
2. *Fresh Showers*
   The following poems are deleted:
   (i) Alexander's Feast, (ii) Evelyn Hope, (iii) Adam's Curse, (iv) Lay Your Sleeping Head, (v) A Hub for the Universe, (vi) Birches, (vii) Tithonus
3. *New Directions*-Part 1,2,3
4. *Transcription of Words*: agony, antonym, capable, committee, decorum, aero plane, calendar, privacy, absolute, academy, academic, advertisement, adversity, allopathic, mathematics, automobile, biography, biology, competition, competitive, certificate, certify, democracy, capacity, magnificent, photography, photograph, photographic, vindictive, celebrity

Distribution of Marks & Instructions for the Paper Setters:
The question paper will consist of three sections and distribution of marks will be as under:
Section A: 20 Marks
Section B: 48 Marks
Section C: 32 Marks

Section–A

I. SIX questions, each requiring a short answer, from the prescribed textbook *New Directions* will be set in the question paper. The examinees will be required to answer all these questions. (2x6= 12 Marks)
II. Transcription of any EIGHT words, FOUR out of the prescribed list and any other FOUR polysyllabic words. (1x8=8 Marks)

Section–B

I. THREE questions, each requiring a brief answer, related to incidents, anecdotes, minor characters, the use of figure of speech, tone and style etc. from the prescribed novel will be set in the paper. The examinees will be required to answer any TWO of these questions. (6x2=12 Marks)
II. THREE questions, each requiring a brief answer, related to theme, central idea, the use of figure of speech, tone and style etc. from the prescribed poems will be set in the paper. The examinees will be required to answer any TWO of these questions. (6x2=12 Marks)
III. FIVE questions (with sub parts, if necessary) based on the exercises in the text book *New Directions* will be set in the question paper. The examinees will be required to answer any FOUR of these questions. (6x4=24 Marks)

Section–C

1. An essay type question, with internal choice, on theme, central idea, tone, and style etc. of the prescribed poems (16 Marks)
2. An essay type question, with internal choice, on theme, Characterization, plot, tone, and style etc. of the prescribed novel (16 Marks)

SEMESTER–III

FUNCTIONAL ENGLISH (VOCATIONAL)
WRITING SKILLS

Time: 3 Hours **Max. Marks: 100**

Objective:

The objective is to teach the students the technique of writing and developing their power of expression through composition. Descriptive writing; report writing; script writing for announcement, comparing should be administered.

Books Prescribed:

a) *Essentials of Grammar and Composition* by Legget et. al., Prentice Hall.
b) *Collins Cobuild Grammar of English*
c) *Study Writing: A Course in Writing Skills for Academic Purposes* by Liz Hamp-Lyons & Ben Heasley, CUP

Course Contents:

1. Basic Sentence Faults: Faulty pronoun reference; shift in point of view; misplaced parts; dangling constructions
2. Manuscript mechanics and punctuation
3. Textual Cohesion: reference, ellipsis, substitution & repetition; Lexical and Conjunctive cohesion
4. Sentence Variation and effective sentences
5. Effective Paragraphs
6. Paraphrase, summary and Precis of prose passages
7. Academic and personal writing styles
8. Grammar of academic discourse
9. Writing about events in time and connecting events in text

Distribution of Marks & Instructions for the Paper Setters:

The question paper will consist of three sections and distribution of marks will be as under:
SECTION–A: 20 Marks
SECTION–B: 48 Marks
SECTION–B: 32 Marks

SECTION–A

A question containing TWENTY items/ sub parts, requiring examinees to correct the basic sentence faults related to the use of faulty pronoun reference, unnecessary change in tense, shift in point of view, misplaced parts, dangling constructions. **(1x20 = 20Marks)**

SECTION–B

I. FIVE questions in the form of exercises to test the use of grammar in academic and personal styles of writing or understanding and using language of comparison and contrast or using in the texts language of definition and generalization etc as given in the prescribed book, *Study Writing*. The examinees will attempt any FOUR of these questions. **(6x4 = 24 Marks)**

II. FIVE questions requiring examinees to organize given sentences into a coherent passage, or to add conjunctions/ linking devices to improve a given passage or using linguistic resources of sentences, vocabulary and punctuation etc. to change a given passage into formal or informal writing. The examinees will attempt any FOUR of these questions **(6x4 =24 Marks)**

SECTION–C

I. ONE question on applying the grammar of coordination, subordination, cohesion etc. as linguistic strategies to write a short passage. **(16 Marks)**

II. ONE question requiring the students to correct the use of grammar and rewrite a passage of about 250 words. **(16Marks)**

SEMESTER–III

PUNJABI (COMPULSORY)
ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ ਕੁਲ ਅੰਕ : 50

1. **ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ (ਸੰਪਾ.ਡਾ. ਗੁਰਬਚਨ ਸਿੰਘ ਤਾਲਿਬ),**
   ਪਜਾਬਾ ਸਾਹਤ ਪ੍ਰਕਾਸ਼ਨ, ਆਮ੍ਰਤਸਰ।
2. **ਸਮਾਂ ਮੰਗ ਕਰਦਾ ਹੈ (ਇਕਾਂਗੀ ਸੰਗ੍ਰਹਿ) (ਸੰਪਾ. ਕੇਵਲ ਧਾਲੀਵਾਲ)**
   ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ ।
3. **ਸੰਖੇਪ ਰਚਨਾ** (ਪ੍ਰੈਸੀ)
4. **ਮੂਲ ਵਿਆਕਰਣ ਇਕਾਈਆਂ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ**
   (ਭਾਵੰਸ਼, ਸ਼ਬਦ, ਵਾਕੰਸ਼, ਉਪ-ਵਾਕ ਅਤੇ ਵਾਕ)

ਅੰਕ ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

1. ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ**/ਕਲਾ ਪੱਖ,** (ਦੋ ਵਿਚੋਂ ਇੱਕ) **15 ਅੰਕ**
2. ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ**/ਨਾਟ ਜੁਗਤਾ** (ਦੋ ਵਿਚੋਂ ਇੱਕ) ਜਾਂ ਚਾਰ ਵਿਚੋਂ ਦੋ ਪਾਤਰਾਂ ਦੀ ਪਾਤਰ ਉਸਾਰੀ **15 ਅੰਕ**
3. ਸੰਖੇਪ ਰਚਨਾ (ਪ੍ਰੈਸੀ) **10 ਅੰਕ**
4. ਲੜੀ ਨੰਬਰ ਚਾਰ ਉੱਤੇ ਨਿਰਧਾਰਤ ਵਿਆਕਰਣ ਵਿਚੋਂ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। **10 ਅੰਕ**

SEMESTER–III

PUNJABI (ELECTIVE)
ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ **ਕੁਲ ਅੰਕ: 100**

1. **ਮੱਧਕਾਲੀਨ ਪੰਜਾਬੀ ਕਾਵਿ** (1701-1900)
(ਸੰਪਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿੱਲੋਂ ਅਤੇ ਨਰਜੀਤ ਸਿੰਘ ਖਹਿਰਾ)
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007
(ਫ਼ਜ਼ਲਸ਼ਾਹ ਅਤੇ ਹਾਸ਼ਮ ਪਾਠਕ੍ਰਮ ਦਾ ਹਿੱਸਾ ਨਹੀਂ ਹਨ) **40 ਅੰਕ**

2. **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ** (ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, **30 ਅੰਕ**
ਅੰਮ੍ਰਿਤਸਰ। (ਉਹ ਸੋਚਦੀ, ਘੋਟਣਾ, ਡੈੱਡ-ਲਾਈਨ, ਓਪਰਾ ਮਰਦ ਪਾਠਕ੍ਰਮ ਦਾ ਹਿੱਸਾ ਨਹੀਂ ਹਨ)

3. **ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ** (ਨਿਬੰਧ ਸੰਗ੍ਰਹਿ) (ਸੰਪਾ. ਡਾ. ਰਣਜੀਤ ਸਿੰਘ ਬਾਜਵਾ ਅਤੇ ਪ੍ਰਿੰਸੀਪਲ ਵੀਰ ਸਿੰਘ ਰੰਧਾਵਾ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007. **30 ਅੰਕ**

ਯੂਨਿਟ ਅਤੇ ਥੀਮ

1. **ਮੱਧਕਾਲੀਨ ਪੰਜਾਬੀ ਕਾਵਿ** (1701-1900)
   (ੳ) ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ (ਚਾਰ ਵਿਚੋਂ ਦੋ) **20 ਅੰਕ**
   (ਅ) ਕਿਸੇ ਕਵਿਤਾ ਦਾ ਵਿਸ਼ੈ ਵਸਤੂ/ਕਵੀ ਬਾਰੇ ਜਾਣਕਾਰੀ ਤੇ ਉਸਦਾ ਯੋਗਦਾਨ (ਦੋ ਵਿਚੋਂ ਇੱਕ) **10 ਅੰਕ**
   (ਏ) ਮਲਟੀਪਲ ਚੋਣ ਪ੍ਰਸ਼ਨ (ਸੱਤ ਵਿੱਚੋਂ ਪੰਜ) **5x2=10 ਅੰਕ**

2. **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ** : ਕਿਸੇ ਇਕ ਕਹਾਣੀ ਦਾ ਵਿਸ਼ੈ-ਵਸਤੂ/ਕਲਾ, ਕਹਾਣੀਕਾਰ ਬਾਰੇ ਜਾਣਕਾਰੀ ਅਤੇ ਉਸਦਾ ਯੋਗਦਾਨ (ਦੋ ਵਿਚੋਂ ਇੱਕ) **20 ਅੰਕ**

3. **ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ** (ਨਿਬੰਧ ਸੰਗ੍ਰਹਿ)
ਕਿਸੇ ਇਕ ਲੇਖ ਦਾ ਵਿਸ਼ੈ/ਸਾਰ/ਸ਼ੈਲੀ (ਦੋ ਵਿਚੋਂ ਇਕ) **20 ਅੰਕ**

4. **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ** ਅਤੇ **ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ** ਪੁਸਤਕਾਂ ਵਿਚੋਂ ਪਾਠ ਆਧਾਰਿਤ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ (ਛੇ ਵਿਚੋਂ ਚਾਰ) **4x5=20 ਅੰਕ**

SEMESTER–III

ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ

(FUNCTIONAL PUNJABI) (VOCATIONAL)

(ਥਿਊਰੀ)

ਕੁਲ ਅੰਕ: 100

ਪਰਚਾ ਏ : ਲਿਖਣ ਸ਼ੈਲੀਆਂ ਅੰਕ : 50
ਪਰਚਾ ਬੀ : ਰਸਮੀ ਲਿਖਤਾਂ ਅੰਕ : 50

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁਲ ਅੰਕ: 50

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਵਿਆਕਰਣਕ ਬਣਤਰ ਨਾਲ ਜਾਣ-ਪਛਾਣ
2. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਰਜਿਸਟਰਾਂ ਸੰਬੰਧੀ ਜਾਣ-ਪਛਾਣ
3. ਪ੍ਰਾਪਤ ਲਿਖਣ ਸ਼ੈਲੀਆਂ ਨਾਲ ਜਾਣ ਪਛਾਣ ਕਰਾਉਣਾ ਅਤੇ ਰਸਮੀ ਪੱਧਰ 'ਤੇ ਲਿਖਣ ਦਾ ਅਭਿਆਸ ਕਰਾਉਣਾ।

ਅੰਕ ਵੰਡ ਅਤੇ ਪੇਪਰ ਸੈਟਰ ਲਈ ਹਦਾਇਤਾਂ

1. ਸਾਧਾਰਣ ਵਾਕਾਂ ਨੂੰ ਸੰਯੁਕਤ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕਾਂ ਵਿਚ ਬਦਲਣਾ : ਸਿਧਾਂਤ ਅਤੇ ਅਮਲੀ ਵਰਤੋਂ (ਘੱਟੋ-ਘੱਟ 50 ਅਭਿਆਸ ਕਰਾਉਣੇ) **15 ਅੰਕ**
2. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਰਜਿਸਟਰਾਂ ਸੰਬੰਧੀ ਜਾਣ-ਪਛਾਣ : ਸਾਹਿਤਕ ਭਾਸ਼ਾ, ਉਪਭਾਸ਼ਾ, ਵਿਅਕਤੀ ਭਾਸ਼ਾ, ਪਿਜਿਨ ਤੇ ਕਰਿਓਲ, ਬਣਾਵਟੀ ਭਾਸ਼ਾ। **20 ਅੰਕ**
3. ਰਿਪੋਰਟਿੰਗ ਕਰਨਾ : ਸਮਾਚਾਰ ਲਿਖਣ ਦੀ ਵਿਧੀ ਅਤੇ ਤੱਤ, ਸਮਾਚਾਰਾਂ ਦੇ ਪ੍ਰਕਾਰ, ਸੰਖੇਪ ਕਰਨਾ ਤੇ ਵਿਆਖਿਆ ਕਰਨੀ। **15 ਅੰਕ**

SEMESTER–III

ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜੀ

(FUNCTIONAL PUNJABI) (VOCATIONAL)

(ਪ੍ਰੈਕਟੀਕਲ)

ਸਮਾਂ: 2 ਘੰਟੇ ਕੁਲ ਅੰਕ: 50

(ਪ੍ਰੈਕਟੀਕਲ ਦੇ ਪੇਪਰ ਵਿਚ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਸੁਣਨ-ਸਮਝਣ-ਲਿਖਣ ਯੋਗਤਾ ਦੀ ਪ੍ਰੀਖਿਆ ਲਈ ਜਾਵੇਗੀ)

ਭਾਸ਼ਾ ਪ੍ਰਯੋਗਸ਼ਾਲਾ ਵਿਚ ਅਭਿਆਸ ਕਰਨਾ:

(ਉ) ਪੰਜਾਬੀ ਦੇ ਉਪ-ਭਾਸ਼ਾਈ ਉਚਾਰਨ ਨੂੰ ਸੁਣ ਕੇ ਰਿਪੋਰਟ ਤਿਆਰ ਕਰਨੀ।

(ਅ) ਸੁਣੇ ਗਏ ਸ਼ਬਦਾਂ ਦੇ ਆਧਾਰ 'ਤੇ ਸਾਧਾਰਣ ਤੇ ਸੰਯੁਕਤ ਵਾਕ ਬਣਾਉਣੇ।

(ਏ) ਭਾਸ਼ਣ ਨੂੰ ਸੁਣ ਕੇ ਸੰਖੇਪ ਰੂਪ ਤਿਆਰ ਕਰਨਾ।

(ਸ) ਰਿਕਾਰਡ ਕੀਤੀਆਂ ਖ਼ਬਰਾਂ ਨੂੰ ਸੁਣ ਕੇ ਲਿਖਣਾ।

SEMESTER–III

ਮੁੱਢਲੀ ਪੰਜਾਬੀ
(In lieu of Compulsory Punjabi)

ਪਾਠ–ਕ੍ਰਮ

ਸਮਾਂ: ਤਿੰਨ ਘੰਟੇ **ਕੁਲ ਅੰਕ: 50**

1.	ਵਿਆਕਰਣਕ ਇਕਾਈਆਂ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ; ਵਾਕੰਸ਼, ਉਪਵਾਕ ਅਤੇ ਵਾਕ	**20 ਅੰਕ**
2.	ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ : ਪੈਰਾ ਰਚਨਾ, ਚਿੱਠੀ ਪੱਤਰ, ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ	**15 ਅੰਕ**
3.	ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ ਪੈਰਾ ਅਧਾਰਿਤ ਪ੍ਰਸ਼ਨ ਸੰਖੇਪ ਰਚਨਾ	**15 ਅੰਕ**

ਅੰਕ–ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ:

1. ਵਿਆਕਰਣਕ ਇਕਾਈਆਂ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਨਾਲ ਸਬੰਧਿਤ 5–5 ਅੰਕਾਂ ਦੇ ਤਿੰਨ ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਅੰਕਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਇਕ–ਇਕ ਜਾਂ ਦੋ–ਦੋ ਅੰਕਾਂ ਦੇ ਛੋਟੇ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ।
2. ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ 'ਤੇ ਪੈਰਾ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
3. ਵਿਦਿਆਰਥੀ ਨੂੰ ਕਿਸੇ ਵਿਸ਼ੇ 'ਤੇ ਨਿੱਜੀ ਜਾਂ ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਲਿਖਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
4. ਵਿਦਿਆਰਥੀ ਨੂੰ ਇਕ-ਇਕ ਅੰਕ ਦੇ ਪੰਜ ਅਖਾਣਾਂ ਜਾਂ ਮੁਹਾਵਰਿਆਂ ਨੂੰ ਵਾਕਾਂ ਵਿਚ ਵਰਤ ਕੇ ਅਰਥ ਸਪੱਸ਼ਟ ਕਰਨ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ।
5. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਕ ਪੈਰਾ ਦਿੱਤਾ ਜਾਵੇਗਾ ਅਤੇ ਉਸ 'ਤੇ ਆਧਾਰਿਤ ਇਕ–ਇਕ ਅੰਕ ਦੇ ਪੰਜ ਪ੍ਰਸ਼ਨ ਦਿੱਤੇ ਜਾਣਗੇ। ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਤਕ ਸੀਮਤ ਹੋਵੇਗਾ।
6. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਕ ਪੈਰਾ ਦਿੱਤਾ ਜਾਵੇਗਾ ਜਿਸ ਦੀ ਉਸ ਨੇ ਇਕ ਤਿਹਾਈ ਹਿੱਸੇ ਵਿਚ ਸੰਖੇਪ ਰਚਨਾ ਕਰਨੀ ਹੋਵੇਗੀ ਅਤੇ ਢੁੱਕਵਾਂ ਸਿਰਲੇਖ ਦੇਣਾ ਹੋਵੇਗਾ।
7. ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਭਾਸ਼ਾ ਸਰਲ ਅਤੇ ਸਪਸ਼ਟ ਹੋਵੇਗੀ।

SEMESTER–III

HINDI (ELECTIVE)

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ukV% ;g i'u&i= rhu Hkkxksa esa foHkDr gksxkA

[k.M&,d

इस भाग में बीस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 20 हैं।

[k.M&nks

इस भाग में 12 प्रश्न पूछे जाएंगे जिन में से 8 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 48 हैं।

[k.M&rhu

इस भाग में 4 प्रश्न पूछे जाएंगे। जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। इन प्रश्नों का उत्तर 5 पृष्ठों का होगा। कुल अंक 32 हैं।

fu/kkfjr ikB;dze

1. काव्य–उत्कर्ष, संपादक–डॉ. सुधा जितेन्द्र, लोकभारती प्रकाशन, नई दिल्ली, 2016
   निर्धारित कविः कबीर, गुरु नानक देव, सूरदास, तुलसीदास, रविदास, बिहारी, रहीम, गुरु तेग बहादुर।
2. हिन्दी साहित्य का इतिहास, प्रकाशक, गुरु नानक देव यूनिवर्सिटी, अमृतसर,
   हिन्दी साहित्य के आदिकाल का अध्ययन अपेक्षित है। तत्संबंधी प्रमुख परिक्षेत्र–इतिहास, काल विभाजन, आदिकालः परिस्थितियां, विशेषताएं।
3. अलंकार निरूपणः
   अनुप्रास, यमक, उपमा, रूपक, प्रतीक, विरोधाभास (छः अलंकार) परिभाषा, लक्षण सोदाहरण परिचय।
4. स्वर, व्यंजनः परिभाषा, लिंग, वचन, प्रचलित संधि और संधि विच्छेद, (केवल व्यावहारिक)

fo"k;kuqdy vad foHkktu

1. प्रथम खंड में अलंकारों और व्याकरण से प्रश्न होंगे।
2. दूसरे खण्ड में छह प्रश्न सप्रसंग व्याख्याओं के होंगे। जिनमें से तीन व्याख्याएं करनी अनिवार्य होंगी। चार प्रश्न पाठ्य–पुस्तक से होंगे। जिनमें से दो प्रश्न करने अनिवार्य होंगे। दो प्रश्न अलंकारों के होंगे। जिनमें से एक करना अनिवार्य होगा। शेष दो प्रश्न विद्यार्थी इस खण्ड मे कहीं से भी कर सकता है। कुल आठ प्रश्न करने हैं।
3. तीसरे खण्ड में दो प्रश्न कवि और कविताओं से संबंधित होंगे और दो प्रश्न हिन्दी साहित्य के इतिहास से संबंधित होंगे।

SEMESTER–III

HINDI PATRAKARITA (VOCATIONAL)

fgUnh i=dkfjrk
fgUnh i=dkfjrk vkj fiVh ehfM;k

le;& 3 ?k.Vs i.kkad% 60

क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 10 हैं।

ख) इस भाग में 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।

ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। कुल अंक 20 हैं।

fu/kkfjr ikB;dze

क) fiVh ehfM;k vkj eqn.k dyk
– समाचार : अर्थ और परिभाषा
– समाचार : मूल तत्त्व
– समाचार संकलन : प्रमुख स्रोत
– समाचार समितियाँ

ख) fgUnh esa lekpkj y[ku
– आमुख,
– शीर्षकीकरण
– पृष्ठ सज्जा प्रस्तुतिकरण
– संवाददाता : कर्त्तव्य और गुण

ग) lekpkj i=ksa ds fy, LrEHk y[ku
– सम्पादकीय
– आलेख
– फीचर लेखन
– रिर्पोताज
– व्यंग्य और हास्य–चित्र (कार्टून)
– कथा–लेखन

vad foHkktu

– प्रथम खंड में भाग 'क' और 'ग' में से प्रश्न पूछे जाएंगे। 1×10=10
– द्वितीय भाग में भाग 'क' और 'ख' में से प्रश्न पूछे जाएंगे। 5×6=30
– तृतीय भाग में भाग 'ख' और 'ग' में से प्रश्न पूछे जाएंगे। 2×10=20

SEMESTER–III

HINDI PATRAKARITA (VOCATIONAL)
fgUnh i=dkfjrk

iz;ksx vkj ekSf[kdh

iw.kkZd % 40

– विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग–पुस्तिका के होंगे।

– प्रयोग पुस्तिका का आकलन और मौखिक–परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा–नियमों के अनुसार की जाएगी।

iz;ksx dk fo'k;

– हिन्दी पाठ के प्रूफ रीडिंग का अभ्यास
– विज्ञापन लेखन का अभ्यास
– हिन्दी समाचार पत्रों के विज्ञापन : संकलन
– समाचार–पत्र में भाशण का अभ्यास
– समूहवार बहस
– पावर–प्वांइट प्रस्तुति

SEMESTER–III

FUNCTIONAL HINDI (VOCATIONAL)

QDk'kuy fgUnh

fVIi.k vkj ik#i y[ku] ifjHkkf"kd 'kCnkoyh ,oa fgUnh lkfgR; dk jhfrdky

le;% 3 ?kaVs i.kkad % 60

क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न एक अंक का है। कुल अंक 10 हैं।

ख) इस भाग में 10 प्रश्न पूछे जाएंगे जिन में से 5 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर 2 पृष्ठों की सीमा का होगा। प्रत्येक प्रश्न के 6 अंक हैं। कुल अंक 30 हैं।

ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। कुल अंक 20 हैं।

fu/kkfjr ikBîØe

d½ i'kkldh; inuke vkj dk;kZy;hu vuqn'kZ ¼fVIi.kh½ dk vuqokn
(निर्धारित पदनाम और अनुदेश साथ संलग्न है)

[k½ fVIi.k vkj ik#i&y[ku % lkekU; ifjp;
- टिप्पण : अर्थ और परिभाषा
- टिप्पण : प्रकार
- टिप्पण : विशेषताएँ और आवश्यक औपचारिकताएँ
- टिप्पण : निर्माण : ध्यान देने योग्य बातें
- टिप्पण : अन्तिम रूप देना
- टिप्पण : भाषा और शैली
- प्रारुप : अर्थ और परिभाषा
- प्रारुप को अन्तिम रूप देना
- प्रकरण ब्यौरा (Case History)
- केस तैयार करना
- परिणाम तक पहुँचाना और कार्यवाही की प्रस्तावना
- आक्षरिक पर्ची (Flag of Reference)

x½ ikfjHkkf"kd 'kCnkoyh
सामान्य शब्द, अर्द्ध– पारिभाषिक भाब्द और पारिभाषिक भाब्द : अर्थ और स्वरूप
पारिभाषिक भाब्दावली : अर्थ, परिभाशा, वि ोशताएँ, महत्व

?k½ fgUnh lkfgR; dk jhfrdky & ifjfLFkfr;k] izo`fÙk;k vkj ukedj.k

vad foHkktu
- प्रथम भाग में भाग 'क' से 10 प्रश्न पूछे जाएंगे। 1×10=10
- & द्वितीय भाग में भाग 'ख' में से प्रश्न पूछे जाएंगे। 5×6=30
- & तृतीय भाग में भाग 'ग' और 'घ' मे ंसे प्रश्न पूछे जाएंगे। 2×10=20

SEMESTER–III

FUNCTIONAL HINDI (VOCATIONAL)
QD'kuy fgUnh

iz;ksx vkj ekSf[kdh

iw.kkZd % 40

– विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग–पुस्तिका के होंगे।

– प्रयोग पुस्तिका का आकलन और मौखिक–परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा–नियमों के अनुसार की जाएगी।

iz;ksx dk fo'k;%

– टिप्पण और प्रारूप लेखन का अभ्यास
– हिन्दी समाचार–पत्रों से विज्ञापन संकलित करना
– विज्ञापनों में संगीत, आकर्शण, मनोविज्ञान, नाटकीय तत्त्व का महत्त्व
– दूरद ान विज्ञापनों से उदाहरण
– विज्ञापनों का लिप्यांतरण
– पावर–प्वाइंट प्रस्तुति

फंक्शनल हिन्दी (निर्धारित पदनाम)
(क) प्रशासनिक पदनाम

1.	अतिरिक्त न्यायाधीश	Additional Judge
2.	अतिरिक्त परीक्षा नियंत्रक	Additional Examination Controller
3.	अधिवक्ता	Advocate
4.	अधिष्ठाता	Presiding Officer
5.	अध्यक्ष	Speaker, Chairman
6.	अधिग्रहण अधिकारी	Requistion Officer
7.	अधीक्षक	Superintendent
8.	अधीक्षक अभियंता	Superintendent Engineer
9.	अधीनस्थ अभियंता	Subordinate Engineer
10.	अनुसंधान अधिकारी	Investigation Officer
11.	अनुवादक	Translator
12.	अपर न्यायाधीश	Additional Judge
13.	अपर समाहर्त्ता	Additional Collector
14.	अनुमंडलाधिकारी	Sub Divisonal Officer
15.	अभिकर्त्ता	Agent
16.	अभियंता	Engineer
17.	अप्रवासी पदाधिकारी	Immigration Authority
18.	अवर सचिव	Under Secretary
19.	आरक्षी अधीक्षक	Police Superintendent
20.	आरक्षी निरीक्षक	Police Inspector
21.	आरक्षी उप महानिरीक्षक	Deputy Inspector General of Police
22.	आरक्षी महानिरीक्ष्क	Inspector General of Police
23.	आशुलिपिक	Shorthand writer
24.	आचार्य	Professor
25.	उच्चायुक्त	High Commissioner
26.	उपायुक्त	Deputy Commissioner

27.	उत्पाद शुल्क समाहर्ता	Collector of Exise
28.	उद्घोषक	Announcer
29.	उप कुलसचिव	Deputy Registrar
30.	उपाचार्य	Reader
31.	उपमंत्री	Deputy Minister
32.	उप सभापति	Vice President
33.	उप राष्टपति	Deputy Chairman
34.	उपसचिव	Deputy Secretary
35.	उपाध्यक्ष	Deputy Speaker
36.	अंचलाधिकारी	Circle Officer
37.	अंकेक्षक / लेखा परीक्षक	Auditor
38.	कर्मचारीगण	Staff
39.	कर्मशाला प्रबंधक	Work Manager
40.	कराधान अधिकारी	Taxation Officer
41.	कार्य नियोजन अधिकारी	Assignment Officer
42.	कार्य पालक अभियंता	Executive Engineer
43.	कारा–अधीक्षक	Jail-Superintendent
44.	किरानी	Clerk
45.	कुर्की अधिकारी	Attachment officer
46.	कुलपति	Vice Chancellor
47.	कुलाधिपति	Chancellor
48.	कुलानुशासक	Proctor
49.	कुलसचिव	Registrar
50.	कृषि पदाधिकारी	Agriculture Officer
51.	कृषि ऋण सलाहकार	Agricultural Credit Officer
52.	कृषि विकास पदाधिकारी	Agricultural Development Officer
53.	कृषि वैज्ञानिक	Agronomist
54.	खजांची	Treasurer

55.	खाद्य मंत्री	Minister of Food
56.	क्षेत्रीय प्रबंधक	Regional Manager
57.	चकबंदी अधिकारी	Consolidation Officer
58.	चिकित्सा अधिकारी	Medical Officer
59.	जनगणना अधिकारी	Census Officer
60.	जनसंपर्क अधिकारी	Public Relation Officer
61.	जिलाधीश	District Magistrate
62.	टंकक	Typist
63.	थानेदार	Police Station Officer
64.	थाना प्रभारी	Incharge Police Station
65.	दंडाधिकारी	Magistrate
66.	दरबान	Gate keeper
67.	दारोगा	Police sub Inspector
68.	दुभाषिया	Interpreter
69.	दुर्घटना अन्वेषण अधिकारी	Accidents Investigation Officer
70.	नक्शानवीस	Cartographer
71.	निदेशक	Director
72.	निबंधक	Registar
73.	नियंत्रक	Controller
74.	नियंत्रक महालेखा परीक्षक	Controller & Auditor General
75.	नियंत्रक अधिकारी	Controlling Officer
76.	नियोजन पदाधिकारी	Employment Officer
77.	निर्वाचन आयुक्त	Election Commissioner
78.	न्यायमूर्ति	Justice
79.	न्यायधीश	Judge
80.	प्रखंड विकार पदाधिकारी	Block Development Officer
81.	प्रति कुलपति	Pro-Vice Chancellor
82.	प्रति लिपिक	Copyist

83.	प्रधानमंत्री	Prime-Minister
84.	प्रधानाचार्य	Principal
85.	प्रधानाध्यापक	Headmaster
86.	प्रबंधक	Manager
87.	प्रभारी प्रधानाचार्य	Professor-In-Charge
88.	प्रशासक	Administrator
89.	प्रशाखा पदाधिकारी	Sectional Officer
90.	पर्यवेक्षक	Supervisor
91.	परामर्शी अधिकारी	Advisory Officer
92.	पणन अधिकारी	Marketing Officer
93.	परिचारिका	Nurse
94.	पशु चिकित्सा पदाधिकारी	Veterinary Officer
95.	पशु चिकित्सक	Veterinary Doctor
96.	प्राचार्य	Principal
97.	प्रादेशिक आयुक्त	Regional Commissioner
98.	प्राध्यापक	Lecturer
99.	प्राधिकृत अभिकर्त्ता	Authorised Agent
100.	प्राधिकारी	Authority
101.	पीठासीन अधिकारी	Presiding Officer
102.	बंदोबस्त पदाधिकारी	Settlement Officer
103.	बेतार तार चालक	Wireless Operator
104.	भर्ती अधिकारी	Recruitment Officer
105.	भंडारपाल	Store Keeper
106.	भारतीय सेना	Indian Army
107.	भुगतान प्राधिकारी	Disbursing Authority
108.	भूमाप शिक्षक	Survey Instructor
109.	भू–राजस्व पदाधिकारी	Land Revenue Officer
110.	महाकारा निरीक्षक	Inspector General of Prisons

111.	महाधिवक्ता	Advocate General
112.	महान्यायवादी	Attorney General
113.	महानिरीक्षक	Inspector General
114.	महाप्रबंधक	Administrator General
115.	महापौर	Mayor
116.	महालेखाकार	Accountant General
117.	महावनपाल	Chief Conservator of Forests
118.	मानव विज्ञानी	Anthropologist
119.	माप–तौल निरीक्षक	Weight & Measurement Inspector
120.	माल प्रशासक	Revenue Administrator
121.	मुख्य अभियंता	Chief Engineer
122.	मुख्य आयुक्त	Chief Commissioner
123.	मुख्य न्यायाधीश	Chief Justice
124.	मुख्य निर्वाचन आयुक्त	Chief Election Commissioner
125.	मुख्यमंत्री	Chief Minister
126.	मूल्यांकन अधिकारी	Evaluation Officer
127.	रख–रखाव अधिकारी	Maintenance Officer
128.	रख–रखाव निरीक्षक	Maintenance Inspector
129.	रक्षा–मंत्री	Defence Minister
130.	राजदूत	Ambassador
131.	राजपत्रित अधिकारी	Gazetted Officer
132.	राज्यपाल	Governor
133.	राजस्व पदाधिकारी	Revenue Officer
134.	राष्टपति	President
135.	रेलमंत्री	Railways Minister
136.	लिपिक–सह–टंकक	Clerk-Cum-Typist
137.	लेखाकार	Accountant General
138.	लेखा–परीक्षक	Auditor

139.	लेखा–परीक्षा–अधिकारी	Audit Officer
140.	लेखा–महापरीक्षक	Auditor General
141.	वन–पदाधिकारी	Forest Officer
142.	वन–रोपण–पदाधिकारी	Afforestation Officer
143.	वरिष्ठ व्याख्याता	Senior Lecturer
144.	व्याख्याता	Lecturer
145.	वाणिज्य मंत्री	Commerce Minister
146.	विक्रय कर पदाधिकारी	Sales Tax Officer
147.	विकास पदाधिकारी	Development Officer
148.	वित्त पदाधिकारी	Finance Officer
149.	वित्तीय परामर्शी	Financial Advisor
150.	वित्त मंत्री	Finance Minister
151.	विदेश मंत्री	Minister Of External Affairs
152.	विधान पार्षद	Member of Legislative Council
153.	विधायक	Member of Legislative Assembly
154.	विधिमंत्री	Minister of Law
155.	विधि सलाहकार	Legal Advisor
156.	विनिमय नियंत्रक	Exchange Controller
157.	विमानन सलाहकार	Aviation Advisor
158.	विश्लेषक सहायक	Analytical Assistant
159.	विशेष कार्याधिकारी	Officer on Special duty
160.	वैद्युतिक	Electrician
161.	शल्य चिकित्सक	Surgeon
162.	शपथ आयुक्त	Oath Commissioner
163.	श्रम पदाधिकारी	Labour Officer
164.	श्रम मंत्री	Labour Minister
165.	शाखा प्रबंधक	Branch Manager
166.	शिक्षा पदाधिकारी	Education Officer

167.	शोध पदाधिकारी	Research Officer
168.	संचार मंत्री	Minister of Communication
169.	सचिव	Secretary
170.	संपदा पदाधिकारी	Estate Officer
171.	सत्यापन अधिकारी	Attesting Officer
172.	सत्र न्यायाधीश	Session Judge
173.	समादेशक	Commandent
174.	समाहर्ता	Collector
175.	समुद्री अधिकारी	Marine Officer
176.	सर्वेक्षक	Serveyour
177.	सहायक	Assistant
178.	स्थानीय प्राधिकारी	Local Authority
179.	संकेत लिपिक	Stenographer
180.	संग्रहालयाध्यक्ष	Curator
181.	संग्रहालय संरक्षक	Custodian of Museum
182.	संयुक्त सचिव	Joint Secretary
183.	संयुक्त निदेशक	Joint Director
184.	संयोजक निदेशक	Convenor
185.	संरक्षक	Patron, Custodian
186.	संशोधक अधिकारी	Revising Officer
187.	सारणीयक	Tabulator
188.	संस्कृति संपर्क अधिकारी	Cultural Relation Officer
189.	संस्कृति मंत्री	Minister of Culture
190.	सांसद	Member of Parliament
191.	सीमा पुलिस निरीक्षक	Boarder Police Inspector
192.	सीमा–शुल्क–समाहर्ता	Collector of Customs
193.	सैनिक अधिकारी	Military Officer

फंक्शनल हिन्दी (निर्धारित अनुदेश)
(ख) कार्यालयीन अनुदेश

1.	Above mentioned	उपरलिखित
2.	According to	के अनुसार
3.	Adjourn Sine die	अनिश्चित् काल के लिए
4.	Acting in good faith	सद्भाव से कार्य करते हुए
5.	Action may be taken as proposed	यथा प्रस्तावित कार्यवाही की जाए
6.	Acts of Commission & Ommission	कृताकृत
7.	After adequate consideration	समुचित विचार के बाद
8.	Against public interest	लोकहित के विरुद्ध
9.	Aid and advice	सहायता और सलाह
10.	A Line of note is placed below	संक्षिप्त नोट नीचे प्रस्तुत है
11.	An interim	अंतरिम, अस्थायी
12.	Aproved as proposed	यथाप्रस्ताव अनुमोदित
13.	As above	जैसा उपर दिया गया है
14.	As desired	इच्छानुसार, आज्ञानुसार
15.	As directed	निदेशानुसार
16.	As far as possible	यथासंभव
17.	As a last resort	अंतिम उपाय के रूप में
18.	As a matter of fact	यथार्थ/वस्तुतः
19.	As may be necessary	आवश्यकतानुसार
20.	As per details below	निम्नलिखित के अनुसार
21.	As regards	के संबंध में/ जहां तक संभव हो सके
22.	As the case may be	जैसी स्थिति हो
23.	Attention is invited to	की ओर ध्यान आकर्शित किया जाता है
24.	Background of the case	मामले की पृष्ठभूमि
25.	Beg to state	निवेदन है

26.	Benefit of doubt	संदेह लाभ
27.	Boarding and lodging	आवास और भोजन
28.	By all means	अवश्यमेव, निस्संदेह
29.	By any means	किसी प्रकार से
30.	By order	के आदेश से
31.	Case has been closed	मामला समाप्त
32.	Come into force	लागू होना
33.	Deemed to be	समझा जाए
34.	Detrimental in interest of	के हित मे हानिकारक
35.	Do the needful	आवश्यक कार्यवाई– हेतु
36.	Duly filled in	विधिवत् ,भरा हुआ
37.	Duly verified	विधिवत् सत्यापित
38.	Early reply is solicited	शीघ्र उत्तर की प्रार्थना है
39.	Eligibility is certified	पात्रता प्रमाणित
40.	Errors and ommissions	भूल चूक
41.	Expedite action	कार्यवाही शीघ्र करें
42.	For early compliance	शीघ्र अनुपालन करें
43.	For favour of necessary action	आवश्यक कार्यवाई हेतु
44.	For immediate action	त्वरित कार्यवाई हेतु
45.	For or against	पक्ष और विपक्ष में
46.	For perusal	ध्यान से अध्ययनार्थ
47.	For the present	फिलहाल
48.	From pre-page	पिछले पृष्ठ से
49.	furnish details	विवरण प्रस्तुत करें
50.	Further report is awaited	अगला प्रतिवेदन प्रतीक्षित
51.	Give necessary facilities	आवश्यक सुविधाएं दें
52.	Hard and fast rules	पक्के नियम
53.	Have the honour to say	सादर निवेदन है

54.	In camera	बंद कैमरे में
55.	In lump sum	एकमुश्त, एक बार में
56.	In due course	यथाविधि
57.	In reply to	के उत्तर में
58.	Inter alia	अन्य बातों के साथ–साथ
59.	Inter se	परस्पर /आपस में
60.	In toto	पूरी तरह, सम्पूर्णतः
61.	In view of	को ध्यान में रख कर/ की दृश्टि से
62.	Keep in abeyance	प्रस्थगित रखा जाए
63.	Kindly Acknowledge receipt	कृपया पावती दें
64.	Kindly confirm	कृपया पुष्टि करें
65.	Kindly consider	कृपया विचार करें
66.	May be cancelled	निरस्त किया जाए
67.	May be considered	विचार किया जाए
68.	Matter of facts	तथ्यतः/तथ्य की बात
69.	Necessary action may be taken	आवश्यक कार्यवाई करें
70.	Note Beno (N.B.)	विशेष ध्यान दें
71.	Not Satisfactory	असंतोषजनक
72.	Okey (OK)	सब ठीक, अच्छा
73.	On behalf of	की ओर से
74.	Out to day	आज ही
75.	Put up	प्रस्तुत करें
76.	Reference to above	उपरिनिर्दिष्ट
77.	Self explanatory	स्वतः स्पष्ट
78.	So far as possible	यथा संभव
79.	So long as	यहां तक कि
80.	Status quo	यथा पूर्व स्थिति
81.	Then and there	तत्काल वही

82.	This is to certify	प्रमाणित कया जाता है
83.	Through over sight	नजर चूकने से, भूल जाने से
84.	Uncalled for	अनामंत्रित, अनाहूत, अनुचित
85.	Under mentioned	निमनलिखित
86.	Until further order	अगले आदेश तक
87.	Up-to-date	अद्यतन
88.	Up-to the mark	स्तरीय
89.	Verified and found correct	सत्यापित किया और सही पाया
90.	Without fail	अवश्यमेव
91.	With reference to	के संदर्भ में
92.	With retrospective effect	प्रभाव–सहित
93.	Yours faithfully	भवदीय

SEMESTER–III
PHYSICAL EDUCATION
(THEORY)

Time: 3 Hours **Maximum Marks: 100**
Theory Marks: 60
Practical Marks: 40

Note: Instructions for the Paper Setters / Examiners. Each question paper may consist of three sections as follows:

Section–A: The candidates are required to attempt all the six questions. Each question carrying two marks. 6x2=12 Marks
Section–B: The candidates are required to attempt seven out of twelve questions. Each question carrying four marks. 7x4=28 Marks
Section–C: The candidates are required to attempt two out of four questions. Each question carrying ten marks. 10x2=20 Marks

Part-A

1. Meaning of Learning, Nature of Skill Learning and laws of Learning.
2. Learning Curve.
3. Motivation in Physical Education.
4. Play meaning and theories.
5. Psychological factors effecting sports performance i.e. stress tension, anxiety, aggression.
6. Psychological characteristics of the adolescent in sports situations.

Part-B

1. Transfer of training, its application in sports situations.
2. Growth and development during childhood;
   i) Physical
   ii) Mental
   iii) Emotional
   iv) Inter-personal social development.
3. Sports and Economy.
4. Causes of poor performance of Sports in India.
5. Sports and Socialization-integration through sports (National & International)
6. Sports, Politics and their relationship.

SEMESTER–III
PHYSICAL EDUCATION

(PRACTICAL)

Marks: 40

Division of Marks: Athletics (12) + Games (12) +Ground Markings (3+3),
Practical Note Book (5), Viva-Voce (5)

- **Athletics Performance** ---------- 200M, Discuss Throw for Boys
  200M, Discuss Throw for Girls
- **Games (Boys & Girls) ---- Fundamental, Rules, Performance**
  Football, Yoga

Books Recommended:

1. Singh, Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi, 2000.
2. Tandan, D.K. et.al,: Scienctific basis of Physical Education and Sports, Frends Publication, New Delhi, 2001.
3. Singh, Ajmer and Gill Jagtar: Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana, 2004.
4. Kang, G.S.: Anatomy, Physiology and Health Education, Publication Bureau, Punjabi University, Patiala, 2000.
5. Kang, G.S. and Deol, N.S.: An Introduction to Health and Physical Education, 21st Century, Patiala, 2008.