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हिन्दी

कक्षा — 12

समय — 3 घंटे

पूर्णांक (70+30) 100

| | अंक |
|---------------------------------------|-----|
| (क) अपठित बोध (गद्यांश बोध) | 15 |
| (ख) रचनात्मक लेखन एवं जन-संचार माध्यम | 20 |
| (ग) ● आरोह भाग-2 | 26 |
| ● पूरक पुस्तक : वितान भाग-2 | 09 |
| (घ) संस्कृत पठित बोध | 10 |
| (ङ) पाठ्यपुस्तक पर आधारित प्रश्नोत्तर | 10 |
| (च) वाक्य रचना एवं व्याकरण | 10 |

(क) अपठित बोध :

1. गद्यांश बोध पर आधारित बोध, प्रयोग, रचनांतरण, शीर्षक आदि पर लघूत्तरात्मक प्रश्न **15 अंक**

(ख) रचनात्मक लेखन एवं जन-संचार माध्यम : **20 अंक**

रचनात्मक लेखन पर दो प्रश्न

2. निबंध 10

3. जनसंचार की विधाओं पर दो प्रश्न

प्रिंट माध्यम सम्पादकीय

● रिपोर्ट 05

● आलेख 05

(ग) आरोह भाग -2 **26 अंक**

4. दो काव्यांशों में से किसी एक पर अर्थग्रहण के तीन प्रश्न (2+2+2) 06

5. एक काव्यांश के सौन्दर्य बोध पर दो प्रश्न (2+2) 04

6. कविता की विषय-वस्तु पर आधारित तीन में से दो लघूत्तरात्मक प्रश्न (2+2) 04

7. दो में से एक गद्यांश पर आधारित अर्थग्रहण के तीन प्रश्न (2+2+2) 06

8. पाठों की विषय वस्तु पर आधारित तीन में से दो बोधात्मक प्रश्न (3+3) 06

पूरक पुस्तक : वितान भाग -2 **09 अंक**

9. विचार/संदेश पर आधारित तीन में से दो लघूत्तरात्मक प्रश्न (2+2) 04

10. विषय वस्तु पर आधारित दो में से एक निबंधात्मक प्रश्न 05

(घ) संस्कृत पठित बोध **10 अंक**

(I) संस्कृत पाठ्यपुस्तक के प्रदत्त गद्यांश पर आधारित चार लघूत्तरीय प्रश्नों में से
तीन प्रश्नों के उत्तर (2+2+2) 06

(II) पाठ्यपुस्तक के प्रदत्त श्लोक के आधार पर आधारित तीन लघूत्तरीय प्रश्नों में से
दो प्रश्नों के उत्तर (2+2) 04

| | | |
|-----|---|------------------|
| (ड) | संस्कृत पाठ्य-पुस्तक पर आधारित प्रश्नोत्तर | 10 अंक |
| | पाठ्य-पुस्तकों के पाठों पर आधारित आठ लघूत्तरीय प्रश्नों में से पाँच प्रश्नों के संस्कृत में पूर्ण वाक्यों में उत्तर | (2+2+2+2+2) 10 |
| (च) | संस्कृत वाक्य रचना | 04 अंक |
| | दिये गये सुबन्त, तिडन्त, अव्यय आदि से सम्बन्धित दस पदों में से चार पदों को लेकर चार वाक्यों की रचना, करना। | (1+1+1+1) 04 अंक |
| (छ) | संस्कृत व्याकरण | 06 अंक |
| | समास, कारक, शब्द रूप, धातु रूप आदि से सम्बन्धित लघूत्तरीय प्रश्न | 04 अंक |
| | विसर्ग संधि – विसर्जनीयस्य सः ससजुषोसः अतोरोरप्लुतादप्लुते | (1+1+1+1) |
| | अथवा | 02 अंक |
| | कोई कण्ठस्थ श्लोक लिखकर उसका हिंदी अनुवाद करना | (3+3) 06अंक |

निर्धारित पुस्तकें :

1. आरोह भाग –2
2. वितान भाग –2
3. अभिव्यक्ति और माध्यम
3. संस्कृत पाठ्य पुस्तक – प्रबोधिनी भाग - 2

निम्नलिखित पाठों का मूल्यांकन नहीं किया जायेगा :-

- | | | |
|----|-------------|---|
| 1— | आरोह भाग-2 | 1. शमशेर बहादुर सिंह – उषा |
| | | 2. चार्ली चैपलिन यानी हम सब –विष्णु खरे |
| | | 3. पहलवान की ढोलक— फणीश्वर नाथ रेणु |
| 2— | वितान भाग-2 | 1. डायरी के पन्ने— ऐन फ्रैंक |

ENGLISH

Class XII

Time : 3 Hours

One Paper

Marks : 100

Unitwise Weightage

| | Unit/Areas of Learning | Marks |
|----|--|----------|
| A. | Section A Reading Skills Reading unseen prose passages and note making | 20 |
| B. | Section B Advanced Writing Skills | 35 |
| C. | Section C (Prescribed Books) (i) Flamingo (ii) Supplementary Reader - Vistas | 30 15 |

SECTION-A

Reading unseen Passages and Note-making

20 Marks

Two unseen passages with a variety of questions including 03 marks for vocabulary such as word formation and inferring meaning and 05 marks for note-making.

The total length of the two passages will be between 950-1200 words. The passages will include two of the following:

- Factual Passages** e.g. instructions, descriptions, reports.
- Discursive passage** involving opinion e.g. argumentative, persuasive or interpretative text.
- Literary passage** e.g. extract from fiction, drama, poetry, essay or biography

Summary - Class XII

| Unseen passages | No. of words | Testing Areas | Marks Allotted |
|-----------------|--------------|--|----------------|
| 1. | 600-700 | Short answer type questions to test local, global and inferential comprehension, Vocabulary | 09 } 12 |
| 2. | 350-500 | Note-making in an appropriate format | 03 } 08 |
| | | Abstraction | 05 } 08 |
| | | | 03 } |

A passage of about 600-700 words carrying 12 marks and another passage of about 350-500 words carrying 08 marks

- A passage to test reading comprehension. The passage can be literary, factual or discursive. The length of the passage should be between 600-700 words. 12
- A shorter passage of 350-500 words for note-making and abstraction. 08

SECTION B

| Advanced Writing Skills | | 35 Marks |
|--------------------------------|--|-----------------|
| 3. | One out of two short compositions of not more than 50 words each e.g. advertisement and notices, designing or drafting posters, writing formal and informal invitations and replies. | 5 |
| 4. | A report or a factual description based on verbal input provided (one out of two) (100-125 words) | 10 |
| 5. | Writing one out of two letters based on verbal input. Letter types include: (a) business or official letters (for making enquiries, registering complaints, asking for and giving information, placing orders and sending replies): (b) letters to the editor (giving suggestions on an issue) (c) application for a job | 10 |
| 6. | One out of two compositions based on visual and/or verbal input (150-200 words). Output may be descriptive or argumentative in nature such as an article, or a speech. | 10 |

SECTION C

| Text Books | | 45 Marks |
|--------------------------|--|-----------------|
| Prescribed Books: | | |
| Flamingo | | 30 |
| 7. | One out of two extracts based on poetry from the text to test comprehension and appreciation | 4 |
| 8. | Three out of four short questions from the poetry section to test local and global comprehension of text. | 6 |
| 9. | Five short answer questions based on the lessons from prescribed text. (2x5) | 10 |
| 10. | One out of two long answer type questions based on the text to test global comprehension and extrapolation beyond the set text. (Expected word limit about 125-150 words each) | 10 |
| Snapshots | | 15 |
| 11. | One out of two long answer type question based on Supplementary Reader to test comprehension and extrapolation of theme, character and incidents (Expected word limit about 125-150 words) | 7 |
| 12. | Four short answer questions from the Supplementary Reader (2x4) | 8 |
| Prescribed Books | | |
| 1. | Flamingo : English Reader | |
| 2. | Vistas : Supplementary Reader | |

**संस्कृत
कक्षा—12
पाठ्यक्रम : परीक्षानिर्देशाश्च**

| | | |
|---|---|----------------------|
| एकम् प्रश्नपत्रम् | अवधि: होरात्रयम् | पूर्णांकः:100 |
| अस्मिन् प्रश्नपत्रे चत्वारः खण्डाः भविष्यन्ति | | |
| खण्डः "क" | अपठितांश—अवबोधनम् | 10 |
| खण्डः "ख" | रचनात्मककार्यम् | 15 |
| खण्डः "ग" | अनुप्रयुक्तव्याकरणम् | 30 |
| खण्डः "घ" | | 45 |
| | (अ) पठितांश—अवबोधनम् | 35 |
| | (ब) संस्कृतसाहित्येतिहासस्य परिचयः | 10 |
| प्रतिखण्डं विस्तृतविवरणम् | | |
| खण्डः 'क' | | |
| (अपठितांशावबोधनम्) | | |
| 80—100 शब्दपरिमितः एकसरलः अपठितः गद्यांशः । | | 10 |
| प्रश्नवैविध्यम् | | |
| (i) | एकपदेन उत्तरम् | 2 |
| (ii) | पूर्णवाक्येन उत्तरम् | 2 |
| (iii) | सर्वनामस्थाने संज्ञाप्रयोगः | 1 |
| (iv) | कर्तृक्रिया—पदचयनम् | 1 |
| (v) | विशेषण—विशेष्य/पर्याय/विलोमादिचयनम् | 2 |
| (vi) | समुचितशीर्षकप्रदानम् | 2 |
| खण्डः 'ख' | | |
| (संस्कृतेन रचनात्मकं लिखितकायम्) | | |
| (i) | अनौपचारिकं पत्रम्/प्रार्थनापत्रम् | 5 |
| (ii) | लघुकथा (शब्दसूचीसाहाय्येन, रिक्तस्थानपूर्ति—माध्यमेन) | 5 |
| (iii) | संकेताधारितम् अनुच्छेदलेखनम् (चित्रमधिकृत्य/निर्दिष्टशब्दसूची—साहाय्येन) | 5 |
| खण्डः 'ग' | | |
| (अनप्रयुक्तव्याकरणम्) | | |
| (i) | पाठाधारिताः सन्धिच्छेदाः स्वरसन्धिः, व्यंजनसन्धिः, विसर्गसन्धिः | (2+2+2) 6 |
| (ii) | पाठाधारितसमस्तपदानां विग्रहाः अव्ययीभावः, द्विगुः, द्वन्द्वः, तत्पुरुषः, कर्मधारयः, बहुव्रीहिः | 6 |
| (iii) | प्रत्ययाः अधोलिखितप्रत्यययोगेन वाक्यसंयोजनम्/ सङ्केताधारितरिक्तस्थानपूर्तिः | |

| | | |
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| (अ) | कृत— क्त, क्तवतु, क्त्वा, तुमुन्, ल्यप्, तव्यत्, अनीयर्, क्तिन्, शतृ, शानच् | 5 |
| (आ) | तद्धित— मतुप्, इन्, ठक्, ठञ्, त्व, तल्, | 3 |
| (iv) | अन्विति: कर्त्ता — क्रिया—अन्वितिः/विशेषण—विशेष्य—अन्वितिः | 5 |
| (v) | उपपदविभक्तिप्रयोगः (पाठ्यपुस्तकम् आधृत्य) | 5 |
| | खण्डः 'घ' | 45 |
| | भागः (I) | |
| | (पठितांश—अवबोधनम्) | 35 |
| (अ) | अंशत्रयम् | 15 |
| (i) | एकः गद्यांशः | 5 |
| (ii) | एकः नाट्यांशः | 5 |
| (iii) | एकः पद्यांशः | 5 |
| | प्रश्नवैविध्यम्— | |
| (i) | एकपदेन उत्तरम् | 1 |
| (ii) | पूर्णवाक्येन उत्तरम् | 1 |
| (iii) | विशेषण—विशेष्य—अन्वितिः/पर्याय/विलोमादिचयनम् | 1 |
| (iv) | सर्वनामस्थाने संज्ञाप्रयोगः | 1 |
| (v) | कर्तृ—क्रिया—पदचयनम् | 1 |
| (i) | उद्धृतांशानाम् प्रसङ्गसन्दर्भलेखनम् कः कम् कथयति/सन्दर्भग्रन्थस्य लेखकस्यच नामोल्लेखनम् | 4 |
| (ii) | प्रदत्ते भावार्थत्रये शुद्धभावार्थचयनम् / प्रदत्ते भावार्थे रिक्तस्थानपूर्तिः | 4 |
| (iii) | उद्धृतश्लोकानाम् अन्वयेषु रिक्तस्थानपूर्तिः | 4 |
| (iv) | प्रदत्तवाक्यानां क्रमायोजनम् | 4 |
| (v) | प्रदत्तपंक्तिषु प्रसङ्गानुसारं श्लिष्टपदानाम्/पदानाम् अर्थलेखनम् | 4 |
| | खण्डः घ | |
| | भागः (II) | |
| | (सामान्यः संस्कृतसाहित्यपरिचयः) | 10 |
| 1. | (अ) पाठ्यपुस्तके संकलितपाठ्यांशानां कवीनां कृतीनां संस्कृतेन परिचयः | (1x5) |
| | (आ) संस्कृते गद्य—पद्य—नाटकादिविधानां मुख्यविशेषतानां परिचयः | 5 |

HISTORY
CLASS XII
Time : 3 Hours

One Paper

Marks : 100

| Units | Marks |
|--|-------|
| Section A: Archaeology & Ancient India Units 1 - 4 | 25 |
| Section B: Medieval India Units 5 - 9 | 30 |
| Section C: Modern India Units 10 - 15 | 35 |
| Unit 16 : Map Work | 10 |

| Class XII: Themes in Indian History | |
|---|---|
| Themes | Objectives |
| <p>SECTION A: ARCHAEOLOGY & ANCIENT INDIA</p> <p>1. The Story of the First Cities: Harappan Archaeology</p> <p>Broad overview: Early urban centres Story of discovery: Harappan civilization</p> <p>Excerpt: Archaeological report on a major site Discussion: how it has been utilized by archaeologists/historians</p> | <ul style="list-style-type: none"> • Familiarize the learner with early . urban centres as economic and social institutions. • Introduce the ways in which new data can lead to a revision of . existing notions of history. • Illustrate how archaeological reports are analyzed and interpreted by scholars. |
| <p>2. Political and Economic History: How Inscriptions tell a story.</p> <p>Broad overview: Political and economic history from the Mauryan to the Gupta period Story of discovery: Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history. Excerpt: Asokan inscription and Gupta period and grant. Discussion: Interpretation of inscriptions by historians</p> | <ul style="list-style-type: none"> • Familiarize the learner with major trends in the political and . economic history of the subcontinent. • Introduce inscriptional analysis and the ways in which these have shaped the understanding of political and economic processes |

| | |
|---|---|
| <p>3. Social Histories: Using the Mahabharata Broad overview: Issues in social history, including caste, class, kinship and gender Story of discovery: Transmission and publications of the Mahabharat Excerpt: from the Mahabharata, illustrating how it has been used by historians. Discussion: Other sources for reconstructing social history.</p> | <ul style="list-style-type: none"> • Familiarize the learner with issues in social history. • Introduce strategies of textual . analysis and their use in reconstructing social history. |
| <p>4. A History of Buddhism: Sanchi Stupa Broad overview: (a) A brief review of religious histories of Vedic religion, Jainism, Vaisnavism, Saivism. (b) Focus on Buddhism Story of discovery: Sanchi stupa Excerpt: Reproduction of sculptures from Sanchi Discussion: Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism</p> | <ul style="list-style-type: none"> • Discuss the major religious developments in early India. • Introduce strategies of visual analysis and their use in reconstructing histories of . religion. |
| <p>SECTION B: MEDIEVAL INDIA 5. Agrarian Relations: The <i>Ain-i- Akbari</i> Broad overview: (a) Structure of agrarian relations in the 16th and 17th centuries. (b) Patterns of change over the period. Story of Discovery: Account of the compilation and translation of <i>Ain-i-Akbari</i> Excerpt: from the <i>Ain-i-Akbari</i> Discussion: Ways in which historians have used the text to reconstruct history.</p> | <ul style="list-style-type: none"> • Discuss developments in agrarian relations. • Discuss how to supplement official documents with other . sources. |
| <p>6. The Mughal Court: Reconstructing Histories through Chronicles Broad Overview: (a) Outline of political history 15th-17th centuries. (b) Discussion of the Mughal court and politics. Story of Discovery: Account of the production of court chronicles, and ‘their subsequent translation and transmission. Excerpts: from the <i>Akbarnama</i> and <i>Padshahnama</i>. Discussion: Ways in which historians have used the texts to reconstruct political histories.</p> | <ul style="list-style-type: none"> • Familiarize the learner with the major landmarks in political history • Show how chronicles and other sources are used to reconstruct the histories of political institutions. |

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|---|--|
| <p>7. New Architecture: Hampi Broad Overview: (a) Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. (b) Relationship between architecture and the political system.. Story of Discovery: Account of how Hampi was found Excerpt: Visuals of buildings at Hampi Discussion: Ways in which historians have analyzed and interpreted these structures</p> | <ul style="list-style-type: none"> • Familiarize the learner with the new buildings that were built during the time. • Discuss the ways in which architecture can be analyzed to . reconstruct history. |
| <p>8. Religious Histories: The Bhakti-Sufi tradition Broad Overview: (a) Outline of religious developments during this period. (b) Ideas and practices of the Bhakti-Sufi saints. Story of Transmission: How Bhakti-Sufi compositions have been preserved. Excerpt: Extracts from selected Bhakti Sufi works. Discussion: Ways in which these have been interpreted by historians.</p> | <ul style="list-style-type: none"> • Familiarize the learner with religious developments. • Discuss ways of analyzing devotional literature as sources of history. |
| <p>9. Medieval Society Through Travellers' Accounts Broad Overview: Outline of social and cultural life as they appear in travellers' Story of their writings: A discussion of where they travelled, why they travelled, what they wrote, and for whom they wrote. Excerpts: from Alberuni, Ibn Batuta, Bernier. Discussion: What these travel accounts can tell us and how they have been interpreted by historians.</p> | <ul style="list-style-type: none"> • Familiarize the learner with the accounts. salient features of social histories described by the travellers. • Discuss how travellers' accounts can be used as sources of social history. |
| <p>SECTION C: MODERN INDIA 10. Colonialism and-Rural Society: Evidence from Official Reports Broad overview : (a). Life of zamindars, peasants and artisans in the late 18 century (b) East India Company, revenue settlements and surveys. (c) Changes over the nineteenth century. Story of official records: An account of why official investigations into rural societies were under taken and the types of records and reports produced.</p> | <ul style="list-style-type: none"> • Discuss how colonialism affected Zamindars, peasants and artisans. • Understand the problems and limits of using official sources for understanding the lives of people. |

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| <p>Excerpts: From Firminger's Fifth Report, Accounts of Frances Buchanan-Hamilton, and Deccan Riots Report, Discussion: What the official records tell and do not tell, and how they have been used by historians.</p> | |
| <p>11. Representations of 1857 Broad Overview: (a) The events of 1857-58. (b) How these events were recorded and narrated. Focus: Lucknow. Excerpts: Pictures of 1857. Extracts from contemporary accounts. Discussion: How the pictures of 1857 shaped British opinion of what had happened.</p> | <ul style="list-style-type: none"> • Discuss how the events of 1857 are being reinterpreted. • Discuss how visual material can be used by historians |
| <p>12. Colonialism and Indian Towns: Town Plans and Municipal Reports Broad Overview: The growth of Mumbai, Chennai, hill stations and cantonments in the 18th and 19th century. Excerpts: Photographs and paintings. Plans of cities. Extract from town plan reports. Focus on Kolkata town planning. Discussion: How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.</p> | <ul style="list-style-type: none"> • Familiarize the learner with the history of modern urban centres. • Discuss how urban histories can be written by drawing on different types of sources. |
| <p>13. Mahatma Gandhi through Contemporary Eyes Broad Overview: (a) The nationalist movement 1918 - 48, (b) The nature of Gandhian politics and leadership. Focus: Mahatma Gandhi in 1931. Excerpts: Reports from English and Indian language newspapers and other contemporary writings. Discussion: How newspapers can be a source of history.</p> | <ul style="list-style-type: none"> • Familiarize the learner with significant elements of the nationalist movement and the nature of Gandhian leadership. • Discuss how Gandhi was perceived by different groups. • Discuss how historians need to read and interpret newspapers, diaries and letters as historical source. |
| <p>14. Partition through Oral Sources Broad Overview: (a) The history of the 1940s; (b) Nationalism. Communalism and Partition. Focus: Punjab and Bengal. Excerpts: Oral testimonies of those who experienced partition. Discussion: Ways in which these have been analyzed to reconstruct the history of the event.</p> | <ul style="list-style-type: none"> • Discuss the last decade of the national movement, the growth of communalism and the story of Partition. • Understand the events through the experience of those who lived through these years of communal violence. • Show the possibilities and limits of oral sources. |

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| <p>15. The Making of the Constitution Broad Overview: (a) Independence and the new nation state. (b) The making of the constitution. . Focus: The Constitutional Assembly debates. Excerpts: from the debates Discussion: What such debates reveal and how they can be analyzed.</p> | <ul style="list-style-type: none"> • Familiarize students with the history of the early years after independence. • Discuss how the founding ideals of the new nation state were debated and formulated. • Understand how such debates and discussions can be read by historians. |
| <p>16. Map Work on Units 1-15</p> | |

GEOGRAPHY
CLASS XII
Time : 3 Hours

| One Theory Paper | Marks : 70 |
|---|-----------------|
| A. Fundamentals of Human Geography | 35 Marks |
| Unit 1: Human Geography | 3 |
| Unit 2: People | 5 |
| Unit 3: Human Activities | 10 |
| Unit 4: Transport, Communication & Trade | 10 |
| Unit 5: Human settlements | 5 |
| Unit 6: Map Work | 2 |
| B. India: People and Economy | 35 Marks |
| Unit 7: People | 5 |
| Unit 8: Human Settlements | 4 |
| Unit 9: Resources and Development | 12 |
| Unit 10: Transport, Communication and International Trade | 7 |
| Unit 11: Geographical Perspective on selected issues and problems | 4 |
| Unit 12: Map Work | 3 |
| C. Practical Work | 30 Marks |
| Processing of Data and Thematic Mapping | 12 |
| Surveying (Chain Table Survey and Plane Table Survey) | 05 |
| Field study or Spatial Information Technology | 04 |
| Practical Record Book | 05 |
| Viva Voce | 04 |

A. Fundamentals of Human Geography

Unit 1: Human Geography: Nature and Scope

Unit 2: People

- Population — distribution, density and growth
- Population change-spatial patterns and structure; determinants of population change;
- Age-sex ratio; rural-urban composition;
- Human development - concept; selected indicators, international comparisons

Unit 3: Human Activities

- Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agricultural and allied activities – some examples from selected countries.
- Secondary activities-concept; manufacturing: types – household, small scale, large scale; agro based and mineral based industries; people engaged in secondary activities – some examples from selected countries.
- Tertiary activities-concept; trade, transport and communication; services; people engaged in tertiary activities - some examples from selected countries
- Quaternary activities-concept; knowledge based industries; people engaged in quaternary activities - some examples from selected countries

Unit 4: Transport, Communication and Trade

- Land transport - roads, railways; trans-continental railways.
- Water transport- inland waterways; major ocean routes.
- Air transport- Intercontinental air routes.

- Oil and gas pipelines.
- Satellite communication and cyber space.
- International trade-Bases and changing patterns; ports as gateways of international trade, role of WTO in International trade.

Unit 5: Human Settlements

- Settlement types - rural and urban; morphology of cities (case study); distribution of mega cities; problems of human settlements in developing countries.

Unit 6: Map Work on identification of features based on above units on the outline Political map of World.

Part B. India: People and Economy

Unit 7: People

- Population : distribution, density and growth; composition of population - linguistic, religious; sex, rural-urban and occupational– population change through time and regional variations;
- Migration: international, national-causes and consequences;
- Human development: selected indicators and regional patterns;
- Population, environment and development.

Unit 8: Human Settlements

- Rural settlements - types and distribution;
- Urban settlements - types, distribution and functional classification.

Unit 9: Resources and Development

- Land resources- general land use; agricultural land use, Distribution of major crops (Wheat, Rice, Tea, Coffee, Cotton, Jute, Sugar cane and Rubber), agricultural development and problems.
- Water resources-availability and utilization-irrigation, domestic, industrial and other uses; scarcity of water and conservation methods-rain water harvesting and watershed management (one case study related with participatory watershed management to be introduced).
- Mineral and energy resources: distribution of metallic (Ironore, Copper, Bauxite, Manganese) non-metallic (Mica, Salt) minerals; conventional (Coal, Petroleum, Natural gas and Hydro electricity) and non-conventional energy sources (solar, wind, biogas).
- Industries - types, industrial location and clustering; distribution and changing pattern of selected industries-iron and steel, cotton textiles, sugar, petrochemicals, and knowledge based industries; impact of liberalization, privatisation and globalisation on industrial location;
- Planning in India- target area planning (case study); idea of sustainable development (case study)

Unit 10: Transport, Communication and International Trade

- Transport and communication-roads, railways, waterways and airways: oil and gas pipelines; national electric grids; communication networkings - radio, television, satellite and internet;
- International trade- changing pattern of India's foreign trade; sea ports and their hinterland and airports,

Unit 11: Geographical Perspective on Selected Issues and Problems (One case study to be introduced for each topic)

- Environmental pollution; urban-waste disposal.
- Urbanisation rural-urban migration; problem of slum.
- Land Degradation.

Unit 12: Map work on locating and labelling of features based on above units on outline political map of India

C. Practical Work

Unit I : Processing of Data and Thematic Mapping

- Sources of data.
- Tabulating and processing of data; calculation of averages, measures of central tendency, deviation and rank correlation;
- Representation of data- construction of diagrams: bars, circles and flowchart; thematic maps; construction of dot; choropleth and isopleth maps.
- Use of computers in data processing and mapping.

Unit II : Survey (Chain Table Survey and Plane Table Survey)

Unit III: Field Study or Spatial Information Technology

Field visit and study: map orientation, observation and preparation of sketch; survey on any one of the local concerns; pollution, ground water changes, land use and land-use changes, poverty, energy issues, soil degradation, impact of floods and drought, catchment area of school, Market survey and Household survey (any one topic of local concern may be taken up for the study; observation and questionnaire survey may be adopted for the data collection; collected data may be tabulated and analysed with diagrams and maps).

OR

Spatial Information Technology

Introduction to GIS; hardware requirements and software modules; data formats; raster and vector data, data input, editing & topology building; data analysis; overlay & buffer

ECONOMICS CLASS XII

Time : 3 Hours

One Paper

Marks : 100

| Units | Marks |
|--|-------|
| Part A : Introductory Microeconomics | |
| 1. Introduction | 4 |
| 2. Consumer Equilibrium and Demand | 18 |
| 3. Producer Behaviour and Supply | 18 |
| 4. Forms of Market and Price Determination | 10 |
| 5. Simple applications of Tools of demand and supply | - |
| | 50 |
| Part B : Introductory Macroeconomics | |
| 6. National Income and Related Aggregates | 15 |
| 7. Money and Banking | 8 |
| 8. Determination of Income and Employment | 12 |
| 9. Government Budget and the Economy | 8 |
| 10. Balance of Payments | 7 |
| | 50 |

Part A : Introductory Microeconomics

Unit 1: Introduction

What is an economy? Central problems of an economy : what, how and for whom to produce; concepts of production possibility frontier and opportunity cost.

Distinctions between (a) planned and market economies, (b) positive and normative perspectives in economics, and (c) microeconomics and macroeconomics .

(Non-evaluative topics: Some basic tools in the study of economics - equation of a line, slope of a line, slope of a curve.)

Unit 2: Consumer Equilibrium and Demand

Consumer's equilibrium – meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.

Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.

Demand, market demand, determinants of demand, demand schedule, demand curve, movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurement of price elasticity of demand – (a) percentage-change method and (b) geometric method (linear demand curve); relationship between price elasticity of demand and total expenditure.

Unit 3: Producer Behaviour and Supply

Production function: Total Product, Average Product and Marginal Product.

Returns to a Factor.

Cost and Revenue: Short run costs - total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationship.

Revenue - total, average and marginal revenue.

Producer's equilibrium-meaning and its conditions-under (a) total revenue-total cost approach and (b) marginal revenue-marginal cost approach.

Supply, market supply, determinants of supply, supply schedule, supply curve, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply – (a) percentage change method and (b) geometric methods.

Unit 4: Forms of Market and Price Determination

Perfect competition - meaning and features.

Market Equilibrium under perfect competition – Determination of equilibrium price, Effects of shifts in demand and supply.

Non - Competitive Markets - monopoly, monopolistic competition, oligopoly - their meanings and features.

Unit 5: Simple applications of Tools of demand and supply (not to be examined)

Part B : Introductory Macroeconomics

Unit 6: National Income and related aggregates

Macroeconomics: Its meaning.

Some basic concepts of macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation.

Circular flow of income; Methods of calculating National Income – Value Added or Product method, Expenditure method, Income method.

Concepts and aggregates related to National Income:

Gross National Product (GNP), Net National Product (NNP), Gross and Net Domestic Product (GDP and NDP) - at market price, at factor cost; National Disposable Income (gross and net), Private Income, Personal Income and Personal Disposable Income; Real and Nominal GDP. GDP and Welfare

Unit 7: Money and Banking

Money – its meaning and function.

Supply of money – Currency held by the public and net demand deposits held by commercial banks.

Money creation by the commercial banking system.

Central banking and its functions (example of the Reserve Bank of India).

Unit 8: Determination of Income and Employment

Aggregate demand and its components.

Propensity to consume and propensity to save (average and marginal).

Short-run fixed price in product market, equilibrium output; investment or output multiplier and the multiplier mechanism.

Meaning of full employment and involuntary unemployment.

Problems of excess demand and deficient demand; measures to correct them - change in government spending, availability of credit.

Unit 9: Government Budget and the Economy

Government budget - meaning, objectives and components.

Classification of receipts - revenue receipt and capital receipt; classification of expenditure - revenue expenditure and capital expenditure.

Various measures of government deficit - revenue deficit, fiscal deficit, primary deficit: their meaning and implications.

Fiscal policy and its role (**non-evaluative topic**).

Unit 10: Balance of Payments

Balance of payments account - meaning and components; balance of payments deficit-meaning.

Foreign exchange rate – meaning of fixed and flexible rates and managed floating.

Determination of exchange rate in a free market.

HOME SCIENCE (Theory)
CLASS XII
Time : 3 Hours

| One Paper | | Marks : 70 |
|------------------|---|-------------------|
| Unit | | Marks |
| I. | Know Little Children | 17 |
| II. | Nutrition for Self and Family (contd.) | 17 |
| III. | Money Management and Consumer Education | 17 |
| IV. | My Apparel | 17 |
| V. | Things I can do with my Home Science Training | 2 |
| Total | | 70 |

Unit I: Know Little Children (0-3 years)

Some specific characteristics: physical and motor-height, weight and body proportions; motor development during 0-3 months, 3-6 months, 6-9 months, 9-12 months and 1-3 years (milestones only); social and emotional developments; recognition of people around; socialization, expression of emotions; cognitive development; learning through concrete operations and language development.

Protection from preventable diseases: immunization - concept and types (natural and acquired), breast feeding (one of the ways to develop natural immunity); immunization chart; symptoms and incubation period of childhood diseases - TB, DPT, polio, measles, cholera, diarrhoea.

Special needs of disadvantaged and disabled children: socially disadvantaged, physically handicapped (partially blind & deaf, affected/missing limb): characteristics & needs.

Substitute care at home and outside: siblings, grand parents, neighbours creche, day care centres etc: Integrated Child Development Scheme (ICDS) - objectives and functions.

Unit II : Nutrition for Self and Family

Planning meals for the family: meaning and importance of meal planning, principles and factors affecting meal planning, planning meals for the family; keeping in mind the needs of individual members, including children, pregnant women, lactating mother, members suffering from fever and diarrhoea; role and preparation of ORS.

Ways to ensure good health for the family: using safe drinking water-importance of potable water for good health, qualities of safe drinking water; household methods of making water safe for drinking; boiling, filtering, use of alum and chlorine tablet role of hygiene for food handlers at home level. Safety against food adulteration, definition and meaning of food adulteration as given by PFA; common adulterants present in cereals, pulses, milk and milk products, fats and oils, sugar, jaggery, honey, spices and condiments. Ill effects of some of the adulterants present in the foods: kesari dal, metanil yellow, argemone seeds.

Unit III : Money Management and Consumer Education

Family Income: various sources of family income: (i) money income, (ii) real income, direct and indirect; Supplementing family income-need & ways; need and procedure for keeping household accounts.

Savings and Investment: meaning and importance of savings; ways/methods of investment-banks, post-office, LIC, Units, PPF, PF; basis for selection of method of investment risk, security, profit, tax saving.

Consumer Protection and Education: meaning, problems faced by consumer, Consumer Protection Act (1986) and Services; Consumer aids: levels, standardization marks, advertising, guidebooks/leaflets, Consumer redressal forum.

Unit IV: My Apparel

Clothing and its relation to personality: Elements of line, colour, texture: elements of design: balance, rhythm, proportion, harmony, emphasis; factors that influence the selection of clothes: personality, age, climate, occupation, figure, occasion, fashion; selection and purchase of fabrics. Purpose, quality, cost, season, reliable shop.

Checking size and quality in ready-made garments, need and criteria: seams, hem, plackets, fasteners, workmanship, design, drape.

Care of clothes: General principles and precautions to be followed while removing stains and washing:

Cleansing agents: soaps and detergents (basic differences); Storage of clothes.

Unit V: Things I can do with my Home Science Education

Application of knowledge of Home Science in everyday life.

Usefulness of some of the skills learnt here for supplementing family income.

Skills learnt here can be gainfully used for employment (self-employment, apprenticeship).

Further training required to make this field a career: various sources and facilities available for training.

Practicals

Time: 3 Hours

30 Marks

| Unit | Marks |
|--|-------|
| I. Know Little Children | 3 |
| II. Nutrition for Self and Family (contd.) | 11 |
| III. Money Management and Consumer Education | 3 |
| IV. My Apparel | 6 |
| V. Things I can do with my Home Science Training | - |
| Record | 5 |
| Viva | 2 |

Unit I : Know Little Children (0-3 years)

Activity: Observe a child in neighbourhood or at home for various milestones of physical and motor developments and prepare a chart.

Practical: Make an interview schedule for working mother.

Activity: Interview three mothers working outside the home to find out their arrangements of substitute care for their children (0-3 yrs) in their absence.

Practical-Prepare of chart of mile stones

Practical: Prepare a chart for immunization of a child.

Unit II : Nutrition for Self and Family

Practicals: Plan meals for the family and carry out modifications to suit individual needs including persons suffering from fever or diarrhoea and for pregnant and lactating mother. Prepare and serve one dish.

Practical: Preparation of oral dehydration solution

Practical: Simple tests for checking adulteration in-

- (i) Cereals
- (ii) Pulses
- (iii) Milk and milk products
- (iv) Tea leaves
- (v) Dhania powder
- (vi) Red chillies
- (vii) Haldi powder
- (viii) Gur (Jaggery)
- (ix) Black Pepper (Whole)

Unit III: Money management and Consumer Education

Activity: Open an account. Find out and report how an account is opened in a bank and post office. Collect and fill forms.

Activity: Read and evaluate labels of any four household items bearing different standardization marks.

Practical: Fill bank/post office forms

Practical: Prepare one label each for four household items/products bearing different standardization marks.

Unit IV : My Apparel

Practical : Make sample of

- (a) basic stitches and seams:
 - (i) Running Stitch
 - (ii) Hemming
 - (iii) Blind stitch
 - (iv) Inter-locking
- (b) Fasteners - Buttons and hooks.
- (c) Patch work

or make an apron and incorporate all the above (a, b, and c).

Practical: Examine quality in ready-made garments.

Practicals: Relative effect of temperature of water on the clothes during the process of washing clothes (cold, lukewarm, hot). Draw conclusions and how this knowledge is helpful.

Practical:

Removal of stains of -

- (i) Tea stain
- (ii) Coffee stain
- (iii) Curry
- (iv) Grease
- (v) Ball point ink
- (vi) Lipstick
- (vii) Blood

Practical: Make a soap/detergent (liquid/powder/cake)

Hindustani Music (Vocal)

CLASS XII

Time : 3 Hours

One Theory paper

Marks : 30

Part A : Theory

- 1- (a) Definition of the following :
Verna, Grama, Murchhana, Alankar, Gamaka, Khatka, Murki, Kan, Laya, Tala, Gharana
- (b) Classification of Ragas. Time theory of Ragas.
- 2- (a) Brief history of ancient Hindustani Music with special reference to Sangeet Ratnakar.
(Brief history of medieval, and modern periods Hindustani Music with special reference to Sangeet Parijata and the works of Pt. Bhatkhande.)
- 3- Description of the Ragas prescribed for Class XII (Practical)
- 4- To recognize the Ragas from given passages of Svaras.
- 5- Writing of Notation of prescribed Songs and Talas.
- 6- Biography of musicians.

Part B : One Practical Paper

Marks 70

- 1- (a) One Drut Khayal, Bihag, Bhairav, Kedar and Bhimpalasi with simple elaborations.
- (b) One Tarana, One Dhrupada, one Dhamar in any prescribed raga.
- (c) One Tarana, One Dhrupada one Dhamar in any prescribed raga.
- (d) One Thumri Style of Dadra style composition in Khamaj or a devotional song.
- (e) One Swar malika each Rag.
- 2- The recitation of Thekas of Kharwa, Dadra, Jhaptal, Rupak, Tilwada and Dhamar with Dugun, keeping Tala with hand beats.
- 3- Ability to sing Aroha, Avaroha, pakad and simple Svaravistar with Alap and Tana in the Prescribed Ragas.
- 4- Ability to recognize the prescribed Ragas from the passaged of svaras rendered by the Examiner.
- 5- To recognise the svaras.
- 6- Biographies of –
 1. Ustad Abdul Karim Khan
 2. Ustad Faiyaz Khan
 3. Pt. Krishna Rao Shankar Pandit
 4. Ustad Bade Ghulam Ali Khan
 5. Thyagaraja
 6. Ustad Alladiya Khan
 7. Ustad Mushtaq Ali Khan

Hindustani Music (Instrumental Melodic)

CLASS XII

Time : 3 Hours

One Theory paper

Marks : 30

Part A : Theory

- 1- (a) Definition of the following :
Gram, Murchana, Varna, Alankar, Gamaka, Kritan, Zamzama
- (b) Classification of Ragas, Time theory of Ragas, Gharana
- 2- (a) Brief history of ancient Hindustani Music with special reference to Sangeet Ratnakar.
- (b) Brief history of medieval and modern period of Hindustani Music with special reference to Sangeet Parijata and works of Pt. V. N. Bhatkhande.
- (c) Description of the Ragas Prescribed for Class XII Practical.
- 3- Description of construction of instruments opted for alongwith the basic techniques of playing.
- 4- To Recognise the Ragas from given passages of Svaras.
- 5- Writing Notation of compositions (Gat) and Talas.
- 6- Biographies of musicians :
Tansen, Ustad Inayat Khan, Ustad Mushtaq Ali Khan, Ustad Alauddin Khan, Pt. Pannalal Ghosh.

Part B : One Practical Paper

Marks 70

- 1- (a) One Razakhani gat in Bhairav, Bihag, Kedar and Bhimpalasi with elaborations (Toda and Jhala) with Sthaya and Antara.
- (b) Two MasitKhani compositions (Gats) in a Prescribed Raga with elaborations.
- (c) One composition in Khamaj in Thumri style or Dhun.
- (d) Ability to produce Meend in any prescribed Raga of minimum two svaras.
- (e) One composition in Ektal and one in Jhaptal.
- 2- Ability to play Aroha, Avaroha, Pakad, Simple Svara – Vistars with Alap and Toda in the prescribed Ragas.
- 3- Ability to recite thekas of Jhaptal, Rupak, Tilwada ad Dhamar with Dugun, keeping tala with hand beats.
- 4- Ability to recognize the prescribed Ragas from passages of Svaras sung or played by the examiner.
- 5- To recognize the Svaras

Hindustani Music (Instrumental Percussion)

CLASS XII

Time : 3 Hours

One Theory paper

Marks : 30

Part A : Theory

- 1- (a) Definition of the following terms :
Verna, Alankar, (Gamak, Krintan, Zamzama) Zarab, Kala, Kriya, Anga, Peshkar, chakkardar, (Classification of Ragas, Time theory of Ragas) Rela and Paran, Gharana.
- (b) Comparative study of some antar Talas
 - (a) Chautal – Ektal
 - (b) Jhaptal – Sul Tal
 - (c) Dhamar – chautal
- (c) Classification of Jatis of different patterns.
- (d) Classification of Layakari.
- 2- (a) Brief history of ancient Hindustani Music with special reference to Sangeet Ratnakar.
- (b) Brief history of medieval and modern period of Hindustani Music With special reference to Sangeet Parijat and the works of Pt. V. N. Bhatkhande.
- 3- Description of the talas Prescribed for Class XII Practical.
- 4- Writing Notation of the prescribed Talas.
- 5- Recognition of talas from give portion of the Thekas.
- 6- Biographies of Natthan Khan, Ahmed jan thira-Kawa, Parbat Singh, Habibuddin Khan

Part B : One Practical Paper

Marks 70

- B. Practical Activities
- 1- Playing of the thekas of Jhaptal and Rupak of Sool tala and Chautal Tala on Tabla with simple elaborations.
 - 2- Two Peshkaras. Two Qayadas, Two Tukras and a few gats in Teental Ektal and Jhaptal/Chautal and Dhamar.
 - 3- Playing the Thekas of Rupak, Tilwara Chautala and Dhamar with Dugun and Chaugun, with Mukhda and Tihai.
 - 4- Recitation of the prescribed talas with Dugun and Chaugun keeping tala with hand beats.
 - 5- A few simple laggis in Dadra tala or Thapia on Pakhawaj.
 - 6- Knowledge of tuning of the instrument.

Karnatak music (Vocal)

CLASS XII

Time : 3 Hours

One Theory paper

Marks : 30

Part A : Theory

History and Theory of Indian Music

- 1- (a) Brief history of Karnatak music with special reference to Sangita Saramte and Sangita Sampradaya Pradarshni, Raga Vibodham, Brihaddesi, Dattillam.
- (b) Short life-sketch and contribution of the following :
Annamaacharya, Kshetrajna Swati Tirunal Gopala Krishna Bharti, Mahavaidyanatha Iyer;
- (c) Brief History and evolution of the musical form Tiruppugarh, pada, javali and tillana.
2. Definition and the explanation of the following –
Janaka janya System of Ragas, Bhashanga, Upanga, Varja, Varka, Ragas, Gamakas Arudi, Eduppu, Probandhams, Grama, Murchhana Jaati & Vikasha Prayoga.
- 3- Description of the ragas prescribed for Practical
- 4- Candidates should be able to write in notation composition in the ragas prescribed.
- 5- Brief description of concert instruments their construction and technique.

Part B One Practical Paper

Marks -70

- 1- Ragas Prescribed
Pantuvarli, Todi, Nata, Gowla, Varali, Sri Saveri Mukhari, Kedaragowla, Purvikalyani.
- 2- Two Varnam in Atatala in two degrees of speed.
- 3- Alapana of the ragas prescribed.
- 4- Compositions in authentic tradition atleast one in each of the prescribed ragas, covering musical forms kirtanas, Kirtis, Padams, Javalis, Tillanas and Ragamalikas.
- 5- Niraval and Kalpana Svaras in Adi, rupakam, and Chapu talas in two degrees of speed.
- 6- Chapu and Desadi Talas.
Talas prescribed
Suladi Sapta Talas with their Jaati and Gati and Bhedas : Chappu talas and their varieties.

Karnatak music (Instrumental Melodic)

CLASS XII

Time : 3 Hours

One Theory paper

Marks : 30

Part A : Theory

History and Theory of Indian Music

- 1- (a) Brief history of Karnatak music with special reference to Sangita Saramrta and Sangita Sampradaya Pradarshni, Raga
(b) Short life-sketch and contribution of the following :
Annamaacharya, Swati Tirunal, Kshetrajna, Gopala Krishna Bharti, Maha Vaidyanatha Iyer;
(c) Brief History and evolution of the musical form Tiruppugarth, Padam, javali and Tilana.
- 2- Definition and the explanation of the following :
Janaka janya System of Ragas, bhushanga, upanga, Varjavakra, Ragas Gamakas Arudi, Eduppu, Probandhams, Grama Murchhana Jaati & Visksha Prayoga.
- 3- Description of the ragas prescribed for Practical
- 4- Candidates should be able to write in notation composition in the ragas prescribed.
- 5- The Candidate should be able to describe the construction of the instrument opted for alongwith the basic techniques of playing.
- 6- The candidate should have an outline knowledge of the classification of the instruments in general & a brief history of the instrumental opted for.

Part B One Practical Paper

Marks -70

- 1- Practical Activities
Ragas Prescribed
Pantumarli, Todi, Nata, Gowla, Sri, Saveri, Kederagowla.
- 2- One Varnam in Ata Tala in two degrees of speed.
- 3- Alpana of the ragas prescribed.
- 4- Atleast one authentic compositions traditionally rendered. In each of the prescribed Ragas covering the musical forms Kirtanas, Kirtis, Padams, Javalis, Tillans and Ragamalikas.
- 5- Kalpana Svaras in Adi, Rupakam and Chapu Talas in two degrees of speed.
- 6- Desadi and chapu Talas.
Talas prescribed
Suladi Sapta Talas with their Jaati and Gati and Bhedas, Chappu talas and their varieties.

Karnatak music (Instrumental percussion)

CLASS XII

Time : 3 Hours

One Theory paper

Marks : 30

Part A : Theory

History and Theory of Indian Music

- 1- (a) Brief history of Karnatak music with special reference to Laya and percussion in chaturdandi Prakashika ,Sangita Ratanakaar ,Laya Vadhyas
(b) Short life-sketch and contribution of the following lemeneries
(c) Needemangalam Meenakshi Sundaram Pillai and
(d) Tanjore Vaidyanathe Iyer
(e) Brief History and evolution of the musical form , Pullavis ,sollukattus and Tillana
2. Definition and the explanation of the following –
Padagrabham,Arudi,Eduppu,Gati-bhedaAnuloma,Pradiloma,Tisram,Trikalan, Tekka,108 Tala,Shadangas,Tiruppugazh Tala,TalaVadya ensemble.
3. The candidate should have an outline knowledge of the classification of the instruments in general and a brief history of the instrumental opted for :
4. Technical terms :
(Villambra,Madhya,Druta),Atitam,Anagatam,Pharan,Kalapramanam,Ghumki, Konnakkoi Choru,Varu
5. The candidate should possess knowledge of the fundamental structure technique and playing of other percussion instruments like moresing Tabla, Chenda, Edakka and Gettu Vadhya

Part B One Practical Paper

Marks -70

1. Ability to construct Mohra ,Korvai to the talas from the 35 tala scheme
2. An exhibition of the accompanying ability
3. Demonstration of the various types and usage of Gumki
4. Ability to play Tani Avertanam, in Chapu Talas and some of the 35 talas.

ड्राइंग एण्ड पेन्टिंग (सैद्धान्तिक)

CLASS XII

One Paper

Marks : 30

इकाईवार प्राथमिकता

इकाई

अंक

1. भारतीय कला का इतिहास
1. राजस्थानी एवं पहाड़ी शैली के लघु चित्र 10
2. मुगल और दक्षिण शैली के लघु चित्र 10
3. बंगाल स्कूल की पेन्टिंग और भारतीय कला मार्डन ट्रेन्ड 10

इकाई-1.

10 अंक

राजस्थानी और पहाड़ी शैली के लघु चित्र (16वीं शताब्दी ई. से 19वीं शताब्दी ई.)

भारतीय लघु चित्र शैली का परिचय : पाश्चात्य- भारतीय, पाल, राजस्थानी, मुगल, मध्य भारत, दक्षिण और पहाड़ी।

A - राजस्थानी शैली

1. उद्भव और विकास
2. उपशैलियां- मेवाड़, बूंदी, जोधपुर, बीकानेर, किशनगढ़ और जयपुर
3. राजस्थानी शैली के मुख्य लक्षण
4. नीचे दिए गए राजस्थानी चित्रों का अध्ययन

शीर्षक

चित्रकार

उपशैलियां

मार्स राणीनी

साहिबदीन

मेवाड़

राजा अनिरुद्ध सिंह द्वारा

उत्कल राम

बूंदी

छौगन प्लेयर्स

दाना

जोधपुर

झूले में श्रीकृष्ण

नुरुदीन

बीकानेर

राधा (बनी-ठनी)

निहाल चन्द्र

किशनगढ़

भरत से राम का मिलन

गुमान

जयपुर

B - पहाड़ी शैली

1. उद्भव और विकास
2. उपशैली - बसोहली और कांगड़ा
3. पहाड़ी शैली के मुख्य लक्षण
4. नीचे दिए गए पहाड़ी चित्रों का अध्ययन

शीर्षक

उपशैली

कृष्ण और गोपियां

बसोहली

राग मेघ (मेघ राग)

कांगड़ा

इकाई-2.

10 अंक

मुगल और दक्षिण शैली के लघु चित्र (16वीं. शताब्दी ई. से 19वीं. शताब्दी ई.)

A - मुगल शैली

1. उद्भव और विकास

2. मुगल शैली के मुख्य लक्षण
3. नीचे दिए गए मुगल चित्रों का अध्ययन

| शीर्षक | चित्रकार | काल |
|----------------------------------|-----------------------|-----------------|
| गोवर्धन पर्वत उठाए हुए कृष्ण | मिरिकन | अकबर |
| सोन नदी पार करते हुए बाबर | जगन्नाथ | अकबर |
| मडौना का चित्र पकड़े हुए जहाँगीर | अबुल हसन | जहाँगीर |
| फालकॉन ऑन अ बर्ड रेस्ट | उस्ताद मंसूर | जहाँगीर |
| कबीर और रैदास | उस्ताद फकिरुल्लाह खान | शाहजहाँ |
| द्वारा शिकोह की शादी | हाजी मदनी | मुगल जनपद (अवध) |

B - दक्षिण शैली

1. उद्भव और विकास
2. दक्षिण शैली के मुख्य लक्षण
3. दक्षिण शैली के चित्रों का अध्ययन

शीर्षक

नर्तक
चाँद बीबी पोलो खेलती हुई (चौगान)

उपशैली

हैदराबाद
गोल कुण्डा

इकाई-3.

10 अंक

बंगाल स्कूल और आधुनिक शैली में भारतीय कला

- A 1-**
- (a) भारतीय कला का नया युग - एक परिचय
 - (b) नीचे दिए गए चित्रों का अध्ययन
 1. समुद्र के घमंड को चूर करते राम - राजा रवि वर्मा
 2. भारतीय ध्वज का मूल्यांकन (प्रथम 1906, मध्य-1921 और अन्तिम रूप-1947)
- आकारों तथा रंगों का चुनाव एक अध्ययन।
- B.**
- (1) **बंगाल चित्र शैली का परिचय**
 1. बंगाल शैली का उद्भव और विकास
 2. बंगाल शैली के मुख्य चित्र
 - (2) राष्ट्रीय स्वतंत्रता के आन्दोलन के संघर्ष में भारतीय कलाकारों का योगदान।
 - (3) नीचे दिए गए बंगाल शैली की पेंटिंग का अध्ययन
 1. यात्रा का अन्त - अवनिन्द्र नाथ टैगोर
 2. पार्थसारथी - नन्दलाल बोस
 3. राधिका - एम.ए.आर. चुगताई
- C.** भारतीय कला में आधुनिक चलन
- परिचय**
- (1). **नीचे दिए गए चित्रों का अध्ययन**
 1. जादूगर - गगनेन्द्र नाथ टैगोर
 2. माँ और बच्चा - यामिनी राय
 3. वूमैन फैंस - रविन्द्र नाथ टैगोर

4. तीन लड़कियाँ - अमृता शेरगिल
- (2) नीचे दिए गए मूर्तिकला का अध्ययन
1. ट्रम्पन (मेहनत की जीत) - डी.पी. राय चौधरी
 2. संधाल परिवार - रामकिंकर वैज
- (3) नीचे दिए गए भारतीय समकालीन कला का अध्ययन
- A. चित्रकला**
1. मद्धर टैरेसा - एम.एफ. हुसैन
 2. कविता का जन्म - कै.कै. हैब्बार
 3. गॉसिप - एन.एस.बैन्द्रे
 4. अनटाइटिल - जी.आर. संतोष
 5. डाइगनल - तैयब मेहता
- (4) ब्रैफिफ प्रिंट्स
1. वर्हलपूल - कृष्णा रेड्डी
 2. चिल्ड्रेन - सौमनाथ होर
 3. देवी - ज्योति भट्ट
 4. आफ वाल्स - अनुपम सूद
 5. मैन, वूमैन एण्ड ट्री - कै. लक्ष्मण गौण
- (5) मूर्तिकला
1. स्टैण्डिंग वूमैन - धनराज भगत
 2. ब्राइज अन हर्ड - अमरनाथ सहगल
 3. गणेश - पी.वी. जानकीराय
 4. फिगर - शंखु चौधरी
 5. चतुर्मुखी - इक्का यादा गिरी राव

नोट - उपरोक्त उल्लिखित कलाकारों के नाम एवं उनके कलात्मक कार्य केवल सुझाव मात्र हैं न कि पूर्ण। शिक्षक और और विद्यार्थी उन्हें अपने संसाधनों के अनुरूप बढ़ा सकते हैं लेकिन प्रश्न पत्र केवल उपरोक्त सम्बन्धित कलात्मक कार्यों पर ही आधारित होंगे।

प्रायोगिक

इकाईवार प्राथमिकता

इकाई

1. प्रकृति एवं वस्तु चित्रण
2. चित्र संयोजन
3. सत्रीय कार्य (सेसनल कार्य)
4. मौखिक

पूर्णांक 70

पूर्णांक

- 20
- 20
- 20
- 10

इकाई 1 - प्रकृति एवं वस्तु चित्रण

पूर्णांक 20

रंगों द्वारा छाया-प्रकाश दर्शाते हुए

- प्रकृति चित्रण - फल, फूल, पौधे तथा सब्जियाँ
- वस्तु चित्र - ज्यामितीय आकारों (शंकु, प्रिज्म, घन तथा बेलन एवं मिले-जुले रूप) वाली वस्तुएं (स्टिल लाइफ)

इकाई 2 - चित्र संयोजन/दृश्य चित्रांकन

पूर्णांक 20

रंगों द्वारा चित्रांकन किया जाना है।

- मानवाकृतियों को आधार बनाते हुए विभिन्न चित्र संयोजन जैसे- विवाहोत्सव, रसोईघर, शयनकक्ष, खेल के मैदान आदि।
- स्केचिंग-लाइफ (मानवाकृतियों) एवं प्रकृति आदि।

इकाई 3 - सेशनल

सत्र के दौरान किसे गुरु कार्यों में से

- सत्र के दौरान बनाए गए पांच चयनित प्रकृति एवं वस्तु चित्रण होने चाहिए जिसमें 2 स्टिफ लाइफ चित्रण किसी भी माध्यम में लिए जाएं।

पूर्णांक-10

- सत्र के दौरान किसे दो चयनित पेन्टिंग जितने भी चयनित चित्र विद्यार्थियों द्वारा तैयार किए गए। वे ही चित्र परीक्षक के सामने प्रस्तुत किए जाएं जो शिक्षक/शिक्षिकाओं द्वारा प्रमाणित हों।

पूर्णांक-10

इकाई 4 - मौखिक परीक्षा

पूर्णांक 10

नोट - समय सारणी इस तरह से बनाई जाए कि विद्यार्थियों को पेन्टिंग के लिए दो वादन लगातार करने के लिए मिल जाए।

POLITICAL SCIENCE

CLASS XII

Time : 3 Hours

One Paper

Marks : 100

Content Marks

Part A: Contemporary World-Politics

Units

| | | | |
|----|---|---|----|
| 1. | Cold War Era in World Politics | } | 14 |
| 2. | Disintegration of the 'Second World' and the Collapse of Bipolarity | | |
| 3. | US Dominance in World Politics | } | 16 |
| 4. | Alternative centres of Economic and Political Power | | |
| 5. | South Asia in the Post-Cold War Era | } | 10 |
| 6. | International organizations in a unipolar world | | |
| 7. | Security in Contemporary World | } | 10 |
| 8. | Environment and Natural Resources | | |
| 9. | Globalisation and its Critics | } | |

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Part B: Politics in India since independence

| | | | |
|-----|--|---|----|
| 10. | Nation-Building and its Problems | } | 16 |
| 11. | Era of One-Party Dominance | | |
| 12. | Politics of Planned Development | } | 6 |
| 13. | India's External relations | | |
| 14. | Challenges to and Restoration of Congress System | } | 12 |
| 15. | Crisis of the Constitutional order | | |
| 16. | Regional aspirations and conflicts | } | 16 |
| 17. | Rise of New Social Movements | | |
| 18. | Recent Developments in Indian Politics | } | |

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COURSE CONTENTS

Part A: Contemporary world Politics

Course Content:

1. Cold War Era in World Politics

Emergence of two power blocs after the second world war. Arenas of the cold war.

Challenges to Bipolarity: Non Aligned Movement, quest for new international economic order. India and the cold war.

2. Disintegration of the 'Second World' and the Collapse of Bipolarity.

New entities in world politics: Russia, Balkan states and Central Asian states, Introduction of democratic politics and capitalism in post-communist regimes. India's relations with Russia and other post-communist countries.

3. US Dominance in World Politics:

Growth of unilateralism: Afghanistan, first Gulf War, response to 9/11 and attack on Iraq.

Dominance and challenge to the US in economy and ideology. India's renegotiation of its relationship with the USA.

4. **Alternative Centres of Economic and Political Power:**
Rise of China as an economic power in post-Mao era, creation and expansion of European Union, ASEAN. India's changing relations with China.
5. **South Asia in the Post-Cold War Era:**
Democratisation and its reversals in Pakistan and Nepal. Ethnic conflict in Sri Lanka, Impact of economic globalization on the region. Conflicts and efforts for peace in South Asia. India's relations with its neighbours.
6. **International Organizations in a unipolar World:**
Restructuring and the future of the UN. India's position in the restructured UN. Rise of new international actors: new international economic organisations, NGOs. How democratic and accountable are the new institutions of global governance?
7. **Security in Contemporary World:**
Traditional concerns of security and politics of disarmament. Non-traditional or human security: global poverty, health and education. Issues of human rights and migration.
8. **Environment and Natural Resources in Global Politics:**
Environment movement and evolution of global environmental norms. Conflicts over traditional and common property resources. Rights of indigenous people. India's stand in global environmental debates.
10. **Globalisation and Its Critics.**
Economic, cultural and political manifestations. Debates on the nature of consequences of globalisation. Anti-globalisation movements. India as an arena of globalization and struggle against it.

Part B: Politics of India Since Independence

10. **Nation-Building and Its Problems:**
Nehru's approach to nation-building: Legacy of partition: challenge of 'refugee' resettlement, the Kashmir problem. Organisation and reorganization of states; Political conflicts over language.
11. **Era of One-Party Dominance:**
First three general elections, nature of Congress dominance at the national level, uneven dominance at the state level, coalitional nature of Congress. Major opposition parties.
12. **Politics of Planned Development**
Five year plans, expansion of state sector and the rise of new economic interests. Famine and suspension of five year plans. Green revolution and its political fallouts.
13. **India's External Relations**
Nehru's foreign policy. Sino-Indian war of 1962, Indo-Pak war of 1965 and 1971. India's nuclear programme and shifting alliances in world politics.
14. **Challenge to and Restoration of Congress System:**
Political succession after Nehru. Non-Congressism and electoral upset of 1967, Congress split and reconstitution, Congress' victory in 1971 elections, politics of 'garibi hatao'.
15. **Crisis of the Constitutional Order:**
Search for 'committed' bureaucracy and judiciary. Navnirman movement in Gujarat and the Bihar movement. Emergency: context, constitutional and extra-constitutional dimensions, resistance to emergency. 1977 elections and the formation of Janata Party. Rise of civil liberties organisations.

16. Regional Aspirations and Conflicts

Rise of regional parties. Punjab crisis and the anti-Sikh riots of 1984. The Kashmir situation. Challenges and responses in the North East.

17. Rise of New Social Movements:

Farmers' movements, Women's movement, Environment and Development-affected people's movements. Implementation of Mandal Commission report and its aftermath.

18. Recent Developments in Indian politics:

Participatory upsurge in 1990s. Rise of the JD and the BJP. Increasing role of regional parties and coalition politics. UF and NDA governments. Elections 2004 and UPA government. Challenge of and responses to globalization: new economic policy and its opposition. Rise of OBCs in North Indian politics. Dalit politics in electoral and non-electoral arena. Challenge of communalism: Ayodhya dispute, Gujarat riots.

PSYCHOLOGY

CLASS XII

Time : 3 Hours

One Theory Paper

Marks : 70

| Units | Marks |
|---|-------|
| Psychology, Self and Society | |
| I. Intelligence and Aptitude | 09 |
| II. Self and Personality | 10 |
| III. Human Strengths and meeting the Life Challenges | 07 |
| IV. Psychological Disorders | 10 |
| V. Therapeutic Approaches | 07 |
| VI. Attitude and Social Cognition | 08 |
| VII. Social Influence and Group Processes | 07 |
| VIII. Environmental and Social concerns | 06 |
| IX. Professional Skills for Psychologists | 06 |
| Practicals (Psychological testing, Case Profile etc.) | 30 |

Psychology, Self and Society

Unit I : Intelligence and Aptitude

09 Marks

The unit aims at studying how people differ with respect to intelligence and aptitude.

Individual differences in intelligence: Theories of Intelligence; Culture and Intelligence; Emotional intelligence; Aptitude: Nature and types: Assessment of psychological attributes.

Unit II : Self and Personality

10 Marks

This unit focuses on the study of self and personality in the context of different approaches in an effort to appraise the person. The assessment of personality will also be discussed.

Aspects of self: self concept: Self-esteem and Self-regulation; Culture and self; Personality: Concept; Approaches to Personality: Type and Trait, Psychodynamic, Humanistic, Behavioural and Cultural; Assessment of Personality: Self-report Measures, Behavioural Analysis, and Projective Measures.

Unit III : Human Strengths and Meeting Life Challenges

07 Marks

This unit deals with the nature of stress and how responses to stress depend on an individual's appraisal of stressors. Strategies to cope with stress will also be dealt with.

Life challenge and adjustment; Concept of adaptation; Human strengths and virtues: Nature, types and effects on psychological functioning; Coping with stress; Concepts of health and well-being; Life style, health and well-being.

Unit IV: Psychological Disorders

10 Marks

This unit discusses the concepts of normality and abnormality and the major psychological disorders.

Concepts of abnormality and psychological disorder, Causal factors associated with abnormal behaviour, Classification of disorder, Major psychological disorders: Anxiety, Somato-form Dissociative, Mood, Schizophrenic, Developmental and Behavioural Substance Related.

Unit V : Therapeutic Approaches

07 Marks

This unit discusses the goals, techniques and effectiveness of different approaches to treat psychological disorders.

Nature and process of therapy; Nature of therapeutic relationship; Types of therapies: Psychodynamic, Humanistic, Cognitive, Behaviour; Alternative therapies: Yoga, Meditation; Zen; Rehabilitation of mentally ill people.

Unit VI : Attitude and Social Cognition

08 Marks

This unit focuses on the formation and change of attitudes, cultural influences on attributional tendencies and conditions influencing pro-social behaviour.

Explaining behaviour through attributions; Social cognition; Schemas and stereotypes; Impression formation; Nature and components of attitudes; Attitude formation and change; Behaviour in the presence of others: Pro-social Behaviour; Prejudice and discrimination; Strategies for handling prejudice.

Unit VII : Social Influence and Group Processes

07 Marks

The unit deals with the concept of group, its functions and the dynamics of social influence process like conformity, obedience and compliance. Different conflict resolution strategies will also be discussed.

Influence Processes: Nature of Conformity, Obedience, and Compliance: Cooperation and Competition; Groups: Nature, formation and types; Influence of group on individual behaviour; Social identity; Inter-Group Conflict; Conflict Resolution Strategies.

Unit VIII: Environmental and Social Concerns

06 Marks

This unit focuses on the application of psychological understanding to some important social issues. Human- environment relationship; Environmental effects on human behaviour. Noise, pollution, crowding, natural disasters, social issue: Aggression and Violence; Social Inequality and Poverty; Media and human values; Promoting pro-environmental behaviour, Human rights and citizenship; Peace.

Unit IX: Professional Skills for a Psychologist

06 Marks

This unit deals with some effective psychological and interpersonal skills for facilitating personal-social development.

Psychological skills: Observation, Interviewing, Testing, Counseling and Communication.

Psychological testing Practicals

30 Marks

The students shall be required to prepare one case profile and conduct 5 practicals related to the topics covered in the course. The case profile will include developmental history of the subject, using both qualitative (observation, interview) and quantitative (Psychological testing) approaches. Practicals would involve using standardised psychological assessment devices in different domains (e.g. intelligence, personality, aptitude, adjustment, attitude, self-concept, and anxiety).

Distribution of Marks:

- | | | |
|-------|--|---------------|
| (i) | Reporting file including case profile: | 05 Marks |
| (ii) | Viva Voce : | 05 Marks |
| (iii) | Two practicals | 10 marks each |
- (5 for accurate conduct and 5 for reporting)

SOCIOLOGY

CLASS XII

Time : 3 Hours

One Theory Paper
Unitwise Weightage

Marks : 80

| Units | 2008 |
|--|----------------|
| Indian Society | 32 |
| 1. Introducing Indian Society | Non evaluative |
| 2. Demographic Structure & Indian Society | 6 |
| 3. Social Institutions-Continuity and change | 6 |
| 4. Market as a Social Institution | 6 |
| 5. Pattern of Social Inequality and Exclusion | 6 |
| 6. Challenges of Cultural Diversity | 8 |
| 7. Suggestions for Project Work | Non evaluative |
| Change and Development in Indian Society | 48 |
| 8. Structural Change | 6 |
| 9. Cultural Change | 6 |
| 10. The Story of Democracy | 6 |
| 11. Change and Development in Rural Society | 6 |
| 12. Change and Development in Industrial Society | 6 |
| 13. Globalization and Social Change | 6 |
| 14. Mass Media and Communications | 6 |
| 15. Social Movements | 6 |

Practical Examination

Max. Marks 20

Time allotted : 3hrs

Unitwise Weightage

| | |
|---|-----------------|
| A. Project (undertaken during the academic year at school level) | 07 marks |
| i. Statement of the purpose : | 2 marks |
| ii. Methodology / Technique : | 2 marks |
| iii. Conclusion : | 3 marks |
| B. Viva - based on the project work | 05 marks |
| C. Research design | 08 marks |
| i. Overall format : | 1 mark |
| ii. Research Question/Hypothesis : | 1 mark |
| iii. Choice of technique : | 2 mark |
| iv. Detailed procedure for implementation of technique : | 2 mark |
| v. Limitations of the above technique : | 2 mark |

B & C to be administered on the day of the external examination

A : INDIAN SOCIETY

Unit 1: Introducing Indian Society

- Colonialism, Nationalism, Class and Community

Unit 2: Demographic Structure And Indian Society

- Rural-Urban Linkages and Divisions

Unit 3: Social Institutions: Continuity & Change

- Family and Kinship
- The Caste System

Unit 4: Market As A Social Institution

- Market as a Social Institution

Unit 5: Pattern of Social Inequality & Exclusion

- Caste Prejudice, Scheduled Castes and Other Backward Classes
- Marginalization of Tribal Communities
- The Struggle for Women's Equality
- The Protection of Religious Minorities
- Caring for the Differently Abled

Unit 6: The Challenges Of Cultural Diversity

- Problems of Communalism, Regionalism, Casteism & Patriarchy
- Role of the State in a Plural and Unequal Society
- What We Share

Unit 7: Suggestions For Project Work

B. CHANGE AND DEVELOPMENT IN INDIA

Unit 8: Structural Change

- Colonialism, Industrialization, Urbanization.

Unit 9: Cultural Change

- Modernization, Westernization, Sanskritisation, Secularization .
- Social Reform Movements & Laws

Unit 10 : The Story Of Democracy

- The Constitution as an instrument of Social Change
- Parties, Pressure Groups and Democratic Politics
- Panchayati Raj and the Challenges of Social Transformation

Unit 11: Change And Development In Rural Society

- Land Reforms, Green Revolution and Agrarian Society

Unit 12: Change And Development In Industrial Society

- From Planned Industrialization to Liberalization
- Changes in the Class Structure

Unit 13: Globalisation And Social Change

Unit 14: Mass Media And Communication Process

Unit 15: Social Movements

- Class-Based Movements: Workers, Peasants.
- Caste-Based Movements: Dalit Movement, Backward Castes, Trends in Upper Caste
- Responses.
- Women's Movements in Independent India.
- Tribal Movements.
- Environmental Movements.

शिक्षा शास्त्र

CLASS XII

Time : 3 Hours

One Theory Paper

Marks : 100

खण्ड 'अ' (शिक्षा के सिद्धान्त)

- (1) इकाई – 1 शैक्षिक विचारधारा का विकास – 15 अंक
- (अ) प्राचीन भारतीय शिक्षा – वैदिक शिक्षा, बौद्ध कालीन शिक्षा।
(ब) मध्यकालीन भारतीय शिक्षा (मुस्लिम शिक्षा)
(स) आधुनिक भारतीय शिक्षा – ब्रिटिश कालीन शिक्षा स्वातंत्रयोत्तर भारतीय शिक्षा
(द) राष्ट्रीय शिक्षा नीति 1968
(य) नई शिक्षा नीति 1986, पुनरीक्षित 1992
- (2) इकाई –2 भारतीय शिक्षा शास्त्री और उनका योगदान – 10 अंक
- (अ) रवीन्द्र नाथ टैगोर
(ब) महात्मा गाँधी
(स) ऐनी बेसेन्ट
(द) प० मदन मोहन मालवीय
- (3) इकाई –3 पर्यावरण शिक्षा – 10 अंक
- (अ) अवधारणा, स्वरूप, आवश्यकता, महत्व
(ब) पर्यावरण प्रदूषण की समस्याएँ एवं उनका निराकरण
(स) पर्यावरण को प्रभावित करने वाली आपदाएँ – आग, सूखा, बाढ़, भूकम्प, समुद्री लहरें आदि की जानकारी, प्रभाव तथा बचाव के उपाय।
- (4) इकाई –4 शिक्षा की समस्याएँ – 15 अंक
- (अ) शैक्षिक प्रसार – समस्याएँ व समाधान (दूरस्थ शिक्षा)
(ब) स्त्री शिक्षा – समस्याएँ व अभिनव प्रयास (एन.पी.ई.जी.ई.एल.)
कस्तूरबा गाँधी विद्यालय आदि)
(स) सामाजिक शिक्षा
(द) शैक्षिक स्तर की समस्या
(य) जनसंख्या शिक्षा
(र) शिक्षा में नवाचार (खेल प्रणाली, सिद्धान्त, शैक्षिक महत्व, गुण-दोष) समेकित शिक्षा।

खण्ड 'ब' शिक्षा मनोविज्ञान

- (5) इकाई – 5 प्रेरणा एवं मूल प्रवृत्तियाँ 12 अंक
(अ) प्रेरणा – अर्थ, शैक्षिक महत्व, रूचि, अवधान पुरस्कार एवं दण्ड।
(ब) मूल प्रवृत्तियाँ – अर्थ, शैक्षिक महत्व, मूल प्रवृत्तियों का शोधन।
- (6) इकाई –6 मानसिक स्वास्थ्य एवं मानसिक स्वास्थ्य विज्ञान – 10 अंक
(अ) अर्थ, मानसिक स्वास्थ्य के तत्व, विशेषताएं
(ब) मानसिक अस्वस्थता – अर्थ, कारण, हानिकारक प्रभाव तथा निवारण
(स) अध्यापक का मानसिक स्वास्थ्य
(द) मानसिक स्वास्थ्य विज्ञान– अर्थ, आवश्यकता
- (7) इकाई –7 परीक्षण एवं निरीक्षण – 16 अंक
(अ) बुद्धि एवं बृद्धि परीक्षण
(ब) उपलब्धि परीक्षण
(स) व्यक्तित्व एवं व्यक्तित्व परीक्षण
- (8) इकाई –8 निर्देशन – 12 अंक
(अ) अर्थ महत्व, शैक्षिक निर्देशन, व्यावसायिक निर्देशन
(ब) अपराधी एवं मंदबुद्धि बालकों के व्यवहार की समस्याएँ और उचित मार्गदर्शन

सैन्य विज्ञान

CLASS XII

Time : 3 Hours

One Theory Paper

Marks : 70

| | | |
|----------------|---|---------------|
| UNIT 1 | स्थल सेना (पैदल सेना) | 05 अंक |
| 1. | स्थल सेना के अंग, स्थल सेना का संगठन (युद्धकालीन, शांतिकालीन), प्रशिक्षण से स्थान | |
| 2. | पैदल सेना की विशेषतायें | |
| 3. | भारतीय पैदल सेना के कार्य एवं क्षमता | |
| UNIT 2. | तोपखाना | 05 अंक |
| 4. | परिचय तथा महत्व | |
| 5. | विशेषतायें तथा परिसीमायें | |
| 6. | तोपखाने के कार्य तथा प्रयोग | |
| 7. | विभिन्न प्रकार के तोपखाने | |
| UNIT 3. | कवचयुक्त सेनाएँ | 05 अंक |
| 8. | टैंकों का विकास | |
| 9. | विशेषतायें एवं परिसीमाएँ | |
| 10. | कार्य तथा प्रयोग | |
| 11. | भारतीय सेना के प्रमुख टैंक | |
| UNIT 4. | प्रतिरक्षा की द्वितीय पंक्ति | 05 अंक |
| 12. | नेशनल कैंडेट कौर (N.C.C.) | |
| 13. | सीमा सुरक्षा बल (B.S.F.) | |
| 14. | भारत तिब्बत सीमा पुलिस बल (I.T.B.P.) | |
| 15. | केंद्रीय आरक्षित पुलिस बल (C.R.P.F.) | |
| 16. | प्रादेशिक सेना (Territorial Army) | |
| 17. | सहायक सेनांग (प्रशासनिक) इंजीनियरिंग सिग्नल कौर, मेडिकल कौर | |
| UNIT 5. | वायुसेना | 05 अंक |
| 18. | भारतीय वायुसेना का विकास एवं इतिहास | |
| 19. | भारतीय वायुसेना की क्षमता एवं विशेषतायें | |
| 20. | भारतीय सुरक्षा में वायुसेना की भूमिका | |
| 21. | भारत के प्रमुख युद्धक विमान | |
| 22. | वायुसेना के प्रशिक्षण संस्थान | |
| UNIT 6. | भारतीय नौसेना | 05 अंक |
| 23. | भारतीय नौसेना का इतिहास एवं विकास | |
| 24. | भारतीय नौसेना की क्षमता एवं विशेषताएँ | |
| 25. | भारतीय सुरक्षा में नौसेना की भूमिका | |
| 26. | भारत के प्रमुख युद्धपोत | |
| UNIT 7. | मराठा सैन्य पद्धति | 05 अंक |
| 27. | शिवाजी की छापामार युद्धकला के संदर्भ में | |
| UNIT 8. | सिक्ख सैन्य पद्धति | 08 अंक |
| 28. | सौमरांव का संग्राम (10 फरवरी 1846) | |

| | | |
|-----------------|---|---------------|
| UNIT 9. | ब्रिटिश सैन्य पद्धति | 08 अंक |
| 29. | प्लासी की लड़ाई (1757 ई.) | |
| UNIT 10. | भारत का प्रथम स्वतंत्रता संग्राम (1857 ई.) | 05 अंक |
| 30. | आर्थिक, राजनैतिक व धार्मिक कारण | |
| 31. | असफलता के कारण व शिक्षाएँ | |
| UNIT 11. | युद्ध के सिद्धान्त | 04 अंक |
| 32. | युद्ध के सिद्धान्त तथा कार्यवाही | |
| UNIT 12. | स्वतंत्र भारत के युद्ध | 10 अंक |
| 33. | प्रथम भारत-पाक युद्ध (1947-48) | |
| 34. | भारत-चीन युद्ध (1962 ई.) | |
| 35. | भारत-पाक युद्ध (1965 ई.) | |
| 36. | भारत-पाक युद्ध (1971 ई.) | |
| 37. | कारगिल युद्ध (1999 ई.) | |

प्रयोगात्मक

पूर्णांक 30

| | | | |
|----|---------------------------------|---|--------|
| 1. | थ्रिड पद्धति | - | 02 अंक |
| 2. | दिशाएँ ज्ञात करने की विधियाँ | - | 04 अंक |
| 3. | द्विक्रमान : परिभाषा एवं प्रकार | - | 04 अंक |
| 4. | द्विक्रमान का परस्पर परिवर्तन | - | 04 अंक |
| 5. | सैन्य अधिकारियों के पद चिन्ह | - | 02 अंक |
| 6. | सर्विस प्रोटेक्टर | - | 04 अंक |

| लिखित | मौखिक | रिकार्ड फाइल | योग |
|-------|-------|--------------|-----|
| 20 | 05 | 05 | 30 |

भूगर्भ विज्ञान

CLASS XII

Time : 3 Hours

One Theory Paper

Marks : 70

Unit - I –

05 अंक

1. परिचय – एक परिचय भूगर्भ विज्ञान
2. भूगर्भ विज्ञान का क्षेत्र (Scope)

Unit - II – शैल विज्ञान

20 अंक

1. परिचय – शैल विज्ञान क्या है ?
2. आग्नेय शैल – परिभाषा, उदाहरण, गठन एवं संरचनाएं।
3. अवसादी शैल – परिभाषा, उदाहरण, गठन एवं संरचनाएं।
4. कायान्तरी शैल – परिभाषा, उदाहरण, गठन एवं संरचनाएं।
5. शैलों का वर्गीकरण, भौतिक गुण, संरचनाएं, अनिवार्य खनिज गठन तथा उपयोग।
6. मुख्य शैल –
 - (1) मारबल – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (2) कांग्लोमरेट – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (3) ग्रेनाइट – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (4) बालू पत्थर – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (5) चूना पत्थर – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (6) खड़िया – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (7) डोलेराइट – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (8) पैग्मेटाइट – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।
 - (9) ब्रेशिया – भौतिक गुण, अनिवार्य खनिज, गठन संरचनाएं एवं उपयोग।

Unit - III – जीवश्म विज्ञान

10 अंक

1. परिचय : जीवश्म विज्ञान क्या है ?
जीवश्म किसे कहते हैं ?
2. गैस्ट्रोपोडा परिचय, उदाहरण तथा उनका सचित्र वर्णन।
3. लैमीलीब्रेंकिया परिचय, उदाहरण तथा उनका सचित्र वर्णन।
4. जीवश्म के उपयोग तथा उनके द्वारा शैलों की आयु ज्ञात करना।

Unit - IV – स्तरीय विज्ञान

15 अंक

1. परिचय – स्तरीय विज्ञान क्या है ?
2. गोण्डवाना शैल समूह – परिचय, वर्गीकरण, आयु तथा उनमें पाए जाने वाले मुख्य खनिज तथा शैल।
3. कडप्पा शैल समूह – “ “ “ “

| | | | | | |
|-------------------|--------------------|--|------------|-----------|---------------|
| 4. | आर्कीयन शैल समूह – | “ | “ | “ | “ |
| 5. | शिवालिक शैल समूह – | “ | “ | “ | “ |
| Unit - V – | | आर्थिक भूगर्भ विज्ञान | | | 10 अंक |
| 1. | परिचय | | | | |
| 2. | आयस्क – | परिभाषा, भौतिक गुण, रसायनिक गुण | उनके वितरण | तथा उपयोग | |
| 3. | अयस्क – | | | | |
| | (अ) बाक्साइट | भौतिक गुण, रसायनिक गुण | उनके वितरण | तथा उपयोग | |
| | (ब) चालकोपाइराइट | “ | “ | “ | “ |
| | (स) जिप्सम | “ | “ | “ | “ |
| | (य) हेमेटाइट | “ | “ | “ | “ |
| | (र) मैग्नेटाइट | “ | “ | “ | “ |
| 4. | कोयला – | कोयले के प्रकार, भारत में कोयले का वितरण | तथा उपयोग। | | |
| 5. | पैट्रोलियम – | भारत में वितरण प्राप्ति | तथा उपयोग। | | |

| | | |
|--------------------|---|---------------|
| Unit - VI – | | 10 अंक |
| 1. | उत्तराखण्ड की प्रमुख भू आपदाओं का संक्षिप्त परिचय। | |
| 2. | भू-स्खलन – उनके प्रमुख प्रकार तथा उत्तराखण्ड में भू-स्खलनों की स्थिति। | |
| 3. | उत्तराखण्ड में भूकम्पों का संक्षिप्त इतिहास तथा भूकम्प की दृष्टि से प्रदेश के प्रमुख संवेदशील क्षेत्र | |
| 4. | अतिवृष्टि तथा अचानक बाढ़ उत्तराखण्ड के परिप्रेक्ष में। | |

प्रयोगात्मक

पूर्णांक 30

| | | |
|----|--|--------|
| 1. | दिए गए खनिज का आपेक्षिक घनत्व ज्ञात करना | 05 अंक |
| 2. | मानचित्र (Map) | 03 अंक |
| 3. | मौखिक परीक्षा (Viva-Voice) | 05 अंक |
| 4. | मॉडल – क्यूब, जिरकान, टेट्राहेड्रान Mode - Cube, Zircon, Tetra Hedron | 03 अंक |
| 5. | स्पाटिंग (Spotting) | 09 अंक |
| | 3 Fossils : Murex, Pectin, Area | |
| | 3 Minerals : Talc, Calcite, Quartz | |
| | 3 Rocks : Granite, Marble, Sand stone | |
| 6. | सत्रीय कार्य | 05 अंक |

योग

30 अंक

MATHEMATICS

CLASS XII

Time : 3 Hours

One Paper

Marks : 100

| Units | Marks |
|--|------------|
| I. RELATIONS AND FUNCTIONS | 10 |
| II. ALGEBRA | 13 |
| III. CALCULUS | 44 |
| IV. VECTORS AND THREE - DIMENSIONAL GEOMETRY | 17 |
| V. LINEAR PROGRAMMING | 06 |
| VI. PROBABILITY | 10 |
| Total | 100 |

UNIT I. RELATIONS AND FUNCTIONS

1. Relations and Functions :

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.

2. Inverse Trigonometric Functions:

Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

UNIT-II: ALGEBRA

1. Matrices:

Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

2. Determinants:

Determinant of a square matrix (up to 3×3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

UNIT-III: CALCULUS

1. Continuity and Differentiability:

Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function. Concept of exponential and logarithmic functions and their derivative. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.

2. Applications of Derivatives:

Applications of derivatives: rate of change, increasing/decreasing functions, tangents & normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

3. Integrals:

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, only simple integrals of the type

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$$
$$\int \frac{(px + q)}{ax^2 + bx + c} dx, \int \frac{(px + q)}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx \text{ and } \int \sqrt{x^2 - a^2} dx$$

to be evaluated.

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4. Applications of the Integrals:

Applications in finding the area under simple curves, especially lines, areas of circles/ parabolas/ ellipses (in standard form only), area between the two above said curves (the region should be clearly identifiable).

5. Differential Equations:

Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type

$$\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x.$$

UNIT-IV: VECTORS AND THREE-DIMENSIONAL GEOMETRY

1. Vectors:

Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.

2. Three - dimensional Geometry:

Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes. (iii) a line and a plane. Distance of a point from a plane.

UNIT-V: LINEAR PROGRAMMING

- 1. Linear Programming:** Introduction, definition of related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

UNIT-VI: PROBABILITY

1. Probability:

Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of haphazard variable. Repeated independent (Bernoulli) trials and Binomial distribution.

PHYSICS (Theory)

CLASS XII

Time : 3 Hours

| One Paper | | Marks : 70 |
|--------------|---|------------|
| Unit I | Electrostatics | 08 |
| Unit II | Current Electricity | 07 |
| Unit III | Magnetic effect of current & Magnetism | 08 |
| Unit IV | Electromagnetic Induction and Alternating current | 08 |
| Unit V | Electromagnetic Waves | 03 |
| Unit VI | Optics | 14 |
| Unit VII | Dual Nature of Matter | 04 |
| Unit VIII | Atoms and Nuclei | 06 |
| Unit IX | Electronic Devices | 07 |
| Unit X | Communication Systems | 05 |
| Total | | 70 |

Unit I: Electrostatics

Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines; electric dipole, electric field due to a dipole; torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Van de Graaff generator.

Unit II: Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity. Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel.

Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge.

Potentiometer - principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell.

Unit III: Magnetic Effects of Current and Magnetism

Concept of magnetic field, Oersted's experiment.

Biot - Savart law and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids.

Force on a moving charge in uniform magnetic and electric fields. Cyclotron.

Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets.

Unit IV: Electromagnetic Induction and Alternating Currents

Electromagnetic induction; Faraday's law, induced emf and current; Lenz's Law, Eddy currents. Self and mutual inductance.

Need for displacement current.

Alternating currents, peak and rms value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, wattless current.

AC generator and transformer.

Unit V: Electromagnetic waves

Displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves.

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI: Optics

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula. Magnification, power of a lens, combination of thin lenses in contact. Refraction and dispersion of light through a prism.

Scattering of light - blue colour of the sky and reddish appearance of the sun at sunrise and sunset.

Optical instruments: Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Wave optics: wave front and Huygens' principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens' principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarised light; Brewster's law, uses of plane polarised light and Polaroids.

Unit VII: Dual Nature of Matter and Radiation

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.

Matter waves-wave nature of particles, de Broglie relation. Davisson-Germer experiment.

Unit VIII: Atoms & Nuclei

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Radioactivity alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear reactor, nuclear fusion.

Unit IX: Electronic Devices

Semiconductors; semiconductor diode – I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

Unit X: Communication Systems

Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude-modulated wave.

Practicals

Every student will perform 10 experiments (5 from each section) & 8 activities (4 from each section) during the academic year. Two demonstration experiments must be performed by the teacher with participation of students. The students will maintain a record of these demonstration experiments.

SECTION A

Experiments

1. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
3. To verify the laws of combination (series/parallel) of resistances using a metre bridge.
4. To compare the emf of two given primary cells using potentiometer.
5. To determine the internal resistance of given primary cell using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
7. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a sonometer.

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.

5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION B

Experiments

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.
3. To find the focal length of a convex mirror, using a convex lens.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To determine refractive index of a glass slab using a travelling microscope.
7. To find refractive index of a liquid by using (i) concave mirror, (ii) convex lens and plane mirror.
8. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.
9. To draw the characteristic curve of a zener diode and to determine its reverse break down voltage.
10. To study the characteristics of a common - emitter npn or pnp transistor and to find out the values of current and voltage gains.

Activities

1. To study effect of intensity of light (by varying distance of the source) on an L.D.R.
2. To identify a diode, an LED, a transistor, and IC, a resistor and a capacitor from mixed collection of such items.
3. Use of multimeter to (i) identify base of transistor. (ii) distinguish between npn and pnp type transistors. (iii) see the unidirectional flow of current in case of a diode and an LED.
- (iv) check whether a given electronic component (e.g. diode, transistor or I C) is in working order.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe polarization of light using two Polaroids.
6. To observe diffraction of light due to a thin slit.
7. To study the nature and size of the image formed by (i) convex lens (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/ mirror).
8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

B. Evaluation Scheme for Practical Examination:

| | | |
|---|-------|-----------------|
| • One experiment from any one section | | 8 Marks |
| • Two activities (one from each section) | (4+4) | 8 Marks |
| • Practical record (experiments & activities) | | 6 Marks |
| • Record of demonstration experiments & Viva based on these experiments | | 3 Marks |
| • Viva on experiments & activities | | 5 Marks |
| Total | | 30 Marks |

CHEMISTRY (Theory)

CLASS XII

Time : 3 Hours

One Paper

Marks : 70

| Unit No. | Title | Marks |
|---------------|---|-----------|
| Unit I | Solid State | 4 |
| Unit II | Solutions | 5 |
| Unit III | Electrochemistry | 5 |
| Unit IV | Chemical kinetics | 5 |
| Unit V | Surface chemistry | 4 |
| Unit VI | General principles and processes of Isolation of Elements | 3 |
| Unit VII | p-Block Elements | 8 |
| Unit VIII | d- and f- Block Elements | 5 |
| Unit IX | Coordination Compounds | 3 |
| Unit X | Haloalkanes and Haloarenes | 4 |
| Unit XI | Alcohols, Phenols and Ethers | 4 |
| Unit XII | Aldehydes, Ketones and Carboxylic acids | 6 |
| Unit XIII | Organic Compounds containing Nitrogen | 4 |
| Unit XIV | Biomolecules | 4 |
| Unit XV | Polymers | 3 |
| Unit XVI | Chemistry in Everyday life | 3 |
| Total: | | 70 |

Unit I: Solid State

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties.

Unit II: Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties – relative lowering of vapour pressure, elevation of Boiling Point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass.

Unit III: Electrochemistry

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea), dry cell – electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, fuel cells; corrosion.

Unit IV: Chemical Kinetics

Rate of a reaction (average and instantaneous), factors affecting rate of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment)

Unit V: Surface Chemistry

Adsorption – physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis : homogenous and heterogeneous, activity and selectivity; enzyme catalysis; colloidal state: distinction between true solutions, colloids and suspensions; lyophilic, lyophobic, multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsion – types of emulsions.

Unit VI: General Principles and Processes of Isolation of Elements

Principles and methods of extraction - concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

Unit VII: p-Block Elements

Group 15 elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen - preparation, properties and uses; compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous-allotropic forms; compounds .of phosphorous: preparation and properties of phosphine, halides (PCl_3 , PCl_5) and oxoacids (elementary idea only)

Group 16 elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; dioxygen: preparation, properties and uses; simple oxides; Ozone. Sulphur - allotropic forms; compounds of sulphur: preparation, properties and uses of sulphur dioxide; sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).

Group 17 elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).

Group 18 elements: General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses.

Unit VIII: d and f Block Elements

General introduction ,electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy,

oxidation states, ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation preparation and properties of $\text{K}_2\text{Cr}_2\text{O}_7$ and KMnO_4 .

Lanthanoids - electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction.

Actinoids - Electronic configuration, oxidation states.

Unit IX: Coordination Compounds

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. bonding; isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).

Unit X: Haloalkanes and Haloarenes.

Haloalkanes:

Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions.

Haloarenes:

Nature of C-X bond, substitution reactions (directive influence of halogen for monosubstituted compounds only)

Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit XI: Alcohols, Phenols and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration, uses of methanol and ethanol.

Phenols : Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Organic compounds containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides - will be mentioned at relevant places in context.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance.

Proteins - Elementary idea of α - amino acids, peptide bond, polypeptides, proteins, structure of amines-primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes.

Vitamins -Classification and functions.

Nucleic Acids: DNA and RNA .

Unit XV: Polymers

Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization. Some important polymers: natural and synthetic like polythene, nylon, polyesters, bakelite, rubber.

Unit XVI: Chemistry in Everyday life:

1. **Chemicals in medicines** - analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.
2. **Chemicals in food** - preservatives, artificial sweetening agents.
3. **Cleansing agents** - soaps and detergents, cleansing action.

Practicals

| Evaluation Scheme for Examination | Marks |
|-----------------------------------|-----------|
| Volumetric Analysis | 10 |
| Salt Analysis | 6 |
| Content Based Experiment | 4 |
| Class record and viva | 5 |
| Investigatory Project | 5 |
| Total | 30 |

Practicals Syllabus

A. Surface Chemistry.

- (a) Preparation of one lyophilic and one lyophobic sol.
Lyophilic sol - starch, egg albumin and gum
Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.
- (b) Study of the role of emulsifying agents in stabilizing the emulsions of different oils.

B. Chemical Kinetics

- (a) Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.
- (b) Study of reaction rates of any one of the following:
 - (i) Reaction of iodide ion with hydrogen peroxide at room temperature using different concentration of iodide ions.
 - (ii) Reaction between potassium iodate, KIO_3 and sodium sulphite: (Na_2SO_3) using starch solution as indicator (clock reaction).

C. Thermochemistry

Any one of the following experiments

- i) Enthalpy of dissolution of copper sulphate or potassium nitrate.
- ii) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH)
- iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone and chloroform

D. Electrochemistry

Variation of cell potential in $\text{Zn}/\text{Zn}^{2+}||\text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature.

E. Chromatography

- i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values.
- ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R_f values to be provided).

F. Preparation of Inorganic Compounds

- i) Preparation of double salt of ferrous ammonium sulphate or potash alum.
- ii) Preparation of potassium ferric oxalate.

G. Preparation of Organic Compounds

Preparation of any two of the following compounds

- i) Acetanilide
- ii) Di-benzal acetone
- iii) p-Nitroacetanilide.
- iv) Aniline yellow or 2 - Naphthol aniline dye.
- v) Iodoform

- H. Tests for the functional groups present in organic compounds:**
 Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary) groups.
- I. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.**
- J. Determination of concentration/molarity of KMnO_4 solution by titrating it against a standard solution of:**
 i) Oxalic acid,
 ii) Ferrous ammonium sulphate
 (Students will be required to prepare standard solutions by weighing themselves).
- K. Qualitative analysis**
- Determination of one cation and one anion in a given salt.
- Cations** - Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Zn^{2+} , Co^{2+} , Ni^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+
- Anions** - CO_3^{2-} , S^{2-} , SO_3^{2-} , SO_4^{2-} , NO_2^- , NO_3^- , Cl^- , Br^- , I^- , PO_4^{3-} ; $\text{C}_2\text{O}_4^{2-}$, CH_3COO^-

(Note: Insoluble salts excluded)

PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects.

- Study of presence of oxalate ions in guava fruit at different stages of ripening.
- Study of quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.
- Study of the effect of potassium bisulphate as food preservative under various conditions (temperature, concentration, time etc.) :
- Study of digestion of starch by salivary amylase and, effect of pH and temperature on it.
- Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice etc.
- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

Note: Any investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

BIOLOGY (Theory)

CLASS XII

Time : 3 Hours

One Paper

Marks : 70

| Unit | Marks |
|---------------------------------------|-----------|
| 1. Reproduction | 14 |
| 2. Genetics and evolution | 18 |
| 3. Biology and human Welfare | 14 |
| 4. Biotechnology and its applications | 10 |
| 5. Ecology and environment | 14 |
| Total | 70 |

UNIT-I

I REPRODUCTION

Reproduction in organisms : Asexual and sexual reproduction. Sexual reproduction in flowering plants : Structure of flower, pollination, fertilization, development of seeds and fruits, apomixis and polyembryony.

Human reproduction : Reproductive system in male and female, menstrual cycle, production of gametes, fertilization, implantation, embryo development, pregnancy, parturition and lactation.

Reproductive Health : Population and birth control, contraception and MTP; sexually transmitted diseases, infertility.

UNIT-II

II GENETICS AND EVOLUTION

Mendelian inheritance.

Chromosome theory of inheritance, deviations from Mendelian ratio (gene interaction-incomplete dominance, co-dominance, multiple alleles).

Sex determination in human beings: XX, XY.

Linkage and crossing over.

Inheritance pattern : Mendelian disorders and chromosomal disorders in humans.

DNA and RNA, search for genetic material, replication, transcription, genetic code, translation.

Gene expression and regulation.

Genome and Human Genome Project.

DNA fingerprinting.

Evolution: Origin of life, theories and evidences, adaptive radiation, mechanism of Evolution, origin and evolution of man.

UNIT -III

III BIOLOGY AND HUMAN WELFARE

Basic concepts of immunology, vaccines.

Pathogens, Parasites

Cancer and AIDS

Adolescence and drug / alcohol abuse.

Plant breeding, tissue culture, single cell protein, food production, animal husbandry.

Mircobes in household food processing, industrial production, sewage treatment, energy generation, biocontrol agents and biofertilizers.

UNIT -IV

IV BIOTECHNOLOGY AND ITS APPLICATION

Principles and Processes; Recombinant DNA technology; Application in Health and Agriculture; genetically modified (GM) organisms; biosafety issues.

UNIT -V

V ECOLOGY & ENVIRONMENT

Ecosystems : components, types, energy flow, nutrient cycling and ecosystem services.

Organism and Population : Organisms and its environment, population and ecological adaptations.

Centres of diversity and conservation for biodiversity, Biosphere reserves, National parks and sanctuaries. Environmental issues.

Practicals

Time: 3 Hours

Marks : 30

- | | |
|--|----------|
| 1. Experiments and spotting | 20 marks |
| 2. Record of one investigatory project and Viva based on the project | 5 marks |
| 3. Class record and Viva based on experiments | 5 marks |

List of Experiments

1. Disect the given flower and display different whorls. Disect anther and ovary to show number of chambers.
2. Study pollen germination on a slide.
3. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity of soil. Correlate with the kinds of plants found in them.
4. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
5. Study the presence of suspended particulate matter in air at the two widely different sites.
6. Study of plant population density by quadrat method.
7. Study of plant population frequency by quadrat method.
8. Prepare a temporary mount of onion root tip to study mitosis
9. To study the effect of the different temperatures and three different pH on the activity of salivary amylase on starch.

Study/observation of the following (Spotting)

1. Study of flowers adapted to pollination by different agencies (wind, insect)
2. Study of pollen germination on stigma through a permanent slide.
3. Study and identify stages of gamete development i.e. T.S. testis and T.S. ovary through permanent slides. (from any mammal)
4. Study meiosis in onion bud cell or grass hopper testis through permanent slide.
5. Study of T.S. of blastula through permanent slide.
6. Study Mendelian inheritance using seeds of different colour/size of any plant.
7. Study prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness.
8. Exercise on controlled pollination-Emasculation, tagging and bagging.
9. To identify common disease causing organisms like *Ascaris*, *Entamoeba*, *Plasmodium*, Ringworm through permanent slide or specimen. Comment on symptoms of diseases that they cause.
10. Study two plants and two animals found in xerophytic condition. Comment upon their adaptations/morphological.
11. Study plants and animals found in aquatic conditions. Comment upon their adaptations/ morphological.

2009–2010
CLASS XII
ACCOUNTANCY
Time : 3 Hours

| One Paper | Marks : 80 |
|---|----------------------|
| Unit | Marks |
| Part A : | |
| Accounting for not for Profit Organisations, Partnership Firms and Companies | |
| 1. Accounting for not for profit organizations. | 10 |
| 2. Accounting for Partnership Firms | 5 |
| 3. Reconstitution of Partnership | 20 |
| 4. Accounting for Share Capital and Debenture | 25 |
| | 60 |
| Part B: | |
| Financial Statement Analysis | |
| 5. Analysis of Financial Statements | 12 |
| 6. Cash Flow Statement | 8 |
| 7. Project Work | 20 |
| Unit 1 : Project File | 4 marks |
| Unit 2 : Written Test | 12 marks (one hour) |
| Unit 3 : Viva Voce' | 4 marks |
| OR | |
| | 40 |
| Part C: | |
| Computerized Accounting | |
| 5. Overview of Computerized Accounting System | 5 |
| 6. Accounting using Database Management System (DBMS) | 8 |
| 7. Accounting Applications of Electronic Spread sheet | 7 |
| 8. Practical Work in Computerized Accounting | 20 |
| Unit 1 : File | 4 marks |
| Unit 2 : Practical Examination | 12 marks (one hours) |
| Unit 3 : Viva Voce' | 4 marks |
| | 40 |

CLASS XII

Part A:

Accounting for Not-For-Profit Organisations, Partnership Firms and Companies.

Unit 1: Accounting for Not-for-profit Organisations

- Meaning and features of not for profit organisations.
- Meaning and features of fundbased accounting.
- Receipts and payments Account
- Preparation of Income and Expenditure Account and Balance Sheet from
- Receipt and Payment Account with additional information.

Unit 2: Accounting for Partnership firms

- Nature of Partnership firm, Partnership Deed-meaning, importance.
- Partners' Capital Accounts : Fixed vs Fluctuating Capital, Division of Profit among partners, Profit and Loss Appropriation Account including past adjustments.

Unit 3: Reconstitution of Partnership

Changes in Profit Sharing Ratio among the existing partners- Sacrificing Ratio and Gaining Ratio.

- Accounting for Revaluation of Assets and Liabilities and distribution of reserves (Accumulated Profits).
- Goodwill: Nature, Factors affecting and methods of valuation: Average profit, Super profit and Capitalisation methods.
- *Admission of a Partner*: Effect of Admission of Partner, Change in Profit Sharing Ratio, Accounting Treatment for Goodwill (as per AS 10), Revaluation of Assets and Liabilities, Adjustment of Capitals.
- *Retirement/Death of a Partner*: Change in Profit Sharing ratio, accounting treatment of Goodwill, Revaluation of Assets and Liabilities, Adjustment of Capitals. Dissolution of a partnership firm.

Unit 4: Accounting for Share Capital and Debenture

- Share Capital: Meaning and Types.
- Accounting for share capital: Issue and Allotment of Equity and Preference Shares; public subscription of shares : over subscription and under subscription; issue at par, premium and at discount; calls in advance, calls in arrears, issue of shares for consideration other than cash. Meaning of Private placement of shares and employee stock option plan.
- Forfeiture of shares : accounting treatment, re-issue of forfeited shares.
- Presentation of Share Capital in company's Balance Sheet.
- Issue of debentures at par; Premium and at discount; writing of discount and loss on issue of debentures; Issue of debentures as collateral security; issue of debentures for consideration other than cash.
- Redemption of debentures; sources : out of profits - debenture redemption reserve / sinking fund; out of capital-methods : lump sum payment, draw by lots, purchase in the open market and conversion (excluding cum-interest and ex-interest).

Part B: Financial Statement Analysis

Unit 5: Analysis of Financial Statements

- Financial Statements of a Company: preparation of simple balance sheet of a company in the prescribed form with major headings only.
- Financial Statement Analysis: meaning, significance, limitations,
- Tools for Financial Statement Analysis: Comparative Statements, Common Size Statements, Accounting Ratios: meaning and objectives, types of ratios:
 - Liquidity Ratios:* Current Ratio, Liquid Ratio
 - Solvency Ratios:* Debt to Equity, Total Assets to Debt, Proprietary Ratio
 - Activity Ratios:* Inventory Turnover, Debtors Turnover, Payables Turnover, Working Capital Turnover, Fixed Assets Turnover,

Profitability Ratio: Gross Profit, Operating, Net Profit, Return on Investment, Earning Per Share, Dividend per Share, Price Earning Ratio

Unit 6: Cash Flow Statement

- Cash Flow Statement: Meaning and objectives, preparation, adjustments related to depreciation, dividend and tax, sale and purchase of non-current assets (as per revised standard issued by ICAI)

Unit 7: Project Work in Accounting

OR

Part C: Computerised Accounting

Unit 5: Overview of Computerized Accounting System

- Concept and types of Computerised Accounting System (CAS)
- Features of a Computerized Accounting System
- Structure of a Computerised Accounting System

Unit 6: Accounting using Database Management System (DBMS)

- Concept of DBMS
- Objects in DBMS: Tables, Queries, Forms, Reports
- Creating data tables for accounting
- Using queries, forms and reports for generating accounting information. Applications of DBMS in generating accounting information such as shareholders' records, sales reports, customers' profile, suppliers' profile, payroll, employees' profile, petty cash register.

Unit 7: Accounting Applications of Electronic Spreadsheet

- Concept of an Electronic Spreadsheet (ES)
- Features offered by Electronic Spreadsheet
- Applications of Electronic Spreadsheet in generating accounting information, preparing depreciation schedule, loan repayment schedule, payroll accounting and other such applications.

Unit 8: Practical Work in Computerised Accounting

2009–2010
CLASS XII
BUSINESS STUDIES
Time : 3 Hours

| | | |
|------------------|-----------------------|--------------------|
| One Paper | Time : 3 Hours | Marks : 100 |
| Unit No. | Title | Weightage |

Part A : Principles and Functions of Management

| | | |
|---|---------------------------------------|----------|
| 1 | Nature and Significance of Management | 07 Marks |
| 2 | Principles of Management | 07 Marks |
| 3 | Business Environment | 05 Marks |
| 4 | Planning | 07 Marks |
| 5 | Organizing | 10 Marks |
| 6 | Staffing | 08 Marks |
| 7 | Directing | 10 Marks |
| 8 | Controlling | 06 Marks |
| | Total | 60 Marks |

Part B: Business Finance and Marketing

| | | |
|----|----------------------|------------------|
| 9 | Financial Management | 12 Marks |
| 10 | Financial Markets | 08 Marks |
| 11 | Marketing Management | 14 Marks |
| 12 | Consumer Protection | 06 Marks |
| | Total | 40 Marks |
| | TOTAL | 100 Marks |

Part A: Principles and Functions of Management

Unit I: Nature and significance of Management

- Management - concept, objectives, importance
- Management as Science, Art, Profession.
- Levels of management
- Management functions - planning, organizing, staffing, directing and controlling
- Coordination - nature and importance

Unit 2: Principles of Management

- Principles of Management - meaning, nature and significance
- Fayol's principles of management
- Taylor's Scientific Management - Principles and Techniques

Unit 3: Business Environment

- Business Environment - meaning and importance
- Dimensions of Business Environment - Economic, Social, Technological, Political and Legal
- Economic Environment in India; Impact of Government policy changes on business

and industry, with special reference to adoption of the policies of liberalization, privatization and globalisation

Unit 4: Planning

- Meaning, features, importance, limitations
- Planning process
- Types of Plans - Objectives, Strategy, Policy, Procedure, Method, Rule, Budget, Programme.

Unit 5: Organising

- Meaning and importance.
- Steps in the process of organising.
- Structure of organization - functional and divisional.
- Formal and informal organization.
- Delegation: meaning, elements and importance.
- Decentralization: meaning and importance.

Unit 6: Staffing

- Meaning and importance of staffing
- Staffing as a part of Human Resource Management
- Staffing process
- Recruitment - meaning and sources
- Selection - meaning and process
- Training and Development - meaning and need. Methods of training

Unit 7: Directing

- Meaning, importance and principles
- Elements of Directing
 - Supervision - meaning and importance
 - Motivation - meaning and importance, Maslow's hierarchy of needs; Financial and non-financial incentives.
 - Leadership - meaning, importance; qualities of a good leader
 - Communication - meaning and importance, formal and informal communication; barriers to effective communication.

Unit 8: Controlling

- Meaning and importance
- Relationship between planning and controlling
- Steps in the process of control
- Techniques of controlling : budgetary control,

Part B : Business Finance and Marketing

Unit 9: Financial Management

- Meaning, role, objectives of financial management
- Financial decisions : meaning and factors affecting
- Financial planning - meaning and importance.
- Capital Structure - meaning and factors
- Fixed and Working Capital -Meaning and factors affecting its requirements.

Unit 10: Financial Markets

- Concept of Financial Market: Money Market and its instruments.
- Capital market and types - primary and secondary market.

- Distinction between capital market and money market.
- Stock Exchange - meaning, functions, NSEI, OCTEI, Trading Procedure.
- Securities and Exchange Board of India (SEBI)- Objectives, Functions.

Unit 11: Marketing Management

- Marketing - meaning, functions and role, marketing and selling
- Marketing management philosophies.
- Marketing mix - elements
 - Product - nature, classification, branding, labeling and packaging
 - Price - Factors determining fixation of price
 - Physical distribution: Elements; Channels of distribution : types, function, choice of channels
 - Promotion -Elements of promotion mix; Advertising - role, limitations, objections against advertising. Personal selling - meaning, importance; Sales promotion - merits, limitations, methods ; Publicity - meaning and role.

Unit 12: Consumer Protection

- Importance of consumer protection
- Consumer rights
- Consumer responsibilities
- Ways and means of consumer protection - Consumer awareness and legal redressal with reference to Consumer Protection Act.
- Role of consumer organizations and NGOs.

2009–2010
CLASS XII
COMPUTER SCIENCE (Theory)
Time : 3 Hours

One Paper

Marks : 70

| Unit No. | Unit Name | Marks |
|-----------------|--|--------------|
| 1. | PROGRAMMING IN C++ | 30 |
| 2. | DATA STRUCTURE | 14 |
| 3. | DATABASE AND SQL | 8 |
| 4. | BOOLEAN ALGEBRA | 8 |
| 5. | COMMUNICATION AND OPEN SOURCE CONCEPTS | 10 |
| | | 70 |

UNIT 1: PROGRAMMING IN C++

REVIEW: C++ covered In Class -XI,

Object Oriented Programming:

Concept of Object Oriented Programming – Data hiding, Data encapsulation, Class and Object, Abstract class and Concrete class, Polymorphism (Implementation of polymorphism using Function overloading as an example in C++); Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies,

Implementation of Object Oriented Programming concepts in C++:

Definition of a class, Members of a class - Data Members and Member Functions (methods), Using Private and Public visibility modes, default visibility mode (private); Member function definition: inside class definition and outside class definition using scope resolution operator (::); Declaration of objects as instances of a class; accessing members from object(s), Array of type class, Objects as function arguments - pass by value and pass by reference;

Constructor and Destructor:

Constructor: Special Characteristics, Declaration and Definition of a constructor, Default Constructor, Overloaded Constructors, Copy Constructor, Constructor with default arguments; Destructor: Special Characteristics, Declaration and definition of destructor;

Inheritance (Extending Classes):

Concept of Inheritance, Base Class, Derived Class, Defining derived classes, protected visibility mode; Single level inheritance, Multilevel inheritance and Multiple inheritance, Privately derived, Publicly derived and Protectedly derived class, accessibility of members from objects and within derived class(es);

Data File Handling:

Need for a data file, Types of data files – Text file and Binary file;

Text File: Basic file operations on text file: Creating/Writing text into file, Reading and manipulation of text from an already existing text File (accessing sequentially);

Binary File: Creation of file, Writing data into file, Searching for required data from file, Appending data to a file, Insertion of data in sorted file, Deletion of data from file, Modification of data in a file;

Implementation of above mentioned data file handling in C++;

Components of C++ to be used with file handling:

Header file: fstream.h; ifstream, ofstream, fstream classes;

Opening a text file in **in**, **out**, and **app** modes;

Using cascading operators for writing text to the file and reading text from the file; **open()**, **get()**, **put()**, **getline()** and **close()** functions; Detecting end-of-file (with or without using **eof()** function);

Opening a binary file using **in**, **out**, and **app** modes;

open(), **read()**, **write()** and **close()** functions; Detecting end-of-file (with or without using **eof()** function); **tellg()**, **tellp()**, **seekg()**, **seekp()** functions

Pointers:

Declaration and Initialization of Pointers; Dynamic memory allocation/deallocation operators: **new**, **delete**; Pointers and Arrays: Array of Pointers, Pointer to an array (1 dimensional array), Function returning a pointer, Reference variables and use of alias; Function call by reference. Pointer to structures: Deference operator: *, ->; self referencial structures;

UNIT 2: DATA STRUCTURES

Arrays:

One and two Dimensional arrays: Sequential allocation and address calculation;

One dimensional array: Traversal, Searching (Linear, Binary Search), Insertion of an element in an array, deletion of an element from an array, Sorting (Insertion, Selection, Bubble sort), concatenation of two linear arrays, merging of two sorted arrays;

Two-dimensional arrays: Traversal, Finding sum/difference of two NxM arrays containing numeric values, Interchanging Row and Column elements in a two dimensional array;

Stack (Array and Linked implementation of Stack):

Operations on Stack (PUSH and POP) and its Implementation in C++, Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression;

Queue: (Circular Array and Linked Implementation):

Operations on Queue (Insert and Delete) and its Implementation in C++.

UNIT 3: DATABASES AND SQL

Database Concepts:

Relational data model: Concept of domain, tuple, relation, key, primary key, alternate key, candidate key;

Relational algebra: Selection, Projection, Union and Cartesian product;

Structured Query Language:

General Concepts: Advantages of using SQL, Data Definition Language and Data Manipulation Language;

Data types: NUMBER, CHARACTER, DATE;

SQL commands:

CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE...SET..., INSERT, DELETE; SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY;

SQL functions: SUM, AVG, COUNT, MAX and MIN;

Note: Implementation of the above mentioned commands could be done on any SQL supported software on one or two tables.

UNIT 4: BOOLEAN ALGEBRA

Binary-valued Quantities, Boolean Variable, Boolean Constant and Boolean Operators: AND, OR, NOT; Truth Tables; Closure Property, Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality, Idem potent Law, Distributive Law, Absorption Law, Involution law, DeMorgan's Law and their applications;

Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for minimisation of Boolean expressions (up to 4 variables);

Basic Logic Gates (NOT, AND, OR, NAND, NOR) and their use in circuits.

UNIT 5: COMMUNICATION AND OPEN SOURCE CONCEPTS

Evolution of Networking: ARPANET, Internet, Interspace;

Different ways of sending data across the network with reference to switching techniques;

Data Communication terminologies:

Concept of Channel, Baud, Bandwidth (Hz, KHz, MHz) and Data transfer rate (bps, kbps, Mbps, Gbps, Tbps);

Transmission media:

Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link.

Network devices:

Modem, RJ45 connector, Ethernet Card, Hub, Switch, Gateway;

Network Topologies and types:

Bus, Star, Tree; Concepts of LAN, WAN, MAN

Network Protocol:

TCP/IP, File Transfer Protocol (FTP), PPP, Level-Remote Login (Telnet), Internet, Wireless/ Mobile Communication, GSM, CDMA, WLL, 3G, SMS, Voice mail, Application Electronic Mail, Chat, Video Conferencing;

Network Security Concepts:

Threats and prevention from Viruses, Worms, Trojan horse, Spams

Use of Cookies, Protection using Firewall;

India IT Act, Cyber Law, Cyber Crimes, IPR issues, Hacking.

Web Servers;

Hyper Text Markup Language (HTML), extensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; Protocol Address; Website, Web browser, Web Servers; Web Hosting, Web Scripting – Client side (VB script, Java Script, PHP) and Server side (ASP, JSP, PHP)

Open Source Terminologies:

Open Source Software, Freeware, Shareware, Proprietary software, FLOSS, GNU, FSF, OSI;

(Practicals)

Duration: 3 hours

Total Marks: 30

1. Programming in C++

10

One programming problem in C++ to be developed and tested in Computer during the examination. Marks are allotted on the basis of following:

| | | |
|---------------------------|---|---------|
| Logic | : | 5 Marks |
| Documentation/Indentation | : | 2 Marks |
| Output presentation | : | 3 Marks |

Notes: The types of problems to be given will be of application type from the following topics

- Arrays (One dimensional and two dimensional)
- Array of structure
- Stack using arrays and linked implementation
- Queue using arrays (circular) and linked implementation
- Binary File operations (Creation, Displaying, Searching and modification)
- Text File operations (Creation, Displaying and modification)

2. SQL Commands

05

Five Query questions based on a particular Table/Reaction to be tested practically on Computer during the examination. The command along with the result must be written in the answer sheet.

- 3. Project Work** **05**
The project has to be developed in C++ language with Object Oriented Technology and also should have use of Data files. (The project is required to be developed in a group of 1-2 students)
- Presentation on the computer
 - Project report (Listing, Sample, Outputs, Documentation)
 - Viva
- 4. Practical File** **05**
Must have minimum 20 programs from the following topics
- Arrays (One dimensional and two dimensional, sorting, searching, merging, deletion' & insertion of elements)
 - Arrays of structures, Arrays of Objects
 - Stacks using arrays and linked implementation
 - Queues using arrays (linear and circular) and linked implementation
 - File (Binary and Text) operations (Creation, Updation, Query)
 - Any computational based problems
- 15 SQL commands along with the output based on any table/relation
- 5. Viva Voce** **05**
Viva will be asked from syllabus covered in class XII and the project developed by student.

2009–2010
CLASS XII
Time : 3 Hours

One Paper

Marks : 70

हिन्दी (कृषि वर्ग हेतु)
[इण्टरमीडिएट द्विवर्षीय पाठ्यक्रम/अंक विभाजन]

विषय कोड – 102

| एक प्रश्नपत्र समय – 3 घंटे | पाठ्य विवरण/अंक निर्धारण | अधिकतम अंक 100 |
|-------------------------------|--|-------------------|
| क | अपठित बोध (गद्यांश) | 15 अंक |
| ख | रचनात्मक लेखन एवं जनसंचार माध्यम | 20 अंक |
| ग | आरोह भाग – 1 } आरोह भाग – 2 } पूरक पुस्तक : वितान भाग – 1 } वितान भाग – 2 } | 26 अंक 09 अंक |
| घ | संस्कृत पठित बोध : संस्कृत प्रबोधिनी भाग – 1 } संस्कृत प्रबोधिनी भाग – 2 } | 10 अंक |
| ङ | संस्कृत प्रबोधिनी भाग – 1 व भाग – 2 पर आधारित | 10 अंक |
| च | प्रश्नोत्तर वाक्य रचना एवं व्याकरण | 10 अंक |

क. अपठित गद्यांश बोध

गद्यांश बोध पर आधारित बोध, प्रयोग, रचनान्तरण, शीर्षक आदि पर लघूत्तरात्मक प्रश्न
15

ख. रचनात्मक लेखन एवं जन संचार माध्यम:

- निबन्ध 10
- जनसंचार की विधाओं पर दो प्रश्न
- प्रिंट माध्यम सम्पादकीय
- रिपोर्ट 5
- आलेख 5

ग. ● आरोह भाग – 1

एक काव्यांश पर अर्थ ग्रहण सम्बन्धी तीन प्रश्नों में से दो प्रश्न 1½+1½ = 3

- आरोह भाग – 2

| | |
|--|-----------|
| एक काव्यांश पर अर्थ ग्रहण सम्बन्धी तीन प्रश्नों में से दो प्रश्न | 1½+1½ = 3 |
| ● आरोह भाग – 1 काव्यांश के सौन्दर्य बोध पर एक प्रश्न | 2 |
| ● आरोह भाग – 2 काव्यांश के सौन्दर्य बोध पर एक प्रश्न | 2 |
| ● आरोह भाग – 1 कविता की विषय वस्तु पर आधारित दो में से एक प्रश्न | 2 |
| ● आरोह भाग – 2 कविता की विषय वस्तु पर आधारित दो में से एक प्रश्न | 2 |
| ● आरोह भाग – 1 एक गद्यांश में से अर्थ ग्रहण सम्बन्धी दो प्रश्न | 1½+1½ = 3 |
| ● आरोह भाग – 2 एक गद्यांश में से अर्थ ग्रहण सम्बन्धी दो प्रश्न | 1½+1½ = 3 |
| ● आरोह भाग – 1 पाठों की विषय वस्तु पर आधारित दो में से एक प्रश्न | 3 |
| ● आरोह भाग – 2 पाठों की विषय वस्तु पर आधारित दो में से एक प्रश्न | 3 |
| ● पूरक पुस्तक : वितान भाग – 1 विचार/संदेश पर आधारित दो प्रश्नों में से एक प्रश्न | 2 |
| ● पूरक पुस्तक : वितान भाग – 2 विचार/संदेश पर आधारित दो प्रश्नों में से एक प्रश्न | 2 |
| ● विषय वस्तु पर आधारित दो में से एक निबन्धात्मक प्रश्न [वितान-भाग-1 व वितान भाग-2] | 5 |
| घ. संस्कृत पठित बोध – | |
| ● संस्कृत प्रबोधिनी भाग-1 के प्रदत्त गद्यांश पर आधारित तीन प्रश्नों में से दो प्रश्न | 1½+1½ = 3 |
| ● संस्कृत प्रबोधिनी भाग-2 के प्रदत्त गद्यांश पर आधारित तीन प्रश्नों में से दो प्रश्न | 1½+1½ = 3 |
| ● पाठ्य पुस्तक पर आधारित प्रश्नोत्तर – संस्कृत प्रबोधिनी भाग – 1 में से श्लोक पर आधारित दो प्रश्नों में से एक प्रश्न का उत्तर | 2 |
| संस्कृत प्रबोधिनी भाग – 2 में से श्लोक पर आधारित दो प्रश्नों में से एक प्रश्न का उत्तर | 2 |
| ङ संस्कृत पाठ्य पुस्तक पर आधारित प्रश्नोत्तर – संस्कृत प्रबोधिनी भाग – 1 चार प्रश्नों में से दो प्रश्नों के उत्तर | 2½+2½ = 5 |
| संस्कृत प्रबोधिनी भाग – 2 चार प्रश्नों में से दो प्रश्नों के उत्तर | 2½+2½ = 5 |

च. संस्कृत वाक्य रचना –

दिये गये सुवन्त, तिङन्त, अव्यय आदि से सम्बन्धित दस पदों में से चार पदों की वाक्य रचना करना। 4

छ. संस्कृत व्याकरण

व्यंजन सन्धि व विसर्ग संधि, समास, कारक, शब्द रूप, धातु रूप आदि से सम्बन्धित लघूत्तरीय प्रश्न 6

अथवा

कोई कण्ठस्थ श्लोक लिखकर उसका हिन्दी अनुवाद लिखना

3 + 3 = 6

निर्धारित पुस्तकें –

(i) आरोह भाग – 1

(ii) आरोह भाग – 2

(iii) वितान भाग – 1

(iv) वितान भाग – 2

(v) संस्कृत प्रबोधिनी – 1

(vi) संस्कृत प्रबोधिनी – 2

निम्न पाठों का मूल्यांकन नहीं किया जायेगा –

आरोह भाग – 1

(i) आत्मा का ताप

(ii) अप्पू के साथ ढाई साल

(iii) त्रिलोचन की कविता

वितान भाग – 1

(i) लता मंगेशकर

आरोह भाग – 2

(i) शमशेर बहादुर सिंह – ऊषा

(ii) चार्ली चैपलिन यानी हम सब – विष्णु नागर

(iii) पहलवान की ढोलक – फणीश्वर नाथ रेणु

वितान भाग – 2

(i) डायरी के पन्ने – ऐन फ्रैंक

