SYLLABUS

FOR

B.A./B.Sc.

(12+3 SYSTEM OF EDUCATION)
(Semester–VI)

Examinations: 2014–15

GURU NANAK DEV UNIVERSITY AMRITSAR

INDEX OF SEMESTER–VI

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Arts & Social Sciences)

SEMESTER–VI

POLITICAL SCIENCE

INTERNATIONAL POLITICS: THEORY AND PRACTICE

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

Instructions for the Paper Setter:
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 form entire syllabus is sections A, B, C & D and will carry 20 marks in all, such short answer type questions carry 2 marks.
Candidates are required to attempt one question, from each section A, B, C and D of the question paper and the entire section E. The candidates are required to answer the short question in not less than 50 words.

Section–A

1. Meaning, Nature and Scope of International Politics.
2. Realist and Idealist Approaches to International Politics.

Section–B

1. National Power**:** Its Elements
2. System of Balance of Power and Collective Security

Section–C

1. Cold War and Post Cold War era of International Politics.
2. Bipolar, Unipolar and Nature of Emerging World Order.
3. Terrorism in global context:. Its emergence and consequences

Section–D

1. Regional Organisations**:** SAARC and EU.
2. UNO: Principles, aims, objectives and its work.
3. New International Economic Order (NIEO).

Recommended Books:

1. Joshua S. Goldstein, *International Relations,* New Delhi, Pearson Education, 2006.
2. John Baylis and Steve Smith, *Globalization of World Politics,* New Delhi, Oxford University Press, 2005.
3. V.K. Malhotra, *International Relations,* New Delhi, Anmol Publishers Private Ltd., 2004.
4. R.P. Barston, *Modern Diplomacy,* New Delhi, Pearsons, 2006.
5. John Allphin Moore, Jr. and Jerry Pubantz, *The New United Nations, International Organization in the Twenty First Century,* New Delhi, Pearsons, 2008.

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SEMESTER–VI
HISTORY
HISTORY OF THE PUNJAB (1799–1966)

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

Note: The question paper will consist of two Sections as follows:-

Section A: The examiner will set **TEN** questions and the candidates will attempt **Six** questions carrying **Six** marks each. Answer to each question will be in 15 to 20 sentences. The total weightage of the section will be **36** marks.

Section–B: The examiner will set 8 questions, **two** from each Unit. The candidate will attempt 4 questions selecting one from each Unit with at least 5 pages each. Each question will carry 16 marks. The total weightage of this Section will be 64 marks.

Important Note: Paper Setters must ensure that questions in **Section-A** do not cover more than one point, and questions in **Section-B** should cover at least 50 per cent of the theme.

UNIT–I

1. **The Establishment and Expansion of Ranjit Singh's Kingdom :** Political condition of the Punjab in the 1790s; Conquests of the Sikh principalities; Subjugation of the Satlej–Jamuna Divide and British intervention; Subjugation of the hill principalities; annexation of Afghan dependencies; Policy towards the defeated rulers; Extent of the kingdom in 1839.
2. **Administrative Organization of the Kingdom of Lahore:** Central, Provincial and local administration; Land revenue system. Jagirdari system, Dharmarth grants; Judicial administration; Military organization; state policy towards agriculture, Manufacture and trade.

UNIT–II

3. **Annexation and After:** First Anglo-Sikh War; Second Anglo-Sikh War; British administration 1845-1856; Agricultural development.
4. **Socio-Religious Reform Movements in the late– Nineteenth Century:** Christian evangelicals; the Arya Samaj; The Nirankaris and the Namdharis; the Singh Sabhas and the Ahmadiyas.

UNIT–III

5. Early Nationalist Activity, Indian National Congress; Swadeshi Movement and Boycott; The Ghadar movement; Rowlatt Satyagrahs and the Jallianwala Bagh; Non-Cooperation Movement; Hindustan Socialist Republican Army and Naujawan Bharat Sabha; Civil Disobedience and Quit India Movement.
6. **Gurdwara Reforms and the Akalis :** Causes of the movement for reform; Central Sikh League; SGPC and the Shiromani Akali Dal ; Major Morchas ; Gurdwara legislation.

UNIT–IV

7. **Towards Partition:** Communal politics; Sikander–Jinnah Pact; Lahore Resolution of the Muslims League; The elections of 1945-46; Cabinet Mission Plan Mountbatten Plan and Partition.
8. **The Punjab after Independence**: Reorganisation and rehabilitation: Demand for Punjabi speaking state; The reorganisation Act of 1966.

Suggested Reading

1. Grewal, J.S., *The Sikhs of the Punjab*, CUP, Cambridge, 1990.
2. Kirpal Singh, *Partition of Punjab,* Punjabi University, Patiala, 1972.
3. Khushwant Singh, *A History of the Sikhs*, Vol. I & II Oxford Publication, 2004.
4. Kushwant Singh, *Ranjit Singh: Maharaja of the Punjab*, Chatar Singh Jeewan Singh Publication, Amritsar, 2012

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SEMESTER–VI

JOURNALISM AND MASS COMMUNICATION
(VOCATIONAL)

PUBLIC RELATIONS

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

Instructions for the Paper Setters:

Section–A: The examiner will set 10 questions. Candidate will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this Section will be **28 marks.**

Section–B: The examiner will set 8 questions which will cover the entire syllabus. Candidate will attempt any 4 questions in at least 4–5 pages each. Each question will carry **18 marks.** The total weightage of this Section will be **72 marks.**

PR–Definition, Concept and Role, Qualities of a PR person, Publics, PR in public & private sector Difference between PR & advertising, Various PR Organisations, Organising a Press, Conference, Various tools of PR, Writing Press, Releases and reports, Need for PR; Objectives, Publics of PR, Code of Ethics.

Book Recommended:

Handbook of Public Relations: D.S. Mehta, 1998, Allied Publishers, New Delhi.

SEMESTER–VI

MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)

VIDEO ELECTRONIC FILM PRODUCTION

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

Instructions for the Paper Setter:

Section-A: The examiner will set 10 questions. Candidate will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this Section will be **28 marks.**

Section-B: The examiner will set 8 questions which will cover the entire syllabus. Candidate will attempt any 4 questions in at least 4-5 pages each. Each question will carry **18 marks.** The total weightage of this Section will be **72 marks.**

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

Videoediting
• Meaning
• Need
• Types (Online, Offline, Linear & Non-linear
• Transitional
Devices (Cut, Fade, Dissolve, Mix, Superimposition, Wipe & Montage)
Special Effects
• Audio Special Effects
• Video Special Effects
• Recording Special Effects
Narration
• Meaning and Role
• Writing & Recording Narration
Sound Mixing & Editing
• Basics
• Dubbing
• Studio Mixing
• Laying Tracks
• Pre & Post Production Mixing
Studio & Location Sound Media Appreciation
• Film Review
• Film Criticism
• Film Journalism
• Film Distribution & Marketing

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SEMESTER–VI

SOCIOLOGY

SOCIAL RESEARCH AND SCIENTIFIC METHODS

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

Note: Questions paper may consist of two sections as follows:-

Section–A: It will consist of 10 very short answer questions 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 questions with answer to each question upto 3 pages in length or in 500 words. The examiner will set fifteen questions (at least 7 from each unit) and the candidates will attempt eight (four from each unit). Each question will carry ten marks. Total weightage of the section being 80 marks.

UNIT–I

a) Social Research: Meaning and Functions.
b) Scientific Methods: Nature, Steps and Types-quantitative and Qualitative.
c) Design of Social Research: Meaning and Types: Descriptive, Exploratory, Experimental.

UNIT–II

a) Sampling and its types.
b) Methods and Techniques of Data Collection: Observation, Questionnaire, Interview Schedule and Case Study
c) Report writing.

Books Recommended:

1. Bajpai, S.R.: *Methods of Social Survey & Research,* Kitab Ghar, Kanpur, 1976.
2. Goode, and Hatt: *Methods in Social Research,* McGraw Hill, Tokyo, 1952.
3. Ghosh, B.N.: *Scientific Method & Social Research,* Sterling Publications, New Delhi, 1985.
4. Jaspal Singh: *Introduction to Methods of Social Research,* Sterling, New Delhi, 1990.
5. Jayaram, N.: *Research Methodology: Methods and Techniques,* MacMillian, Madras, 1989.
6. Kalton, Graham: *Introduction to Survey Sampling*, Sage, New Delhi, 1983.
7. Kapila, S.: *Methods of Social Research,* New Academic Publishing Co., Mai Hiran Gate, Jalandhar, 1991.

SEMESTER–VI

PSYCHOLOGY

ABNORMAL PSYCHOLOGY–II (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).
(The questions are to be set to judge the candidates basic understanding to the concepts).

Anxiety Based Disorders: Symptoms, Etiology and Treatment of Obsessive Compulsive Disorder, Generalized Anxiety Disorder & Phobias. Classification of Somatoform Disorders–Symptoms & Etiology (Conversion Disorder). Dissociative disorders–Types, Symptoms & Etiology.

Personality Disorders: Clinical Features, Types and causal factors in Personality Disorders (Paranoid, Schizoid, Schizotypal, Histrionic, Narcissistic, Antisocial, Boderline, Avoidant, Dependent, Obsessive- Compulsive, Passive Agressive, Self-Defeating & Sadistic.

Antisocial Personality & Delinquency: Clinical Picture, Characteristics, Causes, Treatment & Outcomes.

Mood Disorders: Types & Symptoms, Causes and treatment.

Schizophrenia: Symptoms, Causes Types and Treatment.

Therapies: Psychodynamic, Behavioural, Cognitive-Behaviour Therapy (Rational Emotive) & Humanistic therapy.

Statistics: Introduction to the concept of Hypothesis, One-tailed and two-tailed tests, Type I and Type II errors, Level of significance, degrees of freedom, Significance of Differences between means (Large sample, correlated and uncorrelated).

Readings:

1. Broota, K.D., Experimental Designs in Behavioural Research, Wiley Eastern Limited, New Delhi, 1989.
2. Carson, R.C. Butcher, J.N., and Mineka, S.(1997), Abnormal Psychology and Modern Life, Harper Collins, New York.
3. Davison, G.C. and Neale, J.M. (1998), Abnormal Psychology, John Wiley and Sons, New York.
4. Garrett. H.E. (1996), Statistics in Psychology and Education, Vakils, Feffar and Simons, New Delhi.
5. Sarason, I.G. and Sarason, B.R.(2002), Abnormal Psychology, Prentice Hall of India, New Delhi.
6. Singh, A., Asadharan Manovigyan, Punjabi University, Patiala.
7. Barlow, D.H. & Durand, V.M., Abnormal Psychology: An Integrative Approach. Thomson Wordsworth, 2007.

SEMESTER–VI

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. Projective Techniques (T.A.T.).
2. Measurement of Anxiety.
3. Parenting Scale/Home Environment Scale.
4. EPQ.
5. Measurement of Depression.
6. Rosenweig's Pictures Frustration Test.

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SEMESTER–VI

DEFENCE AND STRATEGIC STUDIES

REGIONAL SECURITY AND COOPERATION (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

i) **Theoretical dimensions of 'Region' in International Relations.**

ii) **Regional Security: Regional Cooperation and Military Alliances: Conceptual Dimensions.**

UNIT–II

i) **North Atlantic Treaty Organisation-(NATO):** Aim, Organisation and Working.

ii) **Gulf Cooperation Council-(G.C.C).:** Aim, Organisation and Working

UNIT–III

i) **Association of South-East Asian Nations-(ASEAN):** Concept, Objectives, Features, Problems & Achievements.

ii) **Shanghai Cooperation Organisation-(S C O):** Aim, Organisation and Working.

UNIT–IV

i) **Non-Aligned Movement (NAM):-** History, Features, Problems, Achievements and relevance in Contemporary period; India and Non-aligned Movement.

ii) **South Asian Association for Regional Cooperation- (SAARC):**

a) Concept, Objectives, Features.

b) Problems & Achievements.

Suggested Readings:

1. Buzan, Barry, (1987) : People Fear and State: New Delhi, Transasia Publications.
2. Buzan, Barry and Waever, Ole (eds.) (2003) : Regions and Powers: Cambridge.
3. Das, S.T. (1987) : National Security in Perspective: Delhi, Gian Publishing House.
4. Frankal, Joseph (1970) : National Interest: London, Macmillian.
5. Garnett, John (ed) (1970) : Theories of Peace and Security: Macmillan St. Martin's Press.
6. Kinger, Kamal (2008) : Rashtri Surakhya (in Punjabi), Punjab Heritage Foundation.
7. Kinger, Kamal (2011) : Khetri Surakhya ate Sehyog (in Punjabi), Unistar Pubishers.
8. Morgenthau, Hans J. (1969) : Politics Among Nations: Calcutta, Scientific Book Agency.
9. Palmer Perkins, Norman D. and C. (1968) : International Relations: Calcutta, Scientific Book Howard Agency
10. Chaudhury, Subrata Roy (1966) : Military Alliances and Neutrality in War and Peace: New Delhi, Orient Longman.
11. Singh, Nagendra (1974) : The Defence Mechanism and the Modern State: New Delhi, Asia Publishing House. SIPRI Year Book.

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SEMESTER–VI

DEFENCE AND STRATEGIC STUDIES

(PRACTICAL)

Time: 3 Hours **Total Marks: 20**

Teaching Hours: 3 Periods a Week **Written: 10**

Written: 1 Hour **Discussion: 05**

Record and Viva: 05

Note: The paper for written test is to be given by the external examiner on the spot. Internal examiner has to assist him in the conduct of the examination.

Group–A **10 Marks**

1. Tactical, Formations–Section and Platoon
2. Verbal orders
3. Military message writing
4. Patrol - Types and stages of patrolling

Group–B: Group Discussion (Topics) **05 Marks**

(a) India's Internal Security problems.

(b) Confidence bulding measures between India and Pakistan.

(c) Environmental Security

Group–C

Record and Viva–Voce **05 Marks**

SEMESTER–VI
GEOGRAPHY

GEOGRAPHY OF INDIA
(THEORY)

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

Objectives

To foster comprehensive understanding of physical, human and economics resource base of India.

Note: Instructions for the paper setters and candidates

1. A compulsory question on map on India will be set covering the whole syllabus. This question will have 20 parts. The students will attempt any 15 parts in about 15-20 words each. Each part will carry 2 marks (total 30 marks). (Location and Explanation).
2. The whole syllabus will be divided into 4 Units. Eight questions will be set out of the whole syllabus, 2 from each unit. The students will be required to attempt four questions selecting one question from each unit. These will be in addition to compulsory question at serial number one.

Course Content

UNIT–I

India in the context of South Asia, Asia and the World. Relief, drainage, climate, vegetation and soils.

UNIT–II

Mineral Resources: Iron-ore, manganese, mica, copper, gold; and power resources. Population: Numbers, distribution and density, growth, migration, urbanization, religious composition.

UNIT–III

Agriculture-Characteristics of Indian agriculture; land use pattern, irrigation, major crops (rice, wheat, sugarcane, cotton, jute, tea, groundnut), areas of surplus and deficit food production, problems of Indian agriculture.

UNIT–IV

Industries-Distribution and localization factors of major industries (iron and steel, cotton textiles, sugar, fertilizers, cement), role of the public sector in Indian economy. *Transport*: Rail, Road, airways and waterways; International Trade.

Books Recommended:

1. Deshpande, C.D.: India: A Regional Interpretation, Northern Book, Centre, New Delhi.
2. Johnson, B.L.C.: South Asia, Heinemann, London, 1981.
3. Spate, O.H.K. & Learmonth, A.T.A.: India and Pakistan: A General and Regional Geography, Methuen, London, 1967.
4. Tirtha, Ranjit & Krishan, Gopal: Emerging India: A Geographical Introduction, Conoub, Ann Arber, Michigan (U.S.A.) 1992.
5. Malkiat Singh: Geography of India, Rasmeet Prakashan, Jalandhar.
6. D.S. Mankoo: Geography of India, Kalyani Publishers, Jalandhar.
7. D.R. Khullar: Geography of India, New Academic Publishing Co., Jalandhar.

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SEMESTER–VI

GEOGRAPHY

FIELD WORK
(PRACTICAL)

Total Marks: 30
Written: 20
Viva: 10

Instructions:
1. There will be total four questions (two questions each from Unit–I and Unit–II).
2. The students are required to attempt one question each from both the units.
3. All Questions carry ten marks each.

UNIT–I

a) Role of field work in Geography.
b) Scale of study and field work methodology.

UNIT–II

a) Methods of collecting Primary data (questionnaire, observation, interview and measurement) and Secondary data.
b) Methods of field study of: a Farm, a Village, a Town and Physical Features of an area.

Books Recommended:

1. Jones, P.A.: Field Work in Geography, Longman, London, 1968.
2. Archer, J.E. & Dalton T.H.: Field Work in Geography, E.T. Bastford Ltd., London, 1968.
3. Singh, Gopal: Map work and Practical Geography, Surjeet Book Depot, Delhi, 1993.

SEMESTER–VI
PUBLIC ADMINISTRATION

DEVELOPMENT ADMINISTRATION
(With Special Reference to Punjab)

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

(Instructions to Mass Communication)
The question paper will consist of Two sections as per following pattern:
Section-A: The examiner will set 10 questions. Candidate will attempt 7 questions carrying 4 marks in 10-15 sentences each. The total weightage of this Section will be 28 marks.
Section-B: The examiner will set 8 questions which will cover the entire syllabus. Candidate will attempt any 4 questions in at least 4-5 pages each. Each question will carry 18 marks. The total weightage of this Section will be 72 marks.

UNIT–I

Introduction:
Development Administration–Meaning, Scope and Significance. Main features of Development Administration in India. Features of Developed and Developing Countries.
Mixed Economy Model & its Rationale and Significance.

UNIT–II

Planning Machinery:
Planning Commission and National Development Council. State Planning Commission. District and Block Level Planning Machinery. Formulation and Implementation of Development Programmes and Projects.

UNIT–III

Public Sector and Development:
Evolution and Expansion of Public Sector. Role of Public Sector. Management Boards. Forms and Features of Public Enterprises. Administrative Problems of Public Sector. Parliamentary and Executive control over Public Sector. New Economic Policy. Public and Private Partnership.

UNIT–IV

Social Welfare and Development:
Welfare of Scheduled Castes, Scheduled Tribes and other Backward Classes.
Welfare Measures for Women and Children, Central Social Welfare Board; Composition and functions.Role of Voluntary Agencies in Social Welfare.

Suggested Readings:
1. Khera S.S., Government in Business, National Publishing House, New Delhi, 1977.
2. Kapoor S.S., Women and Welfare: A Study of Voluntary Agencies, Indus Publishing Company, New Delhi, 1995.
3. Puri K.K. and G.S. Brar, Development Administration, Bharat Parkashan, Jalandhar, 1993.
4. Sachdeva D.R., Social Welfare Administration in India, Kitab Mahal, Allahabad 2005.
5. Sapru R.K., Development Administration, Deep & Deep Publications, New Delhi, 1986.

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SEMESTER–VI

OFFICE MANAGEMENT & SECRETERIAL PRACTICE

STENOGRAPHY IN ENGLISH
(THEORY)

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

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

Typing

Manuscripts:
Proof correction-signs and their meaning, process of typing manuscripts, corrections of drafts.

Tabulations:
Definition and importance, part of tabulation, procedure for typing, tabulation, typing of book-notes, typing of balance sheet.

UNIT–II

Syllabification of Combination:
Rules for division of words at line ends, exceptions, formation of special sign with combination of characters.

Correspondence:
Typing with proper display
Typing of business letters
Typing of official letters

UNIT–III

Shorthand

Advanced phraseography, phraseology related to business, banking, insurance and administration.
Special list of words.

UNIT–IV

Arrangement of materials on typewriter desk to facilitate transcription.

Checking and proof reading transcription.

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SEMESTER–VI

OFFICE MANAGEMENT & SECRETERIAL PRACTICE

(PRACTICAL)

Marks: 40

Typing
Manuscripts

Typewriting of Manuscripts (typed).

Typewriting manuscripts (handwritten).

Practice on carrying out corrections of drafts.

Note:- Computer facilities to do practical on computer.

Tabulations
Typewriting of tabulations, balance-sheet, invoices, foot notes.

Syllabification and Combination:
Typewriting exercises breaking of words at line ends, breaking of words with syllabification rules, typewriting of characters not existing on key boards.

Correspondence:
Typewriting unarranged, misspelt and wrongly-typed letters by observing the rules of display.

Typewriting of business, official letters.

Shorthand

1. Taking information from other documents in completion of short hand notes.
2. Office style dictation with amendments.
3. Submitting transcribed materials for signature.
4. Marking and filing of shorthand notices after completion of transcription.

Recommended Drills:
Throughout the course, there should be a constant emphasis on:
Fluency in shorthand, special care should be taken to expose students to variety of pronunciation.
Formation of well constructed shorthand outlines with the help of facility drills.
Auto mobilisation of grammalogues and phrases.
Daily practice in taking dictation starting at slow speed.
Practice in transcribing the long hand.

Dictation each day should be on practice material to increase the speed and on new matter to improve competence. it should be for timings of 1,3,5,7 and 10 minutes.
Probable work-sites where on the job training may be organised.
Government department offices.
Business/commercial organisation.
Industrial establishments.
Hospitals.
Educational institutions.
Railways, airlines and other transport undertakings.
Banking and insurance organization.
Parliament and state assembly.
Job work centres

This is a tentative list. Principal may be given the complete freedom to select any organistaion. However, while selecting the institution, care should be taken to select such institution who show willingness to accept the trainees and have the scope for providing variety of experiences in office practice and stenography area. Suggested Department/Section for On-the-Job Training' at the end of first year:

Department/Section	**No. of weeks**
1. Reception/inward and outward mail	1
2. Office establishment/filing/office equipment and production	1
3. Stenography work and typing with various executives and sections.	1
4. Sales, advertising and publicity, stores and	1
	4 weeks

Suggested Department/Section for 'On-the-Job Training' at the end of second year.

Department/Section	**No. of weeks**
1. Private Secretaries of various executives in different departments of the organisation	1
2. Office establishment/company secretary/share department	1
3. Accounts department/time office/reception	1
4. Typing pool/advertising /publicity	1
	4 Weeks

Note: The purpose of the 'On-the-Job Training' is to expose the students to the world of work and provide professional experience in real situation. The student shall have to maintain a diary and submit a detailed report of his activities which shall be certified by a responsible officer of the establishment. However, the teacher will also supervise the 'On-the-Job training' programme.

Suggested Reading Materials:

(a) Short Hand

Title	Publisher:
1. Pitman Shorthand Dictionary	A.H. Wheeler& Company
2. Pitman Shorthand Reading and Dictation Exercises	Pitman Shorthand School, New Delhi
3. Pitman Shorthand Reading and Dictation Exercises	Pitman Shorthand School, New Delhi
4. James W.M. Tylor A Commentary on Pitman Shorthand	
5. Shorthand made easy for beginners with key	O.P. Kuthiall
6. How to start shorthand Speed building	–do– & Edger Thrope
7. How to avoid confusion in outline in pitman shorthand	–do–
8. A Comprehensive List of Gramalonguos & Contractions	–O.P. Kuthiall

(b) Type Writing:

Title	Publisher
1. H.A. Mehta Typewriting Complete Course	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay - 4000037.
2. H.A. MehtaTypewriting Office Practice set	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay - 4000037.
3. H.A. Mehta Business Letter typing sets	Mehta Publishing Corporation, Basant Mahal. Wadala (East) Bombay - 4000037.
4. Typewriting by Md.Khan Dictation Exercises	Chittoor Publishing House, Chittoor, A.P.
5. Layouts and Forms in Typewriting	State Board of Technical Education, Hyderabad-500022.
6. 20th Century Typewriting	South-Western Publishing Company, Gincinati, Ohio, USA.
7. Typewriting Drills for Speed and Accuracy	Gregg. Publishing Corporation, USA.
8. Principle of Typewriting	O.P. Bhatia, S.S. Sangal.
9. Typewriting Speed & Accuracy	O.P. Kuthials & Thorpe
10. Typewriting Theory & Practicle	R.C. Bhatia
11. Type writing speed & Accuracy-B-I.	O.P. Kuthiall
12. -do- B-II	-do-

(c) Office Practice

1. Office Practice Made Simple	By G. Whitehead, 1994.
2. Office Management and Commercial Correspondence	By Balraj Duggal, 2005.
3. Office Management and Secretarial Practice	By V.P. Singh, Gyan Publishing House, Delhi.
4. Business Correspondence and Office Practice	By Nagamia and Bhal Thakkar Publication, Bombay
5. Office Procedure and Secretarial Practices	D.P. Katuria-Pitman Publications
6. Office Management	R.K.Sharma, Shashi K.Gupta, Sushil Nayar, Kalyani Publishers, 2003.
7. Office Management	R.K. Chopra, Himalya Publishing House, 2000.
8. Drafting & Office Procedure	Edgen Thrope.
9. Office Practice Made Simple	By Geoffrey Whitehead Published by WH Allen, 1974.
10. Modern Office Management	By Jain J. Singh, PP, 2007, Deep & Deep Publications.
11. Office Management	By Manish Chopra, 2003.

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SEMESTER–VI

TRAVEL & TOURISM

EXPLORING TOURISM IN PUNJAB

Time: 3 Hrs. **Max. 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 each. 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 each. The candidate will have to attempt 4 questions out of 8 questions.

(04x20=80 Marks)

UNIT–I

Chapter 1. Understanding Geography of Punjab:

Topography, river system, climate, flora and fauna,
Historical impact on the life of the people

Chapter 2. Gardens, Wetlands and Wildlife

Bara Dari Patiala, Aam Khas Bagh (Sirhind), Harike werland, Chhatbir Zeological Park (Zirakpur), Kansal Forset Reserve (Chandigarh)

UNIT–II

Chapter 3. Ancient Medieval Landscapes of Punjab

Ropar as a Centre of Harappan Civilisation
Stupa at Sanghol
Golden Temple, Amritsar
Medieval Serais and Imperial Highways

Chapter 4. Modern Landscapes of Punjab

Amritsar of Ranjit Singh: Ram Bagh and Gobindgarh Fort
Kapurthala Place
Sheesh Mahal, Patiala
Chandigarh as a Modern City

UNIT–III

Chapter 5. Fairs and Festivals

Sikh, Hindu and Muslim Religious Fairs-Diwali, Holla Mohalla (Anandpur Sahib), Dusshera, Lohri, Maghi Mela (Muktsar), Baisakhi at Damdama Sahib (Talwandi Sabo), Urs of Sheikh Mujaddid-Alif-Saani (Sirhind), Religious and Secular Centres-Golden Temple and Akal Takth (Amritsar), Anandpur Sahib (Takth Keshgarh Sahib), Durgiana Temple (Amritsar), Devi Talab (Jalandhar).

Chapter 6. Museums and Memorials

Archaeological Museums at Ropar, Government Museum and Art Gallery and City Museum (Chandigarh), Panaroma of Ranjit Singh (Amritsar), Art Gallery at Sheesh Mahal (Patiala), Hussainwala Memorial (Ferozepur), Retreat ceremony at Wagah (Amritsar), Desh Bhagat Yadgaar Hall (Jalandhar), Sikh Museum (Golden Temple, Amritsar), Science City (Kapurthala), Jalianwala Bagh Martyr's Memorial (Amritsar).

UNIT–IV

Chapter 7. Handicrafts and Handlooms

Phulkari, Bagh, Shawla, *durees* (foor covering), *Jutties* and Blankets

Chapter 8. Performing Arts

Dance: Bhangra, Gidda, Malwai Gidda, Jhummer, Sammi.
Music-Folk and Classical

Suggested Readings:

1. Anand, Mulk Raj, ed. 1981. *Maharaja Ranjit Singh as the Patron of Arts* (Mumbai: Marg Publications)
2. Arshi, P.S. 1986. *Sikh Architecture* (Delhi: Intellectual Publishing House).
3. Aryan, K.C. 1977, *Punjab Murals* (Delhi: Rekha Prakashan).
4. Aryan, K.C. 1983, *Cultural Heritage of Punjab* (Delhi: Rekha Prakashan).
5. Daljeet, 2004. *The Sikh Heritage: A Search for Totality* (Delhi: Prakash Books).
6. Grewal, J.S. Social and cultural History of Pujab: Pre-historic, Ancient and Early Medieval (New Delhi: Manmohan)
7. Kang, Kanwarjit Singh, 1985. *Wall Paintings of Punjab and Haryana* (Delhi: Atma Ram & Sons).
8. Parihar, Subhash, 1985. Mughal Monuments of Punjab and Haryana (Delhi: Inter-India Publications).
9. Randhawa, M.S. ed., 1960, *Punjab* Punjabi (Patiala: Languages Department, Punjab).
10. Srivastava, S.P., 1991. *Art and Cultural Heritage of Patiala* (Delhi: Sundeep Prahashan).

www.punjabgovt.nic.in
punjabtourism. gov.in
chandigarhtourism.gov.in

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SEMESTER–VI

TOURISM AND HOTEL MANAGEMENT

Time: 3 Hours. **Max. Marks: 100**
Theory Marks: 80
On the Job Training Marks: 20

Instructions for the Paper Setter:

The following pattern of setting of question paper shall be observed. The question paper covering the entire course shall be divided into three sections as follows:

Section–A: This section will consist of 7 very short answer type questions with answers to each question upto 5 lines. All questions will be compulsory. Each question will carry two marks; total weightage of the section being **14 marks.**

Section–B: This section will consist of short answer type questions with answers to each question upto two pages. Nine questions will be set by the examiner and the candidates will be expected to attempt six questions. Each question will carry six marks; total weightage of the section being **36 marks.**

Section–C: This section will consist of essay type questions with answer 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 15 marks, total weightage of the section being **30 marks.**

UNIT–I

Interdisciplinary approach of tourism, infrastructure and superstructure for tourism-special emphasis on Indian hospitality industry

Tourism planning and development, demand and supply in tourism

UNIT–II

Tourism master plan

Destination development and destination marketing

UNIT–III

Economic, Social and Political consideration of tourism
International tourism organization:
- W.T.O.
- PATA
- IATA

UNIT–IV

Tourism in 21st century,
Impact of globalization and the era of information technology and other future trend in tourism industry Tourism pollution

Students has to go for two months of specialized industrial training in a travel agency or in a hotel.

Specialized industrial training of 8 weeks

The final year students are supposed to undertake practical training either in a hotel or a travel agency for at least two months. The project report will be submitted to college before examination and will be evaluated by external examiner. The internal assessment shall be based on periodical tests, written assignment and behaviour in the class.

Reference Books:

1. Romila Chawla: Tourism in 21st Century, Edition 2003, Sonali Publication.
2. Romila Chawla: Global Tourism, Edition 2003, Sonali Publication.
3. Dalip Makan: Strategies & Planning in Tourism Industry, edition 2003, Adhyayan Publisher.
4. R.L. Varshney: International Marketing Management, Edition 2005, Sultan Chand & Sons.
5. Romila: Tourism Research & Development, Edition 2004, Sonali Publication.
6. Romila Chawla: Tourism Marketing & Development, Edition 2004, Sonali Publication.
7. Romila Chawla: Economics of Tourism & Development, Edition 2004, Sonali Publication.
8. Gene Burte & Munish Thakur: Management Today Principal & Practice, Edition 1995, Tata McGraw Hill Publishing Co. Ltd.
9. Dr. C.B. Gupta & Dr. N. Rajan: Marketing Management, 7th edition 2002, Sultan Chand & Sons.

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SEMESTER–VI

TAX PROCEDURES AND PRACTICE

CUSTOMS–PROCEDURE & PRACTICE

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

Note: The following pattern of setting of question paper shall be observed:

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

1. Role of Customs in International Trade.
2. Organisation of customs in India-Administrative and Operational Authorities.
3. Regulatory framework-An overview of customs Act, 1962; An overview of Customs Tariff Act, 1975.

Important terms and Definitions
Assessable value baggage, bill of entry, bill of exports, suitable goods, duty, exporter, foreign going vessel, aircraft goods, import, import manifest, importer, prohibited goods, shoping bill, stores, bill, stores bill of landing, export manifest, DOB, FAS, CIF, GATT, Letter of Credit.

4. Kinds of duties-basic, Auxiliary, additional or countervailing; basis of levy-advalorem, specified duties.
5. Prohibition of exportation and importation of goods and provisions regarding notified and specific goods.

UNIT–II

6. Import of goods-free import and restricted import; Types of restricted import-prohibited goods, canalised goods, import against licensing; Types of import-import of cargo, import of personal baggage, import of stores;
   Import of cargo- (a) import by land, sea or air route
   (b) by post
   Clearance procedure - For home consumption, for warehousing exbond clearance;
   Steps and documents to be prepared and filed, viz. bill of entry-
   -Form No. 22 bill of entry for home consumption
   -Form No. 23 bill of entry for warehouse.
   -Form No. 24- Shipping bill for exbound clearance for home consumption and other accompanying document.

   Clearance procedure for Import by post

   Clearance of baggage-Import of baggage-meaning and kinds of baggage; rules and procedure of import thereof general passenger, tourist passenger and transfer of residence passenger; (Form No. 37-Form for baggage declaration).

7. Export of Goods–Free Export and Restricted Exports; Types of Restricted Exports-Prohibited Exports, Canalized Exports, Exports Against Licensing; Types of Exports–Export of cargo; Export of Baggage; Types of Exporters-Manufacturer Exporter and Merchant Exporter;
   Export of Cargo- (a) By Land, Sea and Air Route
   (b) By Post

UNIT–III

Clearance Procedure - Procedure and Filling & Filing of Relevant Documents

Form No.94- Shipping Bill for Export of Suitable Goods.

Form No.95- Shipping Bill for Export of Duty Free Goods.

Form No.96- Shipping Bill for Export of Duty Free Goods Exbond.

Form No.98- Bill for Export of Dutyable Goods.

Form No.99- Bill for Export of Duty Free Goods.

Form No.100-Bill for Export for Export of duty free goods ex-bond.

UNIT–IV

Duty drawback - Meaning/Scheme, procedure and documentation thereof

Form No.93- Shipping Bill for Export of Goods under claim for duty Drawback.

Form No.97- Bill of Export for Export of Goods under claim for Duty Drawback.

References:

1. Darey V.S. 2006 Taxmann's Indirect Taxes Law Practice Taxmann. Publications Pvt. Ltd., New Delhi.
2. Taxmann's Indirect Tax Laws as amended by Finance Act 2007. Taxmann Allied Service Pvt. Ltd., New Delhi, 2004.
3. www.incomtaxindia.govt.in.

'ON THE JOB TRAINING' OF 4 WEEKS

Periods/week:	**T**	**L**
	3	**3**

1. 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.

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SEMESTER–VI

ADVERTISING, SALES PROMOTION AND SALES MANAGEMENT (VOCATIONAL)

SALES PROMOTION AND PUBLIC RELATIONS

Time: 3 Hours **Marks: 100**

The following pattern of setting of question 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

Nature and Importance of sales promotion its role in Marketing, Forms of sales promotion: Consumer oriented sales promotion, Trade - oriented sales promotion and sales force oriented sales promotion.

UNIT–II

Major tools of sales promotion: Samples point of purchase, displays and demonstrations. Exhibitions and Fashion shows, sales contests and games of chance and skill, lotteries, gifts, offers, premium and free goods. Princepacks, rebates, patronage, rewards.

Conventions, conference and tradeshows, specialities and novelities.

UNIT–III

Developing and sales promotion programmes, pre-testing implementing, evaluating the results and making necessary modifications.

Public relations: Meaning, features, growing importance, role in marketing, similarities of publicity and public relations.

UNIT–IV

Major tools of public relations: News, speeches, special events, handouts and leaflets, audio-visual, public service activities miscellaneous tools.

Ethical and local aspects of sales promotion and public relations.

Suggested Readings:

1. Kotler, P., K.L. Killer, A. Koshy & M. Jha, Marketing Management, 13th Ed., PHI, 2007.
2. Vaswar Das Gupta, Sales Management: In the Indian Perspective, PHI, 2004.

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SEMESTER–VI

COMMERCE

BUSINESS LAWS

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

Note: i) The candidates are allowed to use simple (Non-Scientific) Calculators.
ii) 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 questions with answer to each question upto five lines in length. All questions will be compulsory. Each question will carry two marks; total weightage of the section 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 candidates. Each question will carry 6 marks: total weightage of the section being **48 marks.**

Section–C: It will consist of essay type questions with answer to each question upto 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 16 marks; total weightage of the section being **32 marks.**

UNIT–I

Law of contract including contract of indemnity guarantee, bailment, pledge and agency

UNIT–II

Law of sales of goods

UNIT–III

Law of negotiable instructions

UNIT–IV

The Punjab shops and commercial establishment act, 1959. Salient provisions relating to Central sales tax and Punjab sales tax act.

Suggested Readings:

1. Kuchhal M.C., "Business Law", Vikas Publications, 2007.
2. Gulshan S.S. and Kappor G.K. "Business Law" New Age International Ltd. Publishers, 2007.
3. Batra V.K. and Kaira N.K., "Mercantile Law", Tata McGraw Hill Publishers, 2007.
4. Fiber Larry and Weigle Jerry, "Applied Business Law", Restan Publishing Company, 2007.
5. Ashwathappa and Ready, "Business Law", Himalaya, Publishing House, 2007.
6. Bulachandani K.R. "Business Law", Himalaya Publishing House, 2007.

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SEMESTER–VI

TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)

INFORMATION, COMMUNICATION & AUTOMATION

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 50
Int. Ass. Marks: 50
(30 (Report) + 20 (Viva)

A consolidated report on 'On the Job-Training' shall be prepared by every student and must be submitted in the college.

Instructions for the Paper Setters:

Section–A: It will consist of 10 questions from the entire syllabus of the paper with answer to each question should up to 50words. Students will be required to attempt any 5 questions. Each question will carry 2 marks. This section will be of 10 marks

Section–B: It will consist of 8 essay type questions, 2 from each unit with answer to each question should up to 5pages. Students will be required to attempt any 4questions. Each question will carry 10 marks. This section will be of 40marks.

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

Part–I

- Consumer expectation and services & legislation.
- National tourism civil aviation & policy.
- Information Technology.
- Computerised Reservation System:-Introduction to CRS, Components of CRS, Need of CRS

Part–II

- Market Research: –Concept, Significance, Market Segmentation.
- Data collection
- Consortiums of airline hotel & wholesalers
- Communication:-Meaning, Importance, Types of Communication, Barriers to effective communication.

Suggested Readings:

1. National Development Council Report.
2. National Action Plan, 1992.
3. Reports of World Tourism Organisation.
4. Report Workshop on Tourism Legislation - August 10-11, 1987 IITTM, New Delhi.
5. Report Workshop on Tourism Legislation - February 23, IITTM, New Delhi.

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SEMESTER–VI

ECONOMICS

QUANTITATIVE METHODS FOR ECONOMISTS

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

Sets, Relations and functions and continuity, Derivative of simple functions only (excluding log & exponential functions). Maxima/Minima for single variable functions. Introduction to matrices -- definition, properties & inverse.

UNIT–II

Measures of central tendency — Mean, Mode, Median and Geometric Mean; Measures of dispersion.

UNIT–III

Concepts and Measure of skewness and kurtosis: Boyle's & Karl Pearson's measures. Simple correlation & regression (ungrouped & grouped data).

UNIT–IV

Interpolation: Concepts and Methods — Binomial expansion, Newton and Lagrange's Method (with emphasis on missing values only). Price Index Numbers–Weighted and Unweighted Index Numbers, various formulae and consistency tests.

Suggested Readings:

1. Archibald, G. & R.G. Lipsey (1973); Introduction to a Mathematical Treatment of Economics, 2nd Ed. Weisdenfeld and Nicholson, London.
2. Yamane, Taro (1968); Mathematics for Economists, 2nd ed. Prentice Hall, Englewood Cliffs, New Jersey.
3. Croxton, F.E. Cowden D.J. and Klein, S. (1973); Applied General Statistics, 3rd. Ed., Prentice Hall of India, New Delhi.
4. Fox, I.A. (1972); Intermediate Economic Statistics, Wiley Eastern Pvt. Ltd., New Delhi.
5. Nagar, A.L. and Das, R.K. (1976); Basic Statistics, Oxford University Press, Bombay.
6. Baumol (1973); Economic Theory and Operations Analysis, Prentice Hall of India, Private Ltd., New Delhi.

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SEMESTER–VI

INDUSTRIAL ECONOMICS–VI

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

Industrial Finance: Meaning, Scope, Objectives and Functions; Sources and Methods of Industrial Finance: Internal and External Sources; Short and Long Term Finance.

UNIT–II

Financial Institutions-Commercial Banks; Finance Corporation and Industrial Development Banks.

UNIT–III

Capital Budgeting and Structure: Finance of Working Capital; Evaluation of Project Investment. Cost of Capital and its Effect on Gearing and Company Valuation. Financial Leverage and Capital Gearing.

UNIT–IV

Bank and Non-Bank Finance; Venture Capital; Foreign Investment and Stock Market Prices and Operations and Role of SEBI.

Recommended Texts:

1. Pandey, I.M.: Capital Structure and Cost of Capital.
2. Pandey, I.M.: Financial Management, Vikas Publishing House, New Delhi, 2000.
3. Hay, D.A. and Morris D.J.: Industrial Economics: Theory and Evidence, Oxford University Press, London, 1979.
4. Khan, M.Y.: Industrial Finance, Tata Mcgraw Hill, New Delhi, 1980.
5. Gupta, L.C.: The Changing Structure of Industrial Finance in India, Oxford, Clarendon, 1969.
6. Dasgupta, P.S. et.al. : Guidelines for Project Evaluation.

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SEMESTER–VI

QUANTITATIVE TECHNIQUES–VI

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

Definition, Scope and Nature of Econometrics. Simple Linear Regression Model (OLS method) with applications.

UNIT–II

General Linear Regression Model, assumptions, properties (BLUE).

Gauss-Markov Theorem, Concepts of R^2 and $\bar{R}^2$, Test of Significance (Stress on Numericals).

UNIT–III

Econometric Problems of Heteroscedasticity and Multicollineraity in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Specification Bias.

UNIT–IV

Problems of Auto-Correlation in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Distributed Lag Models and Auto-Regressive Models. Dummy Variable Technique and its Uses.

Books Recommended:

1. Koutoyannis, A.: Theory of Econometrics.
2. Gujarati: Basic Economics (2003).
3. Mehta and Madnani: Basic Economics.
4. Stock and Watson: Introduction to Econometrics (2004).
5. Dougherty C.: Introduction to Econometrics (2007).

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SEMESTER–VI

AGRICULTURE ECONOMICS & MARKETING

AGRICULTURAL MARKETING–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.
(i) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

UNIT–I

Marketing Management—Nature, Scope and Function of Marketing Management.

Marketing Research—Meaning, Scope, Importance and Techniques.

UNIT–II

Marketing of Major Agriculture Commodities, Foodgrains, Cash Crops, Milk and Poultry. Marketing of Agricultural Input—Fertilizers, Pesticides and Agricultural Machinery.

UNIT–III

Concept of Physical Distribution—Role of Public distribution in India, Performance and Evaluation of public distribution system in India.

UNIT–IV

Agreement on Agriculture under WTO, Pre and Post WTO Agricultural Trade, Sanitary and Phyto-Sanitary Measures on Agriculture, Impact of WTO on Indian Agriculture.

Recommended Readings:
1. Philips, Kotler, Marketing Management Analysis Planning and Control.
2. Gandhi, J.C., Marketing and Managerial Introduction.
3. Neelamegtham, S. Marketing Managerial and the Indian Economy.
4. Bansal, P.C., Agricultural Problems in India.
5. Singh & Sadhu Agri. Problem in India, Himalayan Publishing House, New Delhi, 1986.

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SEMESTER–VI

RURAL DEVELOPMENT–VI
(THEORY)

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

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 (15 marks each).

UNIT–I

Dairy, Poultry & Piggery: Breed and Breeding Methods, Management and Care of Animals, Sheds, Feeding, Health, Important Diseases, Marketing of Products, Economics of Dairy, Poultry and Piggery.

UNIT–II

Fishery: Scope of Fishery, Species and Culturing of Fish, Management, Feeding, Diseases, Marketing, Economics of Fishery.

UNIT–III

Bee Keeping: Scope of Bee-Keeping, Equipment needed, Species, Diseases, Economics of Bee Keeping.

UNIT–IV

Time and Energy Management: Importance, Leisure, Time and its use, Energy Management in Households and Agriculture.

Food & Nutrition: Basic Food Groups, Essential Constituents, Vitamins and Minerals, Balanced diet.

SEMESTER–VI

RURAL DEVELOPMENT–VI

(PRACTICAL)

Max. Marks: 20

Note: Six periods per week will be devoted to both theory and practicals. Candidates are expected to have practical knowledge about dairy, poultry, piggery, bee keeping, time and energy management, food and nutrition etc.

Suggested Readings:

1. D.S. Dev Poultry Farming.
2. Punjab Agriculture Books on Dairying, Fishery and University, Ludhiana Bee Keeping.

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SEMESTER–VI

MATHEMATICS

PAPER–I: DYNAMICS

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

Basic concepts, rectilinear motion in a starlight line with uniform acceleration, Newton's laws of motion. Motion of two particles connected by a string. Motion along a smooth inclined plane. Variable acceleration. Simple Harmonic Motion.

Section–B

Curvilinear motion of particle in a plane, Definition of velocity and acceleration, projectiles. Oscillations: Free Vibrations, Simple Pendulum, Conical Pendulum. Work, Power and Energy: Kinetic and Potential energy, Conservative forces. Theorem of conservation of energy. Work done against gravity.

Books Recommended:

1. S.R.Gupta, A text book of Dynamics
2. F. Chorlton, Dynamics.
3. S.L. Loney, An Elementary Treatise on the Dynamics of a Practice and of Rigid Bodies, Cambridge University Press, 1956.

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SEMESTER–VI

MATHEMATICS

PAPER–II: NUMERICAL 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.
4. The non-programmable scientific calculator is allowed.

Section–A

Error generation, propagation, error estimation and error bounds, Solution of non-linear equations, Bisection method, Iteration method, Newton's Method, Generalized Newton's Method, Method of false position, Muller's method, Rate of convergence of these methods.

Solution of linear system of equation; Direct method, Gauss elimination variant (Gauss Jordan and Crout reduction), Triangular Method, Iterative Method, Jacobi's Method, Gauss Seidel Method.

Finite Differences: Forward, Backward, Central, Divided differences, shift operator, relationship between the operators and detection of errors by use of difference operator.

Section–B

Interpolation with divided difference, Newton's formula, Lagrangian Method, Finite difference interpolation, Gauss formula, Stirling formula, Bessel's formula, Error Estimation Extrapolation. Numerical differentiation, Method based on interpolation. Numerical Integration, Trapezoidal rule, Simpson's rule, Weddle rule, Romberg Integration, Gaussian integration method, Gaussian legendre integration. Double numerical integration.

Numerical solution of ordinary differential equations, Equations of first and second order, System of simultaneous equations, Milne's Method, Runge-Kutta Method. Predictor- Corrector Methods.

Books Recommended:

1. Scarborough: Numerical Mathematical Analysis (6th edition).
2. S.S. Sastry: Introductory Methods of Numerical Analysis, 2003 (3rd Edition), Prentice Hall of India.
3. R.S. Salaria: Computer Oriented Numerical Methods, 2007, Khanna Book Co. Publishing Co. (P) Ltd.
4. A. Maritava Gupta and Subash Ch. Bose: Introduction to Numerical Analysis.

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SEMESTER–VI

STATISTICS

PAPER–I: ECONOMIC STATISTICS

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

Introduction to index number, problems in the construction of index numbers, Laspyeres, Passche's, Drobish-Bowley, Walsh Marshal-Edgworth and Fisher's formulae for index numbers, errors in index numbers, various tests for the criterion of a good index numbers, chain index number, cost of living index numbers, uses of index numbers.

Section–B

Introduction of time series, the four components of a time series, measurement of secular trend by graphic method, method of semi averages, the method of moving averages and fitting of mathematical curves, measurement of seasonal fluctuations by method of simple averages, ratio to moving average, ratio to trend and link relative methods, measurement of cyclical fluctuations (excluding periodogram analysis).

Book Recommended:

1. Goon, A.M., Gupta, M.K. and Dasgupta, B., Fundamentals of Statistics, Vol.-II, World Press, 2005.
2. Medhi, J., Statistical Methods. New Age International Publishers, 2000.
3. Nagar, A.L. and Das, R.K., Basic Statistics, Oxford University Press, 2005.
4. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

SEMESTER–VI

STATISTICS

PAPER–II: VITAL STATISTICS AND INDUSTRIAL STATISTICS

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

Vital statistics, data for vital statistics, rate of vital events, measurement of mortality, crude, specific and standardized death rates, cause of death, infant Mortality. Fertility rates. Measurement of fertility, crude birth rate, general fertility rate, age specific fertility rate, general and total fertility rates. Measurement of population growth, growth reproduction rate and net reproduction rate.

Section–B

Statistical quality control: chance and assignable causes, process and product control, the techniques of control charts for process control, three sigma limits and specification limits. Schewharts Control charts for mean, S.D. and Range, Control Chart for number of defective and fraction defective, control charts for number of defects. Advantages of process control, sampling inspection by attributes for product control, the concept of producer's and consumer's risks, AQL, LTPD, AOQL, ASN, ATI and OC functions and curves, single and double sampling plans and their properties.

Book Recommended:
1. Goon, A.M., Gupta, M.K. and Dasgupta, B., Fundamentals of Statistics, Vol.-II, World Press, 2005.
2. Medhi, J., Statistical Methods. New Age International Publishers, 2000.
3. Nagar, A.L. and Das, R.K., Basic Statistics, Oxford University Press, 2005.
4. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Sciences)

SEMESTER–VI

APPLIED STATISTICS

PAPER–I: SAMPLING THEORY AND ECONOMIC STATISTICS

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

Introduction to design of sample surveys, census and sample surveys, basic principles of sample surveys, planning a sample survey, sampling and non sampling errors.

Simple random sampling (WR and WOR) and its results, estimation of mean: its mean and variance and its estimate, and estimation of proportion: its mean and variance, stratified random sample (WOR): estimation of mean: its mean and variance and its estimate (under WOR), proportional. Neyman and optimum allocations.

Section–B

Introduction of Index numbers: Index numbers-as weighted average, Laspyeres, Passche's Drobish-Bowley, Waslsh, Marshal- Edgworth and Fisher's formulae for index numbers, Quantity index numbers, Tests for the ideal index numbers. Chain index number. Introduction of Time series: The four components of a time series, moving average, the Slutsky-Yule effect, determination of trend by curve fitting and moving average methods. Determination of seasonal variation.

Books Recommended:
1. Goon, A.M. Gupta, M.K. and Dasgupta: Fundamental of Statistics, Vol. II, World Press, 2005.
2. Medhi, J. Statistical Methods: An Introductory Text, New Age International Publications, 2000.
3. Nagar, A.L. and Das, R.K. Basic Statistics, Oxford University Press, 2005.
4. Gupta, S.C. and Kapoor, V.K. Applied Statistics, Sultan Chand and Company, 2007.

SEMESTER–VI

APPLIED STATISTICS

PAPER–II: INDUSTRIAL STATISTICS

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

Statistical quality control: chance and assignable causes, process and product control, the techniques of control charts for process control, three sigma limits and specification limits. Schewharts Control charts for mean, S.D. and Range, Control Chart for number of defective and fraction defective, control charts for number of defects. Advantages of process control, sampling inspection by attributes for product control, the concept of producer's and consumer's risks, AQL, LTPD, AOQL, ASN, ATI and OC functions and curves, single and double sampling plans and their properties.

Section–B

Vital statistics, data for vital statistics, rate of vital events, measurement of mortality, crude, specific and standardized death rates, cause of death, infant Mortality. Fertility rates. Measurement of fertility, crude birth rate, general fertility rate, age specific fertility rate, general and total fertility rates. Measurement of population growth, growth reproduction rate and net reproduction rate.

Book Prescribed:

1. Goon, A.M. Gupta, M.K. and Dasgupta: Fundamental of Statistics, Vol. II, World Press, 2005.
2. Medhi, J. Statistical Methods: An Introductory Text, New Age International Publications, 2000.
3. Nagar, A.L. and Das, R.K. Basic Statistics, Oxford University Press, 2005.
4. Gupta, S.C. and Kapoor, V.K. Applied Statistics, Sultan Chand and Company, 2007.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Sciences)

SEMESTER–VI

CHEMISTRY

ORGANIC CHEMISTRY– IV
(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. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed 1/3rd the page. Each question will be carrying one mark. **8 X 1 = 8 Marks**
Part–B :-
It shall consist of three sections (Section 1, II & III). It shall consist of 9 questions (Q. Nos. 9 to 17) from the entire syllabus. Each question 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 will be carrying 4½ marks.
6 X 4½ = 27 Marks

Section–I

1. Spectroscopy **(15 hrs.)**
Nuclear Magnetic Resonance (NMR) spectroscopy.
Proton Magnetic Resonance (1H NMR) spectroscopy,
nuclear shielding and deshielding, chemical shift and molecular structure, spin-spin splitting and coupling constants, areas of signals, interpretation of PMR spectra of simple organic molecules such as ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromoethane, ethyl acetate, toluene and acetophenone.

2. Electromagnetic Spectrum: Absorption Spectroscopy
Ultraviolet (U.V.) absorption spectroscopy introduction- (Beer-Lambert law), molar absorptivity, analysis of UVspectra, types of electronic transitions effect of conjugation. Concept of chromophores and auxochrome, Bathochrome, hypsochrome, hyperchrome, hypochromic shifts-UV spectra of conjugated compounds, Infrared (IR) Absorption spectroscopy-introduction, Hooke's law, Selection rules, intensity and IR bands, measurement of IR spectrum time characteristic absorption of various fundamental band interpretation of IR spectra of simple organic compounds.

Section–II

3. Problems based on spectroscopy (4 Hrs.)

Problems pertaining to the structure elucidation of simple organic compounds using UV, IR and PMR spectroscopic techniques.

4. Organosulphur Compounds (3 Hrs.)

Nomenclature, structural features, Methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine.

5. Synthetic Polymers (4 Hrs.)

Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers.

Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes. Natural and synthetic rubbers.

6. Organic Synthesis *via* Enolates (4 Hrs.)

Acidity of α-hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.

Alkylation of 1,3-dithianes. Alkylation and acylation of enamines.

Section–III

7. Carbohydrates (8 Hrs.)

Classification and nomenclature. Monosaccharides, mechanism of osazone formation, interconversion of glucose and fructose, chain lengthening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threo diastereomers. Conversion of glucose into mannose. Formation of glycosides, ethers and esters. Determination of ring size of monosaccharides. Cyclic structure of D(+)-glucose. Mechanism of mutarotation.

Structures of ribose and deoxyribose

An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.

8. Amino Acids, Peptides, Proteins and Nucleic Acids (7 Hrs.)

Classification, structure and stereochemistry of amino acids. Acid-base behaviour, isoelectric point and electrophoresis. Preparation and reactions of α-amino acids.

Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid-phase peptide synthesis. Structures of peptides and proteins. Levels of protein structure. Protein denaturation/renaturation.

Nucleic acids : Introduction. Constituents of nucleic acids. Ribonucleosides and ribonucleotides. The double helical structure of DNA.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI
CHEMISTRY

PHYSICAL CHEMISTRY–IV
(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. Nos. 1 to 8) from the entire syllabus and the maximum length of each question may not exceed 1/3rd the page. Each question will be carrying one mark. **8 X 1 = 8 Marks**

Part–B :-
It shall consist of three sections (Section 1, II & III). It shall consist of 9 questions (Q. Nos. 9 to 17) from the entire syllabus. Each question 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 will be carrying 4½ marks.

6 X 4½ = 27 Marks

Section–I

1. Quantum Mechanics-I **(15 hrs.)**

Black-body radiation, Planck's radiation law, Photoelectric effect, heat capacity of solids, Bohr's model of hydrogen atom (no derivation) and its defects, Compton effect.

de Broglie hypothesis, Heisenberg's uncertainty principle, Sinusoidal wave equation, Hamiltonian operator, Schrodinger wave equation and its importance, physical interpretation of the wave function, postulates of quantum mechanics, particle in a one dimensional box, quantization of energy levels, extension to two and three dimensional boxes, degeneracy.

Section–II

2. Quantum Mechanics-II **(15 hrs.)**

Simple harmonic oscillator model of vibrational motion, setting up Schrodinger equation and discussion of solution and wave functions. Rigid rotator model of rotation of diatomic molecules transformation to spherical polar coordinates spherical harmonics and their discussion. Qualitative investigation H-atom, setting up Schrodinger equation, radial and angular part, radial distribution functions of 1s, 2s, 2p, 3s, 3p and 3d.

Section–III

3. Solid State **(8 Hrs.)**

Definition of space lattice and unit cell, Law of crystallography- (i) Law of constancy of interfacial angles, (ii) Law of rationality of indices, (iii) Symmetry elements in crystals.

X-ray diffraction by crystals. Derivation of Bragg's Law in Reciprocal space. Determination of crystal structure of NaCl, KCl by use of Powder method; Laue's method.

4. Photochemistry **(7 Hrs.)**

Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry: Grothus–Drapper law, Stark–Einstein law, Jablonski diagram depicting various processes occurring in the excited state, qualitative description of flourescence, phosphorescence, non–radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions–energy transfer processes (simple examples).

SEMESTER–VI

CHEMISTRY

(PRACTICAL)

Duration 3½ Hrs. **6 Period/week**
M. Marks: 30

(I) Organic Chemistry Laboratory Techniques

(a) Column Chromatography

Separation of o & p nitrophenol
Separation of Leaf pigments from Spinnach leaves
Separation of o & p nitro aniline
Separation of dyes.

(b) Synthesis of Organic Compounds

Preparation of p-nitroacetanilide
Preparation of p-bromoacetanilide
Green Chemistry Experiment: Preparation of benzilic acid from Benzyl-using green approach.
Preparation of Methyl Orange, Methyl Red
Preparation of benzilic acid from benzyl-using green approach

Practical Examination

1)	Column Chromatography	07
2)	Organic Synthesis	16
3)	Viva-Voce	04
4)	Note Book	03

Books Suggested (Theory Courses)

1. Basic Inorganic Chemistry, F.A. Cotton, G. Wilkinson and P.L. Gaus, Wiley.
2. Concise Inorganic Chemistry, J.D. Lee, ELBS.
3. Concepts of Models of Inorganic Chemistry, B. Douglas, D. McDaniel and J. Alexander, John Wiley.
4. Inorganic Chemistry, D.E. Shriver, P.W. Alkins and C.H. Langford, Oxford.
5. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
6. Inorganic Chemistry, A.G. Sharpe, ELBS.

7. Inorganic Chemistry, G.L. Miessler and D.A. Tarr, Prentice Hall.
8. Organic Chemistry, Morrison and Boyd, Prentice-Hall.
9. Organic Chemistry, L.G. Wade Jr. Prentice-Hall.
10. Fundamentals of Organic Chemistry, Solomons, John Wiley.
11. Organic Chemistry Vol. I, II & III, S.M. Mukherji, S.P. Singh and R.P. Kapoor, Wiley Eastern Ltd. (New Age International).
12. Organic Chemistry, F.A. Carey, McGraw-Hill, Inc.
13. Introduction to Organic Chemistry, Sireitwieser, Heathcock and Kosover, Macmilan.
14. Physical Chemistry, G.M. Barrow, International Student Edition, McGraw Hill.
15. Basic Programming with Application, V.K. Jain, Tata McGraw Hill.
16. Computers and Common Sense, R. Hunt and Shelly, Prentice Hall.
17. University General Chemistry, C.N.R. Rao, Macmillan.
18. Physical Chemistry R.A. Alberty, Wiley Eastern Ltd.
19. The Elements of Physical Chemistry, P.W. Atkins, Oxford.
20. Physical Chemistry Through Problems, S.K. Dogra and S. Dogra, Willey Eastern Ltd.

Books Suggested (Laboratory Courses)

1. Vogel's Qualitative Inorganic Analysis, revised, Svehla, Orient Longman.
2. Vogel's Textbook of Quantitative Inorganic Analysis (revised), J. Bassett, R.C. Denney, G.H. Jeffery and J. Mandham, ELBS.
3. Standard Methods of Chemical. Analysis, W.W. Scott: The Technical Press.
4. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
5. Handbook of preparative Inorganic Chemistry, Vol. I & II, Brauer, Academic Press.
6. Inorganic Synthesis, McGraw Hill.
7. Experimental Organic Chemistry, Vol. I & II, P.R. Singh, D.S. Gupta and K.S. Bajpai, Tata McGraw Hill.
8. Laboratory Manual in Organic Chemistry, R.K. Bansal, Wiley Eastern.
9. Vogel's Textbook of Practical Organic Chemistry, B.S. Furniss, A.J. Hannaford, V. Rogers, P.W.G. Smith and A.R. Tatchell, ELBS.
10. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
11. Experiments in Physical Chemistry, R.C. Das and B. Behra, Tata McGraw Hill.
12. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.
13. Advanced Experimental Chemistry, Vol. I, Physical, J.N. Guru and R. Kapoor, S. Chand & Co.
14. Selected Experiments in Physical Chemistry, N.G. Mukherjee, J.N. Ghosh & Sons.
15. Experiments Physical Chemistry, J.C. Ghosh, Bharati Bhavan.

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SEMESTER–VI

PHYSICS

PAPER–A: NUCLEAR PHYSICS
(THEORY)

Time: 3 Hours **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

I. Nuclear Properties: Constituents of nucleus, non-existence of electrons in nucleus, Nuclear mass and binding energy, features of binding energy versus mass number curve, nuclear radius, angular momentum and parity, qualitative discussion of two-body nuclear forces, nuclear moments, magnetic dipole moment and electric quadruple moment.

UNIT–II

II. Radioactive decays: Modes of decay of radioactive nuclides and decay Laws, chart of nuclides and domain of instabilities, radioactive dating, constituents of Cosmic rays, Beta decays: β^-, β^+ and electron capture decays, allowed and forbidden transitions (selection rules), parity violation in β decay, Alpha decay : Stability of heavy nuclei against beak up, Geiger-Nuttal law, barrier penetration as applied to alpha decay, reduced widths, deducing nuclear energy levels, Gamma transitions : Excited levels, isomeric levels, Gamma transitions, multipole moments, selection rules, transitions probabilities, internal conversion (IC), determination of multipolrity from γγ-correlation and IC measurements.

UNIT–III

III. Nuclear reactions: Types of nuclear reactions, reactions cross section, conservation laws, Kinematics of nuclear reaction, Q-value and its physical significance, compound nucleus.

UNIT–IV

IV. Nuclear Models: Liquid drop model, semi-empirical mass formula, condition of stability, Fermi gas model, evidence for nuclear magic numbers, Shell Model, energy level scheme, angular momenta of nuclear ground states.

TUTORIALS: Relevant problems on the topics covered in the course.

Reference Books:

1. Basic Ideas and Concepts in Nuclear Physics by K. Hyde
2. Introduction to Nuclear Physics : H.A. Enge
3. Nuclear Physics : I. Kaplan (Addison Wesley)
4. Nuclei and Particles by E. Segre

SEMESTER–VI

PHYSICS

PAPER–B: PARTICLE PHYSICS
(THEORY)

Time: 3 Hours **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

I. Interaction of radiation and charged particles with matter: Energy loss of electrons and positrons, Positrons annihilation in condensed media, Sopping power and range of heavier charged, derivation of Bethe-Bloch formula, interaction of gamma rays with matter.

UNIT–II

II. Nuclear radiation detection: Gas-filled detectors, proportional and Geiger-Mueller counters, Scintillation detectors, solid-state detectors, Cherenkov effect, calorimeter-electromagnetic and hadron, specialized detectors, solid state nuclear track detectors, bubble chambers, nuclear emulsions.

UNIT–III

III. Accelerators: Accelerators, linear accelerators, cyclic accelerators, ion sources, focussing stability, electron synchrotron, colliding beam machines, particle beams for fixed target experiments, CERN Super Proton Synchrotron (SPS) and Fermilab Tevatron

UNIT–IV

IV. Elementary Particles: Historical introduction, fermions and bosons, particles and antiparticles, Classification of particles, types of interactions, electromagnetic, weak, strong interactions, gravitational interactions, Quantum numbers and conservation laws, isospin, charge conjugation, Yukawa theory, Introduction to quarks and qualitative discussion of the model, high energy physics units.

TUTORIALS: Relevant problems on the topics covered in the course.

Reference Books:

1. Basic Ideas and Concepts in Nuclear Physics by K. Hyde
2. Introduction to Nuclear Physics : H.A. Enge
3. Nuclear Physics : I. Kaplan (Addison Wesley)
4. Nuclei and Particles by E. Segre
5. Introduction to High Energy Physics by D.H. Perkins
6. Elementary Particles by I.S. Hughes

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI

PHYSICS

(PRACTICAL)

Marks: 30

General Guidelines for Practical Examination:

I. The distribution of marks is as follows :

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.

List of Experiments

i. To trace the B-H curves for different materials using CRO and find the magnetic parameters from these

ii. To study the stabilization of output voltage of a power supply with Zener diode.

iii. To draw output and mutual characteristics of an FET (Experiments) and determine its parameters.

iv. To set up an oscillator and to study its output on CRO for different C values.

v. To draw the plateau of a GM counter and find its dead time.

vi. To study the statistical fluctuations and end point energy of beta particles using GM counter.

vii. To study the absorption of beta particles in aluminium using GM counter and determine the absorption coefficient of beta particles from it.

viii. To study the characteristics of a thermistor and find its parameters.

ix. To study the response of RC circuit to various input voltage (square, sine and triangular).

SEMESTER–VI

B.SC. GEOGRAPHY (GEOPHYSICS)

GEOPHYSICS–II

(NUCLEAR GEOPHYSICS)
(THEORY)

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

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.

Section–A

Basic Concepts about the Atom and the Nucleus:
Nuclear size and measurements, Nuclear properties, Radioactive disintegration, Radioactive series and Equilibrium, Nuclear reactions, Artificial Radioactivity, Units of Radioactivity.

Section–B

Interaction of Radiation with matter:

Interaction of charged particle with matter, Stopping power, Energy loss of a heavy charged particle in matter, Interaction of gamma rays with matter, Photoelectric effect, Compton effect and Pair Production process.

Section–C

Radiation Sources and Detectors:

Alpha Radiation Sources, Beta Radiation Sources, Gamma Radiation Sources, Isotopic X-ray sources, Neutron Sources, Radiation Detectors viz. Ionisation Chamber, Proportional counter, Geiger Muller Counter, Scintillation Detectors, Semiconductor Detectors and Neutron Detectors.

Section–D

Radioactivity of Rocks and Ores:

Radioactivity of igneous rocks, Radioactivity of sedimentary rocks, Radioactivity of Soil, Radioactivity of air, Radioactivity of water, Radioactive Minerals and Ores, Uranium and Thorium occurrence in India.

References:

1. Geophysical Methods in Geology by P.V. Sharma. Elsevier Science Publishing Company, New York.
2. Applied Geophysics by W.M. Telford, L.P. Geldart, R.E. Sheriff and D.A Keys. Cambridge University Press Cambridge, New York.
3. Principles and Method of Nuclear Geophysics by Bhimasankaram. Venkat Rao, Srirama Murti and Savenko Published by Association of Exploration Geophysicists, Center of Exploration Geophysics, and Osmania University Hyderabad, India.
4. Principal and Methods of Nuclear Geophysics by Bhimasankaram, Venkat Rao, Sriramamurti and Savenko. Published by Association of Exploration Geophysicists, Center of Exploration Geophysics, and Osmania University Hyderabad, India.
5. Radiometric Methods of Exploration by VLS Bhimasankaram.

SEMESTER–VI

B.SC. GEOGRAPHY (GEOPHYSICS)

FIELD TRAINING

Marks: 30

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI

HOME SCIENCE

FOODS AND NUTRITION & CHILD DEVELOPMENT
(THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Periods: 6 Hrs./week **Theory Marks: 60**
Practical Marks: 30
Internal Assessment: 10

Instructions for the Paper Setters:

The question paper will consist of five sections A, B, C, D & E. Section A, B, C, D will have two Questions from the respective sections of the syllabus and will be of 12 marks each. Section E will consist of short type questions covering the entire syllabus uniformly and will be of 12 marks.

Instructions for the Candidates:

Candidates are required to attempt one question each from section A, B, C, D and section E is compulsory

Section–A

1. **Food Adulteration:**
   i) Definition
   ii) Common Adulteration
   iii) Food standards

2. Concept of balanced diet.

3. Classification of food based on the five/seven food groups.

4. Principles of Meal planning.

   a) Planning of Balanced Diets for the Middle Income Group for the following:

   i) Pre-school children
   ii) School going
   iii) Adolescents
   iv) Adult-male and female (only moderate worker)
   v) Old age
   vi) Pregnancy
   vii) Lactation

Section–B

5. **Therapeutic Diets & Modification of Normal Diets:**
   a) Principles of Therapeutic Diets
   b) Concept of Soft, Bland, Liquid Diets with examples.

6. **Therapeutic diets in the following conditions with principles involved:**
   a) Fever
   b) Constipation
   c) Diarrhea
   d) High Blood Pressure/Hypertension
   e) Diabetes Mellitus

Section–C

7. **Social Development:**
   a) Stages of Social Development
   b) Pattern of Social Development
   c) Role of Family and School in the Development of the Child.

8. **Play:**
   a) Significance of Play
   b) Types of Play
   c) Play Materials/Equipment required for various age group.
9. Common Behavior Problems and their Remedies–Bed Wetting, Thumb Sucking, Nail Biting, Temper-Tantrums.

Section–D

10. **Pregnancy:**
    a) Signs and Symptoms of Pregnancy
    b) Discomforts
    c) Complications
    d) Care During Pregnancy
    e) Methods of Family Planning in Brief
11. **Pre Natal Development:**
    a) Stages of Pre Natal Development
    b) Factor Affecting Pre Natal Development

12. **Feeding of the Infant**
    a) Importance and Process of Breast Feeding
    b) Bottle Feeding
    c) Weaning
    d) Important Weaning Foods
    e) Importance of Weaning

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SEMESTER–VI

HOME SCIENCE

FOODS AND NUTRITION

(PRACTICAL)

Time: 3 Hours **Max. Marks: 40**
Teaching: 6 Periods/week **Practical Marks: 30**
Int. Ass. Marks: 10

Note: One Group will consist of 15 Students.

1. Planning Calculation of Calories, Proteins, Fats and Carbohydrates. Preparation of diets for the following:
   a) Pre-School child
   b) School going/packed lunch
   c) Adolescence
   d) Adult (Man & Woman) moderate worker pregnancy and lactation diets.
2. Cooking and serving of the following: Invalid cookery: soft, liquid, fluid diets.
3. Low calories recipe (five)
4. Low cost recipe (five)
5. Enhancing Nutritive value (five).

List of Books:

1. Applied Nutrition, R. Rajalakshmi, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Principles of Nutrition-Dietetics, Dr. M. Swaminathan, The Bangalore Printing and Publishing Co. Ltd., 88, Mysore Road, Bangalore.
3. Food & Nutrition, By Educational Planning Group, Arya Publishing House, Karol Bagh, New Delhi-5.
4. Normal and Therapeutic Nutrition, By Corinne H. Robinson, Marlya R. Lowler Macmillan Publishing Co., New York, Collier Macmillan Publishers, London.

5. Nutritive Value of Indian Foods:

   C. Copalen B.V.

   Rama Sastri S.C.

   Balasubramaniam

   National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, India.

List of Books Recommended for Child Development

1. Human Development, Graing J. Graig, Fifth edition, 1989, Prentice Hall, Englewood Cliffs, New Jersey, 07632.
2. The Modern Parents Guide to Baby and Child Care–Violet Broadribb, R.N.H.S. & Henry F, Loe, M.E. 1973, Macdonald's London.
3. Good House Keeping' Baby V Book–The Good Housekeeping, 12th ed., 1959.
4. These are your children–Dadys Gardner Jenkins and Helen Shacter, 4th ed. Scott. Foresman and Co. Glenview Illinios.

SEMESTER–VI

COSMETOLOGY (VOCATIONAL)

(THEORY)

Time: 3 hrs. **Max. Marks: 100**
Periods/Week: 4 **Theory Marks: 35**
Practical Marks: 50
College Lab Training Marks: 15

Instructions for the Paper Setters:

Note: There will be 2 sections.

Section–A: It will consist of 5 short type questions, and candidate will be required to attempt 3 of them. Each question carry 5 marks each.
Section–B: It will consist of 4 essay type questions, and candidate will be required to attempt 2 of them. Each question carries 10 marks each.

Note: Lab training should be taken in college cosmetology lab. And report with picture profile should be submitted by each student with the remarks of lab instructor.

COURSE CONTENTS:

1. **Salon Management**
   a) Salon Planning
   b) Types of Salon Ownership
   c) Record Keeping
   d) Types of Services Offered, Types of Employers
   e) Professional Ethics as an employee, co-worker, as an operator

2. **Safety Precautions**
   a) Health and safety risk
   b) Accidents due to chemicals, electric equipments, services
   c) Consultation
   d) Emergency Procedure
   e) First Aid in Salon

3. **Chemical Treatment of Hair**
   a) Permanent waving Procedure with the knowledge of hair porosity
   b) Classification of hair colouring: Application of temporary hair colour, semi-permanent hair colour and permanent hair colour

SEMESTER–VI

COSMETOLOGY (VOCATIONAL)

(PRACTICAL)

Time: 4 Hrs. **Marks: 50**
Periods/Week: 6

1. Wigs and hair pieces

a) Wig materials

b) Wig Construction

c) How to attach hair pieces?

d) How to clean and care for and hair pieces?

2. Hair Colouring

a) Understanding colour

b) International colour code

c) Knowledge and Usage of Permanent Hair colour

d) Highlightening Procedure

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SEMESTER–VI

CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)

ADVANCED DIETETICS AND CLINICAL NUTRITION (THEORY)

Time: 3 Hours **Max. Marks: 100**
Periods/Week: 6 **Theory Marks: 60**
Practical Marks: 40

Instructions for the Paper Setters:
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 (12 marks for each)
4. Question 1 is compulsory. Which contains short answer type question.

Objectives:
1. To provide knowledge about different diseases & dietery modifications

Content:
1. Role of dietician in hospital & community
2. Basic concepts of diet therapy.
3. Therapeutic adaptation the normal diet.
4. Routine hospital diets, light diet, soft diet, full Liquid diet & tube feeding.
5. Modifications of diet, surgical conditions
6. Feeding infants & children-problems in feeding children in hospitals.
7. Nutrient and drug interaction–Effect of drug therapy on intake, absorption and utilization of nutrients.

8. Diets in Fever and Infections–Types, metabolism in fevers, general dietary considerations in
   a. Influenza
   b. Typhoid
   c. Recurrent Malaria
   d. Tuberculosis

9. Diets during disorders of G.I.T. Etiology, Symptoms and treatment and dietary modifications
   a. Peptic ulcers
   b. Diarrhea & Constipation Etiology, Symptoms and treatment and dietary modifications.

10. Diet in disturbances of small intestines and colon–Effect on digestion, absorption and nutritional

11. status and dietary treatment in:-
    a. Flatulence
    b. Ulcerative colitis–symptoms and dietary treatment
    c. Sprue - Coeliac diseases
    d. Lactose intolerance–dietary treatment

12. Diet in diseases of liver, Gall Bladder pancreas–Etiology, symptoms, metabolic nutritional

13. Implication and dietary treatment in:-
    a. Jaundice
    b. Hepatitis
    c. Cirrhosis of liver and hepatic coma
    d. Dietary treatment in cholecystites, and pancreatitis.

14. Diet in diabetes Mellitus–In born defects of metabolism, incidence and predisposing factors
15. Symptoms and Types, Metabolism in diabetes, dietary treatment and meal management.
16. Hypoglycemia Agents insulin and its type. Complications of diabetes.
17. Diet in Renal diseases–

18. Basic renal functions, Symptoms and dietary treatment in:-
    a. Acute and chronic glomeriulonephritis and nephrosis.
    b. Urinary calculi-causes, treatment, acid and alkali producing and neutral foods and dietary

19. Treatment.

20. Diets and cardiovascular diseases–Etiology and symptoms and role of nutrition in :
    a. Arthrosclerosis
    b. Hypertension
    c. Hyperlipidemia

21. Dietary treatment and management of the above.
22. Gout–Nature and occurrence of uric acid, causes, symptoms and dietary management.
23. Obesity

References:

1 Nutritive Value of Indian Foods, Gopalan, et.al., National Institute, 1984.
2. Nutririon in Health & Disease, Aderson Linnea, Toronto Lippincot, 1982.
3. Clinical Dietetics & Nutrition, Anita, FP. Delhi Oxford, University Press, 1998.
4. Nutrition and Diet Theraphy, Lutz, Carrolla, Philadelphia Fa Davis Co., 2001.
5. Kraiss Food Nutrition & Diet Therapy, Mohan, L.K. and Escotts, Philadelphia WB Saun DERS, 2000.

SEMESTER–VI

CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)

ADVANCE DIETETICS AND CLINICAL NUTRITION (PRACTICAL)

Time: 3 Hours **Marks: 40**
Periods: 6/week

1. Planning, Calculating and Preparation of diets for:–

a) Febrile
b) Diarrhea
c) Constipation
d) Gastritis, celiac disease, lactose & gluten intolerance
e) Peptic Ulcer
f) Obesity
g) Liver disease
h) Diabetes
i) Atherosclerosis
j) Hypertension
k) Kidney diseases
l) Cancer
m) Gout

Note: Students are required to go 15 days hospital Training after 6 Semester & submit a report to get final detail marks.

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SEMESTER–VI

FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)

HISTORY COSTUMES OF INDIA & WORLD–II
(THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Periods/week: 4 **Theory Marks: 40**
Practical Marks: 50
Internal Assessment: 10

General Instructions for the paper Setter:
The question paper consists of eight questions, out of which student will attempt five.
All questions carry equal marks.

1. **Historic Costumes of India and World:**
   a) Rome
   b) Asiatic
2. **Traditional Costumes of the following States of India:**
   a) Gujarat
   b) Manipur
   c) Bengal
   d) Kerela
   e) Karnataka
3. **Traditional Textiles of India:**
   a) Irkal & Paithani of Maharashtra
   b) Pochampali of Andhra Pradesh
   c) Sanganeri prints of Rajasthan
   d) Kanchipuram sarees of Tamil Nadu

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SEMESTER–VI

FASHION DESIGNING AND GARMENT CONSTRUCTION (VOCATIONAL)

ADVANCE DESIGNING, CONSTRUCTION & DRAPING–II
(PRATICAL)

Time: 4hrs. **Max. Marks: 60**
Periods/Week: 2x6 **Practical Marks: 50**
Internal Assessment: 10

Part–I

Design Draft and Construct following:

1. Jacket/ Coat.
2. Evening Gown/ Formal Indian Dress.

Part–II

1. Draping of Skirt Block Front.
2. Draping of Skirt Block Back

General Instructions to the Paper Setter:

1. Design any one garment from syllabus on paper bag–Front & back, Adaptation to be made from sloper, Cutting & Placement, Construction and finishing of garment. **Marks: 35**

2. Draping of any block . **Marks: 15**

Note: Please send the material list.

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SEMESTER–VI

EARLY CHILDHOOD CARE AND EDUCATION (THEORY)

Time: 3 Hrs. **Max. 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.

Course Contents:

Community Outreach Programmes

- Parent and community involvement
- Preschool teacher education in India
- NCTE courses for teachers education in early childhood education
- Pre-primary teacher education curriculum
- Women nurtures and care takers
- Parent participation in school

Issues related to Early Childhood Care and Education

- Global issues and specific issues related to India
- Growth and development of pre-school teachers education in India
- Government programmes
- National thrust in global context
- Professional training in childhood
- Future trends in early childhood care and education

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SEMESTER–VI

EARLY CHILDHOOD CARE AND EDUCATION (PRACTICAL)

Time: 3 Hrs. **Total Marks: 40**
Lectures/Week: 4

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

Distribution of marks for practical examination

Written Practical:	**10 Marks**
Class Performance:	**10 Marks**
Practical File:	**5 Marks**
Oral Examination:	**5 Marks**
Preparation of Activity Material:	**10 Marks**

Course Contents:

* Formation of PTA.
* Working out strategies for community involvement in ECE programmes
* Preparation of two play material from indigenous/waste products
* A visit to balwadi school for assessing the curriculum of children

References:

1. Swaminathan, Mina. The First Five Years: A critical perspective on Early Childhood Care and Education in India, Sage Publications, New Delhi.
2. Government of India 1986. A Guide Book for Anganwadi Workers, New Delhi: Department of Women and Child Development, Ministry of Human Resource Development.
3. Sciarray, D.A. and Dorsery, A.G. 1979. Developing and Administering a Child Care Centre, Hongliton Mifflin Company, Boston.
4. Desai, A.N. helping the Handicapped: Problems and prospects, APH Publishing Co., New Delhi
5. Grewal, J.S (1984) Early childhood education, Agra National Psychological corporation.
6. Guide to Activities in creative Drama and Puppetry, (1994) CHETNA (Gujarat).

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SEMESTER–VI

FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)

FSQC–11: FOOD PLANT LAYOUT & MANAGEMENT (THEORY)

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

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

PART–I

Importance of a plant layout selection of site and layouts of different food industries, selection of equipment, machinery and building material, selection and planning of manufacturing process and service facilities, maintenance and replacement, depreciation of machinery, management set up in a plant.

PART–II

Market and Consumer Research, Needs and types of Foods consumption trends. Economics; Psychological, Anthropological and Sociological dimensions of food consumption pattern.
Trends in social change and its role in diet pattern. Using social trends as a framework in new product innovation.
Food situation in India and outside. Trapping the unconventional post-harvest losses and prospects for food processing for export.

PART–III

Traditional foods-Status and need for revival in the context of westernized non-traditional foods, urbanisation and such factors.
Product Development: Primary Processing, Secondary Processing, Types of products e.g. Quick cooking, fast foods, fabricated food, convenience foods.

Recommended Books:

1. Principle of Food Sanitation by Marriott, 5th ed., 2006, CBS Publishers, New Delhi.
2. Food Processing Waste Management by Green JH and Kramer A, 1979, AVI Publishers, USA.
3. Food Science by Potter NN., 5th ed., 2006, CBS Publishers, New Delhi.

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SEMESTER–VI

FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)

FSQC–12: FOOD PLANT LAYOUT & MANAGEMENT (PRACTICAL)

Marks: 25

List of Practicals

1. Calculation of depreciation of machinery and processing costs.

2. Determination of B.O.D./COD.

3. Preparation of layout and process diagram of potato crisp manufacturing plant.

4. Preparation of layout and process diagram of Jam/Marmalade manufacturing plant.

5. Preparation of layout and process diagram of Bread making plant.

6. Preparation of layout and process diagram of a dairy industry.

7. Preparation of layout and process diagram of wine making unit.

8. Preparation of layout and process diagram of a modern slaughter house.

9. Preparation of layout and process diagram of a confectionary unit.

10. Determination of sanitary status of plant equipment.

11. Visit to various food industries.

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SEMESTER–VI

FINE ARTS (DRAWING & PAINTING)

(THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Theory Marks: 50
Practical Marks: 25 + 25

OUTLINES OF TEST

Note:

(a) 50 Marks for the theory paper and 25 marks for each practical.
(b) The question paper will cover the entire syllabus.
(c) Questions should be based on world famous painting and sculptures whose slides are easily available.
(d) Question paper should cover the syllabus uniformly.
(e) The paper setter should set the paper in two sections section A and B.
(f) The division of the marks will be as under:

Section A: 25 marks for 25 short answer 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. Compartment candidates in the subject of Fine Arts will appear only in theory paper during supplementary exam. Previous marks of practical paper will be considered for the aggregate.

Indian Painting:

1. Impact of British on Indian Art- Company School
2. Bengal School- Abanindranath Tagore
3. Contemporary Art- Rabindranath Tagore, Amrita Shergill, Jamini Rai
4. S. Sobha Singh, Dhanraj Bhagat, K.K. Hebbar, M.F. Hussain, Satish Gujral.
5. Kalighat Painting

SEMESTER–VI

FINE ARTS

(PRACTICAL–I)

LANDSCAPE PAINTING

Time: 5 Hrs **Marks: 25**

On the spot landscape painting**.** Emphasis should be given on perspective, Colour and its application in harmony.

Medium: Any medium

Size: ½ Imperial

SEMESTER–VI

FINE ARTS

(PRACTICAL–II)

FULL LIFE DRAWING

Time: 5 Hrs **Marks: 25**

Rendering of full life study should be done in any medium. Emphasis should be given to structure, volume, proportion, tones and texture.

Medium: Any medium

Size: ½ Imperial

Candidates will submit-

(i) 5 sheets of each paper

(ii) Sketch book containing 50 sketches.

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SEMESTER–VI

PAPER–A: HISTORY OF ART

Time: 3 Hours **Marks: 50**

Outlines of Test, Syllabi, and Courses of Reading:

Note: (a) The question paper should cover entire syllabus. It may contain very specific short answer questions.

(b) The paper-setter should set 15 questions in all. Students will attempt 10 questions of 5 marks each.

History of European Painting and sculpture from C. 1850 onwards-.

Impressionism & Post –Impressionism

Cubism

Expressionism

Abstract Expressionism

Surrealism

SEMESTER–VI

PAPER–B: HISTORY OF ART

Time: 3 Hours **Marks: 50**

Outlines of Test, Syllabi, and Courses of Reading:

Note: (a) The question paper should cover entire syllabus. It may contain very specific short answer questions.

(b) The paper-setter should set 15 questions in all. Students will attempt 10 questions of 5 marks each.

Theory and Principles of Art and its appreciation

.Aesthetic approach of the Indian and the Western Art

Terms-Form, Content

Abstraction in art

Realism and Naturalism

Functions of art.

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SEMESTER–VI

GEMOLOGY AND JEWELLERY DESIGN (THEORY)

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

1. Enameling
2. Chasing and Repouse
3. Flexible Shaft
4. Riveting

5 Sand Blasting

6. Lowering and Raising the Karat of Gold and process of Gold electroplating.

SEMESTER–VI

GEMOLOGY AND JEWELLERY DESIGN (PRACTICAL)

Marks: 50

1. Domestic Jewellery - 3 Final Designs
2. Export Jewellery -3 Final Designs
3. Exercise on:
   a) Chasing
   b) Repouse

Development of Bangles, Bracelets, Ring etc.

Through metals by using above techniques

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SEMESTER–VI

STILL PHOTOGRAPHY & AUDIO PRODUCTION (THEORY)

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

Instructions for the Paper Setters:

Total No. of questions to be set: 20
Total No. of questions to be attempted: 12
Question paper is divided in two parts.

Section–A: It will consist of 16 questions. Student will attempt 10 questions. Each question will carry three marks. **(Total: 30 Marks)**

Section–B: It will consist of 4 questions. Student will attempt any 2 question. Answer will carry ten marks. **(Total: 20 Marks)**

Course Contents:

1. Characteristics of sound wave and its propagation.
2. Acoustics, Echo, R.T. Decibels etc.
3. Quality of sound, Frequency reference, S.N rations distortions.
4. Directional response and polar diagram.
5. Factors governing the selection of mikes.
6. Types of cables and connectors and their uses.
7. Magnetic recording principles.
8. Tape recorders and playback machines.
9. Audio tapes.
10. Post production–Editing, sucking laying tracks.
11. Mixing of sound.
12. Monitoring.
13. Difference in the recording, editing and mixing for different media.
14. Sound recordists role in a production crew.

Suggested Readings:

Sr. No.	Book Name	Author
1.	Sound: A Question and Answer Book (Fact Finders)	Fiona Bayrock
2.	Audio Mastering: Essential Practices	Jonathan Wyner

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SEMESTER–VI

STILL PHOTOGRAPHY & AUDIO PRODUCTION

AUDIO VISUAL
(PRACTICAL)

Time: 6 Hours **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.
   Technical competence is expected. The students should also use updated and latest techniques in his/her work.
3. Photographs clicked during examination are supposed to be submitted by the student in the form of C.D. or D.V.D. as desired by the examiner.

Instructions for the 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 Internal Examiner as per requirement.

Course Contents:

1. On slide editing tables.
2. Learn to operate the following equipment:-
   a) Audio Cassette Player
   b) Amplifier for Recording
3. Sound Recording
   a) Use of Microphone
   b) Cassette Player
   c) Cassette recording with synch
   d) Sound Mixer
   e) Amplifier Monitoring

4. Sound and Narration editing using the following equipment:-
   a) Cassette Player
   b) Cassette Recorder
   c) Amplifier
   d) Sound Making and Channel
   e) Operation of Slide Projector
   f) Sound Making & Channel
   g) Operation of Slide Projector
   h) Dissolve Units

Suggested Readings:

Sr. No.	**Book Name**	**Author**
1.	Sound: A Question And Answer Book (Fact Finders)	Fiona Bayrock
2.	Audio Mastering: Essential Practices	Jonathan Wyner

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SEMESTER–VI

COMMERCIAL ART

ART APPRECIATION AND 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: 15
2. No. of questions to be attempted: 10
3. The questions are to be equitably distributed among all the topics of the Syllabus.
4. Each question will carry 5 marks.

Course Contents:

a. Fine Screen
b. Mechanical Tint
c. Screen Size
d. Reverse
e. Negative, Positive
f. Bleach Out
g. Spatter
h. Over Size
i. Center spread
j. Bridging the Gutter
k. Cut Out Blue Tint
l. Half Tone Process
m. Doordarshan in Advertising
n. Art Director
o. Marketing Executive
p. Visualizer
q. Copywriter.

Suggested Readings:

Sr. No.	Book Name	Author
1.	Kleppner's Advertising Procedure	J.Thomas Russel/ Glen Verrill/ W. Ronald lane
2.	Advertising Principals & Practice VI Edition	William Wells, John burnett, Sandra Morianty
3.	Advertising Manager's Hand Book (Third Edition)	Stansfield

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SEMESTER–VI

COMMERCIAL ART

OUTDOOR CAMPAIGN: POSTER AND HOARDING (PRACTICAL)

Time: 6 Hours **Marks: 50**
Size: ½ Imperial
Medium: Poster Colours

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. Limited references while preparing Poster and Hoarding can be taken in case of a Commercial Topic. Logo and writing style of the existing company can be taken from any available source.
4. Any one of the above (Poster and Hoarding) is to be made by the students for the examination

Instructions for the Students:

1. Attendance in departmental seminars and extension lectures and college tours shall be obligatory for all students.
2. Size: As required

Course Contents:

Topics: Commercial Topics like Coca-Cola, Archies, NIFT, Fashion etc.
Educational topics like Donate Blood, Donate Eyes, Humanity Cause, Increase Educational Standards etc.

Suggested Readings:

Sr. No.	Book Name	Author
1.	Art of The Modern Movie Poster	Judith Salavetz, Spencer Drate & Sam Sarowitz
2.	Regular Graphic Design Today	Gestalten

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SEMESTER–VI

SCULPTURE

(THEORY)

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

Note:

1. The question paper should cover the entire syllabus.
2. The paper setter should set fifteen (15) questions in all and students shall attempt 10 ten questions.
3. The questions can be repeated from previous question paper.

Chapter – I:

Khajuraho Sculpture

- Introduction (Shiv Parvati, Apsaras Playing a Flute, Apsaras applying Collyrium to her eyes, Lady with a looking glass, mother & child, Lady writing a love Letter and General Note on Apsaras or sura Sundaries Sculptures)

Chapter – II:

Retrospective and Contemporary Indian Sculptors (Biography & their selected works)

1. **Ramkinker Baij**
   - Santhal Family,
   - Harvester,
   - Portait of Abanindranath Tagore
2. **D.P Roy chowdhary**
   - Triumph of Labour
   - Matrtyr's Memorial
   - Sculptor's Father (Potrait)
3. **Pradosh Dass Gupta**
   - Volume in three Masses
   - Jai Hind
   - Mother and Child
4. **Chintamoni Kar**
   - Skating the stage
   - Park Figure (1949)
   - Seated Figure (1960)

5. Dhanraj Bhagat

- Flute Player
- Three Women
- Cosmic Man

6. Sankho Chowdhary

- Women with Pitcher
- Standing Figure
- Mahatma Gandhi

7. Satish Gujral

- Deity Series (1990)
- Prayer (2000)
- The Crucification (1981)

SEMESTER–VI

SCULPTURE

(PRACTICAL)

Time: 6 Hrs **Marks: 50**

1. Terracotta Mural based on Birds, Flora and Fauna (Minimum Size I' x I' (Feet) Total No. work–1
2. Head study in clay, modeling from life head only in life size. This work should be produced in plaster of Paris/ cement. (Total No. of work–1)
3. Composition in round based on Human Figures/ Animals/ Birds. These work should be produced in P.O.P/ Fiber Glass/ Metal (Total No of work–1)

Books Recommended:

1.	History of Fine Arts in India and West	By Edith Tomory
2.	Indian Art (A concise History)	By Roy C Craven
3.	Satish Gujral (Selected works 1947–2000)	By Lalit Kala Akademi, New Delhi
4.	Indian Sculpture Today (1983)	By Jehangir Art Gallery Publication
5.	Bhartiya Murtikala ka Parichaya	By Bhim Singh Berval
6.	D.P Roy Chaudhary	By Lalit Kala , New Delhi (1973)
7.	Sankho Chaudhary	By Lalit Kala , New Delhi (1970)
8.	Ram Kunker Baij	By Lalit Kala , New Delhi (1961)
9.	Chintamani Kar	By Lalit Kala , New Delhi (1965)
10.	Prodosh Das Gupta	By Lalit Kala , New Delhi (1971)

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SEMESTER–VI

MUSIC (VOCAL)

(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. The paper setter will set **Eight** questions in all. The candidate may be asked to attempt any **Five** questions.
2. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
3. Candidate can take Tabla subject along with Music Vocal.

COURSE CONTENTS:

1. Historical Development of Indian Music during Modern Period.
2. Method of formation of 72 Thatas of Dakhani Music System of Pt. Vyankat Mukhi.
3. Short notes on the following terms:
   i) Sargam Geet ii) Lakshan Geet iii) Saadra iv) Raag-Malika.
4. Detailed knowledge of Gharans of Vocal Music .
5. Detailed description of the following Ragas:
   i) Jaunpuri ii) Kalavati iii) Rageshwari (with notations)
6. Detailed study of the following Talas:
   i) Ada-Char Taal ii) Dhammar.
7. Essay writings on the following Topics:
   i) Raag Aur Ras ii) Music & Literature
8. Life & Contribution of the following musicians:
   i) Girija Devi ii) Fayyaaz Khan iii) Sumati Mutatkar.
9. Role of devotional music in human life.
10. Contribution of Sri Guru Gobind Singh Ji towards Indian Music.

MUSIC (VOCAL)

(PRACTICAL)

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

Instructions for the Examiner:

(i) The Examiner will set practical paper on the spot.
(ii) There should not be more than ten students in a batch for practical examination.
(iii) The practical paper will be of 50 Marks for Private and Regular candidates.

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Jaunpuri, Kalavati, Rageshwari.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Bhajan in any of the Ragas prescribed in the course.
4. Ability to sing a Cinematic Song with the help of Harmonium.
5. Ability to recite Ada Chaar Taal, Dhammar showing Khali Tali with hand motion in Ekgun, Dhugan Lehkaris.
6. Aroh, Avroh and Pakar of Raga Asavari, Jansammohani, Bhageshwari.
7. Ability to play Teen-Taal on Tabla.
8. One Dhammar in any of the prescribed Ragas.

Books Recommended:

1. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
2. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
3. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
4. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
5. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
6. Sikh Dharam Ate Bhakti Sangeet, Dr. Jitender Kaur.
7. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.
8. Abhinav Geetanjali Pt. Ramashrya Jha I,II,III,IV,V.
9. Tantri Nada Pt. Lalmani Mishar.

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SEMESTER–VI

MUSIC (INSTRUMENTAL)

(THEORY)

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

1. Role of media in Indian Music.
2. Short notes of the following terms:
   Alap, Jod, Jhala, Jamjama, Murki
3. Life & contribution of the following Musicians:
   i) Nikhil Benerji (Sitar) ii) Panna lal Ghosh (Flute).
4. Formation of 72 Thatas by Pt. Vyankat Mukhi
5. Relation of Raga with Season & Time.
6. Detailed knowledge of Sahayak Nad.
7. Detailed description of the prescribed Raga:
   i) Mian Ki Todi ii) Rageshwari iii) Shudh Kalyan (with notations)
8. Comparative study of the following Pairs of Ragas:
   i) Mian Ki Todi – Gujri Todi
   ii) Bageshwari – Rageshwari
   iii) Bhopali – Shudh Kalyan
9. Detailed knowledge of the following Talas:
   i) Jhumra ii) Dhamar.
10. Salient features of Gurmat Sangeet.

SEMESTER–VI

MUSIC (INSTRUMENTAL)

(PRACTICAL)

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

1. Ability to play 10 Alankars in the Swaras of Bharaiv Thata.
2. One maseet khani Gat in any Raga prescribed in your course Mian Ki Todi, Rageshwari, Shudh Kalyan
3. Rajakhani Gat in each Raga.
4. Recite Jhumra & Dhamar Tal in Ekgun & Dugan Layakaries.
5. One Gat in Dhammar Style.
6. One Dhun based on folk Music.

Books Recommended:

10. Bharatiye Sangeet Ka Itihaas, Sharat Chandra Paranjpay.
11. Rag Parichya Part – I, II, and III by Shri Harish Chnder Srivastava.
12. Sangeet Shastra Darpan Part – II (Punjabi) published by Punjabi University, Patiala.
13. Sangeet Vishard Sangeet Karayalya, Hathras.
14. Sangeet Shastra Darpan Shanti Govardhan.
15. Hamare Sangeet Rattan Sangeet Karyalaya, Hathras.
16. Kramik Pustak Malika by Vishnu Narayan Bhathkhande.
17. Sangeet Nibandhavli, Dr. Gurnam Singh, published by Punjabi University, Patiala.
18. Sikh Dharam Ate Bhakti Sangeet, Dr. Jitender Kaur.
19. Gurmat Sangeet (Vishesh Ank) Amrit Kirtan Trust, 422, 15/A, Chandigarh.

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SEMESTER–VI

INDIAN CLASSICAL DANCE

(THEORY)

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

Instructions for the Paper Setters/Examiners:

1. The paper setter will set eight questions. The candidate may be asked to attempt five questions.

COURSE CONTENTS:

1. Detailed knowledge of Kuchipudi with its historical background, style, costume and music etc.
2. Abhinaya and its bhedas.
3. Guru – Shishya parampara.
4. Thumri in Kathak.
5. Indian and Western Dance.
6. Nayak – Nayika Bhedas.
7. Folk dances of Haryana.
8. **Notation of:**

(i) PANCHAM - SWARI - **15 MATRAS**

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

(ii) TEEN – TAAL - **16 MATRAS**

a) Tatkar in Ekgun, Dugun & Chougun Layakaries.
b) Thaat- 1
c) Amad-1
d) Salami-1
e) Damdar and Bedam Tehai - 1 - 1
f) Tora-2
g) Paran-1
h) Farmaishi Paran -1
i) Pramelu

9. Arh layakary in Teen – Taal.

10. Definition and Notation of following Taals in Ekgun, Dugun, Tigun and Chougun Layakaries.

(a) Teen Taal

(b) Pancham Swari

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SEMESTER–VI

INDIAN CLASSICAL DANCE
(PRACTICAL)

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

Instructions for the Examiners: The Examiner will set practical paper on the spot.
Instructions given to the examiners are as under:

1. There should not more than ten 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 of prescribed syllabus on the spot.
4. The practical paper will be of the 50 marks for the private & regular candidates.

COURSE CONTENTS:

1. PANCHAM SWARI TAAL (15 MATRAS)

a) Tatkar in Ekgun, Dugun and 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. TEEN TAAL (16 Matra)

a) Tatkar in Ekgun, Dugun & Chougun Layakaries.

b) Thaat-1

c) Amad-1

d) Salami-1

e) Damdar and Bedam Tehai - 1 - 1

f) Tora-2

g) Paran-1

h) Farmaishi Paran - 1

i) Pramelu

3. Padhant of all the Practical material in given Taals.
4. Padhant of all thekas in Dugun & Chougun Layakaries.
5. Kathak Choreography in Tarana.
6. Nagma in Teen Taal and Pancham Swari.

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 Pripekesh Mein Kathak Naritya, Maya Taak, Knishka Publishers, New Delhi, 2005.
4. Nibandh Sangeet, Laxmi Naryan Garg, Sangeet Karyalaya, Hathras, 2004.
5. Kathak Nritya Shiksha Part-I & Part II, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP)

SEMESTER–VI

TABLA

(THEORY)

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

1. Importance of Parant & its importance in Tabla.
2. Tabla as Solo Vadan.
3. Notation & description of the following Talas:
   - Mat Tal-Two Kayada, four Paltas with Tihaai, two Tukdas, two Parans, One Rella & Deepchandi with four Laggies, two Tukdas, two Tihaais
4. Give detail & comparison between the following:
   - Deepchandi-Dhamar, Jhumra-Ada Chaar Tal
5. Life Sketch & Contribution of the following Musicians:
   - Rimpa Shiva
   - Ustad Karamat Ulla Khan
6. Detailed Knowledge of structure & formation of Tabla.
7. Write an Essay on Rythem Emotion & Mood.
8. Detail knowledge of Percussion Instruments used in Gurmat Sangeet.

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 Muni Misher, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vishesht Sangeet Karyalaya Hathras, 1994.
6. Bhartiae Sangeet Mein Tal Aur Roop Vidhan: Dr. Subadra Chaudhary, Krishna Brothers Ajmer 1984
7. Tal Prakash Bhagwat Sharan Sharma Sangeet Karayaliae Haathras.
8. Tabla Vadan Kala Ki Technique Evam Saundriae Paksh. Sunita Srivastav-Anubhav Publication Allahabad.
9. Parmukh Tal Vadhya Pakhawaj Tatha Tabla Ki Vibhan Pramparaen Dr. Mohini Verma Anubhav Publication Allahabad.
10. Raag Parachiae Part I-IV Harish Chandar Srivastav Sangeet Karayalae Haathras.

SEMESTER–VI

TABLA

(PRACTICAL)

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

1. Taal Prescribed: Mat Tal & Deepchandi
2. Proper Bharat of Mat Tal-Two Kayada, four Paltas with Tihaai, two Tukdas, four Tihaais, two Parans, One Rella & Gat.
3. Ability to play Tal Deepchandi with four Laggies, two Tukdas, two Tihaais
4. Practical knowledge to play following Talas on Tabla & Pakhawaj:
   - Jhumra Tal
   - Ada Char Tal
   - Dhamar Tal
5. Tuning of Tabla
6. Playing of all the prescribed Talas with Vocal & Instrument performance as well as Solo item

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 Muni Misher, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Rattan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vishesht Sangeet Karyalaya Hathras, 1994.
6. Bhartiae Sangeet Mein Tal Aur Roop Vidhan: Dr. Subadra Chaudhary, Krishna Brothers Ajmer 1984
7. Tal Prakash Bhagwat Sharan Sharma Sangeet Karayaliae Haathras.
8. Tabla Vadan Kala Ki Technique Evam Saundriae Paksh. Sunita Srivastav-Anubhav Publication Allahabad.
9. Parmukh Tal Vadhya Pakhawaj Tatha Tabla Ki Vibhan Pramparaen Dr. Mohini Verma Anubhav Publication Allahabad.
10. Raag Parachiae Part I-IV Harish Chandar Srivastav Sangeet Karayalae Haathras.

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SEMESTER–VI

COMPUTER SCIENCE

INFORMATION TECHNOLOGY
(THEORY)

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

Instructions for the Paper Setters:-

Note: (i) In theory eight questions are to be set in all. The candidates are required to attempt five of them. All questions are to be equal marks.
(ii) The maximum marks for the paper is 75.
(iii) As per as possible except in the Computer language papers no programme may be asked in theory papers. Emphasis should be on algorithm development.

UNIT–I

Data & Network Communication:
Communication media: Twisted pair, Coaxial, Fibre optics, Wireless(Line of Sight & Satellite), Network Advantages, Types & Topologies, Communication using Network protocol/Network Interface card(NP/NIC), Transmission & Communication protocol/protocol(TCP/IP), Moderns, Types of Operating systems: Multiuser, Multitasking & Multiprogramming and their examples.

UNIT–II

Information Systems:
Introduction to IT & its components, What is Information systems, Computer based information systems, Management Information System, Decision Support System, Expert System, Functional Information System, Open Information System, Transaction Processing System, System Development Process & System development Tools. Internet basics, Its uses and Applications.

Fundamentals of Networking O.S.:
Introduction to components of various Networking O.S., Case Study of Network Operating System Windows NT.

UNIT–III

Fundamental of Client Server:

Basics of Client Server model and its applications. Designing a Client Server model by Creating Database Server and networking O.S. Server.

Careers in Computers:

Role of Programmers, Program analysis, System Analyst, System Administrators, System Managers, System Integrators, DTP Manager & Administrators, MIS Director.

References:

1. Peter Norton, Introduction to Computers, Glencoe, Macmillan/McGraw Hill. Kroenke, Business Computer System, McGraw Hill.
2. Patric, G.Mckeown, Living with the Computers, 2nd edition, HBT Publishers, USA.
3. Hussain & Hussain, Computer Technology, Applications & Social Implications, PHI.

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SEMESTER–VI

COMPUTER SCIENCE

INFORMATION TECHNOLOGY
(PRACTICAL)

Marks: 25

Periods/Week: 2

Note: Practical Marks will include the appropriate weightage for proper maintainance of lab record.

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SEMESTER–VI

INFORMATION TECHNOLOGY (VOCATIONAL)

SOFTWARE ENGINEERING
(THEORY)

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

Instructions for the Paper Setters:–

(i) In theory eight questions are to be set giving the weightage to all the portions. The candidates are required to attempt any five. All questions are to be equal marks.
(ii) The maximum marks for the paper will be 75.
(iii) As per as possible except in the Computer language papers no programme may be asked in theory, papers. Emphasis should be on algorithm development.

UNIT – I

System Analysis, Data Modeling, Process Modeling, Network Modeling, Object Modeling, System Design and Construction.

UNIT – II

Application architecture and process design, Database design, Input design and Prototyping output design and prototyping.

UNIT – III

User interface design and prototyping, Software design, Object– Oriented design, System implementation and support, S/W testing.

References:
1. System Analysis and Design Methods by Jeffrey L. Whitten, 7th Edition, Tata McGraw–Hill.
2. Pankaj Jalote, “An Integrated Approach to Software Engineering”, 3rd Edition.

SEMESTER–VI

INFORMATION TECHNOLOGY (VOCATIONAL)

SOFTWARE ENGINEERING

(PRACTICAL)

Marks: 25

Practical on the basis of Software Engineering

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SEMESTER–VI

COMPUTER MAINTENANCE

(PROJECT)

Max. Marks: 100

General Instructions:

1. A software module based on the work done in the entire course is to be developed.

2. The soft copy of the module shall be submitted to the College/Institute till April 30.

3. The software module shall be developed in groups, consisting of at most two students in a group.

4. The respective college shall depute guide(s)/supervisor(s) under whose supervision the software module shall be developed. The guide/supervisor shall clarify that the work done is original & authenticated. The certificate found to be incorrect at any stage shall attact the proceedings against all the stakeholders, as per the University rules.

5. The evaluation of the module shall be done as per the common ordinance of UG/PG w.e.f. 2012–2013 under semester system.

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SEMESTER–VI

COMPUTER APPLICATION (VOCATIONAL)

BUSINESS DATA PROCESSING
(THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Periods/Week: 4 **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters:–

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

(ii) The maximum marks for the paper will be 75.

(iii) As per as possible except in the Computer language papers no programme may be asked in theory papers. Emphasis should be on algorithm development.

UNIT–I

1. Introduction to Data Processing.
2. Need of Computers in Business.
3. Characteristics of Business Organization and Use of computers in various work areas of business.
   a) Payroll System
   b) Inventory Control
   c) Online Reservation
   d) Computer in Banks
   e) Computer Application in Educational Institutions
4. Concept of Data Processing Methods with Examples.
   a) Batch Processing
   b) Online Systems
   c) Time Sharing
   d) Real Time Systems
   e) Distributed Processing

UNIT–II

5. File Organization.
   a) Types of Files (Master, Transaction, Work, Backup, Audit Files)
   b) File Organization (Serial, Sequential, Indexed Sequential, Direct Assess Files).
6. Spreadsheets (Data Analysis Package)
   a) Introduction to Spreadsheets
   b) Lonus 123/MS Excel
   c) Creating a simple worksheet
   d) Computations in a Worksheet
   e) Printing the Worksheet
   f) Graphs
   g) What if Analysis (Data sort, fill, query, filter)
7. Iterative controls
   ***** Simple Loops (Loop–end loop)
   * Numeric FOR Loops
   * While Loops

UNIT–III

8. Intro and Advantages of procedures and functions with examples.
9. Intro to database Triggers
   * Creation a database triger with example
   * Enable and disable of database trigger
   * Drop a database trigger

10. Developer 2000
    * Reports 6.0
    * Forms 6.0

11. Utilities
    * Export/Import
    * SQL
    *Loader

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SEMESTER–VI

COMPUTER APPLICATION (VOCATIONAL)

BUSINESS DATA PROCESSING

(PRACTICAL)

Marks: 25

Periods/Week: 2

SEMESTER–VI
ELECTRONICS

601: MICROPROCESSOR PROGRAMMING (THEORY)

Time: 3 Hours **Marks: 40**

Instructions for the Examiners / Paper Setters:
1. Equal weightage should be given to each unit of the syllabus.
2. Question Paper should be set strictly according to the syllabus.
3. The distribution of marks is as given below:

Section–A: This will consist of 10 (ten) very short answer type questions. All questions will be compulsory. Each question will carry 1 mark; total weightage of the section being 10 marks.

Section–B: This will consist of short–answer questions. The examiner will set Fifteen (15) questions and the candidates will attempt ten (10) questions. Each question will carry 2 marks each, total weightage of the section shall being 20 marks.

Section–C: This will consist of essay type questions. The examiner will set three (3) questions and the candidates will be required to attempt two (2). Each question will carry 5 marks each; total weightage of the section being 10 marks.

Note for Teacher / Student: Minimum number of hours for theory are three (3) = 4x45 minutes per week.

UNIT–I

Programming techniques: looping, counting, and indexing, additional data transfer and 16-bit arithmetic instructions, arithmetic operation related to memory, logic operations: compare, logic operation: rotate.

UNIT–II

Stack, subroutine, conditional call and return instructions, advanced subroutine concepts, BCD to binary conversion, binary to BCD conversion, BCD addition, introduction to advanced instruction and applications.

UNIT–III

Interrupts of 8085, 8085 vectored interrupts, programmable data transfer, DMA data transfer and interrupt driven data transfer schemes. 8257 DMA controller, 8255, 8251, 8253, 8279, 8259. Introduction to 16 bits, 32 bits & 64 bits microprocessor s.a. 8086, 486, Pentium processor.

Suggested Readings:

1. Microprocessor Architecture and Programming by Gaonkar.
2. Fundamentals of Microprocessor & Microcomputers by B.Ram (Dhanpat Rai & Sons), 1990.
3. Microprosessors and interfacing, DV Hall (TMH), 2nd Edition, 2006.
4. An introduction to the INTEL, Family of Processor, JL Antonakos, Pearson Edu. Asia.

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SEMESTER–VI
ELECTRONICS

602: TELEVISION SYSTEM (THEORY)

Time: 3 Hours **Marks: 40**

Instructions for the Examiners / Paper Setters:
1. Equal weightage should be given to each unit of the syllabus.
2. Question Paper should be set strictly according to the syllabus.
3. The distribution of marks is as given below:

Section A: This will consist of 10 (ten) very short answer type questions. All questions will be compulsory. Each question will carry 1 mark; total weightage of the section being 10 marks.

Section B: This will consist of short–answer questions. The examiner will set Fifteen (15) questions and the candidates will attempt ten (10) questions. Each question will carry 2 marks each, total weightage of the section shall being 20 marks.

Section C: This will consist of essay type questions. The examiner will set three (3) questions and the candidates will be required to attempt two (2). Each question will carry 5 marks each; total weightage of the section being 10 marks.

Note for Teacher / Student: Minimum number of hours for theory are three (3) = 4x45 minutes per week.

UNIT–I

Elements of TV system, picture-Sound transmission and reception, synchronization, analysis and synthesis of TV Pictures, gross structure, image continuity, number of scanning lines, flicker, fine structure, tonal gradation, composite video signal, video signal dimensions.

UNIT–II

Channel bandwith, vestigial sideband transmission and reception of vestigial, sideband signals, monochrome picture tube, beam deflection, screen phosphore, face plate, picture tube characteristics, picture circuits controls, TV camera tubes, basic principle, image orthicon, vidicon, plumbicon. TV receiver, types of TV receiver, receiver sections.

UNIT–III

Essential of colour television, compatability, three colour theory, luminance, hue, saturation, colour TV camera tube, the luminance signal, values of luminance and colour difference signals, Polarity of colour difference signals, colour TV display tube, delta gun colour picture tube, colour signal transmission, bandwidth for colour signal transmission, modulation of colour difference signals, weighting factors, formation of chrominance signal, NTSC colour TV system, NTSC colour receiver, limitations of NTSC, system PAL colour television system, remote control, electromechanical control system, electronic control system. Basic Concepts of liquid crystal display and plasma TV, introduction to high definition TV.

Books:

1. Monochrome and Colour TV by R.R. Gulati (New Age International), Reprint 2007.
2. Television Engineering by Arvind Dhake (TMH).
3. Colour Television Theory by S.P. Bali (TMH), 2000.

SEMESTER–VI
ELECTRONICS

603: MICROPROCESSOR PROGRAMMING AND TELEVISION SYSTEM LAB (PRACTICAL)

Time: 3 Hours & 30 Minutes **Marks: 20**

Note:
1. Perform two experiments at least one from each section
2. Minimum hours per week for practical 6.

List of Practical

Section–A

1. Simple programs for sorting a list number in ascending and descending order.
2. Sorting a list without destroying the original list.
3. Code conversion-Binary to Gray/Gray to Binary.
4. Program of addition of BCD numbers.
5. Program for multiplication of 8 bit numbers using Booth's algorithm.
6. Interface a LED array and 7-segment display through 8255 and display a specified bit pattern/character sequence at an interval of 2 seconds.
7. Write a program to demonstrate rolling display from left to right using 8279. Do not use any built in routines, instead program the 8279.
8. Use the SOD line to generate a square wave of the specified duty cycle at a given frequency.

Section–B

1. To measure voltages, resistances and to observe waveform of sync detector circuit of a given television set.
2. To observe voltage, resistance, waveform of video amplifier circuits and to plot its frequency response characteristics.

3. To observe voltage, resistance and waveforms of Picture I.F. amplifier, Sound I.F. amplifier and sound output stage of T.V. set.
4. To align the video I.F. Stage of T.V. receiver.

Suggested Readings:

1. Microprocessor Architecture and Programming by Gaonkar.
2. Fundamentals of Microprocessor & Microcomputers by B.Ram (Dhanpat Rai & Sons), 1990.
3. Microprosessors and Interfacing, DV Hall (TMH), 2nd Edition, 2006.
4. Monochrome and Colour TV by R.R. Gulati (New Age International), Reprint 2007.
5. Television Engineering by Arvind Dhake (TMH).
6. Colour Television Theory by S.P. Bali (TMH), 2000.
7. An introduction to the INTEL, Family of Processor, JL Antonakos, Pearson Edu. Asia.

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SEMESTER–VI

AUTOMOBILE MAINTENANCE (VOCATIONAL) (THEORY)

Time: 3 Hours **Max. Marks: 100**
Periods/Week: 6 Hrs. **Theory Marks: 50**
Practical Marks: 30
Internal Assessment: 20

Instructions for the Paper Setters:

a. Ten compulsory short answer questions of one mark each. **1x10=10**
b. Eight short answer questions of four marks each, student is required to attempt any five questions. **5x04=20**
c. Four long answer questions of ten marks each, student is required to attempt any two. **2x10=20**

Orientation of the Course:

UNIT–I

Brake System and Brake Services: Introduction, Purpose of brakes, Requirement of brakes, Brake efficiency, Factor effecting to brakes, Braking forces, Classification of Brakes, Braking force, Classification of Brakes, Braking systems, Method of actuating brakes, Construction of actuating brakes, Construction of disk type brakes, Mechanical brakes, Coiling mechanical break, Hydraulic brakes, Bleeding of brakes, Hill holder, Electric brakes, Brake troubleshooting. Basic concepts of Anti lock braking system.

UNIT–II

Tyre and Wheels Construction and Service: Wheel assembly, Wheels, Rims, Tyres, Types of tyres, Construction of a tyre, Tyre plies and construction, Tyre sizes, Tubes, Tyre inflation pressure, Schrader valve, Tyre inspection, Desirable tyre properties, Tyre chains, Care and maintance of rims, Tyres and tubes, Tyre rotation, Repair of inner tube, Repair of tyres, Wheels and tyres troubleshooting.

UNIT–III

Tune up and Workshop Setup: Introduction, Tune up procedure of Engine, Fault finding and troubleshooting in petrol engine and diesel engine, to set up and Automobile workshop and service station, Ways to sell better service.

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SEMESTER–VI

AUTOMOBILE MAINTENANCE (VOCATIONAL)

LAB – II
(PRACTICAL)

Time: 3 Hours **Total Marks: 50**
Periods/Week: 4 **Practical Marks: 30**
Internal Assessment: 20

Distribution of External Marks:

Three visits to Motor Workshop	-	**5 Marks**
Oral Examination	-	**5 Marks**
Written Test	-	**5 Marks**
Test of Workshop Jobs	-	**5 Marks**
Identification of Workshop Tool	-	**5 Marks**
Scale Instrument Readings	-	**5 Marks**

1. Front Wheel Alignment.
2. Foot Brake Leather Opening and Fitting.
3. Brake Adjustment.
4. Tie Rod Opening and Fitting.

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).
3. Automobile Mechanics (English Edition) written by William H. Crousa, Donald L. Anglin.

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SEMESTER–VI

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

Time: 3 Hours **Marks: 30**
Teaching Periods/Week: 6

Instructions for the Paper Setters:

Section–A : It will consist of 10 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. (½ 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

Ice Manufacture: Introduction, Principle of Ice Production, Different Methods of Ice manufacturing, Treatment of Water for making the Ice, Brines, Freezing Tanks, Ice cans, Quality of Ice, General layout of Ice factory

UNIT – II

Food Preservation: Introduction, Factors contributing to food spoilage, Causes of Food Spoilage**.**

UNIT – III

Methods of Food Preservation: Freezing methods of Food preservation, Preservation of Foods with direct contract of liquid CO_2 Freeze Drying, Preservation of Different products, cold storage and commercial cabinets.

SEMESTER–VI

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

Time: 3 Hours **Marks: 30**
Teaching Periods/Week: 6

Instructions for the Paper Setters:

Section–A : It will consist of 10 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. (½ 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

Transport Air Conditioning: Automobile Air-Conditioning, Railway Air conditioning, Marine Air Conditioning, Air-Crafts, Air-Conditioning

UNIT – II

Commercial Applications: Introduction, Air conditioning of houses and offices, Air conditioning of Hotels and Restaurants, Air conditioning of departmental stores, Air conditioning of Theatres and Auditorium, Air conditioning of Hospitals.

UNIT – III

Industrial and Special Applications: Introduction, Design considerations in Bus Air Conditioning, Air conditioning in textile industry, Medical applications, Engineering Applications, Air conditioning of Special Type Building, Ice Rinks.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Engineering & Technology)

SEMESTER–VI

REFRIGERATION & AIR CONDITIONING (VOCATIONAL)

PRACTICAL: LAB–III

Time: 2 Hours **Total Marks: 40**
Teaching Periods/Week: 4 **Practical Marks: 20**
Internal Assessment: 20

List of Experiments:

1. To study the service Ice candy plant (small unit)
2. To study the cold storage and layout the cold storage for leakage.
3. To test overload and relay in window unit
4. To find the C.O.P. of an Air conditioner.
5. To study Domestic Refrigerator

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–VI

ਧਰਮ ਅਧਿਐਨ
(ਧਰਮ ਅਧਿਐਨ)

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 ਅਤੇ ਉਨ੍ਹਾਂ ਦੇ 40 ਅੰਕ 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): ਧਰਮ ਅਧਿਐਨ

1. ਧਰਮ ਅਧਿਐਨ ਦਾ ਆਰੰਭ
2. ਧਰਮ ਅਧਿਐਨ ਦਾ ਉਦੇਸ਼
3. ਧਰਮ ਅਧਿਐਨ ਦੇ ਮੁੱਖ ਸਿਧਾਂਤਾਂ ਦਾ ਸੰਖਿਪਤ ਪਰਿਚੈ

ਭਾਗ (ਅ): ਧਰਮ ਦਾ ਦਾਰਸ਼ਨਿਕ ਅਧਿਐਨ

1. ਧਰਮ–ਦਰਸ਼ਨ (Philosohy of Religion)
2. ਇਲਹਾਮ(Revelation) ਅਤੇ ਧਰਮ ਸ਼ਾਸਤਰ (Theology)
3. ਧਾਰਮਿਕ ਭਾਸ਼ਾ ਦਾ ਸਰੂਪ

ਭਾਗ (ੲ): ਧਰਮ ਦਾ ਸਮਾਜਿਕ ਅਧਿਐਨ

1. ਧਰਮ ਦਾ ਸਮਾਜ ਸ਼ਾਸ਼ਤਰ (Sociology of Religion)
2. ਧਰਮ ਦਾ ਮਨੋਵਿਗਿਆਨਿਕ ਅਧਿਐਨ
3. ਧਰਮ ਅਤੇ ਸਮਾਜਿਕ ਪਰਿਵਰਤਨ

ਭਾਗ (ਸ): ਧਰਮ ਸੰਬੰਧੀ ਆਧੁਨਿਕ ਮੁੱਦੇ

1. ਮਾਨਵਵਾਦ
2. ਵਿਸ਼ਵ ਸ਼ਾਂਤੀ ਤੇ ਸਹਿਹੋਂਦ
3. ਪ੍ਰਯਾਵਰਣਿਕ ਮੁੱਦੇ (Environmental Issues)

English Books

1. Dea, Thomas O., *Sociology of Religion. Prentice Hall,* New Delhi, 1969
2. Freud, S. *The Future of An Illusion*. Hogarth, London, *1970.*
3. Galloway, *Philosophy of Religion*, T.T.Cleark, 38 George Street, Edinburgh, 1960.
4. Sharpe, Eric J., *Comparative Religion. A History, duckworth,* London, *1975.*
5. Hick, John, H., *Philosophy of Religion. Prentice Hall,* New Delhi, 1978.Wach, Jaochim, *The Comparative Study of Religion.*
6. Mitagawa, Joseph M., *Mircea Eliade & Charles*, H. Long (ed.)
7. James, William, *Varieties of Religious Experience.Macmillan,* New York, *1968.*
8. Jung, *Modern Man in Search of Soul*. A PK paperbacks, London, 1984
9. Kristensen, W. B., *The Meaning of Religion.*
10. Margrete, *Mysticism.*
11. Masih, Y., *Introduction of Religious Philosophy,* Moti Lal Banarsi Das, New Delhi, 1971.
12. The History of Religion, *Essays on the Problems of Understanding*.

ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:

1. ਦਰਸ਼ਨ ਸਿੰਘ, *ਧਰਮ ਅਧਿਐਨ ਅਤੇ ਸਿੱਖ ਅਧਿਐਨ,* ਪਬਲੀਕੇਸ਼ਨ ਬਿਉਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2002.
2. ਫਰਾਇਡ, ਸਿਗਮੰਡ, *ਪ੍ਰਮਾਤਮਾ ਦੀ ਉਤਪਤੀ ਤੇ ਇਸ ਦੇ ਭਰਮ ਦਾ ਭਵਿੱਖ*, ਤਰਕ ਭਾਰਤੀ ਪ੍ਰਕਾਸ਼ਨ, ਬਰਨਾਲਾ, 2002.
3. ਮਨਜੀਤ ਸਿੰਘ, *ਧਰਮ ਦਰਸ਼ਨ,* ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ,2007.
4. ਰਾਜੇਸ. (ਡਾ.), *ਧਰਮ ਦਰਸ਼ਨ।*
5. ਵਜ਼ੀਰ ਸਿੰਘ, *ਧਰਮ ਦਾ ਦਾਰਸ਼ਨਿਕ ਪੱਖ* , ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1986

Hindi Books

1. ਮਸੀਹ, ਯਾਕੂਬ, ਸਾਮਾਨਯ ਧਰਮ ਦਰਸ਼ਨ, ਮੋਤੀ ਲਾਲ ਬਨਾਰਸੀ ਦਾਸ,ਪ੍ਰਾ.ਲਿ.ਦਿੱਲੀ.

SEMESTER–VI

PHILOSOPHY

OPT. (i) INDIAN METAPHYSICS AND EPISTEMOLOGY

Time: 3 Hours **Max. Marks: 100**
Lectures 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. Section A, B, C & D will have two questions from each respective section of the syllabus and each question will carry 15 marks. 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 carrying 4 marks.

Instructions for the Candidates

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

Section–A

1. Introduction and Salient Features of Indian Philosophy (Orthodox and Heterodox Systems).
2. Concepts of Atman and Brahman in Upanishads.

Section–B

3. Carvaka: Metaphysics and Epistemology
4. Samkhya: Purusa and Prakrti.
5. Maya and Avidya (Shankaracharya).

Section–C

6. Nyaya Theory of Knowledge: Prama, Aprama and Four Pramanas.
7. Buddhism: Theory of Causation (Pratityasamutpada).
8. Vaisheshika: Six Categories.

Section–D

9. Jainism: Anekantvada, Syadvad.
10. Sikhism: Akal Purakh and Jagat Rachna.
11. Yoga Psychology

Section–E

Ten short answer type questions.

Recommended Readings

1. Chatterjee and Datta, *An Introduction to Indian Philosophy,* University of Calcutta, Calcutta, 1968.
2. Daya Krishna, *Indian Philosophy : A New Approach* ,Sri Satguru, Delhi, 1997
3. Gupta, S.N., *Bhartiya Darshan*
4. Narain, Iqbal, *Bharatiya Darshan*
5. Nirakari, R.D., *Bhartiya Darshan*
6. Sharma, C.D., A *Critical Survey of Indian Philosophy,* Motilal Banarsidas, Delhi, 1964.
7. Sher Singh, *Philosophy of Sikhism*, Sikh University Press, Lahore, 1945.

SEMESTER–VI

PHILOSOPHY

OPT. (ii) AESTHETICS

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

Note: Instruction for the Paper Setter

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

Section–A

1. Aesthetics: Nature, Scope and Utility
2. Form and Content in work of Art
3. Art for Art Sake (Kant), Art for Social Function (Sartre)

Section–B

4. Rasa Theory in Indian Aesthetics
5. Main Characteristics of Aesthetic Activity with special reference to Sikhism

Section–C

6. Architecture
7. Sculpture
8. Painting and Drawing

Section–D

9. Music
10. Poetry
11. Theatre

Section–E

Ten Short answer type questions.

Recommended Readings

1. Chaman, Saroj, *Saundrya Shastar,* Punjabi University, Publication, 1997.
2. Chatterji, D.C., *Fundamental Questions in Aesthetics*, Indian Institute of Advanced Studies, Shimla. 1968.
3. Gopal Singh, *Guru Granth Sahib Di Sahitak Visheshta* (Punjabi) New Delhi, National Press of India, 1987.
4. Jhanji, Rekha, *Aesthetic Communication,* New Delhi, M. Manohar Lal, 1985.Sharma, H.L., *Indian Aesthetic and Aesthetics Perspective,* Mansi Prakashan, 1995.
5. Titus, Harold H., *Living Issues in Philosophy,* Eurasia, New Delhi, 1968.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Life Sciences)

SEMESTER–VI

ZOOLOGY

APPLIED ZOOLOGY

ZOO–VI (OPTION-I): MEDICAL ZOOLOGY & MEDICAL LABORATORY TECHNOLOGY
(THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Credit Hours/Week: 6 (60 mints. each) **Theory Marks: 75**
Practical Marks: 25

Instructions for the Paper Setters:
There will be a total of 9 questions.
Question 1 will be compulsory and will be of 10 short answer type. **(1½ x10=15)**
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 **(15x04=60)**

UNIT–I

MEDICAL ZOOLOGY

1. Introduction of Parasitology (pertaining to various terminologies in use).
2. Brief accounts of life history, mode of infection and pathogenicity of the following pathogens with reference to man; prophylaxis and treatment:
   a) Pathogenic protozoans: *Entamoeba, Trypanosoma, Leishmania, Giardia, Trichomonas* and *Plasmodium.*
   b) Pathogenic helminthes: *Fasciolopsis, Schistosoma, Echinococcus, Ancylostoma, Trichinella, Wuchereria, Dracunculus* and *Oxyuris.*
3. Life cycle and control measures of arthropod vectors of human disease : Malaria *(Anopheles stephens, A. culicifaces* Yellow fever and Dengue haemorrhagic fever, *(Aedes aegypti A. Albopicuts)*; Filariasis *(Culex pipien satigeans) Mansonia* sp. Japanes Encephalitis *(C. trinanelorhynchus);* Plague *(Stenophalide cheopis)* and Epidemic Typhus *(Pediculus spp).*

UNIT–II

1. Brief introduction to pathogenic Microbes, Viruses, Ricketsiae, Spirochaetes and Bacteria.
2. Epidemic disease, such as Typhoid, Cholera, Small pox; their occurrence and eradication programmes.
3. Brief introduction to human defence mechanisms.
4. Humoral and cell mediated immune response. Physical & chemical properties of antigens. Antibodies structure and function of immunoglobulins M, G, A, E and D.
5. Antigens and antibody interactions. Serodiagonstic assays.
6. Vaccines.

UNIT–III

MEDICAL LABORATORY TECHNOLOGY

1. Laboratory safety rules, hazards and precautions during sample collections and laboratory investigations.
2. Laboratory Techniques: Colorimetery, Microscopy, Autoclaving, Centrifugation and Spectrophotometery.
3. Collection, transportation and preservation of different clinical samples.
4. Bacteriology, sterilization (dry heat, moist heat, autoclave, filteration), disinfection, staining techniques, (gram stain, AFB stain, etc), culture media (defined and synthetic media & routine laboratory media), bacterial culture (aerobic and anerobic) and antibiotic sensitivity.

UNIT–IV

Haematology, collection of blood (venous and capillary) anticoagulants (merits and demerits), Romanowsky's stains, total RBC count, erythrocyte sedimentation rate, TLC, DLC, esinophil count, platelet count, reticulocyte count.

Biochemistry, protein estimation, estimation of blood urea, sugar and cholesterol, serum creatinine and uric acid, urine analysis, estimation of proteins, sugar, bile salts, bile pigments, ketone bodies, enzyme studies (serum transaminase, phosphatase, amylase and lipase), liver function test.

Histopathology: Common fixatives and staining techniques, histochemistry, principle and methods: staining of carbohydrates, proteins and fats with Bromophenol Blue, Periodic acid Schiff, Sudan Black Blue and Feulgenl reagents.

Suggested Readings:

1. Baker, F.J. and Silverton, R.E. Introduction to Medical Laboratory Technology, 6th edition, Butlerworth and Co. Ltd. 1985.
2. Chatterjee, K.D., Parasitology, Protozoology and Helminthology, 12th ed., 1995.
3. Cheesborough, M. Medical Laboratory Technology for Tropical countries, 2nd edition, Butlerworth and Co., Ltd., 1987.
4. Garcia, L.S., Diagnostic Medical Parasitology, 4th ed., ASM Press Washington, 2001.
5. Kimball, J.W. (1986): Introduction of Immunology, MacMillian Publishing Co., New York.
6. Kuby, J., Immunology, W.H. Freeman & Co., USA, 2000.
7. Roitt, I. (1984): Essential Immunology, Blackwell Scientific Publications, Oxford.
8. Talib, V.H. Essential Laboratory Manual, Mehta Publishers, New Delhi, 1999.

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(Faculty of Life Sciences)

SEMESTER–VI

ZOOLOGY

PRACTICAL–VI
(RELATED TO ZOO–VI (OPTION–I))

Time: 3 Hrs. **Max. Marks: 25**
Credit Hours/Week: 4½

1. Demonstration of safety rules in laboratory like proper handling of patients, specimens and disposal of syringes, needles etc.
2. Demonstration of the use of autoclave, centrifuge and spectrophotometer.
3. Cleaning and sterilization of glass ware, using hot air oven, autoclave etc.
4. Demonstration of parts of microscope, its functioning and care.
5. Processing of clinical samples for culture and identification of pathogens; blood, throat swab, sputum, pus, urine, stool, CSF* subject to availability of materials and other body fluids.
6. Estimation of Haemoglobin using Sahli's Haemometer.
7. Preparation of thick and thin blood films for malarial parasite.
8. Counting of WBC, RBC and DLC.
9. Examination of stools for demonstration of intestinal parasites.
10. Study of permanent slides and specimens of parasitic protozoans, helminthes and arthropods mentioned in the theory syllabus.
11. Analysis of blood groups, A,B, AB, O and Rh.
12. ESR, haematocrit, bleeding time, coagulation time, prothrombin time.
13. Estimation of blood sugar, serum urea, protein and cholesterol.

Guidelines for conduct of Practical Examination:

1. Write down the principle and working of given equipment. (4)
2. Processing and identification of pathogen in clinical sample. (4)
3. Perform an experiment on Haemotology. (4)
4. Identification, pathogenicity and host of parasitic organism. (4)
5. Estimation of blood sugar/urea/cholesterol/ protein in the given sample. (4)
6. Viva-voce and note book. (5)

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SEMESTER–VI

ZOOLOGY

ZOO–VI (OPTION–II): ECONOMIC ENTOMOLOGY
(THEORY)

Time: 3 Hrs. **Marks: 75**
Credit Hours/Week: 6

Instructions for the Paper Setters:
There will be a total of 9 questions.
Question 1 will be compulsory and will be of 10 short answer type. **(1½ x10=15)**
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 **(15x04=60)**

UNIT–I

1. Systematic position, habits and nature of damage of the following pests of crops and vegetables :

a) Sugarcane:

1. Sugarcane leaf hopper *(Pyrilia perpusila)*
2. Sugarcane top borer *(Scirpophaga niovella)*
3. Sugarcane stem borer *(Chilotrea infuscatellus)*
4. Alongwith life cycle and control of *Pyrilia perpusilla* (Sugarcane leaf hopper).

b) Cotton:

1. Pink bollworm *(Pectinophora gossypiella)*
2. Red cotton bug *(Dysdercus cinglulatus)*
3. Cotton grey weevil *(Myllocerus maculosus)*
4. Surface grasshopper *(Chrotogonus trachypterus)*
5. Cotton jassid *(Empoasca devastans)*
6. Along with life cycle and control of Pink boll worm *(Pectinophora gossypiella)*

c) Paddy:

1. Rice gundhy Bug *(Leptocorisa varicorni)*
2. Rice grasshopper *(Heiroglyphyus bania)*
3. Rice Hispa *(Dicladispa armigera)*
4. Along with life cycle and control of gundhy bug *(Leptocorisa varicornis).*

UNIT–II

a) Wheat:

1. Wheat stem borer *(Sesamia inferens)* Along with life cycle and control.
2. Termites
3. Wheat Aphid and Jassid

b) Vegetables:

1. Red pumpkin beetle *(Aulacophora foveicollis)*
2. Pumpkin fruit fly *(Dacus cucurbitae)*
3. Hadda beetle *(Epilachna vigintioctopunctata)*
4. Along with life cycle and control of pumpkin fruit fly *(Dacus cucurbitae)*

c) Pests of stored grains: Systematic position, habits and nature of damage of the following pests of stored grains:

1. Pulse Beetle *(Callosobruchus Maculates)* along with life cycle and control.
2. Rice weevil *(Sitophilus oryzae)*
3. Khapra beetle *(Trogoderma granarium)*
4. Rust red flour beetle *(Tribolium castaneum)*
5. Rice moth *(Corcyra cephalonica)*
6. Lesser grain borer *(Rhizopertha dominica)*

UNIT–III

Systematic position, disease caused and control of the following pests of Medical and Veterinary importance:

1. Mosquitoes
2. Sand fly *(Phlebotomus minutus)*
3. House fly *(Musca domestica)*
4. Horse fly *(Tabamus striatus)*
5. Blow fly (*Calliphora erythrocephala)*
6. Warble fly *(Hypoderma lineatum)*
7. Lice Poultry louse *(Menopon gallinae)*
8. Sucking louse *(Haematopinus surysternus)*
9. Fleas

Useful Insects: Principles of sericulture, apiculture and lac culture industries.

UNIT–IV

1. **Insect Control and Pest Management:**
   1. Principles, history and modern status of biological control of insect pests.
   2. Chemical control: History and principle of chemical control; categories of pesticides and important pesticides of each category; insect repellents and attractants.
   3. Recent methods of pest suppression; sterile insect release methods; behavioral control involving the use of pheromones; integrated pest control.

      Mouth parts of red cotton bug, cockroach, honey bee, housefly & butterfly.

Suggested Reading Material:

1. Alford, D.V. (1999). A text book of Agricultural Entomology. Blackwell Science Publishers, Cambridge, U.K.
2. Atwal, A.S. and Dhaliwal, G.S. (1997). Agricutural pest of South Asia and their management. Kalyani Publishers, New Delhi.
3. Dhaliwal, G.S. and Arora, R. (1996), Principles of insect management. Globe offset Press, New Delhi.
4. Hill, D.S. (1993). Agricultural insect pests of the Tropics and their control, 2nd Edition, Cambridge University Press, Cambridge, New York.

SEMESTER–VI

ZOOLOGY

PRACTICAL–VI

(RELATED TO ZOO–VI (OPTION–II))

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

1. Study of permanent slides: Mouth parts of honey bee, butterfly and red cotton bug.
2. A study of different types of larvae and pupae of insects through charts.
3. External morphology and identification marks of the pests *Pyrilla perpusilla* (Sugarcane leaf hopper), *Pectinophora gossypiella* (Pink bollworm), *Leptocorisa varicornis* (Gunbdhy bug) *Heiroglyphus banian* (Paddy grass hopper), *Dacus cucurbitae* (Pumpkin fruit fly).
4. External morphology and identification marks of the following stored grain pests : *Sitophilus oryzae* (Rice Weevil), *Tribolium castaneum* (Rust red flour beetle), *Rhizopertha dominica* (Lesser grain borer/susri), *Trogoderma granarium* (Khapra beetle), *Callosobruchus maculatus* (Pulse beetle/Dhora).
5. External morphology and identification marks of the following insects of Medical/Veterinary importance–Mosquitoes *(Culex, Anopheles* and *Aedes),* house fly, blow fly, warble fly and horse fly.
6. A study of life stages of silkworm and honeybees through charts.
7. To demonstrate different techniques for insect collection, storage & preservation.
8. Structure and working of common sprayers. Hand compression sprayer, Knap sack sprayer.
9. Visit to apiary and godowns for study of infestation.
10. Assignment in local insect fauna.

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

Guidelines for conduct of Practical Examination:

1. Identification of given spots. (8)
2. Write down the life cycle of given specimen. (4**)**
3. Identify the instrument and write down its working and application. (4)
4. Project report on apiary and godowns/grainary. (4)
5. Viva-voce and note book. (5)

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Life Sciences)

SEMESTER–VI

ZOOLOGY

ZOO–VI (OPTION–III): INLAND FISHERIES (AQUACULTURE)
(THEORY)

Time: 3 Hrs. **Marks: 75**
Credit Hours/Week: 6

Instructions for the Paper Setters:
There will be a total of 9 questions.

Question 1 will be compulsory and will be of 10 short answer type. **(1½ x10=15)**

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 **(15x04=60)**

UNIT–I

1. History of inland fisheries in India.
2. Morphology of a typical fish (carp, cat-fish, freshwater eel, perch).
3. Structure of mouth of different fishes in relation to feeding habits.
4. Identification and classification of important fishes of Punjab, Haryana and Himachal Pradesh.
5. Bionomics of *Labeo rohita, Cirrhinus mrigala* and *Wallago attu.*

UNIT–II

1. Exotic fishes: History, their introduction, morphology, their role in fish culture, impact on native fish fauna.
2. Induced Breeding: History, Technique, Chemicals involved in induced breeding and Impact on fish culture.
3. Pond culture: Construction of pond, Types of pond, Fertilization of pond and Maintenance of pond.
4. Aquatic weeds and their control both biological and chemical.

UNIT–III

1. Riverine fisheries of river Sutlej and Beas.
2. Reservoir fisheries: Gobindsagar, Pong Dam.
3. Culture systems: Conventional, Extensive, Intensive, Monoculture and Polyculture.
4. Integration of fish farming with Duckry, poultry, piggery and dairy.
5. Sewage fed fisheries.

UNIT–IV

1. Cold water fisheries: Mhaseer fisheries and Trout fisheries.
2. Fish Disease and their control: Viral, Bacterial, Fungal, Helmith, Crustacean.
3. Disease due to unhygienic conditions during transportation.
4. Fish by-products.
5. Marketing of fish: Fresh Water fish, Preservation of fish.

Suggested Readings:

1. Fish and Fisheries of India: V.G. Jhingran, Hindustan Publishing Corporation of India, Delhi.
2. Fish of India Vol. I & II: F-day Reprinting Edition Jagmandar Book Agency, New Delhi.
3. Monograph on the: M.S. Johal & K.K. Tandon, Pb. Fish of Bull, Fishes of Reorganised, Vols. I & II, 1979, Punjab 1980.
4. Fishery Development: S.C. Aggarwal & M.S. Johal, Narendra Publishing House, Delhi.
5. Fisheries of Punjab : M.S. Johal & K.K. Tandon, Res. Bull, Panjab University, Vol. 32, pp. 143-154, 1981.
6. Freshwater Fishery Biology: Kerl F-Legler Wm. C-Brown Co. Dublingus IOWA, USA.
7. Fisheries Techniques: Brian R. Murphy & David W. Wills (Ed.) American Fisheries Society Bethesde Maryland, USA.

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SEMESTER–VI

ZOOLOGY

PRACTICAL–VI
(RELATED TO ZOO–VI (OPTION–III))

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

1. Morphology of a Carp, Cat fish and Perch.
2. Morphometric and meristic characters of typical fish.
3. Identification of the following fishes using key : *Notopterus* spp.; *Labeo rohitta, L. bata, Cirrhinus mrigala, Catla catla, Puntius sarana, Tor putitora, Schizothorex, Aorichthys seenghala, Wallago attu, Callichrous padda, Bagarius bagarius, Heterpneustus fossilis, Channa marulius, C. Striatus, Xenetondon cancila, Cyprinus carpio,Hypophthalamichthys molitrix, Ctenopharyngodon idella, Colisa fasciatu* and *Mastacembelus armatus.*
   For the identification of these fishes, the candidate can use already prepared keys or they can prepare their own keys.
4. Understanding the following methods of food and feeding :
   a) Frequency occurrence method
   b) Feeding intensity
   c) Point method
5. Determination of maturity stages (both male and female) of any commercial fish (Preserved specimens).
6. Study of phytoplanktons and zooplanktons which constitute the food of commercial fishes. Their identification and study of important characters.
7. Identification of aquatic weeds of a fish pond.
8. Estimation of following chemical parameters of the water of a fish pond :
   1. Temperature
   2. pH
   3. Dissolved oxygen
   4. Phosphates
   5. Total Dissolved solids

6. Nitrates
7. Hardness
8. Examination of diseased fishes
9. Visit of various fish ponds and fish market.

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

Guidelines for conduct of Practical Examination:

1. Give salient features of a given fish species. Identification of Fish using keys. (5)
2. Estimation of physico chemical parameters of fish pond water. (5)
3. Identification of Zoo/ Phytoplanktons and their important characteristies. (4)
4. Write morphometric and meristic characters of a fish species. (3)
5. Project report. (3)
6. Viva-voce and note book. (5)

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SEMESTER–VI

BOTANY

ECOLOGY AND UTILIZATION OF PLANTS

Time: 3 Hrs. **Max. Marks: 100**
Lectures/Week: 6 Hours **Theory Marks: 75**
Practical Lectures/Week: 4½ **Practical Marks: 25**

Instructions for the Paper Setters:

There will be a total of nine 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 two 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

Plants and Environment: Atmosphere (gaseous compositions), water (properties of water cycle), light (global radiation, photosynthetically active radiation), temperature, soil (development, soil profiles, physico-chemical properties), and biota.
Morphological, anatomical and physiological responses of plants to water (hydrophytes and xerophytes), temperature (thermoperiodicity and verbalization), light (photoperiodism, heliophytes and sciophytes) and salinity.

Population Ecology: Growth curves, ecotypes, ecads.

UNIT–II

Community Ecology: Community characteristics, absolute and relative frequency, density and dominance, basal area and importance value index (IVI), Whittaker's classification of biodiversity, indices of alpha, beta and gamma diversity, life forms, biological spectrum, ecological succession.

Ecosystem: Structure, abiotic and biotic components, food chain, food web, ecological pyramids, energy flow, biogeochemical cycles of carbon, nitrogen and phosphorus.

Biogeographical Regions of India

Vegetation types of India: Forests and grasslands

Landscape Ecology: Definition & concept, effect of patch size and shape on biodiversity, dynamics of land use.

UNIT–III

Food Plants: Rice, wheat, maize, potato, sugarcane.

Fibres: Cotton and jute.

Vegetable Oils: Groundnut, mustard and coconut. General account of sources of firewood, timber and bamboos

UNIT–IV

Spices: General account of black pepper, cloves, cinnamomum, cardamon, ginger, tumeric, coriander, fennel and mint.

Medicinal Plants: General account of harar, bahera, neem amla, Aconitum Rauwolfia, Atropa, Datura, Withania and poppy.

Beverages: Tea and coffee.

Rubber

Suggested Readings

1. Odum, E.P. 1983. Basic Ecology. Saunders, Philadelphia, Kermody, E.J. 1996. Concepts of Ecology. Prentice Hall of India Pvt. Ltd., New Delhi.
2. Mackenzie, A. et al., 1999. Instant Notes in Ecology. Viva Book Pvt. Ltd., New Delhi.
3. Kocchar, S.L. 1998. Economic Botany in Tropics, 2nd edition, Macmillan India Ltd., New Delhi.
4. Sambarmurthy, A.V.S.S. and Subramanyam, N.S. 1989. A Textbook of Economic Botany, Wily Eastern Ltd., New Delhi.
5. Sharma, O.P. 1996. Hill's Economic Botany (Late Dr. A.F. Hill, adapted by O.P. Sharma). Tata McGraw Hill Co. Ltd., New Delhi.
6. Simpson, B.B. and Conner-Ogozaly, M. 1986. Economic Botany-Plants in Our World. McGraw Hill, New York.

Suggested Laboratory Exercises

1. To determine minimum number of quadrats required for reliable estimate of biomass in grasslands through speciesarea curves.
2. To study the frequency of herbaceous species in grassland and to compare the frequency distribution with Raunkiar's Standard Frequency Diagram.
3. To estimate Importance Value Index for grassland species on the basis of relative frequency, relative density and relative dominance in protected and grazed grassland.

4. To measure the vegetation cover of grassland through point frame method.
5. To measure the above ground plant biomass in a grassland.
6. To study the morphological anatomical features of hydrophyte (Hydrilla, Eichhornia) Xerophyte (Nerium, Calotropis).
7. To determine diversity indices (richness, Simpson, Shannon-Wiener) in grazed and protected grassland.
8. To estimate bulk density and porosity of grassland and woodland soils.
9. To determine moisture content and water holding capacity of grassland and woodland soil.
10. To study the vegetation structure through profile diagram.
11. To estimate transparency, pH and temperature of different water bodies.
12. To measure dissolved oxygen content in polluted and unpolluted water samples.
13. To estimate salinity of different water samples.
14. To determine the percent leaf area injury of different leaf samples collected around polluted sites.
15. To estimate dust-holding capacity of the leaves of different plant species.
16. **Food Plants:** Study of the morphology, structure and simple microchemical tests of the foods storing tissues rice, wheat, maize, potato and sugarcane. Microscopic examination of starch in these plants (excepting sugarcane).
17. **Fibres:** Study of cotton flowers, sectioning of the cotton ovules/developing seeds to trace the origin and development of cotton fibers. Microscopic study of cotton and test for cellulose. Sectioning and staining of jute stem to show the location and development of fibers. Microscopic structure. Tests for lignocelluloses.
18. **Vegetable Oils:** Study of hand sections of groundnut, mustard and coconut and staining of oil droplets by Sudan III and Sudan Black.
19. **Field Visits:** To study sources of firewood (10 plants)/timberyielding trees (10 trees)/bamboos, list to be prepared mentioning special features, collection of plant based articles of common use.
20. **Spices:** Examine black pepper, cloves, cinnamon (hand sections) and opened of cardamom and describe them briefly.

21. Preparations of an illustrated inventory of 10 medicinal plants used in indigenous systems of medicine or allopathy: Write their botanical and common names parts used and diseases/disorders for which they are prescribed.
22. **Beverages:** Section boiled coffee beans and tea leaves to study the characteristic structural features.
23. Visit to in situ conservation site/Botanical Garden.

Suggested Readings (for laboratory exercises)

1. Krebs, C.J. 1989. Ecological Methodology. Harper and Row, New York, USA.
2. Ludwig, J.A.and Reynolds, J.F. 1988. Statistical Ecology, Wiley, New York.
3. Moore, P.W. and Chapman, S.B. 1986. Methods in Plant Ecology, Blackwell Scientific Publications.
4. Misra, R. 1968. Ecology Work Book. Oxford & IBH, New Delhi. APHA - Standard Methods for the Examination of Water and Waste Water. American Public Health Association, Washington, D.C.
5. Kocchar, S.L. 2000. Economic Botany of the Tropics, Macmillan India Pvt. Ltd., New Delhi.
6. Council of Scientific & Industrial Research 1986. The Useful Plants of India. Publications and Information Directorate. CSIR, New Delhi.
7. Prinentel, D. and Hall, C.W. (Eds.) 1989. Food and Natural Resources. Academic Press, London, New York.
8. Sharma, O.P. 1996. Hill’s Economic Botany. Tata McGraw Hill Co. Ltd., New Delhi.
9. Swaminathan, M.S. and Kocchar, S.L. (Eds) 1989. Plants and Society. Macmillan Publications Ltd., London.

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SEMESTER–VI

MICROBIOLOGY

APPLIED MICROBIOLOGY–II
(THEORY)

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

Instructions for the Paper Setter:
There will be a total of nine 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 two 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. Fermentation Process of Fermented Foods: Fermented cereal, legume and milk products. Microbiology of natural fermentation. Saurekraut, Youghurt, soya sauce, cheese.

UNIT–II

2. Microbial Cell as Fermentation Products: Baker's and brewar's yeast, single cell protein, mushroom farming. Production of industrial chemicals: Acetic acid, citric acid, acetone and butanol.

UNIT–III

3. Production of alcoholIc Beverages: Beer, wine and distilled beverages–Whisky, Brandy Vodka, Gin production and applications of industrial enzymes: Amylases, proteaes, immobilization of enzymes.

UNIT–IV

4. Vitamins and Amino Acids Production by Microorganisms: Riboflavin (B2) and cyanocobalamin (B12), glutamic acid. Production of antibiotics: Penicillin and streptomycin.

Books Recommended:

1. Read, G. 1982. Prescott and Dunn, *Industrial Microbiology*. CBS Publishers & Distributors, New Delhi.
2. Casida, L.E. 1991. *Industrial Microbiology.* Wiley Eastern Ltd., New Delhi.
3. Patel, A.H. 1984. *Industrial Microbiology.* Macmillan India Ltd., Delhi.
4. Trevan, M.D. Saffey, S., Goulding, K.H. and Stanberry, P. 1988. *Biotechnology : The Biological Principles,* Tata McGraw Hill Publishing Co. Ltd., New Delhi.
5. Wiseman, A. 1995. *Handbook of Enzyme Biotechnology*. Ellis Harwood Ltd., London.
6. Wood, J.B.B., 1998. *Microbiology of Fermented Foods,* Volumes 1 and 2, Blackie Academic and Professional, London.
7. Power C.B. and Dagniwala, H.F. 1992. *General Microbiology*. Volume-2. Himalaya Publishing House, New Delhi.

SEMESTER–VI

MICROBIOLOGY

(PRACTICAL)

Time: 4 Hours **Marks: 25**

1. Production of amylases and proteases in liquid medium using the selected organisms.
2. Assay of various crude enzyme preparations
    a. Amylase
    b. Protease.
3. Production of alcohol from molasses and cereal grains.
4. Immobilization of microbial cells and enzyme preparations by calcium alginate entrapment method.
5. Comparison of submerged and solid state fermentation techniques for amylase production.

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SEMESTER–VI

INDUSTRIAL MICROBIOLOGY (VOCATIONAL)

FERMENTATION TECHNOLOGY (THEORY)

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

Instructions for the Paper Setter:
There will be a total of nine 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 two 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. The fermentation industry, Selection and development of Industrial Microorganisms, Fermentation media, aeration, pH, temperature, Batch versus continuous culture, Immobilized enzymes & their applications.

UNIT–II

2. Production of some Microbial Enzymes; Proteases, Amylases, Cellulases, Microbial Production of alcoholic beverages; Beer, Wine and Whisky.

UNIT–III

3. Production of Organic acids; Acetic Acid, Citric Acid, Lactic Acid, Gibberellic Acid, Production of Amino Acids; Lysine, Glutamic Acid.

UNIT–IV

4. Downstream processing and product recovery; Production of Pharmaceuticals Antibiotics:- Tetracycline & Penicillin, Vaccines, Vitamins. Bioleaching of metals, microbial treatment of Oil Pollution and Oil recovery.

Books Recommended:-

1. Fermentation Technology by Whittaker, 1995.
2. Industrial Microbiology by Casida, 1989.
3. Industrial Microbiology by A.H. Patel, 2004.
4. Biotechnology: A text book of Industrial Microbiology by W. Cruger and A.Cruger, 2003.

SEMESTER–VI

INDUSTRIAL MICROBIOLOGY
(VOCATIONAL)

(PRACTICAL)

Time: 4 Hrs. **Marks: 25**

1. Demonstration for the cultivation of mushrooms.
2. Estimation of microbial ethanol production.
3. Isolation of actinomycetes from soil.
4. Isolation of thermophillic micro organisms from soil.
5. Immobilization of microbial cells and enzyme preparations by sodium alginate entrapment method.

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SEMESTER–VI

MICROBIAL & FOOD TECHNOLOGY

QUALITY CONTROL OF FOODS PRODUCTS
(THEORY)

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

Instructions for the Paper Setter:
There will be a total of nine 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 two 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

Definitions of Quality, Quality control, Total Quality Management, Quality Assurance.
Organization of quality control department & its relation with other departments of industry system and development of HACCP, GMP guidelines.

UNIT–II

Food Laws, Grades & Standards, PFA, FPO, BIS, SWMA, Export (Quality Control & Technology) act, AGMARK, ISO 9000 standards, consumer Production Act. Sugar control order, vanaspati order, Meat Food Products order.

UNIT–III

Methods for microbiological examination of foods, (Direct examination, cultrual techniques), enumeration methods, Alternate indirect methods (dye reduction, electrical, ATP), rapid methods for detection of specific organisms & toxins (immunological/molecular methods).

UNIT–IV

Chemical analysis of cereals, milk, eggs, meat, fruits & vegetables. Sensory analysis–General testing conditions, taste, odor, aroma & other senses. Descriptive, Discrimination & Acceptance tests. Taint tests, Layout & requirements of sensory test laboratory. Types of panels the requirements of panel members.

Recommended Books:

1. Jelling, Gisela. Sensory evaluation of food theory & quality control for fruits & vegetable products, 2nd Edition, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
2. Krammer A & Twigg B.A. Quality Control in Food Industry Vol. I.
3. Krammer A & Twigg B.A. Quality Control in Food Industry Vol. II.
4. Hayes P.R. (1992). Food Microbiology & Hygiene Elsenien Science Publishers Ltd., England.
5. Aurand L.W. & Wood A.E. Food Composition & Analysis.

SEMESTER–VI

MICROBIAL & FOOD TECHNOLOGY

(PRACTICAL)

Time: 4 Hours **Marks: 25**

1. Platform tests for milk
2. Detection of additives/preservatives/neutralizers in milk.
3. Determination of fat, TS & SNF in milk.
4. Physical examination of cereals.
5. Proximate composition of wheat flour.
6. Microbiological examination of milk by MBRT & SPC.
7. Determination of % salt and reducing sugars in fruits & vegetable products.
8. Grading of eggs by candling.
9. Cut out examination of a canned food product & sensory analysis.

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SEMESTER–VI

BIOINFORMATICS (VOCATIONAL)

STRUCTURAL BIOLOGY AND MOLECULAR MODELLING (THEORY)

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

Isolation and purification of proteins, Protein sequence determination: Edman degradation, Mass Spectroscopy, Determination of protein structure: X-ray diffraction, NMR spectroscopy, Electron Microscopy.

UNIT–II

Protein Architecture: Motifs, Domains, classification of three dimensional structures in Brook haven protein databank (Pfam, SCOP, CATH). Secondary structure prediction: Chou Fasman, GOR. Protein Motifs and Domain Prediction (using Multiple sequence alignment, Regular expressions and statistical modelling), Prediction of three dimensional structure of proteins (Homology Modelling).

UNIT–III

Drug Design process, Computer aided drug design (Structure based drug design, Ligand based drug design), Quantitative structure activity relationship: QSAR Descriptors, Development of Hansch Equation, ADMET Prediction.

UNIT–IV

Empirical force fields for trimolecular simulations, Molecular Dynamics simulations techniques, Simulated Annealing, Conformational Analysis, Calculation of relative free energy using simulation techniques.

List of Books:

1. Broune P.E. and Weissig H. (Eds) Structural Biology. John Willey and Sons. N.J. USA (2002).
2. Creighton T.E. Protein Structure and Molecular Properties. W.H. Freeman and Company. (2001).
3. Martin R.B. Introduction to Biophysical Chemistry. McGraw Hill New York.

SEMESTER–VI

BIOINFORMATICS (VOCATIONAL)

LAB IN STRUCTURAL BIOLOGY AND MOLECULAR MODELLING (PRACTICAL)

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

- Discovering motifs from DNA or Protein Sequences using MEME.
- Homology Modelling using SWISS-MODEL
- To analyze protein sequence using Secondary Structure prediction methods: GOR, CHOU-FASMAN
- To retrieve various structures of proteins from RCSB, their classification system using CATH/ SCOP.
- To carry out molecular dynamics simulation on a protein
- To carry out rigid body docking between a protein and ligand

SEMESTER–VI

BIOTECHNOLOGY (VOCATIONAL)

ENVIRONMENTAL BIOTECHNOLOGY AND PLANT BIOTECHNOLOGY (THEORY)

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

ENVIRONMENTAL BIOTECHNOLOGY

UNIT–I

Renewable and non-renewable resources, What is renewable should be bioassimilable biodegradable; Major consumer items: Food, fuel and fibres, Conventional fuels and their environment impact:

- Firewood, Plant and animal wastes, Coal, Gas, Animal oils. Modern fuels and their environment impact.
- Methogenic bacteria and biogas.
- Microbial hydrogen production, Microbial bioconversion, biotransformation, beer & wine production.
- Microbial mining, metalurgy, BOD & COD, environmental degradation and role of biotechnology in sustainable development. Environmental microbiology in chemical and other industries.
- Conversion of sugars to ethanol. The gasohol experiment.
- Solar energy converters-Hopes from the photosynthetic pigments.
- Plant based petroleum industry.
- Cellulose degradation for combustible fuel.

UNIT–II

Biotechnological inputs in producing good quality nature fibres - Transgenic sheep and transgenic plants, Microbiological quality of food and water, Treatment of municipal waste and industrial effluents and waste water management, Degradation of pesticides and other toxic chemicals by microorganisms, Thuringenesis toxin as a natural pesticide, Biological control of other insects swarming the agricultural fields, Enrichment of ores by microorganisms, Biofertilizers and organic farming. Nitrogen fixing microorganisms enrich the soil with Assimilable nitrogen.

PLANT BIOTECHNOLOGY

UNIT–III

Introduction to *in vitro* methods. Terms and definitions. Use of plant growth regulators, Beginning of *in vitro* cultures in our country, Ovary and ovule culture, *in vitro* Pollination and fertilization. Embryo culture, embryo rescue after wide hybridization, and its applications. Introduction to the processes of embryogenesis and organogenesis and their Practical applications, Clonal, multiplication of elite species using Micropropagation methods via axillary bud, shoot-tip and meristem culture.

UNIT–IV

Haploids and their applications. Somaclonal variations and their applications, Endosperm culture, production of triploids and their Practical applications, Single-cell suspension cultures and their applications in selection of variants.

UNIT–V

Introduction to protoplast isolation: Principles and applications, Testing of viability of isolated protoplasts, Various steps in the regeneration of protoplasts. Somatic hybridization–an introduction, Various methods for fusing protoplasts, Chemical, electrical, Use of markers for selection of hybrid cells. Practical applications of somatic hybridization (hybrids vs Cybrids). Use of plant cell, protoplasts and tissue culture for genetic manipulation of plants. Introduction to *Agrobacterium tumefaciens*, Tumor formation on plants using *A. tumefaciens* (Monocots vs. Dicots), Root-formation on plants using. *A rhizogenes*, Practical application of genetic transformation.

Books Recommended:

1. Davis, B.D., Dulbecco, R., Eisen, H.N. and Ginsberg, H.S. (1991). Microbiology, 4th edition, Harper and Row, Singapore.
2. M.K. Razdan (2003). An Introduction to Plant Tissue Culture, 2nd Edition, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
3. Pelczar, M.J. Jr., Chan ECS and Krieg, N.R. (1993). Microbiology Concepts and Applications, McGraw Hill, NY.
4. Stanbury, P.F. Whitaker, A. and Hall, S.J. (2001). Principles of Fermentation Technology, 2nd ed., Aditya Books (P) Ltd., New Delhi.
5. B.D. Singh (2012), Biotechnology: Expanding Horizons, Kalyani Publishers.
6. G.S. Chahal and S.S. Gosal (2002). Principles and Procedures of Plant Breeding. Biotechnology and Conventional Approaches, Narosa Publishers.
7. Chawla, H.S. (2009). Introduction to Plant Biotechnology, 3rd Edition, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
8. Bhojwani, S. S. and Razdan, M. K. (1996). Plant Tissue Culture: Theory and Practice, A Revised Edition, Elsevier India, New Delhi.

SEMESTER–VI

BIOTECHNOLOGY (VOCATIONAL)

ENVIRONMENTAL BIOTECHNOLOGY AND PLANT BIOTECHNOLOGY

(PRACTICAL)

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

Preparation of Media (simple and complex) significance of sterilization, selection of explant.

Initiating plant tissue culture: (differentiation of explants).

Growth of plant cells into undifferentiated callus mass.

Raising plant cell suspension cultures *in vitro.*

Monitoring Microbial contamination (bacteria, fungi and mycoplasma)/Sterilization techniques: Theory and Practical.

- Glass ware sterilization
- Media sterilization
- Laboratory sterilization

Demonstration/operation of large scale fermenters

Sereening, isolation and selection of cellulolytic microorganism B.O.D. determination

Books Recommended:

1. Chawla, H.S. (2004). Laboratory Manual for Plant Biotechnology, Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
2. Benson, H.J. (1994). Microbiological Applications, 6th ed., Win, C. Brown Publishers, England.
3. Cappucino, J.G. and Serman, N. (2002). Microbiology–A Laboratory Manual, 6th ed., Pearson Education, New Delhi.

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SEMESTER–VI

EDUCATION

MODERN INDIAN 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 & aims of Elementary Education
2. Universalization of Elementary Education – Need & importance and its problems

UNIT–II

1. Meaning & Aims of Secondary Education
2. Vocationalization of Secondary Education – Meaning, Need & importance and its problems

UNIT–III

1. Role of Sarv Shiksha Abhiyan in strengthening Elementary Education
2. Right to Education Act – 2009

UNIT–IV

1. Functions of PSEB, CBSE, ICSE
2. Functions of NCERT , SCERT, UGC

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. Bhatia K.K., Chadha P.C., Kadyan, K.S. Sharma, S: Modern Indian Education and its Problems, Parkash Brothers Ludhiana, 2005.
2. Bhatnagar, Suresh: Modern Indian Education and its Problems, Meerut, R.Lall Book Depot (2006).
3. Bhullar, G.K.: Emerging Indian Education: Challenges and Trends, Jalandhar, Modern Publishers, (2010).
4. Chakravarti, M. Education in the 21st Century, Kalpaz Publishers, New Delhi, 2007.
5. Srivastva, D.S., Elementary Education, Isha Books Publishers, New Delhi, 2007
6. Sodhi, T.S: Emerging Trends in Indian Education, Patiala, Bawa Publication, 2007.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Agriculture & Forestry)

SEMESTER–VI

DAIRY FARMING (VOCATIONAL)
(THEORY)

Time: 3 Hours **Max. Marks: 100**
Periods/Week: 6 **Theory Marks: 50**
Instructions for the Paper Setters: **Practical Marks: 40**
Internal Assessment: 10

1. Question paper should be set strictly according to the syllabus and in 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 two marks each requiring short replies up to five lines each. **(5x2=10 Marks)**
   b) Five questions of six marks each requiring short replies shall be asked. The candidate has the choice to attempt eight questions. **(4x6=24 Marks)**
   c) Two questions of descriptive type requiring five pages for each answer shall be asked. The candidate has the choice to attempt one question. **(16x=16 Marks)**
4. The question paper should cover the whole syllabus.

1. Marketing of Milk and Milk Products

Organisation of dairy unit, cooling, storage and transportation of milk. Standardization, homogenization and pasteurization of milk. Types of marketable milk. Processing of milk. Quality control tests of milk and *ghee.* Distribution of milk, Export of milk and milk products.

2. Role of Govt. departments and institutions in Dairy

Farming
Role of organizations like Animal Husbandry Department, Dairy Development Board, National Dairy Research Institute, Banks, Co-operatives, P.A.U., GADVASU, Milk Producers' Cooperative Societies, Milk Plants, Private milk plants, their role as stake holders.

3. Operation Flood
Role and scope of Dairy Farming in National Economy. National Dairy Development Board, Indian Dairy Development Corporation, Milkfed.

4. Dairy Farm Record Keeping and its importance.

SEMESTER–VI

DAIRY FARMING (VOCATIONAL)
(PRACTICAL)

Time: 3 Hours **Total Marks: 50**
Periods/Week **Practical Marks: 40**
Internal Assesment Marks: 10

Distribution of Marks:

Assignment	**10 Marks**
Practical Note book	**10 Marks**
Four Visits to Dairy Farms	**10 Marks**
Oral Examination	**05 Marks**
Written Test	**05Marks**
Internal Assessment	**10 Marks**

Note: Preparation of Practical Note book and Dairy Farm Assignment is compulsory
1. Separation of Cream from Milk.
2. Preparation of Curd, butter, ghee, cheese and khoa.
3. Determining the Value of Dairy Animal.
4. Preparation of Dairy Farm Loan Scheme for Submission to credit Agencies.
5. Judging of lactating Cows and Buffaloes.
6. Practice in Computation of Rations for Dairy Stock.

Text Books:

1. A Text book of Animal Husbandry by G.C. Banerjee.
2. A Text book of Livestock Production and Management in Tropics by D.N. Verma.
3. Livestock Production and Management by NSR Sastry and C.K. Thomas.
4. Livestock and Poultry Production by H. Singh and E.N. Moore.
5. Handbook of Animal Husbandry Published by ICAR New Delhi.
6. Thronton's Meat Hygiene by Thronton.
7. Dairy Farming: Extension booklet No. PAU/1992/F/29/P published by Communication Centre, PAU, Ludhiana (Punjab).
8. "Dudharaun Layee Dharay" (Punjabi) Extension booklet No. PAU/1993/F/560 Published by PAU, Ludhiana.
9. Dairy Farm Record Keeping, PAU, Ludhiana (Punjabi) Booklet.
10. Feeding Dairy Cattle Extension booklet published by NDRI, Karnal. (English).

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI

RSL–321: RUSSIAN

PAPER–I: (COMPOSITION, GRAMMAR & COMPREHENSION)
(WRITTEN)

Time: 3Hrs **Marks: 40**

A. Composition

i) An official letter in French (one out of two) **Marks: 10**

B. Grammar

i). Questions on applied grammar pertaining to the text **Marks: 30**
(Exercises from the textbook)

Course of Reading & Prescribed Text-Book:

Nouveau Sans Frontières 3 by Philippe Dominique & Jacky Girardet.

Reference: "CONNEXIONS-3" by Regine Merieux & Yves Loiseau, Published by Didier.

Topic for Official Letters

i. Demande d'emploi
ii. Demande de renseignements p. ex.:
- Alliance Francaise
- Ambassade de France
- Bureau dev tourisme
- Agence de voyage

iii. Commonder des articles
iv. Demande de conge

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI

RSL–321: RUSSIAN

PAPER–II (WRITTEN) (TRANSLATION & TEXT)

Time: 3 Hrs. **Marks: 40**

A- TRANSLATION:

1. Translation from French to English. (Passage) **Marks: 10**

2. Translation from English to French. (Short Sentences) **Marks: 10**

B – TEXT:

1. Questions from main texts of lessons from the text book, excluding articles, extracts etc. given after the lesions. **Marks: 10**
(5 out of 7 questions to be attempted)

2. Objective type questions pertaining to the various aspects of French civilization covered in the textbook. (10 questions out of 15 in the form of fill in the blanks or multiple choices to be attempted).

Marks: 10

NOTE: Use of Dictionaries is permitted.

Prescribed Text-Book:
Nouveau Sans Frontières 3 by Philippe Dominique & Jacky Girardet
Reference: "CONNEXIONS-3" by Regine Merieux & Yves Loiseau, Published by Didier

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI

RSL–321: RUSSIAN

PAPER–III (ORAL)

Marks: 20

- Reading of a text **Marks: 05**

- Conversation **Marks: 10**

- Retelling of a small text in French **Marks: 05**

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Languages)

SEMESTER–VI

FRL–321: FRENCH

PAPER–I: (COMPOSITION, GRAMMAR & COMPREHENSION)
(WRITTEN)

Time: 3Hrs **Max. Marks: 40**

A. Composition
i) An official letter in French (one out of two) **Marks: 10**

B. Grammar
i). Questions on applied grammar pertaining to the text **Marks: 30**
(Exercises from the textbook)

Course of Reading & Prescribed Text-Book:

Nouveau Sans Frontières 3 by Philippe Dominique & Jacky Girardet
Reference: "CONNEXIONS-3" by Regine Merieux & Yves Loiseau, Published by Didier

Topic for official letters
iii. Demande d'emploi
iv. Demande de renseignements p. ex.:
- Alliance Francaise
- Ambassade de France
- Bureau dev tourisme
- Agence de voyage

iii. Commonder des articles
iv. Demande de conge

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Languages)

SEMESTER–VI

FRL–321: FRENCH

PAPER–II: (TRANSLATION & TEXT)
(WRITTEN)

Max. Marks: 40

A- TRANSLATION:

1. Translation from French to English. (Passage) **Marks: 10**
2. Translation from English to French. (Short sentences) **Marks: 10**

B – TEXT:

1. Questions from main texts of lesions from the text book, excluding articles, extracts etc. given after the lesions. (5 out of 7 questions to be attempted) **Marks: 10**
2. Objective type questions pertaining to the various aspects of French civilization covered in the textbook. (10 questions out of 15 in the form of fill in the blanks or multiple choices to be attempted). **Marks: 10**

NOTE: Use of Dictionaries is permitted.

Prescribed Text-Book:

Nouveau Sans Frontières 3 by Philippe Dominique & Jacky Girardet

Reference: "CONNEXIONS-3" by Regine Merieux & Yves Loiseau, Published by Didier

SEMESTER–VI

FRL–321: FRENCH

PAPER–III (ORAL)

Max. Marks: 20

- Reading of a text **Marks: 05**

- Conversation **Marks: 10**

- Retelling of a small text in French **Marks: 05**

SEMESTER–VI

URDU

URL–321: URDU FICTION AND MASS MEDIA

Time: 3 Hours **Marks: 50**

1. Study of short story
2. Media and Information:
   (News, Column, Editorial and Internet – Basic information)

Book Prescribed:

1. Urdu Ke Terah Afsane, Educational Book House, AMU Market, Aligarh – 202002.

Books Recommended:

1. Mukhtsar Tarikh-e- Adab-e-Urdu by Syed Ejaz Husain, Educational Book House, AMU Market, Aligarh – 202002 (UP).
2. Tarikh Adab Urdu by Ram Babu Sexena, Educational Book House, AMU Market, Aligarh – 202002 (UP).
3. Urdu Adab Ki Tarikh by Azeem-ul-Haq Junaidi, Educational Book House, AMU Market, Aligarh – 202002 (UP).
4. Urdu Zaban-o-Adab ka Khaka by Khushhal Zaidi, Edara Bazme Khizre Rah, 80- Ghaffar Manzil Jamianagar, New Delhi, 110025.
5. Urdu Sahafat by Anwar Dehlvi, Urdu Academy, Delhi.

SEMESTER–VI

URDU

URL–322: HISTORY OF URDU LITERATURE

Time: 3 Hours **Marks: 50**

Urdu Ki Ibtida Aur Irtiqa

Urdu ka Ahd-e-Zareen, with Special Reference to the Following:-

Zauq, Ghalib, Momin and Zafar

Urdu Sha'iri Ke Naye Rujhanat with special reference to the following poets:

Azad, Hali, Chakbast and Iqbal

Taraqqi Pasand Tehrik Aur Urdu Sha'iri with special reference to the following poets: Majaz, Faiz, Ali Sardar Jafri and Jazbi

Urdu Nasr Ka Irtiqa Aur Fort William College

Urdu Nasr Ka Ahd-e-Zareen with Special Reference to the Following:

Sir Syed Ahmad Khan, Shibli Naumani and Hali

Modern Urdu Friction:

General information about the contribution of:

Krishan Chander, Rajinder Singh Bedi, Qurratul Ain Haider and Ismat Chughtai and Kanhiya Lal Kapoor.

Books Recommended:

1. Mukhtsar Tarikh-e- Adab-e-Urdu by Syed Ejaz Husain, Educational Book House, AMU Market, Aligarh – 202002 (UP).
2. Tarikh Adab Urdu by Ram Babu Sexena, Educational Book House, AMU Market, Aligarh– 202002 (UP).
3. Urdu Adab Ki Tarikh by Azeem-ul-Haq Junaidi, Educational Book House, AMU Market, Aligarh – 202002 (UP).
4. Urdu Sahafat by Anwar Dehlvi, Urdu Academy, Delhi.
5. Urdu Zaban-o-Adab ka Khaka by Khushhal Zaidi, Edara Bazme Khizre Rah, 80- Ghaffar Manzil Jamianagar, New Delhi, 110025.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Languages)

SEMESTER–VI

PERSIAN

PRL–321: COMPOSITION AND GRAMMAR

Time: 3 Hours **Marks: 50**

Composition:

(a) Composition: Essay in Persian on any one of the following:-

Gulistan-e-saadi, Hafiz, Farsi Ghazal, Farsi Qasida , Masnavi Manavi , Sarmad, Bahar , Parveen, Umar Khayam & Khusru bahaisiyat Ghazalgo

b) Grammar: Definitions and examples of the following: Ajza-e-she'r, Matla, Maqta,

Husan-e-Matla, Tashbeeb, Gurez, Dua, Rukhsat, Salam-wa-Noha

Tajnis (Tajnis-e-Taam, Tajnis-e-Murakkab, Tajnis-e-Khatti)

Talmih, Ista'ara, Kinaya, Tashbeeh, Ihaam, Mubaligha, Husan-e-Ta'leel,

Tajahul-e-Arifana, Siyaqat-ul-Adad, Mira'tun-Nazir –o- Tarse'a

Books Recommended:

1. Naseem-e-Balaghat by Jalaluddin Jafri, 2- Katra Road, Allabhabad – 211002.
2. Ma'ani-o-Bayan**.** By Dr. Jalil Tajlili, Tehran Edition.
3. Al-Mu'ajjam by Shams Qais Razi, Edara Musannifin, Hydeabad.

SEMESTER–VI

PERSIAN

PRL–322: STUDY OF LITERATURE

Time: 3 Hours **Marks: 50**

Composition:

(a) Prose:
Short History of Short Story, Novel and Drama

(b) Poetry:
Study of different forms of Poetry:- Ghazal, Qasida , Masnavi, Rubai and Qata etc.

Books Recommended:

1. Naseem-e-Balaghat by Jalaluddin Jafri, 2- Katra Road, Allabhabad – 211002.
2. Ma'ani-o-Bayan**.** By Dr. Jalil Tajlili, Tehran Edition.
3. Al-Mu'ajjam by Shams Qais Razi, Edara Musannifin, Hydeabad.

SEMESTER–VI

SANSKRIT (ELECTIVE)
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i'u&i= dk ek/;e fgUnh gksxkA mÙkj laLd`r@fgUnh@iatkch@vaxzsth esa gks ldrs gSaA

<u>i'ui= fuekZ.k funsZ'k</u> &

I Hkxonxhrk ¼f}rh; v/;k;½ esa ls nl 'yksd nsdj ikap dh lizlax 0;k[;k iNh tk,& 5x7 = 35

II Hkxonxhrk ¼f}rh; v/;k;½ esa ls pkj i'u nsdj nks dk mÙkj iNk tk, & 2x7½ = 15

III ykSfdd lkfgR; esa ls pkj dfr;ksa nsdj nks dk lkekU; ifjp; iNk tk, & 2x10 = 20

IV nl leLrin@foxzg nsdj ikap dk foxzg@leLrin iNk tk, & 5x2 = 10

V pkj vyadkj nsdj nks dk y{k.k ,oa mnkgj.k lfgr Li"Vhdj.k iNk tk, & 2x5 = 10

VI rhu fucU/k nsdj laLd`r esa ,d fucU/k nl iafDr;ksa esa fy[kok;k tk, & 1x10 = 10

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¼?k½ vyadkj & miek] mRi{kk] :id] n"VkUr] ;ed] 0;frjsd] vuqikl rFkk fo'k"kkfDrA 10 vad

¼³½ fucU/k & 10 vad

1- lLd`rHkk"kk;k% egŸoeA
2- ee fi;: iqLrdeA
3- ee fi;dfo%A
4- vkn'k% Nk=%A
5- lR;eo t;rA
6- lRlxfr%A

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Languages)

SEMESTER–VI

FUNCTIONAL SANSKRIT (VOCATIONAL)

Time: 3 Hours **Max. Marks: 100**
Theory Marks: 84
Practical Marks: 16

Note: Paper will have 3 Sections i.e. Section A, B & C. Question Paper will be set in Hindi.

Section–A

In this Section 10 objective type questions of 2 marks each will be asked. All questions will be compulsory with a total weightage of 20 marks.

Section–B

In this Section 12 short answer type questions will be asked. Candidates will have to attempt 8 questions carrying 6 marks each with a total weightage of 48 marks.

Section–C

In this Section 4 questions will be asked. Candidates will have to attempt 2 questions. Each question will carry 8 marks. Practical will carry 16 Marks with a total weightage of 32 marks. **16 (Written) + 16 (Practical)**

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x.kifr itk orkfuA

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ljLorh itk oreA

f'koi tk oreA

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
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SEMESTER–VI

ENGLISH (COMPULSORY)

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

Instructions for the Paper Setter and Distribution of Marks:
Note: The paper setters should avoid questions of theoretical nature on English Grammar.
The question paper will consist of three sections and the distribution of marks will be as under:
Section A: **10 Marks**
Section B: **24 Marks**
Section C: **16 Marks**

Section–A:

I. SIX questions(three questions based on the prescribed one-act plays from the textbook, *Glimpses of Theatre* and three questions based on the novel, *The English Teacher)* requiring very short answers based on the close reading of the prescribed novel and one-act plays shall be set and examinees will be expected to answer any FIVE. **(2x5=10 Marks)**

Section–B:

II. THREE questions requiring brief descriptive answers based on character, tone, plot and theme(s) in the prescribed one-act plays will be set and examinees will be expected to attempt any TWO. **(6x2= 12 Marks)**

III. THREE questions on central idea, theme, tone or style etc. of the prescribed novel will be set for the students to attempt any TWO of these questions. **(6x2= 12 Marks)**

Section–C:

IV. ONE question requiring the students to write an essay on one of the three given topics will be set. **(1x8=8 Marks)**

V. TWO essay type questions (one from the prescribed one-act plays and one from the prescribed novel) will be set for the students to answer any ONE of these questions. **(1x8= 8 Marks)**

Texts Prescribed:

1. *The English Teacher* by R.K. Narayan
2. *Glimpses of Theatre*, Guru Nanak Dev University Amritsar.

Course Contents:

1. The study of the whole text of the novel, *The English Teacher* **21 Marks**
2. The study of the following one-act plays from the prescribed book, *Glimpses of Theatre* **21 Marks**
   i) The Will
   ii) Villa for Sale
   iii) Progress
   iv) The Monkey's Paw
   v) Sorry Wrong Number
3. Essay Writing **8 Marks**

SEMESTER–VI
ENGLISH (ELECTIVE)
MODERN ENGLISH NOVEL

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

Texts Prescribed:

1. *So Many Hungers* by Bhabani Bhattacharya
2. *The Power and the Glory* by Graham Greene
3. *Background to the Study of English Literature* by B. Prasad, Macmillan India Limited (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III)

Instructions for the Paper Setter and Distribution of Marks:

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

Note: The examinees will be required to answer all the **TEN** questions set as per the following scheme:

1. Three very short-answer questions (approximately 5 lines each) from *So Many Hungers*
2. Three very short-answer questions (approximately 5 lines each) from *The Power and the Glory*
3. Four very short-answer questions (approximately 5 lines each) from *Background to the Study of English Literature* by B. Prasad. (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III) The questions shall deal with simple definitions and examples of literary terms introduced in the book. (10 x2=20 Marks)

Section–B

Note: The examinees will be required to answer **EIGHT** questions set as per the following scheme:

1. The examinees will be required to answer **THREE** short-answer questions out of the **FOUR** questions set from the novel, *So Many Hungers*. Each answer should be written in about 10-15 sentences.
2. The examinees will be required to answer **THREE** short-answer questions out of the **FOUR** questions set from the novel, *The Power and the Glory*. Each answer should be written in about 10-15 sentences.
3. The examinees will be required to answer **TWO** short-answer questions out of the **FOUR** questions set from the prescribed book, *Background to the Study of English Literature*. (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III) Each answer should be written in about 10-15 sentences.

Note: Questions of both theoretical and practical nature requiring understanding of literary concepts and developments may be asked. At least two questions may be set on the analysis of passages/poems that clearly exhibit the use of literary devices discussed in the book. (8x6=48 Marks)

Section–C

The examinees will be required to answer any **two** questions (each of 16 marks) out of the three questions set as per the following scheme:

1. One essay type question (3 to 4 pages) from *So Many Hungers*
2. One essay type question (3 to 4 pages) from *The Power and the Glory*
3. One essay type question (3 to 4 pages) on the structure/ development of a genre as discussed in B. Prasad's book. (Chapters III and IV from Section-I; Chapters IV, V and VI from Section-II; Chapters IV, V and VI from Section-III) (2x16=32 Marks)

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SEMESTER–VI

FUNCTIONAL ENGLISH (VOCATIONAL)

OFFICE COMMUNICATION FOR BUSINESS

Time: 3 Hrs. **Total Marks: 100**
Theory Paper: 75
Practical Marks: 25

Instructions for the Paper Setter and Distribution of Marks:

Theory: 75 Marks
The question paper will consist of three sections and distribution of marks will be as under:
Section-A: 16 Marks
Section-B: 35 Marks
Section–C: 24 Marks
Practical: 25 Marks

SECTION–A

EIGHT very short answer questions requiring students to define, describe, illustrate the concepts, or terms or else requiring the students to tick the most appropriate option or a substitute word out of those provided by the paper setter in the form of multiple choice will be set. The students will be required to attempt all the questions. **(8x2=16 Marks)**

SECTION–B

SEVEN questions of practical nature will be set to test various skills as required in writing notices, agenda and minutes and business correspondence etc. The students will be required to attempt any **FIVE** of these tasks/ questions. Data for use in these tasks may be provided by the examiner. However this is not a necessary condition. **(7x5=35 Marks)**

SECTION–C

ONE question (with internal choice) requiring students to present a likely telephonic conversation on a business topic in the written mode. **12 Marks**
ONE question (with internal choice) requiring students to write notes on description of products, services and process or customer complaint. **12 Marks**

Objectives:
- To equip learners with language proficiency in business/work situations.
- To equip learners with techniques of written communication in business situations.
- To expand vocabulary and develop reading comprehension of material related to business.
- To make learners aware of features of business communication through various modes.

Course Contents:

UNIT–I

Business Communication:

- The format of business letters and faxes: Different types of formats, address, opening and closing, subject, heading, subheading, numbering etc.
- Writing letters of application with curriculum vitae/resume, letters of invitation, reply of invitation, enquiry, conference arrangements, reference, announcing forthcoming events, products, visits, making booking for trade fairs, complaints and replies to complaints, apologies, thanks, etc.
- Writing office memos and notes.

UNIT–II

Business Meetings:

- Writing notices, agendas, resolutions, minutes of business meetings, preparing notes for a meeting.

UNIT–III

Telephonic Interaction in Business:

- Taking messages, making appointments, making enquiries regarding travel bookings, hotel bookings, services, business trading (stocks etc.), placing orders, receiving orders, apologizing, complaining, giving information, etc.

UNIT–IV

Dealing with Clients and Customers:

- Describing products and services
- Describing processes
- Persuading clients
- Negotiating and agreeing

Suggestions for Teaching:

Along with training in written communication in business, role play, simulation of business situations and playing tape recorded material (e.g. Interview, telephonic conversations) may be used to equip the learners with language proficiency required in work situations. The same may be tested in practical.

SEMESTER–VI

FUNCTIONAL ENGLISH (VOCATIONAL)

(PRACTICAL)

Marks: 25

There will be a practical task of 25 marks on different business tasks performed orally or in written mode. The external examiner for practical work shall also give due weightage to the training file of each student at the time of evaluation.

Books Recommended:

1. *Oxford Guide to Effective Writing and Speaking* by John Seely.
2. *A Course in Grammar and Compostion* by Geetha Nagaraj, Foundation Books, 2006.

SEMESTER–VI

ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)

ਸਮਾਂ : 3 ਘੰਟੇ **ਕੁਲ ਅੰਕ : 50**

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ

1. **ਜੱਗ ਬੀਤੀ ਹੱਡ ਬੀਤੀ** (ਕਥਾ ਸੰਗ੍ਰਹਿ) (ਸੰਪਾ. ਜੁਰਿੰਦਰ ਸਿੰਘ ਰਾਹੀ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2008. (ਪਿਛਲੀਆਂ ਛੇ ਕਹਾਣੀਆਂ)
2. **ਗੰਦ ਪ੍ਰਵਾਹ**
   (ਸੰਪਾ. ਡਾ. ਬਿਕਰਮ ਸਿੰਘ ਘੁੰਮਣ ਅਤੇ ਜਸਪਾਲ ਸਿੰਘ ਰੰਧਾਵਾ)
   ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ
   (ਭਾਗ ਦੂਜਾ)
3. **ਲੇਖ ਰਚਨਾ** (ਵਿਦਿਅਕ ਅਤੇ ਸਭਿਆਚਾਰਕ ਵਿਸ਼ਿਆਂ ਬਾਰੇ)
4. **ਸੰਖੇਪ ਰਚਨਾ**
5. **ਵਿਆਕਰਣ :**
   (ੳ) ਕਿਰਿਆ ਵਾਕੰਸ਼ : ਪਰਿਭਾਸ਼ਾ, ਬਣਤਰ ਤੇ ਪ੍ਰਕਾਰ
   (ਅ) ਕਾਰਕ ਅਤੇ ਕਾਰਕੀ ਸਬੰਧ

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1.	ਕਿਸੇ ਇਕ ਕਹਾਣੀ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ (ਦੋ ਵਿਚੋਂ ਇਕ)	10 ਅੰਕ
2.	ਕਿਸੇ ਇਕ ਨਿਬੰਧ ਦਾ ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ (ਦੋ ਵਿਚੋਂ ਇਕ)	10 ਅੰਕ
3.	ਲੇਖ ਰਚਨਾ : ਤਿੰਨਾਂ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਵਿਸ਼ੇ ਉਤੇ	05 ਅੰਕ
4.	ਸੰਖੇਪ ਰਚਨਾ	05 ਅੰਕ
5.	ਨੰਬਰ 5 ਉਤੇ ਨਿਰਧਾਰਿਤ ਵਿਆਕਰਣ ਵਿਚੋਂ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ	10 ਅੰਕ
6.	ਉਪਰੋਕਤ ਲੜੀ ਨੰਬਰ 1 ਅਤੇ 2 ਦੀਆਂ ਪੁਸਤਕਾਂ ਵਿਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ 5 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਦਾ ਉੱਤਰ 50 ਸ਼ਬਦਾਂ ਤੋਂ ਵੱਧ ਨਾ ਹੋਵੇ	

5X2=10 ਅੰਕ

SEMESTER–VI

ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)

ਸਮਾਂ ਤਿੰਨ ਘੰਟੇ **ਕੁਲ ਅੰਕ : 100**

1. **ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (1700 ਈ. ਤਕ)**
(ਸੰਪਾ. ਡਾ. ਧਰਮ ਸਿੰਘ, ਡਾ. ਹਿਰਦੇਜੀਤ ਸਿੰਘ ਭੋਗਲ),
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2007.
ੳ) ਸਾਹਿਤਕ ਰੂਪ, ਧਾਰਾਵਾਂ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ
ਅ) ਸਾਹਿਤਕ ਰੂਪ ਦੇ ਸਮੁੱਚੇ ਵਿਕਾਸ ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
(ਵਿਅਕਤੀਗਤ ਸਾਹਿਤਕਾਰ ਸੰਬੰਧੀ ਪ੍ਰਸ਼ਨ ਨਹੀਂ ਪੁੱਛਿਆ ਜਾਵੇਗਾ)
ਉਪਰੋਕਤ ਦੋਹਾਂ ਭਾਗਾਂ ਵਿਚੋਂ ਦੋ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਪ੍ਰੀਖਿਆਰਥੀਆਂ ਨੇ ਇਕ ਇਕ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨਾ ਹੋਵੇਗਾ।

20+20 = 40 ਅੰਕ

2. **ਸਾਹਿਤ ਅਤੇ ਹੋਰ ਅਨੁਸ਼ਾਸਨ**
ਸਾਹਿਤ ਦੇ ਤੱਤ, ਸਾਹਿਤ ਅਤੇ ਸਮਾਜ, ਸਾਹਿਤ ਅਤੇ ਸ਼ਖਸੀਅਤ, ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ (ਤਿੰਨ ਵਿਚੋਂ ਦੋ)

10+10 = 20 ਅੰਕ

3. (ੳ) **ਛੰਦ** : ਦੋਹਿਰਾ, ਸੋਰਠਾ, ਕਬਿੱਤ, ਕੋਰੜਾ, ਚੌਪਈ, ਸਿਰਖੰਡੀ, ਸਵੱਈਆ ਬੈਂਤ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ (ਚਾਰ ਵਿਚੋਂ ਦੋ)

5+5 = 10 ਅੰਕ

(ਅ) **ਰੇਖਾ ਚਿੱਤਰ** : ਨਾਟਕ, ਸਫ਼ਰਨਾਮਾ, ਜੀਵਨੀ, ਸਵੈ-ਜੀਵਨੀ : ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਤੇ ਤੱਤ (ਦੋ ਵਿਚੋਂ ਇਕ)

10 ਅੰਕ

4. **ਵਿਹਾਰਕ ਆਲੋਚਨਾ** :
ਮੱਧਕਾਲੀ ਕਾਵਿ ਤੇ ਮੱਧਕਾਲੀ ਵਾਰਤਕ ਦੇ ਸੰਦਰਭ ਵਿਚ
(ਕਵਿਤਾ ਜਾਂ ਵਾਰਤਕ ਦੇ ਦੋ ਵਿਚੋਂ ਕਿਸੇ ਇਕ ਟੁਕੜੇ ਦੀ)

20 ਅੰਕ

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ਪ੍ਰਕਾਰਜੀ ਪੰਜਾਬੀ (ਫੰਕਸ਼ਨਲ)

ਪੰਜਾਬੀ ਵਿਚ ਕੰਪਿਊਟਰ ਦੀ ਵਰਤੋਂ ਦਾ ਅਭਿਆਸ

ਕੁਲ ਅੰਕ : 100

ਸਮਾਂ : 2 ਘੰਟੇ

ਪ੍ਰੈਕਟੀਕਲ ਅੰਕ: 80
ਮੌਖਿਕ ਪ੍ਰੀਖਿਆ : 20

ਪ੍ਰੈਕਟੀਕਲ

ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਲੇਖ, ਪੱਤਰ, ਨੋਟ ਆਦਿ ਕੰਪਿਊਟਰ ਰਾਹੀਂ ਤਿਆਰ ਕਰਕੇ ਪ੍ਰਿੰਟ–ਆਊਟ ਲੈਣ ਲਈ ਕਿਹਾ ਜਾਵੇਗਾ । (ਪ੍ਰੈਕਟੀਕਲ ਦੇ 80 ਅੰਕ ਹੋਣਗੇ)
2. ਵਿਦਿਆਰਥੀ ਕੋਲੋਂ ਕੰਪਿਊਟਰ ਅਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ ਬਾਰੇ ਮੌਖਿਕ ਪ੍ਰਸ਼ਨ ਵੀ ਪੁਛੇ ਜਾਣਗੇ । (ਮੌਖਿਕ ਪ੍ਰੀਖਿਆ ਦੇ 20 ਅੰਕ ਹੋਣਗੇ)।

(ੳ) **ਪੰਜਾਬੀ ਵਰਡ ਪਰੋਸੈਸਿੰਗ** : ਸਿਸਟਮ ਖੋਲ੍ਹਣਾ, ਸਿਸਟਮ ਦੀ ਚੋਣ : ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਚੋਣ–ਅੰਮ੍ਰਿਤ ਲਿਪੀ, ਗੁਰਬਾਣੀ ਲਿਪੀ, ਗੁਰਬਾਣੀ ਕਲਮੀ, ਫਾਇਲ ਬਨਾਉਣੀ, ਸਮਗਰੀ ਦੀ ਪ੍ਰਕਿਰਤੀ ਅਨੁਸਾਰ ਪੰਨੇ ਦੀ ਸੈਟਿੰਗ, ਡਾਇਰੈਕਟਰੀ ਬਨਾਉਣੀ ਅਤੇ ਫਾਇਲ ਨੂੰ ਸੇਵ ਕਰਨਾ ।

(ਅ) ਹਾਰਡ ਡਿਸਕ ਤੋਂ ਫਲੌਪੀ ਜਾਂ ਪੈਨ–ਡਰਾਈਵ ਅਤੇ ਜਾਂ ਫਲੌਪੀ ਤੇ ਪੈਨ–ਡਰਾਈਵ ਤੋਂ ਹਾਰਡ ਡਿਸਕ ਉਤੇ ਸਮੱਗਰੀ ਪੈਨ–ਡਰਾਈਵ 'ਤੇ ਤਬਦੀਲ ਕਰਨੀ, ਫੀਡ ਕੀਤੀ ਸਮਗਰੀ ਦਾ ਪ੍ਰੀਵਿਊ ਅਤੇ ਪ੍ਰਿੰਟ ਲੈਣਾ ; ਰੀਸੈਟਿੰਗ, ਕੁਰੈਕਸ਼ਨ ਅਤੇ ਡਬਲ ਸਕਰਿਪਟਿੰਗ ਦਾ ਅਭਿਆਸ ਕਰਨਾ, ਫੌਂਟ ਦਾ ਆਕਾਰ ਚੁਣਨਾ, ਫੀਡ ਕੀਤੀ ਸਮੱਗਰੀ ਦੇ ਭਾਗਾਂ ਨੂੰ ਇਕ ਥਾਂ ਤੋਂ ਦੂਜੀ ਥਾਂ ਲਿਜਾਣਾ ਅਤੇ ਪੈਰਾ ਸੈਟਿੰਗ ਕਰਨਾ ।

(ਇ) ਪੰਜਾਬੀ ਦੀ ਵੈਬਸਾਈਟ ਖੋਲ੍ਹਣਾ, ਪੰਜਾਬੀ ਵਿਚ ਈ.ਮੇਲ ਭੇਜਣ ਦਾ ਅਭਿਆਸ ਕਰਨਾ ।

SEMESTER–VI

BCG-102 **ਮੁਢੱਲੀ ਪੰਜਾਬੀ**
(ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ ਤੇ ਸੱਭਿਆਚਾਰ)
(In Lieu of Punjabi Compulsory)

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

ਅੰਕਾਂ ਦੀ ਵੰਡ :-

ਭਾਗ ੳ:- ਇਸ ਭਾਗ ਵਿੱਚ 15 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਵਲੋਂ ਕਿਸੇ 10 ਦੇ ਉੱਤਰ 30-40 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ । ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 2 ਅੰਕ ਹੋਣਗੇ ।

ਭਾਗ ਅ:- ਇਸ ਭਾਗ ਵਿੱਚ 6 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ । ਵਿਦਿਆਰਥੀ ਕਿਸੇ 3 ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ 400-500 ਸ਼ਬਦਾਂ ਵਿੱਚ ਦਿੱਤੇ ਜਾਣ। ਹਰੇਕ ਦੇ 10 ਅੰਕ ਹਨ ।

1. **ਰਣਜੀਤ ਸਿੰਘ ਅਧੀਨ ਪੰਜਾਬ ਦਾ ਏਕੀਕਰਨ ਅਤੇ ਵਿਸਥਾਰ :-** 1790 ਵਿੱਚ ਪੰਜਾਬ ਦੇ ਰਾਜਨੀਤਿਕ ਹਾਲਾਤ, ਰਣਜੀਤ ਸਿੰਘ ਦਾ ਜੀਵਨ ਅਤੇ ਜਿੱਤਾਂ, ਅੰਮ੍ਰਿਤਸਰ ਦੀ ਸੰਧੀ, ਰਣਜੀਤ ਸਿੰਘ ਦੇ ਅੰਗਰੇਜਾਂ ਨਾਲ ਸਬੰਧ , ਸੈਨਿਕ ਪ੍ਰਬੰਧ, ਪੰਜਾਬ ਦਾ ਮਿਲਾਨ ਬ੍ਰਿਟਿਸ਼ ਰਾਜ ਵਿੱਚ ।

2. **ਰਾਜਨੀਤਿਕ ਜਾਗ੍ਰਿਤੀ ਅਤੇ ਸਮਾਜਿਕ-ਧਾਰਮਿਕ ਸੁਧਾਰ ਅੰਦੋਲਨ :-** 1857 ਦਾ ਵਿਦਰੋਹ ਅਤੇ ਪੰਜਾਬ, ਕੂਕਾ ਅੰਦੋਲਨ, ਗਦਰ ਅੰਦੋਲਨ, ਆਰੀਆ ਸਮਾਜ, ਨਿਰੰਕਾਰੀ ਤੇ ਨਾਮਧਾਰੀ, ਸਿੰਘ ਸਭਾ ਅੰਦੋਲਨ, ਗੁਰਦੁਆਰਾ ਸੁਧਾਰ ਅੰਦੋਲਨ ਅਤੇ ਅਕਾਲੀ।

3. **ਵੰਡ ਅਤੇ ਸੁਤੰਤਰਤਾ :-** ਜਲਿਆਵਾਲਾ ਬਾਗ ਹੱਤਿਆਕਾਂਡ, ਅਸਹਿਯੋਗ ਅੰਦੋਲਨ, ਨੌਜਵਾਨ ਭਾਰਤ ਸਭਾ, ਸਿਵਲ ਨਾ ਫੁਰਮਾਨੀ ਅੰਦੋਲਨ, ਭਾਰਤ ਛੱਡੋ ਅੰਦੋਲਨ, ਮਹਾਨ ਸੁਤੰਤਰਤਾ ਸੈਨਾਨੀਆਂ ਦਾ ਯੋਗਦਾਨ-

 # ਲਾਲਾ ਲਾਜਪਤ ਰਾਏ **# ਮਾਸਟਰ ਤਾਰਾ ਸਿੰਘ**
 # ਸ.ਕਰਤਾਰ ਸਿੰਘ ਸਰਾਭਾ **# ਸ. ਭਗਤ ਸਿੰਘ**
 # ਸ.ਊਧਮ ਸਿੰਘ **# ਸ. ਖੜਕ ਸਿੰਘ**

ਸਬੰਧਤ ਪੁਸਤਕਾਂ:-

1. **'ਰਣਜੀਤ ਸਿੰਘ',** ਨਰਿੰਦਰ ਕ੍ਰਿਸ਼ਨ ਸਿਨਹਾ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
2. **'ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ',** ਸੀਤਾ ਰਾਮ ਕੋਹਲੀ, ਆਤਮਾਰਾਮ ਐਂਡ ਸੰਨਜ, ਪਬਲਿਸ਼ਰਜ਼ ਐਂਡ ਬੁੱਕ ਸੈਲਰਜ਼ ।
3. **'ਸਿੱਖ ਹਿਸਟਰੀ'** 1469-1988 ਖੁਸ਼ਵੰਤ ਸਿੰਘ, ਨਵਯੁੱਗ ਪਬਲਿਸ਼ਰਜ਼, ਨਵੀ ਦਿੱਲੀ ।
4. **'ਸਿੱਖ ਇਤਿਹਾਸ'** ਭਾਗ ਦੂਜਾ (1839-2004), ਖੁਸ਼ਵੰਤ ਸਿੰਘ ਅਨੁਵਾਦਕ ਡਾ. ਗੁਰਦਰਸ਼ਨ ਸਿੰਘ ਔਲਖ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ ਲੁਧਿਆਣਾ।
5. **'ਸਿੱਖ ਇਤਿਹਾਸ'** (1526-1849) ਬਿਸ਼ਨ ਦਾਸ, ਮਲਹੋਤਰਾ ਬ੍ਰਦਰਜ਼ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ ।
6. **'ਪੰਜਾਬ ਦੀਆਂ ਲਹਿਰਾਂ'** (1850-1910), ਸ਼ਮਸ਼ੇਰ ਸਿੰਘ 'ਅਸ਼ੋਕ', ਪ੍ਰਕਾਸ਼ਕ ਕਵਿਰਾਜ ਨਰਾਇਣ ਸਿੰਘ ਵੱਲਭ ਨਿਆਮਤ ਪੁਰੀ ।
7. **'ਪੰਜਾਬ ਦਾ ਵਿਰਸਾ',** ਪ੍ਰਿਥੀਪਾਲ ਸਿੰਘ ਕਪੂਰ, ਨਿਊ ਬੁੱਕ ਕੰਪਨੀ, ਜਲੰਧਰ।
8. **'ਸਿੱਖ ਇਤਿਹਾਸ',** ਕਨਿੰਘਮ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ ।
9. **'ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸ'** (1791-1966) ਸ਼ਿਵ ਗਜਰਾਨੀ, ਮਦਨ ਪਬਲੀਸ਼ਰਜ਼, ਪਟਿਆਲਾ ।

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Languages)

SEMESTER–VI

HINDI (ELECTIVE)

लघु विधायें, रीति, आधुनिक काल तथा शब्दानुवाद

समय : 3 घण्टे **कुल अंक : 100**

नोट : यह प्रश्न–पत्र तीन भागों में विभक्त होगा।

खण्ड–एक

इस भाग में से 10 प्रश्न पूछे जाएंगे। इस का पांच पंक्तियों में उत्तर देना होगा। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न दो अंकों का है। कुल अंक 20 है।

खण्ड–दो

इस भाग में 12 प्रश्न पूछे जायेंगे जिनमें से 8 प्रश्नों का उत्तर देना अनिवार्य होगा। प्रत्येक प्रश्न का उत्तर दो पृष्ठों तक सीमित होगा। प्रत्येक प्रश्न के छः अंक हैं। कुल अंक 48 हैं।

खण्ड–तीन

इस भाग में चार प्रश्न पूछे जायेंगे जिनमें से दो प्रश्नों का उत्तर देना अनिवार्य है। प्रत्येक प्रश्न का उत्तर पांच पृष्ठों का होगा। प्रत्येक प्रश्न सोलह अंकों का होगा। कुल 32 अंक हैं।

निर्धारित पाठ्यक्रम

- गद्य विविधा : सम्पादक डॉ. विनोद कुमार तनेजा तथा हरीश सूद 'निश्चिंत', प्रकाशक : गुरु नानक देव यूनिवर्सिटी, अमृतसर।
- हिन्दी साहित्य का इतिहास : रीति तथा आधुनिक काल

अध्ययन के पंद्रह निर्धारित परिक्षेत्र

- रीतिकाल का नामकरण
- रीतिकालीन काव्य का वर्गीकरण
- रीतिकालीन साहित्य की विशेषताएं
- बिहारी : काव्य सौष्ठव
- प्रमुख रीतिबद्ध कवि : केशवादि (सामान्य परिचय)

- रीतिमुक्त कवि : घनानंद आदि (सामान्य परिचय)
- आधुनिक काल गद्य काल के रूप
- भारतेंदु युग : सामान्य परिचय
- द्विवेदी युग : सामान्य परिचय
- छायावाद : प्रमुख कवि तथा काव्यगत विशेषतायें
- प्रगतिवाद : प्रमुख कवि तथा काव्यगत विशेषतायें
- प्रयोगवाद : प्रमुख कवि तथा 'रारसप्तक' का मूल्यांकन
- उपन्यास तथा कहानी विधा का विकास
- हिंदी आलोचना और आचार्य रामचन्द्र शुक्ल
- नई कविता : अभिप्राय और प्रमुख विशेषतायें

विषयानुसार विभाजन

1. **प्रथम खण्ड** में तकनीक शब्दावली के दो भाग होंगे। 'क' भाग में दस अंग्रेजी शब्दों का हिन्दी अनुवाद तथा 'ख' भाग में दस हिन्दी शब्दों का अंग्रेजी में अनुवाद करना होगा।

   अथवा

   इतिहास से संबंधित दस प्रश्न होंगे। प्रत्येक प्रश्न दो अंकों और पांच पंक्तियों/पचास शब्दों का होगा।

2. **दूसरे खण्ड** के प्रथम उपखण्ड से क्रमशः तीन व्याख्याएं, तीन प्रश्न 'गद्य विविधा' से होंगे। दूसरे उपखण्ड में छः प्रश्न होंगे। प्रत्येक उपखण्ड में से चार–चार प्रश्न करने अनिवार्य होंगे।

3. **तीसरे खण्ड** में से दो प्रश्न पाठ्यपुस्तक तथा दो इतिहास से होंगे। दो प्रश्नों में से एक–एक प्रश्न करना अनिवार्य है।

क) **अंग्रेजी से हिन्दी**

1.	Accuse	अभियोग लगाना
2.	Advertisement	विज्ञापन
3.	Alphabetic Order	वर्णानुकमिक श्रेणी, कोटि
4.	Appendix	परिशिष्ट
5.	Annual Administrative Report	वार्षिक प्रशासकीय रपट
6.	Assistant Superintendent	सहायक अधीक्षक
7.	Attestation	साक्ष्यंकन, प्रमाणीकरण
8.	Bonafide	सद्भावी, वास्तविक
9.	Bacteriology	जीवाणु विज्ञान
10.	Bail	जमानत, जामिन, प्रतिम्
11.	Boundary	परिसीमा, सीमा, सीमांत

12.	Certificate of fitness	आरोग्यापत्र
13.	Circular	परिपत्र, गश्ती चिट्ठी
14.	Commission	आयोग, कमीशन, दलाली, आढ़त
15.	Contingencies	आकस्मि व्यय
16.	Custody	अभिरक्षा
17.	Decentralisation	विकेन्द्रीयकरण
18.	Defendent	प्रतिवादी
19.	Deputation	शिष्टमंडल
20.	Discretion	विवेकाधिकार
21.	Emolument	उपलब्धि, पारिश्रमिक, परिलाभ
22.	Electrical Engineer	विद्युत अभियन्ता
23.	Faculty	संकाय
24.	Finance Committee	वित्त समिति
25.	Foreign Currency	विदेशी मुद्रा
26.	Gazetted Post	राजपत्रित पद
27.	Grant	अनुदान
28.	Geological Survey	भूविज्ञान सर्वेक्षण
29.	Guardianship	संरक्षण
30.	Honorary	अवैतनिक, मानद
31.	Head Quarter	मुख्य केन्द, मुख्यालय
32.	Hydrological data	जलविज्ञान संबंधी बाते
33.	Identity Card	पहचान पत्र
34.	Insignificant	उपेक्ष्य, तुच्छ
35.	Judicial	अदालती, न्यायिक
36.	Kinetise	गति सम्बन्धी
37.	Ledger	खाता
38.	Monopoly	एकाधिकार
39.	Nationalization	राष्ट्रीयकरण
40.	Offender	अपराधी
41.	Proceedings	कार्यवाही
42.	Quoram	गणपूर्ति
43.	Reservation	आरक्षण
44.	Subordinate	अधीनस्थ
45.	Transfer	स्थानांतरण

46.	Unclassified	अवर्गीकृत
47.	Vacancy	रिक्त
48.	Validity	वैधता, मान्यता
49.	Warrant	वारंट/अद्यिपत्र
50.	Zonal	क्षेत्रीय, प्रादेशिक, मंडलीय

ख) हिन्दी से अंग्रेजी

1.	अग्रिमता	Priority Involuntery Unoptional
2.	अनैच्छिक	Unintentional
3.	अर्थशास्त्री	Economist
4.	सीमा–शुल्क/सीमाकर	Custom Duty
5.	इकाई	Unit
6.	उत्तराधिकार	Inheritance, Succession
7.	उन्मलून	Abolition
8.	उपर उदृधृत	Above noted, above quoted
9.	एकरुपता/सारुप्यता	Uniformity, Identity
10.	औपनिवेशिक	Colonical, Dominion
11.	कर्मचारी तंत्र	Bureaucracy
12.	ग्रंथ सूची	Bibliography
13.	गणनीय	Computable, Calculable, Enumerable
14.	घटक	Component, Constituent, factor
15.	घोषणापत्र	Manifesto, Proclamation
16.	चिकित्सक	Doctor, Physician
17.	छात्रावास	Boarding House/Hostel
18.	जन सर्म्पक	Public Relation
19.	टंकण	Type Writing
20.	टीकाकार	Interpreter, Annetator
21.	दण्ड संहिता	Penal Code
22.	द्विभाषिक	Bilingual
23.	धन विनियोग	Investment
24.	नगर निगम	Corporation
25.	नैमित्तिक व्यय	Contingency

26.	पृथक्करण	Separation
27.	प्रधान कार्यालय	Head Quarter
28.	पत्र व्यवहार	Correspondence
29.	पदाधिकारी	Office Bearer
30.	परिषद्	Council/Board
31.	भरण–पोषण	Maintenance
32.	मरणोत्तर	Posthumous
33.	यथार्थता/विशुद्धता	Accuracy
34.	यांत्रिक	Mechanical
35.	राष्ट्रीयता	Nationality
36.	लोकतंत्रात्मक	Democratic
37.	विकेन्द्रीकरण	Decentralisation
38.	वैज्ञानिक	Scientist
39.	व्यायामशाला	Gymnasium
40.	शपथपत्र	Affidavit
41.	शरणार्थी	Refuges
42.	श्रेष्ठ	Superior
43.	संरक्षण	Safeguard, Protection
44.	सारिणी	Table
45.	स्वीकृत	Accepted, Recognised, Sanctioned
46.	संशोधन	Modification, Amendment
47.	सभा–भवन	Assembly Hall, Chamber
48.	सार्वजनिक स्वास्थ्य	Public Health
49.	स्थानीय	Local
50.	हस्तकला शिक्षण	Mannual Training

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क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में से दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न 1 अंक का है। कुल अंक 10 हैं।
ख) इस भाग में 8 प्रश्न पूछे जाएंगे जिनमें से 4 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर दो पृष्ठों तक की सीमा का होगा। प्रत्येक प्रश्न के 4 अंक हैं। कुल अंक 16 हैं।
ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। इन प्रश्नों क उत्तर 3–4 पृष्ठों तक सीमित होंगे। प्रत्येक प्रश्न के 7 अंक हैं। कुल अंक 14 हैं।

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- क्षेत्रकार्य (फिल्डवर्क)
- क्षेत्रकार्य की प्रणालियां, क्षेत्रकार्य की प्रक्रिया,
- प्रतिवेदन : (रिर्पोट)
  प्रतिवेदन की परिभाषा, प्रतिवेदन लेखन, प्रतिवेदन का स्वरूप, प्रतिवेदन की विशेषताएँ।

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- समूह चर्चा – समूह चर्चा में प्रशिक्षण का उपयोग, अध्यक्ष की भूमिका, सदस्य–सचिव की भूमिका, समूह चर्चा का नियोजन, बैठक की व्यवस्था आदि।
- समिति बैठकों का आयोजन– समिति के घटक, कार्यवृत्त लेखन।

x½ x| d: vU; :i: गद्यगीत, व्यंग्य, रिर्पोताज, भेंटवार्ता यात्रावृत्त।

- कैमरे और माइक्रोफोन का सामना करना।

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- प्रथम खंड में भाग 'क' में से प्रश्न पूछे जाएंगें। 1x10=10
- द्वितीय खंड में भाग 'क' और 'ख' में से प्रश्न पूछे जाएंगे। 4x4=16
- तृतीय खंड में भाग 'क' और 'ग' में से प्रश्न पूछे जाएंगे। 2x7=14

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क) यह प्रश्नपत्र तीन भागों में बँटा हुआ है। पहले भाग में से दस प्रश्न पूछे जाएंगे। इस भाग के सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न 1 अंक का है। कुल अंक 10 हैं।
ख) इस भाग में 8 प्रश्न पूछे जाएंगे जिनमें से 4 प्रश्नों का उत्तर देना है। इन प्रश्नों का उत्तर दो पृष्ठों तक की सीमा का होगा। प्रत्येक प्रश्न के 4 अंक हैं। कुल अंक 16 हैं।
ग) इस भाग में 4 प्रश्न पूछे जाएंगे जिनमें से 2 प्रश्नों का उत्तर देना अनिवार्य है। इन प्रश्नों क उत्तर 3–4 पृष्ठों तक सीमित होंगे। प्रत्येक प्रश्न के 7 अंक हैं। कुल अंक 14 हैं।

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- तत्सम्, तद्भव, देशज, विदेशी या आगत, संकर शब्द

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- कोशविज्ञानः अर्थ, परिभाषा, स्वरूप और उपयोगिता
- कोशः विभिन्न प्रकार
- कोश–निर्माणः सिद्धांत और विविध सोपान
- कोश–निर्माणः समस्याएँ

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- विज्ञापन : अर्थ, परिभाषा और स्वरूप
- विज्ञापन : ऐतिहासिक परिप्रेक्ष्य
- विज्ञापन : विभिन्न प्रकार
- foKkiu d rÙo : आकर्षण, मनोविज्ञान, सौन्दर्य, नाटकीयता और संगीतात्मकता
- विज्ञापनों में लिप्यंतरण
- विज्ञापनों की भूमिका और महत्त्व

vad foHkktu

- प्रथम खंड में 'क' 'हिन्दी का शब्द भंडार' में से दस प्रश्न पूछे जाएंगे।
  अंकः 1x10=10
- द्वितीय खंड में भाग 'ख' और भाग 'ग' से प्रश्न पूछे जाएंगे।
  अंकः 4x4=16
- तृतीय खंड में भाग 'ख' और 'ग' में से प्रश्न पूछे जाएंगे।
  अंकः 2x7=14

nksV : पाठ्यक्रम में निर्धारित 'हिन्दी शब्द–भंडार' की सूची साथ संलग्न है।

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lL—r 'kCn	fgUnh 'kCn	lL—r 'kCn	fgUnh 'kCn
अक्षर	अक्षर	अग्नि	अग्नि
अरूण	अरूण	अश्विनी	अश्विनी
अहंकार	अहंकार	अश्रु	अश्रु
उत्तर	उत्तर	आत्मा	आत्मा
कक्ष	कक्ष	कक्षा	कक्षा
कथा	कथा	कण्ठ	कण्ठ
कृष्ण	कृष्ण	कृषि	कृषि
क्रोध	क्रोध	ग्रीष्म	ग्रीष्म
गोत्र	गोत्र	घोर	घोर
चरण	चरण	जति	जाति
धर्म	धर्म	दक्षिण	दक्षिण
पृथ्वी	पृथ्वी	ज्प्जा	प्रजा
पूर्व	पूर्व	पुष्प	पुष्प
पुण्य	पुण्य	मित्र	मित्र
पशु	पशु	मंत्री	मंत्री
मृत्यु	मृत्यु	श्रस	रस
रात्रि	रात्रि	रक्त	रक्त
युवा	युवा	वृद्ध	वृद्ध
वर्ण	वर्ण	स्ेना	सेना
सूर्य	सूर्य	सम्राट्	सम्राट्
समर	समर	ळल	हल

rRle	rnHko	rRle	rnHko	rRle	rnHko
अग्नि	आग	अंगुली	उंगली	–	–
अंध	अंधा	अंगरक्षक	टंगरखा	अंतःपुट	अंदर
अग्र	आगे	अद्य	टाज	अज्ञान	अनजान
अंचल	आँचल	अंत्र	आँत	अन्यत्र	अनत
अगुंष्ठ	अंगूठा	अमृत	अमिय	अक्षि	आँख
अश्रु	आँसू	अगस्य	टगम	अगणित	अनगिनत
आम्र	आम	अश्रय	आसरा	आश्चर्य	अचरज

आभीर	अहीर	आलस्य	आलस	आश्विन	आसिन
आमलक	आँवला	इक्षु	ईख	इष्टिका	ईंट
अलूक	उल्लू	उष्ट्र	ऊँट	उच्च	ऊँचा
उत्तसम	ऊमस	एकादश	ग्यारह	ओष्ठ	ओठ
कंकण	कंगन	कर्ण	कान	कर्म	काम
काक	कौआ	कर्पूर	क्पूर	कटुक	कड़वा
कृष्ण	कान्हा	कार्य	कज	काष्ठ	काठ
कपाट	किवाड़	कथावत	कहावत	कर्त्तनी	कतरनी
कुम्भकार	कुम्हार	कंटक	काँटा	कुटी	कुटिया
कुठार	कुल्हाड़ी	कूप	कुआँ	खर्जूर	खजूर
खट्वामल	खटमल	गर्जर	गाजर	ग्राम	गाँव
गर्दभ	गदहा	गर्जन	गरजना	गमन	गौना
गायक	गवैया	गैरिक	गेरू	गौर	गोरा
गृध	गीद्ध	गोमल	गेबर	घट	घड़ा
घृत	घी	घोटक	घोड़ा	चंचु	चोंच
चैत्र	चैत	चर्म	चमड़ा	चर्मकार	चमार
चतुष्पादिका	चौक	छत्रक	छाता	छत्र	छतरी
छिद्र	छेद	ज्येष्ठ	जेठ	जंघा	जाँघ
जिह्वा	जीभ	जुष्ट	जूठा	तृण	तिनका
ताम्र	ताम्बा	त्वरित	तुरन्त	तिक्त	तीता
दंत	दाँत	दधि	छही	दुग्ध	दूध
दीपक	दीया	दण्ड	डंडा	दक्षिण	दाहिना
धृष्ट	ढीठ	धन्य	धान	धनका	धनिया
नग्न	नंगा	नव	नया	नृत्य	नाच
निम्ब	नीम	नक्र	नक	नापित	नाई
नारिकेल	नारियल	निष्ठुर	निठुर	पंच	पाँच
पत्र	पत्ता	प्रभूत	ब्हुत	पक्वान्न	पकवान
पर्यंक	पलंग	पक्षी	पंछी	पुष्कर	पोखर
पर्ण	पान	पाद	पाँव	पुत्र	पूत
प्रस्तर	पत्थर	प्रहर	प्हर	पिप्पल	पीपल
पृष्ठ	पीठ	वंध्य	बाँझ	बर्कर	बकरा
बिंदु	बूँद	बिल्व	ब्ल	भक्त	भगत
भगिनी	बहन	भिक्षा	भीख	भद्रक	भला
भंडारण	भंडार	भल्लकू	भालू	भ्रमर	भँवरा
भ्राता	भाई	मित्र	थ्मत	मधूक	महुआ
मयूर	मोर	मक्षिका	मक्खी	महिषी	भैंस
मस्तक	माथा	मातुल	ममा	मातृत	माता

माणिक्य	मानिक	मुक्त	मेती	मुख्य	मुखिया
मुष्टि	मुट्ठी	मृत्यु	मौत	महार्घ	महँगा
मुख	मुँह	मेघ	म्ह	मृत्तिका	मिट्टी
याचक	जाचक	मिष्ठ	मीठा	युवन्	जवान
यमुना	जमुना	योगी	जेगी	यूका	जुआ
यष्टि	लाठी	योद्धा	जोधा	यव	जौ
रात्रि	रात	राज्ञी	रानी	रूक्ष	रूखा
लक्ष्य	लाख	लोक	लेग	लोहकार	लोहार
लौह	लोहा	लिंगपट्ट	लंगोटा	लोमशा	लोमड़ी
वर्ष	बरस	वर्षा	ब्रसा	व्याख्यान	बखन
वात	ब्यार	वधू	ब्हू	वानर	बंदर
वाष्प	भाप	वृद्ध	बूढ़ा	वत्स	बछड़ा
वणिक	बनिया	वामन	बौना	वार्ता	बात
वैर	बैर	शाक	सग	शर्करा	शक्कर
शयया	सेज	रात	सौ	शकुन	सगुन
शकट	छकड़ा	श्लाका	सलाई	शिम्बा	सेम
श्वास	साँस	शुष्क	सूखा	शप्तशती	सतसई
शिक्षा	सीख	श्रृगाल	सियार	श्यामल	साँवला
सत्य	सच	सप्त	सत	सर्प	साँप
सर्व	सब	सर्षप	सरसों	संध्या	साँझ
स्कंध	खम्भ	सौभाग्य	स्हाग	सूची	सुई
सुत्र	सूत	सूर्य	स्रज	स्नेह	नेह
स्व	सुर	षट्	छह	षष्ठी	छठी
षण्ड	साँड़	षोडश	सोलह	हस्त	हाथ
हरित	हरा	हरिण	थ्हरन	हस्ती	हाथी
हृदय	हिय	हरिद्रा	हल्दी	क्षण	छिन, छन
क्षीर	खीर	क्षुर	खूर	क्षुरिका	छुरी
क्षेत्र	खेत	त्रुट	टूट	त्रिंशत	तीस

¼x½ n\'k t 'kCn

अक्खड़, अटपटा, अलबेला, अण्टा, आहट, उमंग, ऊटपटांग, ओझल, औढर, औचक, कनकट, करार, कूड़ा, कटरा, कटोरा, खह्हर, खुरदरा, खर्रा, खखरी, खिड़की, खिचड़ी, खूँटी, खुर्राट, खूसट, खोखला, गली, गिरटि, गुदड़ी, गोद, गोंद, घेघा, घमंड, घोंसला, चट्टान, चकमा, चप्पल, चींटी, चुड़ैल, चहल, चुनरी, चौका, चिन्दी, चसक, छलाँग, छीछालेदर, जुगनू, झिझक, झिड़की, झक्की, झुमका, झरोखा, टपरा, टीमटाम, टेसू, ठर्रा, ठेस, डाबर, ढिबरी, डेरा, तसला, तेंदुआ, टट्टी, धाक, पगड़ी, पेट, बीहड़, बौड़म, भौंचक्का, झाड़ू, माँद, रेबड़ी, सिलवट, झोला, हेकड़ी आदि।

¼?k½ fon'kh ;k vkxr 'kCn

1. vjch 'kCn % अदा, अमीर, अदावत, असर, अकल, अल्ला, आखिर, आदत, अहमक, आदमी, इनाम, ईमान, इज्जत, इस्तीफा, इमारत, उम्र, उम्दा, एहसान, औलाद, औरत, कसर, कसूर, कब, कदम, किस्सा, कमाल, कर्ज, कसरत, कसम, कीमत, किला, मिस्मत, किताब, कुर्सी, खत, खत्म, ख्याल, खबर, खराब, गरीब, जिस्म, जलसा, जुलूस, जनाब, जहाज, ज़िक्र, जवाहर, जालिम, तमाम, तमाशा, तकिया, तकदीर, तजुरबा, तरक्की, दफ्तर, दवा, दावात, दुआ, दग़ा, दिमाग, दौलत, दुनिया, दुकान, नश, नतीजा, नकद, फकीर, फिक्र, फायदा, बाकी, बहस, माल, मदद, मरज, मजबूर, मुल्क, मौका, मुसाफिर, मतलब, मौसम, लायक, लिफाफा, लिहाज, शराब, हराम, हिसाब, हमला, हक, हाकिम, हुक्म, हाल, हाजिर, हौसला आदि।

2. Qkjlh 'kCn % अदा, अंगूर, अफसोस, अनार,अंजीर, आफत, आमदनी, आवारा, आवाज़, उम्मीद, ईमानदार, इत्र, किशमिश, कबूतर, कुश्ती, खुश, खामोश, खरगोश, गल्ला, गवाह, गिरह, गरम, गोश्त, गुलाब, चश्मा, चादर, चाबुक, चेहरा, चिराग, जादू, जिंदगी, जहर, जोश, जुरमाना, जागीर, ताजा, दीवार, दिल दंगल, नापाक, पाजामा, परवाह, पर्दा, पुल, बेहुदा, मुर्गा, मोर्चा, रंग, लगाम, वरना, वापस, शेर, शादी सरकार, सैदागर, सितारा, हफता, हजार इत्यादि।

3. rqdh 'kCn % आका, आगा, उजबक, उर्दू, कालीन, काबू, कुर्की, कुली, कैंची, चमचा, चकमक, चाकू, चारपाई, चिक, चोंगा, चुगल, जाजिम, तमगा, तलाश, तुरूक, तोप, बहादुर, बीवी, बुलबुल, बेगम, दारोगा, लफंगा, लाश, सुराग, सौगात, मुगल इत्यादि।

4. i'rks 'kCn : अटकल, अखरोट, गड़बड़, गुंडा, जमालगोटा, नगाड़ा, पठान, पटाखा, भड़ास, मटरगश्ती, रूहेला, लुच्चा इत्यादि।

5. iqrxkyh 'kCn : अँचार, अनन्नास, आलपीन, आलमारी, आया, इस्तरी, कनस्तर, कप्तान, कमरा, कोको, गमला, गिरिजा, गोदाम, किरानी, चाबी, क्रिस्तान, गोभी, तौलिया, तंबाकू, कमीज, नीलाम, परात, पादरी, पिस्तौल, पावरोटी, फर्मा, फीता, बाल्टी, बुताम, मेज, मस्तूल, लबादा, साया, साबुन इत्यादि।

6. Ýkalhlh 'kCn : अंग्रेज़ी, अंग्रेज़, कूपन, कारतूस, काजु।

7. teu 'kCn % किंडर गार्डन, ब्लिट्ज, नात्सी।

8. Mp 'kCn % तुरूप, ड्रिल, स्काउट, बम।

9. phuh 'kCn % तूफान, चाय, पटाखा, लीची।
10. tkikuh 'kCn : रिक्सा।

11. yfVu 'kCn % अक्टूबर, नवंबर, इस्पताल, इंच, एजेंडा, कोरम, कोटा, पेंशन, मशाल, स्कूल, रेडियो, राशन इत्यादि।

12. ;ukuh 'kCn % होड़ा–चक्र, ऐटम, एटलस, एकेडेमी, टेलीफोन, टेलीग्राफ, बइबिल इत्यादि।

13. vxsth 'kCn % अप्रैल, अगस्त, अक्टूबर, अफसर, अपील, अस्पता, ऑफिस, ऑर्डर, इंजिन, इंजीनियर, एजेंट, एडवांस, कम्पनी, कमीशन, कॉलेज, कलेंर, कमेटी, कांग्रेस, कालर, कार, मोटर, टैक्सी, टेबुल, टिकट, टेनस, क्रिकेट, हॉफी, क्रीम, कर्नल, मेजर, चेक, कार्ड, प्लेट, गिलास, पेन, पम्प, स्लेट, मशीन, रेडियो, लीटर, मीटर, नट, बोल्ट, बिस्कुट, बैटरी, ब्रेक, टॉफी, कोट, पैंट, पाउडर, डॉक्टर, प्रोफेसर, कंपाउंडर इत्यादि।

¼MÛ½ lidj 'kCn

fgUnh vkj lL—r–कपड़ा–उद्योग, पूँजीपति, माँग–पत्र, वर्षगाँठ।

fgUnh vkj vxsth–सिनेमाघर, मालगोदाम, टिकटघर, रेलगाड़ी।

fgUnh vkj vjch@Qkjlh–थानेदार, किताबघर, घड़ीसाज, बैठकसाज, जेब–कट, बेडौल इत्यादि।

lL—r vkj vxsth&रेलयात्री, रेडिया–तरंग, योजना–कमीशन।

vxsth vkj vjch@Qkjlh&पार्टीबाजी, अफसरशाही, बीमापॉलिसी, जेलखाना, सील–बंद।

lL—r vkj Qkjlh& छायादार, लोकशाही, विज्ञापनबाजी।

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Languages)

SEMESTER–VI

QD'kuy fgUnh
i;kx vkj ekf[kdh

vad 20

i;kx

दूरदर्शन और रेडियो पर प्रसारित कार्यक्रमों का वर्णन। (किन्ही 3–3 का)

SEMESTER–VI

PHYSICAL EDUCATION
(THEORY)

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

Note:- **Question paper will be divided into three sections.**

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. Effect of exercises on muscular, respiratory and circulatory systems.
2. General concept of Vital capacity, Blood pressure, General and Specific conditioning.
3. Tournaments: Draw of fixture, types of tournaments.
   (a) Knock Out
   (b) League
   (c) Combination Tournament
   (d) Challenge Tournament
4. Organisation of Camps, Play days (Sports Meet)
5. Need and scope of coaching in India. Professional preparation of coaches. Qualifications and responsibilities of a coach.

Part-B

1. Meaning and Importance of Kinesiology.
2. Joints, Muscles, heir types and Movements.
3. Therapeutic Exercises, their classification and benefits.
4. Components of Physical Fitness, Speed, Strength, Endurance, Agility and Flexibility.
5. Training Methods; Circuit, Interval, Fartlek, Weight-Training and Cross Country.
6. Methods of Improving Strength, Speed, Endurance, Flexibility and Agility.

B.A./B.Sc. (Semester System) *(12+3 System of Education)*
(Faculty of Physical Education)

SEMESTER–VI

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 ----------1500M, Javelin Throw for Boy
  800M, Javelin Throw for Girls

- Games (Boys & Girls) ---------- Fundamentals, Rules, Performance
  Kabbadi
  Badminton

Books Recommended:

1. Singh Kanwaljeet and Singh Inderjeet: Sports Sociology, Friends Publication, New Delhi 2000.
2. Tandon D.K. et.al,: Scientific Basis of Physical Education and Sports, Friends 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.