

# **SYLLABUS FOR THE BATCH FROM YEAR 2020 TO YEAR 2023**

**B.A. / B.Sc.**  
(12+3 SYSTEM OF EDUCATION)  
(Semester–V)

**Examinations: 2020–23**



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**GURU NANAK DEV UNIVERSITY  
AMRITSAR**

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**SEMESTER-V**

**POLITICAL SCIENCE**

**COMPARATIVE POLITICAL SYSTEMS (UK & USA)**

**Time: 3 Hours**

**MaxMarks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Theoretical Framework**

1. Meaning and Scope of Comparative Government and Politics.
2. Various Approaches to Comparative Politics
3. Systems Approach: David Easton, Almond & Powell.

**SECTION-B**

1. Features of British Political System.
2. Features of US Political System.
3. Executive in US: President, Powers, Position and Role,
4. Executive in UK: Monarchy, PM, Powers, Positions and Role.

**SECTION-C**

1. Legislatures in the US & UK: Functioning and Changing Role.
2. Political Parties and Pressure Groups in US and UK.

**SECTION-D**

1. Judicial System in USA and UK: Judicial Review in USA and Rule of Law in UK.
2. Unitary v/s Federal System, USA and UK.

**Books Recommended:**

1. Rod Hague and Martin Harrop, *Comparative Government and Politics*, New Delhi, Palgrave Macmillan, 2007.
2. G.A. Almond, G.B. Powell, K. Strom, R.J. Dalton, *Comparative Politics Today: A World View*, New Delhi, Pearsons, 2006.
3. J.C. Johari, *New Comparative Government*, New Delhi, Lotus Press, 2006, 4263/3, Ansari Road, Daryaganj, New Delhi-110002.

4. A.C Kapur and K.K. Misra, *Selection Constitutions*, New Delhi, S. Chand, 2006 (Sixteenth Revised Edition).
5. A.C. Kapur and K.K. Misra, *Selection Constitutions*, New Delhi, S. Chand, 2006 (Sixteenth Revised Edition).
6. S.N. Ray, *Modern Comparative Politics: Approaches, Methods and Issues*, New Delhi, PHI, 1999.
7. M.V. Pylee, *Select Constitutions of the World*, New Delhi, Universal Law Publishers, 2006 (Revised).
8. Judith Bara And Mark Lennigton, *Comparative Politics*, Sage, 2009
9. William R. Clarks, Matt Golder and Sona Nadenichek, *Principals of Comparative Politics*, CQ Press, 2012
10. December Green and Lenra Luhrmann, *Comparative Politics of the Third World*, Viva 2004
11. Vishnoo Bhagwan and Vidhya Bhushan, *World Constitutions*, Sterling, 2002
12. Daniele Caramani, *Comparative Politics*, Oxford, 2008
13. Vidhya Bhushan, *Comparative Politics*, Atlantic, 2008

**SEMESTER-V**

**HISTORY**

**History of the World (C 1500-1956 AD)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. **Emergence of the Modern World:** Renaissance and reformation; Causes, effects of Renaissance in Europe; Martin Luther's Protestantism.
2. **French Revolution:** Causes; National Assembly; National Convention, Napoleon's rise to Power, Continental System, Downfall of Napoleon, Vienna Settlement.

**SECTION-B**

3. **Nationalism in Europe:** Rise of Imperialism; Industrial Revolution; Unification of Italy and Germany.
4. **The World War-I:** Causes and Impact of the war, Treaty of Versailles; League of Nations.

**SECTION-C**

5. **Russian Revolution:** February Revolution, October Revolution; New Economic Policy.
6. **Rise of China and Japan:** The revolution of 1911; Rise of Communism in China; the Revolution of 1949; Opening up of Japan; Meiji restoration and the Modernization of Japan.

**SECTION-D**

7. **Rise of USA as World Power:** Entry in the First World War; Great Economic Depression of 1929; New Deal of Roosevelt.
8. **Towards World War II and its Aftermath:** Fascism in Italy; Nazism in Germany; Causes and Impact of the World War II; the UNO; the Cold War.

**Suggested Reading:**

1. Lowe, Norman, *Mastering Modern World History*, Macmillan, New Delhi, 1997
2. Chakrabarti, Ranjan, *A History of the Modern World*, Ratan Sagar Private Limited. 2012
3. Rao, B.V. , *History of Modern World*, Sterling Publication Pvt. Ltd. New Delhi, 2012 .

**SEMESTER-V**

**JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)  
ADVERTISING  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Definition, need, concept and role; Difference in Publicity, Advertising, Propaganda, Types of advertising,

**SECTION-B**

Ad agencies-Organisational setup and functions, Copy Writing, Parts of an advertisement, Attributes of an effective copy, types, design and layout.

**SECTION-C**

Advertising and its impact. Modes of advertising, Appeals.

**SECTION-D**

Advertising Code, Advertising in Various media.  
Online advertising



**JOURNALISM AND MASS COMMUNICATION (VOCATIONAL)**  
**ADVERTISING**  
**(PRACTICAL)**

**Practical Marks: 20**

Making 10 advertising portfolios

**SEMESTER-V**

**MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)**

**VIDEO FOR COMMUNICATION  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 80  
Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

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

**SECTION-A**

**Video camera**

- Basic Design (Lens, Zoom, Aperture, Focal Length, Shutter)
- Camera Angles, Movements, Shots & Mountings
- Types of Cameras (VHS), Umatic, Betacam, High Eight, Video Eight)\

**SECTION-B**

Camera Crew (Director, Producer, Production Manager, Floor Manager, Art Director, Makeup Man, Dress Designer, Choreographer  
Lighting (Types, Luminants, accessories, lamps, & lighting problems)

**SECTION-C**

Programme Proposal  
Budgeting  
Location Survey  
Shooting Script

**SECTION-D**

Pre & Post Production Meeting  
Single Camera & Multicamera Shooting  
Indoor & Outdoor Shooting

**MASS COMMUNICATION & VIDEO PRODUCTION (VOCATIONAL)**

**VIDEO FOR COMMUNICATION  
(PRACTICAL)**

**Practical Marks: 20**

- Camera Handling
- Script Writing
- Making program proposal for any channel

**SEMESTER-V**  
**SOCIOLOGY**

**SOCIAL THOUGHT**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- a) **Auguste Comte:** Law of three stages, Positivism
- b) **Herbert Spencer:** Social Darwinism and types of Society.

**SECTION-B**

- a) **Karl Marx:** Dialectical Materialism, Historical Materialism, class and class struggle, Alienation.

**SECTION-C**

- a) **Max Weber:** Theory of Social Action, Types of Authority, Protestant Ethic and Spirit of Capitalism.

**SECTION-D**

- a) **Emile Durkheim:** Nature and Characteristics of Social facts, Division of Labour in Society, Theory of Suicide.

**Books Recommended:-**

1. Abraham, F and J.H Morgan., *Sociological Thought*. New Delhi: Trinity Press 2014.
2. Abraham, M. Francis: *Contemporary Sociology*, Oxford University, New Delhi, 2006.
3. Aryan Raymond: *Main Currents in Sociological Thought*, Vols. I, II, Penguin, Harmondsworth, 1968.
4. Ashley, David, Orenstein, D.M.: *Sociological Theory*, Dorling Kindersly, Delhi, 2007.
5. Coser, Lewis A: *Master of Sociological Thought*, Harcourt Brace Jovanovich, New York, 1971.
6. Jammu I.S.: *Samajak Vigyan Pattar*, No.-26-28, Punjabi University, Patiala, 1998.
7. Judge, Paramjit Singh: *Foundations of Classical Sociological Theory*. New Delhi: Pearson. 2012.
8. Judge, Paramjit Singh: *Samaj Vigyanik Drishtikon te Sidhant*, Panjabi University, Patiala, 1997.
9. Kapila, S.: *Fundamentals of Sociology*, Vol. III, Panchkula, Kapila Publishers, 2006.
10. Kundu, Abhijit. *Sociological Theory*. New Delhi: Pearson. 2012.
11. Ritzer, George. *Classical Sociological Theory*. New Delhi: McGraw Hill. 2016.
12. Royce, Edward. *Classical Social Theory and Modern Society*. Jaipur: Rawat. 2015.

**SEMESTER-V****WOMEN EMPOWERMENT****WOMEN EMPOWERMENT AND LAWS****Time- 3Hrs.****Max. Marks-100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****Women and Social issues: relevant provisions:**

1. Protection of Women from Domestic Violence Act, 2005
2. The sexual harassment of women at workplace Prevention, Prohibition and Redressal Act 2013

**SECTION-B****Women and Labour Laws: Relevant Provisions:**

1. Employees State Insurance Act 1948
2. Maternity Benefit Act 1961

**SECTION-C****Women and Maintenance Laws**

1. Married Women and Property Act 1874
2. Married Women Property (Extension Act) 1959
3. Istri Dhan and Alimony.

**SECTION-D****Women and Laws: Education and Politics**

1. National Plan of Action for Girl Child (1991 to 2000)
2. Women and Constitutional Amendments 73<sup>rd</sup>, 108<sup>th</sup>, 110<sup>th</sup>, 112<sup>th</sup>.

**SEMESTER-V  
PSYCHOLOGY**

**ABNORMAL PSYCHOLOGY-I  
(THEORY)**

**Time: 3 Hours**  
**Pass Marks: 35% of the subject**  
**(Theory and Practical Separately)**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Abnormality:** Concept and Criteria of Abnormality. Myth and Misconceptions regarding Abnormal Behaviour. DSM V classification of Abnormal Behaviour- Advantages and disadvantages

**Theoretical Perspectives of Psychopathology:** Psychoanalytic, Cognitive, Behavioural, Humanistic and Interpersonal (Sullivan).

**SECTION-B**

**Causes of Abnormal Behaviour:** Primary, Predisposing, Precipitating reinforcing. Biological Causes-(Genetic defects, constitutional liabilities, Brain dysfunction & Physical deprivation). Psycho-Social Causes-(Self-perception and cognitive maps, early deprivation, Inadequate parenting, pathogenic family structures, maladaptive peer relationship. Socio-Cultural Causes-(Socio-Cultural Environment and Pathogenic societal influences).

**SECTION-C**

**Stress & Coping:** Concept, Categories of Stressors, Factors Predisposing an individual to stress. Coping strategies.

**Stress Related Disorders:** Coronary Heart Disease (CHD), Hypertension Ulcers & Migraine Pain: Symptoms Causes and general treatment of stress related disorders.

**SECTION-D**

**Alcoholism:** Misconception about Alcohol & Alcoholism, Clinical Picture, Causes, Treatment & Outcomes.

**Drug Addiction:** Clinical Picture, Causes and Treatment of Opium and its Derivatives, Sedatives (Barbiturates), Stimulants (Amphetamines & Cocaine): Hallucinogens (LSD & related drugs) Marijuana, Caffeine & Nicotine.

**Readings:**

1. Carson, R.C., Butcher, J.N. and Mineka, S. (1997), *Abnormal Psychology and Modern Life*, New York: Harper Collins.
2. Davison, G.C. and Neale, J.M. (1998), *Abnormal Psychology*, New York: John Wiley and Sons.
3. Sarason, I.G. and Sarason, B.R. (1996), *Abnormal Psychology*, New Delhi: Prentice Hall of India.
4. Singh, A. Asadharan Manovigyan, Punjabi University, Patiala.
5. Alloy, L.B., Riskind, J.H. & Manso, M.J. (2006), *Abnormal Psychology* Tata McGraw Hill Publishing Company, New Delhi.

**SEMESTER-V**

**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 Practical have to be performed out of the following:**

1. Word Association Test.
2. Adjustment Inventory.
3. Measurement of Stress
4. Measurement of Attitudes.
5. Measurement of Interests.
6. Locus of Control.



**SEMESTER-V**  
**DEFENCE AND STRATEGIC STUDIES**

**NATIONAL SECURITY OF INDIA**  
**(THEORY)**

**Time: 3 Hours**

**Max .Marks: 100**  
**Theory Marks: 80**  
**Practical Marks: 20**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**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.*

**SECTION-A**

**i) National Security: Conceptual Aspects.**

**ii) Elements of National Security:**

- a) Geography
- b) Mineral resources
- c) Social, Political and Economic factors
- d) Scientific and Technological Development
- e) Military preparedness

**iii) India's Security Problems since Independence**

- a) Geo-political effects of partition
- b) Security problems related to Pakistan
- c) Security problems related to China

**SECTION-B**

**i) Indian Ocean and India's Security:**

- a) Geo-strategic importance of the Indian Ocean
- b) India's Economic, Political and Security stakes in the Indian Ocean
- c) Role of Indian Navy & Coast Guards

**ii) Nuclear Policy of India.**

**SECTION-C**

**(i) Internal Dimension of India's Security:**

- a) Militancy in Jammu & Kashmir
- b) Insurgency in North eastern states
- c) Naxalism in India

**(ii) Disaster Management in India.**

### SECTION-D

#### Planning for Natural Defence

- (i) Economic Mobilisation for national defence with reference to mobilization of Physical and Fiscal resources.
- (ii) Planning and Production for national defence.
- (iii) Major defence production Industries in India.

#### Suggested Readings:

1. Buzan, Barry (1987) : People Fear and State: New Delhi, Transasia Publications.
2. Bajpai, U.S. (1986) : India and its Neighbourhood: New Delhi, Lancer International.
3. Baranwal, S.P.(1984) : Measures of Civil Defence in India: New Delhi, Guide Publications.
4. Bobbing, Ross and Gordon, Sandy (eds.) (1992) : India's Strategic Future: Delhi, Oxford University Press.
5. Chatterjee, R.K. (1978) : India's Land Borders-Problems and Challenges: New Delhi, Sterling Publishers.
6. Chadhury, Rahul Roy (1995) : Sea Power and India's Security, London, Brassey's.
7. Dass S.T. (1987) : National Security in Perspective: Delhi, Gian Publishers.
8. Karnard, Bharat (1994) : Future Imperiled: New Delhi, Viking.
9. Kavic, Lorne J. (1967) : India's Quest For Security: Defence Policies 1947- 1965: Los Angeles, University of California Press.
10. Khera, S.S. (1968) : India's Defence Problems: New Delhi.
11. Menon, V.P. (1961) : The Story of the Integration of Indian States: New Delhi, Orient Longmans.
12. Misra, R.N. (1986) : Indian Ocean and India's Security: Delhi, Mittal Publications.
13. Nayar, V.K. (1992) : Threats From Within: New Delhi, Lancer Publications.
14. Rao, Ramakrishna and Sharma, R.C. (ed) (1991) : India's Borders: New Delhi, Scholars' Publishing Forum
15. Rao, P.V.R. (1970) : Defence Without Drift: Bombay, Popular Prakashan.
16. Singh, Jaswant (1999) : Defending India: Bangalore, Macmillan India Ltd.
17. Singh Nagendra (1974) : The Defence Mechanism and the Modern State: New Delhi, Asia Publishing House.
18. Venkateshwaran (1967) : Defence Organisation in India: New Delhi, Ministry of Information and Broadcasting, Government of India.

**SEMESTER-V**  
**DEFENCE AND STRATEGIC STUDIES**

**(PRACTICAL)**

**Time: 3 Hours**

**Teaching Hours: 3 Periods a Week**

**Written: 1 Hour**

**Marks: 20**

**Written: 10**

**Discussion: 05**

**Record and Viva-Voce: 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. Relief features and their representation on the Map.
2. Types of slopes and their representation on the Map.
3. Study of field craft with reference to the following:
  - (a) Ground
  - (b) Cover
  - (c) Camouflage
  - (d) Concealment
  - (e) Observation.

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

**05 Marks**

- (a) India's Nuclear Policy.
- (b) Maritime Security of India.
- (c) Sino-India Relations

**Group – C**

**Record and Viva-Voce**

**05 Marks**

**SEMESTER-V  
GEOGRAPHY**

**WORLD REGIONAL GEOGRAPHY-I  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 70  
Practical Marks: 30**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Objectives:**

To provide an understanding of:

- \* The geographic dimensions of the world regions in terms of their political and administrative characteristics.
- \* The physical and human resource base and their interface with economic development.
- \* Development problems and prospects.

**Note:**

1. Question will be put on region(s) as a whole and not on individual country. The question should focus on regional perspective.
2. Stencil/outline maps and coloured pencils are allowed.

**Course Contents:-**

Study of the following regions of the world in terms of the aspects mentioned in each unit.

1. Anglo America and Latin in America
2. Europe

**SECTION-A**

- |                       |                                 |
|-----------------------|---------------------------------|
| a) Location           | b) Physiographic divisions      |
| c) Drainage & Climate | d) Soils and Natural Vegetation |

**SECTION-B**

- a) Major minerals    b) Agricultural crops & related occupations

**SECTION-C**

- a) Industries

**SECTION-D**

- a) Demographic Characteristics
- b) Trade and Transport
- c) Problems and Prospects

**Books Recommended:****Essential Readings:**

1. Johnson, D.L. Haarmann, V. , Johnson, M.L. & Calwson, D.L. (2012):  
World Regional Geography: A Development Approach. PHI Learning Private Ltd., New Delhi.
2. Blij, Harm J.de Peter, O. Muller: *Geography: Realms, Regions and Concepts, 16<sup>th</sup> Edition*, John Wiley, New York, 2013.
3. English, Paul Ward & James, A. Miller: *World Regional Geography: A Question of Place*, John Wiley, New York, 1989.
4. Jackson, Richard H. & Lloyd E. Hudman: *World Regional Geography Issues for Today*, John Wiley, New York, 1991.
5. Kromm, D.E.: *World Regional Geography*, Saunders Publishing, New York, 1981.

**Further Readings:**

1. Don R. Hoy (Ed.): *Essentials of Geography and Development*, Macmillan, New York, 1984.
2. Mankoo, Darshan Singh: *A Regional Geography of the World*, Kalyani Publishers, Ludhiana, Reprint 2015.
3. Singh, Malkiat : *World Regional Geography*, Rasmeet Prakashan, Jalandhar, (Pb.), Reprint 2015
4. Trikha, R.N. and Bali P.K. and Sekhon, M.S.: *World Regional Geography*, New Academic Publishers, 2002.

**Pedagogy**

Teaching should involve maximum use of detailed maps of the countries, Students should be encouraged to use atlas in classrooms. Video shows about culture, physiography and economy of these countries may be arranged if possible.

### SEMESTER-V

### MAP PROJECTIONS (PRACTICAL)

**Time: 3 Hours**

**Max. Marks: 30**

**Written Paper of 3 Hours: 15 Marks**

**Practical Record (File): 08 Marks**

**Viva: 07 Marks**

#### Objective:

- To provide an analytical understanding of constructions, properties, limitations and use of cylindrical and conical map projections.

#### SECTION-A

General introduction and classification of projections, constructions, properties, limitations and use of projections.

Construction, properties and limitations of following map projections:

Cylindricals: Plate Caree, Equal-Area and Mercator's.

#### SECTION-B

Construction, properties and limitations of following map projections:

Conicals: One Standard Conic, Two Standard Conic, Bonne's, Polyconic and International.

#### Note:

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

#### Books Recommended:

- Kellaway, George P.: *Map Projections*, Methue and Co., London.
- Singh, Gopal: *Mapwork and Practical Geography*, Surjeet Book Depot, Delhi, 1993.
- Singh, Malkiat: *Cartography*, Rasmeeth Prakashan, Jalandhar, **Reprint 2014**.
- Singh, L.R.: *Practical Geography*, Chaitanya, Publishing House, Allahabad

**SEMESTER-V**  
**PUBLIC ADMINISTRATION**

**LOCAL GOVERNMENT (WITH SPECIAL REFERENCE TO PUNJAB)**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Introduction:**

Meaning and Significance of Local Government. History of Local Government in India. Main Features of 73rd and 74<sup>th</sup> Constitutional Amendments, State-Local Government Relations; Role of State Finance Commission.

**SECTION-B**

**Urban Local Government:**

Main features of Urban Local Government in Punjab, Types of Urban Local Bodies, Municipal Corporation, Organisation and Functions, Municipal Commissioner, Mayor, Provincialisation of Municipal Services.

Municipal Council: Organisation and Functions; President, Executive Officer.

**SECTION-C**

**Rural Local Government:**

Main features of Panchayati Raj System in Punjab; Gram Sabha. Village Panchayats-Structure, Finance and Functions. Recommendations of Punjab Finance Commission. Panchayat Samitis-Structure, Finance and Functions. Zila Parishads-Structure, Finance and functions.

**SECTION-D**

**State Control:**

Organisation of Department of Local Government in Punjab. Relation of Local Government Institutions with District Administration. State control over Panchayati Raj Institutions and Urban Local Government.

**Suggested Readings:**

1. Dubey V.P., Urban Development and Administration, Deep & Deep Publication Pvt. Ltd., 1990.
2. Goel S.L., Urban Administration in India, New Delhi, Deep & Deep Publication Pvt. Ltd., 2003.
3. Hoshier Singh, Theory and Practice of Local Government, Allahabad, Kitab Mahal, 1999.
4. Maheshwari S.R., Local Government in India, Agra, Lakshmi Narain Aggarwal, 2005.
5. Sachdeva Pardeep, Urban Local Government in India, Allahabad, Kitab Mahal, 2002.
6. Sahib Singh and Swinder Singh, Local Government in India, Jalandhar, New Academic Publishing Co., 2005.
7. Sachdeva D.R., Sathanak Sarkar: Punjab De Sandarbh Vich, Publications Bureau, Patiala, 2003.



**SEMESTER-V**  
**Punjab History & Culture (From 1849-1947 A.D)**  
**(Special Paper in lieu of Punjabi compulsory)**  
**(For those students who are not domicile of Punjab)**

**Time: 3 Hours**

**Max. Marks : 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION- A**

1. First Anglo-Sikh War.
2. Annexation of Punjab by the British and Board of Administration

**SECTION--B**

3. British Policy towards agriculture, industry, trade and commerce.
4. Spread of modern education

**SECTION--C**

5. Social religious reform movements: Namdhari, Singh Sabha and Arya Samaj
6. Gadhar Movement and Jallianwala Bagh tragedy

**SECTION--D**

7. Gurdwara Reform Movement
8. Contribution to freedom struggle: Non-cooperation; HSRA and Quit India Movement.

**Suggested Readings**

1. Singh, Fauja, *History and Culture of the Punjab*, Part II, Publication Bureau, Punjabi University, Patiala, 1987.
2. Singh, Fauja, *Freedom Struggle in the Punjab*, Publication Bureau, Punjabi University, Patiala, 1974.
3. Grewal, J.S., *The Sikhs of the Punjab*, New Cambridge House, New Delhi, 2005.
4. Singh, Kushwant, *A History of the Sikhs*. Vol. II (1839-1998), Oxford University Press, Delhi, 1991.
5. Rai, Satya. M (1978), *Heroic Tradition in the Punjab (1900-1947)*. Punjabi University, Patiala, 1978.
6. Chopra, P.N.& Das, M.N. (1974), *A Social, Cultural & Economic History of India*. Vol.III, Macmillan India, 1974.

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester-V) (Batch 2020-23)  
(Faculty of Arts & Social Sciences)

7. Yadav, K.C. , *Haryana Aitihāsik Simhavalokan* (Hindi). Haryana Sahitya Akademy, Chandigarh, 1991.
8. Saini B. S, *The Social & Economic History of the Punjab 1901-1939*, Ess Ess Publications, Delhi, 1975.
9. Mittal, S.C, *Freedom Movement in the Punjab (1905-29)*, Concept Publishing Company Delhi, 1977.

**SEMESTER-V  
ECONOMICS**

**ECONOMICS OF DEVELOPMENT**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Economic Development:** Meaning and Measurement, Economic and Non-Economic Factors, Nature of Underdevelopment, Characteristics of Undeveloped Countries. Human Development Index, Concept of Sustainable Development.

**Dualism:** Social and Technological Dualism, Lewis Model of Unlimited Supply of Labour, Problems of Unemployment and Disguised Unemployment.

**SECTION-B**

**Models of Growth:** Classical, Marxian, Schumpeter's, Harrod-Domar and Solow's Growth Models.

**SECTION-C**

Rostow's Stage Theory, Strategies of Economic Development-Balanced vs. Unbalanced Growth; Theory of Big Push; Libenstein's Critical Minimum Efforts Thesis, Export Promotion and Import Substitution.

**SECTION-D**

Capital Formation – Meaning and Sources. Choice of Technique, Role of Planning in Under Developed Countries, Need, Objective, Strategy, Types and Problems of Planning.

**Suggested Readings:**

1. Rostow W.W.: Stages of Growth
2. G.M. Meier: Leading Issues in Economic Development.
3. Micheal Todaro: Economic Development in the Third World.
4. Higgins: Economic Development: Theory and Politics.
5. Meier, G.M.: Leading Issues in Economic Development, Oxford University Press, New Delhi, 1995.
6. Thirlwall, A.P.: Growth and Development, Macmillan, London, 1999.
7. Todaro, M.P.: Economic Development in Third World, Oxford University, London.
8. Yotopoulos, P.A. and Nugent, J.: Economics of Development, Harper and Row, New York.

**SEMESTER-V**  
**INDUSTRIAL ECONOMICS**  
**INDUSTRIAL ECONOMICS-V**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Pattern and Rationale of Industrialisation in Developing Economy Like India; Factors Promoting and Inhibiting Industrialisation.

Industrialisation in India—Evolution of Modern Industry, Evolution of Industrial Policy—1948, 1951, 1956, 1991 and onwards.

**SECTION-B**

Role of Public Sector; Recent Trends in Indian Industrial Growth—Liberalization and Privatization; Small Scale Industry in India.

**SECTION-C**

Regional Industrial Growth in India; Industrial Concentration: Meaning, Measurement and Remedial Measures.

Issues in Industrial Proliferation and Environmental Preservation; Pollution Control Policies.

**SECTION-D**

Institutional Industrial Finance: IDBI, ICICI, SFC, SIDC and Commercial Banks

**Recommended Readings:**

1. Sutcliffe, R.B.: Industry and Under-development, Addison Wesley, London.
2. Kuchhal, S.C: The Industrial Economy of India chaitanya, Allahabad, 1969.
3. Gadgil, D.R.: The Industrial Evolution of India in recent time 1860-1939, Oxford University Press, Delhi, 1979.
4. Ahluwalia, I.J.: Industrial Growth in India Stagnation Since mid 1960's.
5. Goyal S.K.: Monopoly Capital Public Policy, Allied, New Delhi, 1979.
6. Chadha, V. and G.S. Bhalla: Indian Industrial Development: The Post Reform Scene.
7. Brahmananda, P.R. and V.R. Panchmukhi: The Development Process of the Indian Economy, Vikas Publications, New Delhi, 1979.
8. Datta, B.: Indian Planning at the Crossroads.
9. Savdesara, T.C.: Industrial Policy and Planning—1947-91: Tendencies, Interpretation and Issues.
10. Kelkar, V.C. and V.V. Bhanoji Rao: Indian Development Policy Imperatives.

**SEMESTER-V**  
**QUANTITATIVE TECHNIQUES**

**QUANTITATIVE TECHNIQUES-V**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Statistical Inference:** Point & Interval Estimation; Properties of a Good Estimator, Maximum Likelihood Method of Estimation, its applications for Binomial, Poisson and Normal distributions. Basic Concepts of Null and Alternative Hypotheses, Types of Errors; One Tailed and Two Tailed Tests, Power of Test, Critical Region.

**SECTION-B**

**Sampling Distributions:** Derivation of properties of Z, T, Chi Square and F distributions.

**SECTION-C**

Tests of significance based upon distribution of Z, t, F and Chi-square.

**SECTION-D**

**Analysis of Variance:** Introduction, Assumptions, Techniques of Analyzing Variance, Analysis of Variance of one-way and two-way classification.

**Books Recommended:**

1. Sukhatme, P.V. and Sukhatme, B.V.: Sampling Theory of Surveys with Applications, Iowa State University Press, Ames, Iowa (1970).
2. Goon, Gupta and Dass Gupta: An Outline of Statistical Theory, Dass Gupta Vol. 1(1977).
3. Kapur and Gupta: Fundamentals of Mathematical Statistics, Sultan Chand, New Delhi.
4. Murry, R. Spiegel Statistics: Theory & Practical (1972), McGraw Hill, New York.

**SEMESTER-V**  
**AGRICULTURAL ECONOMICS AND MARKETING**

**AGRICULTURAL ECONOMICS-III**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Mobilisation and Determinants of Agricultural Surpluses; Terms of trade between Agriculture and Industry. Farmers terms of trade with special reference to Punjab and their implication for development.

**SECTION-B**

Income and Price Elasticities of Agricultural Commodities, Cobb-Webb Model. Price Expectations and Uncertainties, Market Risk, Price Stabilization Measures.

**SECTION-C**

Food System and Food Safety, Food and Nutritional Security, Food Security Nets, Foodgrain losses at different stages. Measures to contain foodgrain losses. Food Subsidies, Global Environmental Change and Food Security.

**SECTION-D**

Marketable and Marketed Surplus, Supply Response of Marketed surplus to prices, size distribution of marketable surplus. Backward bending supply curve. Price expectations and uncertainties, market risk, price stabilization measures.

**Recommended Readings:**

1. Matoria, C.B., Agricultural Problems of India, Kitab Mahal, 1985.
2. Kaur, Rajbans, Agricultural Pricing Policies in Developing Countries, Kalyani Publishers, 1984.
3. Chand, Mahesh and Srivastava, A.K., Economics Analysis and Management in Agriculture, Oriented Publishers, 1978.
4. Kainth, G.S., Foodgrain Marketing System in India, Associated Publishing House, 1982.

**SEMESTER-V  
RURAL DEVELOPMENT**

**RURAL DEVELOPMENT-V**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Rural industries: Meaning and Importance; Problems and Difficulties, Measures for Development; Government Policy.

Agro-Industries: Meaning and features; Importance and Present status; Problems and Remedies.

**SECTION-B**

The nature of agricultural and industries production system and their relationships; Public and Private delivery system and their importance.

**SECTION-C**

Delivery system for supplies of inputs like seeds, fertilizers, insecticides etc. Agricultural supply chains, Public Distribution System.

**SECTION-D**

Rural Poverty: Problems and Magnitude; Causes and Remedies; Government Policies.

Role of irrigation and power in rural development; Forests and Forestry Development; Major Problems; Lines of Development; Government Policy.

**Suggested Readings:**

1. Aggarwal, A.N. and Kundan Lal: Rural Economy of India.
2. Mukerjee, K.B.: Community Development in India.
3. Desai, A.R.: Rural Sociology in India.
4. Jammu, P.S. (ed) Pendu Punjab vich Samajak Parvartan (special issue of Samajik Vigyan Pattar) Punjabi University, Patiala.
5. Jammu, P.S. Hindustan Vich Samuda Vikas, Punjabi University, Patiala.
6. Bhattacharya, S.N.: Rural Industrialization in India.
7. Dhesi, A.S. and Gurmail Singh: Rural Development in Punjab, A success story going astray, Routledge, New Delhi, 2008 (Edited book).

## SEMESTER-V

### OFFICE MANAGEMENT AND SECRETARIAL PRACTICES (VOCATIONAL) SECRETARIAL PRACTICES AND BASIC PHONOGRAPHY (THEORY)

**Duration: 3 hours**

**Total Marks: 100**

**Theory: 60**

**Practical: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

#### SECTION-A

**Secretary:-** Meaning of secretary, Types/ kinds of secretary, Importance of secretary, Qualification, qualities and duties of secretary.

Meaning of stationary, needs importance, Types of papers and envelopes, Purchase of stationary, Issue of stationary, Storage system.

#### SECTION-B

**Handling of Mail:-** Meaning of mail, Importance, Organisation of mail – Centralized mail their advantages and disadvantages, Decentralized mail their advantages and disadvantages, Nature of mail, Email and physical mail, Types of mail – Inward mail, outward mail and inter departmental mail, Handling of inward and outward mail.

**Meeting:-** Meaning, purpose, Types of meeting, Notice, Agenda, Quorum, Minutes, Roll of secretary

#### SECTION-C

**Introduction:-** origin of shorthand with particular emphasis of Pitman Shorthand, definition and importance of stenography, qualities of a successful stenographer, writing techniques and materials

**Consonants:-** Definition, number, forms, classes, sizes, thinness, thickness, directions and joining of strokes

#### SECTION-D

**Vowels & Diphthongs:-**

**Vowels:-** definition, number, sound, signs, places, position of outlines, intervening vowels, Introduction of upwards, downwards and horizontal strokes in stenography

**Diphthongs:-** definition, names, signs, placed, joined diphthongs and triphones.



**OFFICE MANAGEMENT AND SECRETARIAL PRACTICES (VOCATIONAL)  
SECRETARIAL PRACTICES AND BASIC PHONOGRAPHY  
(PRACTICAL)**

**Marks 40**

1. **Shorthand Practice:-**  
Repeated practice of consonants, writing each consonant from the text material with particular attention to their length, size and direction  
Repeated practice of upward & downward strokes  
Repeated practice of Vowels, Diphthongs
2. **Practice on operating the following machines:**
  - Photocopier                      6 hours
  - Word Processor                 20 hours
  - Scanner                            8 hours
3. **Working in the Office:**
  - Specimen of Notice & Agenda
  - Maintaining of stock register
  - Drafting of business and official e-mails
  - Mail handling (both physical and electronic mail)
4. **Telephone Handling**

**SEMESTER-V**  
**TRAVEL & TOURISM**

**WORLD TRAVEL GEOGRAPHY**

**Time: 3 Hrs.**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Chapter 1. Fundamentals of Geography**

Importance of Geography in tourism,  
Climatic variations, climatic regions of world

**Chapter 2. Study of Maps**

Longitude & latitude,  
International Date Line,  
Time variations and time difference

**SECTION-B**

**Chapter 3. Popular Destinations-1**

United States of America and Europe  
African Wildlife

**Chapter 4. Popular Destinations-2**

Islamic Middle East  
South East Asia and Australia

**SECTION-C**

**Chapter 5. Seven Wonder of the World**

Great Pyramid of Giza, Hanging Gardens of Babylon,  
Statue of Zeus at Olympia, Temple of Artemis at  
Ephesus, Mausoleum of Maussollos at Halicarnassus,  
Colossus of Rhodes, Lighthouse of Alexandria.

**Chapter 6. Modern Wonders**

Great Wall of China, Petra (Jordan). Christ the  
Redeemer (Brazil), Machu Picchu (Peru), Chichen  
Itza (Mexico), Roman Colosseum (Italy), Taj Mahal (India).

**SEMESTER-V**

**SECTION-D**

**Chapter 7. Globalisation and Tourism**

Globalisation and Tourism in India,  
Incredible India campaign

**Chapter 8. Heritage and Challenges to Growth of Tourism**

What is Heritage and why should it be conserved  
World Heritage Monuments of India  
Reasons for slow growth rate of Tourism in India.

**Suggested Readings:**

1. Allchin, B. Allchin, F.R. et al. (1989) Conservation of Indian Heritage, Cosmo Publishers, New Delhi.
2. Ashworth, G.T. (2000), The Tourist Historic City. Retrospect and Prospect of Managing the Heritage City, Pergamon, Oxford.
3. Dixit, M. Tourism Products, Royal Publishers.
4. Hall, CM and Page, SJ. The Geography of Tourism and Recreation, Routledge.
5. New Inskeep, Edward, Tourism Planning: An Integrated and Sustainable Development Approach (1991) VNR, New York.
6. Pearce, D.G. and Butler, R.W. Contemporary issues in tourism development, Routledge.
7. UNESCO-IUCN (1992) Eds. Masterworks of Man and Nature, Pantoga, Australia.

**SEMESTER-V**

**TOURISM AND HOTEL MANAGEMENT (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours.**

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

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Front Office**

- I. Front office as an operational department.
- II. Job description of front office assistant.
- III. Lobby:
  - Duties & responsibilities of lobby manager.
  - Organization of bell desk and functions.
  - Left luggage handling.
  - Guest errand cards.
  - Mail Message handling.
  - Wakeup call procedure.
- IV. Check in-Check out procedure, Guest folio, safety locker management.
- V. Processing housekeeping discrepancy.

**SECTION-B**

**Housekeeping**

- I. Housekeeping department-recruitment & selection.
- II. Floor linen room
  - Type of linen and use.
  - Par stock, safety stock, lead time quantity, Max. Qty, Min. Qty.
  - Inventory control.
  - Exchange of linen and uniforms.
- III. Interior Decoration, color, furniture, fixture and lighting in hotel.
- IV. Laundry Service.
- V. Housekeeping Practice.
  - Lost & found procedure.
  - Pest control.
  - Turn down service.
  - Key Control.

**SECTION-C**

**Food and Beverage Production:**

- I. Work Method in food preparation.
- II. Different type of soups.
- III. Curry powder used in Indian Cookery:
  - Gram masala, Pulao masala, Sambar masala, Rasam powder, Chaat masala, Meat masala.

### SEMESTER-V

- IV. Vegetables and salads.
- V. Meat (lamb, beef, pork) Poultry.
- VI. Basic Indian Gravies :
  - Yellow gravy.
  - White gravy.
  - Butter gravy.
  - Onion tomato masala.

### SECTION-D

#### Food and Beverage Service:

- I. Organization structure of F & B Service Deptt.
- II. Preparation for Service:
  - Mise-en-essance
  - Mise-en-place
  - Side board
- III. Type of Services:
  - English service.
  - French service.
  - Russian service.
  - American service.
  - Room service.
  - Geuridon service.
- IV. Briefing and check point for supervisor.
- V. Beverages (alcoholic, Non-alcoholic)
  - Procedure for serving table wine.
- VI. Cheese

**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 month. 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.

#### Suggested Readings:

- 1 Andrew Sudhir, *Food and Beverage Sersvice*, Tata McGrew Hill Publications, New Delhi, 38th Edition, 1991.
- 2 Andrew Sudhir, *Front Office Training Mannul*, Tata McGrew Hill Publications, New Delhi.
- 3 Koontz, H. Wandrich *Essentails of Management*, Tata McGraw Hill, Publishers, New Delhi, 1990.
- 4 Sudhir Andrew, *Hotal House Keeping*, Tata McGraw Hill Publishing Co. Ltd.
- 5 Negi Jagmohan *Hotels for Tourism Development*, Metropolitan, New Delhi, 2nd Edition, 1997.
- 6 Arora, Krishna, *Victory of Cookery*, Frank Bros. & Co. Publishers Ltd.

**SEMESTER-V****TAX PROCEDURES AND PRACTICE (VOCATIONAL)****GOODS AND SERVICES TAX (GST)****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**GST Act 2017:** Overview, Constitutional aspects, Implementation, Liability of Tax Payer, GST Council, Brief Introduction to IGST, CGST, SGST and UGST. Levy and collection.  
**Exemption from GST:** Introduction, Composition Scheme and remission of Tax.

**SECTION-B**

**Registration:** Introduction, Registration Procedure, Special Persons, Amendments / Cancellation.

**Supply:** Concept, including composite supply, mixed supply, interstate supply, intra-state supply, supply in territorial waters, place and time of supply.

**SECTION-C**

**Input Tax Credit:** Introduction, Tax Invoice Credit & Debit notes, e-way bill.

Computation of GST Liability and Payment including time, method of making payment, challan generation, CPIN, TDS & TCS. Reverse charge.

**SECTION-D**

**Returns:** various returns to be filed by the assesses.

**GST Portal:** Introduction, GST Eco-system, GST Suvidha Provider (GSP), Uploading Invoices

**Suggested Readings:-**

1. Taxmann: Taxmann's GST Manual 2017. Taxman, Publications (P) Ltd.
2. Datey V.S., Taxmann's GST Ready Reckoner Taxman, Publications (P) Ltd.
3. Gupta S.S., GST-How to meet your obligations 2017. Taxman, Publications (P) Ltd.
4. [www.cbec.gov.in](http://www.cbec.gov.in)

**SEMESTER-V**

**ADVERTISING, SALES PROMOTION AND SALES MANAGEMENT (VOCATIONAL)  
MANAGEMENT OF THE SALES FORCE**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Importance of the sales force and its management  
Functions of Sales Manager  
Recruitment and Selection

**SECTION-B**

Training and Direction  
Motivation and Compensation  
Appraisal of Performance

**SECTION-C**

Sales force size, organisation of the sales department: Geographic, Product Wise, Market based.  
Sales Planning and Control: Market analysis and Sales Forecasting. Methods of forecasting sales.  
Sales Budget: Importance, Process of sales budget, uses of sales budget.

**SECTION-D**

Sales territory: Considerations in allocation of sales territory.  
Sales quota: Objectives, principles of selling sales quota administration of sales quota. Uses of Sales quota.  
Sales and cost analysis: Uses and Methods.

**Suggested Readings:**

1. Johnston, Mark W. & Greg W. Marshall, Sales Force Management, McGraw Hill, 2008.  
(Richard D. Irwin).
2. Kotler, Philip, K.L. Keller, Abraham Koshy & Mithileshwar- Jha, Marketing Management PHI, 13th ed., 2007.

**SEMESTER-V  
COMMERCE**

**ANY ONE OF THE FOLLOWING OPTIONS:-**

**OPT. (I) COMPUTER AIDED ACCOUNTING  
OPT. (II) MATERIALS MANAGEMENT  
OPT. (III) TYPING AND SHORTHAND**

**OPTION (I): COMPUTER AIDED ACCOUNTING**

**Time: 3 Hours**

**Max. Marks: 100**

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

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Introduction to Computers: Early developments, Computer generations; information representation and storage; basic concepts of Boolean algebra; Binary arithmetic operations; hardware and software; Concepts of data and information; fields, records, files.

**SECTION-B**

Definition of data processing, types of data processing; data processing cycle; common data processing operations; data capture and validation; data validation techniques; introduction to data storage devices.

**SECTION-C**

**Problem Solving Basic Programming**

Problem solving on computers: Algorithms and flowcharts; programming languages and BASIC: Introduction to BASIC language; constants, variables and expressions; Communication with the computer.

**SECTION-D**

Program control, Commands; repetitive computations, arrays and subscripted variables; functions and subroutines; string data manipulation, graphics commands.

Software Lab: Accounting Problems based on the above syllabus. The students are required to develop programmes for various accounting problems.

**Suggested Readings:**

1. Martin and Seymour: Data Processing (Schaum Series, McGraw Hill, 1984).
2. Gotterfried: Programming with BASIC (Schaum Series, McGraw Hill, 1986).
3. Pradeep K. Sinha, Priti Sinha: Computer Fundamentals, BPB Publications, 2005.
4. Grover: Programming in BASIC (Allied Publishers, New Delhi, 1987).



**SEMESTER-V****COMMERCE****OPTION (II): MATERIALS MANAGEMENT****Time: 3 Hours****Marks: 100****Teaching Hours: 80****Period of 45 minutes each****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Nature and scope of materials management, objectives and functions of materials management; organization of materials management, interdepartmental relationships  
Purchasing Management Introduction, Objectives and functions organisation for purchasing, responsibilities of purchase department, determination of purchase, requirements. Purchase procedures inviting tenders and quotations selecting a source, placing an order and follow up; purchasing records and their maintenance; purchasing through approved sources and through D.G.S. and T.D.

**SECTION-B**

Stores Management : Identification of stores, classification and codification of materials on alphabetical, nemonic, numerical, alpha-numerical and column making systems, advantage of classification and codification; stores organisation; receiving section layout and location system, substores, material handling and storage equipment, store accounting.

**SECTION-C**

Inventory Management: Definition scope and objectives of inventory control, ABC analysis, factors requirement of an item, lead time, carrying or holding costs, set up or ordering , costs, shortage or stock out costs re-order point, safety stock, economic order quantity (without shortages), EOQ for price discounts.

**SECTION-D**

Distribution Management: Definition of physical distribution, factors affecting distribution, elements of transport system, pros and cons of various modes of transportation, transportation and non transportation costs. Inter-state tariffs documentation, carrier and consigners liabilities, packing and package costs, packaging fragile, perishable and dangerous goods.

**Recommended/Suggested Books:**

1. Gopalkrishnan, "Handbook of Material Management", Prentice Hall of India, 2007.
2. Menon K.S. "Stores Management", Mac Millan of India Ltd., 2007.
3. Arnold and Ramkrishnan, "Introduction to Materials Management", Pearson Education, 2007.
4. Nair N.K., "Purchasing and Materials Management", Vikas Publications, 2007.
5. Goyal B.C., "Production Management", Pragati Prakashan, 2007.

**SEMESTER-V**

**COMMERCE**

**OPTION (III): TYPING AND SHORTHAND**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 70**

**Practical Marks: 30**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Theory**

**Practical**

**SECTION-A**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Nature, Scope and importance of typewriting. Sitting posture, introduction of basic principles, knowledge of essential parts of a typewriter and their usage.</li> <li>2. Manipulation of fingers on key board– Introduction of basic lesson (all the four rows) including operation of side shift keys.</li> </ol> | <p>Satisfy the curiosity of the students by making him sit on the typewriter in a required manner by inserting and removing the paper and by observing the action of keys when pressed.</p> <p>Mastery of key-board, practice of basic lesson on all the four rows. Practice of “quick brown fox jumps straight over the lazy dog” lesson.</p> |
|---|--|

**SECTION-B**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>3. Speed development importance of accuracy over speed.</li> <li>4. Care and upkeep of typewriter. Typewriting accessories, change of ribbon, use of punctuation signs and space to be left after punctuation marks carbon manifold.</li> </ol> | <p>Introduction and manipulation of side shift keys and their use.</p> <p>Practice from exercises, after completion of basic lessons to attain speed @ 15 w.p.m.</p> |
|--|--|

**SECTION-C**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>5. Instructions for stencil cutting. Use of correcting fluid.</li> <li>6. Display of tabulation work and balance sheets.</li> </ol> | <p>Practice from book exercises @ 15 w.p.m. daily for atleast five minutes and practice in cutting stencils.</p> <p>Typing in printed forms, telegrams and tabulated statements etc.</p> |
|--|--|

**SECTION-D**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>7. How to type printed forms, telegrams, minutes notices and legal matters.</li> <li>8. Revision of theory.</li> </ol> | <p>Development of speed @ 25 w.p.m. with daily practice.</p> |
|---|--|

### SEMESTER-V

**Note:** There would be one paragraph of 125 words to be typed @ 25 w.p. m. for 5 minutes carrying 10 marks and their would be 5 marks for sessional work. (The candidate is required to maintain his file through out the year.)

#### Books Recommended: (Typewriting Theory)

1. Typewriting made easy.
2. General instructions regarding typewriting and stencil cutting.
3. A handbook of type writing.

#### Typewriting Practical:

1. Speed and accuracy.
2. Comprehensive course in touch typewriting.
3. Weekly test papers.
4. Any other book suitable to students.

THEORY	PRACTICAL
1. Nature, scope, importance of shorthand (this includes basic instructions and introduction).	Teacher would be required to teach students basic principles of shorthand and practice of constant and vowels (initial lessons.)
2. Explanation of consonant and vowel sounds, their indication and their use in shorthand.	Practice from books and reading back at initial Speed it will be required for the whole of the year.
3. Gramalogues—explanation and their usage in shorthand.	Dictation and reading back from further exercises,. Transcription from written shorthand would start from this stage.
4. Explanation of diphthongs hooks (initial and final) halving and doubling principles.	
5. Diphones, medial semicircles and compound words-general contractions.	Practice from book exercise, reading back and Transcription. 5 minutes para dictation and transcription at nominal speed till last examination.
6. Intersections, advanced phraseography and special contractions including legal phraseography.	Dictation from seen and unseen passage (from shorthand book) reading back and transcriptions at normal speed.
7. Quick revision of theory note making techniques—common errors in shorthand of English words.	Dictation from any exercise of shorthand book. Reading of printed shorthand outlines from Shorthand book.
– Introduction of new and advance shorthand outlines.	The candidate would be required to attain speed @ 60 w.p.m. and transcribe the same @ 12 w.p.m.
8. Dictation from instructor exercises and preparation for examination.	

**Note:** There would be one paragraph of 5 minutes of 300 words to be dictated @ 60 w.p.m. and to be typed @ 12 w.p.m. carrying 15 marks.  
'Shorthand Instructor' is required to give practical knowledge of all the exercises of the book to the learners. Questions for theory would be from the prescribed syllabus but practical (shorthand test) would be from the whole of the book.

**SEMESTER-V****TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)****EMERGING CONCEPTS FOR EFFECTIVE TOURISM DEVELOPMENT****Time: 3 Hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Internal assessment will be based on Periodical test, Presentations, Assignments, Group discussions, and Grooming skills

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

**SECTION-A**

Relevant concepts and approaches for effective tourism development.

- National Development Council Report on Tourism Development.
- National Action Plan, 1992.
- New Policies on Tourism and Civil Aviation.

**SECTION-B**

- Tourism traffic and its Improvisations
- Destination development.
- Sustainable development.

**SECTION-C**

- Man Power Development Needs.
- Management Strategies.

### **SECTION-D**

- Tourism Policy Analysis.
- Tourism Legislation a Necessity.

#### **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.

**SEMESTER-V  
MATHEMATICS**

**PAPER-I: DYNAMICS**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Rectilinear motion in a straight line with uniform acceleration, Newton's laws of motion, Motion of two particles connected by a string.

**SECTION-B**

Motion along a smooth inclined plane, Variable acceleration, Simple Harmonic Motion.

**SECTION-C**

Curvilinear motion of particle in a plane, Definition of velocity and acceleration, projectiles, Oscillations: Free Vibrations, Simple Pendulum, Conical Pendulum.

**SECTION-D**

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 Particle and of Rigid Bodies, Cambridge University Press, 1956.

**SEMESTER-V  
MATHEMATICS**

**PAPER-II: NUMBER THEORY**

**Time: 3 Hours**

**Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Preliminaries: Proof by induction, Binomial Theorem. Divisibility in Integers: Basic Definitions and Properties, The division Algorithm, GCD, The Euclidean Algorithm, LCM, Existence and determination of solution to the linear Diophantine equation  $ax + by = c$ , primes-definition & Properties, the fundamental theorem of Airthmetic.

**SECTION-B**

Number-theoretic functions: the greatest integer function, Euler's Phi-function, Sum & number of divisors functions, *möbius* function & the Inversion formula.

**SECTION-C**

Congruences-definition and properties, linear congruences, existence & solution of the linear congruence,  $ax \equiv b \pmod{m}$ , Complete and reduces residue systems, Chinese remainder theorem.

**SECTION-D**

Fermat's theorem, Euler's theorem, Pseudoprimes Wilson's theorem. Application to Cryptography-Factorization methods due to Fermat, RSA.

**Books Recommended:**

1. David M. Burton: Elementary Number Theory, Seventh Edition, McGraw-Hill, Indian Reprint, 2012.
2. Ivan Niven, Herbert S, Zuckerman & Hugh L. Montgomery : An Introduction to the theory of Numbers, Wiley, fifth edition, 1991.
3. Tom M. Apostol, An introduction to Analytical Number Theory, Springer-Verlag, UTM.

**SEMESTER-V****STATISTICS****PAPER-I: LINEAR MODELS AND DESIGN OF EXPERIMENTS****Time: 3 Hours****Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Linear models, the fixed effect models, the distribution of minimum error sum of squares and the conditional minimum error sum of squares, tests of general linear hypotheses. Analysis of one way classified data under the fixed effect model expectations of various mean sum of squares in one way classified data

**SECTION-B**

Analysis of two way classified data with one observation per cell under the fixed effect models, Analysis of two way classified data with multiple but equal observation in cell under the fixed effect models, expectations of various mean sum of squares in two way classified data.

**SECTION-C**

Terminologies in experimental designs, basic principles of design of experiment: randomization, replication and local control, completely randomized design, randomized block design and the latin square design, balanced incomplete block design and their advantages, disadvantages and analysis.

**SECTION-D**

Factorial experiments, the concept of main effects and interactions in  $2^2$  and  $2^3$  factorial experiments and the sum of squares due to them. Yates method of computing the sum of squares due to the main effects and interactions in  $2^2$  and  $2^3$  factorial designs, statistical analysis of these experiments (excluding confounding).

**Books Recommended:**

1. Goon, A.M., Gupta, M.K. and Dasgupta, B. Fundamentals of Statistics, Vol. II, World Press, 2005.
2. Das, M.N. and Giri, N.C. Design and Analysis of Experiment, New Age International Publisher, 2003.
3. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.



**SEMESTER-V**  
**STATISTICS**

**PAPER-II: THEORY OF SAMPLE SURVEYS**

**Time: 3 Hours**

**Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**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.

**SECTION-B**

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-C**

Ratio, product and regression estimates of population mean: their approximated (under large sample) expected values and variances under SRSWOR, comparisons with mean per unit estimate (under SRSWOR)

**SECTION-D**

Regression estimates of population mean: their approximated (under large sample) expected values and variances under SRSWOR, comparisons with mean per unit estimate (under SRSWOR)

**Books Recommended:**

1. Goon, A.M., Gupta, M.K. and Dasgupta, B. Fundamentals of Statistics, Vol. II, World Press, 2005.
2. Singh, D. and Chaudhary, F.S., Theory and Analysis of sample survey design, New Age International Publisher, 2002.
3. Mukhopadhyar, P., Theory and Methods of Survey Sampling, Prentice Hall, 2000.
4. Gupta, S.C. and Kapoor, V.K., Applied Statistics, Sultan Chand and Company, 2007.

**SEMESTER-V****STATISTICS****PAPER-III: - Practical based on PAPER-I: LINEAR MODELS AND DESIGN OF EXPERIMENTS****Time: 2 Hours****Marks: 30**

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

**List of Practicals Exercises**

1. Exercises on analysis of variance for one way classified data and Completely Randomized design
2. Exercises on analysis of variance for two way classified data with one observation per cell and Randomized Complete Block design
3. Exercises on analysis of variance for two way classified data with multiple but equal observations per cell
4. Exercises on analysis of variance for Latin Square design
5. Exercises on analysis of variance for Balanced Incomplete Block design
6. Exercises on analysis of variance for  $2^2$  and  $2^3$  factorial experiments

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

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

**SEMESTER-V****CHEMISTRY****(INORGANIC CHEMISTRY-IV)  
(THEORY)****Time: 3 Hrs****Marks: 35****45 Hrs. (3 Hrs./week)****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****1. Metal-ligand Bonding in Transition Metal Complexes (12 Hrs)**

Limitations of valence bond theory, an elementary idea of crystal-field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, Spectrochemical series factors affecting the crystal-field parameters, Structural and Thermodynamic effects of inner orbital splittings, Jahn-Teller effects.

**SECTION-B****2. Magnetic Properties of Transition Metal Complexes (11 Hrs)**

Types of magnetic behaviour, methods of determining magnetic susceptibility, spin-only formula. L-S coupling, correlation of  $\mu_s$  and  $\mu_{eff}$  values, orbital contribution to magnetic moments, application of magnetic moment data for characterization of 3d-metal complexes.

**3. Thermodynamic and Kinetic Aspects of Metal Complexes**

A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reactions of square planar complexes.

**SECTION-C****4. Electronic Spectra of Transition Metal Complexes (11 Hrs)**

Term Symbols for  $p^2$  &  $d^2$  systems, spectroscopic ground states for  $d^1$ - $d^{10}$  electronic configurations. Types of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, Orgel diagram for  $d^1$ - $d^5$ .

**SECTION-D****5. Organometallic Compounds: (11 Hrs)**

Definition, nomenclature and classification of organometallic compounds. EAN rule, Preparation, properties, and applications of alkyls aryls of lithium and aluminium, Bonding in metal-ethylenic complexes, Mechanism of homogeneous hydrogenation reactions.

**Books Suggested:-**

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDaniel, D., Alexander, J., Concepts and Models of Inorganic Chemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Porterfield, W.W., Wesley, A., Inorganic Chemistry; Pubs: Addison-Wesley Publishing Company, 1984.
6. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
7. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
8. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
9. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.
10. Inorganic Chemistry, W.W. Porterfield Addison-Wesley.
11. Inorganic Chemistry, A.G. Sharpe, ELBS.

**SEMESTER-V**  
**CHEMISTRY**  
**(PHYSICAL CHEMISTRY-III)**  
**(THEORY)**

**Time: 3 Hrs**  
**45 Hrs. (3 Hrs./week)**

**Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**1. Electrochemistry**

**(12 hrs.)**

Electrical transport-conduction in metals and in electrolyte solutions, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of equivalent and specific conductance with dilution. Migration of ions and Kohlrausch law, Arrhenius theory of electrolyte dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law, its uses and limitations. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only). Transport number, definition and determination by Hittorf method and moving boundary method. Applications of conductivity measurements: determination of degree of dissociation, determination of  $K_a$  of acids, determination of solubility product of a sparingly soluble salt, conductometric titrations.

Types of reversible electrodes-gas metal ion, metal ion, metal insoluble salt-anion and redox electrodes. Electrode reactions. Nernst equation, derivation of cell E.M.F. and Single electrode potential, standard hydrogen electrode, reference electrodes, standard electrode potential, sign conventions, electrochemical series and its significance. Electrolytic and Galvanic cells-reversible and irreversible cells, conventional representation of electrochemi cells.

EMF of a cell and its measurements. Computation of cell. EMF, Calculation of thermodynamic quantities of cell reactions ( $\Delta G$ ,  $\Delta H$  and  $K$ ), polarization, over potential and hydrogen overvoltage. Concentration cells with and without transport, liquid junction potential, application of concentration cells, valency of ions, solubility product and activity coefficient, potentiometric titrations.

**SECTION-B**

**2. Nuclear Chemistry**

**(11 Hrs.)**

Introduction: Radioactivity, Nuclear Structure, Size of Nucleus, Mass Defects and Binding Energy, Nuclear Stability, Nuclear Forces, Nuclear Spin and Moments of Nuclei, Nuclear Models, Nuclear Decay Processes, The Laws of Radioactive Decay, Soddy-Fajans Group Displacement Law, Rate of Nuclear Decay and Half Life Time (Kinetics of Radioactive Decay), Induced Nuclear Reactions, Types of Nuclear Processes, High Energy Nuclear Reactions, Nuclear Reaction Cross-Section, Artificial radioactivity, Detection and Measurement of Radioactivity, Nuclear Fission, Nuclear Fusion, Applications of Radioactivity.

**SECTION-C****3. Spectroscopy****(11 Hrs.)**

Introduction: Electromagnetic radiation, regions of the spectrum, basic features of different spectrometers, statement of the Born-Oppenheimer approximation, degrees of freedom.

**4. Rotational Spectrum**

Diatomic molecules. Energy levels of a rigid rotor (semiclassical principles), selection rules, spectral intensity, distribution using population distribution (Maxwell-Boltzmann distribution) determination of bond length, qualitative description of non-rigid rotor, isotope effect.

**SECTION-D****5. Vibrational Spectrum****(11Hrs.)**

Infrared spectrum: Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, intensity, determination of force constant and qualitative relation of force constant and bond energies, effect of anharmonic motion and isotope on the spectrum, idea of vibrational frequencies of different functional groups.

Raman Spectrum: Concept of polarizability, pure rotational and pure vibrational Raman spectra of diatomic molecules, selection rules.

**6. Electronic Spectrum**

Concept of potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules and Franck-Condon principle. Qualitative description of s, p, and n M.O., their energy levels and the respective transitions.

**Books Suggested:-**

1. Atkins, P., Paula, J.de, Atkins Physical Chemistry; 8th edition, Pubs: Oxford University Press, 2008.
2. Berry, R.S., Rice, S.A., Ross, J., Physical Chemistry; 2nd edition, Pubs: Oxford University Press, 2000.
3. Albert, R.A., Silbey, R.J., Physical Chemistry; 1st edition, Pubs: John Wiley & Sons Inc., 1992.
4. Levine, I.N., Physical Chemistry; 5th edition, Pubs: Tata McGraw Hill Publishing Co. Ltd, 2002.
5. Moore, W. J., Basic Physical Chemistry; Pubs: Prentice Hall of India Pvt. Ltd, 1983.
6. Metz, C.R., Theory and problems of Physical Chemistry; Schaum's outline series, 2nd edition, Pubs: McGraw-Hall Book Company, 1989.
7. W. Kemp, "Organic Spectroscopy".
8. C.N. Banwell "Fundamentals of Molecular Spectroscopy".
9. D.L. Pavia, G.M. Lampan and G. S. Kriz, Introduction to Spectroscopy" Hartcourt College Publishers, 2001

**SEMESTER-V  
CHEMISTRY  
(PRACTICAL)**

**Duration: 3½ Hrs.**

**Marks: 30**

**6 Period/week**

**(I) Synthesis and Analysis**

- (a) Preparation of Sodium trioxalatoferrate (III)
- (b) Preparation of Ni-DMG Complex
- (c) Preparation of Copper tetrammine complex
- (d) Preparation of cis-bisoxalatodiaquachromate (III) ion

**(II) Physical Chemistry**

**(a) Conductometric Titrations**

(i) Determine the end point of the following titrations by the conductometric methods.

Strong acid-Strong base

Strong acid-Weak base

Weak acid-Strong base

Weak acid-Weak base

(ii) Determine the composition of a mixture of acetic acid and the hydrochloric acid by conductometric titration.

**(b) (i) Molecular Weight Determination of acetanilide, naphthalene, using camphor as solvent (Rast's methods).**

**(c) Adsorption** (i) To study the adsorption of acetic acid oxalic/acid from aqueous solutions by charcoal.

**(d) Phase Equilibria** to determine the distribution coefficient of iodine between CCl<sub>4</sub> and water.

**(e) Refractometry**

(i) Determination of refractive index of a liquid by Abbe refractometer, and hence the specific and molar refraction.

(ii) To determine the composition of unknown mixture of two liquids by refractive index measurements.

**Practical Examination**

- |                        |    |
|------------------------|----|
| 1) Inorganic Synthesis | 10 |
| 2) Physical experiment | 13 |
| 3) Viva- Voce          | 04 |
| 4) Note Book           | 03 |

**Books Suggested:-**

1. Experimental Inorganic Chemistry, W.G. Palmer, Cambridge.
2. Handbook of preparative Inorganic Chemistry, Vol. I & II, Brauer, Academic Press.
3. Inorganic Synthesis, McGraw Hill.
4. Experiments in General Chemistry, C.N.R. Rao and U.C. Aggarwal, East-West Press.
5. Experiments in Physical Chemistry, R.C. Das and B. Behra, Tata McGraw Hill.
6. Advanced Practical Physical Chemistry, J.B. Yadav, Goel Publishing House.
7. Advanced Experimental Chemistry, Vol. I, Physical, J.N. Guru and R. Kapoor, S. Chand & Co.
8. Selected Experiments in Physical Chemistry, N.G. Mukherjee, J.N. Ghosh & Sons.
9. Experiments Physical Chemistry, J.C. Ghosh, Bharati Bhavan.



**SEMESTER-V  
PHYSICS**

**PAPER-A  
CONDENSED MATTER PHYSICS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Note : There should be 20% numericals in each paper.**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Crystal structure, Symmetry operations for a two and three dimensional crystal, Two dimensional Bravais lattices, Three dimensional Bravais lattices, Basic primitive cells, Crystal planes and Miller indices, Diamond and NaCl structure.

**11 Lectures**

**SECTION-B**

Crystal Diffraction: Bragg's law, Experimental methods for crystal structure studies, Laue equations, Reciprocal lattices of SC, BCC and FCC, Bragg's law in reciprocal lattice, Brillouin zones and its construction in two and three dimensions, Structure factor and atomic form factor.

**11 Lectures**

**SECTION-C**

Lattice vibrations, Concepts of phonons, Scattering of photons by phonons, Vibration and mono-atomic, linear chains, Density of modes, Einstein and Debye models of specific heat.

**11 Lectures**

**SECTION-D**

Free electron model of metals, Free electron, Fermi gas and Fermi energy, Band Theory: Kronig-Penney model, Metals and insulators, Qualitative discussion of the following: Conductivity and its variation with temperature in semiconductors, Fermi levels in intrinsic and extrinsic semiconductors, band gap in semiconductors.

**12 Lectures**

**Books Suggested:**

1. Introduction to Solid State Physics: C. Kittel (Wiley Eastern)
2. Elements of Modern Physics: S.H. Patil (TMGH), 1985.
3. Solid State Physics: Puri and Babbar.

**SEMESTER-V  
PHYSICS**

**PAPER-B  
ELECTRONICS  
(THEORY)**

**Time: 3 Hours**

**Marks: 35**

**Total Teaching Hrs: 45(3h/week)**

**Pass Marks: 35%**

**Note : There should be 20% numericals in each paper.**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Concepts of current and voltage sources, p-n junction, Biasing of diode, V-I characteristics, Rectification: half wave, full wave rectifiers and bridge rectifiers, Efficiency, Ripple factor, Qualitative ideas of filter circuits (LC and filters), Zener diode and voltage regulation, Introduction to Photonic devices (solar cell, photodiode and LED). Basic concepts of Boolean algebra, AND OR NOT and NAND Gates.

**11 Lectures**

**SECTION-B**

Junction transistor : Structure and working relation between different currents in transistors, Sign conventions, Amplifying action, Different configurations of a transistor and their comparison, CB and CE characteristics, Structure and characteristics of JFET, Transistor biasing and stabilization of operating point, Voltage divider biasing circuit.

**11 Lectures**

**SECTION-C**

Working of CE amplifier, Amplifier analysis using h-parameters, Equivalent circuits, Determination of current gain, Power gain, Input impedance, FET amplifier and its voltage gain, Feed back in amplifiers, Different types, Voltage gain, Advantage of negative feed back, Emitter follower as negative feed back circuit.

**12 Lectures**

**SECTION-D**

Barkhausen criterion of sustained oscillations, LC oscillator (tuned collector, tuned base Hartley), RC oscillators, phase shift and Wein bridge.

**11 Lectures**

**Books Suggested:**

1. Basic Electronics and Linear Circuits by N.N. Bhargave, D.C. Kulshreshtha and S.C. Gupta.
2. Electronic Devices & Circuits: Millman & Halkias
3. Solid State Electronic Devices: Ben G. Streetman
4. Physics of Semi Conductor Devices: S.M. Sze and Kwok K. Ng.

**SEMESTER-V**

**PHYSICS  
(PRACTICAL)**

**Marks: 30**

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

- I. The distribution of marks is as follows :
 

(i) One experiment	<b>15 Marks</b>
(ii) Brief Theory	<b>5 Marks</b>
(iii) Viva-Voce	<b>5 Marks</b>
(iv) Record (Practical file)	<b>5 Marks</b>
  - II. There will be one sessions of 3 hours duration. The paper will have one session.  
Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.
  - III. Number of candidates in a group for practical examination should not exceed 12.
  - IV. In a single group no experiment be allotted to more than three examinee in any group.
1. Measurement of reverse saturation current in p-n-junction diode at various temperatures and to find the approximate value of energy gap.
  2. To draw forward and reverse bias characteristics of a p-n junction diode.
  3. Study of a diode as a clipping element.
  4. To measure the efficiency and ripple factors for (a) halfwave (b) full wave and (c) bridge rectifier circuits.
  5. To draw the characteristics of a Zener diode.
  6. To study characteristics of Common Base transistor.
  7. To study characteristics of Common Emitter transistor.
  8. To study the gain of an amplifier at different frequencies and to find Band width
  9. To study the reduction in the ripple in the rectified output with RC, LC and filters.
  10. To study logic gates (OR, AND, NOT and NAND).

**SEMESTER-V**

**HOME SCIENCE**

**FOODS AND NUTRITION & CHILD DEVELOPMENT - I  
(THEORY)**

**Time: 3 Hrs.**

**Teaching Periods: 6/week**

**Max. Marks: 100**

**Theory Marks: 60**

**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Importance and functions of food:
  - a) Physiological
  - b) Psychological
  - c) Social
2. Essential food Constituents: Carbohydrates, Proteins and Fats; functions, sources, requirements and Deficiency and excess.
3. Methods of cooking: Boiling, steaming, frying, baking, roasting and micro-wave cooking.

**SECTION-B**

4. Food nutrients: Functions, recommended allowances, deficiency and sources of:
  - a) Vitamins- B-1, B-2, Niacin, A, C, D
  - b) Minerals-Calcium, Iron, Iodine
5. Food Preservation: Definition, Importance & Principles. Causes of food spoilage. Household methods of preservation. Sun drying, use of salt, oil, spices, sugar & chemical preservatives.

**SECTION-C**

1. Definition and importance of Child Development.
2. a) Differences between growth and development.  
b) Principles of development.
3. Physical development of the child from infancy to late childhood and factors affecting the same.

**SECTION-D**

4. Motor Development from infancy to late childhood.
  - a) Pattern of motor development.
  - b) Factors affecting motor development.
5. Emotional Development
  - a) Characteristics of children emotions.
  - b) Common childhood emotions fear, anger, jealousy, love and affection, anxiety and curiosity.
6. Language Development
  - a) Stages of language development.
  - b) Factors affecting language development

**References Books:**

<b>Sr.no.</b>	<b>Book title</b>	<b>Author</b>
1.	Food and Nutrition	Sebrell, William H.
2.	Normal And Therapeutic Nutrition	Praudfit
3.	Child Behaviour and Development	Kappuswamy, B
4.	Child Growth and Development	Hurlock, Elizabeth
5.	Human Nutrition and Dietics	Davidson, Stanley
6.	Textbook of Home Science	Neelam Garewal

**SEMESTER-V**

**HOME SCIENCE**

**FOODS AND NUTRITION  
(PRACTICAL)**

**Time: 3 Hours**

**Marks: 40**

**Teaching: 6 Periods/week**

1. Preparation of minimum of three dishes by using various methods of cooking (e.g. boiling, steaming, baking), frying (deep & shallow) and roasting with different food groups e.g. cereal, pulses & vegetables groups and their combinations.
2. Food preservation-Pickle, chutneys, jams, squashes, sherbets, sauce (at least two each).

**SEMESTER-V****COSMETOLOGY (VOCATIONAL)  
(THEORY)**

**Time: 3 hrs.**  
**Periods/Week: 4**

**Max. Marks: 100**  
**Theory Marks: 35**  
**Practical Marks: 50**  
**College Lab Training Marks: 15**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****Bacteriology**

- a) What is Bacteria?
- b) How Bacteria grows and reproduce?
- c)

**SECTION-B****Bacteria and Infection Control**

- a) Types of Bacteria
- b) Infections and Disease

**SECTION-C****Sterilization & Sanitation**

- a) Methods of Sterilization & Sanitations
- b) Commonly used disinfectants
- c) Knowledge of common antiseptics
- d) General suggestions for sanitations

**SECTION-D****Chemical Treatment of Hair**

- a) Rebonding
- b) Smoothing

**SEMESTER-V**

**COSMETOLOGY (VOCATIONAL)  
(PRACTICAL)**

**Time: 3 Hrs.**  
**Periods/Week: 6**

**Marks: 50**

**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.

**1. Make-up**

- a) Cosmetics used in make-up, how to choose the correct colour, selecting base shades, how to determine facial balance.
- b) Bridal Makeup - day & night
- c) Corrective make-up

**2. Hair Styling:** Formal and casual

**3. Draping of Formals & Casuals:** Saree and Lehngas



**SEMESTER-V****CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)****THERAPEUTIC NUTRITION  
(Theory)****Time: 3 Hrs.****Max. Marks: 100****Theory: 60****Practical: 40****Pds – 6 pds/week****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Objectives :-**

- 1) To gain knowledge about different diseases.
- 2) To learn therapeutic adaptation of the normal diet.

**Content:-****SECTION-A**

- 1) Basic concept of Therapeutic diet - meaning, importance, objectives, Therapeutic adaptations of the normal diet.
- 2) Types of routine hospital diets - normal diet, Soft diet, liquid diet, Special feeding methods Enteral nutrition and Parenteral Nutrition.
- 3) Role of Dietitian in feeding of patients. Effect of illness on food acceptance and utilization.
- 4) Nutrient and drug interaction. Effect of drug therapy on intake, absorption and utilization of nutrients.

**SECTION-B**

- 5) Nutrition during infection and fevers - classification, etiology, symptoms and dietary management in - Typhoid, Tuberculosis and Dengue.
- 6) Nutrition in Gastro - intestinal disorders, etiology, symptoms and dietary management in Diarrhoea, constipation, Gastritis, Irritable bowel syndrome peptic ulcer.
- 7) Nutrition in disturbances of small and large intestine etiology, symptoms and dietary management in Celiac disease, Lactose intolerance, ulcerative colitis.
- 8) Nutrition in disease of the liver, gall bladder and pancreas, etiology, symptoms and dietary management in - Jaundice, Hepatitis, cirrhosis of liver, Cholecystitis and Pancreatitis.

**SECTION-C**

- 9) Nutrition in Diabetes Mellitus - Types etiology, symptoms metabolic changes, life style modification, Dietary management, Hypoglycemic agents, Medication, Insuline therapy, Acute Complication of diabetes.

- 10) Nutrition in Renal disease, etiology, symptoms dialysis - Its type and dietary management in Glumerulonephritis, Nephrosis, Acute Renal failure.
- 11) Nutrition in Cardiovascular diseases, etiology, symptoms, life style modification, brief knowledge of Dash Diet and dietary management in Atherosclerosis, Hypertension, Dislipidemia and Acute cardiovascular disease/Heart attack.

#### **SECTION-D**

- 12) Nutrition in Cancer, types etiology, stages, symptoms diagnosis, factors inhibiting carcinogenesis, factors enhancing carcinogenesis and dietary management and Chemo & Radiation therapy (Brief Introduction).
- 13) Nutrition in obesity - assessment of obesity, Hazards of obesity, etiology, nutritional management and other approaches.
- 14) Gout - etiology, symptoms & dietary management.
- 15) Food Allergy - Causes, symptoms & dietary management.

#### **Reference books**

1. Food and Nutrition - by Dr. M. Swamination
2. Text book of Nutrition & Dietetics - by Kumeed Khanna & others.

**SEMESTER-V**

**CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)**

**THERAPEUTIC NUTRITION  
(PRACTICAL)**

**Time: 3 Hrs.**

**Marks: 40**

**Periods: 6**

**Note:- Paper will be set on the spot by the examiner instructions for the Paper Setter.**

1. Prepare following therapeutic recipes and calculate their nutritive value.
  - a. Prepare 5 recipes of liquid and soft diet.
  - b. Prepare 5 high protein and high energy recipes.
  - c. Prepare 5 high carbohydrate, moderate protein & low fat recipes.
  - d. Prepare 5 high fiber and low glycemic index recipes.
  - e. Prepare 5 low sodium, low fat and high fiber diet.
2. Plan and calculate nutritive value of diet for the following diseases. Typhoid, Diarrhoea, Constipation, Jaundice, peptic ulcer, Diabetes, Hypertension, atherosclerosis, renal disease and obesity.
3. Students are required to run Diet Clinics in the college

**Note: Students are required to undergo 10 days hospital training in winter break and submit report**

**Reference Books:**

1. Food and Nutrition - by Dr. M. Swamination
2. Text book of Nutrition & Dietetics - by Kumeed Khanna & others.

**SEMESTER-V**

**FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)**

**HISTORY COSTUMES OF INDIA & WORLD-I  
(THEORY)**

**Time: 3 Hrs.**  
**Periods/week: 4**

**Max. Marks: 100**  
**Theory Marks: 40**  
**Practical Marks: 60**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Historic Costumes of World**

- 1) Egypt
- 2) Greece

**SECTION-B**

**Traditional Costumes of the following States of India:**

- 3) Punjab
- 4) Himachal Pradesh
- 5) Jammu & Kashmir
- 6) Rajasthan
- 7) Maharashtra

**SECTION-C**

**Traditional Textiles of India:**

- 8) Jamdhani & Baluchari of Bengal
- 9) Tanchoi of Gujarat

**SECTION-D**

- 10) Patola of Gujarat
- 11) Chanderi & Maheshwari of Madhya Pradesh

**References Books:**

1. Textiles and Dress of Gujarat Edwards, Eiluned
2. Traditional Indian Textiles
3. Costume Textiles and Jewellery of India Vandana Bhandari
4. Survey of Historic Costumes Phyllis Tortora
5. Ancient Indian Costumes Roshan Alkazi
6. Medieval Indian Costumes Roshan Alkazi
7. History of Fashion Sodhia, Manmeet

**SEMESTER-V**

**FASHION DESIGNING AND GARMENT CONSTRUCTION  
(VOCATIONAL)**

**ADVANCE DESIGNING, CONSTRUCTION & DRAPING-I  
(PRACTICAL)**

**Time: 4 Hrs.**  
**Periods/week: 2x6**

**Marks: 60**

**Part-I**

**Sample making of following**

1. Pockets – Cross, Welt, Bound.
2. Zippers – Concealed, Zipper with fly opening.

**Design Draft and Construct following:**

1. Night Wear.
2. Trouser / Culottes / Hipsters.

**Part-II**

1. Draping of Basic Bodice Block Front.
2. Draping of Basic Bodice Block Back
3. Draping of Bodice with princess line

**General Instructions for the Paper Setters:**

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.
2. Draping of any Block.

**Note: Please send the material list along with.**

**SEMESTER-V**

**EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs.**  
**Lectures/week: 6 Theory**

**Max. Marks: 100**  
**Theory Marks: 60**  
**Practical Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Course Contents:**

**SECTION-A**

**Integration in Early Childhood Care and Education**

- Handicapped children
- Types of handicaps
- Identification of children with special needs
- Integration with normal children
- Basic needs of handicapped children

**SECTION-B**

**Roles and Responsibilities of Staff**

- Administration and supervision
- Qualities of a good teacher and supervisory staff
- Capacity building in staff
- Pre-school personnel's and their training

**SECTION-C**

**Substitute Child Care**

- Substitute child care
- Needs of infant and children
- Kinds of substitute child care
- Role of Nursery school/balwadi's

**SECTION-D**

**Integrated Child Development Scheme**

- Packages of services
- Objectives of ICDS

**NOTE: 10 DAYS TRAINING IN A RECOGNISED PRE-SCHOOL WITH PROJECT REPORT.**

**SEMESTER-V****EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)  
(PRACTICAL)****Time: 3 Hrs.****Marks: 40****Lectures/week: 4 Practical****Instructions for the Paper Setters:**

Paper will be set on the spot by the examiner.

**Distribution of marks for practical examination**

Written Practical:	<b>10 Marks</b>
Class Performance:	<b>10 Marks</b>
Practical File:	<b>5 Marks</b>
Oral Examination:	<b>5 Marks</b>
Preparation of Activity Material:	<b>10 Marks</b>

**Course Contents:**

- \* Use of appropriate psychological tools to identify developmental needs of children with special needs.
- \* Organizing a Parent Education Programme.
- \* Preparation of interactive material for children with special needs
- \* Preparation of activities/ material for enhancing physical and mental abilities of pre-school children

**SEMESTER-V**  
**FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)**

**FSQC-9: FOOD ANALYSIS (THEORY)**

**Time: 3 Hours**

**Max. Marks: 75**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

- i) Food Composition and factors effecting food composition.
- ii) Sampling techniques and preparation of sample.
- iii) General physical and chemical methods of analysis of foods.

**SECTION-B**

Physical analysis of foods by following techniques

- i) Electronic determination
- ii) Refractometry.
- iii) Polarimetry and polarography
- iv) Food rheology.
- v) Viscosity.
- vi) Surface tension.
- Vii) Freezing point
- viii) Specific gravity

**SECTION-C**

Chemical analysis of foods by following

- ii) Proximate composition.
- iii) Ash and its types.
- iv) Total protein, Non protein and specific protein in foods,
- v) total fat and different types of lipids.

**SECTION-D**

Detection of following components in foods

- i) Macro nutrients - Sodium, potassium, Phosphorus, Calcium, Magnesium
- ii) Micronutrients-Fe, Zn.
- iii) Trace Elements
- vi) Vitamins

**Reference Books:**

1. Manuals of Food Quality Control additions contaminants techniques, 1980.
2. The Chemical Analysis of Foods and Food Products. By Morries B Jacob, 3rd Ed., Roberte, Krieger.



**SEMESTER-V**

**FOOD SCIENCE & QUALITY CONTROL (VOCATIONAL)**

**FSQC-10: FOOD ANALYSIS (PRACTICAL)**

**Max. Marks: 25**

**List of Practicals:**

1.
  - a. Lactometric determination
  - b. Refractrometry
  - c. Polarimetry and polarography
  - d. Food Rheology
  - e. Viscosity
  - f. Surface tension
  - g. Freezing point.
2. Proximate composition of food using various techniques.
3. Estimation of different minerals in food using various methods.
4. Estimation of vitamins in food using analytical and microbiological techniques.
5. Estimation of crude, dietary and other fibre components.

**SEMESTER-V**

**PAPER: A**  
**(DRAWING & PAINTING)**  
**(THEORY)**

**Time: 3 Hrs.**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 25 + 25**

**Work Load:**

**Theory - 3 periods per week.**

**Practical - 9 periods per week.**

**Total - 12 periods per week.**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

History of Modern Movement in Europe:

1. IMPRESSIONISM:

- a. Monet
  - Impression Sunrise
  - Rouen Cathedral.
- b. Renoir
  - The Umbrellas
  - Lunch on the boat.
- c. Edgar Degas
  - Ballet Dancer
  - The dancing class

**SECTION-B**

1. POST IMPRESSIONISM:

- a. Cezanne
  - Card players
  - Still life with apples
- b. Van Gogh
  - Starry night
  - Sunflowers
- c. Paul Gauguin
  - The Yellow Christ
  - Where do we come from? What are we? Where are we going?

### SECTION-C

1. EXPRESSIONISM:
  - a. Munch
    - Cry
    - Dance of life
  - b. Kandinsky
    - Blue mountain
    - Improvisation 30
2. CUBISM:
  - a. Picasso
    - Les Demoiselles D' Avignon
    - Guernica
  - b. Braque
    - Still life
    - The Portuguese

### SECTION-D

3. SURREALISM:
  - a. Salvador Dali
    - Persistence of Memory
    - Burning Giraffe
  - b. Max Ernst
    - Celebes
    - Europe after rain
  - c. Rene Magritte
    - Time Transfixed

**SEMESTER-V**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER: B- LANDSCAPE (ON THE SPOT)  
(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

<b>Theory</b>	-	<b>3 periods per week.</b>
<b>Practical</b>	-	<b>9 periods per week.</b>
<b>Total</b>	-	<b>12 periods per week.</b>

Arrangement of shape based on subjects like human forms and animal forms.

In landscape setting emphasis should be given on perspective, Colour and its application in harmony.

**Medium:** Any medium

**Size:** ½ Imperial

**SEMESTER-V**

**FINE ARTS  
(DRAWING & PAINTING)**

**PAPER: C-FULL LIFE DRAWING  
(PRACTICAL)**

**Time: 5 Hrs**

**Marks: 25**

**Work Load:**

<b>Theory</b>	-	<b>3 periods per week.</b>
<b>Practical</b>	-	<b>9 periods per week.</b>
<b>Total</b>	-	<b>12 periods per week.</b>

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

**Medium:** Any medium

**Size:** ½ Imperial

Candidates will submit:-

- (i) 5 sheets of each paper
- (ii) Sketch book containing 50 sketches.

**SEMESTER-V**

**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)  
(THEORY)**

**Time: 3 Hrs**

**M.Marks : 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**1. CASTING:**

- (i) Definition , process or steps involved in casting, defects in techniques (porosities)  
Types of casting:-
- (ii) Lost wax casting
- (iii) Gravity casting
- (iv) Centrifugal casting

**SECTION-B**

**2. POLISHING:**

- (i) Definition , its compound , techniques, ultrasonic cleaning.
- (ii) Metal fusion techniques – granulation

**3. Difference between polishing and non-polishing techniques.**

**SECTION-C**

- 4. **ELECTROPLATING:-** Definition, Terms used in Electroplating, Reasons, Principals, process of Electroplating, Electroplating Circuit.
- 5. **ELECTROFORMING:-** Definition ,forming ,conductivity, procedure, electroforming cycle.

**SECTION-D**

**6. CHEMICAL FINISHING:**

- (i) Definition types of finishing, protection.

**7. Coloring – non polishing techniques**

- (i) Oxidation
- (ii) Enameling
- (iii) Plating

**8. Jewellery finishing**

- (i) High polish/ high shine finishing
- (ii) Matte finish
- (iii) Hammered finish
- (iv) Stipple finish

**SEMESTER-V**  
**GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)**  
**(PRACTICAL)**

**Time: 5 Hours**

**M.Marks: 50**

1. Export jewellery: - creation of 3 final design in relation to export market like U.K, USA, China etc.
2. Making of fashion and costume jewellery with metal – pendent, earring, necklace, and bracelet.  
Exercise on:- jail work, riveting, sawing, bending.
3. Domestic jewellery and international jewellery: - creation of 5-5 design through JEWEL-CAD.



**SEMESTER-V**

**STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION - A**

**Course Contents:**

1. Pre-script Stage: Background
2. Communication Objectives—Identify and presentise
3. Target Audience—Identify and presentise

**SECTION - B**

4. Creative Treatment
5. Microphones—Different types.
6. Mikes—Special types and accessories, wireless, lappet, reflector type, short again.

**SECTION - C**

**Introductory lectures on:**

- Overhead Projector.
- Hand held picture/chart slide presentation
- Multi Projector single screen with dissolves
- Multi Projector Multiscreen

**SECTION - D**

**Emphasis on:**

- Multi Projector
- Script
- Visualisation
- Photography
- Graphics

**Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Effects and Experiments in Photography	Pet old- Focal
2.	Basic Photography	John Hedgecoe

## SEMESTER-V

### STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)

#### ADVANCE PHOTO TECHNIQUES (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 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. Use a medium format cameras and appreciate the difference.
2. Expose Raw stocks of different kinds, Find out their Characteristics.
3. Use lenses of different kind to see its various uses.
4. Measuring light by using a exposer meter.
5. Black and White processing and printing (only demonstrations)
6. Indoor lighting arrangement for Poliant and Table Tops.
7. In-camera Special Effects.
8. Post exposure SFX Special Effects.

#### **Suggested Readings:**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Color Prints	Coote-Focal
2.	Guide to the Dark Room	Gaunt- Focal

**SEMESTER-V**

**APPLIED ARTS**

**ART APPRECIATION AND ADVERTISING  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Course Contents:**

**SECTION - A**

- a. Development of Printing Press in India (Ancient, Medieval, Post-Independence)
- b. Aesthetic of Commercial Art

**SECTION - B**

- c. Letter Press for printing
- d. Trade Mark

**SECTION - C**

- e. Brand Name
- f. Preparing Product Packaging

**SECTION - D**

- g. Block Making

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Introduction to Printing	Herbert Simon
2.	Design	Peter Bridgewater, Brain Lewis, Brett Beckon

**SEMESTER-V  
APPLIED ARTS**

**INDOOR CAMPAIGN: FOLDER AND LAYOUT  
(PRACTICAL)**

**Time: 6 Hours**

**Marks: 50**

**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 layout and folder can be taken. Logo and writing style of the existing company can be taken from any available source.
4. Any one of the above (Folder and Layout) 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:**

Folder: Prepare 2 fold or 3 fold folders as asked by the teacher.

Topics: Commercial and Educational

Layout: Prepare Layout for Magazine

Topics: Commercial and Educational

During examination, use of stencil, Transfer letters, Screens are allowed. Limited references while preparing layout and folder can be taken.

**Suggested Readings:-**

<b>Sr. No.</b>	<b>Book Name</b>	<b>Author</b>
1.	Advertising Procedure	Otto kleppner
2.	Design	Peter Bridgewater, Brain Lewis, Brett Beckon

**SEMESTER-V****SCULPTURE  
(THEORY)****Time: 3 Hrs.****Max. Marks: 100  
Theory Marks: 50  
Practical Marks: 50****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION - A****Gupta Sculptures**

- Mathura Centre ( standing Vishnu, Standing Buddha, Vishnu Anant Shayian from Dasavatar temple, Deogarh, Vishnu of Vaikuntha from Mathura)
- Sarnath Centre ( Life of Buddha Panel, Seated Buddha preaching the Sermon of Law and Copper Buddha from Sultan Ganj)

**SECTION – B**

Pallava's Sculpture including Rath temples.

Art of Sun temple of Konark (Odisha)

**SECTION – C**

Sculptures of Kailashnath Temple, Ellora.

Chola Bronzes sculptures including techniques, Shiv Natraj and Parvati Sulptures.

**SECTION - D**

Sculptures of Elephanta Caves (Marriage of Shiva and parvati, Shiv Maheshamurti, including main features of the Sculptures.

**SEMESTER-V**

**SCULPTURE  
(PRACTICAL)**

**Time: 6 Hrs**

**Marks: 50**

- 1) Low Relief Sculptures in Geometrical pattern, Cast in Plaster of paris (POP) / Cement / Metal based on birds, Flora and Fauna. (Minimum Size 10 X 10 inches), Total no. of work-1
- 2) Composition in round sculpture based on human figures. Work should be produced in PoP / cement / Metal. Total no. of work-1
- 3) Creative Head in Clay Modeling, work should be produced in PoP / Cement / Terracotta.

**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. A Survey of Indian Sculptures                     | By S. K Sarawati               |
| 4. Indian Sculpture                                  | By Stella Kramisch             |
| 5. Murti Kala Ka Itihaas                             | By Aggar Ali kadavi            |
| 6. The Pelican History of Art                        | By Benjamin Rowland            |
| 7. Indian Images—Part I, II                          | By D.C. Bhattacharya           |
| 8. Mathura ki Murtikala                              | By Neel Kanth Purshottam Joshi |
| 9. An Interesting Survey<br>(Sculptures from konark) | By T.N Ramachandran            |
| 10. South Indian Bronzes                             | By O.C Gangoli                 |

**SEMESTER-V**

**MUSIC (VOCAL)  
(THEORY)**

**Theory: 3 Hours**  
**Theory: 3 Periods per week**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note: There should not be more than fifteen students in one group of Practical class.**

**Instructions given to the examiners are as under:**

1. There should not be more than fifteen students in a batch for practical examination.
2. Harmonium will only be allowed as base instrument in practical examination.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for the practical paper should also be sent.
4. Candidate can take both subjects i.e. Vocal & Instrumental Music as elective subject.
5. Candidate can take Tabla subject along with Music Vocal or Music Inst.

**SECTION-A**

1. Historical Development of Indian Music during Modern Period.
2. Development of Indian Notation System and its merits and demerits.
3. Short notes on the following :
  - a. Thumri
  - b. Tappa
  - c. Chaturang

**SECTION-B**

4. Detailed knowledge of folk music of Punjab.
5. Life and Contribution of the following Musicians:
  - a. Dalip Chandra Bedi
  - b. Surinder Kaur

**SECTION-C**

6. Detailed description and notation of the following Ragas:
  - a. Darbari
  - b. Tilang
  - c. Kedar
7. Description and Notation of the following Talas:
  - a. Deepchandi
  - b. Tilwara



**SECTION-D**

8. Classical GayanShailies used in GurmatSangeet.
9. Essay writing on the following topics:
  - a. KanthSadhna (Voice Culture)
  - b. Devotional Music

**SEMESTER-V**  
**MUSIC (VOCAL)**  
**(PRACTICAL)**

**Time: 20 minutes for each student**  
**Periods/week: 9**

**Marks: 50**

1. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Darbari, Kedar, Tilang.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. Brief Knowledge of Non Detailed Ragas: Adana, Kamod and Jog.
4. One Ghazal.
5. One Chaturang or Trivat in any Raga of Your Choice.
6. Ability to recite Deepchandi and Tilwara showing Khali Tali with hand motion in Ekgun, Dugun Layakaris.
7. Ability to play theka of Jhap Taal on Tabla.
8. Ability to play five alankars on the Harmonium based on the Asawari Thata.

**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 PunjabiUniversity, Patiala.
6. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
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 Mishra.

**SEMESTER-V**

**MUSIC (INSTRUMENTAL)  
(THEORY)**

**Theory: 3 Hrs.**

**Theory: 3 periods per week.**

**Total Marks: 100**

**Theory Marks: 50**

**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Development of Music during modern period.
2. Comparative study of Avirbhava & Tirobhava with illustrations.
3. Relevance of time theory in Music.

**SECTION-B**

4. Life & Contribution of the following Musicians.
  - a. Pt. Ravi Shankar (Sitar)
  - b. Ustad Bismillah Khan (Shehnai)
5. Study of Musical Electronic Instruments.

**SECTION-C**

6. Detailed description of the prescribed Ragas Darbari Kanrha, Todi, Puria Kalyan (with Notations).
7. Knowledge of the following Ragas:-
  - a. Multani
  - b. Adana
  - c. Puriya Dhanashri.
8. Detailed knowledge of following Talas :-
  - a. Deepchandi
  - b. Tilwara

**SECTION-D**

9. Study of Kirtan Chowkies in Gurmat Sangeet.
10. Inter relation between folk & classical music.

**SEMESTER-V**  
**MUSIC (INSTRUMENTAL)**  
**(PRACTICAL)**

**Time: 20 minutes for each student**  
**Periods/week: 9**

**M.Marks: 50**

1. Ability to play 10 Alankars in Sitaar in the Swaras of Asawari That.
2. One Maseetkhani gat in any Raga prescribed in you course Darbari, Todi and Puriya Kalyan
3. One Rajakhani Gat in each Raga prescribed in your course.
4. Brief Knowledge of Non-detailed Raagas: Puriya Dhanashri., Adana and Multani.
5. Ability to recite on hand Deepchandi & Tilwara Tal with single & Double Layakarities.
6. Ability to play theka of Jhap Tal on Tabla.
7. Ability to play One gat in Ektal in any Raga prescribed in your Course.
8. Ability to sing national anthem with any instrument.

**Books Recommended:**

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

**SEMESTER-V**

**INDIAN CLASSICAL DANCE  
(THEORY)**

**Time: 3 Hours**  
**Periods/week: 3**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION - A**

1. Detailed knowledge of Bharat Natyam with its historical background, style, costume and music etc.
2. Knowledge of Bhav, Sthai Bhav, Vibhav, Anubhav and Sanchari Bhav.

**SECTION - B**

3. Origin of Taal and its ten Prans.
4. Gati Bhedas and Sthanak Bhedas according to Abhinaya Darpan.

**SECTION -C**

5. Importance of background music in Dance.
6. Knowledge of Folk Dances of Himachal Pradesh.

**SECTION - D**

7. Kathak and Natwari Nritya.
8. **Notation of:**

**(i) BASANT TAAL -- 9 Matras**

- a) Tatkar in Ekgun, Dugun and Chougun Layakaries.
- b) Thaat- 2
- c) Tehai-1
- d) Amad-1
- e) Tora-2
- f) Paran-1
- g) Chakardar Paran – 1
- h) Kavita-1
- i) Pramelu – 1

**(ii) ADA – CHAUTAAL -- 14 Matras**

- a) Tatkar in Thah, Dugun and Chougun Layakaries.
  - b) Thaat- 1
  - c) Amad-1
  - d) Damdar and Bedam Tehai – 1 - 1
  - e) Tora-2
  - f) Paran-1
  - g) Chakardar Paran – 1
  - h) Kavit-1
9. Notation of nagma in Basant Taal and Ada – Choutaal.
10. Defination and Notation of the following Talas in Ekgun, Dugun, Tigun and Chougun Layakaries:
- a) Basant Taal
  - b) Ada - Choutaal

**SEMESTER-V**

**INDIAN CLASSICAL DANCE  
(PRACTICAL)**

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

**Marks: 50**

**Instructions given to the examiners are as under:-**

1. There should not more than fifteen students in a batch for practical examination.
2. Harmonium will be allowed as accompaniment to perform Nagma.
3. Separate practical paper should be as a base set for each class from practical of prescribed syllabus on the spot.

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

**1. BASANT TAAL (MATRAS - 9)**

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

**2. ADA – CHOUTAAL (MATRAS - 14)**

- a)Tatkar in Ekgun, Dugun & Chougun Layakaries.
  - b) Thaat - 1
  - c) Amad - 1
  - d) Damdar and Bedam Tehai – 1- 1
  - e) Tora - 2
  - f) Paran - 1
  - g) Chakardar Paran - 1
  - h) Kavita - 1
3. Padhant of all the Practical material in given Taals.
  4. Padhant of all thekas in Dugun & Chougun Layakaries.
  5. Gat – Bhav in Radha – Krishan leela.
  6. Nagma in Basant Taal.
  7. Ability to play the theka of Ekeharva Taal on Tabla.
  8. Ability to sing a Stuti with Harmonium.

**Books Recommended:**

1. Kathak Nritya Ka Prichey, Subashni Kapoor, Radha Publications, New Delhi, 1997.
2. Kathak Soundaryatmak Shashtriya Nritya, Shikha Kharey, Knishka Publishers, New Delhi, 2006.
3. Atihasik 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-V**  
**TABLA**  
**(THEORY)**

**Theory: 3 Hours**  
**Theory: 3 periods per week.**

**Total Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**NOTE:**

1. There should not be more than fifteen students in a batch for practical examinations.
2. Harmonium will be allowed as accompaniment to perform the Nagma.
3. While sending the syllabus to paper setter in theory the syllabus prescribed for practical paper should also be sent.
4. Candidate can take Tabla subject with Vocal or Instrumental Music (Sitar, Sarangi, Veena, Sarod, Dilruba, Violin, Guitar, Bansuri, Shehnai, Rabab, Saranda, Taus, Santoor and any other SwarVadhya to be played on the basis of Indian Classical Music).

**COURSE CONTENTS:**

**SECTION-A**

1. Historical development of Avadh Vadhya.
2. Life & Contribution towards music of the following:
  - a. QadarBaksh
  - b. Karamatullah Khan
  - c. Ayodhya Prasad

**SECTION-B**

3. The role of Farukha-baad Gharana in promoting female artists.
4. Notation & description of :
  - a. PanchamSwari Taal-One Peshkar, Two Kayada, Five paltas with Tihaai, Two Tukdas, Rella, One ChakradarParan,
  - b. Tivra Taal with proper vadanshally of Pakhawaj -Two Tukdas, Two Rella, Two Tihais.

**SECTION-C**

5. Detailed knowledge of Dakshini Tala System.
6. Explanation of the following Terms.
  - a. Taal Kachaihari
  - b. Partal
  - c. Tablatarang
  - d. Prastaar

**SECTION-D**

7. Write an essay on the following topic:  
Importance of electronic musical instruments in teaching.
8. The Place of tabla in Shaan (in the context of Gurmat Sangeet)
9. Place of Tabla in Fusion Music.
10. Detailed knowledge of Dakshini Tala System.

**Books Recommended:**

1. SangeetVisharad: Basant, Sangeet Karyalaya Hathras, 2004.
2. Tal Prabandh: Pt. Chhote Lal MisherKnishka Publisher, New Delhi, 2006.
3. Bharti Sangeet Vadhya: Lal Muni Misher, Bhartiya Gayan Peeth Parkashan, 1973.
4. Hamare Sangeet Ratan: Sangeet Karyalaya Hathras, 1978.
5. Tal Martand: Sataya Narayan Vishesh Sangeet Karyalaya Hathras, 1994.
6. Tal Parichaie Part I-IV Garish Chandar Srivastav Sangeet Karyalaya Hathras.
7. Tal Parkash Bhagwat Sharan Sharma Sangeet Karyalaya Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita Chitragupta Radha Publication New Delhi 1992.



**SEMESTER-V****TABLA  
(PRACTICAL)**

**Time: 20 minutes for each student  
9 periods/week.**

**Marks: 50**

1. Taal Prescribed Pancham Swari, Tivra
2. Pancham Swari Taal-One Peshkar, Two Kayada, Five paltas with Tihaai, Two Tukdas, Rella, One Chakradar Paran
3. Tivra Taal with proper vadan shally of Pakhawaj -Two Tukdas, Two Rella, Two Tihais.
4. Ability to play Nagma on Harmonium in Pancham Swari and Tivra taal.
5. Ability to play Theka of Sooltal and Mat tal.
6. Practice of playing the above Taals with Vocal and Instrumental performance.
7. Tuning of Tabla.
8. Ability to play Western patterns of Taal – Keharva and Dadra on tabla

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 Vishesh Sangeet Karyalaya Hathras, 1994.
6. Tal Parichaie Part I-IV Garish Chandar Srivastav Sangeet Karyalaya Hathras.
7. Tal Parkash Bhagwat Sharan Sharma Sangeet Karyalaya Hathras.
8. Sangeet Mein Tal Vadon Ki Upyogita Chitragupta Radha Publication New Delhi 1992.

**SEMESTER-V****COMPUTER SCIENCE  
DATA BASE MANAGEMENT SYSTEM & ORACLE  
(THEORY)**

**Time: 3 Hours**  
**4 Hours per week**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****DBMS**

Introduction to database management system, components of DBMS, ER. Diagrams, Data Description Language, Data Manipulation Language, SQL.  
Data Models, Hierarchical Model, Network Model and Relational Model, Relational Databases. Relational Algebra and Calculus Normalisation.

**SECTION-B**

Database Security, Protection, Integrity, Recovery, Concurrency, Control, Decomposition. Distributed Databases, Knowledge Base/Expert Systems and Object Oriented Databases.

**SECTION-C****Oracle 10g****SQL \* PLUS**

Introduction to Oracle 10 SQL – DDL, DML, DCL.  
Join methods & Sub query, Union, Intersection  
Built in Functions, View Security amongst users, Sequences, indexing object Features of Oracle 10.

**SECTION-D****PL/SQL**

Introduction to PL/SQL.  
Cursors – Implicit & Explicit.  
Procedures, Functions & Packages.  
Database Triggers.

**References:**

- 1 Desai B.C.: An Introduction to Database Systems, Galgotia Publishers.
- 2 Date C.J. An Introduction to Database Systems, Vol. I, Narosa Publishers.

**SEMESTER-V**

**COMPUTER SCIENCE  
DATA BASE MANAGEMENT SYSTEM & ORACLE  
(PRACTICAL)**

**Marks: 25**

**Practical:** Based on Database Management System and Oracle

**Note:** Practical marks will include the appropriate weightage for proper maintainance of Lab.

**SEMESTER-V****INFORMATION TECHNOLOGY (VOCATIONAL)  
OPERATING SYSTEM  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Operating System Definition, Evolution of OS, Components of OS, Single User Operating System, Multi User Operating Systems (UNIX), Types of Processing (Batch Processing, Multiprocessing, Time Sharing, Real Time Processing (Hard Real Time Processing, Soft Real Time Processing), Multiprogrammed Batch Processing, Parallel Systems, Distributed Systems and Real Time Systems,

**SECTION-B**

Process Concept, Process Scheduling, Context Switching, CPU Scheduling: Basic Concepts, Scheduling algorithms.

Deadlocks: Deadlocks Characterization, Memory Management: Logical versus physical address space, paging, segmentation, Virtual memory, Demand Paging Technique.

**SECTION-C**

File Management, File System Structure, Allocation Methods: Contiguous Allocation, Linked Allocation, Indexed Allocation, Free Space Management: Bit Vector, Linked List, Directory Implementation, Linear, List, Hash table,

**SECTION-D**

Device Management: Disk Structure, Disk Scheduling, FCFS, SSTF, SCAN, C-SCAN, LOOK  
Windows NT Study as an Example of Operating System,

**Reference:**

Galvin and Sillberchatz, "Operating Systems" 7th Edition.

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B.A./B.Sc. (Semester System) (*12+3 System of Education*) (*Semester-V*) (*Batch 2020-23*)  
(*Faculty of Visual Arts & Performing Arts*)

**SEMESTER-V**

**INFORMATION TECHNOLOGY (VOCATIONAL)  
OPERATING SYSTEM  
(PRACTICAL)**

**Marks: 25**

Practical on the basis of Operating System

**SEMESTER-V**  
**COMPUTER MAINTENANCE (VOCATIONAL)**  
**(THEORY)**  
**NETWORKING OPERATING SYSTEMS**

**Time: 3 Hours**

**Max. Marks: 100**

**Theory Marks: 75**

**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Introduction of various Network Operating Systems (Windows 9x/XP/2000/NT)

Introduction to Windows 2003 server, Window 2003 features, Hardware requirements, planning the network, Windows 2003 network security model special purpose servers, licensing.

**SECTION-B**

Planning storage strategies, options, working with disk administrator and backup. Networking and Network protocols Configuration of Windows 2003.

Windows 2003 services Architecture and security Architecture, planning and managing group and user accounts

**SECTION-C**

File services, distributed file system, remote administration, remote access services, Internet & Intranet. Printing and supporting network clients, performance tuning.

### SECTION-D

Introduction to Windows NT, features, Hardware requirements. Windows NT services Architecture and security Architecture, planning and managing group and user accounts File services. Installation of Windows NT.

Concept of distributed Networks, E-mail & Internet Technology.

#### **Text & Reference Books:**

Windows NT 4: The Complete Reference by Sybex Publisher, BPB 1999.

Inside Windows Server 2003: William Boswell Publisher, Pearson, 2003.

#### **Network Operating Systems Lab**

Installation of Windows NT.

Implementing LAN using workgroup model and windows 2003.

Implementing LAN using Windows 2003 Domain model.

Using user manager for Domains in Administration.

Assigning user rights and permission on different objects.

**SEMESTER-V**  
**COMPUTER MAINTENANCE (VOCATIONAL)**  
**(PRACTICAL)**

**Marks: 25**

Practical on the basis of Operating System



**SEMESTER-V****COMPUTER APPLICATIONS (VOCATIONAL)  
INTERNET AND WEB DESIGNING (THEORY)****Time: 3 Hrs****Max. Marks: 100****Theory Marks: 75****Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Section A**

1. BBS
2. Intro to Internet

**Section B**

3. E-Mail, Browsers
4. HTTP, WWW, Shell, TCP/IP-(PPP, SLIP)

**Section C**

5. FTP
6. HTML, Web Designing

**Section D**

7. Web site Designing using HTML

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B.A./B.Sc. (Semester System) (*12+3 System of Education*) (*Semester-V*) (*Batch 2020-23*)  
(*Faculty of Engineering & Technology*)

**SEMESTER-V**

**COMPUTER APPLICATION (VOCATIONAL)**  
**INTERNET AND WEB DESIGNING**  
**(PRACTICAL)**

**Marks: 25**

Practical Based on Internet and Web Designing

**SEMESTER-V****INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE  
DEVELOPMENT (VOCATIONAL)****PROGRAMMING USING IN C LANGUAGE****Time: 3 Hrs.****Max. Marks: 75****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**C language preliminaries:** Introduction to C, Identifiers and Key Words, Data types, Constants, Variables, Expressions, Statements,.

**Operators and I/O functions:** Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, getchar, putchar, printf, gets, puts

**SECTION-B**

**Control Statements:** While, Do-while and for statements, Nested loops, If-else, Switch, Break – Continue statements.

**Functions:** Brief overview, types, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes, recursion.

### SECTION-C

**Arrays and Pointers** Defining, processing an array, passing arrays to a function, multi-dimensional arrays, Introduction to pointers, Operations on pointers, Pointers and array.

### SECTION-D

**Structure and Union:** : A simple structure, specifying the structure, defining a structure variable Accessing Structure member, Structure within structure, union, difference between structure and union.

### References:

1. Let us C, Yashwant Kanetkar
2. C – programming E. Balagurusamy Tata McGraw Hill
3. Complete reference with C Tata McGraw Hill

**SEMESTER-V**

**INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT  
(VOCATIONAL)**

**Lab – I: PROGRAMMING USING IN C LANGUAGE**

**Time: 3 Hrs.**

**Max. Marks: 25**

Practical based on Programming in C language

**SEMESTER-V****AUTOMOBILE MAINTENANCE (VOCATIONAL)****(THEORY)****Time: 3 hours****Max. Marks: 60****Periods per week Theory: 6****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Note :**

**Question paper should be set strictly according to the syllabus and preferably in Punjabi. The language of the paper should be straight and simple Punjabi.**

**SECTION-A**

**Objective of transmission:** Resistance, Variation of tractive efforts and total resistance with speed, Sliding mesh gearbox, Sliding mechanism, Constant mesh gearbox, Synchromesh gearbox, Simple epicyclic gear, Automobile epicyclic gearbox, General deduction, Mechanism of epicyclic gearbox, Pre-Selector Gearbox,

**SECTION-B**

Torque convertor, Free Wheel Unit overdriver, Gearbox troubleshooting, Transmission trouble diagnosis, Four wheel drive and transfer case operation and service, Drive lines and universal joints, Differential and drive axle

**SECTION-C**

**Springs and Suspension Systems:** Introduction, Objects of suspension, Rate and frequency, Basic requirements, Classification of suspension springs, Adjustable and self adjusting suspensions, Interconnected suspension systems, Independent front suspension, Independent rear suspension, Shock absorbers, Suspension systems troubleshooting

**SECTION-D**

**Fluid Fly Wheel:** Introduction, Advantages & Disadvantages of Fluid Fly wheel.

**SEMESTER-V**  
**AUTOMOBILE MAINTENANCE (VOCATIONAL)**  
**(PRACTICAL) LAB-I**

**Time: 3 Hours**

**Total Marks: 40**

**Periods per week: Practical: 4**

1. To study the Gear box dismantling and Assembling/Serviceing.
2. To study the Drive shaft and universal/Joint opening.
3. To study the Steering wheel/Droparm, Tie rod opening.

**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.

**SEMESTER-V****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)****PAPER-I (THEORY)****Time: 3 Hours****Marks: 30****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Steam Jet Refrigeration:** Introduction, steam jet Refrigeration, Analysis of Steam Jet Refrigeration system, Components of Steam Jet Refrigeration Plant, Advantages and Limitation of steam jet Refrigeration System, Performance of the system.

**SECTION-B**

**Non Conventional Refrigeration System:** Thermoelectric Refrigeration, Vortex Tube Thermoelectric effects, Applications of Vortex Tube, Advantages of Vortex Tube

**SECTION-C**

Refrigerant Mixture and its properties, Cooling by Adiabatic demagnetization, plus Tube Refrigeration.

**SECTION-D**

**Methods of defrosting:** Necessity of Defrosting, Manual Defrosting, Automatic Periodic Defrosting, Water Defrosting, Defrosting by Reversing Cycle, Automatic Hot Gas Defrosting thermo bank Defrosting.



**SEMESTER-V****REFRIGERATION & AIR CONDITIONING (VOCATIONAL)****PAPER-J (THEORY)****Time: 3 Hours****Marks: 30****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Electric Defrosting:** Electric Control Defrosting, Electric Air Switch Defrosting System, Two outdoor units system, Multiple evaporator defrosting.

**SECTION-B**

**Electric Controls:** Introduction, Water Level Control, High Pressure control, Low pressure control

**SECTION-C**

Superheat control, Superheat and pressure limit control, over Protection control, Temperature Differential and Temperature Range control Capacity control Devices.

**SECTION-D**

**Solar Heating and Cooling:** Introduction Solar Collectors Solar Refrigeration, Solar Air conditioning, Solar Dehumidification, Solar Heat Pump System, Economics and future of Solar Energy.

**SEMESTER-V**  
**REFRIGERATION & AIR CONDITIONING (VOCATIONAL)**

**PRACTICAL: LAB-III**

**Time: 2 Hours**

**Period Per week Practical: 4**

**Total Marks: 40**

**List of Experiments:**

1. To Study the various Gas charging in a Refrigerating system and testing for leakages
2. To study the Gas charging in a Air conditioning system and testing for leakages
3. To test and adjust low pressure out. (L.P.).
4. To test and adjust high pressure out. (H.P.)
5. To test and adjust thermostat.

**List of Books Recommended:**

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

**SEMESTER-V**

**RELIGIOUS STUDIES (ਧਰਮ ਅਧਿਐਨ)**  
(ਸਿੱਖ ਦਰਸ਼ਨ)

ਸਮਾਂ 3 ਘੰਟੇ

ਲੈਕਚਰਾਂ ਦੀ ਗਿਣਤੀ:75%

ਕੁਲ ਅੰਕ:100

ਪਾਸ ਹੋਣ ਲਈ ਅੰਕ:35

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

ਸਿੱਖ ਸੰਕਲਪ-ਭਾਗ ਪਹਿਲਾ

1. ਅਕਾਲ ਪੁਰਖ
2. ਸ੍ਰਿਸ਼ਟੀ ਰਚਨਾ
3. ਜੀਵਾਤਮਾ

**SECTION-B**

ਸਿੱਖ ਸੰਕਲਪ-ਭਾਗ ਦੂਜਾ

1. ਹੁਕਮ
2. ਸਿਮਰਨ
3. ਸੇਵਾ

**SECTION-C**

ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ

1. ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ : ਜਾਣ ਪਛਾਣ
2. ਬਾਣੀ ਦਾ ਸੰਕਲਨ
3. ਬਾਣੀ ਦਾ ਸੰਪਾਦਨ

**SECTION-D**

ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦੀਆਂ ਪ੍ਰਮੁੱਖ ਬਾਣੀਆਂ

1. ਜਪੁ ਜੀ ਸਾਹਿਬ
2. ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ ਦੇ ਸਲੋਕ
3. ਬਾਰਹਮਾਹ ਮਾਝ

ਸੁਝਾਈਆਂ ਪੁਸਤਕਾਂ ਦੀ ਸੂਚੀ:

**English:**

1. Jodh Singh, *Outline of Sikh Philosophy*, Sikh Heritage, Patiala, 2000.
2. Kohli, Surinder Singh, *Sikh Philosophy*, Singh Brothers, Amritsar, 1992.
3. Puri, Shamsheer Singh, *Handbook of Sikh Theology*, Nation Book Shop, Delhi, 1999.

4. Sahib Singh, *About Compilation of Sri Guru Granth Sahib*, Tr. By Dalip Singh, Lok Sahit Parkashan, Amritsar, 1996.
5. Sher Singh, *Philosophy of Sikhism*, Sterling, Delhi, 1966.
6. Talib, G.S., *Introduction to Guru Granth Sahib*, Punjabi University, Patiala, 1991.
7. Taran Singh, *Guru Granth Ratnavali*, Punjabi University, Patiala, 2001.
8. Pritam Singh, *Sikh Falsafey di Roop Rekha*, Guru Nanak Dev University, Amritsar, 1975.

**Punjabi:**

1. ਆਹਲੂਵਾਲੀਆ, ਜਸਬੀਰ ਸਿੰਘ, *ਸਿੱਖ ਫ਼ਲਸਫ਼ੇ ਦੀ ਭੂਮਿਕਾ*, ਰਘੁਬੀਰ ਰਚਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ, 1976.
2. ਸ਼ੇਰ ਸਿੰਘ, *ਗੁਰਮਤਿ ਦਰਸ਼ਨ*, ਸ਼੍ਰੋਮਣੀ ਗੁਰਦੁਆਰਾ ਪ੍ਰਬੰਧਕ ਕਮੇਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1982
3. ਸਾਹਿਬ ਸਿੰਘ, *ਸਲੋਕ ਗੁਰੂ ਅੰਗਦ ਸਾਹਿਬ ਸਟੀਕ*, ਸਿੰਘ ਬ੍ਰਦਰਜ਼, ਅੰਮ੍ਰਿਤਸਰ, 2011.
4. ਕਵੀਸ਼ਰ, ਸਰਦੂਲ ਸਿੰਘ, *ਸਿੱਖ ਧਰਮ ਦਰਸ਼ਨ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1969.
5. ਗਿੱਲ, ਮਹਿੰਦਰ ਕੌਰ, *ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦੀ ਸੰਪਾਦਨ ਕਲਾ*, ਰੂਹੀ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ, 1974.
6. ਗੁਰਮੁਖ ਸਿੰਘ, *ਬਾਰਹਮਾਹ ਦਰਸ਼ਨ (ਮਾਝ ਤੇ ਤੁਖਾਰੀ); ਪਾਠ, ਪ੍ਰਵਚਨ ਤੇ ਅਰਥ ਬੋਧ*, ਰੂਹੀ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 2008.
7. ਤਾਰਨ ਸਿੰਘ, *ਬਾਰਹਮਾਹ ਦਰਪਣ*, ਨਿਊ ਬੁੱਕ ਕੰਪਨੀ, ਜਲੰਧਰ, 2002.
8. ਪਦਮ, ਪਿਆਰਾ ਸਿੰਘ, *ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਪ੍ਰਕਾਸ਼*, ਕਲਮ ਮੰਦਿਰ, ਲੋਅਰ ਮਾਲ, ਪਟਿਆਲਾ, 1977.

**SEMESTER-V**  
**PHILOSOPHY**  
**WESTERN METAPHYSICS AND EPISTEMOLOGY**

**Time allowed: 3 hours**

**Max. Marks: 100**

**Lectures to be delivered: 6 per week**

**Pass Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Introduction to Western Philosophy: Nature, Scope and Utility
2. Idealism: Subjective (Berkeley) and Objective (Plato)
3. Materialism: Mechanical and Dialectical

**SECTION-B**

4. Monism (Spinoza): Definition, Meaning, Characteristics and Critical Evaluation
5. Dualism (Descartes) Definition, Meaning, Characteristics and Critical Evaluation
6. Pluralism (Leibnitz) Definition, Meaning, Characteristics and Critical Evaluation

**SECTION-C**

7. Rationalism: Definition, Meaning, Characteristics and Critical Evaluation
8. Empiricism: Definition, Meaning, Characteristics and Critical Evaluation
9. Intuitionism: Definition, Meaning, Characteristics and Critical Evaluation

**SECTION-D**

10. Existentialism: Definition, Nature and Characteristics.
11. Logical Positivism: Definition, Nature and Characteristics.
12. Pragmatism: Definition, Nature and Characteristics.

**Recommended Readings:-**

**English Books:-**

1. Ayer, A.J., *20th Century Philosophy*, Orion Books, London, 1992.
2. Bahm, A.J., *Philosophy An Introduction*, New Delhi, Asia publisher house, 1964.
3. Grossman Reinhardt, *Phenomenology and Existentialism: An Introduction*, London; Boston: Routledge & K. Paul, 1984.
4. James William, *Pragmatism and Four Essays from the Meaning of Truth*, New Delhi, Eurasia, 1975.
5. Stephen, Conner, *Fundamental Questions in Philosophy*, Harmondsworth, Middlesex, Penguin Books, 1971.
6. Stumpf, Samuel Enoch, *Socrates to Sartre: A History of Philosophy*, McGraw-Hill, New York, 1966.
7. Titus, H., *Living Issues in Philosophy*, Eurasia, New Delhi, 1968.

**Punjabi Books:-**

1. ਸੰਧੂ, ਜੀ.ਐਸ., *ਤੱਤ ਮੀਮਾਂਸਾ ਅਤੇ ਗਿਆਨ ਮੀਮਾਂਸਾ*, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।

**Hindi Books:-**

1. ਪ੍ਰਸਾਦ, ਰਾਜਿੰਦਰ, *ਦਰਸ਼ਨ ਸ਼ਾਸਤਰ ਕੀ ਰੂਪਰੇਖਾ*, ਮੋਤੀਲਾਲ ਬਨਾਰਸੀਦਾਸ, ਦਿੱਲੀ, 2011.

**SEMESTER –V****ZOOLOGY**

<b>Paper</b>	<b>Maximum Marks</b>		<b>Hours of Teaching</b>	
	<b>Theory Marks</b>	<b>Practical Marks</b>	<b>Theory</b>	<b>Practical</b>
<b>SEMESTER–V</b>			<b>Credit Hrs.</b>	<b>per Week</b>
			<b>(60 min. each)</b>	
ZOO-VA (Developmental Biology)	35	—	3 Hrs	—
ZOO-VB (Genetics)	35	—	3 Hrs	—
PRACTICAL–V (RELATED TO ZOO-VA and ZOO-VB)	—	30	—	4½ Hrs

**SEMESTER-V**  
**ZOOLOGY**  
**ZOO-VA: Developmental Biology**  
**(THEORY)**

**Max. Time: 3 Hrs.**

**Max Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Gametogenesis with particular reference to differentiation of spermatozoa, vitellogenesis; role of follicle/subtesticular cells in gametogenesis  
Egg maturation; egg membranes; polarity of egg  
Parthenogenesis  
Fertilization

**SECTION-B**

Cleavage and its patterns  
Gastrulation  
Determination and differentiation  
Tissue interactions, basic concepts of organizers and inductors and their role  
Embryonic development of Hardmania

**SECTION-C**

Development upto three germinal layers and their fate in frog and chick  
Fate maps of chick and frog embryos  
Metamorphosis in Frog

**SECTION-D**

Embryonic development of Rabbit  
Foetal membranes, their formation and role  
Mammalian placenta—its formation, types and functions  
Regeneration, Ageing and Death



**Suggested Readings:**

1. Balinsky, B.I. (2007), An Introduction to Embryology, Saunders, Philadelphia.
2. Bellairs, R. (1971), Development Processes in Higher Vertebrates, University of Miami Press, Miami.
3. Berrill, N.J. (1971), Developmental Biology. McGraw Hill, New Delhi.
4. Ebert, J.D. & Sussex, IM. (1970), Interacting Systems in Development, Holt, Rinehart and Winston, New York.
5. Gilbert, F. (2017), Developmental Biology, Sinaur.
6. Goel, S.C. (1984), Principles and Animal Developmental Biology, Himalaya, Bombay.
7. Grant, P. (1978), Biology of Developing System.
8. Karp, G. & Berrill, M.J. (1981), Development. McGraw Hill, New Delhi.
9. Oppenheimer, J.M. and Willer, B.H. (1964), Foundation of Experimental Embryology, Prentice-Hall, New Delhi.
10. Pritchard, D.J. (1986), Foundation of Development Genetics, Taylor and Francis, London.
11. Saunders, J.W. (1982), Developmental Biology, Patterns, Principles, Problems, MacMillan, New York.
12. Spratt, N.T. Jn. (1971), Developmental Biology, Wordsworth, Belmont, Co.
13. Waddington CH. (1966), Principles of Development and Differentiation, MacMillan, New York.
14. Loomis, W.F. (1986), Developmental Biology Macmillan, New York.
15. Miller, W.A. (1997), Developmental Biology Springer Verlag, New York.

**SEMESTER-V****ZOOLOGY****ZOO-V B: Genetics  
(THEORY)****Max. Time: 3 Hrs.****Max Marks: 35****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Modification of Mendelian Ratios:** Non-allelic gene interaction, Modified F<sub>2</sub> ratios. (9:7;9:3:4;12:3:1;13:3;15:1;9:6:1), Gene modifications due to incomplete dominance; lethal factors(2:1); Pleiotropic genes.

**Multiple Alleles:** Blood group inheritance, eye colour in *Drosophila*, pseudoallelism.

**Multiple Factors:** Qualitative and quantitative characters, inheritance of quantitative traits (skin colour in man).

**Linkage:** Linkage, sex-linked characters

**Crossing Over and Recombination:** crossing over, frequency of crossing over, cytological basis of crossing over, synaptonemal complex. Recombination in Fungi (Tetrad analysis).

**SECTION-B**

**Gene and Genetic Code:** Structure of nucleic acids (DNA & RNA).

**Replication & transcription of DNA**

**Expression of gene** (Protein synthesis in Prokaryotes and Eukaryotes).

**Genetic code:** Properties of genetic code, codon assignment, wobble hypothesis, split and overlapping genes,

**SECTION-C**

**Mutations:** Spontaneous and induced mutations, physical and chemical mutagen. Detection of mutations in Maize and *Drosophila*. Inborn errors of metabolism in man (Phenylketonuria, Alcaptonuria, Albinism). Somatic mutations and carcinogenesis.

**Regulation of gene expressions** in prokaryotes (Operon model) in eukaryotes.

**Extranuclear inheritance:** Chloroplast with special reference to *Mirabilis jalapa* and kappa particles in *Paramecium*.

### SECTION-D

**Population genetics:** Equilibrium of gene frequencies and Hardy-Weinberg law.

**Genetic recombination** in bacteria (conjugation, transduction and transformation) and in plasmids.

**Applied Genetics:** Recombination DNA, Genetic cloning and its applications in medicine and agriculture, DNA finger printing.

#### Suggested Readings:-

1. Ayala, F.J. & Kiger, Jr. J.A. (1980), Modern Genetics. The Benjamin Cummings Publishing Co. Inc.
2. Brown T.A. (1992), Genetics- A Molecular Approach, (2<sup>nd</sup> ed), Van Nostrand Reinhold (international).
3. Gardener, E.J., Simmons, M.T.J. & Sunstad, D.P. (1999), Principles of Genetics, (8<sup>th</sup> ed), John Wiley & Sons, New York.
4. Miglani, G.S. (2000), Basic Genetics, Narosa Publishing House, New Delhi.
5. Winter, P.C., Hickey, G.I. and Fletcher, H.L. (1999), Instant notes in Genetics, New Delhi.
6. Satson, J.D. et. al. (1987), Molecular Biology of Gene (4<sup>th</sup> ed. vol. I & II), The Benjamin /Cummings Publishing Co., Inc.
7. Weaver, R.F. and Hedrick, P.W. (1992), Genetics, Wm. C. Brown Publishers Dubuque.
8. Zubay. U.G. (1987), Genetics, The Cummings Publishing Co., Inc.

**SEMESTER-V**

**ZOOLOGY**

**Practical-V (Related to ZOO-V A and ZOO-V B)**

**Time: 3hrs.**

**Marks: 30**

**Important Note for Practical:**

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines the dissections may please be avoided. In no case an animal falling under the categories of wildlife protection act 1972 should be caught or dissected. The rules of the Prevention of cruelty to Animals act 1960 should be familiar to all who are teaching the zoology courses. The guidelines on this issue are also available on the UGC website: [www.ugc.ac.in](http://www.ugc.ac.in)
1. Demonstrate the Law of segregation and independent assortment (use of coloured beads capsules etc.) Numericals for segregation, independent assortment and Epistasis as well as numerical based on chi square.
2. Demonstration of segregation in preserved material (Maize).
3. Demostation of cytoplasmic inheritance in snails.
4. Inheritance of human characteriscts.
5. Comparison of variance in respect of pod length and number of seeds/pods.
6. Calculation of gene frequencies and random mating (coloured beads, capsules).
7. Pedigree analysis
8. Dermatoglyphics: Palm print and finger tip patterns.
9. Study of the following permanent slides :
  - Polytene Chromosomes of *Chironomus*.
  - Stages of gametogenesis, structure of egg and sperm of a mammal.
  - Larva of *Herdmania*.
  - Developmental stages of freshwater snail (*Limnaea*), frog-upto tadpole, chick-upto 96 hr.
10. Preparation of charts showing developmental stages of any vertebrate.
11. Preparation of slide for Barr body from cheek cells.

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

**Guidelines for conduct of Practical Examination:**

- |   |    |
|---|----|
| 1. Two Numericals based on Mendel/Hardy Weinberg Law.                     | 10 |
| 2. Perform the experiment for Dermatoglyphics/ Random mating/ Pod Length. | 4  |
| 3. Identification of given spots/slides.                                  | 6  |
| 4. Make a pedigree chart from the given data.                             | 3  |
| 5. Chart/Assignment.  | 2  |
| 6. Viva-voce and practical file.  | 5  |

**SEMESTER-V**  
**BOTANY**  
**PAPER-VA: PLANT PHYSIOLOGY**  
**(THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week**

**Max. Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Plant-Water Relation:** Importance of water to plant life, physical properties of water, (imbibition) diffusion and osmosis, absorption, transport of water and transpiration, physiology of stomata.

**SECTION-B**

**Mineral Nutrition:** Essential macro-and micro-elements and their role, mineral uptake, deficiency and toxicity symptoms (hydroponics).

**Transport of Organic Substances:** Mechanism of phloem transport, source-sink relationship, factors affecting translocation.

**SECTION-C**

**Photosynthesis:** Significance, historical aspects, photosynthetic pigments, action and absorption spectra and enhancement effects, concept of two photosystems, z-scheme, photophosphorylation, Calvin cycle, C4 pathway, CAM plants, photorespiration.

**SECTION-D**

**Growth and Development:** Definitions, phases of growth and development, kinetics of growth, seed dormancy, seed germination and factors of their regulation, plant movements, the concept of photoperiodism, physiology of flowering, florigen concept, biological clocks, physiology of senescence, fruit ripening, plant hormones - auxins, gibberellins, cytokinins, abscisic acid and ethylene, history of their discovery, biosynthesis and mechanism of action, general account of salicylic acid, jasmonates and brassinosteroids, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.

**Suggested Readings:-**

1. Dennis, D.T., Turpin, D.H. Lefebvre, D.D. and Layzell (eds.) 1997. Plant Metabolism (2<sup>nd</sup> Edition). Longman, Essex, England.
2. Galston, A.W. 1989. Life Processes in Plants. Scientific American Library, Springer-Verlag, New York, USA.
3. Hopkins, W.G. and Huner, A. (2008). Introduction to Plant Physiology (4th Edition). John Wiley and Sons. U.S.A.
4. Mandavia, C., Patel, S. V., Mandavia, M. K., Golakiya, B. A. and Chovatia, V. P. (2009). Glimpses in Plant Physiology. International Book Distributing Co., Lucknow, India.
5. Mohr, H. and Schopfer, P. 1995. Plant Physiology. Springer-Verlag, Berlin, Germany.
6. Salisbury, F.B. and Ross, C.W. 1992. Plant Physiology (4th Edition). Wadsworth Publishing Co., California, USA.
7. Taiz, L. and Zeiger, E. (2010). Plant Physiology (5th Edition). Sinauer Associates Inc. USA.
8. Buchanan, B.B., Gruissem, W. and Jones, R.L. (2002). Biochemistry and Molecular Biology of Plants, American Society of Plant Physiologists, Maryland.

**SEMESTER-V**  
**BOTANY**  
**PAPER-VB: BIOCHEMISTRY AND BIOTECHNOLOGY**  
**(THEORY)**

**Time: 3 Hrs.**

**Theory Lectures: 3 Hours/Week**

**Max. Marks: 35**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Basics of Enzymology:** Discovery and nomenclature, characteristics of enzymes, concept of holoenzyme, apoenzyme, coenzymes and cofactors regulation of enzyme activity, mechanism of action.

**SECTION-B**

**Respiration:** ATP-the biological energy currency, aerobic and anaerobic respiration, Krebs' cycle, electron transport mechanism (chemi-osmotic theory), redox potential, oxidative phosphorylation, pentose phosphate pathway.

**SECTION-C**

**Nitrogen and Lipid Metabolism:** Biology of nitrogen fixation, importance of nitrate reductase and its regulation, ammonium assimilation, structure and function of lipids, fatty acid biosynthesis, -oxidation, saturated and unsaturated fatty acids, storage and mobilization of fatty acids.

**SECTION-D**

**Genetic Engineering:** Tools and techniques of recombinant DNA technology, cloning vectors, genomic and cDNA library, transposable elements, techniques of gene mapping.

**Biotechnology:** Functional definition, basic aspects of plant tissue culture, cellular totipotency, differentiation and morphogenesis, biology of Agrobacterium, vectors for gene delivery and marker genes, salient achievements in crop biotechnology.

**Suggested Readings:-**

1. Bhojwani, S.S. (1990). Plant Tissue Culture: Applications and Limitations. Elsevier Science Publishers, New York, USA.
2. Dennis, D.T., Turpin, D.H. Lefebvre, D.D. and Layzell (eds.) (1997). Plant Metabolism (2<sup>nd</sup> Edition). Longman, Essex, England.
3. Galston, A.W. (1989). Life Processes in Plants. Scientific American Library, Springer-Verlag, New York, USA.
4. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.

5. Lea, P.J. and Leegood, R.C. (1999). *Plant Biochemistry and Molecular Biology*. John Wiley Sons, Chelichester, England.
6. Old, R.W. and Primrose, S.B. (1989). *Principles of Gene Manipulation*, Blackwell Scientific Publishers, Oxford, UK.
7. Snustad, D.P. and Simmons, M.J. (2010). *Principles of Genetics (5th Edition)*. John Wiley and Sons Inc., U.S.A.
8. Stewart, C.N. Jr. (2008). *Plant Biotechnology & Genetics: Principles, Techniques and Applications*. John Wiley & Sons Inc. U.S.A.
9. Vasil, I.K. and Thorpe, T.A. (1994). *Plant Cell and Tissue Culture*. Kluwer Academic Publishers, The Netherlands

**SEMESTER-V  
BOTANY**

**Botany Practicals – V (Based on Papers- VA and VB)**

**Practical Hours: 4½ Hours/week Practical Marks: 30  
Suggested Laboratory Exercises:**

1. To study the permeability of plasma membrane using different concentrations of organic solvents.
2. To study the effects of temperature on permeability of plasma membrane.
3. To prepare the standard curve of protein and determine the protein content in unknown samples.
4. To study the enzyme activity of catalase and peroxidase as influenced by pH and temperature.
5. Separation of chloroplast pigments by solvent method.
6. Determining the osmotic potential of vacuolar sap by plasmolytic method.
7. Determining the water potential of any tuber.
8. Separation of amino acids in a mixture by paper chromatography and their identification by
9. comparison with standards.
10. Bioassay of auxin, cytokinin, GA, ABA and ethylene using appropriate plant material.
11. Demonstration of the technique of micropropagation by using different explants, e.g. axillary buds, shoot meristems.
12. Demonstration of the technique of anther culture.
13. Demonstrate the ascent of sap using a dye.
14. Demonstration of root and shoot formation from the apical and basal portion of stem segments in liquid medium containing different hormones.
15. Demonstrate the transpiration pull by mercury method.
16. Demonstration of osmosis by potato osmoscope.
17. Comparison of loss of water from two surfaces of leaf by  $\text{CoCl}_2$  method/four leaf method.
18. Demonstration of imbibition by plaster of paris method.
19. Demonstration that  $\text{O}_2$  is evolved during photosynthesis.
20. Separation of pigments by paper chromatography/TLC method.
21. Demonstration of phototropism movements.
22. Demonstration the measurements of growth by arc auxanometer.



### **Suggested Readings (For Laboratory Exercises)**

1. Bajracharya D. (1999). Experiments in Plant Physiology-A Laboratory Manual. Narosa Publishing House, New Delhi.
2. Devi, P. 2000. Principles and Methods of Plant Molecular Biology, Biochemistry and Genetics. Agrobios, Jodhpur, India.
3. Dixon, R.A. (Ed.) 1987. Plant Cell Culture: A Practical Approach, IRL Press, Oxford.
4. Kochhar, S. L. and Gujral, S. K. (2012). Comprehensive Practical Plant Physiology. Macmillan Publishers India Ltd., Delhi.
5. Moore, T.C. 1974. Research Experiences in Plant Physiology: A Laboratory annual. Springer-Verlag. Berlin.
6. Plummer, D.T. (1996). An Introduction to Practical Biochemistry (3rd Edition). Tata McGraw-Hill Publishing Co. Ltd. New Delhi.
7. Roberts, J. and Tuckar, G.A. (Eds.) 2000. Plant Hormone Protocols. Human Press, New Jersey, USA.
8. Scott, R.P.W. 1995. Techniques and Practices of Chromotography. Marcel Dekker, Inc., New York.
9. Smith, R.H. 2000. Plant Tissue Culture: Techniques and Experiments. Academic Press, New York.
10. Wilson, K. and Goulding, K.H. (Eds.) 1986. A Biologists Guide to Principles and Techniques of Practical Biochemistry. Edward Arnold, London, UK.

**SEMESTER-V****MICROBIOLOGY  
APPLIED MICROBIOLOGY-I  
(THEORY)****Time: 3 Hours****Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Microorganisms in Industry: Historical development definition and scope of industrial microbiology; contribution of Louis Pasteur in fermentation; sources of industrial microorganisms and their essential characteristics, natural habitats, cultural collections and preservation of stock cultures.

**SECTION-B**

Screening of Microorganisms: Isolation of industrially important microorganisms, primary and secondary screening methods for isolating useful Yeast, bacteria and fungi. Fermentation media: Composition of production media, characteristics of an ideal production medium, raw materials.

**SECTION-C**

Fermentation and Fermentation Processes: Fermentation as biological activity, Types of industrial fermentation's (submerged, solid state and continuous fermentation). Design of fermentor (body construction, aeration and agitation and control of septic conditions), Basics of batch culture, fedbatch culture and continuous culture.

**SECTION-D**

Recovery and purification of fermentation products: General principles of separation of fermentation products, solid particles, foam separation, separation by filtration, centrifugation, cell disruption, liquid-liquid chromatography, ion-exchange chromatography. Fermentation economics; plant fermentation designing, process designing, market potential and recovery costs for the industrial set-up.

**Books Recommended:**

1. Casida, L.E. 1991. *Industrial Microbiology*. Wiley Eastern Ltd., New Delhi.
2. Stanbury, P.F. Whittaker, A. and Hall S.J. 1995. *Principles of Fermentation Technology*. Elsevier Science Ltd., U.K.
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. Freifelder, D. 2006. *Microbial Genetics*. Jones and Bartlett Publishers Inc., Boston.

**SEMESTER-V  
MICROBIOLOGY**

**(PRACTICAL)**

**Time: 4 Hours**

**Marks: 25**

1. Isolation of various types of microorganisms from (a) soil (b) fruits.
2. Screening of some industrially important microorganisms
  - a. amylase producers.
  - b. protease producers.
3. Protein estimation by Lowry method.
4. Preservation of industrially important microorganisms by various methods (a) storage in 10 % glycerol (b) storage in mineral oil.
5. Determination of % viability of Yeast cells by haemocytometer.

**SEMESTER-V**  
**BIOINFORMATICS (VOCATIONAL)**

**COMPUTATIONAL METHODS FOR SEQUENCE ANALYSIS**  
**(THEORY)**

**Time: 3 Hrs.**  
**Credit Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Sequence Alignment: Scoring matrices (PAM and BLOSUM), Local and Global alignment concepts, dynamic programming methodology (Needleman and Wunsch algorithm, Smith Waterman algorithm), Statistics of alignment score, Multiple Sequence alignment (Progressive alignment), Database searches for homologous sequences (Fasta and Blast versions).

**SECTION-B**

Fragment assembly: Genome sequence assembly, Gene finding methods: concept and signal methods, Background of transform techniques, Fourier Transform and Gene Prediction, Pattern and Motif searching, Analysis and prediction of regulatory regions.

**SECTION-C**

Neural Network concepts and secondary structure prediction. Probabilistic models: Markov chain (random walk), Hidden Markov models, Gene identification and other applications.

**SECTION-D**

Evolutionary analysis: Basics of evolution: Rooted and unrooted trees, molecular clock theory, molecular markers used in studying evolution. Distances based methods and Clustering Methods of evolution, Bootstrapping strategies.

**List of Books:**

1. Waterman M.S. (Eds). Introduction to Computational Biology: Maps, sequence and genome. Chapman and Hill. London, (1995).
2. Yop T.K., Frieder O, Martino R.L., Hogh Performance computation methods for biological sequence analysis. Kluver Academic Publishers, Dordrecht. (1996).
3. Suhai (Eds). Theoretical and computation methods in genome research. Plenum Press, New York (1997).
4. Durbin R, Eddy S.R., Krogh A, Mitchison G, Biological sequence analysis. Probablistic models of proteins and nucleic acid. Cambridge University Press (1998).
5. Schulze K.S., Molecular Bioinformatics: counselling and application. Walterde Gruyter Berlin New York (1995).
6. Setubal J, Meidanis J, Introduction to Computational Molecular Biology. PWS Publishing Company. Boston (1996).
7. Gusfield D. Algorithms on strings, stress, trees and sequence. Computer Science and Biology. Cambridge Uiversity Press, Cambridge (1997).
8. Bishop M.J., Rawling C.J. (Eds). DNA and Protein Sequence analysis. A Practical Apporach. IRL Press. Oxford (1997).

**SEMESTER-V****BIOINFORMATICS (VOCATIONAL)****LAB IN COMPUTATIONAL METHODS FOR SEQUENCE ANALYSIS  
(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Credit Hours: 4½**

- Tools to study local and global alignments.
- To study multiple sequence alignment using Clustal-W and T-COFFEE.
- To study gene prediction in Eukaryotes and Prokaryotes using GENSCAN, GLIMMER, GeneMark, ORF FINDER.
- Evolutionary analysis using Phylip.

**SEMESTER-V**  
**BIOTECHNOLOGY (VOCATIONAL)**

**rDNA TECHNOLOGY AND ANIMAL BIOTECHNOLOGY**  
**(THEORY)**

**Time: 3 Hrs.**  
**Teaching Hours: 6**

**Max. Marks: 100**  
**Theory Marks: 75**  
**Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**rDNA Technology**

**SECTION-A**

DNA Modifying enzymes: Restriction enzymes Ligases for blunt & sticky end ligation), DNA Polymerases, Klenow fragment, Alkaline phosphatase, antartic phosphatase Polynucleotide kinase, Terminal deoxynucleotidyl transferase, reverse transcriptase.

Cloning Vectors for E.coli: plasmids, ( -complementation) bacteriophages as vector, Genetic selection(HfL,SPi),Cosmids.

**SECTION-B**

Southern Hybridization, Methods of Transformation: CaCl<sub>2</sub>, electroporation, transfection, micro projectile bombardment, Labelling of DNA and RNA- Radioactive labeling (Nick Translation, Random Priming, End Labelling), Non-Radioactive labelling (Direct & Indirect non isotopic labeling ), cDNA cloning: Linker, Adaptation, Different strategies for cDNA cloning- self priming, adaptor linker method, Introduction , principles & applications of PCR.

**Animal Biotechnology**

**SECTION-C**

General metabolism (Glucose and Glutamine), inhibition of metabolism, Bioreactors for large scale culture of cells Growth factors promoting proliferation of animal cells (EGF, FGF, PDGF, IL-1, IL-2, NGF, erythropoietin etc.), The need to express proteins in animal cells. Transfection – vectors (P element vector, SV 40 vectors, BPV vector, reteroviral vectors), selectable markers, Transfection methods (Calcium Phosphate precipitation, DEAE Dextran, microinjection, electroporation, protoplast fusion, somatic cell nuclear transfer, lipofection)



### SECTION-D

Expressing cloned proteins in animal cells - Insulin, Growth hormone, Interferon, t-plasminogen activator, factor VIII., Over production and processing of chosen protein. Production of vaccines in animal cells, Production of monoclonal antibodies, Stem cells-sources of stem cells & their applications.

#### Books Recommended:

1. Butler, M. (1987). Animal Cell Technology—Principles and Practices, Oxford University Press.
2. Butler, M. (1991). Mammalian Cell Biotechnology—Practical Approach, IRL, Oxford University Press.
3. Freshney, R. T. (1994). Culture of Animal Cells, John Wiley and Sons, New York.
4. Primrose, S. B. (1994). Molecular Biotechnology, 2nd edition, Blackwell Scientific Publishers, Oxford.
5. Sharma AD (2014) rDNA technology, Hemalaya publishing house.
6. Sambrook, J., Fritsch, E. F. and Maniatis, T. (2000). Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory Press, New York.

**SEMESTER-V****BIOTECHNOLOGY (VOCATIONAL)****rDNA TECHNOLOGY AND ANIMAL BIOTECHNOLOGY  
(PRACTICAL)****Time: 3 Hrs.****Marks: 25****Teaching Hours: 4½**

Isolation of chromosomal and plasmid DNA from bacteria

Isolation of genomic DNA from blood

Agarose gel electrophoresis

Spectrophotometer analysis of DNA.

Restriction digestion of DNA

Making competent E. coli

Transformation and selection of competent E Coli.

**SEMESTER-V  
EDUCATION**

**DEVELOPMENT OF EDUCATION IN INDIA**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Concept of Education in Vedic-Era with special reference to aims, curriculum & role of teacher
2. Education in Buddhist period with special reference to aims, curriculum & role of teacher

**SECTION-B**

1. Salient features of Indian Education during Medieval period
2. Recommendations of Major Commissions & Committee set up during British Period with special reference to Charter Act (1813), Maculay's Minute (1835) and Wood's Despatch (1854).

**SECTION-C**

1. Concept & features of Basic Education
2. Constitutional Provisions of Education

**SECTION-D**

1. Major recommendations of Secondary Education Commission (1952-53) and Indian Education commission (1964-66)
2. Salient features of NPE (1986)

### **SEMESTER-V**

#### **Books Recommended:**

1. Aggarwal, J.C. Landmarks in the History of Modern Indian Education, Vikas Publishing House Pvt. Ltd., New Delhi, 2004.
2. Aggarwal, J.C.: Modern Indian Education: History Development and Problems, New Delhi, Shiplra Publication House (2006).
3. Govt. of India, Ministry of Education, Report of Education Commission (1964-66), New Delhi, 1986
4. Govt. of India, Ministry of Human Resources Development, National Policy of Education, New Delhi, 1986.
5. Govt. of India, Challenge of education, A Policy Perspective, New Delhi, 1986.
6. Govt. of India, Ministry of Human Resources Development, National Policy of Education, New Delhi, 1986 (with Modifications undertaken in 1992), New Delhi, 1992.
7. Saxena Swaroop, N.R., Education in Emerging India Chaturvedi Sikha Society, R.Lall, Book Depot, Meerut, 2005.

**SEMESTER-V****HUMAN RIGHTS****INTERNATIONAL HUMAN RIGHTS****Time: 3 hours****Max. Marks: 100****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Organizations related to Human rights; Instruments of Human rights and covenants; role of UNO, UN Commission of Human Rights, UN children's fund (UNICEF), UN commission on the status of Women, ILO, UNESCO.

**SECTION-B**

International humanitarian issues, laws and assistance.

**SECTION-C**

International Human rights provisions: Torture, custodial violence, disappearance, prisoners, and under trials.

**SECTION-D**

Role of NGOs, role of Amnesty, Red Cross and NHRC

**Recommended Books:**

1. Khare, Subhash Chandra, Human Rights and United Nations Metropolitan Co. New Delhi.
2. Iyer, V.R. Krishna, Hman Rights and the Law, Vapul law, Indore.
3. Kashyap, subhash, Human Rights and Parliament, Metropolitan Book co. Delhi.
4. Sinha, P.C. Global sourcebookon Human Rights Part I, Kanishka Publishers, New Delhi.
5. Sinha, P.C., Global source book on Human rights part II, Kanishka Publishers, New Delhi.

**SEMESTER-V****DAIRY FARMING (VOCATIONAL)  
(THEORY)**

**Time: 3 Hours**  
**Periods per week: 6**

**Max. Marks: 100**  
**Theory Marks: 50**  
**Practical Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A****1. Fodder Production**

Importance of green fodder in milk production, recommendations for cultivation of different fodder crops, nutritional value and yield of different fodder crops.  
Legume and non-legume fodders. Enhancing nutritional value and yield of fodder crops. Fodder crop rotations and mixtures.

**SECTION-B**

Conservation of surplus green fodder. Feeding of green fodder, hay and silage. Fodder trees, bushes and grasses. Availability of fodders in different seasons for animals. Plan for Green fodder production throughout the year for Dairy Animals. Crop residues and biproducts. Enrichment of roughages.

**SECTION-C****2. Diseases of Cows and Buffaloes**

Diseases of Nutritional Deficiency. Infectious and noninfectious diseases. Symptoms of different diseases. External and internal parasitic diseases and their control. Prevention of different diseases. Preventive vaccination schedule in a dairy farm. Control of reproductive disease. Use of sanitation and disinfection in disease control in a dairy farm. Diseases transmitted through milk. Veterinary First-Aid Zoonotic-diseases through from animals to man and vice-versa. Segregation and quarantine.

**SECTION-D****3. Economics of Dairy Farming**

Economic parameters in a dairy farm. Income and expenditure details for upkeep of ten cows/buffaloes rural dairy unit.  
Factors affecting profitability of a dairy unit. Advantages of mixed farming.

**SEMESTER-V**

**DAIRY FARMING (VOCATIONAL)**

**(PRACTICAL)**

**Time: 3 Hours**

**Total Marks: 50**

**Distribution of Marks:**

<b>Assignment</b>	<b>10 Marks</b>
<b>Practical Note book</b>	<b>10 Marks</b>
<b>Four Visits to Dairy Farms</b>	<b>10 Marks</b>
<b>Oral Examination</b>	<b>10 Marks</b>
<b>Written Test</b>	<b>10 Marks</b>

**Note:** Preparation of Practical Note book and Dairy Farm Assignment is compulsory

1. Formulation and costing of Dairy Rations.
3. Expenditure and Income Calculations.
4. Recognition of Disease Symptoms.
5. Recognition of Heat Symptoms.
6. Visit to NDRI Karnal.
7. Two visits to PAU Ludhiana.
8. Filling of Dairy Record Performs.
9. Recognition of External and Internal Parasites.

**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).

**SEMESTER-V****RUSSIAN****RSL-301: PAPER-I (APPLIED GRAMMAR)****Time allowed: 3 Hrs.****Max. Marks: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Grammar (questions based on all the topics covered in the chapters 41-50 of the prescribed text book)

**SECTION-B**

2. Writing of a dialogue on a given situation.

**SECTION-C**

3. Questions pertaining to Culture & Civilisation of Russian Federation to be answered in Russian. (8 out of 10).

**SECTION-D**

4. Writing of a formal E-mail on the given situation.



**SEMESTER-V**  
**RUSSIAN**

**PAPER-II (TRANSLATION)**

**Time allowed: 3 Hrs.**

**Max. Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Translation of any two unseen passages out of the given three from Russian into English, each passage not exceeding about 200 words.

**SECTION-B**

2. Translation of any two unseen passages out of the given three from English into Russian, each passage not exceeding about 250 words.

**SECTION-C**

3. Comprehension (An unseen passage).

**SECTION-D**

4. General questions pertaining to day to day life situations to be answered in Russian. (8 out of 10)

**SEMESTER-V  
RUSSIAN**

**PAPER-III (ORAL)**

**Max. Marks: 20**

- |  |                 |
|--|-----------------|
| - Reading & comprehension of a text    | <b>10 Marks</b> |
| - Conversation                         | <b>05 Marks</b> |
| - Retelling of a small text in Russian | <b>05 Marks</b> |
- (Besides general talk it includes questions on the prescribed text of Q.1)

**Note:- Dictionaries are allowed in paper II.**

**Prescribed Textbook:-** “RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 41-50)

**Books recommended for additional reading:-**

1. A.K.Maurya: ESSENTIAL RUSSIAN, University of Delhi, 2004.
2. S Khavronina: Russian in Exercise, 1978.
3. I. Pulkina : RUSSIAN A practical Grammar with Exercise. Russky Yazik. Pub. H. Moscow.
4. Dictionaries: English -Russian dictionary,Russian -English dictionary.
5. B.I. Balin and R.M.Bakaya: An Introductory Russian course for students of Science and technology, Asia publishing house, Delhi

**SEMESTER-V****FRENCH****FRL-301: PAPER- I (COMPOSITION, GRAMMAR & COMPREHENSION)****Time allowed: 3 Hrs.****Max. Marks: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

A composition of around 200 words from the given topics. (One out of four)

**SECTION-B**

Grammar Exercises based on the textbook

**SECTION-C**

Grammar Exercises based on the textbook

**SECTION-D**

An unseen comprehension passage

**COMPOSITION TOPICS:-**

- La vie en ville /au village, La France, Mon pays, La cuisine, Un pique nique au bord de la mer, Mon acteur/actrice/ écrivain favori, Mes rêves, Un voyage, La vie au xxi siècle, L'influence de la télévision/radio/presse écrite sur les jeune, Le mariage – est-ce que c'est une institution essentielle? L'amour ou l'argent, Si J'étais....., je..., Les souvenirs de mon enfance, Les vacances en Inde.

SEMESTER-V  
FRENCH

PAPER-II (TRANSLATION AND LITERATURE)

**Time allowed: 3 Hours**

**Max Marks: 40**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

Translation from French into English.

**SECTION-B**

Translation from English into French.

**SECTION-C**

Questions of general comprehension pertaining to the vocabulary covered in the text book (e.g. Comment aimez – vous passer les vacances?)

**SECTION-D**

**A) POEMS:-**

1) Familial    2) Le pont Mirabeau    3) La jeune veuve

**B)** Objective type questions pertaining to the various aspects of French civilization covered in the textbook.

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

**SEMESTER-V**  
**FRENCH**

**FRL-301: PAPER-III: (ORAL)**

**Max. Marks: 20**

- |   |                    |                 |
|---|--------------------|-----------------|
| - | Reading of a text  | <b>05 Marks</b> |
| - | Dictation          | <b>05 Marks</b> |
| - | Conversation       | <b>05 Marks</b> |
| - | Oral Comprehension | <b>05 Marks</b> |

**Prescribed Textbook:-**

**“CONNEXIONS-III”** (Units 1-6) by Regine Merieux & Yves Loiseau, Published by Didier

**Recommended Book:-**

**Nouveau Sans Frontières III** by Philippe Dominique & Jacky Girardet

**SEMESTER-V**

**URDU**

**URL-301: MODERN URDU PROSE AND POETRY**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

**Prose:**

Study of Urdu Prose with special reference to modern fiction: General information which leads to vital changes in literary attitudes and different forms of prose which came up in Urdu in Munshi Prem Chand and Post Prem Chand period

**SECTION-B**

Introductory information about latest forms of prose: Afsana, Novel, Inshaiya, Khutoot-nigari, Reportaz

**SECTION-C**

**Poetry**

Study of Urdu poetry with special reference to the modern period: General information about the Modern period; the circumstances which lead to the vital changes in literary attitudes & different shades of Urdu poetry which came up in Urdu after Mirza Daagh Dehlvi; Questions on trends like Quami Shairi, Taraqqi Pasand Shairi & Jadeed Shairi.

**SECTION-D**

Introductory information about latest forms of poetry Ghazal, Aazad Ghazal, Paaband Nazm and Doha.

**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.

**SEMESTER-V**  
**PERSIAN**

**PRL-301: PROSE AND POETRY**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Prose:**

Selections from Intkhab Adabiyat-e-Farsi by Syed Hasan, Arun Kumar Beni Madho, 2, Katra Road, Allahabad – 211002.

**SECTION-A**

1. Akhlaq-e-Mohsini : Adab, Ulve Himmat, Sakhavat-o-Ahsan (Pages from 34 to 41).
2. Tarikh-e-Firoz Shahi (Pages from 17 to 23).

**SECTION-B**

Selections from Nisab-e-Jadid-e-Farsi, Published by Jyed Press, Balli Maran, Delhi.

1. Zindagi-e-Man (Bab Kodaki (Pages from 5 to 19).
2. Sarzameen-e-Hind Zaban-e-Farsi Dar Hind (Pages from 33 to 48)

**SECTION-C**

**Poetry:**

Selections from Intkhab Adabiyat-e-Farsi: Published by Jyed Press, Balli Maran, Delhi.

1. Rubaiyat-e-Sarmad (Pages from 144 to 146)
2. Sho'orai Asar-e- Hazir
  - a) Ai Ranj bar by Khanum Parveen Aitsami ( Page-164 )
  - b) Jamhuri by Arif Qazwini ( Page-169)
  - c) Libas-e-Watni by Sarmad Tehrani ( Page-170)
  - d) Parda-e-Beenash by Rasheed Yasmee ( Page-175)

**SECTION-D**

Simple and direct questions on life and works of poets studied

**Books Prescribed:-**

1. Intkhab Adabiyat-e-Farsi by Syed Hasan and published by Ram Narain Lal Arun Kumar,  
2- Katra Road, Allahabad- 211002.
2. Nisab-e-Jadeed-e-Farsi,published by Jyed Press, Balli Maran, Delhi.

**SEMESTER-V**

**SANSKRIT (ELECTIVE)**

1/2 hr (100 marks)

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**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Syllabus**

**SECTION-A** पंचतन्त्र (लब्धप्रणाश) : प्रस्तावना, गंगदत्तप्रियदर्शनसर्पकथा, सिंहलम्बककर्णकथा, युधिष्ठिर कुम्भकार कथा।

**SECTION-B** पंचतन्त्र (लब्धप्रणाश) : सिंहश्रृगालपुत्रकथा, घण्टोष्टकथा, श्रृगाल-सिंह-व्याघ्रचित्रकथा, विदेशगतसारमेयकथा।

**SECTION-C** व्याकरण : विसर्ग सन्धि।

प्रत्यय : सन्, णिच्

(भू, पठ्, हस्, गम्, पत्, कृ, ग्रह्, दिव्, हा, आप्, क्री, चुर्, सिच्, दृश्, चल् धातुओं के सन्, णिच् प्रत्यय लगाकर लट् लकार प्रथम पुरुष, एकवचन में रूप)।

सामान्य ज्ञान : वार, मास, ऋतु, नवग्रह, राशि, दस दिशायेँ।

**SECTION-D** वैदिक साहित्य : ऋग्वेद, यजुर्वेद, सामवेद, अथर्ववेद।

व्यावहारिक शब्द :

- |                            |                    |
|----------------------------|--------------------|
| 1. अगूठा-अङ्गुष्ठः         | 2. कान-कर्णः       |
| 3. गर्दन-ग्रीवा            | 4. जीभ-जिह्वा      |
| 5. नाक-नासिका              | 6. बांह-बाहुः      |
| 7. सांग-शाकम्              | 8. गधा-गर्दभः      |
| 9. घोड़ा-अश्वः, घोटकः      | 10. नेवला-नकुलः    |
| 11. बन्दर-वानरः            | 12. बैल-बलदः       |
| 13. भैंस-महिषी             | 14. कबूतर-कपोतः    |
| 15. कोयल-कोकिलः            | 16. कौवा-काकः      |
| 17. चिड़िया-चटका           | 18. मोर-मयूरः      |
| 19. नारियल (वृक्ष)-नारिकेल | 20. रसोई-रसवती     |
| 21. कंबल-कम्बलः            | 22. साड़ी-साटिका   |
| 23. हार-हारः               | 24. बिन्दी-बिन्दुः |
| 25. मूंग-मुद्गः            | 26. सरसों-सर्षपः   |
| 27. हल्दी-हरिद्रा          | 28. रोटी-रोटिका    |
| 29. शक्कर-शर्करा           | 30. थाली-स्थाली    |



- |                                       |                            |
|---------------------------------------|----------------------------|
| 31. छोटा भाई, बड़ा भाई— अनुजः, अग्रजः | 32. दादा—पितामहः           |
| 33. जवाई (दामाद)—जामाता               | 34. देवर—देवरः             |
| 35. साला—श्यालः (स्यालः)              | 36. ससुर—श्वशुरः           |
| 37. पोता—पौत्रः                       | 38. भानजा—भागिनेयः         |
| 39. भाभी—भ्रातृजाया                   | 40. Internet-अन्तर्जालम्   |
| 41. Television-दूरदर्शनम्             | 42. Telephone-दूरभाषः      |
| 43. Black Board-श्यामपटः              | 44. Mobile Phone-चलदूरभाषः |
| 45. Computer-संगणकः                   |                            |

lk' ui = fuekZk funZk

### SECTION-A

- Question-I** निर्धारित कथाओं में से 4 श्लोक देकर सप्रसंग व्याख्या करने को कहा जाये — = 20 अंक  
**Question-II** प्रस्तावना, कथाओं में से 2 देकर सार, शिक्षा, महत्त्व बताने को कहा जाये — = 20 अंक

### SECTION-B

- Question-III** निर्धारित कथाओं में से 4 श्लोक देकर सप्रसंग व्याख्या करने को कहा जाये — = 20 अंक  
**Question-IV** प्रस्तावना, कथाओं में से 2 देकर सार, शिक्षा, महत्त्व बताने को कहा जाये — = 20 अंक

### SECTION-C

- Question-V** क. विसर्ग सन्धि के लिये 5 सन्धिच्छेद देकर सन्धि पूछी जाये — = 10 अंक  
 ख. विसर्ग सन्धि के 5 शब्द देकर उनका सन्धिच्छेद पूछा जाये — = 10 अंक  
**Question-VI** क. निर्धारित धातुओं में से 5 धातुओं के साथ णिच्/सन् प्रत्यय देकर लट् लकार प्रथम पुरुष, एकवचन में रूप पूछे जायें। = 10 अंक  
 ख. सामान्य ज्ञान से सम्बन्धित 2 बिन्दु देकर स्पष्ट करने को कहा जाये। = 10 अंक

### SECTION-D

- Question-VII** एक प्रश्न। = 10 अंक  
 एक प्रश्न। = 10 अंक  
**Question-VIII** व्यावहारिक शब्दावली में से 10 शब्द देकर उन्हें संस्कृत में लिखने को कहा जाये। = 20 अंक

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1. पंचतन्त्र —
2. वैदिक साहित्य का इतिहास —

**SEMESTER-V**  
**FUNCTIONAL SANSKRIT (VOCATIONAL)**

**Time: 3 Hours**

**Max. Marks: 100**

प्रश्न पत्र हिन्दी में होगा।

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Syllabus**

**SECTION-A**

मासों का वैशिष्ट्य तथा माहात्म्य (चैत्र, वैशाख, ज्येष्ठ, आषाढ मास)।

**SECTION-B**

मासों का वैशिष्ट्य तथा माहात्म्य (श्रावण, भाद्रपद, आश्विन, कार्तिक मास)।

**SECTION-C**

मासों का वैशिष्ट्य तथा माहात्म्य (मार्गशीर्ष, पौष, माघ, फाल्गुन मास)।

**SECTION-D**

मासों में पूजा कर्म, उत्सव, धार्मिक आयोजन (चैत्र, आश्विन, कार्तिक, फाल्गुन मास)।

lk' ui = fuekZk funZk

**SECTION-A**

<b>Question-I</b>	एक प्रश्न	= 20 अंक
<b>Question-II</b>	एक प्रश्न	= 20 अंक

**SECTION-B**

<b>Question-III</b>	एक प्रश्न	= 20 अंक
<b>Question-IV</b>	एक प्रश्न	= 20 अंक

**SECTION-C**

<b>Question-V</b>	एक प्रश्न	= 20 अंक
<b>Question-VI</b>	एक प्रश्न	= 20 अंक

**SECTION-D**

<b>Question-VII</b>	एक प्रश्न	= 20 अंक
<b>Question-VIII</b>	एक प्रश्न	= 20 अंक

**SEMESTER-V**  
**ENGLISH COMPULSORY**

**Time: 3 Hours**

**Max. Marks: 50**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Texts Prescribed:**

1. *All My Sons* by Arthur Miller
2. *Poems of Nature and Culture*, Guru Nanak Dev University, Amritsar

*Poems of Nature and Culture*

William Wordsworth: "The World is Too Much with Us"

Gordon Lord Byron: "She Walks in Beauty"

P.B. Shelly: "Ozymandias"

Alfred Lord Tennyson: "In Memoriam"

Robert Browning: "Meeting at Night"

Mathew Arnold: "Dover Beach"

W.B. Yeats: "Words"

Wilfred Owen: "Strange Meeting"

Robert Graves: "The Portrait"

W.H. Auden: "The Unknown Citizen"

Dylan Thomas: "Do not Go Gentle into That Good Night"

Ted Hughes: "The Thought-Fox"

Sylvia Plath: "Mirror"

Seamus Heaney: "Honeymoon Flight"

Rabindranath Tagore: "False Religion"

Nissim Ezekiel: "Night of Scorpion"

3. Formal letter and application writing, Resume Writing, Business Writing and Report writing

**The syllabus is divided into four sections as mentioned below:**

Section A- *All My Sons* by Arthur Miller the whole text.

Section B- *Poems of Nature and Culture* Guru Nanak University, Amritsar.

Section C- Formal Letter and Application Writing.

Section D- Business Writing and Report Writing, Resume Writing

**Instructions for the paper-setter and distribution of marks:**

**The question paper will consist of four sections and distribution of marks will be as under:**

**The question paper will be divided into four sections:**

**SECTION-A**

Section A will consist of two questions. Question one will consist of three short answer questions and the students are required to attempt any two. Each question will carry 4 marks. (2X4=8). Total weightage of this section is 15 marks.

Question two, an essay type question with internal choice will be set. It will carry 7 marks. (1X7=7)

**SECTION-B**

Three short answer type questions based on the central idea, theme, tone or style etc. of the prescribed poems will be set. The students are required to attempt any two. Each question carries three marks. (2x3=6) One question with internal choice requiring the students to explain a stanza with reference to the context will be set. (1x4=4) It carries four marks. One essay- type question with internal choice from the poems prescribed will be set. It carries five marks. (1x5=5). Total weightage of this section is 15 marks.

**SECTION-C**

Two questions will be set in this section. One question will be set on Formal Letter Writing. It carries five marks. Another question on Application Writing will be set. It also carries five marks. (5+5=10)

**SECTION-D**

Two questions will be set in this section. One question will be on Resume Writing/ Business Writing. It carries five marks. Another question based on Report Writing will be set. It carries five marks. (5+5=10)

**SEMESTER-V**  
**ENGLISH (ELECTIVE)**  
**MODERN ENGLISH DRAMA**

**Time: 3 Hours**

**Max. Marks: 100**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Prescribed Books:**

1. *Merchant of Venice* by William Shakespeare
2. *Arms and the Man* by G.B. Shaw
3. *Background to the Study of English literature* by B. Prasad, Macmillan India Limited (Chapters I and II from section- I ; chapters I, II, and III from section- II; Chapters I, II, and III from Section III )

**The syllabus is divided into four sections as mentioned below:**

**SECTION-A**

*Background to the Study of English literature* by B. Prasad, Macmillan India Limited (Chapters I and II from Section -I; Chapters I and II from section- II)

**SECTION-B**

*Background to the Study of English literature* by B. Prasad, Macmillan India Limited (Chapter III from section- II ; Chapters I, II, and III from section- III )

**SECTION-C**

*Merchant of Venice* by William Shakespeare – Complete text

**SECTION-D**

*Arms and the Man* by G.B. Shaw – Complete text

### **SECTION-A**

Two questions will be set from Section-A of the syllabus. One essay type question based on the structure/development of a genre as discussed in B. Prasad's book would be set carrying eight marks. The second part of the question would carry three short answer questions. Each question would carry four marks.

The students would be required to attempt any one of the two sets of questions. (8+3x4=20)

### **SECTION-B**

Two questions will be set from Section-B of the syllabus. One essay type question based on the structure/development of a genre as discussed in B. Prasad's book would be set carrying eight marks. The second part of the question would carry three short answer questions. Each question would carry four marks.

The students would be required to attempt any one of the two sets of questions. (8+3x4=20)

### **SECTION-C**

Two questions will be set from Section-C of the syllabus. One essay type question based on the theme, plot, and characterization would be set carrying eight marks. The second part of the question would carry three short answer questions. Each question would carry four marks. One question may be with reference to the context.

The students would be required to attempt any one of the two sets of questions. (8+3x4=20)

### **SECTION-D**

Two questions will be set from Section-D of the syllabus. One essay type question based on the theme, plot, and characterization would be set carrying eight marks. The second part of the question would carry three short answer questions. Each question would carry four marks. One question may be with reference to the context.

The students would be required to attempt any one of the two sets of questions. (8+3x4=20)

**SEMESTER-V**

**FUNCTIONAL ENGLISH (VOCATIONAL)**

**PRINT JOURNALISM  
(THEORY)**

**Time: 3 Hours**

**Max. Marks: 100  
Theory Marks: 75  
Practical Marks: 25**

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**Objectives:** To generate awareness among learners of issues deserving reporting in print and to simulate them to respond to their environment in print. To enable learners to write news stories from the stage of news gathering to editing to their final presentation. To enable learners to acquire the art and skills of feature writing.

**Course Contents:**

**SECTION-A**

Introduction to Print Media - Print Media and Communication - Definition of Communication - Scope of Communication: Its purpose and forms, Reporting - Sources of Information - Distinguishing Factual News Reporting from Interpretative and - Analytical Reporting

**SECTION-B**

Investigate Journalism  
- Writing the Questions  
- Reporting from Interviews - Format, Style and Content  
Writing News Stories - Essentials of News Writing—the Headlines—the Leads—the Body and Conclusion—the Art and Skills of Writing for Different Purposes.

**SECTION-C**

Areas in News Reporting  
- Reporting Obituaries, Weather, Sports, Science, Business, Art and Culture, Education, Agriculture, Fashion, Community Service etc, The Reader, Understanding the Reader

**SECTION-D**

Feature Writing - Defining a Feature (a lyric in Prose)—the Crafts of Feature Writing—Distinguishing a Feature from other Forms of Newspaper/Magazine, Writing—Researching before Writing— Titles and Leads—Packaging a Feature with interest, Humour, Pictures and other Ingredients—Areas for Feature Writing (middles, reviews)—Freelancing and Feature Writing.



**SEMESTER-V**

**FUNCTIONAL ENGLISH (VOCATIONAL)  
PRINT JOURNALISM  
(PRACTICAL)**

**Marks: 25**

There will be practical examination of 25 marks. An external examiner will conduct the examination by giving on the spot news/report writing test.

**Bibliography:**

- Ahuja, E.N. & S.S. Chhabra *Reporting*, Surjeet Publications, New Delhi, 1990.
- Drewry, John E *Book Reviews*, The Writer, Inc. Bosten, 1945
- Nicholis, Brian *Features with Flair*, Press Institute of India, New Delhi, 1972.
- Patterson, Helen M. *Writing and Selling Feature*, Articles, Prentice Hall, New York, 1950.
- Steigheiman, M. *Writing the Feature Article*, Macmillan, New York, 1950.
- Copestake, T. *Editing Super 8*, Focal Press Ltd., London, 1980.
- Critchfield, Richard P. *The Indian Reporters Guide*, Allied Pacific, Bombay, 1962.
- George, TJS *News Editing*, Indian Institute of Mass Communication, New Delhi, 1989.
- Tayler, Howard B and Jacob Scher *Copy Reading and News Editing*, Prentice Hall, New York, 1955.
- Warren, Carl H. *Modern News Reporting*, Harper, New York, 1973.

**SEMESTER-V**

**Punjabi (Compulsory) ਪੰਜਾਬੀ (ਲਾਜ਼ਮੀ)**

ਸਮਾਂ : 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ : 50

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਇੱਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ**

**ਸੈਕਸ਼ਨ - ਏ**

**ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ**

(ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2018)  
(ਵਿਸ਼ਾ ਵਸਤੂ/ਸਾਰ/ਕਹਾਣੀ ਕਲਾ)

**ਸੈਕਸ਼ਨ - ਬੀ**

**ਏਹੁ ਹਮਾਰਾ ਜੀਵਣਾ** (ਨਾਵਲ) : ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ (ਲੇਖਕ ਦਾ ਜੀਵਨ ਤੇ ਰਚਨਾ/ਵਿਸ਼ਾ-ਵਸਤੂ/ਪਾਤਰ-ਚਿਤਰਨ)

**ਸੈਕਸ਼ਨ - ਸੀ**

- (ੳ) ਲਗਪਗ 200 ਸ਼ਬਦਾਂ ਵਿੱਚ ਪੈਰਾ ਰਚਨਾ  
(ਅ) ਸਰਲ ਅੰਗਰੇਜ਼ੀ ਪੈਰੇ ਦਾ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦ

**ਸੈਕਸ਼ਨ - ਡੀ**

**ਵਿਆਕਰਨ :**

- (ੳ) ਪੰਜਾਬੀ ਧੁਨੀ ਵਿਉਂਤ  
(ਅ) ਵਾਕਾਤਮਕ ਜੁਗਤਾਂ : ਮੇਲ ਤੇ ਅਧਿਕਾਰ  
(ੲ) ਕਾਰਕ ਤੇ ਕਾਰਕੀ ਸੰਬੰਧ

**ਸਹਾਇਕ ਪੁਸਤਕਾਂ**

1. ਬਲਦੇਵ ਸਿੰਘ ਧਾਲੀਵਾਲ, ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਇਤਿਹਾਸ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
2. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੀ ਸ਼ਾਹਰਾਹ (ਭੂਮਿਕਾ), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਜੋਗਿੰਦਰ ਸਿੰਘ ਰਾਹੀ, ਰਮਿੰਦਰ ਕੌਰ, ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਸਫ਼ਰ ਤੇ ਸ਼ਾਸਤ੍ਰ, ਸਿੰਘ ਬ੍ਰਦਰਜ, ਅੰਮ੍ਰਿਤਸਰ (ਭਾਗ ਦੂਜਾ)
4. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ ਦੀ ਗਲਪ ਚੇਤਨਾ, ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਆਪਰੇਟਿਵ ਸੋਸਾਇਟੀ ਲਿਮਟਿਡ, ਲੁਧਿਆਣਾ।
5. ਪ੍ਰੈਟੀ ਸੋਢੀ, ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ ਦੇ ਨਾਵਲ : ਮਨੋਵਿਗਿਆਨਕ ਪਾਸਾਰ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ
6. ਪ੍ਰੀਤਮ ਕੌਰ, ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ ਦੀ ਨਾਵਲ ਕਲਾ, ਨੈਸ਼ਨਲ ਬੁੱਕ ਸ਼ਾਪ, ਦਿੱਲੀ।
7. ਮਿੰਨੀ ਸਲਵਾਨ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਮੁੱਢਲੇ ਸੰਕਲਪ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
8. ਜਗਜੀਤ ਸਿੰਘ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ : ਸ਼੍ਰੇਣੀਆਂ ਤੇ ਇਕਾਈਆਂ, ਨਿਊ ਬੁੱਕ ਕੰਪਨੀ, ਮਾਈ ਹੀਰਾ ਗੇਟ, ਜਲੰਧਰ।
9. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਬੋਧ, ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ।

**SEMESTER-V**

**PUNJABI (ELECTIVE) ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ)**

ਸਮਾਂ: ਤਿੰਨ ਘੰਟੇ

ਕੁਲ ਅੰਕ: 100

ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਇੱਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠ-ਕ੍ਰਮ ਅਤੇ ਪਾਠ-ਪੁਸਤਕਾਂ  
ਸੈਕਸ਼ਨ- ਏ

ਸ਼ਰੋਮਣੀ ਪੰਜਾਬੀ ਕਾਵਿ (ਭਾਗ II)  
(ਸੂਫ਼ੀ, ਕਿੱਸਾ ਅਤੇ ਬੀਰ ਕਾਵਿ)  
(ਸੰਪਾ. ਡਾ. ਰਮਿੰਦਰ ਕੌਰ, ਡਾ. ਮੇਘਾ ਸਲਵਾਨ)  
(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ)

ਸੈਕਸ਼ਨ- ਬੀ

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ  
ਗੌਤਮ ਤੋਂ ਤਾਸਕੀ ਤੱਕ, ਹਰਪਾਲ ਸਿੰਘ ਪੰਨੂ,  
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।  
(ਪਹਿਲੇ ਦਸ ਨਿਬੰਧ)  
ਸਾਰ/ਨਾਇਕ ਬਿੰਬ/ਵਾਰਤਕ ਸ਼ੈਲੀ

ਸੈਕਸ਼ਨ- ਸੀ

ਸਾਹਿਤ ਅਤੇ ਹੋਰ ਅਨੁਸ਼ਾਸਨ  
ਸਾਹਿਤ ਆਲੋਚਨਾ  
ਸਾਹਿਤ ਦੇ ਤੱਤ, ਸਾਹਿਤ ਅਤੇ ਸਮਾਜ, ਸਾਹਿਤ ਅਤੇ ਸ਼ਖਸੀਅਤ, ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ,

ਸੈਕਸ਼ਨ- ਡੀ

ਛੰਦ : ਦੋਹਿਰਾ, ਸੋਰਠਾ, ਕਬਿੱਤ, ਕੋਰੜਾ, ਚੋਪਈ, ਸਿਰਖੰਡੀ, ਸਵੱਈਆ ਬੈਂਤ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ

**ਸਹਾਇਕ ਪੁਸਤਕਾਂ**

1. ਗੁਰਦੇਵ ਸਿੰਘ ਸਿੰਧੂ, ਸੂਫ਼ੀ ਕਾਵਿਧਾਰਾ ਦਾ ਇਤਿਹਾਸ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
2. ਕੁਲਬੀਰ ਸਿੰਘ ਕਾਂਗ, ਕਿੱਸਾ ਕਾਵਿ ਦਾ ਇਤਿਹਾਸ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
3. ਸੁਤਿੰਦਰ ਸਿੰਘ ਨੂਰ, ਵਾਰ ਕਾਵਿ ਦਾ ਇਤਿਹਾਸ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
4. ਸੁਤਿੰਦਰ ਸਿੰਘ, ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਇਤਿਹਾਸ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ।
5. ਜੀਤ ਸਿੰਘ ਸੀਤਲ, ਵਾਰਤਕ ਅਤੇ ਵਾਰਤਕ ਸ਼ੈਲੀ, ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ।
6. ਧਰਮਪਾਲ ਸਿੰਗਲ, ਵਾਰਤਕ ਸ਼ੈਲੀ, ਭਾਸ਼ਾ ਵਿਭਾਗ ਪੰਜਾਬ, ਪਟਿਆਲਾ।
7. ਡਾ. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, ਸਾਹਿਤ ਦੇ ਰੂਪ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
8. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, ਸਮਾਲੋਚਨਾ ਸ਼ਾਸਤਰ, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
9. ਡਾ. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, ਸਾਹਿਤ ਕੋਸ਼ : ਪਰਿਭਾਸ਼ਕ ਸ਼ਬਦਾਵਲੀ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
10. ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼, ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤ੍ਰ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ।

**SEMESTER-V**

**FUNCTIONAL PUNJABI (VOCATIONAL) (ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜ)**

**ਪ੍ਰਯੋਜਨ: ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਚ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ ਨਾਲ ਜਾਣ ਪਛਾਣ ਅਤੇ ਪੰਜਾਬੀ ਵਿਚ ਇਸ ਦੀ ਵਰਤ।**  
**ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ**

**ਕੁਲ ਅੰਕ : 100**

**(ਥਿਊਰੀ)**

**ਸਮਾਂ : 3 ਘੰਟੇ**

**ਅੰਕ : 50**

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਸੈਕਸ਼ਨ-ਏ**

**ਪੰਜਾਬੀ ਉਚਾਰਨ ਅਤੇ ਗੁਰਮੁਖੀ ਅਰਥਗ੍ਰਾਫਾ : ਪੰਜਾਬੀ ਧੁਨੀਆਂ ਅਤੇ ਗੁਰਮੁਖੀ ਦਾ ਸੰਬੰਧ (ਆਈ.ਪੀ.ਏ. ਦੀ ਮਦਦ ਨਾਲ)**

**ਸੈਕਸ਼ਨ-ਬੀ**

**ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ : ਪਰਿਭਾਸ਼ਾ, ਮਹੱਤਵ, ਭਾਸ਼ਾ ਅਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ, ਸਾਹਿਤ ਤੇ ਸੂਚਨਾ ਤਕਨਾਲੋਜੀ।**

**ਸੈਕਸ਼ਨ-ਸੀ**

**ਕੰਪਿਊਟਰ ਸੌਫਟਵੇਅਰ : ਕੰਪਿਊਟਰ ਓਪਰੇਟਰ ਸਿਸਟਮ - ਐਮ.ਐਸ.ਆਫਿਸ (4,3,6,0,7,0) ਪੇਜ ਮੇਕਰ ਆਦਿ।**

**ਸੈਕਸ਼ਨ-ਡੀ**

**ਵੈਬਸਾਈਟ : ਪਰਿਭਾਸ਼ਾ, ਸੰਕਲਪ ਅਤੇ ਮਹੱਤਵ, ਪੰਜਾਬੀ ਦੀਆਂ ਵੈਬਸਾਈਟ : ਜਾਣ-ਪਛਾਣ।**

**ਸਹਾਇਕ ਪੁਸਤਕਾਂ**

1. ਬ੍ਰਹਮਜਗਦੀਸ਼ ਸਿੰਘ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
2. ਪ੍ਰੋ. ਸ਼ੈਰੀ ਬ੍ਰਹਮਜਗਦੀਸ਼, ਭਾਸ਼ਾ ਵਿਗਿਆਨ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
3. ਨਰਿੰਦਰ ਸਿੰਘ ਕਪੂਰ, ਪੰਜਾਬੀ ਪੱਤਰਕਾਰੀ ਦਾ ਇਤਿਹਾਸ, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।
4. ਹਰਜਿੰਦਰ ਵਾਲੀਆ, ਪੱਤਰਕਾਰੀ ਅਤੇ ਜਨਸੰਚਾਰ, ਮਦਾਨ ਪਬਲਿਸਿੰਗ ਹਾਊਸ, ਪਟਿਆਲਾ।
5. ਜਸਬੀਰ ਕੌਰ (ਸੰਪਾ.), ਪੰਜਾਬੀ ਸਮਾਜ ਅਤੇ ਮੀਡੀਆ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
6. ਰਾਜਿੰਦਰਪਾਲ ਸਿੰਘ ਬਰਾੜ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਸਾਹਿਤ ਸਭਿਆਚਾਰ ਅਤੇ ਮੀਡੀਆ : ਅੰਤਰ ਸੰਵਾਦ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
8. ਸੀ. ਪੀ. ਕੰਬੋਜ, ਕੰਪਿਊਟਰ ਅਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਯੂਨੀਸਟਾਰ ਬੁੱਕਸ, ਚੰਡੀਗੜ੍ਹ।
9. ਦਿਲਰਾਜ ਸਿੰਘ (ਸੰਪਾ.), ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਕੰਪਿਊਟਰ ਦੀਆਂ ਯੋਗਤਾਵਾਂ, ਯੂਨੀਸਟਾਰ ਬੁੱਕਸ, ਚੰਡੀਗੜ੍ਹ।

**SEMESTER-V**  
**FUNCTIONAL PUNJABI (VOCATIONAL) (ਪੰਜਾਬੀ ਪ੍ਰਕਾਰਜ)**

**ਭਾਸ਼ਾ ਪ੍ਰਯੋਗਸ਼ਾਲਾ ਵਿਚ ਅਭਿਆਸ ਕਰਨਾ**  
**(ਪ੍ਰੈਕਟੀਕਲ)**

ਸਮਾਂ : 2 ਘੰਟੇ

ਅੰਕ : 50

**ਸੈਕਸ਼ਨ-ਏ**

ਪੰਜਾਬੀ ਉਚਾਰਨ ਸੁਣ ਕੇ ਗੁਰਮੁਖੀ ਅਖਰਾਂ ਅਤੇ ਅੰਤਰ-ਰਾਸ਼ਟਰੀ ਧੁਨੀ ਲਿਪੀ ਵਿਚ ਲਿਖਣਾ  
(ਪੰਜ-ਪੰਜ ਮਿੰਟਾਂ ਦੇ ਚਾਲੀ ਅਭਿਆਸ)

**ਸੈਕਸ਼ਨ-ਬੀ**

ਵਿਆਕਰਣਕ ਵਰਗਾਂ ਦੇ ਆਧਾਰ 'ਤੇ ਸ਼ਬਦ ਸੁਣਾਏ ਦੇ ਰੂਪਾਂ ਦੀ ਪਹਿਚਾਣ ਕਰਨਾ ਅਤੇ ਰੂਪ  
ਸਿਰਜਣ (ਪੰਜ-ਪੰਜ ਮਿੰਟਾਂ ਦੇ ਚਾਲੀ ਅਭਿਆਸ)

**ਸੈਕਸ਼ਨ-ਸੀ**

ਥਿਊਰੀ ਵਿਚ ਦਿੱਤੇ ਗਏ ਵਿਸ਼ਿਆਂ ਉੱਤੇ ਘੱਟੋ-ਘੱਟ 35 ਵਾਕਾਂ ਵਾਲੇ ਭਾਸ਼ਣ ਦੇਣ ਦਾ ਅਭਿਆਸ  
(ਚਾਲੀ ਅਭਿਆਸ)

**ਸੈਕਸ਼ਨ-ਡੀ**

ਪੰਜਾਬੀ ਦੀ ਵੈਬਸਾਈਟ ਖਲੂਣਾ, ਪੰਜਾਬੀ ਵਿਚ ਈ-ਮੇਲ ਭੇਜਣ ਦਾ ਅਭਿਆਸ ਕਰਨਾ ।

**ਸਹਾਇਕ ਪੁਸਤਕਾਂ**

1. ਰਣਜੀਤ ਕੌਰ, ਕਾਰਜੀ ਪੰਜਾਬੀ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

**SEMESTER-V**

**ਮੁੱਢਲੀ ਪੰਜਾਬੀ**

(In lieu of Compulsory Punjabi)

ਸਮਾਂ: 3 ਘੰਟੇ

ਕੁਲ ਅੰਕ: 50

**ਅੰਕ-ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ**

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ ਇੱਕ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚ ਕਰ ਸਕਦਾ ਹੈ।

**ਪਾਠ-ਕ੍ਰਮ**

**ਸੈਕਸ਼ਨ-ਦੇ**

ਸਾਹਿਤ ਅਤੇ ਲੋਕ ਸਾਹਿਤ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਲੋਕ ਕਾਵਿ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਲੋਕ ਵਾਰਤਕ ਬਿਰਤਾਂਤ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

**ਸੈਕਸ਼ਨ-ਬੀ**

ਸੁਹਾਗ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਘੋੜੀਆਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਸਿੱਠਣੀਆਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

**ਸੈਕਸ਼ਨ-ਸੀ**

ਗਿੱਧਾ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਭੰਗੜਾ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਝੂਮਰ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

**ਸੈਕਸ਼ਨ-ਡੀ**

ਲੋਕ ਖੇਡਾਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਲੋਕ ਤਮਾਸ਼ੇ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

ਲੋਕ ਕਲਾਵਾਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ)

**ਸਹਾਇਕ ਪੁਸਤਕਾਂ**

1. ਸੋਹਿੰਦਰ ਸਿੰਘ ਬੇਦੀ, **ਲੋਕਧਾਰਾ ਅਤੇ ਸਾਹਿਤ**, ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼, ਨਵੀਂ ਦਿੱਲੀ।
2. ਸੁਹਿੰਦਰ ਸਿੰਘ ਬੇਦੀ, **ਪੰਜਾਬ ਦੀ ਲੋਕਧਾਰਾ**, ਨੈਸ਼ਨਲ ਬੁੱਕ ਟਰੱਸਟ, ਦਿੱਲੀ।
3. ਕਰਨਜੀਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਤੇ ਲੋਕ ਜੀਵਨ**, ਨਵਜੁੱਗ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ।
4. ਕਰਨੈਲ ਸਿੰਘ ਬਿੰਦ, **ਲੋਕਯਾਨ ਤੇ ਮੱਧਕਾਲੀਨ ਸਾਹਿਤ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
5. ਨਵਰਤਨ ਕਪੂਰ, **ਪੰਜਾਬ ਦੇ ਲੋਕ ਤਿਓਹਾਰ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
6. ਜੀਤ ਸਿੰਘ ਜੋਸ਼ੀ, **ਲੋਕਧਾਰਾ ਤੇ ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ**, ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਉਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
7. ਜੋਗਿੰਦਰ ਸਿੰਘ ਕੈਰੋਂ, **ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ ਦਾ ਸੰਰਚਨਾਤਮਕ ਅਧਿਐਨ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
8. ਜਸਵਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ ਸ਼ਾਸਤਰ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ।
9. ਭੁਪਿੰਦਰ ਸਿੰਘ ਖਹਿਰਾ, **ਲੋਕਯਾਨ ਭਾਸ਼ਾ ਤੇ ਸਭਿਆਚਾਰ**, ਪੈਪਸੂ ਬੁੱਕ ਸ਼ਾਪ, ਪਟਿਆਲਾ।
10. ਨਾਹਰ ਸਿੰਘ, **ਲੋਕ ਕਾਵਿ ਦੀ ਸਿਰਜਣ ਪ੍ਰਕ੍ਰਿਆ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।
11. ਗੁਰਮੀਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਦੇ ਕੁਝ ਪੱਖ**, ਦੀ ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਆਪਰੇਟਿਵ ਸੁਸਾਇਟੀ ਲਿਮਟਿਡ, ਲੁਧਿਆਣਾ।
12. ਦਰਿਆ, **ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਧਿਐਨ : ਵਿਭਿੰਨ ਪਾਸਾਰ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

**SEMESTER-V**

**HINDI (ELECTIVE)**

fof'k"V dfo , oa dk0; fl ) ka] dkedkth fgUnh rFkk jhfrdky

I e; &3 ?k. Vs

i w kkZd% 100

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

I D'ku& ,

0; k[; k ds fy, fu/kkZj r Nfr  
jf'ejFkh ½jke/kkj h fl g f nudj ½

I D'ku&ch

रामाधारी सिंह दिनकर का सामान्य परिचय एवं निर्धारित पुस्तक रश्मि रथी से सम्बन्धित प्रश्न।

I D'ku&I h

dk0; fl ) ka-% काव्य की परिभाषा, तत्त्व, प्रकार

कामकाजी हिन्दी के प्रमुख कार्य: प्रारूपण, संक्षेपण, टिप्पण: परिभाषा एवं विधि विशेष, पदनाम शब्दावली (संलग्न)

I D'ku&Mh

jhfrdky% नामकरण, परिस्थितियां, विशेषताएं एवं काव्यधाराओं का केवल संक्षिप्त परिचय।

nl NUn% वसंततिलका, भुजंगप्रयात, वंशस्थ, मालिनी, इन्द्रवज्रा, दोहा, चौपाई, कवित्त, सोरठा, गीतिका।

I gk; d i rd%

1) भारतीय कथा पाश्चात्य काव्यशास्त्र, डॉ. सत्यदेव चौधरी, अशोक प्रकाशन, दिल्ली, 2014

2) हिन्दी साहित्य का इतिहास (भाग-2), रीतिकाल एवं आधुनिक काल, डॉ. अविनाश शर्मा, डॉ. राकेश प्रेम, गुरु नानक देव यूनिवर्सिटी, अमृतसर, 2003

3) आधुनिक हिन्दी व्याकरण, श्री शरण, डॉ. आलोक कुमार रस्तोगी, चिन्तन प्रकाशन, कानपुर, 2001

vaxth iz kkl fud i nukeka ds fgUnh vupkn

1.	Auditor	लेखा परीक्षक
2.	Acting Principal	कार्यवाहक प्राचार्य
3.	Administrator	प्रशासक
4.	Associate Professor	सह आचार्य
5.	Air Hostess	विमान परिचारिका
6.	Attendant	परिचर
7.	Administrator General	महाप्रशासक
8.	Attorney General	महान्यायवादी
9.	Advocate General	महाधिवक्ता
10.	Auditor General	महालेखापरीक्षक
11.	Assistant Commissioner of Police	सहायक पुलिस आयुक्त
12.	Chairman	अध्यक्ष
13.	Chancellor	कुलाधिपति
14.	Vice – Chancellor	कुलपति

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester-V) (Batch 2020-23)  
(Faculty of Languages)

15.	Commissioner	आयुक्त
16.	Controller	नियन्त्रक
17.	Commissioner of Police	पुलिस आयुक्त
18.	Deputy Commissioner	उपायुक्त
19.	Director	निदेशक
20.	Education Officer	शिक्षा अधिकारी
21.	Evaluation Officer	मूल्यांकन अधिकारी
22.	Executive Engineer	कार्यकारी अभियन्ता
23.	Editor in Chief	प्रमुख संपादक
24.	Forest Officer	वन अधिकारी
25.	General Manager	महाप्रबंधक
26.	Honorary Adviser	मानद सलाहकार
27.	Inspector General	महानिरीक्षक
28.	Secretary	सचिव
29.	Joint Secretary	संयुक्त सचिव
30.	Lecturer	प्राध्यापक
31.	Public Relation Officer	जन संपर्क अधिकारी
32.	Proctor	कुलानुशासक
33.	Professor	आचार्य
34.	President's Estate Officer	राष्ट्रपति संपदा अधिकारी
35.	Principal Secretary	प्रधान सचिव
36.	Registrar	कुलसचिव
37.	Surveyor	सर्वेक्षक
38.	Superintendent	अधीक्षक
39.	Supervisor	पर्यवेक्षक
40.	Sales – Incharge	बिक्री प्रभारी
41.	Senior Assistant	वरिष्ठ सहायक
42.	Senior Deputy General	वरिष्ठ उप महाप्रबंधक
43.	Patent Officer	एकस्व अधिकारी
44.	Commissioner For Food and Supply	खाद्य एवं आपूर्ति आयुक्त
45.	Commissioner for Department Enquiry	विभागीय जांच आयुक्त
46.	Additional Station Director	अपर केन्द्र निदेशक
47.	Chief Justice	प्रमुख न्यायवादी
48.	Pro Vice Chancellor	प्रतिकुलपति
49.	Field Assistant	क्षेत्रीय सहायक
50.	Medical Officer	चिकित्सा अधिकारी



**SEMESTER-V**

**Function Hindi (Vocational)**

fglUnh QD' kuy %oksd's kuy½  
dUnh; eU=ky; ka ea fglUnh dk i z; ksx vkj fglUnh I kfgR; dk vk/kfud dky  
I e; % 3 ?ka/s i w kkid% 60

**Instructions for the Paper Setters:-**

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I D' ku&

fu/kkfjr i kB; Øe%

(क) मंत्रालयों, कार्यालयों में नाम तथा पदनाम (शब्दावली साथ सलंगन है)

I D' ku&ch

(ख) dUnh; eU=ky; ka ea fglUnh dk i z; ksx

- गृह
- विदेश
- वित्त
- सूचना व प्रसारण
- संचार
- रक्षा
- विधि
- रेल
- शिक्षा
- वाणिज्य तथा उद्योग
- यातायात व पर्यटन
- स्वास्थ्य और परिवार नियोजन

I D' ku&I h

¼x½ fglUnh I kfgR; dk vk/kfud dky

- परिस्थितियाँ
- नामकरण
- विशेषताएँ

I D' ku&Mh

¼k½ विविध वाद

I gk; d i rda%

- 1) राजभाषा हिन्दी संघर्षों के बीच, हरिबाबू कंसल, सुधांशु बन्धु, प्रकाशन, नई दिल्ली, 1991
- 2) हिन्दी साहित्य का इतिहास (भाग-दो), रीतिकाल एवं आधुनिक काल, गुरु नानक देव यूनिवर्सिटी, अमृतसर, 2003

**SEMESTER-V**  
**Functional Hindi (Vocational)**  
fglnh QD' kuy %okds kuy½

i wkkd% 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के ओर 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z; ksx ds fo"k;

- केन्द्रीय मन्त्रालयों की कोई बैठक तैयार करना।
- दूरदर्शन पर वरिष्ठ अधिकारियों की समूहवार बहस का सारांश तैयार करना।
- समाचार-पत्रों में से किसी केन्द्रीय/राज्य मन्त्री के किसी भाषण का सारांश तैयार करना।
- सरकारी/गैर-सरकारी कार्यालयों में हिन्दी समारोह/हिन्दी-पत्रिका पर पी.पी.टी. तैयार करना।

ea=ky; k; dk; k; y; k; ds uke rFkk i nuke %  
½d½½½ ea=ky; k; ds uke

Ministry of Home Affairs	गृह मंत्रालय
Ministry of Finance	वित्त मंत्रालय
Ministry of Defence	रक्षा मंत्रालय
Ministry of Railways	रेल मंत्रालय
Ministry of External Affairs	विदेश मंत्रालय
Ministry of Information & Broadcasting	सूचना और प्रसारण मंत्रालय
Ministry of Education & Social Welfare	शिक्षा और समाज कल्याण मंत्रालय
Ministry of Law Justice & Company Affairs	विधि, न्याय तथा कम्पनी कार्य मंत्रालय मंत्रालय
Ministry of Law	विधि मंत्रालय
Ministry of Health & Social Welfare	स्वास्थ्य और समाज कल्याण मंत्रालय
Ministry of Food, Agriculture & Irrigation	खाद्य, कृषि तथा सिंचाई मंत्रालय
Ministry of Parliamentary Affairs	संसदीय कार्य मंत्रालय
Ministry of Labour & Industries	श्रम और उद्योग मंत्रालय
Ministry of Steel & Mines	इस्पात और खान मंत्रालय
Ministry of Trade & Commerce	व्यापार और वाणिज्य मंत्रालय
Ministry of Community Development & Cooperation	सामुदायिक विकास तथा सहकारिता मंत्रालय
Ministry of Shipping & Transport	जहाजरानी और परिवहन मंत्रालय

Ministry of Civil Aviation & Tourism	पर्यटन और नागर विमानन मंत्रालय
Ministry of Works, Housing & Supply	निर्माण, आवास और पूर्ति मंत्रालय
Ministry of Irrigation & Power	रसायन तथा उर्वरक मंत्रालय
Ministry of Energy	ऊर्जा मंत्रालय
Ministry of Chemical & Fertilizers	रसायन तथा उर्वरक मंत्रालय
Ministry of Labour	श्रम मंत्रालय
Ministry of International Trade	अन्तर्राष्ट्रीय व्यापार मंत्रालय
Ministry of Science & Technology	विज्ञान तथा प्रौद्योगिकी मंत्रालय
Ministry of Petroleum & Chemicals	पेट्रोलियम और रसायन मंत्रालय
Ministry of Industry & Supply	उद्योग और पूर्ति मंत्रालय
Ministry of Rehabilitation	पुनर्वास मंत्रालय

### विकल्पिक; कल्प; कल्पके

All India Institute of Medical Sciences	अखिल भारतीय आयुर्विज्ञान संस्थान
All India handicrafts Board	अखिल भारतीय हस्तशिल्प बोर्ड
All India Radio	आकाशवाणी
Income Tax Department	आयकर विभाग
Central Ordinance Depot	केन्द्रीय आयुध डिपो
Central Cottage Industries Emporium	केन्द्रीय कुटरी उद्योग एम्पोरियम
Central Bureau of Investigation	केन्द्रीय जांच ब्यूरो
Central Telegraph Office	केन्द्रीय तारघर
Central Reserve Police	केन्द्रीय रिजर्व पुलिस
Central Vigilance Commission	केन्द्रीय सतर्कता आयोग
Central Social Welfare Board	केन्द्रीय समाज कल्याण बोर्ड
Central Statistical Organisation	केन्द्रीय सांख्यिकीय संगठन
Central Hindi Directorate	केन्द्रीय हिन्दी निदेशालय
Oil & Natural Gas Commission	तेल तथा प्राकृतिक गैस कमीशन
Army Head Quarters	थल सेना मुख्यालय
Naval Head Quarters	नौ सेना मुख्यालय
Department of Atomic Energy	परमाणु ऊर्जा विभाग
Department of Transport & Shipping	परिवहन तथा जहाजरानी विभाग
Supreme Court of India	भारत का उच्चतम न्यायालय
Life Insurance Corporation of India	भारतीय जीवन बीमा निगम
Archaeological Survey of India	भारतीय पुरातत्त्व सर्वेक्षण
Indian Standards Institute	भारतीय मानक संस्थान
National Archives of India	भारतीय राष्ट्रीय अभिलेखागार
Survey of India	भारतीय सर्वेक्षण
Cabinet Secretariat	मंत्रिमण्डल सचिवालय
Accountant General Central Revenue	महालेखाकार केन्द्रीय राजस्व
Accountant General Post & Telegraphs	महालेखाकार डाक-तार
Metropolitan Council	महानगर परिषद्
Printing & Stationery Department	मुद्रण तथा लेखन विभाग
Planning Commission	योजना आयोग
Official Language Commission	राजभाषा आयोग
State Trading corporation	राज्य व्यापार निगम

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester-V) (Batch 2020-23)  
(Faculty of Languages)

National Physical Laboratory	राष्ट्रीय भौतिक प्रयोगशाला
National Small Scale Industries Coporation	राष्ट्रीय लघु उद्योग निगम
National Council of Education Research and Training	राष्ट्रीय शैक्षिक अनुसंधान तथा प्रशिक्षण परिषद्
Accountant	लेखाकार
Auditor	लेखा परीक्षक

### Mkd&rkj

Post Master General	डाक महाध्यक्ष
Director (Post Offices)	निदेशक (डाक)
Senior Superintendent Post Office	प्रवर डाक अधीक्षक
Post Master	डाकपाल
Postman	डाकिया

**SEMESTER-V**

**Hindi Patrakarita (Vocational)**

fgllnh i =dkfj rk %oksd's kuy%  
fgllnh Qks/ks i =dkfj rk vksj i d' dkuuu

I e; % 3 ?ka/s

i wkkd% 60

**Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

fu/kkfj r i kB; Øe%

I D' ku&,

Qks/ks i =dkfj rk

- फोटो पत्रकारिता : आरम्भ
- फोटो पत्रकारिता : अर्थ, परिभाषा और महत्त्व
- फोटो पत्रकारिता : विशेषताएँ
- फोटो पत्रकारिता : फोटोग्राफी के लिए आवश्यक उपकरण

I D' ku&ch

फोटो पत्रकारिता : लेखन के सिद्धांत/विशेषताएँ

- फोटो पत्रकारिता : छायांकन कला के प्रमुख बिन्दु

I D' ku&I h

Qks/ks i =dkfj rk : कैमरा उपकरण और उसके रख-रखाव के निर्देश

- फोटो पत्रकारिता : पत्र-पत्रिकाओं के लिए चित्रों का चयन और संपादन कला
- फोटो पत्रकारिता : चित्र-प्रेषण के प्रकार

I D' ku&Mh

i d' dkuuu

- मानहानि
- न्यायालय की अवमानना
- भारतीय सरकारी रहस्य अधिनियम (1923)
- औषधि और चमत्कारी उपकार कानून
- एकांतता का कानून (1957)
- प्रेस एवं पुस्तक पंजीकरण नियम (1867)
- प्रेस एवं संसदीय विशेषाधिकार
- श्रमजीवी पत्रकार : कानून (1955)

I gk; d i rda%

- 1) पत्रकारिता पहचान और प्रशिक्षण, हरिमोहन लाल सूद, डॉ. देवेन्द्र कुमार, वागीश प्रकाशन, जालन्धर, 2004
- 2) समाचार लेखन एवं संपादन, नवीन चंद्र पंत, कनिष्का पब्लिशर्स, डिस्ट्रीब्यूटर्स, दिल्ली, 2001
- 3) हिन्दी पत्रकारिता, रीति, नीति एवं वृत्ति, डॉ. जितेन्द्र वत्स, निर्मल पब्लिकेशन, दिल्ली, 2008
- 4) रेडियो और दूर-दर्शन पत्रकारिता, डॉ. हरिमोहन, तक्षशिला प्रकाशन, नई दिल्ली, 2006

**SEMESTER-V**  
**Hindi Patrakarita (Vocational)**

fgllnh i =dkfj rk %oksd's kuy½  
i z; ksx vksj ekf [kdh

i wkkz d% 40

- विद्यार्थियों को प्रति समस्तर 40 अंक की प्रयोग-पुस्तिका तैयार करनी होगी। जिसमें 20 अंक मौखिक परीक्षा के और 20 अंक प्रयोग-पुस्तिका के होंगे।
- प्रयोग-पुस्तिका का आकलन और मौखिक-परीक्षा गुरु नानक देव विश्वविद्यालय द्वारा निर्धारित परीक्षा-नियमों के अनुसार की जाएगी।

i z; ksx ds fo"k;

- विषय – फोटोग्राफी के विभिन्न उपकरणों की जानकारी देना।
- पत्र – पत्रिकाओं से विभिन्न चित्रों का चयन और संकलन करना।
- कैमरे की प्रचलित किस्मों के बारे में जानकारी दें।
- कैमरे के अवयव किस प्रकार कार्य करते हैं इसकी जानकारी देना।

**SEMESTER-V****PHYSICAL EDUCATION****Time 3 hours****Maximum mark: 100**  
**Theory mark: 60**  
**Practical Marks: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION-A**

1. Recreation: Meaning and Importance of Recreation.
2. Aims and objectives of recreation.
3. Types and Principles of recreation.
4. Agencies providing recreation in India.

**SECTION-B**

5. Intramural and Extramural Sports Competitions and their Importance.
6. Muscular contraction: Eccentric, Concentric, Motor unit, Isotonic, Isometric, Isokinetic Exercises.
7. Laws of motion, Lever and its types, Equilibrium, Its types and Laws, Centre of Gravity, Force and its types.

**SECTION-C**

8. Posture: Meaning and Types of postures.
9. Postural-Deformities: Spinal Foot and Knock-Knees, Their Causes and Corrective Exercises.

**SECTION-D**

10. Meaning and Aims of Sports Training.
11. Principles of Sports Training.
12. Normal Load, Creast Load, Over Load.
13. Meaning and Importance of Warming up and Cooling down in sports.

**SEMESTER-V**

**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 ----- 800M, Triple Jump for Boy  
800M, Triple Jump for Girls
- Games (Boys & Girls) ----- Fundamentals, Rules, Performance  
Basketball, Judo

**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.