SYLLABUS

FOR

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

Examinations: 2019–20

GURU NANAK DEV UNIVERSITY
AMRITSAR

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(ii) Subject to change in the syllabi at any time.
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### INDEX OF SEMESTER–IV

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Subject</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>FACULTY OF ARTS &amp; SOCIAL SCIENCES</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Political Science</td>
<td>4-5</td>
</tr>
<tr>
<td>2.</td>
<td>History</td>
<td>6-7</td>
</tr>
<tr>
<td>3.</td>
<td>Journalism and Mass Communication (Vocational)</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>Mass Communication and Video Production (Vocational)</td>
<td>9-10</td>
</tr>
<tr>
<td>5.</td>
<td>Sociology</td>
<td>11</td>
</tr>
<tr>
<td>6.</td>
<td>Psychology</td>
<td>12-13</td>
</tr>
<tr>
<td>7.</td>
<td>Defence and Strategic Studies</td>
<td>14-17</td>
</tr>
<tr>
<td>8.</td>
<td>Geography</td>
<td>18-21</td>
</tr>
<tr>
<td>9.</td>
<td>Public Administration</td>
<td>22</td>
</tr>
<tr>
<td>10.</td>
<td>Women Empowerment</td>
<td>23</td>
</tr>
<tr>
<td>11.</td>
<td>Punjab History &amp; Culture (From 1605 to 1849 A.D)</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>(Special Paper in lieu of Punjabi compulsory)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(For those students who are not domicile of Punjab)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>FACULTY OF ECONOMICS &amp; BUSINESS</strong></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Economics</td>
<td>25</td>
</tr>
<tr>
<td>13.</td>
<td>Industrial Economics</td>
<td>26</td>
</tr>
<tr>
<td>14.</td>
<td>Quantitative Techniques</td>
<td>27</td>
</tr>
<tr>
<td>15.</td>
<td>Agricultural Economics and Marketing</td>
<td>28-29</td>
</tr>
<tr>
<td>16.</td>
<td>Rural Development</td>
<td>30</td>
</tr>
<tr>
<td>17.</td>
<td>Office Management and Secretarial Practice (Vocational)</td>
<td>31-32</td>
</tr>
<tr>
<td>18.</td>
<td>Travel and Tourism</td>
<td>33-34</td>
</tr>
<tr>
<td>19.</td>
<td>Tourism and Hotel Management (Vocational)</td>
<td>35</td>
</tr>
<tr>
<td>20.</td>
<td>Tax Procedure and Practice (Vocational)</td>
<td>36-37</td>
</tr>
<tr>
<td>21.</td>
<td>Advertising Sales Promotion and Sales Management (Vocational)</td>
<td>38-39</td>
</tr>
<tr>
<td>22.</td>
<td>Commerce</td>
<td>40-41</td>
</tr>
<tr>
<td>23.</td>
<td>Tourism and Travel Management (Vocational)</td>
<td>42-43</td>
</tr>
</tbody>
</table>
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)

<table>
<thead>
<tr>
<th>FACULTY OF SCIENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Mathematics</td>
<td>44-45</td>
</tr>
<tr>
<td>25. Statistics</td>
<td>46-48</td>
</tr>
<tr>
<td>26. Chemistry</td>
<td>49-53</td>
</tr>
<tr>
<td>27. Physics</td>
<td>54-57</td>
</tr>
<tr>
<td>29. Cosmetology (Vocational)</td>
<td>60-61</td>
</tr>
<tr>
<td>30. Clinical Nutrition and Dietetics (Vocational)</td>
<td>62-66</td>
</tr>
<tr>
<td>31. Fashion Designing and Garments Construction (Vocational)</td>
<td>67-68</td>
</tr>
<tr>
<td>32. Early Childhood Care and Education (Vocational)</td>
<td>69-71</td>
</tr>
<tr>
<td>33. Food Science and Quality Control (Vocational)</td>
<td>72-73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF VISUAL ARTS &amp; PERFORMING ARTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>34. Fine Arts</td>
<td>74-77</td>
</tr>
<tr>
<td>35. Gemology and Jewellery Design (Vocational)</td>
<td>78-80</td>
</tr>
<tr>
<td>36. Still Photography and Audio Production (Vocational)</td>
<td>81-83</td>
</tr>
<tr>
<td>37. Applied Art</td>
<td>84-85</td>
</tr>
<tr>
<td>38. Sculpture</td>
<td>86-87</td>
</tr>
<tr>
<td>39. Music (Vocal)</td>
<td>88-89</td>
</tr>
<tr>
<td>40. Music (Instrumental)</td>
<td>90-91</td>
</tr>
<tr>
<td>41. Indian Classical Dance</td>
<td>92-94</td>
</tr>
<tr>
<td>42. Tabla</td>
<td>95-97</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF ENGINEERING &amp; TECHNOLOGY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>43. Computer Science</td>
<td>98-99</td>
</tr>
<tr>
<td>44. Information Technology (Vocational)</td>
<td>100-101</td>
</tr>
<tr>
<td>45. Computer Maintenance (Vocational)</td>
<td>102-103</td>
</tr>
<tr>
<td>46. Computer Applications (Vocational)</td>
<td>104-107</td>
</tr>
<tr>
<td>47. Information Technology (Specilization Software Development) (Vocational)</td>
<td>108-109</td>
</tr>
<tr>
<td>48. Automobile Maintenance (Vocational)</td>
<td>110-111</td>
</tr>
<tr>
<td>49. Refrigeration &amp; Air Conditioning (Vocational)</td>
<td>112-113</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF HUMANITIES &amp; RELIGIOUS STUDIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>50. Religious Studies (यज्ञ अधिष्ठित)</td>
<td>114-115</td>
</tr>
<tr>
<td>51. Philosophy</td>
<td>116-119</td>
</tr>
</tbody>
</table>
B.A./B.Sc. (Semester System) *(12+3 System of Education) (Semester–IV) (Session 2019-20)*

<table>
<thead>
<tr>
<th>FACULTY OF LIFE SCIENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>52. Zoology</td>
<td>120-125</td>
</tr>
<tr>
<td>53. Botany</td>
<td>126-128</td>
</tr>
<tr>
<td>54. Microbiology</td>
<td>129-130</td>
</tr>
<tr>
<td>55. Industrial Microbiology (Vocational)</td>
<td>131-133</td>
</tr>
<tr>
<td>56. Microbial &amp; Food Technology</td>
<td>134-135</td>
</tr>
<tr>
<td>57. Bioinformatics (Vocational)</td>
<td>136-139</td>
</tr>
<tr>
<td>58. Biotechnology (Vocational)</td>
<td>140-141</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF EDUCATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>59. Education</td>
<td>142</td>
</tr>
<tr>
<td>60. Human Rights</td>
<td>143</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF AGRICULTURE &amp; FORESTRY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>61. Dairy Farming (Vocational)</td>
<td>144-145</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF LANGUAGES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>62. Russian</td>
<td>146-148</td>
</tr>
<tr>
<td>63. French</td>
<td>149-151</td>
</tr>
<tr>
<td>64. Urdu</td>
<td>152</td>
</tr>
<tr>
<td>65. Persian</td>
<td>153</td>
</tr>
<tr>
<td>66. Sanskrit (Elective)</td>
<td>154-155</td>
</tr>
<tr>
<td>67. Functional Sanskrit (Vocational)</td>
<td>156</td>
</tr>
<tr>
<td>68. English (Compulsory)</td>
<td>157</td>
</tr>
<tr>
<td>69. English (Elective)</td>
<td>158-159</td>
</tr>
<tr>
<td>70. Functional English (Vocational)</td>
<td>160-161</td>
</tr>
<tr>
<td>71. Punjabi (Compulsory) (पंजाबी सम्पन्न)</td>
<td>162</td>
</tr>
<tr>
<td>72. Punjabi (Elective) (पंजाबी दिलचस्प)</td>
<td>163</td>
</tr>
<tr>
<td>73. Functional Punjabi (पंजाबी दिलचस्पी) (Vocational)</td>
<td>164-165</td>
</tr>
<tr>
<td>74. मेंड़ली उम्मीदी (in lieu of Punjabi Compulsory)</td>
<td>166-167</td>
</tr>
<tr>
<td>75. Hindi (Elective)</td>
<td>168</td>
</tr>
<tr>
<td>76. Functional Hindi (Vocational)</td>
<td>169-179</td>
</tr>
<tr>
<td>77. Hindi Patrakarita (Vocational)</td>
<td>180-182</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACULTY OF PHYSICAL EDUCATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>78. Physical Education</td>
<td>183-184</td>
</tr>
</tbody>
</table>
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20) (Faculty of Arts & Social Sciences)

SEMESTER–IV
POLITICAL SCIENCE

INDIAN POLITICAL SYSTEM

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
2. National Political Parties (Indian National Congress – BJP, CPI, CPI (M), their organisation, Ideologies and electoral performance.
3. Regional Political Parties (SAD, and DMK,): Their Organisation, Ideologies and Electoral Performance.

SECTION–B
3. Political Participation: Determinants and levels of Political Participation.

SECTION–C
1. Caste and Religion in Indian Politics.
2. Regionalism and Indian politics.
3. Emerging trends in Indian Politics.

SECTION–D
1. Basic principles and determinants of Indian Foreign Policy.
2. Policy of Non-alignment and its relevance in contemporary world.

Books Recommended:
20. *Indian Journal of Political Sciences*
21. *Punjab Journal of Politics*
22. *Seminar*
SEMESTER–IV
HISTORY
HISTORY OF THE PUNJAB (AD 1469-1799)

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. Sources: Geographical and Physical features, Historical literature in Persian and Punjabi; Religious literature; Administrative records and documents; European travellers' accounts, Non-literary sources: numismatics and paintings; Socio-Religious condition of the Punjab around 1500 A.D. : The Sunnis; the Shias; the Sufis, the Brahmans; the Jogis; the Vaishnava bhakti and the saints.

2. Foundation of Sikh Panth: Guru Nanak Dev and his Teachings: Early life, Conception of God, Importance of the Guru, Insistance on right conduct and earnest profession; Institution of community kitchen (Langer) and Congregational worship (sangat), Succession to Guruship.

SECTION–B

4. Transformation of the Sikh Panth: Guru Hargobind to Guru Tegh Bahadur: Martyrdom of Guru Arjan Dev and Guru Hargobind's response; Armed conflict with the state; Circumstances leading to the accession and martyrdom of Guru Tegh Bahadur.

SECTION–C
5. Creation of Khalsa: Meaning; Circumstances leading to the creation of the Khalsas (1699); New Social order; Conflict with the Hill chiefs and Mughal administrators; Legacy.

6. Banda Bahadur: Early life of Banda Bahadur and his meeting with Guru Gobind Singh; His political activities up to the conquest of Sarhind; Establishment of an independent rule; Imperial campaign against Banda.

SECTION–D
7. Political Struggle (1716-48): Position of the Sikhs; Repression and conciliation by the Mughal governors, Abdus Samad Khan and Zakaria Khan (1716-1745), Ghallughara, Sikh-Afghan struggle (1752-65); Occupation of Lahore, the striking of the coin; Causes of Sikh success against the Mughals and Afghans; Leading Sardars and Territories: Nawab Kapur Singh; Jassa Singh Ahluwalia; Bhangis; Jassa Singh Ramgarhia; Charat Singh and Mahan Singh; Jai Singh Kanhaya; Ala Singh.
8. **Political Organisations of the Sikhs in the 18th Century:** Rakhi; Dal Khalsa; Gurmata, Misl. Emergence of new rulers and their military resources; Administrative arrangements; Land revenue; Administrative of Justice.

**Suggested Reading:**
3. ________, *Guru Nanak in History*, Panjab University, Chandigarh, 1969.
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

Traditional and Folk Media: Characteristics, Role in the age of Electronic Media.

SECTION–B

Television: Characteristics, Objectives of the medium, Educational TV, Satellite Invasion and Cable Television, Internet.

SECTION–C

Photography: Introduction to Photography, Aperture setting, Shutter speed
Types of cameras
Types of lens
Qualities of a good photograph: framing, Lighting control, depth of field, rule of thirds

SECTION–D

Types of shots and angles
Photojournalism: Qualities of a good photo journalist, ethics of photo journalism
Photo editing techniques, photo features

Books Recommended:-

(PRACTICAL)

Preparing an album of minimum 20 photographs on the given topics.
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Arts & Social Sciences)

SEMESTER–IV
MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)
INTRODUCTION TO MEDIA
(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
Role & Impact of Media in Different Socio-Economic & Political Systems/Freedom of Press

Press & Registration of Books Act, 1867, Public Libraries Act

SECTION–B
Advertising: Meaning & Concept, Role & Importance, Types of Ads, Advertising Agency
Advertising Budget, Advertising Designing & Layout

SECTION–C
Public Relations: Meaning & Concept, Role & Importance, Qualities to Good PRO
Tools/Technique of PR, PR in Government, Public & Private Sector

SECTION–D
Difference between PR & Advertising Propaganda, Publicity & Public Opinion
Cinematograph Act, censorship in India
SEMESTER–IV

MASS COMMUNICATIONS & VIDEO PRODUCTION (VOCATIONAL)
INTRODUCTION TO MEDIA
(PRACTICAL)

Marks: 20

Making of an ad (Print & Audio-Visual)
Making of Press note/ Press releases

Books Recommended:

SOCIAL CHANGE IN INDIA

Time: 3 Hours  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) Social Change: Meaning and Forms: Evolution, Revolution, Progress and Development.

SECTION–B

SECTION–C

SECTION–D
b) Challenges of Social Change: Dowry, Domestic Violence, Divorce, Problems of elderly, Female foeticide.

Books Recommended:
SEMIESTER--IV

PSYCHOLOGY

EXPERIMENTAL PSYCHOLOGY--II
(THEORY)

Time: 3 Hours
Pass Marks: 35% of the subject
(Max. Marks: 100)
(Theory and Practical Separately)
(Pass Marks: 35% of the subject)
(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
Psychophysics: Concept of Psychophysics, Physical V/S Psychological continua, Point of
Subjective Equality, Weber- Fechner law, Concept of Absolute and Differential Thresholds,
Determination of AL and DL by Methods of Limits, Method of Constant Stimuli & Method of
Average Error

SECTION--B
Memory: Concept and Nature, Encoding, Storage, Retrieval, Types of Memory
Mneumonics: An Introduction to the concept of Mneumonics, Constructive memory, Implicit
memory & Eyewitness memory. Methods of Retention
Forgetting: Concept and Nature, Factors affecting Forgetting, Theories of Forgetting (Decay,
Interference and Retrieval failure)

SECTION--C
Thinking and Problem Solving: Nature and Types of Thinking. Nature of Problem Solving, Stages
of Problem Solving, Factors, Role of Set in Problem Solving
Concept Formation: Nature, Types and Processes

SECTION--D
Correlation: Concept, Types of Correlation, Nature and Characteristics, Rank Order and Product
Moment Methods (Numericals for Individual data), Chi-square Test

References:
   Hill Company, New Delhi, 1970.
3. Woodworth, R.S. and Schlosberg, H.: Experimental Psychology, New York; Holt, Rinehart and
   Winston Inc. 1954.
   Worth.
Instructions for the Practical Examination:

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

Five Practicals have to be performed out of the following:

1. Measurement of Differential Threshold
2. Recall Vs Recognition Method
3. Retroactive inhibition
4. Problem-Solving
5. Concept formation.
6. Immediate Memory Span
SEMMESTER–IV
DEFENCE AND STRATEGIC STUDIES

EVOLUTION OF WARFARE IN 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 paper shall be of 100 marks. For the private students, each question will be of 20 marks.

SECTION–A
1. Macedonian and Indian Military Organisation and techniques of fighting with particular reference to the Battle of Hydaspes, 326 B.C.:
   (a) Macedonian and Indian Military organisations.
   (b) Battle of Hydaspes.
      i) Introduction
      ii) Opposing forces and their deployment.
      iii) Description of the battle.
      iv) Analysis (strategy, tactics, application of Principles of war and causes of defeat and victory).

2. Kautilya's Philosophy of War
   i. Diplomacy and Strategy.
   ii. The Institution of Spies.
   iii. Army Organisation.
   iv. Mode of Warfare.
   v. Forts: Type & role.
SECTION–B

3. **Military organizations and techniques of fighting of Rajputs and Turks with particular reference to the Battle of Terrain 1192 A.D.:**
   (a) Military organisations of Rajputs and Turks.
   (b) Battle of Terrain.
      i) Introduction
      ii) Opposing forces and their deployment
      iii) Description of the battle
      iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory).

4. **Military organizations and techniques of fighting of Mughals and Afghans with particular reference to the First Battle of Panipat 1526 AD.:**
   (a) Military organisations of Mughals and Afghans.
   (b) First Battle of Panipat.
      i) Introduction
      ii) Opposing forces and their deployment
      iii) Description of the battle
      iv) Analysis (strategy, tactics, application of principles of war and causes of defeat and victory)

SECTION–C

5. **Fighting techniques of Southern Muslim Sultans with particular reference to the Battle of Talikota, 1568 A.D.**
   i) Introduction
   ii) Opposing forces and their deployment
   iii) Description of the battle
   iv) Analysis (strategy, tactics, application of principles of War and causes of defeat and victory)

6. **Military Organisations of Marathas under Shivaji and his techniques of fighting:**
   i) Shivaji as a military leader.
   ii) Higher Defence Organisation.
   iii) Military Organisation.
   iv) Techniques of Fighting.

SECTION–D

7. **Military organisation of Sikh Army and its fighting techniques under Maharaja Ranjit Singh :**
   i) Maharaja Ranjit Singh as a Military leader.
   ii) Growth and development of the Sikh Army from (1799-1849).
   iii) Organisation of the Army.
   iv) Fighting techniques of the Sikh Army strategies and tactics.
8. Anglo-Maratha and Anglo-Sikh Warfare with particular reference to the Battles of Assaye, 1803 A.D. and Chillianwala, 1849 A.D.:
   (a) Battle of Assaye
      i) Introduction
      ii) Opposing forces and their deployment.
      iii) Description of the battle.
      iv) Analysis (strategy, tactics application of principles of War and causes of defeat and victory).
   (b) Battle of Chillianwala
      i) Introduction
      ii) Opposing forces and their deployment.
      iii) Description of the battle.
      iv) Analysis (strategy, tactics application of principles of War and causes of defeat and victory).

Suggested Readings:

1. Alfred, David (1953) Indian Art of War, Atma Ram, Delhi.
SEMESTER–IV
DEFENCE AND STRATEGIC STUDIES

EVOLUTION OF WARFARE IN INDIA
(PRACTICAL)

Time: 3 Hrs.  
Marks: 20
Written: 10
Discussion: 05
Record & Viva-Voce: 05

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

A. WRITTEN TEST  
(i) Bearing: Definition & Types  
(ii) Interconversion of Bearing in detail.  
(iii) Service protactor: Its type and uses.

B. TOPICS FOR DISCUSSION/PRESENTATION  
(i) Strategy & Tactics of Alexender the Great in the Battle of Hydaspes.  
(ii) Impact of Industrial Revolution on Land Warfare  
(iii) Military Leadership of Maharaja Ranjit Singh.  
(iv) Principles of Napoleonic Warfare.

C. RECORD AND VIVA-VOCE  
Marks: 05
SEMESTER–IV
GEOGRAPHY

GEOGRAPHY OF PUNJAB
(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.

Objective:
1. To understand the regional setting of Punjab State in detail through physical and political maps.
2. To examine the pattern of select population characteristics.
3. To study the distribution of major crops, industries and transport links in the state.
4. To understand the intra regional variations in the select aspects.

SECTION–A
Location, Evolution of the State, Administrative Divisions. Relief, Drainage, Climate, Soils, Vegetation, Mineral and Power Resources.

SECTION–B
Population: Numbers, distribution, density, growth (birth rate, death rate and migration), religious composition, urbanization.
Agriculture: Main characteristics including green revolution, irrigation, main crops (wheat, rice, cotton, sugarcane) and their distribution, agricultural marketing, livestock and dairying, problems of agriculture.

SECTION–C
Industries: Main characteristics, distribution pattern of major industries (cotton textile, sugar, hosiery, engineering) industrial concentration, problems of industrialization.
Transport and Trade: Road, rail and their transport; Inter-State trade.

SECTION–D
Regional Geography of Majha, Doaba, Malwa and major characteristics of each region.
Books Recommended:

Essential Readings:


Further Readings:

Time: 3 Hours

Objective:
1. To apprise the students with symbolization of different types of geographical data and depiction of various spatial data.
2. To provide training in application of various graphical methods of depicting geographic data.
3. To train the students to interpret the topographical sheets at different scales.

Course Contents:

SECTION–A

Construction and Significance of the following:

a) Columnar Diagrams: Simple, superimposed, composite.
b) Graphs: Line graphs, climograph, hythergraph, erograph, wind rose.

SECTION–B

Topographical Maps: Significance of topographical maps in geographical studies. Study and Interpretation of topographical Maps of India (two sheets: one representing a hilly/mountainous tract and the other a plain tract).

Basic Introduction to Remote Sensing and GIS (Geographical Information System).

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

Essential Readings:

Further Readings:
SEMMESTER–IV
PUBLIC ADMINISTRATION
FINANCIAL ADMINISTRATION

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
Nature and Scope of Financial Administration
Objectives and Principles of Financial Administration.

SECTION–B
Budgetary System
Meaning, Purpose and Principles of Budget—Budget as a tool of Administration.
Preparation of Budget.
Enactment of Budget.
Execution of Budget.

SECTION–C
Performance Budgeting.
Zero-Base Budgeting.
Legislative Control over Finance:
Role of Financial Committees: Public Accounts Committee, Estimates Committee; Committee on Public Undertakings.

SECTION–D
Organization of Ministry of Finance; Department of Finance in Punjab; Audit: Meaning and Significance; Comptroller and Auditor General.

Suggested Readings:
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)
(Faculty of Arts & Social Sciences)

SEMESTER–IV
WOMEN EMPOWERMENT

WOMEN RIGHTS AND LEGAL REFORMS:
IDEOLOGIES AND PRACTICE

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

Women Rights:

SECTION–B

Women Rights and Marriage Laws
1. Sources of Hindu Law; Concept of Marriage under Hindu Marriage Act 1955, Special Marriage Act 1954.
2. Sources of Muslim Law: Classification of Marriage and Ceremonies of Marriage.

SECTION–C

1) Hindu Adoption & Maintenance Act 1956
2) Hindu Succession Act 2005
3) Muslim law regarding Maintenance and Succession.

SECTION–D

Women Rights: Role of Civil Society and NGO's
1. Civil Society, women and gender issues.
2. NGO's in India and the challenges for Women Empowerment.
3. National Alliance of Women's Organization (NAWO) and its achievements.
4. CEDAW and its implementation in India.
SEMESTER–IV
Punjab History & Culture (From 1605 to 1849 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. Politicization of Sikhism under Guru Hargobind.
2. Martydom of Guru Teg Bahadur

SECTION–B
3. Creation of Khalsa
4. Khalsa and its impact on the Punjab

SECTION–C
5. Rise of Banda Bahadur and his achievements.
6. Rise of Misl

SECTION–D
7. Ranjit Singh’s rise to power; Civil, Military and Land Revenue Administration.
8. Art and Architecture, Fair, Festivals and Folk Music in the Punjab during the medieval period.

Suggested Readings
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
Commercial Policy: Free trade vs. protection, rationale of a protectionist policy in less developed area. GATT & WTO (Introductory).

SECTION-B
Balance of Payments: Meaning and components of balance of payments, Methods for correcting adverse balance of payments, devaluation and direct control.
Rate of Exchange: Meaning and determination, Fixed and flexible exchange rates.

SECTION-C
Public Finance: Nature, scope importance.
Public Expenditure: Meaning, principles, importance, effect of public expenditure on production and distribution.

SECTION-D
Taxes: Meaning, classification, features of a good taxation system, canons of taxation, incidence and impact of taxation.
Public Debt: Meaning, objectives, importance, its burden.

Recommended Texts
6. Taylorm Philip: The Economics of Public Finance.
SEMMESTER–IV

INDUSTRIAL ECONOMICS-IV

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
Theories of Industrial Location : Contribution of Weber, Sargent Florence and Plander. Factors affecting industrial location. Location policy in India since independence.

SECTION–B
Patterns of industrialization, Centralised versus Balanced regional development. Industrial concentration and dispersal in India - Methods of measurement.

SECTION–C
Measures to control industrial concentration; licensing, SEBI; controlling monoplies and restrictive trade practices: MRTPA and new competition policy.

SECTION–D
Foreign Exchange Regulation Act and FEMA; Privatization: Forms and evidence. Industrial incentives and disincentives.

Recommended Books:

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Economics & Business)

**SEMESTER–IV**

**QUANTITATIVE TECHNIQUES-IV**

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**

**Multiple Linear Regression:** Concepts, Estimation and Applications (without derivations) of: Partial and Multiple Correlation.

**Non-Linear Regression:** Quadratic and Exponential; Estimation of Fitting of Various Growth Curves (Modified Exponential, Gempertz and Logistic).

**SECTION–B**

**Probability:** Definition, Additive & Multiplicative Laws and their Applications, Bayes Theorem, Concept of Random Variable, Probability Mass Function & Density Function, Mathematical Expectation (meaning and properties), Moments elementary treatment.

**SECTION–C**

**Theoretical Probability Distributions:** Derivations of the properties of Binomial, Poisson, Normal, Beta and Gamma Distributions.

**SECTION–D**


**Books Recommended:**

SEMMTER–IV
AGRICULTURAL ECONOMICS & MARKETING

ARGRICULTURAL MARKETING-II

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

Concept of Marketing; Marketed and marketable surplus, Structure conduct and performance of agricultural marketing, Supply chains.

SECTION–B

Marketing margin, spread and various channels of markets of different foodgrains.
Food grains marketing system in India, its efficiency with special reference to Punjab.

SECTION–C

State intervention in food grains marketing, Role of different agencies (FCI, PUNSUP, MARKFED, State Deptt.) and the impact on market efficiency.

SECTION–D

Financing of Agricultural Markets, Role of Directorate of Marketing and inspection. Role of State Marketing Board, Public Private Partnership in Marketing.
Recommended Texts:

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

SECTION–B
Weeds and losses caused by the Common Kharif and Rabi. Weeds and methods of their control. Role of water in crop production for irrigation requirement of important crops.

SECTION–C
Scientific production of food crops, rice, maize, wheat and gram with special reference to their varieties, seed bed preparation, seed rate, method of sowing, weed control, irrigation and fertilizer requirement.

SECTION–D
Scientific production of other crops, cotton, groundnut, sugarcane, raja and barseem harstem with special reference to their varieties, seed bed preparation, seed rate, method of sowing, weed control, irrigation and fertilizer requirement.
COMMUNICATION AND BUSINESS CORRESPONDENCE

Time: 3 Hrs.  
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
Communication – Meaning, objectives of effective communication. Process of Communication, Types of Communication (verbal & Non Verbal), Importance of Communication, Different forms of Communication, Barriers to Communication Causes, Linguistic Barriers, Psychological Barriers, Interpersonal Barriers, Cultural Barriers, Physical Barriers, Organizational Barriers

SECTION–B
Business Correspondence – Meaning, importance, qualities of good business correspondence. Structure and layout of business letters and types of business letters. Letter Writing, presentation, Inviting quotations, Sending quotations, Placing orders, Inviting tenders, Sales letters, claim & adjustment letters and social correspondence,

SECTION–C

SECTION–D
Report Writing Business reports, Types, Characteristics, Importance, Elements of structure, Process of writing, Order of writing, the final draft, check lists for reports. Oral presentation importance, characteristics, Presentation Plan, Power Point Presentation, Visual aids.
SEMESTER–IV

OFFICE MANAGEMENT AND SECRETARIAL PRACTICE (VOCATIONAL)

COMMUNICATION AND BUSINESS CORRESPONDENCE

(PRACTICAL)  
 Marks: 40

1. Drafting various business letters.  
2. Developing Power Point presentations and making presentations.  
3. Floating tenders & quotations.  
4. Handling social correspondence.  
5. Handling letters of business enquiries & replies.  
6. Handling correspondence with banks, Insurance companies and public authorities etc.  
7. Drafting various business reports.

Suggested Readings
7. Shirley Taylor, Communication for Business, Pearson Education  
SEMMER–IV
TRAVEL AND TOURISM

TOURISM MARKETING AND TRAVEL AGENCY BUSINESS

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
Tourism Product: Principles and concepts of marketing, Meaning and nature of tourism marketing, How tourism marketing is different from the marketing of other products, Marketing mix, Market research vs. Marketing research.
Pricing: Marketing vs. Selling, Consumer behavior, Buyer decision making process, Segmentation, targeting and positioning, Pricing strategies.

SECTION–B
Tour Packaging: Concept and characteristics, Methodology and pricing of tour packaging, Designing and printing of tour brochure.
Marketing of Packaged Tours: Marketing in different sectors of tourism, Leisure and hospitality.

SECTION–C
Travel Agency Business: Linkages in tourism and other sectors - travel agency, transportation, accommodation, food, nutrition and catering, Travel agency and its role in the tourism development, Functions and organizational structure of a travel agency and the tour operators.

Travel Agents: Types of travel agents and their responsibilities; Procedures for becoming a travel agent and tour operator in India. Method of getting IATA recognition and the advantages enjoyed by an IATA recognized travel agent.

SECTION–D
Transportation: Transportation and tourism development; Role of transportation in the growth of travel agency and tour operator business in India.
Accommodation: Accommodation and tourism; Types of accommodation and their organization.
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20) (Faculty of Economics & Business)

Suggested Readings:

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

Role of Various agencies in growth of Tourism like Central and State Government and Private Players; Positive and Negative impact of Tourism.

SECTION–B

Tourism Products: Meaning or concept, how they are different from other consumer products. Facilities: Hostels, Transport—Air, Rail, Road and Water.

SECTION–C

Technical Terminology of Tourism. Tourist Attractions: Tourist destinations or places and tourist spots having tourist value from heritage spots, having tourist value from heritage or historical points of view or sports and recreational point of view, dance, fair festivals, trade fair, conferences and exhibitions, etc.

SECTION–D

Tourism Promotions: The Price of the Product, Tourist Markets, Characteristics of the Travel Market, Classification of Travellers, Obstacles of Travel Trade, The Demand for Travel, Tourism Marketing in India, Tourist Transport, Travel Trade, Hotel Marketing, Tourist Destinations. Domestic Tourism: Benefits of Domestic Tourism, Domestic Tourism in India, Hotels and Domestic Tourism, Difficulties of Domestic Tourism boosting Domestic Tourism.
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20) (Faculty of Economics & Business)

SEMESTER–IV
TAX PROCEDURE & PRACTICE
(VOCATIONAL)

TAX PLANNING

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
Concept of tax planning Method commonly used by tax payers to minimize tax liability-Tax evasion, tax avoidance and tax planning, difference between tax planning ,tax avoidance and tax evasion. Meaning of tax planning, Types of tax planning, objectives of tax planning, Precautions in tax planning, need for tax planning, limitation of tax planning. Difference between tax planning and tax management.

SECTION–B
Tax planning for new business
-Location and nature and size of business,
-forms of business organization
-Tax planning in respect of managerial remuneration
-Tax planning regarding employees remuneration from employer point of view and employee point of view

SECTION–C
Tax planning and managerial decisions
-Tax planning in respect of own or lease
-Sale of assets used for scientific research
-Make or buy decisions
-Repair, replace, renewal or renovation of assets
-Shut down or continue decision

SECTION–D
Tax planning in respect of foreign income
-Selling in domestic or foreign marker
-Avoidance of double taxation agreement
-Foreign collaborations and joint ventures
Suggested Readings:-

2. Procedures with Case Studies; Taxman 21st Edition 2017, New Delhi
3. Dr. Girish Ahuja and Dr. Ravi Gupta (2016) Concise Commentary on Income Tax with Tax Planning and Problems and Solutions, Bharat law house (2016), New Delhi
SEMIESTER-IV
ADVERTISING, SALES PROMOTIONS AND SALES MANAGEMENT
(VOCATIONAL)

PERSONAL SELLING AND SALESMANSHIP

Time: 3 Hours  Max. Marks: 100

On the Job Training of 4 weeks

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.

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

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

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

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

SECTION–A

Nature and Importance of personal selling, Door to door selling situation where personal selling is more effective than advertising. Cost of advertising Vs. Cost of personal selling.
AIDA model of selling, Types of selling situations; Types of sales persons

SECTION–B

Buying Motives; types of markets; Consumer and Industrial markets, their characteristics and implications for the selling function
Process of Effective Selling: Prospecting, Pre-approach, approach, presentation and demonstration, handling and objections. Closing and sale post-sale activities
Qualities of the successful sales person with particular reference to consumer services
Selling as a career, advantages and difficulties. Measures for making selling an attractive career

Distribution network-relationship
Reports and documents; sale manual, order desk, cash memo, tour dairy, daily and periodical reports; Other problems in selling

A. Tentative Suggested Readings:


SALESMANSHIP

Time: 3 Hours  
Marks: 100

Theory: Teaching Hours: 60 Periods 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

Selling: Concept of selling, role of society, careers in selling, characteristics of sales careers, types of selling jobs; types of sales people Salesmanship-Definition, nature and scope; origin and development; salesmanship a science or an art.

Salesman: Qualities- Physical and mental, salesman's duties and responsibilities, role in the organisation. Features, qualities and work performed by counter salesman traveling salesman, specialty of salesman, staple salesman.

SECTION–B

Manufacturers salesman, wholesaler's salesman, Exporters Salesman, service salesman and Missionary Salesman. Strengths and limitation of personal selling. Salesman and his territory; coordination of selling efforts

Significant aspects of human behaviours, buying motives, the art of persuasion, difference between prospects and customer.

SECTION–C

Introduction to selling theories, selling process, Determining selling objectives, Prospecting-definition, nature and methods, some prospecting system

Planning the sale, objective, sources of information, sizing up the prospect, the approach importance and objectives gaining the interview, methods of approaching prospect making approach effective. Sales-presentation-objective and strategies of presentation. Demonstration nature, importance and timing, essentials of good demonstration

SECTION–D

Handling Objection: Types of objections, methods of handling objections. Closing the sales call tactics and methods, ethical problems in selling

Recruitment and selection of salesman, training, compensation, performance, Appraisal of salesman, Sales force information system
Suggested Readings:

SEMESTER–IV
TOURISM AND TRAVEL MANAGEMENT (VOCATIONAL)

TOURISM MARKETING AND TRAVEL AGENCY BUSINESS

Time: 3 Hours

Max. Marks: 100
Theory: 50
Viva: 50

VIVA will be based on ‘On the Field Trip’ undertaken by student.

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

SECTION–A
Definition, Main functions, Organisational Structure of a Travel Agency and the Tour Operators.

SECTION–B
Different types of Travel Agents and (their responsibilities, procedures for becoming a travel) Agent and Tour Operator in India.

SECTION–C
Role of Indian Airlines, Indian Railways, Air India and Vayudoot in the growth of Travel Agency and Tour Operators business.

SECTION–D
Suggested Readings:

1. MerrisseanJame, W. Travel Agents and Tourism.


3. Agarwal, Surinder Travel Agency Management (Communication India 1983).


SEMESTER–IV

MATHEMATICS

PAPER–I: STATICS AND VECTOR CALCULUS

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
Composition and resolution of forces (parallel law, triangle law, polygon law, Lami's Theorem, (-µ) theorem). Resultant of a number of coplanar forces, parallel forces. Moments, Varignon’s theorem of moments, Couples, Resultant of two Coplanar Couples, Equilibrium of two coplanar couples, Resultant of a force and a couple. Equilibrium of coplanar forces.

SECTION–B
Friction, Laws of friction, Equilibrium of a particle on a rough plane. Centre of Gravity: Centre of gravity of a rod, triangular lamina, solid hemisphere, hollow hemisphere, solid cone and hollow cone.

SECTION–C
Vector differentiation, Gradient, divergence and curl operators, line integrals, Vector identity, Vector integration.

SECTION–D
Theorems of Gauss, Green, Stokes and problems based on these.

Books Recommended:
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Sciences)  

SEMESTER–IV  

MATHEMATICS  

PAPER–II: SOLID GEOMETRY  

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  
Cylinder as surface generated by a line moving parallel to a fixed line and through fixed curve. Different kinds of cylinders such as right circular, elliptic, hyperbolic and parabolic in standard forms  

SECTION–B  
Cone with a vertex at the origin as the graph of homogeneous equation of second degree in x, y, z. Cone as a surface generated by a line passing through a fixed curve and fixed point outside the plane of the curve, right circular and elliptic cones.  

SECTION–C  
Equation of surface of revolution obtained by rotating the curve \( f(x,y) = 0 \) about the z-axis in the form of \( f(x^2 + y^2, z) = 0 \). Equation of ellipsoid, hyperboloid and paraboloid in standard forms.  

SECTION–D  
Surfaces represented by general equation of \( 2^{nd} \) degree \( S = 0 \). Tangent lines, tangent planes and Normal plane.  

Books Recommended:  
SEMESTER-IV
STATISTICS
PAPER-I ADVANCED PROBABILITY-II

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
Concept of statistic, sampling distribution and standard error, Sampling distributions: Chisquare, t and F distributions and their applications.

SECTION-B
Sampling distribution of the mean of a set of independent random observations from a normal population, sampling distribution of the sample variance of independent random observations from a normal population (derivation of sample variance distribution is excluded). Expectation and variance of sampling mean and variance.

SECTION-C
The law of large numbers, Bernoulli's form of the law of large numbers, Convergence in probability, the difference between convergence in probability and the ordinary convergence of calculus, convergence in distribution.

SECTION-D
The central limit theorem for independent identically distributed random variables and the outline of its proof using moment generating function. Applications of central limit theorem. Normal approximation to the Binomial distribution, Poisson distribution.

Book Recommended:


Books Suggested for Supplementary Reading:

SEMESTER-IV
STATISTICS
PAPER–II: STATISTICAL INFERENCE–II

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
Large Sample Tests: Tests about the mean and variance of a univariate normal distribution, comparison of two univariate normal distributions through their means and variances.

SECTION–B
Testing the significance of the correlation coefficient. Tests for significance for single proportion and for difference of two proportions, Z-transformation of the sample correlation, tests regarding the population correlation coefficient based on the Z-transformation. Chi-square tests for goodness of fit.

SECTION–C
Chi-square test for homogeneity and for independence of attributes, simplified formula for Chi-square for testing homogeneity and for independence in 2x2 tables and kxb contingency tables. Yates correction for continuity in 2x2 tables. Chi-square tests for significance for single variance. F-test for equality of variances.

SECTION–D
Small Sample Tests: t-tests for single population and two populations, paired t-test, t-test for significance of correlation coefficients and regression coefficients,

Book Recommended:

Books Suggested for Supplementary Reading:
SEMESTER–IV
STATISTICS
PAPER–III: Practical based on PAPER–II: STATISTICAL INFERENCE–II

Time: 2 Hours
Marks: 30

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

List of practical exercises
1. Exercises on Large Sample Tests
2. Exercises on Z-transformation
3. Exercises on applications of Chi square test
4. Exercises on applications of t-test
5. Exercises on application of F-test

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

The distribution of marks is as under:

1. Practical Note book: 05
2. Viva – voce: 10
3. Exercises: 15
SEMESTER–IV
CHEMISTRY (INORGANIC CHEMISTRY–A)
(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
I. Coordination Compounds  
11 Hrs.
Werner's coordination theory and its experimental verification, effective atomic number concept, chelates, nomenclature of coordination compounds, isomerism in coordination compounds, valence bond theory of transition metal complexes.

SECTION–B
II. Non-aqueous Solvents  
12 Hrs.
Physical properties of a solvent, types of solvents and their general characteristics, reactions in non-aqueous solvents with reference to liquid NH3 and liquid SO2.

III. Oxidation and Reduction

SECTION–C
IV. Chemistry of Lanthanide Elements  
11 Hrs.
Electronic structure, oxidation states and ionic radii and lanthanide contraction. Electronic absorption and magnetic properties of lanthanides.

V. Chemistry of Actinides
General features and chemistry of actinides, similarities between the later actinides and the later lanthanides. Electronic and magnetic properties of actinides and their general comparison with the lanthanide elements.

SECTION–D
VI. Bioinorganic Chemistry  
11 Hrs.
Essential and trace elements in biological processes, metalloporphyrins and special reference to haemoglobin and myoglobin. Biological role of alkali and alkaline earth metal ions with special reference to Ca$^{2+}$. 

Books Suggested:

11. Inorganic Chemistry, A.G. Sharpe, ELBS.
SEMESTER-IV
CHEMISTRY (ORGANIC CHEMISTRY–B)
(THEORY)

Time: 3 Hrs.  
45 Hrs (3 Hrs/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

I. Carboxylic Acids  
(12 Hrs.)

II. Carboxylic Acids Derivatives

SECTION–B

III. Ethers and Epoxides  
(11 Hrs.)

IV. Heterocyclic Compounds

SECTION–C

V. Organic Compounds of Nitrogen  
(11 Hrs.)
VI. Organometalic Compounds (11 Hrs.)
Organomagnesium Compounds: The Grignard reagents: formation, structure and chemical reactions.
Organolithium Compounds: Formation and chemical reactions.
Organozinc and Organo copper Compounds: Nomenclature, structural features, Methods of formation and chemical reactions.

Book Suggested:-

SEMESTER–IV
CHEMISTRY
(PRACTICAL)

Duration: 3½ hrs.  Marks: 30
6 Period/Week

Qualitative Analysis
Detection of elements (N, S and halogens)
Detection of functional groups (phenolic, carboxylic, carbonyl, esters, carbohydrates, amines, amides, nitro and anilide) in simple organic compounds and preparing their derivatives.

Practical Examination
1) Detection of Elements  05
2) Detection of functional group and derivative preparation  18
3) Viva-Voce  04
4) Note Book  03

Book Suggested:-

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Sciences)

SEMESTER–IV  
PHYSICS  
PAPER–A  
QUANTUM MECHANICS  
(THEORY)

Time: 3 Hours  
Marks: 35  
Total Teaching Hrs: 45(3h/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
Formalism of Wave Mechanics:

SECTION–B
Expectation value, Probability current and conservation of probability. Admissibility conditions or wave function. Ehrenfest theorem, Eigen function and eigen value. Operator formalism, orthogonal system, expansion in eigen functions, Hermitian operator, simultaneous eigen function, equation of motion.

SECTION–C
Application of Schrodinger wave equation to one dimensional problems: Fundamental postulates of wave mechanics, Schrodinger’s wave equation for a free particle and equation of a particle subject to forces. One dimensional step potential for E>V₀ , one dimensional step potential for 0<E<V₀, one dimensional potential barrier of finite height and width, Quantum mechanical tunnelling effect, particle in one dimensional box with infinitely hard walls, one dimensional square well of finite depth

SECTION–D
Application of Schrodinger equation to three dimensional problems: Free particle in three dimensional rectangular box, Eigen wave function, Eigen values of momentum, energy and degeneracy, three dimensional harmonic oscillator (Cartesian coordinates) wave function, energy levels,degeneracy, Schrodinger’s wave equation in spherical polar co-ordinates, Schrodinger wave equation for spherically symmetric potential for hydrogen atom, wave function of H atom, solution of \( R(r), \Theta(\theta), \Phi(\phi) \) equations.
Books Suggested:-

SEMMESTER–IV
PHYSICS

PAPER–B
ATOMIC AND MOLECULAR SPECTRA
(THEORY)

Time: 3 Hours
Total Teaching Hrs: 45(3h/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
Introduction to Atomic Spectra: Observation of spectra, Types of spectra, Light sources, Spectral analysis, Units in spectroscopy, Bohr's Theory, Spectral series, Representation of spectral lines by terms, Energy level Diagram, Bohr’s correspondence Principle, Ritz combination Rule, Continuum at series limit, Evidences in favour of Bohr's Theory, Experimental confirmation of Bohr's theory, Frank-Hertz Experiment.

SECTION–B

SECTION–C
Many Electron System Spectra: Exchange symmetry of wave function, exclusion principle, shells, subshells in atoms, atomic spectra (Helium), spectra of alkaline earth atoms, LS coupling, selection rules, Regularities in atomic spectra.

SECTION–D
Interaction energy ideas, X-ray spectra, Mosley law, Absorption spectra, Auger effect, Molecular bonding, Molecular spectra, selection rules, symmetric structure, Rotational Vibrational, electronic level and spectra of molecules, Raman spectra. Introduction to Raman spectra

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

I. The distribution of marks is as follows:

   i) One experiment  
   ii) Brief Theory   
   iii) Viva–Voce    
   iv) Record (Practical file)  

   Marks: 30

   15 Marks
   5 Marks
   5 Marks
   5 Marks

II. There will be one session of 3 hours duration. The paper will have one session.

   Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and
   one of these is to be allotted by the external examiner.

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

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

1. To study adiabatic expansion of gas and hence to calculate value of V.
2. To find the coefficient of Thermal Conductivity of a bad conductor by Lee’s method.
3. To plot a calibration curve of a given thermocouple (copper constantan) using a
   potentiometer.
4. To study the photoelectric effect and determine the value of planck’s constant.
5. To determine the ionization potential of mercury.
6. Study of variation of light intensity with distance using photovoltaic cell (Inverse Square
   Law)
7. To determine the heating efficiency of an electric kettle with varying voltage.
8. To study the absorption spectra of iodine vapours.
9. To study the rotation of plane of polarization by using polarimeter.
10. To determine the specific rotation of sugar using Laurent’s half shade polarimeter
11. To study the characteristics of Photovoltaic cell.
SEMESTER–IV
HOME SCIENCE
CLOTHING TEXTILES, PART–II
(THEORY)

Time: 3 Hours
6 Periods/week
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. Principles of design such as harmony, balance, rhythm, emphasis, and proportion.
2. Elements of design such as colour, line, form, texture, light and pattern.

SECTION–B
1. Selection of suitable clothes for the following groups
   a) Infants
   b) Toddlers
   c) School going children
   d) Adolescents
   e) Adults
   f) Elderly.
2. Care and storage of garments: cotton wool and silk.

SECTION–C
1. Bleach—Oxidising, reducing bleaches & their suitability to different fabrics.
2. Finishing—Sizing, designing, calendaring, sanforising, mercerisation, crease resistant, water proofing & water repellent, flame resistant & flame proofing.

SECTION–D
1. Different types of yarns- simple, novelty and bulk yarn in brief.
2. Fabric construction- a brief study of basic weaves
   a) simple weaves- basket, rib
   b) twill- broken twill, satin, sateen.
   c) knitting, knotting, felting, bonding.

Books:

<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>Book title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Encyclopedia of Needle Work</td>
<td>Dillmont</td>
</tr>
<tr>
<td>2.</td>
<td>Pradeep’s Clothing Textiles and their Care</td>
<td>Dr. Rajwinder k. Randhawa</td>
</tr>
<tr>
<td>3.</td>
<td>Handbook of Weaving</td>
<td>Murphy, W.S.</td>
</tr>
<tr>
<td>4.</td>
<td>Garment Construction skills</td>
<td>Premlata, Mullick</td>
</tr>
<tr>
<td>5.</td>
<td>Textbook of Home Science</td>
<td>Neelam Garewal</td>
</tr>
<tr>
<td>6.</td>
<td>Textile Fibres Dyes, Finishes and Prices</td>
<td>Needles, L. Howard</td>
</tr>
</tbody>
</table>
SEMESTER–IV
HOME SCIENCE
CLOTHING TEXTILES, PART–II
(PRACTICAL)

Time: 4 hours  
6 Periods/week

Marks: 50

1. Clothing
   1. Drafting and stitching of the following
      a) ladies shirt (kameez)
      b) salwar
      c) chooridar payjami
      d) nightie.
      e) Peticoat

2. Textile
   1. Preparation of article by
      a) stencil printing
      b) fabric painting
      c) stain removal- tea, rust, curry, oil, ball pen, boot polish, lipstick, nail polish, juice

Instructions for the Practical Examiners:

Clothing Practical  
Time: 2hrs 30 min

a. Drafting and stitching of garment -15 marks
b. File/Scheme-10 marks

Textile Practical  
Time: 1 hrs 30 min

a. Fabric painting/ stencil printing-10 marks
b. Stain removal-5 marks
c. Scheme/ file- 10 marks
   Number of students in one group 12

Note: One practical group will consist of 15 students.
SEMESTER–IV

COSMETOLOGY (VOCATIONAL)

(THEORY)

Time: 3 Hrs.  Max. Marks: 100
Periods/Week: 6  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

1. Chemical Knowledge of Hair
   Chemical Structure of Hair
   Hair Bonds

SECTION–B

2. Acids & Alkalis
   Determine porosity in chemical hair treatments

SECTION–C

3. Colours: Colour Principles
   Colour Key Programme and its relation to skin, eye and hair

SECTION–D

4. Analysis of client – Hair textures, lighteners, cosmetics and hair coloring
1. Basic Hair Shaping
   a) Hair Shaping instruments and their using
   b) Sectioning for a haircut
   c) Degree System for haircutting
   d) Hair Textures and 4 types of haircuts

2. Scalp Manipulation
   a) Benefits of Scalp Manipulation
   b) Scientific Hair Brushing
   c) Pressure Points of Head Massage
   d) Hair Styling Buns
Time: 3 Hrs.                    Marks: 40
Periods/week: 4

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
Cereals & Pulses: Cereals and millets, breakfast cereals, cereal products Fast foods- structure, processing, use in variety of preparations, selection, variety storage, nutritional aspects and cost. Pulses & Legumes-Production (in brief) selection and variety, storage, processing, use in variety of preparations, nutritional aspects and cost.
Eggs: Production, grade, quality, selection, storage, spoilage, uses, cost and nutritional aspects.

SECTION–B
Fish, Poultry and Meat: Variety, Selection, Purchase, storage, availability, cost, use and.
Vegetable & Fruits: Classification, nutritional aspect, selection raw and processed, storage, use & cost.
SECTION–C

Sugar & Sugar Products: Different forms of sugar (sugar, jaggery, honey syrup) manufacture, selection, storage & use, pre-serves.

Fats and Oils: Types and sources of fats and oils (animal and vegetable) processing, use, storage, cost and nutritional aspects.

Raising agents Types, constituents, basin cookery and bakery, preservation methods.

SECTION–D

Food Products: Spices, condiments, herbs, extracts concentrates, essences & food colours, origin, classification, description, uses, specifications, procurement and storage.

Convenience Foods: Role, types, advantages, disadvantage, cost and contribution to diet.

Salt: Types, uses in the diet.

Tea, Coffee, Chocolate and Cocoa powder, processing, use, cost and nutritional aspects.

Reference Book:

SEMESTER-IV

CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)

PAPER-B: INSTITUTIONAL FOOD ADMINISTRATION (THEORY)

Time: 3 Hrs.
Periods/week: 4

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
Standardization and portion size of recipe-calculating cost of dish, meal and event. Methods of calculation-Gross profit ratio food cost ratio elements of cost Methods of controlling cost.

SECTION-B
Functions of Management - Planning Organizing directing, coordinating, controlling and evaluating.
Tools of Management - The Organization charts, types, job description, job specification work schedule, job analysis.
Management of Specific Resource in Food Production Service - Time, energy, money and budget.

SECTION-C
Food Buying - open market, formal, negotiated & wholesale buying.
Receiving and Storage of Food - Delivery method requisition slip, order form, stock, book invoice.

SECTION-D
Personnel Management - Need, recruitment, selection and training.

Reference Books:

2) Bora, P.M. - Food Administration in India, A Study of An IndianState 1982.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Book</th>
<th>Year</th>
<th>Author</th>
<th>Edition</th>
<th>Publisher</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Food Science and Nutrition</td>
<td>2018</td>
<td>Sunetra Rodey</td>
<td>3rd</td>
<td>Oxford University Press</td>
</tr>
<tr>
<td>2</td>
<td>Food production Operations</td>
<td>2011</td>
<td>Parvinder Bali</td>
<td>2nd</td>
<td>Oxford University Press</td>
</tr>
<tr>
<td>3</td>
<td>Nutrition and Dietetics</td>
<td>2015</td>
<td>Shubhangini A. Joshi</td>
<td>4th</td>
<td>McGraw- Hill Education</td>
</tr>
<tr>
<td>5</td>
<td>Food Science</td>
<td>2014</td>
<td>B. Srilakshmi</td>
<td>6th</td>
<td>New Age International, (P) Limited Publishers</td>
</tr>
<tr>
<td>7</td>
<td>Dietetics</td>
<td>2014</td>
<td>B. Srilakshmi</td>
<td>7th</td>
<td>New Age International, (P) Limited Publishers</td>
</tr>
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<td>8</td>
<td>Food Hygiene and Sanitation</td>
<td>2011</td>
<td>Sunetra Rodey</td>
<td>2nd</td>
<td>McGraw Hill Education</td>
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<tr>
<td>9</td>
<td>Clinical Nutrition and Dietetics</td>
<td>2002</td>
<td>F P Antia</td>
<td>4th</td>
<td>Oxford University Press</td>
</tr>
<tr>
<td>10</td>
<td>Food Science</td>
<td>2006</td>
<td>Sumati R. Mudambi</td>
<td>2nd</td>
<td>New Age International, (P) Limited Publishers</td>
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<tr>
<td>14</td>
<td>Exercise Physiology Fitness and Sports Nutrition</td>
<td>2016</td>
<td>B. Srilakshmi</td>
<td>1st</td>
<td>New Age International, (P) Limited Publishers</td>
</tr>
</tbody>
</table>
SEMESTER–IV

CLINICAL NUTRITION AND DIETETICS (VOCATIONAL)

ON JOB TRAINING

CAFETERIA

Marks: 20

1) Standardization, preparation and cost calculation of recipes suitable for cafeteria.

2) Students are required to prepare dishes and sell it. They will be evaluated on the basis of their performance in cafeteria.
FASHION DESIGNING AND GARMENT CONSTRUCTION
(VOCATIONAL)

FUNDAMENTALS OF TEXTILES
(THEORY)

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

Instructions for the Paper Setters:
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 Woven Fabrics
   a) Weaving-Parts of Basic Loom, Basic Weaving Operation
   b) Classification of Weaves-Basic Weaves, Fancy Weaves

SECTION–B
2. Introduction to Non-Woven Fabrics
   a) Knitting-Warp Knitting, Weft Knitting
   b) Felting
   c) Bonding

SECTION–C
3. Introduction to Finishes
   a) Classification of finishes
   b) Mechanical finishes
   c) Chemical finishes

SECTION–D
4. Introduction to Dyeing and Printing
   a) Tie and Dye, Batik Dye
   b) Block printing, Screen Printing, Roller Printing and Discharge Printing.

Books:

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<tbody>
<tr>
<td>1.</td>
<td>Techniques of Dyeing and Printing</td>
<td>Mahapatra, N. N.</td>
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<td>2.</td>
<td>Non Woven Process Structure</td>
<td>Karthik, T.</td>
</tr>
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<td>3.</td>
<td>Traditional Embroideries of Indian</td>
<td>Shailja, D. Naik</td>
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<td>4.</td>
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B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20) (Faculty of Sciences)

SEMESTER–IV

FASHION DESIGNING AND GARMENT CONSTRUCTION
(VOCATIONAL)

PATTERN MAKING AND GARMENT CONSTRUCTION
(PRACTICAL)

Time: 5 Hrs.                                      Marks: 60
Periods/week: 2x6

Instructions for the Paper Setters:

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

PART–A

1. PATTERN MAKING AND GRADING
   a) Drafting and Adaptation of Sleeves-Basic Sleeve, Cowl, Dolman, Peasant
   b) Drafting and Adaptation of Collars-Chinese, Convertible, Shawl, Coat
   c) Upgrading and Downgrading of Bodice Block.

PART–B

2. GARMENT CONSTRUCTION
   a) Designing, Drafting and Construction of Ladies Blouse.
   b) Designing, Drafting and Construction of Designer Suit.
   c) Traditional Embroidery- Kantha, Chikankari.
SEMESTER–IV

EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)
(THEORY)

Time: 3 Hrs. 
Lectures/week: 6

Maximum 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
Curriculum Planning - Curriculum models, Use of Curriculum models in early childhood education

SECTION–B
Curriculum Management– Programme planning, Principle content, annual, monthly, weekly, daily programmes
Execution and planning of activity plans
Indoor and outdoor activities

SECTION–C
Preschool Equipments- Need and importance of equipments, Maintenance of equipment
Record keeping

SECTION–D
Handicapped Children- Identification of children with special need, Special needs of handicapped children, Integration with normal children.
SEMESTER–IV

EARLY CHILDHOOD CARE AND EDUCATION (VOCATIONAL)
(PRACTICAL)

Time: 3 Hrs. 
Lectures/week: 4

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

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

Course Contents:
Collection of self composed age appropriate stories and rhymes for pre-school children
Demonstration on making ECE centre childproof, maintenance and care of equipment
Activities for generating moral values among pre-school children
To create awareness regarding personal hygiene and environment among pre-school children
Preparation of article/activity material for motor/social/creative skills development of pre-school children

Suggested Readings:
6. Planning effective preschool education (1995), CHETNA (Gujarat)
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Sciences)

SEMMESTER–IV

FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)

FSQC–7: QUALITY ASSURANCE (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

Objectives, importance and functions of quality control. Methods of quality assessment of food materials: fruits, vegetables and cereals.

SECTION–B


SECTION–C

Concept of HACCP and GMP. Quality Attributes: Size, Shape, Colour, Aroma, Texture.

SECTION–D

Food Laws and Regulations. AGMARK, FPO, PFA, MFPO, BIS, ISO. Sampling

Recommended Books:

SEMESTER–IV

FOOD SCIENCE AND QUALITY CONTROL (VOCATIONAL)

FSQC-8: QUALITY ASSURANCE (PRACTICAL)

Max. Marks: 25

List of Practicals

2. Quality evaluation of cereals.
3. Quality evaluation of fruits and vegetables
6. Adulterants in milk, cereals, oils and fats and their detection.
SEMESTER–IV
FINE ARTS
(DRAWING & PAINTING)
PAPER–A (THEORY)

Time: 3 Hrs. 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. Early Indian Miniature painting (Pala School)
2. Western Indian Miniature painting (Jain School)

SECTION–B
3. Mughal School of art: Origin of the school, subject matter and characteristics.

Akbar:- Paintings under Akbar period
i) Akbar trying to control a wold elephant
ii) Akbar receiving the news of Salim's Birth
Important artists of Akbar's time:- Mir Sayyad Ali, Khwaja Abd-Al-Samad, Daswant, Basawan

Jahangir:- Paintings under Jahangir period
i) Turkey cock
ii) Death of Inayat Khan
Important artists of Jahangir's time:- Mir Mansur, Abu'l Hasan.

SECTION–C
4. Rajasthani School of Art: Origin of the school, subject matter and characteristics.

Mewar:- i) Deepak Raga
   ii) Vasant Ragini

Bundi:- i) Krishna subduing the Snake Kaliya
       ii) The hour of cow dust
Kishangarh:- i) Bani thani as Radha
SECTION–D

5. **Pahari School of Art:** Origin of the school, subject matter and characteristics.

**Guler:**
   i) Govardhan Chand listening to musicians
   ii) Lament of separation

**Kangra:**
   i) Radha and Krishna in the grove
   ii) The worship of mount Govardhan

**Basohli:**
   i) The lady and the herd of deer
   ii) The forest fire
SEMESTER–IV
FINE ARTS
(DRAWING & PAINTING)
PAPER–B: LANDSCAPE
(PRACTICAL)

Time: 5 Hrs.  Marks: 25

Work Load:
Theory - 3 periods per week.
Practical - 9 periods per week.
Total - 12 periods per week.

Study of clouds, trees and foreground. Emphasis should be given on perspective, texture, colour and its application in harmony.

Medium: Any medium

Size: ½ Imperial
Rendering of the full life study and study of muscles and bones should be done in pencil or charcoal. Emphasis should be given to structure, volume, proportion, tones and texture.

**Medium:** Pencil or charcoal

**Size:** ½ Imperial

Candidates will submit:

(i) 5 sheets of each paper.

(ii) Sketch book containing 50 sketch
SEMESTER–IV

GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)
(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

1. Physical Properties of Gemstones
   a. Cleavage: Definition, Description, Importance of Gemology and lapidary work
   b. Hardness: Definition, Moh’s scale of hardness, Application in Gemology and lapidary work.
   c. Specific Gravity: Definition, Determination of specific gravity by heavy liquid

SECTION–B

2. Gemology: It’s optical properties
   a. Nature of light
   b. Reflection of light: Law of Reflection, Lusture, Cat’s eye effect, Star effect
   c. Refraction of light: Refraction Index, Total Internal refraction, Double refraction
   d. Color of gemstones

SECTION–C

3. Gemology: It’s optical properties
   e. Absorption
   f. Dichrosim
   g. Absorption spectrum
   h. Play of Colour

SECTION–D

4. Cuts of Gemstones
   a. Designing Cut
   b. Catachom Cut
   c. Step cut
   d. Rose Cut
   e. Faceted Beads
Essential Readings:

1) Jewellery Concept & Technology by Oppi Untracht
2) The Art of Jewellery Design by Elizabeth Olver
3) Gem Identification Made Easy by Antoinette C. Matlirs Books Recommended:
   1) The Jeweller's Directory of Shape and Form by Elizabeth Olver
   2) Practical Gemology by Robert Webster
   3) Gemstones of the world by Walter Schumann
   4) Identification of Gemstones by Michael O'Donoghue
   5) Gemology (2nd Edition) by Peter G. Read
   6) Gem & Ornamental Materials of Organic Origin by Maggie Campbell Pedersen
SEMMESTER–IV

GEMOLOGY AND JEWELLERY DESIGN (VOCATIONAL)

(PRACTICAL)

Time: 3 Hrs

Marks: 50

1. Bead making
2. Twisting
3. Different styles of stone setting like Prong, bezel channel etc.
4. Identification of gem stones
5. Development of design of bangles bracelets, rings etc.

Through metals by using above techniques.
SEMESTER–IV

STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)

PHOTO JOURNALISM (THEORY)

Time: 3 Hours

Max. Marks: 100

Theory Marks: 50

Practical Marks: 50

Instructions for the Paper Setters:

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. Photographing the right moment (Rapid Focusing Technique: Auto Focusing
   (a) Lenses (b) Range Finding (c) Hyper Focal Distance)

SECTION–B

2. Retrieval Methods: Photo C.D., Computer C.D. Access system, Photo Catalogue

SECTION–C

3. Photo Editing – Continuity, Cropping, Caption, Size, Placement.

4. Digital Imaging

SECTION–D

5. Photo-Print Technology, Quality Control, Printing Techniques, Half Tones, Colour.

Suggested Readings:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Book Name</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A Simple Guide to Digital Photography</td>
<td>Corbett</td>
</tr>
<tr>
<td>2.</td>
<td>The Photographers Manual</td>
<td>John Frama</td>
</tr>
</tbody>
</table>
SEMESTER–IV

STILL PHOTOGRAPHY & AUDIO PRODUCTION (VOCATIONAL)

PHOTO LAB 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. and can be evaluated by the Examiner on Computer or Laptop.

Instructions for Students:

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

1. **Photolab Techniques**
   - Types of Enlarger.
   - Types of Light Sources for Enlarger.
   - Working of an Enlarger.
   - Lenses for Enlarger.

2. **Computerised Photo Finishing**

3. **Constituents of Developers**
   i) Techniques of Development.
   ii) Types of Developers.
   iii) Effect of Over/Under Development
   iv) Effect of Temperature on Development.
   v) Effect of Agitation on Development.
   vi) Types of Printing Papers, Grades, Textures/ Weight Colour/ Surfaces.
   vii) Mono Bath Development.

4. **Special Effect in Printing**
COLOUR PHOTOGRAPHY AND LIGHTING

1. Filter for Colour
   - U.V. Filters.
   - Polarising.
   - Sky Lighting.
   - Colour Compensation Filter
   - Colour Conversation Filter.

2. Lighting
   - Shortcoming of Single Flash Unit.
   - Their Correction.

3. Flash Techniques, Lighting the Subject, Light Source, Quality of Light, Meters.

Suggested Readings:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Book Name</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>John Hedgecoe’s The Art of Colour Photography</td>
<td>Mitchell Beazley</td>
</tr>
<tr>
<td>2.</td>
<td>35mm Photography</td>
<td>Bavister</td>
</tr>
<tr>
<td>3.</td>
<td>Pro Lighting Black and White Shots</td>
<td>Alex Larg and Jane Wood</td>
</tr>
</tbody>
</table>
ART APPRECIATION & 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.

SECTION–A
1. Role of Advertising Agency.
2. Departments of Advertising Agency.

SECTION–B
3. Television Advertising.
4. Newspaper Advertisement. (Standard size of column in Newspaper, Classified and Display Adv.)

SECTION–C
5. Magazine Advertisement.
6. Calligraphy.

SECTION–D
7. Tools of Calligraphy.
8. Hoarding and its purpose.

Suggested Readings:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Book Name</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Practical Calligraphy</td>
<td>Nash &amp; Fleuss</td>
</tr>
<tr>
<td>2.</td>
<td>Digital Calligraphy</td>
<td>George Thomson</td>
</tr>
<tr>
<td>3.</td>
<td>Advertising Management</td>
<td>Manendra Mohan</td>
</tr>
</tbody>
</table>
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Visual Arts & Performing Arts)

SEMESTER–IV  
APPLIED ART

POSTER OR PACKAGING  
(PRACTICAL)

Time: 6 Hours  
Marks: 50

Instructions for the Paper Setters/Examiners:
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. Topic for the Examination will be set by the external examiner on the spot.
4. Extra weightage will be given for creative and professional approach.

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

Course Contents:

   Poster Topics: Social & Commercial  
   Size: 1/2 imperial.
   Maximum Colours for Social Posters: 4 (Tones can be used for each colour).
   Maximum Colours for Commercial Posters: Multi colors.
   Packaging Topics: Cosmetics, Colours, Toys or any topic set by the teacher in class.
   Size: According to Product.
   Maximum Colours: Multi–Colour.

Note: Limited Reference while preparing rough visual is allowed.
SEMESTER-IV  
SCULPTURE  
(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  
(1) Mathura and Gandhara school of Art under kushana period.  

SECTION–B  
(2) Art of Bodhgaya Stupa.  

SECTION–C  
(3) Art of Amaravati Stupa.  

SECTION–D  
(4) Gupta Period.  

Books Recommended:  
3. Dr. Gyacharu Tripathi: Prachin Bharat Ki Kala.
SEMESTER–IV
SCULPTURE

(PRACTICAL)

Time: 6 Hrs.  
Marks: 50

(1) High Relief Sculpture, cast in cement/Fiber glass/Plaster of Paris based on
Birds/Animals/Human Figures (Min Size 8x8 inches (Total No. 1)
(2) Composition in round Sculpture based on Human Figures, work should be produced in
plaster cast (Total No1)
(3) Creative Head in clay Modeling work should be produced in Cement/Fiber glass/Plaster
cast (Total Number 01)

Books Recommended:

(1) S.K Sarswati A survey of India Sculptures.
(2) Stella Krmisch Indian Sculptures
(3) B.M Barwa Bharhut
(4) S.M Asgar Ali Kadvi Moorti Kala ka Itihas.
(5) Benjamin Rowland The Pelican History of Art
(6) Dr. Gyacharu Tripathi Prachin Bharat Ki Kala
(7) Dr. G.K Aggarwal Shilpa Darshan.
(8) A. Foucher The Beginning of the Budhist Art
(9) A.K Coomaraswamy History of Indian & Indonesian Art
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20) (Faculty of Visual Arts & Performing Arts)

SEMESTER–IV

MUSIC (VOCAL)
(THEORY)

Time: 3 Hours
Total Marks: 100
Theory: 3 Periods per week
Theory 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.

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. Detailed knowledge of Khayal Styles of Singing.
2. Short notes on the following terms:
   a. Sargam Geet
   ii Lakshan Geet
   iii Saadra
   iv Raag-Malika

SECTION–B

SECTION–C
5. Description and notation of the following Ragas: Malkauns, Bihaag and Bhairavi.
6. Description and notation of the following Talas: Ada Chautal and Jhaptal.

SECTION–D
9. Detailed knowledge of Folk singing styles used in Gurmat Sangeet.
SEMESTER–IV
MUSIC (VOCAL)
(PRACTICAL)

Time: 20 Minutes  Marks: 50

1. Ability to play five alankars on the Harmonium based on the Kafi Thata.
2. One Vilambit Khayal in any of the Ragas prescribed in the course with simple Alaps and Tanas.
3. One Drut Khayal in each of the following Ragas with simple Alaps and Tanas: Malkauns, Bihaag and Bhairavi.
4. One Trana in any Prescribed Raga with proper singing style.
5. Ability to sing National Anthem with Harmonium.
6. Ability to recite Jhap-Taal and Ada Chautal showing Khali Tali with hand motion in Ekgun, Dhugan Layakaries.
7. Brief Knowledge of Non Detailed Ragas: Chandrakauns and Tilang and Bilas Khani Toddi
8. Ability to play theka of Teen Taal on tabla.

Books Recommended:
5. Sangeet Shastra Darpan, Shanti Govardhan.
8. Sangeet Nibandhavli, Dr. Gurnam Singh, published by PunjabiUniversity, Patiala.
9. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh.
SEMESTER–IV

MUSIC (INSTRUMENTAL)  
(THEORY)

Time: 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. Historical development of Indian Music during medieval period i.e. from 15th to 18th century.
2. Formation of 484 Ragas from a Thata.

SECTION–B

3. Brief knowledge of the following musical terms – Shuddha Rag, Chayalag Rag, Sankirna Rag, Ashraya & Janya Rag.
5. Importance of Adhvashaka Swara.

SECTION–C

6. Description and notation of the prescribed Ragas: Malkauns, Sohni and Alahaiya Bilawal.
7. Brief knowledge of the following Ragas: Chandrikauns, Puriya and Bilawal.

SECTION–D

8. Brief knowledge of the following Talas: Ada Chautal and Jhap Tal.
9. Importance of Instrumental Music in Gurmat Sangeet.
10. Detailed knowledge of Folk singing styles used in Gurmat Sangeet.

Books Recommended:-

1. Rag Parichay (Part 1,2,3) by H.C. Shrivastav.
2. Sangeet Shastar Darpan (Part I & II) by Shanti Govardhan.
5. Gurmat Sangeet, Prabandh ate Pasaar, Dr. Gurnam Singh
6. Sangeet Subodh by Dr. Davinder Kaur.
9. Sangeet Roop by Dr., Davinder Kaur, Patiala.
10. Bhartiya Sangeet ka Itihas by Umesh Joshi.
11. Bhartiya Sangeet ke Vadhya, Dr. Lal Mani Mishra.
SEMESTER–IV

MUSIC (INSTRUMENTAL)

(PRACTICAL)

Time: 20 Minutes for each student

Marks: 50

Teaching: 9 periods per week.

1. Ability to play ten Alankars on Sitar in the swaras of Bhairav Thaat.
2. One Masitkhani Gat in any of ragas prescribed in the Course. (Malkauns, Sohni and Alahaiya Bilawal).
3. One Razatkhani Gat in each of the prescribed raga with Toras and Jhaala.
4. Ability to recite on hand, the Talas, Ada Chautal and Jhap Tal in Ekgun & Dugun Layakaris.
5. Ability to play Ektal on Tabla.
6. Ability to play One Gat in Rupak Tala.
7. Brief Knowledge of the following Non–detailed Ragas: Chandrakauns, Puria and Bilawal.
8. Ability to sing a Merital song with Harmonium.
SEMESTER– IV

INDIAN CLASSICAL DANCE
(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

1. Study of Nritt, Nritya and Natya.
2. Study of different Gharanas of Kathak with their characteristics.
3. Study of Odissi Dance with its historical background, style costumes and music etc.

SECTION–B

4. Knowledge of Bharamari and Utpalavan Bhedas according to Abhinaya Darpan.
5. Knowledge of the Folk Dances of Himachal Pradesh.
6. Biography and contribution of the following Kathak Gurus with their contributions in the field of dance.
   (i) Birju Maharaj
   (ii) Sunder Prasad

SECTION–C

7. Essay on the following topics:-
   (i) Dance and Religion.
   (ii) The role of dance in Indian films.
93

B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)
(Faculty of Visual Arts & Performing Arts)

INDIAN CLASSICAL DANCE

(THEORY)

8. Notation of:

(i) **Dhamar Taal (Matra-14)**

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

(ii) **Roopak Taal (Matra-7)**

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

SECTION–D

9. Description and notation of the following Talas in Thah, Dugun, Tigunand Chaugun layakaries:

   (i) Dhamar Taal   (ii) Roopak Taal   (iii) Ada-choutaal.

10. Notation of Nagma in:

   (i) Dhamar Taal   (ii) Roopak Taal

Books Recommended:

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

INDIAN CLASSICAL DANCE
(PRACTICAL)

Time: 20 Minutes  Marks: 50

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

Instructions given to the examiners are as under:-

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

1. Dhamar Taal (Matra-14)
   a) Tatkar in Thah, Dugun & Chaugun Layakaries.
   b) Thaat- 2
   c) Tehai-1
   d) Amad-1
   e) Salami-1
   f) Tora-2
   g) Paran-1
   h) Chakardar Paran-1
   i) Kavit-1

2. Roopak Taal (Matra-7)
   a) Tatkar in Thah, Dugun & Chaugun Layakaries.
   b) Thaat- 2
   c) Tehai-1
   d) Amad-1
   e) Salami-1
   f) Tora-2
   g) Paran-1
   h) Chakardar Paran-1
   i) Kavit-1

4. Padhant of all the Practical material mentioned above.
5. Ability to demonstrate Theka of Dhamar Taal, Roopak Taal and Ada - choutaal by hand in Single, Dugun and Chaugun layakaries.
6. Practical Dance demonstration of any Cinematic song based on classical dance.
7. Ability to play the theka of Roopak Taal on Tabla.
8. Ability to sing a cinematic song with Harmonium.

Books Recommended:
5. Kathak Nritya Shiksha Part-1, Dr. Puru Dadhich, Bindu Prakashan, Ujjain (MP).
SEMMESTER–IV

TABLA
(THEORY)

Time: 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.

SECTION–A

1. Define and Explain the following terms :
   a) Rella
   b) Laggi
   c) Peshkar
   d) Chakardar Paran

2. Detail knowledge of Gharana of Tabla & Pakhawaj :
   a) Lakhnow
   b) Banaras
   c) Farukhabad

SECTION–B

3. Life sketch :
   a) Ustad Habibbu-din-Khan
   b) Pt. Pagal Das Pakhawaji
   c) Pt. Chatur Lal

4. Write an essay on the place of Tabla in Gazal Gayaki.

SECTION–C

5. Notation and description of :
   a) Ada Chautal –One Peshkar, Two Kayda with four Palta each, Two Tukra, One paran, One Rella.
   b) Deepchandi Vilambit – One Rella. Three Laggis, Two Tihaai.


7. Notation of above mention talas in Dugun, Chaugun layakari’s.
SECTION–D

8. Detailed knowledge of Ravinder Sangeet Taal system.

Books Recommended:

SEMESTER–IV

TABLA
(PRACTICAL)

Time: 20 Minutes for each student
Teaching 9 Periods per week.

Marks: 50

1. Tala Prescribed:
   a) Ada Chautal
   b) Deepchandi
2. Ada Chautal – One Peshkar, Two Kayda with four Palta each, Two Tukra, One Paran, One Rella.
4. Ability to play Nagma on Harmonium in Ada Chautal.
5. Ability to play Theka of Jhumra and Jaital.
6. Practice of playing the above Taals with Vocal and Instrumental performance.
7. Tuning of Tabla.
8. Ability to sing any folk song of Punjab with Harmonium.

Books Recommended:

15. Tal Prakash, Bhagwat Saran Sharma, Sangeet Karyalaya, Hathras.
SEMESTER–IV
COMPUTER SCIENCE

DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++
(THEORY)

Time: 3 Hours
Max. Marks: 100
4 Hours/week
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

Data Structure: Introduction to elementary Data Organization, Common Operation on Data Structures, Algorithm Complexity, Big O Notation, Time-Space Trade off between Algorithm.
Arrays: Array Defined, Representing Arrays in memory, Various operations on Linear arrays, Multi Dimensional arrays.
Linked Lists: Types of Linked Lists, representing linked list in memory, advantages of using linked lists over arrays, Various operations of linked lists.

SECTION–B

Stacks: Description of STACK structure, Implementation of stack, using araryas and linked lists, application of stack-converting Arithmetic expression from infix notational to polish and their subsequent evaluation, quicksort technique to sort an array.

Queues: Description of queue structure, Implementation of queue using arrays and linked lists, description or priorities of queues, deques.

SECTION–C


SECTION–D

Object Oriented Programming: Objects & Classes, Constructor & Destructor, Operator Overloading, Overloading uniary operators, Overloading binary operators, Data conversion, Pitfalls of operator overloading and conversion, Inheritance, Derived class and pase, Derived class constructor. Overloading member functions, Inheritance in the English distance class, class hierarchies, Public & Private inheritance, Level of inheritance, Polymorphism, problems with single inheritance, multiple inheritance

References:
3. Tanenbaum, Data Structure Using C++
SEMESTER-IV

COMPUTER SCIENCE

DATA STRUCTURES & PROGRAMMING LANGUAGE USING C++ LAB
(PRACTICAL)

2 Hours/week Marks: 25

Practical based on Data Structures & Programming Language Using C++
SEMMESTER–IV

INFORMATION TECHNOLOGY (VOCATIONAL)

DATA BASE MANAGEMENT SYSTEM
(THEORY)

Time: 3 Hours
Max. Marks: 100
4 Hours/week
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
Indexing Techniques, Primary, Secondary, Clustering, B Trees, B+Trees, Hashing (Extendible, Dynamic, and linear) Database Architectures and Data Models, Network, Hierarchical, and Relational, Object-Oriented, Relational Model; Relations, Relational operators and integrity constraints.

SECTION–B
Relational Algebra and SQL, Query Optimisation, DDL, DML, DCL.
Database Design: ER Modeling, mapping to relational scheme. Normalisation - 1st, 2nd, 3rd and BCNF

SECTION–C
Concurrency Control Lost Update, Temporary Update, Locking Mechanisms, Binary Locks, Shared and Exclusive Locks, 2 Phase Locking protocol, Timestamping approaches.

SECTION–D

References:
SEMESTER–IV

INFORMATION TECHNOLOGY (VOCATIONAL)

DATA BASE MANAGEMENT SYSTEM
(PRACTICAL)

2 Hours/week

Marks: 25

Practical based on Data Base Management System
SEMIESTER–IV
COMPUTER MAINTENANCE (VOCATIONAL)

PC MAINTENANCE & TROUBLESHOOTING
(THEORY)

Time: 3 Hours
4 Hours/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


SECTION–B

Motherboard & Buses: Introduction, Motherboard Components, Expansion Slots system, Bus Functions & Features. Upgrading & Troubleshooting Motherboard, General Bus Troubleshooting.

SECTION–C

SECTION–D


References:

SEMESTER–IV
COMPUTER MAINTENANCE (VOCATIONAL)
(PRACTICAL)

2 Hours/week  Marks: 25

List of Practical Based on PC Maintenance & Troubleshooting

1. Introduction and knowledge of components of PC.
2. To study the troubleshooting Beep Codes.
5. Detection of Motherboard failure and its repair.
6. Upgradation of PC.
7. Troubleshooting Keyboard and Mouse.
RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE
(THEORY)

Time: 3 Hours  Max. Marks: 100
4 Hours/week  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
Relational Data Base Management System & ORACLE

Definition of 3 GL and 4 GL languages.
Definition of CODD's Rules.
Introduction to RDBMS and Oracle-Advantages and Limitations over DBMS.
  a) Normalization of Data : First, Second and Third Normal form
  b) Database Models - Hierarchical, Network, Relational
  c) Features of SQL Compatibility, Portability
  d) Important components (Database Manager, DDL., DML., DCL., query processor. (Data Dictionary);
  e) Introduction to SQL Plus - Definition.

SQL Operators
=I=<>><>=<= [NOT]BETWEEN.......AND.......[NOT]IN[Text][NOT]like,IS[NOT][NULL,NOT,AND,OR

SECTION–B

Data Types
Char, numbers, date long, raw, long raw

DDL Commands of SQL
- Create Tables
- Alter Table, view
- Drop Table
- Create View-As selected from, where
- Rename
- Create Index
Data Manipulation Language

Select
- Select distinct
- Select from where
- Select from where order by
- Select group by clause
- Select Group by having clause

Insert Into
Update Statement
Delete Statement

Data Control Language
- Roll back
- Revoke
- Grant

SECTION–C

Sub Query Definition with 2 Levels
Aggregate Functions
  Sum, Avg, max, min,count,stddev,variance

Character Functions
  Lower, Upper, Length, Substr,RPAD,LPAS

Arithmetic Functions
  Round, Trune, Sqrt, Mod, Abs, Sine

Date and Time Functions and Other Miscellaneous Functions
  (Add-months, Month-between, NVL, Translate, field concatenation, decode)
Conversion Functions (to-char,to-number, to-date)
Substitution Variables (&,&&)

SECTION– D

Reporting Using SQL Plus
  Specifying column heading
  Formatting columns
  Char formats
  Break
  Inserting spaces when the break value changes
  Inserting spaces after every row.
  Break on multiple columns with different spacing
  Compute
  T Title
  B Title
  Page size line size, pause.

Introduction to PL/SQL
  Relationship between SQL & PL/SQL
  Advantages of PL/SQL
  PL/SQL block structure
  Valuable and Constant declaration
  Declaration using attributes %type attribute If elsif ends if statement
Books Recommended:

1. Introduction to Data Base System by C.J. Date.
2. Data Base Management System by B.C. Desai.
3. Data Base Concept by Korth.
5. Oracle Developer 2000 by Iven Bayross.
SEMESTER-IV
COMPUTER APPLICATION (VOCATIONAL)

RELATIONAL DATA BASE MANAGEMENT SYSTEMS & ORACLE
(PRACTICAL)

2 Hours/week  Marks: 25

Practical based on Relational Data Base Management System & ORACLE
SEMESTER–IV

INFORMATION TECHNOLOGY SPECIALIZATION SOFTWARE DEVELOPMENT (VOCATIONAL)

Paper–I: WEB TECHNOLOGY

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

Introduction to Web Development
Webpage, Website, Static Website, Dynamic Website, Web Servers, Web Browsers

Introduction to HTML/DHTML

SECTION–B

Introduction to JavaScript:

SECTION–C

Introduction to Dreamweaver

SECTION–D

Purchasing a Domain Name & Web Space
Domain Name & Web Space, Getting a Domain Name & Web Space (Purchase or Free), Uploading the Website to Remote Server.

Suggested Readings / Books:-
1. Web Enabled Commercial Application Development HTML (Ivan Bayross)
4. The Essential Guide to Dreamweaver CS4 David Powers
SEMESTER–IV

INFORMATION TECHNOLOGY SPECILIZATION SOFTWARE DEVELOPMENT (VOCATIONAL)

Paper–I: Lab – I: Web Technology

Time: 3 Hrs.  Max. Marks: 25

Practical based on Web Technology

- **Web Technology**: HTML, DHTML, Dreamweaver
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)
(Faculty of Engineering & Technology)

SEMESTER-IV
AUTOMOBILE MAINTENANCE (VOCATIONAL)
(THEORY)

Time: 3 Hours
Periods per week: 6 Hrs.

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.

Orientation of the Course:

SECTION–A

Engines: Introduction, Classification of automobile engines, Engine cycle, Number of strokes,
with respect to fuels use, Number and arrangement of cylinders, Classification based on valve
arrangements, Classification based on type of cooling, Classification based on type of valve,
Special type engines, Square engines, Fuel cell, Electric vehicles, Engine position.

SECTION–B

Ignition Systems: No spark, Spark at some wires, Intermittent spark, Weak spark, servicing
ignition system. Piston Assembly, Piston rings, Analysis of piston rings, piston pins, Materials.
Engine Service Crank Shift and Cylinder Blocks: Review of design, Analysis of Crank shift for
strength, Surface hardening of crank shaft and their materials.

SECTION–C

Clutch Operation: Clutch, Requirement of clutch, Types of Clutch, Friction clutches, Clutch
components, Friction materials, Clutch lining materials, Bonding materials, Fluid coupling,
Torque transmission, Characteristics of the fluid flywheel, Advantages of fluid flywheel, Clutch
troubleshooting, Fluid flywheel troubleshooting.

SECTION–D

Diesel Engine Service: Fuel pump tests, Fuel Delivery, Pressure, Stroke, Carburetor test and
adjustments, Fuel level, Float level, Adjustment.

References:

   Dhanpat Rai and Sons, Jalandhar, Delhi.

SEMESTER-IV

AUTOMOBILE MAINTENANCE (VOCATIONAL)

LAB–II (PRACTICAL)

Time: 3 Hours
Periods per week: Practical: 4 Hrs.

Distribution of External Marks:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Marks</th>
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<tr>
<td>Three visits to Motor Workshop</td>
<td>10</td>
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<tr>
<td>Oral Examination</td>
<td>10</td>
</tr>
<tr>
<td>Written Test</td>
<td>10</td>
</tr>
<tr>
<td>Test of Workshop Jobs</td>
<td>10</td>
</tr>
<tr>
<td>Identification of Workshop Tool</td>
<td>5</td>
</tr>
<tr>
<td>Scale Instrument Readings</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Engine Piston and Rings Fitting
2. Clutch Dismentling and Assembling
3. Clutch Fitting with Engine
4. Cut out opening and fitting with Engine
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)
(Faculty of Engineering & Technology)

SEMESTER–IV
REFRIGERATION & AIR CONDITIONING (VOCATIONAL)

PAPER–G (THEORY)

Time: 3 Hours  
Teaching Hours: 6  
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
Domestic Refrigerators: Introduction, Construction & Operational features of domestic Refrigerators. Defrosting Automatic Pressure & Electric Defrosting etc.

SECTION–B

SECTION–C
Duct Construction: Buelt systems. Loop perimeter, Radial Perimeter & Exunded Pleanum Duct System. Water Pumps: Vertical Types & Horizontal Type.

SECTION–D
Evaporators: Introduction, Types of Evaporator Flooded Type Evaporator. Dry Expansion type Evaporator Baudelot cooler Bare Tube, Plate Surface, Finned Evaporator, Their construction & Operational features.

List of Books Recommended:

<table>
<thead>
<tr>
<th>Name of Book</th>
<th>Author</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigeration &amp; Air Conditioning</td>
<td>S.C.Arora</td>
<td>Dhanpat Rai</td>
</tr>
<tr>
<td>Refrigeration &amp; Air Conditioning</td>
<td>Dowkundwar</td>
<td>Katson</td>
</tr>
<tr>
<td>Refrigeration &amp; Air Conditioning</td>
<td>Khurmi</td>
<td>Publication</td>
</tr>
</tbody>
</table>
SEMESTER–IV
REFRIGERATION & AIR CONDITIONING (VOCATIONAL)

PRACTICAL: LAB–II

Time: 2 Hours
Period Per week Practical: 4
Marks: 50

List of Experiments:
1. To Study a cooling Tower.
2. To Study a desert cooler & Pump used for this type.
4. To test check the capacitors, Relays, automatic Value, Solenoid value, high & low pressure cut off etc.
5. To find the C.O.P. of a water cooler.
6. To find the C.O.P. of an Ammonia Ice Plant.
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. ब्राह्मण लिपिवर्ग: छन्दस्त्रोते देव लिखाम
2. ब्राह्मण लिपिवर्ग से प्रभुत्व ब्राह्मण देव नीठक: नाममें, हरिहर, चित्तम
3. छन्दस्त्रोते देव से ब्राह्मण परिचय:निचावट अड़े सवलट

SECTION–B

1. मृत्ती अष्ट-पदार्थ: आयुंकृत, दिवान अड़े शिलालम्बन रिख्तेवत
2. मृत्ती भंड: पूर्वार्थ नियांद
3. शिलालम्बन अड़े वाक्य लक्ष्य: नीठक: देव शिलालम्बन

SECTION–C

1. चैत्यमण्डप पूजन
2. मंदिर देख
3. भीमां व्रती
SECTION–D

ENGLISH:

Punjabi:
1. ग्वारामलाई खांडम, भुजु तारट झांड क्षिथी गरिसक दे अनिक धृमणा, डाढी उडर खिस नीवत खिस, मनिरूमाग, 2007.
2. ग्वारामलाई खिस, किया खिस खड युस्क, धमस्फी फुलीवत्रिनी, पाटिफाल, 1994.
3. वाडलिख, वण्डनी खेत, केंद्र ताली-मोटीरी डे चाटर, भौसफी फुलीवत्रिनी, पाटिफाल, 1982.
4. भण्डरामलाई खिस, भुजु तारट नबेज भाजी अफेसुन, भर्टीय पुराणमात, तही निर्मी, 1970.
5. ----------, भाजी निर्माण दे अनाहार खुड, भौसफी फुलीवत्रिनी, पाटिफाल, 1991.
6. खलिम, भाजी बाढ़ि, बाढ़ि हिस्हा भाग, पाटिफाल, 1970.

Hindi:
1. चुंटली, दरकुमाव, शुंडली खंड बी मोंं धर्मोर, बांदीज बुराह, शरीफ धौम, दिलियागढ़, 1964.
2. ध्वारन, धारिकामी खिसवर बी भिन, धूप खेंड खंडी, तही निर्मी, 2001.
3. धुंधार, महाभी, खंडहर मी बैंडवर भालू, बांदीज बुराह बूब टर्ममाट, मंगळी, 2002.
SEMMESTER-IV

PHILOSOPHY

INDUCTIVE LOGIC AND ENVIRONMENTAL ETHICS (OPT. I)
(ONLY FOR REGULAR STUDENTS)

Lectures to be delivered: 6+4=10 per week
Time: 3 Hours
Pass Marks: 35%

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

1. Induction: Definition and Characteristics of Induction; Types of Induction (Simple Enumeration, Scientific Induction and Analogy); Difference between Deduction and
3. Definition, Nature and Conditions of Valid Hypothesis; and its uses.

SECTION–B

5. Nyaya Syllogism: Difference between Nyaya Syllogism and Aristotelian Syllogism

SECTION–C


SECTION–D

Recommended Readings:

**English Books**


**Punjabi Books**

2. ਤਿੰਨੌਜਦ, ਕਸਾਨੀ, ਮੋਹੋੜ ਜਾਂ ਸੋਨਿਆ ਮੋਹੋੜ, ਪੰਜਾਬੀ ਵਿਵੱਧ ਵਿਦ੍ਯਾ, ਪਟਿਅਲਾਹਾਲ।
3. ਟਿੰਨੌਜਦ ਮਿੱਠ ਅਧੀਨ ਉਲਮਾਮ ਸਗਫ਼, ਉਲਮਾਮ ਵਿਵਵੱਧ ਦੀ ਸਟੂ-ਹਸਟ : (ਕਾਲ-2) (ਆਜਾਲ), ਪੰਜਾਬੀ ਪੁਲਿਟੀਵਾਲੀ, ਪਟਿਅਲਾਹਾਲ।

**Hindi Books**

1. दीदी, श्रीमाल, योज्तिर उदयमान दरविचल.
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)
(Faculty of Humanities and Religious Studies)

SEMESTER–IV
PHILOSOPHY
INDUCTIVE LOGIC AND SOCIAL PHILOSOPHY (OPT. II)
(ONLY FOR PRIVATE STUDENTS)

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

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. Induction: Definition and Characteristics of Induction; Types of Induction (simple
   enumeration, scientific induction and analogy); Difference between deduction and
   induction.
2. Causation : Nature of Cause, Plurality of Causes (Mill)

SECTION–B

SECTION–C
7. Major Social Theories: Marxism and Liberalism.
8. Gandhi on Swaraj and Sarvodaya

SECTION–D
10. Social Problems: Corruption, Gender Discrimination Dowry and Divorce and
12. Punishment: Theories of Punishment and Capital Punishment
Recommended Readings:

**English Books**


**Punjabi Books**

1. ਅਕਾਦਮੀ ਸਿਖ਼, ਸੀ ਸੂਤੂ ਤੌੰਚ ਸਾਈਨਸ਼ੁਆਲ : ਸਭਾਨ ਖ੍ਰਿਸ਼ਚੀ ਦੀਸਲੇਂਸੀ, ਜੜਖਾਰ ਘੁੱਡਆ, ਪਟਿਆਲਾ।
2. ਸੇਨਾ, ਪਰਮਾਣੀ ਸਿਖ਼, ਸਭਾਨ ਦਿਖਾਇਆ ਦੀਸਲੇਂਸੀ ਦੇ ਮਿਣਾਂ, ਸੇਨਾਵਾਤ ਪੁੰਤੀੰਵਾਸਤੀ, ਪਟਿਆਲਾ।
3. ਹਿੰਦੁਕ ਕਲ ਅਤੇ ਖਿੱਤੇ ਉਦਾਰ ਸਮੂਹ, ਪਹਾਣੀਆਂ ਦਿਖਾਇਆ ਵਿਚੋ, ਪਟਿਆਲਾ।
4. ਹਿੰਦੁਕ ਸਿਖ਼ ਅਤੇ ਉਦਾਰ ਸਿਖ਼, ਉਦਾਰ ਦਿਖਾਇਆ ਕੀ ਸਾਹ-ਪ੍ਰਵਾਸ : (ਹਰਾ-2) (ਅਧਾਰਤ), ਸੇਨਾ ਪੁੰਤੀੰਵਾਸਤੀ, ਪਟਿਆਲਾ।
5. ਸਭਾਨ, ਸ਼ਰਵਿਤੇ ਅਤੇ ਸਭਾਨ ਦੀ ਸਭਾਨ ਦੇ ਸਭਾਨ ਦਿਖਾਇਆ, ਉਦਾਰ ਪਹਾਣੀਆਂ ਦਿਸਟੈ, ਪਟਿਆਲਾ।

**Hindi Books**

1. उद्योज किथ, सभान दिक्षा वी दुधेढ़।
2. पंडे, भूषण, झुल, सभान दिक्षा और देव पुष्पक।
3. दिहांगी, वर्दी, झाॅड़ी, उद्योज दिक्षा दलित।
### ZOOLOGY
#### SEMESTER–IV

<table>
<thead>
<tr>
<th>Paper</th>
<th>Maximum Marks</th>
<th>Hours of Teaching</th>
<th>Credit Hrs. per Week</th>
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<tr>
<td></td>
<td>Theory Marks</td>
<td>Practical Marks</td>
<td>(60 min. each)</td>
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<tr>
<td>ZOO-IVA</td>
<td>35</td>
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<td>3 Hrs</td>
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<tr>
<td>(Biochemistry)</td>
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<tr>
<td>ZOO-IVB</td>
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<td>3 Hrs</td>
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<tr>
<td>(Animal Physiology)</td>
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<tr>
<td>PRACTICAL–IV</td>
<td>__</td>
<td>30</td>
<td>4½ Hrs</td>
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<tr>
<td>(RELATED TO ZOO-IVA and ZOO-IVB)</td>
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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

Biochemistry and its scope
Classification and functions of:
Carbohydrates
Proteins
Lipids
Nucleic acids

Enzymes:
Nature and their classification
Coenzymes.

Lipid Metabolism:
B-Oxidation of fatty acid
Ketosis

SECTION–B

Carbohydrate Metabolism:
Glycolysis
Tricarboxylic acid cycle
Hexose monophosphate shunt
Glycogenesis
Glycogenolysis
Gluconeogenesis
Oxidative Phosphorylation

SECTION–C

Protein Metabolism:
Metabolism of amino acids
Oxidative deamination
Transamination
Decarboxylation
Hydrolysis of proteins
Ornithine cycle

SECTION–D
Suggested Reading Material:-


SEMESTER–IV

ZOOGLOGY

ZOO-IV B: Animal Physiology
(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

Digestion: Digestion of dietary constituents, regulation of digestive processes and absorption. Extra and intra cellular digestion, enzymatic digestion and symbiotic digestion.

Respiration: Transport of O₂ and CO₂, Oxygen dissociation curve of haemoglobin, Bohr effect, chloride (-) shift, Haldane effect and control of breathing.

SECTION–B

Heart: Origin and regulation of heart beat, cardiac cycle, electrocardiogram, cardiac output, Blood pressure and micro-circulation.


Excretion: Urine formation and osmoregulation.

SECTION–C

Muscles: Ultrastructure, chemical and physical basis of skeletal muscle contraction.

Neural Integration: Structure of neuron, resting membrane potential, Origin and propagation of impulse along the axon, synapse and myoneural function.
SECTION–D

Physiology of Behavior: Taxes and reflexes, instinctive and motivate learning and reasoning

Endocrine: Structure and physiology of thyroid, parathyroid, adrenal, hypothalamus, pituitary, pancreas and gonads.

Suggested Reading Material:-

Important Note for Practical:
1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines (D.O.No. F. 14-6/2014(CPP-II) dated 01-08-2014) the dissections should not be conducted. The guidelines on this issue are available on the UGC website: www.ugc.ac.in
   1. Study of the skeleton of Scoliodon, Rana, Varanus, Gallus and Oryctolagus.
   2. Identification of food stuffs: starch, glucose, proteins and fats in solution.
   3. Demonstration of osmosis and diffusion.
   4. Demonstrate the presence of amylase in saliva, denaturation by pH and temperature.
   5. Determination of coagulation and bleeding time of blood in man/rat/rabbit.
   7. Recording of blood pressure of man.
   8. Analysis of urine for urea, chloride, glucose and uric acid.
   10. Field study: Visit to a fossil Park/Lab/Science City and submit a report.
   11. Familiarity with the local vertebrate fauna.

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

Guidelines for conduct of Practical Examination:
1. Identify the given bones, make labeled sketches of their respective views.
2. Write down the steps and determine the constituents in the given sample.
3. Write the procedure and perform the given physiology experiment.
4. Report on visit to a fossil park/lab/Science City/study of local vertebrate fauna.
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
Characteristics of seed plants; Evolution of the seed habit; Distinguishing features of angiosperms and gymnosperms. Angiosperms: Origin and evolution. Some examples of primitive angiosperms.

SECTION–B
General features of gymnosperms and their classification; evolution and diversity of Gymnosperms including fossil and living gymnosperms; Geological time scale and fossilization

SECTION–C
Morphology of vegetative and reproductive parts; Anatomy of root, Stem and leaf; Reproduction and life cycle of Pinus, Cycas,

SECTION–D
Morphology of vegetative and reproductive parts; Anatomy of root, Stem and leaf; Reproduction and life cycle of Epherda and Ginkgo

Suggested Readings:-
SEMMESTER–IV
BOTANY
Paper–IV B: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS–II
(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
Angiosperm taxonomy; Brief history, Aims and fundamental components (alpha-taxonomy, Omega-taxonomy, Holotaxonomy); Identification, keys. Taxonomic literature. Botanical nomenclature: Taxonomic ranks; Type concept; Principle of priority.

SECTION–B
Botanical nomenclature: Taxonomic ranks; Type concept; Principle of priority. Major contribution of cytology, Phytochemistry and taximetrics to taxonomy. Classification of angiosperms; Salient features of the systems proposed by Bentham and Hooker, Engler and Prantl

SECTION–C
Diversity of flowering plants as illustrated by members of the families Ranunculaceae, Brassicaceae, Rutaceae, Fabaceae, Apiaceae, Acanthaceae,

SECTION–D
Diversity of flowering plants as illustrated by members of the families Apocynaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Chenopodiaceae, Euphorbiaceae, Liliaceae, Orchidaceae and Poaceae.

Suggested Readings:-
Suggested Laboratory Exercises
1. Angiosperms The following species are suitable for study.
2. This list is only indicative. Teachers may select plants available in their locality. Teachers may select plants/material available in their locality/institution.
1. Ranunculaceae: Ranunculus, Delphinium
4. Rutaceae: Murraya, Citrus.
13. Chenopodiaceae: Chenopodium, Beta.
3. The Students should be made familiar with the use of identification keys including use of computers in taxonomy. The teachers should prevent students from collecting plants from the wild and submitting them for the practical examination. Instead, the student should be asked to prepare field reports.

Gymnosperms
Cycas (i) Habit, armour, of leaf bases on the stem (if specimen is not available show photography), very young leaf (circinate vernation) and old foliage leaves, sclae leaf, bulbils, male cone (specimen); Microsporophyll, megasporophyll mature seed. (ii) Study through permanent slides—normal root (T.S.), stem (T.S.) (if sections are not available show photographs), ovule (L.S.). (iii) Study through hand sections or dissections-coralloid root (T.S.), rachis (T.S.), leaflet (V.S.), microsporophyll (V.S.) pollen grains (W.M.).
Pinus (i) Habit, long and dwarf shoot showing cataphylls and scale leaves, T.S. wood showing growth rings, male cone, 1st year, 2nd year and 3rd year female cones, winged seeds. (ii) Study through permanent slides-root (T.S.), female cone (L.S.) ovule (L.S.), embryo (W.M.) showing polycotyledonous condition. (iii) Study through hand sections or dissections-young stem (T.S.), old stem (wood) (T.L.S. and R.L.S.), needle (T.S. male cone (L.S.), male cone (T.S.), Pollen grains (W.M.).
Ephedra (i) Habit and structure of whole and female cones. (ii) Permanent slides-female cone (L.S.). (iii) Hand sections/dissections-node (L.S.), internode (T.S.), macerated stem to see vessel structure; epidermal peel mount of vegetative parts to study stomata, male cone (T.S. and L.S.), pollen grains. Ginkgo (i) Habit and structure of whole plant. (ii) Permanent slides-male and female reproductive parts. (iii) pollen grains

Suggested Readings:
Semester–IV
Microbiology
Microbial Ecology
(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
1. Diversity of microbial habitats: Environmental selecting factors, physical, chemical and biological types of microbial habitats, atmospheric, aquatic and terrestrial environments.

Section–B
2. Microbial interactions, Competition for survival in nature (for nutrients, space, oxygen), antagonism, commensalism, symbiosis, parasitism miscellaneous associations in nature.

Section–C
3. Role of microorganisms in geochemicals cycles: Carbon cycle, nitrogen cycle, phosphorus cycle. Sulphur cycle, microbial toxins in the environment: Types of Microbial toxins, ecological consequences of microbial toxins as insectical agents, bioinsecticides.

Section–D
4. Microbiological aspects of pollution caused by domestic and industrial sewages, water pollution, air pollution, potable and non-potable water, concept of BOD and COD, effluent treatment by primary, secondary and tertiary methods, biofertilizers bioinsecticides.

Books Recommended:
1) Isolation and enumeration of total bacteria from soil by pour plating and spread plating.

2) Distinction between fermenting and non-fermenting microorganisms.

3) Effects of various concentrations of carbon source on microbial growth.

4) Effects of various concentrations of nitrogen source on microbial growth.

5) Effect of temperature on microbial growth.

6) Effect of pH on microbial growth.
SEMMESTER–IV
INDUSTRIAL MICROBIOLOGY (VOCATIONAL)

MICROBIAL BIOCHEMISTRY
(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
1. Classification of carbohydrates, optical properties, chemical properties of carbohydrates, chemical structure and properties of starch, cellulose, glycogen. Saturated and unsaturated fatty acids, biosynthesis of fatty acid, distribution and function of lipids and microorganism. Degradation of lipids by alpha, beta and omega oxidation, lipid peroxidation.

SECTION–B

SECTION–C
3. Enzymes Classification, coenzyme, cofactor, thermodynamics Explanation of enzyme catalysis, reaction order, derivation of Michaelis-Menten equation, transformation of Michaelis- Menten Kinetics to line weaver-Burke Plot, competitive, uncompetitive and non competitive inhibition, kinetics of allosteric regulation of enzyme. Isozymes, factors contributing to catalytic efficiency of enzymes (Mode of catalysis).
SECTION–D

4. The general structure of DNA, RNA (mRNA, tRNA), synthesis of RNA in Eukaryotes and prokaryotes, concept of operon, promoters and repressor, post transcriptional processing of RNA, regulation of gene expression, (positive and negative control).

Books Recommended:
5. General Microbiology, Vol.I by Power and Daginawala, Himalayan Publisher.
SEMESTER–IV
INDUSTRIAL MICROBIOLOGY (VOCATIONAL)
(PRACTICAL)

Time: 4 Hours  Marks: 25

1. Estimation of Extracellular Protein in cell culture.
2. Estimation of sugars in cell culture broth.
3. Extraction and identification of lipids by this layer chromatography.
4. Paper chromatographic separation of amino acid and pigments by one way descending.
5. Measurement of Mutation frequency in bacteria.
6. Mutant isolation by gradient plate technique.
7. Effect of UV light on mutation frequency in Bacteria.
SEMESTER–IV
MICROBIAL & FOOD TECHNOLOGY

PRINCIPLES OF FOOD NUTRITION
(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

Introduction to Nutrition:
Food as a source of nutrients. functions of foods, Malnutrition. Food guide—Basic five food groups, Concept or Blanced diet. Energy requirement or the body.

SECTION–B

Food Chemistry:
Water: Sources, Requirement, functions, water-balance, effects of deficiency.

SECTION–C

Meal Planning:
Bais principles of meal planning objectives Steps in meal planning food cost. Planning normal diets for following age groups:
   a) Adult male & female
   b) Pregnancy & weaning
   c) Infancy & school going
   d) Adolescence
   e) Old age

SECTION–D

Therapeutic Diets:
In following conditions:
   a) Diarrhea
   b) Hypertension
   c) Constipation
   d) Fever

Recommended Books:
1. Determination of calorific value of a given food.

2. Preparation & Calculation of calories, proteins, carbohydrates, fats & fiber of the diets for the following age groups:
   a) Adult male & female
   b) Pregnancy & weaning
   c) Infancy & school going
   d) Adolescence
   e) Old age

3. Preparation & calculation of calories, proteins, fats, carbohydrates & fiber of therapeutic diets in the following conditions.
   a) Diarrhea
   b) Hypertension
   c) Constipation
   d) Fever
SEMMESTER-IV
BIOINFORMATICS (VOCATIONAL)

COMPUTER PROGRAMMING IN C++ AND PERL
(THEORY)

Time: 3 Hrs. \hspace{2cm} \text{Max. Marks: 100}
Credit Hours: 6 \hspace{1cm} \text{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


**C++ Programming Basics:** Variable, constant, Expression, Statements, Comments and keywords of C++, Arithmetic, Relational, Logical, Assignment, Increment/Decrement, Conditional, Precedence of Operators, Data type, Type Conversion, library function, Introduction to C++ I/O System: Inputting using cin and outputting using cout statements.

**Decision Making and Looping Statement:** If Statement, If else statement, nesting of if statement, switch statement, conditional operator statement, While loop, do loop, for loop, nesting of loops, break and continue statement, go to statement.

**Arrays** Defining an array, array type, array elements, Accessing, and averaging array elements, initializing array, Programming of C++ with array, String handling, array of strings.

SECTION–B

**Functions:** Declaring and defining function, Local, global variables, execution of function, passing argument to function, Return values, Overloading functions, Inline function.

**Object Oriented Programming:** Objects & Classes, Constructor & Destructor, Operator overloading, Overloading unary operators, Overloading binary operators, Data conversion.

**Inheritance:** Derived class and Base Class, Derived Class Constructors, Overriding member functions.

**Polymorphism:** Virtual Functions, Problems with single inheritance, Multiple inheritance.

**Structures** A simple structure, specifying the structure, defining a structure variable.

**Pointers:** Addresses and pointers, Pointers and Arrays, Pointer to objects.

Advanced C++ I/O
SECTION–C


Perl Values and Data Types: Scalar, Arrays, Hashes, Operators; Operator precedence, I/O: Input from STDIN, Built in File handlers, Input from file, Input from file named on command line, Output to file.

SECTION–D

Conditional and Logical Statements: Statement Blocks, if, else, elsif, unless, while, do while, do until, for, foreach statements. Control Statements: Next, last, redo, continue statements. Regular Expressions: Match, substitute and translate operators, Meta characters, Metasymbols and Pattern Modifiers. PERL subroutines and functions, Introduction to Bioperl.

Recommended Books:

SEMESTER-IV
BIOINFORMATICS (VOCATIONAL)

LAB IN COMPUTER PROGRAMMING IN C++ AND PERL
(PRACTICAL)

Time: 3 Hrs
Credit Hours: 4½
Marks: 25

Practicals Using PERL Language:

1. Write a Program to show the concept of standard input/output.
2. Write a Program to declare and use variables.
3. Write a Program to use the operators.
4. Write a Program to use hashes and arrays.
5. Write a Program to implement the conditional statements.
6. Write a Program to show the use of loops, nested loops
7. Write a Program which uses NEXT, LAST, REDO, CONTINUE statement
8. Write a program to show file input/output.
9. Write a Program to show the concept of subroutine.
10. Write a program to transcription of DNA to RNA
11. Write a program to concatenate two strings
12. Programs related with Regular Expression
    - Searching for a regular expression in a file.
    - Searching and replacing a regular expression a file.

Practicals Using C++ Language:

1. Write a Program for addition and multiplication of two matrices.
2. Write a Program to create dynamic array.
3. Create a class having default constructor, copy constructor and destructor.
4. Write a Program to implement the concept of virtual base class.
5. Write a Program to implement multiple inheritances.
6. Write a Program to overload binary operator (-).
7. Write a Program to implement run time polymorphism.
8. Create a database to store student’s information.
SEMESTER-IV
BIOINFORMATICS (VOCATIONAL)

ON JOB TRAINING

Satisfactory/Unsatisfactory

This should be taken up during summer vacations over a period of one month in the area of Bioinformatics/Computer. The college should send the satisfactory/Unsatisfactory report of students after receiving the project/training report from the student.
SEMESTER–IV
BIOPHYSICAL AND BIOCHEMICAL TECHNIQUES AND MOLECULAR BIOLOGY
(THEORY)

Time: 3 Hours
Credit Hours/week: 6 (60 mints. each)

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
Spectroscopy: Lambert-Beer law, General spectroscopy-UV-VIS, fluorescence, IR, Raman spectra. Electrophoresis: Basic principles, theory and application of native, SDS-PAGE and Agarose Gel electrophoresis. Introduction to IEF, (Iso-electric focusing) 2-D gel electrophoresis, applications in biology for isolation of biomolecules based on charge and molecular weight.

SECTION–B
Chromatography: Theory, principle and application of column, paper, thin layer, ion-exchange and affinity chromatography, GLC, HPLC, centrifugation: Basic principles, theory and applications of preparative and analytical centrifugation, rotor types, sedimentation co-efficient and care of rotors.

SECTION–C
Molecular Basis of Life: Structure of DNA, DNA replication both prokaryotes and eukaryotes. DNA recombination molecular mechanisms: prokaryotic and eukaryotic. Insertion elements and transposons.

SECTION–D

Books Recommended:
Time: 3 Hrs.                                       Marks: 25
Credit Hours/week: 4½

Biophysical and Biochemical Techniques

1. Preparation of standard curve of BSA
2. Preparation of standard curve of DNA using absorption at 260nm
3. Separation of proteins by ion-exchange, chromatography
4. Separation of proteins by affinity column chromatography
5. Separation of molecules by gel filtration chromatography.
6. Separation of proteins by SDS-PAGE
7. Sedimentation using Swing out Rotor and Angle Rotor

Molecular Biology

1. Isolation of Genomic DNA
2. Isolation of Plasmid DNA
3. Determination of concentration of DNA sample
4. Determination of Concentration of RNA sample
5. Preparation of Agarose gel for agarose gel electrophoresis
6. Separation of Plasmid and Genomic DNA by Agarose Gel Electrophoresis
7. Separation of assorted charged dyes such as xylene cyanole and bromphenol blue by agarose gel electrophoresis

ON JOB TRAINING

Satisfactory/Unsatisfactory
SEMESTER–IV

EDUCATION

PSYCHOLOGICAL FOUNDATIONS OF EDUCATION

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. Meaning , nature & scope of Educational Psychology
2. Relationship between Education & Psychology, Difference between Psychology & Educational Psychology

SECTION–B
1. Heredity & Environment – concepts & their role in development

SECTION–C
1. Nature of learner- Physical, Mental, Emotional & Social stages of development
2. Physical, Mental, Social, Emotional characteristics, needs & problems of Indian Adolescents.

SECTION–D
1. Exceptional children – Meaning, Types & Identification
2. Characteristics & Education of gifted & backward children

Books Recommended:
5. Sidhu, Kulbir Singh Statistics in Education and Psychology
SEMESTER–IV
HUMAN RIGHTS
ENVIRONMENT AND 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
Environment: Meaning; and Concern for Environment.

Historical Perspective; and Pollution and its effects on environment and life on earth.

SECTION–B
Rights to clean environment: Its Content and Scope; Right to Environment v/s Right to Development; and Culprits and Victims.

SECTION–C
Globalization of the Right: The Planet Earth and Global Commons.

SECTION–D
National Regime of Environment Protection: Constitutional Rights and Duties; and Statutory Rights and Duties.

Recommended Books:
SEMESTER–IV
DAIRY FARMING (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
Management: Breeding cycle; castration of male calves; methods and advantages of castration; control and restraining of animals, casting of animal.

SECTION–B
Estimation of age and body weight of animals; dry period; methods of milking, loose and stall feeding, grazing, use of water in dairy farming; water requirements of dairy animals; factors affecting water intake. Routine dairy farm operations, labour requirement for various farm operations.

SECTION–C

SECTION–D
Merits and demerits of artificial insemination. Infections caused by natural service and artificial insemination. Factors affecting success in artificial insemination. Principles of upgrading of cattle. Various systems of breeding, i.e. inbreeding, outbreeding.
1. Practice in age determination, body weight, disbudding, casting
2. Estimation of milk sample.
3. Cream separation, use of lactometer. Fat and S.N.F.
4. Identification of the breeds.
SEMMESTER–IV

RSL–221 RUSSIAN
PAPER–I (APPLIED GRAMMAR)

Time: 3Hrs  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 (all topics covered in the chapters 31–40 of the prescribed textbook)

SECTION–B
2. Comprehension (Unseen text)

SECTION–C
3. An informal letter to a Friend/Family member.

SECTION–D
4. Questions related to Culture & Civilisation of the Russian Federation to be answered in English. (8 out of 10)
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 from English into Russian (Simple text not exceeding about 200 words)

SECTION–B
2. Translation from Russian into English/Hindi/Punjabi (Simple text not exceeding about 250 words)

SECTION–C
3. General questions based on the chapters covered in the prescribed textbook. (To be answered in Russian) (8 out of 10).

SECTION–D
4. Paragraph writing on any one of the following topics:
   My Neighbour, My Dream Profession, My Best Friend, Our City.
SEMESTER–IV
RUSSIAN
PAPER–III (ORAL)  Max. Marks: 20

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

Note: Dictionaries are allowed in paper III.

Prescribed Text-Book:
“RUSSIAN” – by Wagner V.N. & Ovsienko Y.G. (Lessons 21 to 30)

Recommended Books:

5. B.I. Balin and R.M. Bakaya: An Introductory Russian course for students of Science and Technology, Asia Publishing House, Delhi.
SEMMESTER-IV

FRL–221: FRENCH

PAPER–I (GRAMMAR & COMPOSITION)

Time: 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

Grammar exercises based on textbook

SECTION–B

Grammar exercises based on textbook

SECTION–C

Short answer questions based on vocabulary of textbook

SECTION–D

Paragraph/e-mail/ complete the story

Prescribed Book: “CONNEXIONS-2” by Regine Merieux & Yves Loiseau, Published by Didier (Units 7-12)
SEMESTER–IV
FRENCH
PAPER–II (TRANSLATION & LITERATURE)

Time: 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
Translation from French to English

SECTION–B
Translation from English to French

SECTION–C
Play –“La Parure” - Guy de Maupassant

SECTION–D
Questions related to civilization of France & Francophonie
SEMESTER–IV
FRENCH
PAPER–III (ORAL)

Max. Marks: 20

Reading of a text – 05
Dictation – 05
Conversation – 05
Oral Comprehension – 05

Prescribed Book: “CONNEXIONS-2” by Regine Merieux & Yves Loiseau, Published by Didier (Units 7-12)
SEMMESTER–IV

URDU

URL202: Urdu Fiction (Novel and Short Story)

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.

Courses of Study

SECTION–A
Novel/ Short Story: Origin and Development

SECTION–B
Plot, characterization, language and style & treatment of situation/ Social condition

SECTION–C
Translation of paragraphs

SECTION–D
Summary and Central Idea

Books Prescribed:

2. Urdu Ke Terah Afsane, Educational Book House, AMU Market, Aligarh – 202002
PRL202: GRAMMAR AND FORMS OF PERSIAN 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.

Courses of Reading

SECTION–A
Definitions, kinds and examples of the following:
Ism, Zameer, Sifat, Fail, Fa’il, Mafool & Jumla

SECTION–B
a) Mutazad Alfaz
b) Muttradif Alfaz
c) Ta’dad
d) Tazkeer-o-Tanees

SECTION–C
Ghazal, Qasida, Masnavi, Rubai (Origin, Development, Nomenclature, Definition and technique

SECTION–D
Life History of Prominent Poets (Saadi, Hafiz, Rumi, Amir Khusrau)

Books Recommended:
1. Miftah-ul-Qawaid by Mohiuddin Jafri.
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

पंचतन्त्र (अपरीक्षित कारक) की निम्नलिखित कथायें –
मणिमंडल सेठ की कथा, ब्राह्मणी और नेबले की कथा,
सत्कर पर चक्र भ्रमण करने वाले ब्राह्मण की कथा – कथासार, शिक्षा, जीवन में महत्व।
1 से 25 रू. व्याख्या।

SECTION–B

पंचतन्त्र (अपरीक्षित कारक) की निम्नलिखित कथायें –
सिंह बनाने वाले ब्राह्मणों की कथा,
चार महामूर्ति परिवारों की कथा,
शब्दुद्धि सहाबुद्धि मत्स्य की कथा – कथासार, शिक्षा, जीवन में महत्व।
26 से 50 रू. व्याख्या।

SECTION–C

क. शब्द रूप— देव, गुणि, नवी, गृह, रस्ती, जगत, भवत, मनस, पुंस, महत, सुहात, विक्ष।
गुणाद्, अस्मद्, इदम्, तद्, यद्, किम् – तीनों लिंगों में।
ख. रस्ती प्रत्यय दाप, दौष्ट आदि।

SECTION–D

तत्त्वरुच समास।
संस्कृत अनुवाद।
अपरीशिक्तकारक के पहले 25 पदों में से 4 पदों की सप्रसंग व्याख्या = 20 अंक
अपरीशिक्तकारक की निर्धारित कथाओं में से एक का सार, शिक्षा, जीवन में महत्व पूर्ण जाए। = 20 अंक

अपरीशिक्तकारक के 26 से 50 पदों में से 4 पदों की सप्रसंग व्याख्या = 20 अंक
अपरीशिक्तकारक की निर्धारित कथाओं में से एक का सार, शिक्षा एवं जीवन में महत्व पूर्ण जाए। = 20 अंक

निर्धारित में से 4 शब्द देकर रूप पूछे जाएं। = 20 अंक
10 प्रमुख शब्दों के साथ निर्धारित में से रूप बनाये जायें। = 20 अंक

तत्पुरुष समास में से 10 का समस्त पद/विग्रह लिखने को कहा जाएं। = 20 अंक
हिन्दी में 10 सरल वाक्य देकर संस्कृत अनुवाद पूछा जाए।= 20 अंक

1. पंचतन्त्र (अपरीशिक्त कारक) – विष्णु शर्मा
2. बृहद अनुवाद चन्द्रका (सक्रधर हंस नौटियाल), मोती लाल बनारसी दास, दिल्ली।
SEMESTER–IV
FUNCTIONAL SANSKRIT (VOCATIONAL)

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
इन बिन्दुओं से संबंधित विस्तृत अध्ययन :
पंचमहापातक
प्रायविश्वत
श्राद्धमेंद

SECTION– B
इन बिन्दुओं से संबंधित विस्तृत अध्ययन :
श्राद्धकाल
राप्यण्डीकरण
श्राद्धविकार

SECTION– C
इन बिन्दुओं से संबंधित विस्तृत अध्ययन :
भारतीयवास्तुशास्त्रपरिचय
भूमिचरण

SECTION– D
इन बिन्दुओं से संबंधित विस्तृत अध्ययन :
गृहनिर्माणविधि
गृहप्रवेश
वास्तुशास्त्रि
B.A./B.Sc. (Semester System) (12+3 System of Education) (Semester–IV) (Session 2019-20)  
(Faculty of Languages)

SEMESTER–IV

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.

Important Note: The textbook Making Connections (3rd edition) is significantly different from its 2nd edition. The third edition (by Kenneth J Pakenham, Jo EcEntire, Jessica Williams) is to be followed for this course.

Texts Prescribed:-

1. Making Connections by Kenneth J. Pakenham, Jo McEntire, Jessica Williams, 3rd Edition. CUP.
3. English Grammar in Use (Fourth Edition) by Raymond Murphy, CUP.

Syllabus is divided into four sections as mentioned below:

SECTION–A

English Grammar in Use (Fourth Edition) by Raymond Murphy, CUP: Revision of Units 26-37, 42-48, 92- 97, 113-120.

SECTION–B

Moments in Time: Poems at Sr. No. 7-12

SECTION–C

Making Connections by Kenneth J. Pakenham, 3rd Edn. CUP: SECTION–III (Aspects of Language) and SECTION–IV (Sustaining Planet Earth)

SECTION–D

Essay type question based on the SECTION–“Beyond the reading” from the text, Making Connections.
SEMESTER–IV
ENGLISH (ELECTIVE)

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.

Books Prescribed:
1. Modern Prose, G.N.D.U. Amritsar
2. Dispelling Silence: Short Stories
3. New Directions (Part 4-5)
4. Transcription of Words

Course Contents:
1. Modern Prose–Essays at serial No. 3, 4, 5, 7, 11, 12
2. Dispelling Silence – Stories at serial No. 1, 2, 6, 7, 8, 10, 11, 12
3. New Directions (Part 4-5)
4. Words for Transcription: accommodation, appreciation, capability, civilization, examination, pronunciation, university, terminology, utility, nationality, objectionable, rationality, testimonial, vocabulary, superintendent, satisfactory, rehabilitate, consultation, dictionary, veterinary, espionage, singularity, tranquility, interference, pavilion, superiority.

The syllabus is divided in four units as mentioned below:

SECTION–A
Modern Prose–Essays at serial No. 3, 4, 5, 7, 11, 12

SECTION–B
Dispelling Silence – Stories at serial No. 1, 2, 6, 7, 8, 10, 11, 12

SECTION–C
New Directions (Part 4-5)

SECTION–D
Words for Transcription: accommodation, appreciation, capability, civilization, examination, pronunciation, university, terminology, utility, nationality, objectionable, rationality, testimonial, vocabulary, superintendent, satisfactory, rehabilitate, consultation, dictionary, veterinary, espionage, singularity, tranquility, interference, pavilion, superiority.
Two questions will be set from Section–A of the syllabus. One essay type question based on the theme, plot, characterization etc 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 theme, plot, and characterization would be set carrying eight marks. The second part of the question would carry three short answer questions each requiring a brief answer, related to incidents, anecdotes, minor characters, the use of figure of speech, tone and style etc. from the prescribed short stories will be set in the paper. 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 requiring answer on argument, rhetorical devices, text development strategies, tone, and style etc. from one of the prescribed essays would be set carrying eight marks. The second part of the question would carry three short answer questions based on the exercises in the text book New Directions. 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–D

Two questions would be set from Section–D of the syllabus. Ten words for transcription (five out of the prescribed list and any other five polysyllabic words) would be set in each question. Each word would carry two marks. The students would be required to attempt any one of the two sets of questions. (10x2=20)
SEMESTER–IV
FUNCTIONAL ENGLISH (VOCATIONAL)
CONVERSATIONAL ENGLISH

Time: 3 Hours

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.

Objective: To introduce different social situations and develop Conversational Skills.

Books Prescribed:-

Course Contents:-
Meeting People, exchanging greetings and taking leave
Introducing oneself and others to people
Giving personal information & talking about people, animals and places
Answering telephone calls and dealing with wrong numbers
Getting attention, giving instructions and seeking clarification
Making requests, giving & receiving directions and thanks etc.
Inviting others, accepting or refusing invitations
Exchanging compliments, congratulations, requests, and apologies
Exchanging opinions, advice and suggestions
Expressing likes, dislikes, hopes, wishes, regrets, sympathies, and emotions
Talking about quantity, manner, frequency and comparisons
Talking about past, present and future events, intentions, plans, purposes, arrangements
Expressing (un)certainty, (im)possibility, (im)probability, (in)ability, obligation, necessity and Option
SECTION–A
Module 1- all chapters, Module 2- Chapters 6 and 7 (Spoken English: A Foundation Course, Part-1 by Kamlesh Sadanand & Susheela Punitha, Orient Blackswan)

SECTION–B
Module 3- all chapters, Module 4- chapters 16, 18, 19 (Spoken English: A Foundation Course, Part-1 by Kamlesh Sadanand & Susheela Punitha, Orient Blackswan)

SECTION–C
Module 6- Chapters 26, 27, 28, Module 7- All Chapters, Module 8- Chapters 36, 37 (Spoken English: A Foundation Course, Part- II by Kamlesh Sadanand & Susheela Punitha, Orient Blackswan)

SECTION–D
Module 8- Chapter 39, Module 9- Chapters 41-44, Module 10- All Chapters (Spoken English: A Foundation Course, Part- II by Kamlesh Sadanand & Susheela Punitha, Orient Blackswan)
SEMESTER–IV

PUNJABI (COMPULSORY)

ਪੰਜਾਬੀ (ਅਧਿਕਾਰੀ)

ਸੈਕਸ਼ਨ–ਆ

ਭਾ਷ਾ ਨੀਤੀ (ਭਾਸ਼ਾ-ਨੀਤੀ) : ਜੀ. ਲੀਫਟਨੈਂਟ ਮਿਕਲ, ਮਰਕੂਪਰ ਭਾਸ਼ਾ ਅੰਦਰ ਭਾਸ਼ਾ, ਅਧਿਕਾਰਤ

ਸੈਕਸ਼ਨ–ਬੀ

ਫਾਸਲੇ (ਬਕ਼ੀ) : ਇਫ਼ੋਰ ਸਟੇਕਟ, ਸ਼ਾਨਦਾਰ ਅੜਾ ਕਵਿਤਾ, ਅਧਿਕਾਰਤ

ਸੈਕਸ਼ਨ–ਸੀ (ਟੀ)

ਪ੍ਰਕਾਸ਼ਕਤ (ਟੀਐਸ) (ਸੌਸ਼ਧ, ਸੌਸ਼ਧਾਗ, ਹਿੰਦੀਕਤ ਅਤੇ ਹਿੰਦੀ ਮੂਲਕਾਨ ਮੈਂਬਰ)

ਸੈਕਸ਼ਨ–ਡੀ

ਹਿੰਦੀਕਤਾ (ਰੋਸ਼ਨ ਵਿਦੇਸ਼) (ਜੀਐਸਐਨ, ਟੀਏ)

ਸੈਕਸ਼ਨ–ਟੀ

ਹਿਸਾਬਕਤ (ਸੌਸ਼ਧ-ਸੌਸ਼ਧਾ ਦੇ ਹਿੰਦੀਕਤਾ ਅਤੇ ਬਾਲਾਧਾਰੀ ਹਿੰਦੀ ਹਿਸਾਬਕਤਾ)
SEMESTER-IV

PUNJABI (ELECTIVE)

भाषा (पिछिल्लिट)

पाठ: दिन बाटे

विषय-पैकि अत भविष्याच्या तारीखाने उपलब्धता

1. भूमत भूत ते चतुर दशा ठेवतो। तत दशा लिख ते भूमत तुळे सराटो।
2. बिलासपुराण ते बँधें भंड भूमत भवते तरा। तत वाण लिख दिव भूमत सफळ ते।
3. विचल भूमत ते वाचते अव तरा।
4. पेण्ट मैंट वर्ग दाख्तर भेदच्या उं भूमत देवी चैंड भों चैंड उं चैंड चतुर चिन-भूमत लिख तर मदत ते।

मैत्री- डी

भाषा प्रोफेसर दर प्रोफेसर (1701 इ.स. 1900)
(मैत्री: डा. रांजू गिर राजचंद), भाषा लूटीहितिकर, प्रकाशन, 1992.
(क) प्रोफेसर ज्योति दर प्रोफेसर (लिखक दे प्रोफेसर),
(अ) प्रोफेसर ज्योति दर गिर राजचंद दे प्रोफेसरीयां

मैत्री- बी

महाविद्या अदश प्रोफेसर महाविद्या (प्रोफेसर मंगोलिया)
(मैत्री: डा. उदयपुर मिश्र चंद्र कुमार कुमार मिश्र त्रिवेदी),
(ब) राजन कर्न देव प्रसङ्गिकर, अभिभूतमार, 2007.
(रिजर्व-लेडर/विधिक/विधिक मलिक)

मैत्री- ए

I. दिने धौले हिंद मठ-मठां ते मृणाली
II. दिने धौले हिंद मठ रहस्य लिंगङ लाहड़े

मैत्री- आ

भाषा ज्योति दर लूटीहितिकर लिखी: भूमत सफळता
(क) भाषा ज्योति: लिखक दर लिखक,
(अ) लूटीहितिकर लिखी: लिखक दर लिखक
SEMESTER–IV

FUNCTIONAL PUNJABI (VOCATIONAL)
(ਪ਼ਲ ਜਾਬੀ)

ਪਰਚਾ ਇੈ : ਲਿਖਤ ਮੈਸੀਬਾਂ
ਪਰਚਾ ਘੀ : ਲਾਗੀ ਸਮਾਨ

ਸਭਾ : 3 ਪੇਟੀ

ਜਨਵਰੀ – ਜੁਲਾਈ ਦੇ ਬਾਲ ਵਿਭਾਗ ਦੀ ਰਹਿਣਾ

1. ਪ੍ਰਸਤ ਪ੍ਰਤੀਕੋਲ ਦੇ ਹਾਲ ਜੋਨਾ ਰੇਤਕੋ। ਉਨ ਜੋਨਾ ਹਿੱਸੇ ਦੇ ਪ੍ਰਸਤ ਪ੍ਰਤੀਕੋਲ ਸਥਿਤਤਾ।
2. ਵਿਧਿਆਲਾਖ ਦੇ ਛੇਤੀ ਪ੍ਰਸਤ ਪ੍ਰਤੀਕ ਬਹਤੇ ਜਾਂ। ਉਨ ਜੋਨਾ ਹਿੱਸੇ ਦੇ ਪ੍ਰਸਤ ਪ੍ਰਤੀਕ ਬਹਤੇ ਜਾਂ। ਪ੍ਰਸਤ ਪ੍ਰਤੀਕ ਦੋ ਧੀ ਜੋਨਾ ਹਿੱਸੇ ਦੇ ਬੀਅਰ ਸਾ ਸਰਦਾਰ ਨਹੀਂ。
3. ਉਨੇ ਬਹਤ ਪ੍ਰਸਤ ਦੇ ਕਮ ਭੌਂ ਜਾਂ।
4. ਦੇਖਾ ਮੈਂ ਰਤਕ ਬਹਤ ਸੇਵਾ ਵਰਤੇ ਉਨ ਪ੍ਰਸਤ ਦੀ ਏਂਬਡ ਅਗਾਈ ਦੇ ਮੇਂ ਲੇਪ ਦੇ ਮੇਂ ਸਾਰਾ ਸਾ ਹਿੱਸਾ ਦੇ ਹੀ ਪ੍ਰਸਤ ਪ੍ਰਤੀਕੋਲ ਹਿੱਸ ਵਾਲ ਸਰਦਾਰ ਨਹੀਂ।

ਮੈਵਮਲ-ਦੇਂ
ਪ੍ਰਸਤ ਵਿਚ ਅਸਾਧਾਰਣ - ਹੈਡਸਵਿੇਲ ਅਸਾਧਾਰਣ, ਪਹਿਲਾਵ ਅਸਾਧਾਰਣ।
ਮੈਵਮਲ-ਘੀ
ਚਿੱਟੀ ਭੌਂਵਰ ਲਿਖਤ ਦੇ ਪ੍ਰਸਤ ਪ੍ਰਤੀਕੋਲ: ਹੈਡਸਵਿੇਲ, ਪਹਿਲਾਵ ਅਸਾਧਾਰਣ ਸੁਤੀ।
ਮੈਵਮਲ-ਮੀ
ਛਾਲ ਦੇ ਹੋਂਟਨਾ ਰੇਤ ਦੀ ਹਿੱਸਾ।
ਮੈਵਮਲ-ਬੀ
ਲਾਗੀ ਪ੍ਰਸਤ ਪ੍ਰਤੀਕੋਲ, ਸੂਬਾਮੁੱਖ ਪ੍ਰਤੀਕੋਲ, ਜਲ, ਹੈਡਸਵਿੇਲ ਆਟੇਸਟ, ਹੈਡਸਵਿੇਲ ਸੁਚਲਤਾ, 
ਪ੍ਰਸਤ ਸ਼ਾਹ ਬੀਨ।
SEMESTER–IV
FUNCTIONAL PUNJABI (VOCATIONAL)
(ਪੰਜਾਬੀ ਵਿਦਿਆ)

ਸੈਕਸ਼ਨ-ਆ
ਵਿਗਾਹ ਅਤੇ ਲਖਣ ਦੀ ਸਮਰਥਤਾ ਲਈ ਜਾਵੇਗੀ।

ਸੈਕਸ਼ਨ-ਬੀ
ਲਖਣ ਦਾ ਅਭਾਸ ਕਰਵਾਉਣਾ (30 ਪੇਟਜ਼)

ਸੈਕਸ਼ਨ-ਸੀ
ਅਮਲੀ ਤਰੀਕਾ:
ਵਿਭਾਗ/ਅਧਿ ਵਿਭਾਗ/ਅਧਿ ਵਿਭਾਗ ਇਨਕਾਰ ਦੀ ਮਾਤਰ ਵੇਖੀ ਉੱਤੇ ਦਿੱਤਾ ਵਾਲੇ ਦੀ ਮਾਤਰਾਵਲੀ ਫੁਲ ਲਖਣੀ ਪ੍ਰਸਫੁੱਲਤਾ ਦੀ ਸ਼ੇਰ ਦਾ ਲਖਣ ਦਾ ਹਿਸਾਬ ਬਣਾਉਣਾ।
BCG–102: 
(भुज्जली बंसारी)
(In Lieu of Punjabi Compulsory)

Time: 3 Hrs  
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

मिश्र पंच दी संवप्त: गुरु वासन रेंढ नी दर सीता रे दुपेर (1469–1539): गुरु वासन रेंढ नी दर सीता रे दुपेर भी दर, देव समय विद्या, गुरु दर भक्ति, मिश्र पंच दी संवप्त। संवप्त-भक्ति, गुरुमंती दी संवप्त दी संवप्त दे पुढ़े।

SECTION–B

मिश्र पंच दी विद्या: गुरु अंगाद रेंढ नी (1539–1522): गुरु अंगाद रेंढ नी दर मिश्र पंच दी विद्या दी, गुरुमंती दी विद्या।

SECTION–C

गुरु अभयराम दे गुरु अभयराम दी दुर्ग (1522–1581): गुरु अभयराम दी दर मिश्र पंच दी विद्या दी, अविश्वास मन्दििय दी संवप्त, भंसी क्रूर भरे भक्तिभाव मुहूर, गुरु अभयराम दी दर वेद स्त्र, अभयरामपुरा दी संवप्त, अभद्र क्रूर।

SECTION–D

गुरु अवसर दे दे में मिश्र पंच दी विद्या (1581–1606): गुरु अवसर दे दे वेद स्त्र, अविश्वास मन्दििय दी विद्या, भंसी क्रूर मन्दििय दी संवप्त, गुरु अवसर दे दे में मिश्र पंच दे वेद स्त्र।
Suggested Readings:

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

Q 1; k ds fy, fu/maj r ṇfr

निर्मला : मुंशी प्रेमचंद, मिस्टर अभिमन्यु: लक्ष्मी नारायण लाल

SECTION–B

मुंशी प्रेमचंद और लक्ष्मीनारायण लाल का सामान्य परिचय
निर्मला उपन्यास एवं मिस्टर अभिमन्यु नाटक से सम्बन्धित प्रश्न : तात्त्विक समीक्षा, सार, उद्देश्य, चरित्र–विज्ञान आदि से सम्बन्धित प्रश्न।
सैकड़ा: उपन्यास एवं नाटक की परिभाषा एवं तत्व

SECTION–C

भविष्कल: परिस्थितियाँ, स्वर्ण युग, काव्यावरां, विशेषताएं

SECTION–D

सामान्य प्रचलित मुहावरे तथा लोकोक्तियाँ : अर्थ और वाक्य प्रयोग
विशेष चिह्न, सामान्य प्रचलित समास, कारक(अनुप्रयोग)

Vyaakaran ke liye koi bhi samanya purushak dekh ||
FUNCTIONAL HINDI (VOCATIONAL)

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

- अनुवाद के गुण
- अनुवाद के प्रकार
- अनुवाद की समस्याएँ

SECTION B

- अनुवाद अनुवाद के गुण
- अनुवाद के प्रकार
- अनुवाद की समस्याएँ

SECTION C

हिन्दी साहित्य का रीतिकाल: परिस्थितियाँ, नामकरण, विशेषताएँ और रीतिकाल की प्रमुख कार्यरूपों का परिचय।

1. डॉ. वासुदेव शर्मा, हिन्दी साहित्य का विकास, सूर्यभारती प्रकाशन, दिल्ली।
2. डॉ. रीता पालीवाल, अनुवाद प्रक्रिया, साहित्य निधि, दिल्ली।
SEMESTER – IV
Functional Hindi (Vocational)

- विद्यार्थियों को प्रति समस्त 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।

- अनुवाद का अभ्यास–वाक्यों और अनुच्छेदों में
- समाचार–पत्रों में से किसी एक समाचार का हिन्दी से अंग्रेजी व अंग्रेजी से हिन्दी में अनुवाद।
- किसी एक स्व: निर्धारित विज्ञान का अंग्रेजी से हिन्दी/पंजाबी में अनुवाद
- किसी साहित्यिक कृति में से एक लघुकथा और एक कविता का हिन्दी/पंजाबी/अंग्रेजी भाषा में अनुवाद।
1. Ability to invest
2. Acceptance Credit
3. Acceptor
4. Accounts, Debt
5. Accredited
6. Accreditee
7. Accrued
8. Advance
9. Agio
10. Allotment of debentures
11. Amortisation Payments
12. Amount Claimed
13. Assuser
14. At par
15. At variance with
16. Back data
17. Bad debt
18. Balance Book
19. Balance Due
20. Balance of trade
21. Balance
22. Bank, Apex
23. Bank bill
24. Bank Cash
25. Bank Credit
26. Bank Debit
27. Black list
28. Bring forward
29. Capita, per
30. Capital loss
31. Capitalisation
32. Case study
33. Cheque, Bearer
34. Coin, Base
35. Consignee
36. Credit Balance
37. Daily Balance
38. Exchange, Stable
39. Goodwill
40. House, Clearing
41. Issue
<table>
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<tr>
<th>No.</th>
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<th>English Translation</th>
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<tr>
<td>42</td>
<td>Key-word</td>
<td>सूचक शब्द</td>
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<tr>
<td>43</td>
<td>know-how</td>
<td>तकनीकी जानकारी</td>
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<td>Life fund</td>
<td>टाइटल, विधि</td>
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<td>45</td>
<td>Loan</td>
<td>ऋण</td>
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<td>Long term rate</td>
<td>दीर्घविधि दर</td>
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<td>Market, Firm</td>
<td>व्यापार, चिह्न</td>
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<td>48</td>
<td>Tax base</td>
<td>कर आधार</td>
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<td>Year Accounting</td>
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<td>50</td>
<td>Wage</td>
<td>मजबूती</td>
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</table>

1. कार्य लागत     Work Cost
2. मूल्य देय     Value payable
3. व्यापार चिह्न     Trade Mark
4. समय बद्र     Time Bound
5. वाचक का बजट     Surplus budget
6. विक्रय स्थल     Selling point
7. सलत प्रतिभूति     Security continuing
8. अभिम लेखा     Advance account
9. सूचना पुस्तक     Advice Book
10. स्थायी परिस्थितियां     Assets
11. शेष राशि     Balance in Hand
12. लाभ राशि     Balance of profit
13. वैकिंग पूंजी     Banking capital
14. वैकिंग नीति     Banking policy
15. वाहक/धारक     Bearer
16. खाता जमा     Book deposit
17. परिकलन     Calculation
18. नकद बाजार     Cash market
19. भुगतान गया चेक     Cheque cashed
20. वसूली प्रभार     Collection charges
21. ऋण अंतराल     Credit gap
22. चालू खाता     Current account
23. नामे बाकी     Debit balance
24. गिरती कीमतें     Declining price
25. मांग पत्र     Demand note
26. मूल्य हास     Depreciation
27. आर्थिक बंदौं     Economic depression
28. अंकित मूल्य     Face value
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<td>36.</td>
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<td>न हानि न लाम के आधार पर</td>
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<td>Mint price of gold</td>
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<td>Note, Soiled</td>
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<td>Policy, whole life</td>
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13. कक्ष
14. कार्ड टिकट
15. खंडरे की जंजीर
16. खान-पान
17. खुला माल डिब्बा
18. गालत मार्ग
19. गाड़ी पटरी पर
20. गाड़ी का डिब्बा
21. बलती गाड़ी
22. वालू करना
23. चिटकनी
24. चुंगी
25. जलमार्ग
26. टिकट घर
27. टैंकर
28. धाक गाड़ी
29. डिब्बा
30. ले जाना
31. तीर्थयात्री कर
32. दबा
33. दुर्घटना स्थल
34. दोहरी लाइन
35. नियन्त्रक
36. निर्देशन
37. प्रभार
38. प्लेटफर्म टिकट
39. बुक किया मार्ग
40. भारतीय रेल
41. माल गाड़ी
42. यात्रा टिकट
43. लेख दूरी
44. वातानुकूलित
45. वापसी टिकट
46. शाखा लाइन
47. साधारण किराया
48. स्टीपर
49. हाथ ब्रेक
50. हाथ शंटिंग

Compartment
Card ticket
Alarm chain
Catering
Open wagon
Wrong route
Train on line
Guard's Van
Running Train
Switching in
Bold
Terminal charges
Waterway
Booking office
Tariff
Mail train
Compartment
Carry
Pilgrim tax
Claims
Site of accident
Double line
Controller
Direction
Charges
Platform Ticket
Booked route
Indian Railway
Goods Train
Journey Ticket
Brake distance
Air conditioned
Return ticket
Branch line
Ordinary fare
Sleeper
Hand brake
Hand Shunting
1. Dead slow — अत्यन्त धीरे
2. Over time — अतिरिक्त समय
3. Seat — टासन
4. Rest Room — आराम कमरा
5. Average speed — औसत गति
6. Points — कोईंटे
7. Personnel — कर्मिक
8. Coach — ग्यारी
9. Detrain — गाड़ी से उतरना या उतारना
10. Thick fog — घना कोहरा
11. Charge man — चार्ज मैन
12. Sort — छांटना
13. Credit Note — जमा पत्र
14. Dispute — झगड़ा
15. Contract — ठेका
16. Determine — तय करना
17. Class — छर्जा
18. Rate — छर
19. Capacitor — धारक
20. Lower class — निचला दर्जा
21. Damages — नुकसानी
22. Resistance — प्रतिरोध
23. Tourist — पर्यटक
24. Package — पैक करना
25. Replace — बदलना
26. Obstruction — बाढ़ा
27. Shorel — बेलचा
28. Freight — भाड़ा
29. Despatch — भेजना
30. Quote — भाव देना
31. Arch — महरबंब
32. Commodity — मल
33. Quantity — मात्रा
34. Van  यान
35. Night shift  रात की पाली
36. Train  रेलगाड़ी
37. Detain  रोकना
38. Return Ticket  वापसी टिकट
39. Carriage  बहन
40. Indicator  संकेतक
41. Collection  संग्रहण
42. Stores  समान
43. Through Train  सीधी गाड़ी
44. Stock Rail  स्थिर पटरी
45. Push trolley  हाथ ठेला
46. Hand shunting  हाथ शेंटिंग
47. Through Booking  सीधी बुकिंग
48. Notice  सूचना
49. Collaboration  सहयोग
50. Relief train  राहत गाड़ी

1. Inland air-mail  अंतर्देशीय हवाई डाक
2. Inland air-mail service  अंतर्देशीय हवाई डाक सेवा
3. International post  अंतर्राष्ट्रीय डाक
4. Most immediate call  अति तात्क्षणिक काल
5. No delivery  अवितरण, वितरण नहीं
6. Sectional mail bag  अनुभागीय डाक--केसेटा
7. Small saving fund  अंश बचत निधि
8. Unclaimed article  अनुच्छेदी वस्तु
9. Unclaimed money  अनुच्छेदी मनीआर्डर
10. Emergency call  आपत्तिकाल
11. Inward Land rate  आवक देश दर
12. Inward mail  आवक डाक
13. Credit care ticket  उच्चाध काल टिकट
14. Extension telephone  उपटेलीफोन
15. Gift coupon  उपहार कूपन
16. Gift parcel  उपहार पार्सेल
17. Output voltage  उत्पादन वोल्टता
18. Satellite exchange  उपमार्ग-केन्द्र
19. Sub-post office  उपपत्रक घर
20. Cable code  कंबिल कोड
21. Cable fault  कंबिल दोष
22. Cable guard  कंबिल रक्षक
23. Cable house  कंबिल घर
24. Cable terminal box  कंबिल टर्मिनल बक्स
25. Call counting meter  काल गणन मीटर
26. Code word  कोड शब्द
27. Duration of call  काल की अवधि
28. Message in code  कोड भाषा में शब्द
29. Misdelivery  गलत डिलिवरी
30. Microphone  व्यंग्यगाही
31. Reply postcard  टेलीफोन केन्द्र
32. Mail agent  डाक एजेंट
33. Post  डाक से भेजना
34. Postage  डाक शुल्क
35. First day cover  प्रथम दिवस आवरण
36. Call bell  बुलावा घंटी
37. Call signal  बुलावा संकेत
38. Indian postal service  भारतीय डाक सेवा
39. Meter reading  मीटर पठन
40. Cash certificate  रोकड प्रमाण पत्र
41. Cash counter  रोकड पटल
42. Short circuit  लघु पथक
43. Advice of delivery  वितरण सूचना
44. Dry battery  शुष्क बैटरी
45. Dry code cable  शुष्क कोड केबल
46. Army post office  सेना डाक घर
47. Combined mail  संयुक्त डाक थैला
48. Message code  संदेश संकेत
49. Ordinary telegram  साधारण काल
50. Service post card  सरकारी पोस्टकार्ड
1. **Anonymous communication**
2. **Inland air-mail**
3. **Inland letter**
4. **International post**
5. **Most immediate call**
6. **No delivery**
7. **Non-Objection certificate**
8. **Obonious call**
9. **Sectional mail bag**
10. **Unclaimed article**
11. **Unclaimed money**
12. **Emergency call**
13. **Inward foreign parcel**
14. **Inward land rate**
15. **Inward mail**
16. **Recurring**
17. **Credit call ticket**
18. **Extension telephone**
19. **Gift Coupan**
20. **Gift parcel**
21. **Output voltage**
22. **Satelite Exchange**
23. **Sub-post office**
24. **Cable Code**
25. **Cable fault**
26. **Cable guard**
27. **Cable house**
28. **Cable terminal box**
29. **Call counting meter**
30. **Code word**
31. **Central telegraph office**
32. **Duration of call**
33. **Message in code**
34. **Misdelivery**
35. **Microphone**
36. **Reply postcard**
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<tr>
<th>No.</th>
<th>Bengali Term</th>
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<td>37.</td>
<td>ডাক এজন্ট</td>
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<td>ডাক থেলা</td>
<td>Mail bag</td>
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<tr>
<td>39.</td>
<td>তার পত্তা</td>
<td>Telegraphic address</td>
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<tr>
<td>40.</td>
<td>প্রথম দিবস আবরণ</td>
<td>First day cover</td>
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<td>41.</td>
<td>বুলাবা ঘণ্টী</td>
<td>Call Bell</td>
</tr>
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<td>42.</td>
<td>বুলাবা সংকেত</td>
<td>Call signal</td>
</tr>
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<td>43.</td>
<td>ভারতীয় ডাক সেবা</td>
<td>Indian postal service</td>
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<td>মিটার পথন</td>
<td>Meter reading</td>
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<td>রোকড় প্রমাণ পত্র</td>
<td>Cash certificate</td>
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<td>রোকড় পতল</td>
<td>Cash counter</td>
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<td>লঘু পথ</td>
<td>Short circuit</td>
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<td>শুক বেটরি</td>
<td>Dry battery</td>
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<td>সেনা ডাকঘর</td>
<td>Army post office</td>
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<td>সংযুক্ত ডাক থেলা</td>
<td>Combined mail</td>
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</table>
Hindi Patrakarita (Vocational)

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

- विज्ञापन – अर्थ, परिभाषा और स्वरूप
- विज्ञापन – लेखन के चरण
- विज्ञापन – शीर्षक
- विज्ञापन – लेआउट और विशेषताएं
- विज्ञापन – कापी के प्रकार

SECTION–B

- विज्ञापन के विषय
- विज्ञापन – उपयोगिता

SECTION–C

- विज्ञापन एजेंसियों का चुनाव
- विज्ञापन एजेंसियों का प्रशासकीय कार्य
- विज्ञापन एजेंसियों के कार्य
SECTION-D

½k½ foK ki u d sx qk

— विज्ञापन के माध्यम :
  • रेडियो
  • दूरदर्शन
  • समाचार—पत्र
— विज्ञापन की भाषा
— विज्ञापन—निर्माण व कार्य विधि
— हिन्दी के प्रमुख विज्ञापन

I gk d i qr d

डॉ. हरमोहन लाल सूद, हिन्दी भाषा, प्रयोजनमूलकता एवं आयाम, वागीश प्रकाशन,
जालंधर—2005
SEMESTER-IV
Hindi Patrakarita (Vocational)

विद्यार्थियों को प्रति समस्त 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।

- विज्ञापन-लेखन का अभ्यास (तत्त्वों के आधार पर)
- विज्ञापन-लिप्यांतरण का अभ्यास
- कोई एक सुजनात्मक विज्ञापन तैयार करना (रेडियो/समाचार-पत्र/दूरदर्शन)
- प्रिंट व इलेक्ट्रॉनिक मीडिया के विज्ञापनों की तुलना
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. Meaning, aims types of yoga.
2. The practice Asans and their importance, meditative poses, Padma, Vazra, Sukh Asana
Cultural poses, Halasan, Sarvangasana, Bhujangasna, Salbhasana, Dhanurasana
Chakarasana,

SECTION–B
3. Paranayam, its types, objective Physiological value.
4. Sudhi kirya ; its types objective Physiological value .
5. Effects of Yogic Physical exercise on various systems of the body.

SECTION–C
6. Respiratory System, Organ of respiratory, Mechanism of respiration.
7. Excretory system ; Structure and function of skin
8. Endocrine system, meaning of endocrine glands, function and location pituitary, thyroid and adrenal glands.

SECTION–D
9. Nervous System : its organ and function
10. Circulatory system : Heart and its structure, Mechanism of circulation of blood, various types of blood vessel
11. Care, prevention of causes and cure of sports injuries (sprain, contusion, dislocation, and fractures).
Division Marks: athletics (12) + games (12) + ground marking (3+3), Practical Note Book (5), Viva Voce (5)

- **Athletics Performance**
  - 200M, High Jump for Boys
  - 200M, High Jump for Girls

- **Games (Boys & Girls)**
  - Fundamental Rules, Performance
  - Hockey
  - Wrestling

**Books Recommended:**