

S. D. VIDYA MANDIR CITY
A unit of Shri S.D. Education Society (Regd.) Panipat
Affiliated to CBSE
Class XII
Holidays Homework (2026-27)
Subject - ENGLISH

Literature: Revise all the chapters done in the class.

Bravia (Practice Paper) –

Reading Section –

1. Do worksheets of comprehension passages 1 to 5 in practice paper.
2. Do worksheet 24 & 25 (Notice Writing)
3. Do worksheet 36 ,37 and 39,40 (letter to editor and job application)

Speaking Skill (5 marks)

Topics for speech-

Prepare one minute speech on any topic given below-

1. Climate Change: A Global concern
2. Dreams Need Actions , Not Just Imagination
3. Empathy and Kindness as Tools for Human Transformation.
4. The AI Revolution: Job Creator or job Destroyer?

Project Work -

Project Topic- “Climate Change and Global Warming’: A Threat to Humanity”

- Based on your reading of 'Journey to the end of the earth’ research and analyze the causes ,effects and possible solution to the environmental crisis with suitable examples.
- Also make a comparison of climatic conditions of Haryana and Manipur.

Project File should include –

1. Cover Page(Title , name, class& roll no, academic year
2. Certificate of Authenticity (signed by student and teacher(
3. Acknowledgment
4. Index (Table of content)
5. Bibliography (list all the books ,articles and sites you referred to)

Note – Cover page should be attractive .

Use pictures or illustrations

The project should be of 12 – 15 pages and should be prepared in A4 size papers only

ग्रीष्मावकाश गृहकार्य

प्रिय विद्यार्थियों,

ग्रीष्मावकाश केवल विश्राम का समय नहीं, बल्कि स्वयं को नई ऊर्जा, रचनात्मकता एवं ज्ञान से समृद्ध करने का अवसर भी है। अतः दिए गए कार्यों को रुचि, स्वच्छता एवं रचनात्मकता के साथ पूर्ण कीजिए।

प्रश्न - 1

कक्षा में पढ़ाए गए 'आरोह' एवं 'वितान' पुस्तक के पाठों को पुनः पढ़ें तथा उनके प्रश्नोत्तर याद करें।

प्रश्न - 2

निम्नलिखित प्रश्नों के उत्तर लिखिए:

1. जनसंचार के प्रमुख माध्यम कौन-कौन से हैं?
2. समाचार लेखन में किन बातों का ध्यान रखना चाहिए?
3. रेडियो नाटक की प्रमुख विशेषताएँ लिखिए।
4. कहानी के नाट्य रूपांतरण में किन बातों का ध्यान रखा जाता है?
5. फीचर लेखन और समाचार लेखन में अंतर स्पष्ट कीजिए।

प्रश्न - 3

निम्नलिखित विषयों पर रचनात्मक लेख लिखिए:

1. डिजिटल युग में विद्यार्थियों की बदलती जीवनशैली
2. पर्यावरण संरक्षण : आज की आवश्यकता

प्रश्न - 4

निम्नलिखित विषयों में से किसी एक विषय पर भाषण तैयार कीजिए:

1. बाजारवाद का हमारे जीवन पर प्रभाव
2. जल संरक्षण का महत्व
3. संघर्ष और जीवन मूल्य

प्रश्न - 5

कला समेकित परियोजना कार्य

निर्देश:

विद्यार्थी निम्नलिखित विषयों पर कला समेकित परियोजना कार्य तैयार करें। परियोजना आकर्षक, हस्तलिखित एवं रचनात्मक होनी चाहिए। चित्र, चार्ट, पोस्टर, कोलाज आदि का प्रयोग अवश्य करें।

रोल नंबर	विषय
1 - 7	महादेवी वर्मा
8 - 14	जैनेंद्र कुमार
15 - 21	धर्मवीर भारती
22 - 28	फणीश्वरनाथ 'रेणु'

सामान्य निर्देश

- सभी कार्य अलग गृहकार्य फाइल में करें।
- कार्य स्वच्छ एवं सुंदर हस्तलेख में होना चाहिए।
- चित्रों एवं रंगों का उचित प्रयोग करें।
- समय पर कार्य पूर्ण करें।

शुभकामनाएँ!

अपना अवकाश आनंदपूर्वक बिताइए और नियमित अध्ययन करते रहिए।

Physics

1. Make a project file on the given topic.
2. Complete the lab manual with 4 experiments and 3 activities given.
3. Solve the assignment.
4. Revise all notes thoroughly.

Complete all work neatly and submit it on time.

Regards

Physics Department

Biology (044)

Complete the biology practical file.

1. Make one investigatory project on any topic of your choice from the syllabus.
2. Solve the given assignment in fair notebook.

Assignment

1. Explain double fertilization and trace the post-fertilisation events in sequential order leading to seed formation in a typical dicotyledonous plant.
2. Draw a labelled diagram of an anther lobe at microspore mother cell stage. Mention the role of different wall layers of anther.
3. i. Explain the formation of placenta after the implantation in a human female.
ii. Draw a diagram showing human foetus within the uterus and label any 4 parts.
4. Where oogenesis does takes place. Describe the stages of this process?
5. What is menstruation? What are specific action of FSH, LH, estrogen and progesterone in the menstrual cycle?
6. i. Draw the sectional view of a seminiferous tubule of human. Label any 4 parts.
ii. Name the pituitary hormones involved in the process of spermatogenesis. State their functions.
7. Explain with the help of an example i) monohybrid cross ii) dihybrid cross
iii) incomplete dominance. iv) co dominance
8. Write short note on i. Haemophilia. ii. colour blindness. iii. Sickle cell anaemia
9. Describe the technique which is used for sex determination in foetus.
10. What is pyramid of biomass? Represent the pyramid of biomass in
 - i. Grassland ecosystem
 - ii. Aquatic ecosystem
11. What is decomposition? Describe the different processes involved in decomposition.
12. With the help of a diagram, represent the energy flow through different trophic level.
13. Explain in detail detritus and Grazing food chains.

BUSINESS STUDIES

COMPREHENSIVE HOMEWORK ASSIGNMENT & PROJECT WORK

Dear Students,

To utilize your academic break effectively and establish a rock-solid foundation for your upcoming CBSE Board Examinations, you are required to complete the following assignments systematically. This work has been designed to strengthen your conceptual clarity, application skills, and project methodology. Please note that all components of this homework will be rigorously evaluated and will directly contribute to your Internal Assessment (Practical) Marks.

1. Chapter-Wise Assignment Completion

You are required to comprehensively solve the structured assignment questions for the first four chapters in your dedicated Assignment Notebook. Ensure all answers are written cleanly, maintaining board-level presentation benchmarks.

- **Chapter 1:** Nature and Significance of Management
- **Chapter 2:** Principles of Management
- **Chapter 3:** Business Environment
- **Chapter 4:** Planning

Board Examination Strategy Note:

While answering, place specific emphasis on Higher Order Thinking Skills (HOTS) questions, multi-conceptual application questions, and real-world case studies strictly matching the latest CBSE pattern. Map your answers using relevant keywords to maximize scoring potential.

2. CBSE Class XII Project Work Allocation

In accordance with current CBSE guidelines, every student must prepare one comprehensive project file. To ensure diversification and comprehensive learning, topics have been strictly distributed according to your Class Roll Numbers (Roll No. 1 to 38) in a cyclic pattern.

Roll Numbers Matrix

1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37

Allocated Project Topic & Structural Scope

Principles of Management

Application of Henri Fayol's 14 Classical Principles or F.W. Taylor's Scientific Management Concepts inside a live, operational business unit (e.g., local departmental store, fast-food outlet, bank branch, or small factory). Focus on compliance and deviations.

2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38

Business Environment

Empirical study tracking the structural shifts and operational impact of macroeconomic changes. Students may choose to deeply analyze Demonetization, Goods and Services Tax (GST) implementation, or the Digital India framework on corporate operations.

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36

Marketing Management

A comprehensive, practical brand study on a product of your choice (e.g., consumer goods, electronic items, beverages). The analysis must exhaustively map out the 4 Ps of the Marketing Mix: Product, Price, Place, and Promotion, alongside competitive differentiation.

Mandatory Project Requirements & Sequential Structure

The final project report must be strictly handwritten by the student on eco-friendly, clean A4 size sheets. Visual presentation, creativity, and systematic structuring are imperative. Organize your file exactly in the following sequence:

- **1. Official Cover Page:** Must display the Project Title, Student Name, Roll Number, Class Stream, and School Name clearly using clean typography.
- **2. Certificate of Authenticity:** Formal declaration signed by the subject teacher and the student confirming original work.
- **3. Acknowledgement:** A brief paragraph expressing professional gratitude to individuals, organizations, or mentors who assisted in your data collection.
- **4. Detailed Index:** A structured table mapping out the topics, sub-topics, and sections against their precise page numbers.
- **5. Introduction to the Topic:** Core theoretical background, operational concepts, definitions, and academic fundamentals relevant to your study.
- **6. Field Research & Primary Data Collection:** Real evidence including survey questionnaires, targeted interview questions, or structured case study notes compiled from the ground.
- **7. Empirical Observations & Data Analysis:** Presentation of gathered field data using crisp visual elements like pie charts, comparative graphs, bar diagrams, and relevant site photographs.
- **8. Conclusion & Learning Outcomes:** A summary reflecting your final interpretations, analytical derivations, and core management principles learned during the project.

- **9. Bibliography / References:** Properly citing all supporting resources, standard textbooks, business magazines, and online URLs accessed during your research.

3. Learning Core, Notebook Maintenance & Exam Preparation

A. Core Learning Target

Students must thoroughly memorize and understand the underlying concepts, characteristics, significance, limitations, and operational processes across Chapters 1, 2, 3, and 4. A comprehensive, descriptive evaluation (written test) covering these four chapters will be conducted immediately upon the reopening of school.

B. Fair Class Notebook Completion

Your Main Fair Class Notebook must be completely updated up to Chapter 4 (Planning). This includes all classroom definitions, detailed running notes, concept mind-maps, and solutions to all theoretical and descriptive NCERT back-exercise questions.

C. Board Exam Preparation (Previous Years' Questions)

You must solve the past 2 years' CBSE official Board Question Papers exclusively for Chapters 1, 2, 3, and 4 inside your Fair Class Notebook. Allocate special focus to structured 4-mark and 6-mark questions. Ensure that you answer utilizing explicit sub-headings, clear bullet points, and neat structural diagrams wherever applicable.

⚠ CRITICAL COMPLIANCE INSTRUCTIONS:

- **Plagiarism Notice:** Every project report must be original and based on genuine field observations. Replicated, copied, or digitally printed text files will face instant rejection.
- **Handwritten Clause:** All assignments, notes, PYQ solutions, and project reports must be completely handwritten. No typed or printed submissions will be evaluated.
- **Assessment Weightage:** Proper presentation, handwriting neatness, conceptual accuracy, and strict compliance with submission timelines will carry a significant weightage towards your final internal assessment marks.

Wish you all the very best for your intensive self-study and disciplined academic preparation!

Chemistry

1. **Solve the given assignment and complete your lab manual.**
2. Ensure your chemistry notebook is completed neatly and properly.
3. Prepare a project file on the topic allotted according to your roll number.
4. **Project File Contents** should include:
 - Cover Page
 - Certificate
 - Acknowledgement
 - Index
 - Introduction

- Main Content with Pictures/Graphs
 - Conclusion
 - Bibliography
5. **Format** Use A4 size sheets or a spiral/project file.
 6. **Presentation** Maintain neat handwriting and proper presentation.
 7. **Submission** Submit the holiday homework positively after summer vacation.
 8. **Project file must be hand written.**

Assignment:

Electrochemistry

1. Conductivity of 0.00241M acetic acid solution is $7.896 \times 10^{-5} \text{ S cm}^{-1}$. Calculate its molar conductivity in this solution. If Λ_m° for acetic acid is $390.5 \text{ S cm}^2 \text{ mol}^{-1}$, what would be its dissociation constant?
2. The conductivity of 0.20 M solution of KCl at 298 K is 0.0248 S cm^{-1} . Calculate its molar conductivity in this solution.
3. (a) Depict the galvanic cell in which the following reaction takes place:
 $\text{Zn (s)} + 2\text{Ag}^+(\text{aq}) \rightarrow \text{Zn}^{2+}(\text{aq}) + 2\text{Ag(s)}$. Also indicate that in this cell
 (i) which electrode is negatively charged.
 (ii) what are the carrier of the current in the cell.
 (iii) what is the individual reaction at each electrode.
 (b) Write the Nernst equation and determine the e.m.f. of the following cell at 298 K:
 $\text{Mg(s)} \mid \text{Mg}^{2+} (0.001\text{M}) \parallel \text{Cu}^{2+} (0.0001\text{M}) \mid \text{Cu (s)}$ (Given : $E^\circ = \text{Mg}^{2+} / \text{Mg} = - 2.375 \text{ V}$,
 $E^\circ = \text{Cu}^{2+} / \text{Cu} = 0.34 \text{ V}$)
4. (a) Define conductivity and molar conductivity for the solution of an electrolyte. How do they vary when the concentration of electrolyte in the solution increases?
 (b) Three conductivity cells A, B and C containing solutions of zinc sulphate, silver nitrate and copper sulphate respectively are connected in series. A steady current of 1.5 amperes is passed through them until 1.45 g of silver is deposited at the cathode of cell B. How long did the current flow? What mass of copper and what mass of zinc got deposited in their respective cells? (Atomic mass : Zn = 65.4 u, Ag = 108 u, Cu = 63.5 u)
5. (a) Define molar conductivity of a substance and describe how for weak and strong electrolytes, molar conductivity changes with concentration of solute. How is such change explained?
 (b) A voltaic cell is set up at 25° C with the following half cells:

$\text{Ag}^+ (0.001 \text{ M}) \mid \text{Ag}$ and $\text{Cu}^{2+} (0.10 \text{ M}) \mid \text{Cu}$ What would be the voltage of this cell?

($E^\circ_{\text{cell}} = 0.46$)

6. (a) State the relationship amongst cell constant of a cell, resistance of the solution in the cell and conductivity of the solution. How is molar conductivity of a solute related to conductivity of its solution?

(b) A voltaic cell is set up at 25°C with the following half-cells: $\text{Al} \mid \text{Al}^{3+} (0.001 \text{ M})$ and $\text{Ni} \mid \text{Ni}^{2+} (0.50 \text{ M})$ Calculate the cell voltage [$E^\circ_{\text{Ni}^{2+}/\text{Ni}} = -0.25 \text{ V}$, $E^\circ_{\text{Al}/\text{Al}^{3+}} = -1.66 \text{ V}$]

7. (a) Express the relationship amongst cell constant, resistance of the solution in the cell and conductivity of the solution. How is molar conductivity of a solute related to conductivity of its solution.

(b) Calculate the equilibrium constant for the reaction.

$\text{Fe} + \text{Cd}^{2+} \rightarrow \text{Fe}^{2+} + \text{Cd}$ (Given: $E^\circ_{\text{Cd}^{2+}/\text{Cd}} = -0.40 \text{ V}$, $E^\circ_{\text{Fe}^{2+}/\text{Fe}} = -0.44 \text{ V}$).

8. (a) Define the term molar conductivity. How is it related to conductivity of the related solution?

(b) One half-cell in a voltaic cell is constructed from a silver wire dipped in silver nitrate solution of unknown concentration. Its other half-cell consists of a zinc electrode dipping in 1.0 M solution of $\text{Zn}(\text{NO}_3)_2$. A voltage of 1.48 V is measured for this cell. Use this information to calculate the concentration of silver nitrate solution used. (Given : $E^\circ = \text{Zn}^{2+} / \text{Zn} = -0.76 \text{ V}$ and $E^\circ = \text{Ag}^+ / \text{Ag} = 0.80 \text{ V}$)

9. (a) Corrosion is essentially an electrochemical phenomenon. Explain the reactions occurring during corrosion of iron kept in an open atmosphere.

(b) Calculate the equilibrium constant for the reaction.

$\text{Fe} + \text{Cd}^{2+} \rightarrow \text{Fe}^{2+} + \text{Cd}$ (Given: $E^\circ_{\text{Cd}^{2+}/\text{Cd}} = -0.40 \text{ V}$, $E^\circ_{\text{Fe}^{2+}/\text{Fe}} = -0.44 \text{ V}$).

10. A copper-silver cell is set up. The copper ion concentration in it is 0.10 M . The concentration of silver ion is not known. The cell potential measured 0.422 V .

Determine the concentration of silver ion in the cell.

(Given: $E^\circ = \text{Ag}^+ / \text{Ag} = 0.80 \text{ V}$ and $E^\circ = \text{Cu}^{2+} / \text{Cu} = 0.34 \text{ V}$)

11. (a) State Kohlrausch law of independent migration of ions. Write an expression for the molar conductivity of acetic acid at infinite dilution according to Kohlrausch law.

(b) Calculate Λ_m^0 for acetic acid. Given that $\Lambda_m^0 (\text{HCl}) = 426 \text{ S cm}^2 \text{ mol}^{-1}$, $\Lambda_m^0 (\text{NaCl}) = 126 \text{ S cm}^2 \text{ mol}^{-1}$, $\Lambda_m^0 (\text{CH}_3\text{COONa}) = 91 \text{ S cm}^2 \text{ mol}^{-1}$

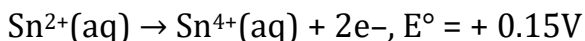
12. Express the relation among the cell constant, the resistance of the solution in the cell and the conductivity of the solution. How is the conductivity of a solution related to its molar conductivity?

13. Given that the standard electrode potential (E°) of metals are:

$K^+/K = -2.93\text{ V}$, $Ag^+/Ag = 0.80\text{ V}$, $Cu^{2+}/Cu = 0.34\text{ V}$, $Mg^{2+}/Mg = 2.37\text{ V}$, $Cr^{3+}/Cr = 0.74\text{ V}$, $Fe^{2+}/Fe = 0.44\text{ V}$

Arrange these metals in an increasing order of their reducing power.

14. Two half-reactions of an electrochemical cell are given below:



Construct the redox reaction equation from the two half-reactions and calculate the cell potential from the standard potentials and predict if the reaction is reactant or product favoured.

15. Write the anode and cathode reactions occurring in a commonly used mercury cell.

How is the overall reaction represented?

16. One half-cell in a voltaic cell is constructed from a silver wire dipped in silver nitrate solution of unknown concentration. The other half-cell consists of a zinc electrode in a 0.10 M solution of $Zn(NO_3)_2$. A voltage of 1.48 V is measured for this cell. Use this information to calculate the concentration of silver nitrate solution.

(Given : $E^\circ = Zn^{2+}/Zn = -0.76\text{ V}$ and $E^\circ = Ag^+/Ag = 0.80\text{ V}$)

17. Determine the values of equilibrium constant (K_C) and ΔG° for the following reaction: $Ni(s) + 2Ag^+(aq) \rightarrow Ni^{2+}(aq) + 2Ag(s)$, $E^\circ = 1.05\text{ V}$

18. Express the relation among the conductivity of solution in the cell, the cell constant and the resistance of solution in the cell.

19. (a) What type of a battery is lead storage battery? Write the anode and cathode reactions and the overall cell reaction occurring in the operation of a lead storage battery.

(b) Calculate the potential for half-cell containing 0.10 M $K_2Cr_2O_7(aq)$, 0.20 M $Cr^{3+}(aq)$ and $1.0 \times 10^{-4}\text{ M } H^+(aq)$. The half cell reaction is $Cr_2O_7^{2-}(aq) + 14H^+(aq) + 6e^- \rightarrow 2Cr^{3+}(aq) + 7H_2O(l)$ and the standard electrode potential is given as $E^\circ = 1.33\text{ V}$.

20. (a) How many moles of mercury will be produced by electrolysis 1.0 M $Hg(NO_3)_2$ solution with a current of 2.00 A for 3 hours?

(b) A voltaic cell is set up at 25° C with the following half-cells Al^{3+} (0.001 M) and Ni^{2+} (0.50 M). Write an equation for the reaction that occurs when the cell generates an electric current and determine the cell potential. [$E^\circ Ni^{2+}/Ni = -0.25\text{ V}$, $E^\circ Al/Al^{3+} = -1.66\text{ V}$]

Political Science

1. **Scrapbook: Map Work**

1.1 On a political world map, locate and label:

Map-1: USA, Russia, China, India, Pakistan, Britain, Israel, Iran

1.2 On the political map of India, mark:

Map-2: Neighbouring countries of India

Map-3: North-Indian States

Map-4: South-Indian States

Map-5: North-East States

Map-6: New Delhi, Mumbai, Chennai, Kolkata, Bengaluru, Lucknow, Chandigarh

2. **Project Work**

* The Project can be made on any of the topics given in the syllabus or any contemporary issues. * Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.

* Each student will present the research work in the Project File.

2.1 Project Layout Guidelines

* The project should be neatly handwritten on A4 sheets (approx. 3,500–4,000 words) and structured as follows:

1. Cover Page: Title of the project, Student Name, Roll No., School Name, and Academic Year.

2. Certificate of Authenticity & Acknowledgement

3. Index/Table of Contents

4. Introduction & Objectives: Relevance of the chosen topic.

5. Content/Body of the Project: Detailed analysis with subheadings, historical background, current relevance, and comparative data.

6. Visual Representations: Relevant newspaper clippings, mind maps, tables, or graphs.

7. Conclusion: Student's own reflection and learnings.

8. Bibliography: Sources used (NCERT textbook, websites, books, news channels).

2.2 Suggested Topics

1. NAM- 1961 to present times.

2. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.

3. CIS-Central Asian Republics

4. Disintegration of USSR with special focus on Gorbachev.

5. Arab Spring

6. Cover the negative as well as positive aspects of relationship between India and the following countries.

Focus on any one of the following (current updates should be highlighted):

a) Relationship between India and Russia

b) Relationship between India and China

c) Relationship between India and Pakistan

d) Relationship between India and Bangladesh

7. ASEAN
8. European Union and India
9. BRICS
10. SAARC
11. India's Nuclear Policy
12. United Nations with focus on India's candidature in Security Council.
13. UN Agencies – UNICEF, UNESCO, WHO
14. Pandemics: Covid 19- Its global impact (focus on worldwide cooperation and preparedness along with controversies (collect newspaper clippings for the same)
15. Partition of India-Theory behind it and its legacy
16. Comparison between NITI AAYOG and Planning Commission and their contribution in India's Development.
17. Election Commission of India and Electoral Roll and its revision
18. Elections 2019- Rise of BJP and Downfall of Congress (1989-2019).
19. Imposition of Emergency in India
20. NDA III and NDA IV – Social and Economic welfare programmes.

Distribution of Marks

S.No.	Components	Marks Alloted
1.	Introduction/Overview	2
2.	Variety of Contents	3
3.	Presentation	3
4.	Conclusion	1
5.	Bibliography	1
6.	Viva-Voce	5
7.	Scrapbook: Map Work	5
	Total	20

Political Science

1. Scrapbook: Map Work

1.1 On a political world map, locate and label:

Map-1: USA, Russia, China, India, Pakistan, Britain, Israel, Iran

1.2 On the political map of India, mark:

Map-2: Neighbouring countries of India

Map-3: North-Indian States

Map-4: South-Indian States

Map-5: North-East States

Map-6: New Delhi, Mumbai, Chennai, Kolkata, Bengaluru, Lucknow, Chandigarh

2. Project Work

* The Project can be made on any of the topics given in the syllabus or any contemporary issues. *
Students can use primary sources available in city archives, Primary sources can also include newspaper cuttings, photographs, film footage and recorded written/speeches. Secondary sources may also be used after proper authentication.

* Each student will present the research work in the Project File.

2.1 Project Layout Guidelines

* The project should be neatly handwritten on A4 sheets (approx. 3,500–4,000 words) and structured as follows:

1. Cover Page: Title of the project, Student Name, Roll No., School Name, and Academic Year.
2. Certificate of Authenticity & Acknowledgement
3. Index/Table of Contents
4. Introduction & Objectives: Relevance of the chosen topic.
5. Content/Body of the Project: Detailed analysis with subheadings, historical background, current relevance, and comparative data.
6. Visual Representations: Relevant newspaper clippings, mind maps, tables, or graphs.
7. Conclusion: Student's own reflection and learnings.
8. Bibliography: Sources used (NCERT textbook, websites, books, news channels).

2.2 Suggested Topics

1. NAM- 1961 to present times.
2. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.
3. CIS-Central Asian Republics
4. Disintegration of USSR with special focus on Gorbachev.
5. Arab Spring
6. Cover the negative as well as positive aspects of relationship between India and the following countries.

Focus on any one of the following (current updates should be highlighted):

- a) Relationship between India and Russia
 - b) Relationship between India and China
 - c) Relationship between India and Pakistan
 - d) Relationship between India and Bangladesh
7. ASEAN
 8. European Union and India
 9. BRICS
 10. SAARC
 11. India's Nuclear Policy
 12. United Nations with focus on India's candidature in Security Council.
 13. UN Agencies – UNICEF, UNESCO, WHO
 14. Pandemics: Covid 19- Its global impact (focus on worldwide cooperation and preparedness along with controversies (collect newspaper clippings for the same)
 15. Partition of India-Theory behind it and its legacy
 16. Comparison between NITI AAYOG and Planning Commission and their contribution in India's Development.
 17. Election Commission of India and Electoral Roll and its revision
 18. Elections 2019- Rise of BJP and Downfall of Congress (1989-2019).
 19. Imposition of Emergency in India
 20. NDA III and NDA IV – Social and Economic welfare programmes.

Distribution of Marks

S.No.	Components	Marks Alloted
1.	Introduction/Overview	2
2.	Variety of Contents	3
3.	Presentation	3
4.	Conclusion	1
5.	Bibliography	1
6.	Viva-Voce	5
7.	Scrapbook: Map Work	5
	Total	20

Mathematics

1. If A is a non singular matrix of order 3 such that $A^2 = 3A$, Then find the value of $|A|$.
2. If A is a 2×3 matrix such that AB and AB' are defined, then find order of the matrix B.
3. How many no. of all possible matrices of order 3×2 with each entry 0,2,or 3.

4. If $A \cdot \text{adj}(A) = \begin{bmatrix} -5 & 0 & 0 \\ 0 & -5 & 0 \\ 0 & 0 & -5 \end{bmatrix}$, then the value of $|A| + |\text{adj}(A)|$.

5. If $\det\left(\frac{A^{-1}}{2}\right) = \frac{1}{k|A|}$ where A is a matrix of order 3×3 , then the value of k.

6. Matrix $A = \begin{pmatrix} 2x+4 & 4 \\ x+5 & 3 \end{pmatrix}$ is a non invertible matrix for what value of d x ?

7. If $A = \begin{bmatrix} 0 & a & 1 \\ -1 & b & 1 \\ -1 & c & 0 \end{bmatrix}$ is a skew-symmetric matrix, then find the value of $(a+b+c)^2$.

8. If A is a matrix of order 3 and $\det(A) = 2$, then the find the value of $|-AA'|$.

9. If C_{ij} denotes the cofactor of element a_{ij} of the matrix $A = \begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & 3 \\ 3 & 2 & 4 \end{bmatrix}$, then find the value of $C_{31}C_{23}$.

10. Find the number of symmetric matrix of order 3×3 with each entry 1 or -1.

11. For what value of λ the Matrix $\begin{bmatrix} 2 & -1 & 3 \\ \lambda & 0 & 7 \\ -1 & 1 & 4 \end{bmatrix}$ is not invertible.

12. If A and B are symmetric matrices, check whether $AB - BA$ is skew-symmetric or symmetric matrix.

13. There are two values of y for which $|A| = \begin{vmatrix} 1 & 0 & 5 \\ 4 & y & -2 \\ 0 & -4 & 3y \end{vmatrix} = 6$, find the sum of these numbers.

14. If $A = \begin{bmatrix} 1 \\ -4 \\ 3 \end{bmatrix}$, $B' = \begin{bmatrix} -1 \\ 2 \\ 1 \end{bmatrix}$, verify that $(AB)' = B'A'$.

15. If $A = \begin{bmatrix} 0 & 1 & 3 \\ 1 & 2 & x \\ 2 & 3 & 1 \end{bmatrix}$ and $A^{-1} = \frac{1}{2} \begin{bmatrix} 1 & -8 & 5 \\ -1 & 6 & -3 \\ 1 & 2y & 1 \end{bmatrix}$, find the values of x and y.

16. If A and B are symmetric and commutative matrices and $|A| \neq 0$, then prove that $A^{-1}B^{-1}$ is symmetric.

Q17. (i) Find x, if $[x \ -5 \ -1] \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix} [x \ 4 \ 1]' = 0$

(ii) If for the matrix $A = \begin{bmatrix} \alpha & -2 \\ -2 & \alpha \end{bmatrix}$, $|A^3| = 125$, find the value of α .

18. If A and B are square matrices of order 3×3 such that $|A| = -2$ and $|B| = 3$, find the value of $|I - 5AB|$.

19. X, Y, Z, W and P are the matrices of order $2 \times n$, $3 \times k$, $2 \times p$, $n \times 3$ and $p \times k$ respectively. Find the value of k and the relation between p and n, where $PY + WY$ are defined.

20. If a matrix X, such that

$$X \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} = \begin{bmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \end{bmatrix}. \text{ Find Matrix X.}$$

21. For the matrix $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3 \end{bmatrix}$, to prove $A^3 - 6A^2 + 5A + 11I = O$.

22. Given matrices $A = \begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$, find AB and use it to solve the system of linear equations $x - y + z = 4$, $x - 2y - 2z = 9$ and $2x + y + 3z = 1$.

Lab Manual activities

1. To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive.
2. To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \parallel m\}$ is an equivalence relation
3. To demonstrate a function which is one-one but not onto.
4. To draw the graph of $\sin^{-1}x$, using the graph of $\sin x$ and demonstrate the concept of mirror reflection (about the line $y = x$)
5. To understand the concept of absolute maximum and minimum values of a function in a given closed interval through its graph
6. To understand the concepts of decreasing and increasing functions.
7. To measure the shortest distance between two skew lines and verify it analytically.
8. To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.

History

1. Read the following chapters thoroughly:

Ch-1 Bricks, Beads and Bones

Ch-2 Kings, Farmers and Towns

Ch-3 Kinship, Caste and Class

Ch-4 Thinkers, Beliefs and Buildings

Learn N.C.E.R.T and extra questions.

2. Make a collage on different sources available to study the Indus Valley Civilization on A-3 size coloured sheet. (Use colourful and bright images.)

3.HISTORY PROJECT REPORT TOPICS

Prepare a handwritten project report on any one of the following topics. Only one project is to be done in a session.

Town planning and artefacts of Harappan Civilization

Understanding the Bhakti & Sufi Movement

Mahabharata through a reader's eye

Mughal Paintings

The Sanchi and Amravati Stupa

Monuments of Delhi

An Imperial Capital – Vijayanagar

Mahatma Gandhi – A Legendary Soul

Jainism and Buddhism

Divine Apostle of Guru Nanak Dev

Help, humanity and sacrifices during Partition

The process behind the framing of Indian Constitution

GENERAL INSTRUCTIONS

The project should be strictly as per CBSE guidelines.

The project should be handwritten on A4 size sheets. The total length should not be less than 25–30 pages.

The project should include pictures, maps, colour illustrations, relevant newspaper clippings, charts, acknowledgement and bibliography.

Students must prepare the project individually; it is not a group activity.

The project must be neat, well-presented and completely handwritten.

No correction pen should be used and written matter should not be crossed out. In case of mistakes, redo the sheet.

Pictures should be properly labelled.

The introductory page should include picture and name.

4. Solve the Assignment in your fair notebook.

Assignment

1. How did Kushana rulers exemplify themselves with the high status?
2. How did Ashoka hold his empire together by propagating Dhamma?
3. Mauryan Empire was regarded as a major landmark in the early Indian history. Justify the statement.
4. Describe the economic and social conditions of the people living in the rural areas from 600 BCE to 600 CE.
5. Describe the kinship relations with reference to the Mahabharata.
6. Critically examine the duties as laid down in Manusmriti for the chandalas.
7. Describe briefly how historians usually classify the contents of Mahabharata.
8. According to Shastra only kshatriya could be the kings critically examine the statement.
9. How do the principles of Jainism influence Indian thinking?
10. How was the fate of Amravati stupa different from the Sanchi stupa?

Painting Practical (049)

1. Still Life (5 Sheets)

- 2 in Watercolour
- 3 in Pencil Shading

Focus: Object arrangement with background drapery, understanding form, light, and shadow.

2. Landscape (5 Sheets)

- All 5 in Watercolour /poster colour /Acrylic

Focus: Nature study from life or references, use of perspective, sky treatment, foliage, water bodies.

3. Composition (5 Sheets)

- All 5 in Watercolour /poster colour/Acrylic

Focus: Imaginative scenes from life/nature with narrative or thematic value (must include figures, ideally 3), proper colour scheme and background.

4. Folk Art (4 Sheets)

- Medium: Watercolour / Poster Colour / Acrylic

Suggested Forms: Madhubani, Warli, Gond, Pattachitra, Kalamkari, etc.

Focus: Decorative elements, stylization, vibrant colours.

5. Pattern Design (2 Sheets)

- Based on Indian Folk Motifs

Focus: Basic design elements (line, shape, repetition, rhythm), neatness and creativity.

5. Tonal Value Chart (1 Sheet)

- Gradation from white to black in pencil, showing smooth value transitions.

7. Colour Theory (1 Sheet)

- Colour wheel, primary/secondary/tertiary colours, warm/cool colours, complementary colours, tints/shades.

8. Shading Techniques (1 Sheet)

- Hatching, cross-hatching, stippling, blending, scribbling, etc.

9. Indian Painting (1 Sheet)

- A work inspired by Indian miniature/mural painting styles (e.g., Mughal, Rajasthani, Pahari, Ajanta murals).

Summary Table

Type Number of Sheets Medium

-Still Life 5 2 Watercolour, 3 Pencil

Shading

-Landscape 5 Watercolour

-Composition 5 Watercolour

-Folk Art 4 Watercolour / Poster /

Acrylic

-Pattern Design 2 Open

-Tonal Value Chart 1 Pencil

-Colour Theory 1 Poster or Watercolour

-Shading Techniques 1 Pencil

-Indian Painting 1 Traditional Style