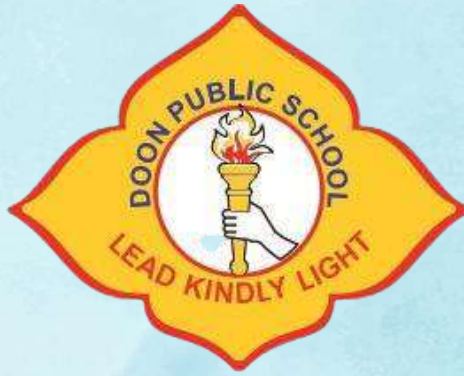


Doon Public School

A New Generation Sr. Sec. School | Recognised & Affiliated to CBSE
Sector 21, Panchkula - 134112 (Haryana)



SUMMER BREAK ASSIGNMENTS

SESSION: 2026 - 2027



Class – XII

Doon Public School



Dear Doonite Families,

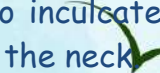

A. A. Milne, in his 1926 classic, "Winnie the Pooh," wrote, "Piglet noticed that even though he had a very small heart, it could hold a rather large amount of gratitude." Our little pink friend was grateful for the richness he had in his life; great friends, a warm place to sleep and a few tasty "haycorns" to eat.




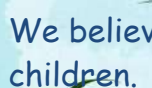
As we break for the summer holidays, we want to take a moment to express our heartfelt gratitude to all who help make Doon Public School an amazing place to be. We Doonite families are a community with many gifts and talents, which we share daily with one another and most important, our students. From our living room, to the classroom, and all points in-between, our collective efforts are to raise the whole child. We are a community filled with passion, commitment and a willingness to make decisions that may be hard in the present, but will have a positive and lasting influence in the future for all. Parents play a very critical role in what we envision to accomplish on behalf of our Doonite scholars. You are adeptly doing what we know firsthand is the firmest, most rewarding and blissful job of all. We are grateful to you for entrusting us with your most precious gift.

We are appreciative to our wonderful, creative, talented, optimistic, resourceful, inquisitive, and resilient students. Often, they make us laugh, occasionally they make us cry, nonetheless always they make us contemplate. On the whole, they make us better. In the essence of this holiday season, we extend our fervent wish that each of you receives and returns the seasonal abundance of blessings and good tidings that make these days truly special.

Education offers us all a number of amazing occasions to focus on abundant small things that accrue overtime to produce students that are prepared to do greater things in life. Eventually, as a collective community, we are judged by the actions of our student body as a whole and the system new students' learning connects and impacts the world beyond our school. At our school, we are devoted to inculcating the arts into our academic curriculum as we believe that we learn better with and through an artistic approach.



With this approach as our core vision and philosophy, we are sure you will understand the higher value of the summer tasks we are sharing with our Doonites and their families to inculcate artistic approach into our curriculum and develop the whole child and not just above the neck.



We believe the true meaning of this holiday season is best expressed through the faces of our children. They radiate a sense of untainted hope, unabashed joy for life and unbridled enthusiasm, and the prospects that await them.

To the parents and friends of Doonite community, please have a safe and joyous holiday season.

With Regards,
Team Doon



Doon Public School

English Core

Prepare an Interdisciplinary Art-Integrated Project File based on the chapter Lost Spring by Anees Jung

Chapter: Lost Spring

Topic: Childhood Lost in Labour

Guidelines for the Project

1. Cover Page (Art Integration)

Design a creative cover page

2. Introduction

Write a brief introduction of the author Anees Jung

Theme and message of the chapter

3. Integration with Sociology-

Causes of child labour in India, Government initiatives for child welfare and education

Paste relevant newspaper clippings, data wherever possible.

4. Creative Writing

Attempt the following:

Diary entry by Saheb describing his feelings.

Speech writing on "Every Child Deserves Education"

5. Reflection

Write a self-reflection (100-120 words) on:

"What did you learn from the chapter Lost Spring?"

Submission Instructions

- The work should be handwritten.
- Maintain neatness and creativity.
- Use coloured sheets/pictures wherever required.
- File should be properly indexed and decorated.

Submission Date: First working day after the summer break.

Psychology

I. Case Study Project:

You are instructed to prepare a case study file on the psychological disorder assigned to you in class. (Chapter 4 - Psychological Disorders)

❖ Project Requirements:

Your case study must include the following components:

- Introduction to the Disorder
- Detailed Case Study (real-life or hypothetical)
- Symptoms and Behavioural Features
- Diagnosis (based on DSM-5-TR criteria)
- ICD-10 Classification of the disorder
- Research Overview (recent findings or studies)
- Causes/ Etiology (biological, psychological, socio-cultural)
- Treatment and Management
- Preferred Therapy (e.g., CBT, Behaviour Therapy, Medication, etc.)
- Prognosis and Prevention
- Importance of DSM-5-TR and ICD-10 in Diagnosis

❖ Format & Submission Guidelines:

- The case file must be handwritten
- Use A4 size, single-sided, lined sheets
- Minimum length: 20 pages
- Include relevant pictures/diagrams/charts
- Maintain originality (No plagiarism)
- Follow proper headings and subheadings as per practical file guidelines
- Ensure neatness, clarity, and proper organization

❖ Important Note:

Special emphasis should be given to:

- The role and importance of DSM-5-TR and ICD-10 in accurate diagnosis
- Understanding how classification systems help in standardizing mental health assessment and treatment

II. Practical File Work:

Complete the following practicals (excluding administration, result, and interpretation):

- EPQ (Practical - 2)
- SCAT (Practical - 3)

☞ Follow the format and guidelines provided in your practical file for:

- Aim
- Material Required
- Procedure
- Scoring Method

Accountancy

Prepare a Project file to analyse the accounting data of a manufacturing company using analytical tools such as Ratio Analysis, Cash Flow Statement, Segment Analysis etc. For this purpose, all the students have been allotted a specific company. Collect the following information of the company allotted to you.

➤ PROJECT STRUCTURE

1. **Cover Page** - Title of the Project, Student Name, Class, Roll No., Session, School Name
2. **Certificate** - From the student and attested by the teacher/school authority
3. **Acknowledgement** - Gratitude towards teachers, school, family, peers, or anyone who helped.
4. **Index** - Table of Contents with page numbers
5. **Introduction of the Company allotted** - Brief overview
6. **Objectives of the Study** - Clearly define what the project aims to explore/analyze.
7. **Data Collection & Financial Statements** -History of the company, Board of Directors, Product information, Location of the company, Competitors, Strategies adopted, Key Performance Indicators (Milestones Achieved), SWOT Analysis etc. and financial statements- Income Statement,

Cash Flow Statement and Balance Sheet. (Take printouts of financial statements)

8. Analysis & Interpretation of Financial Statements - Ratios/Cash Flow/ Common Size etc. (For this, you need to calculate Ratios and will do ratio analysis of the company on the basis of financial statements).

9. Findings/Conclusion

10. Bibliography

➤ **GENERAL INSTRUCTIONS FOR PROJECT FILE:**

- The project file should consist of 20-30 pages (coloured ruled sheets)
- The project must be handwritten on A4 size sheets.
- Write in **clear and legible handwriting**.
- Maintain a **neat, clean, and well-organized file**. Avoid overwriting and cutting.
- Use **blue/black pen** for writing and coloured pens/pencils only for headings, charts, or diagrams.
- Submit the project on or before the given deadline.
- The project should be presented in a neat folder.

➤ **IMPORTANT POINTS:**

1. Choose a company with published financial statements.
2. Use **latest available annual reports**.
3. Show all calculations clearly and systematically.
4. Draw tables, charts, and graphs wherever required.
5. Interpretation should be written in your own words.
6. Mention formulas used in ratio analysis.
7. Attach supporting statements neatly.
8. Do not copy directly from the internet.

Students need to make a project file on the assigned companies given below:

Roll No.	Name	Project
1	Gauransh Mehra	Bajaj Auto/Larsen and Toubro
2	Md Sahil Ali	TCS/Starbucks
3	Jashan Sharma	Infosys Ltd
4	Disha Goyal	ITC Limited
5	Vinti	Vodafone Idea/Reliance Jio
6	Ananya	Hindustan Unilever Ltd.
7	Rudraksh Handa	Samsung
8	Amit Singh Bora	Rolex/Titan
9	Karanpreet Kaur	Asian Paints
10	Garv	HDFC Bank
11	Aayush Kaushal	Nestle India
12	Rachit Nandal	Reliance Industries
13	Vikramvir Singh	State Bank of India
14	Maurya Sharma	Mahindra & Mahindra
15	Hanshika Chaudhary	Godrej Consumer Products/Britannia
16	Divanshu Sharma	BMW/NTPC
17	Nandini	Sun Pharmaceuticals
18	Arnav Mahajan	Tata Motors
19	Simrat Kaur	Adani Enterprises

Business Studies

Make a project file on the topic assigned to you in the Class.

➤ **Instructions for Project File:**

- The project file should be of 25-30 pages (coloured ruled sheets)
- The project should be handwritten on A4 size sheets.
- Write in **clear and legible handwriting**.
- Maintain a **neat, clean, and well-organized file**.
- Avoid overwriting and cutting.
- Use **blue/black pen** for writing and coloured pens/pencils only for headings, charts, or diagrams.
- Submit the project on or before the given deadline.
- The project should be presented in a neat folder.
- **Suggested sequence is as follows:**
 - (i) Cover page
 - (ii) Certificate
 - (iii) Acknowledgement and Preface
 - (iv) Index
 - (v) Introduction
 - (vi) Objectives of the Project
 - (vii) Planning and activities done during the project.
 - (viii) Observations and findings of the visit
 - (ix) Conclusion
 - (x) Bibliography
 - (xi) Photographs
 - (xii) Teacher's Observations & Signature
- The pages must be numbered properly and the same shall be mentioned accurately in the index.
- One can get as creative as possible while making the project.
- Timelines of the project should be adhered to strictly.

➤ **Important Points**

1. The project should reflect practical application of business concepts.
2. Include relevant examples, surveys, interviews, advertisements, or case studies wherever applicable.
3. Use charts, pictures, newspaper clippings, and diagrams to make the file attractive.
4. Write observations and conclusions in your own language.
5. Questionnaire (if applicable) should be attached properly.
6. Avoid unnecessary content and maintain relevance to the topic.

Students need to make a project file on the assigned topics given below:

Roll No.	Name	Project
1	Gauransh Mehra	Principles of Management
2	Md Sahil Ali	Business Environment
3	Jashan Sharma	Stock Exchange
4	Disha Goyal	Marketing
5	Vinti	Principles of Management
6	Ananya	Business Environment
7	Rudraksh Handa	Principles of Management
8	Amit Singh Bora	Marketing
9	Karanpreet Kaur	Business Environment
10	Garv	Stock Exchange
11	Aayush Kaushal	Marketing
13	Vikramvir Singh	Principles of Management
14	Maurya Sharma	Business Environment
15	Hanshika Chaudhary	Marketing
16	Divanshu Sharma	Stock Exchange

17	Nandini	Principles of Management
18	Arnav Mahajan	Stock Exchange
19	Simrat Kaur	Marketing
	Daksh (12 th C)	Marketing

Sociology

Each student in the class must complete the individual project assigned to them.

➤ **List of individual projects**

1. **Changing Family Structures:** Investigative study on the shift from joint families to nuclear or single-parent households in urban areas.
2. **Caste Dynamics in Modern Workplaces:** Analysis of how traditional caste identities manifest or fade in corporate or urban employment sectors.
3. **Gender Wage Gap:** Field study or interview-based project on income disparities between men and women in the informal labour sector.
4. **Tribal Displacement:** Research on the socio-economic impact of development projects or deforestation on indigenous communities.
5. **Impact of Mass Media on Youth:** Study on how social media algorithms influence the body image and consumption patterns of teenagers.
6. **Globalization of Food Culture:** Exploration of how traditional dietary habits change with the rise of international fast-food chains.
7. **Elderly Isolation in Urban Spaces:** Inquiry into the social abandonment and psychological challenges faced by senior citizens in modern cities.
8. **Changing Roles of Youth in Modern Society:** Investigative study on the shift from traditional career and social expectations to digital entrepreneurship,

financial independence, and progressive social values among urban teenagers.

9. **Impact of Social Media on Youth Behaviour:** Field study or survey-based analysis of how online algorithms, hyper-connectivity, and digital peer pressure alter the attention spans, communication habits, and lifestyle choices of young adults.

➤ **Guidelines for making the project.**

This project is an opportunity to apply the sociological concepts you learned in class to real-world situations. Your project must be well-researched, objective, and presented in a neat, systematic format.

Step 1: Project File Structure

Your final project file must be arranged in the following exact order:

1. **Preliminary Pages (Introductory)**

- **Cover Page:** Title of the project, your name, roll number, class/section, school name, and academic year.
- **Acknowledgement (1 Page):** Formally thank your sociology teacher, school principal, institution, and anyone (like survey participants or family) who helped you complete the project.
- **Certificate (1 Page):** A formal declaration page certifying that this project is your original work, completed under the guidance of your teacher. Leave space for teacher and external examiner signatures.

2. **Setting up the Research**

- **Introduction (4-6 Pages):** Introduce your chosen sociological topic. Define the core concepts, historical background, and why this topic is socially relevant today.

- **Statement of Purpose (5-8 Pages):** Clearly state why you chose this specific topic. Detail your research questions, hypothesis, and what you aim to achieve or discover through this study.

3. Data Collection & Methodology

- **Presentation of Evidence (10-12 Pages):** This is the core body of your project. Present your secondary data, case studies, relevant news articles, historical facts, and theoretical frameworks related to your topic.
- **Methodology (3-4 Pages):** Explain the research methods you used to gather primary data. Discuss whether you used quantitative or qualitative methods, your sampling technique, and how you approached your target audience.
- **Questionnaire (20-30 responses):** Include a blank copy of the questionnaire, interview schedule, or observation checklist you used to gather primary data from your respondents.

4. Analysis & Conclusion

- **Analysis & Interpretation (5-6 Pages):** Analyse the data collected from your questionnaires. Use visual aids like pie charts, bar graphs, and tables to represent your findings, and explain what the data reveals about your topic.
- **Evaluation (3 Pages):** Critically evaluate your findings. Connect your primary data results back to the sociological theories mentioned in your introduction.
- **Outcome (1-2 Pages):** Summarize the final results, core findings, and conclusions drawn from your entire research project.
- **Limitations (1 Page):** Honestly state the challenges and constraints you faced during the project (e.g., small sample size, time constraints, or limited access to resources).
- **Bibliography (1 Page):** List all the sources you referenced throughout the project, including textbooks, sociological

journals, websites, and news articles, formatted in a standard style (like APA or MLA).

Step 2: Conducting Your Fieldwork (Methodology)

Every sociology project requires primary data. Follow these rules to collect your information ethically:

- **If using a Survey (Questionnaire):**
 - Create a digital (Google Forms) or printed questionnaire containing 10 to 12 questions.
 - Circulate it to a minimum of **25 to 30 respondents**.
 - Keep questions simple, respectful, and objective. Avoid leading questions.
- **If using Case Studies or Interviews:**
 - Identify **3 to 5 individuals** who have direct experience with your topic.
 - Record or write down their detailed responses to your open-ended questions.
- **Ethics Rule:** Always ask for the respondent's consent before asking questions, and never publish their real names if they wish to remain anonymous.

Step 3: Presenting and Analysing Data

Do not just list the answers you received. You must analyse them sociologically:

- Convert your survey data into visual elements like **pie charts, bar graphs, or tables**.
- Write a 2-3 sentence sociological analysis below *every* chart explaining *why* people answered the way they did.
- Use sociological vocabulary learned in your textbook (e.g., *social stratification, socialization, globalization, modernization, secularization*).

Formatting Rules

- **Legibility:** Use a clean, legible handwriting.

	<ul style="list-style-type: none"> • Visuals: Paste relevant newspaper clippings, photographs, or sketches to make the project visually engaging, but ensure they remain academically relevant.
<p>Political Science</p>	<p>Students will make a project file on any one of the topics mentioned below:</p> <ol style="list-style-type: none"> 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): <ol style="list-style-type: none"> 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 (please 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.

➤ **General Instructions for Project File:**

- The project must be handwritten.
- The project should be presented in a neat folder.
- One can be as creative as possible while making the Project
- **Project Structure (15 -20 pages):**
 1. Cover Page
 2. Acknowledgment
 3. Index
 4. Introduction
 5. Aim of the Project
 6. Explanation of the concepts
 7. Conclusion
 8. Bibliography
 9. Teacher's Observations & Signature

Economics

Students will make a project file on any one of the topics mentioned below:

1. **Fiscal Policy & Government Initiatives**
 - Government Budget: Structure and Importance
 - Impact of GST on Indian Economy
 - GST - A Shift Towards One Nation, One Tax
 - Sarva Shiksha Abhiyan - A Cost-Benefit Analysis
 - Make in India - Economic Impact

- Digital India - Step Towards the Future

2. Global Economic Events

- The Global Inflation crisis (2021-2024)
- US-China Trade war & its global impact
- Russia Ukrain war - Economic Consequences
- Rise of BRICS & shift in Global Economic Power
- Global Debt crisis- Developing Nations
- AI & Automation - Economic Disruption

3. Banking & Financial Sector

- Cashless Economy - Scope and Challenges
- Role of Shadow Banking in the Financial Crisis
- Can Cryptocurrencies Replace Fiat Currency?

4. COVID-19 Impact Studies

- Economic Implications of the COVID-19 Pandemic
- Digital Acceleration and Economic Shifts Post-COVID
- Comparative Study: COVID-19 Impact on Indian vs. Global Economies

5. Poverty, Development & Human Welfare

- Role of Microfinance in Poverty Alleviation
- Human Development Index - India in Comparison
- Comparison of Inflation Trends in India and the USA

➤ GENERAL INSTRUCTIONS FOR PROJECT FILE:

- Word limit: 3,500-4,000 words (excluding graphs, diagram bibliography).
- Handwritten project preferred
- Should be an independent, self-directed work.

- Real-world data, newspaper clippings, interviews, or surveys should be used wherever applicable.
- Must include **proper citation** and **original analysis**.

➤ **Flow / Structure of the Project File**

- **Cover**
Title of the Project, Student Name, Class, Roll No., Session, School Name
- **Certificate**
From the student and attested by the teacher/school authority
- **Acknowledgement**
Gratitude towards teachers, school, family, peers, or anyone who helped
- **Index**
Table of Contents with page numbers
- **Introduction**
Brief overview of the topic and why it was selected
- **Objectives of the Study**
Clearly define what the project aims to explore/analyze
- **Methodology**
How the data was collected - interview, observation, secondary data (newspapers, websites), etc.
- **Explanation of Concepts Used**
Include related Microeconomic terms and theories used in the study
- **Data Collection & Analysis**
Use tables, charts, graphs (self-made) to support your analysis
- **Interpretation of Results**
Discuss what the data indicates in the real-world context
- **Findings & Conclusion**
Summarise the insights drawn from the research

	<ul style="list-style-type: none"> • Bibliography Mention sources like newspapers, books, websites, interviews used in APA/MLA format
<p>हिंदी- (ऐच्छिक हिंदी)</p>	<p>परियोजना कार्य : विश्वयुद्ध और मानवता पर उसका प्रभाव (प्रथम विश्वयुद्ध तथा द्वितीय विश्वयुद्ध के ऐतिहासिक एवं मानवीय प्रभावों पर आधारित)</p> <p>अतः नीचे दिए गए निर्देशों के अनुसार हिंदी विषय का परियोजना कार्य तैयार करें।</p> <p>निर्देश :</p> <p>1. आवरण पृष्ठ (Cover Page) निम्नलिखित विवरण लिखिए –</p> <ul style="list-style-type: none"> • शीर्षक : विश्वयुद्ध और मानवता पर उसका प्रभाव • छात्र/छात्रा का नाम • कक्षा एवं अनुभाग • अनुक्रमांक • विद्यालय का नाम • शैक्षणिक सत्र <p>(आवरण पृष्ठ को मानचित्र, शांति-प्रतीक, सैनिकों या विश्व-मानवता से जुड़े चित्रों द्वारा आकर्षक बनाइए।)</p> <p>2. प्रमाण-पत्र (Certificate) विद्यालय / अध्यापक की ओर से प्रमाण-पत्र तैयार कीजिए।</p> <p>3. आभार (Acknowledgement) 5-6 पंक्तियों में अपने अध्यापक, अभिभावकों एवं मित्रों के प्रति आभार व्यक्त कीजिए।</p> <p>4. अनुक्रमणिका (Index) परियोजना में शामिल सभी विषयों की सूची पृष्ठ संख्या सहित तैयार कीजिए।</p>

5. परिचय (Introduction)

लिखिए –

- विश्वयुद्ध क्या होते हैं?
- प्रथम एवं द्वितीय विश्वयुद्ध क्यों हुए?
- आपने इस विषय का चयन क्यों किया?

6. विषय-वस्तु / परियोजना विवरण

निम्न बिंदुओं पर जानकारी एकत्र कीजिए –

- (क) प्रथम विश्वयुद्ध - प्रमुख कारण , इसमें शामिल देश , युद्ध के परिणाम
- (ख) द्वितीय विश्वयुद्ध - युद्ध के मुख्य कारण , प्रमुख नेता एवं राष्ट्र, हिरोशिमा और नागासाकी पर प्रभाव
- (ग) मानवता पर प्रभाव - जनहानि , आर्थिक एवं सामाजिक प्रभाव , बच्चों एवं महिलाओं पर प्रभाव , विश्व शांति की आवश्यकता

7. साहित्य और विश्वयुद्ध

यह लिखिए कि युद्धों ने साहित्य, कविता और मानव विचारधारा को किस प्रकार प्रभावित किया। (किसी हिंदी कवि / लेखक की रचना या विचार भी जोड़ सकते हैं।)

8. नैतिक मूल्य एवं सीख (Themes and Moral Values)

निम्न बिंदुओं पर अपने विचार लिखिए –

- शांति का महत्व
- मानवता एवं सह-अस्तित्व
- युद्ध के दुष्परिणाम
- विश्व बंधुत्व की आवश्यकता

9. शब्दावली अनुभाग (Vocabulary Section)

विश्वयुद्ध से संबंधित 10-15 कठिन शब्द चुनकर उनके अर्थ लिखिए।
उदाहरण - उपनिवेशवाद , तानाशाही , विनाश , शांति-संधि , मानवाधिकार
आदि

10. रचनात्मक गतिविधि (Creative Activity)

(निम्न में से कोई एक कार्य कीजिए)

- "युद्ध नहीं, शांति चाहिए"- विषय पर पोस्टर बनाइए
- "विश्व शांति" पर कविता लिखिए
- प्रथम एवं द्वितीय विश्वयुद्ध का टाइमलाइन चार्ट बनाइए
- किसी सैनिक और नागरिक के बीच संवाद लिखिए

11. निष्कर्ष (Conclusion)

लिखिए कि इस परियोजना से आपने क्या सीखा तथा विश्व शांति के बारे में आपकी क्या सोच बनी।

12. संदर्भ सूची (Bibliography)

सहायता हेतु प्रयोग किए गए स्रोत लिखिए –

- हिंदी पाठ्य सामग्री
- पुस्तकालय
- समाचार-पत्र / पत्रिकाएँ
- इंटरनेट स्रोत (यदि उपयोग किए हों)

महत्वपूर्ण निर्देश :

- कार्य पूर्णतः हस्तलिखित होना चाहिए।
- कार्य प्रस्तुति A4 शीट पर होनी चाहिए।
- साफ-सुथरी लिखावट एवं उचित शीर्षकों का प्रयोग करें।
- आवश्यकतानुसार चित्र, चार्ट, मानचित्र एवं रंगों का प्रयोग करें।
- इंटरनेट से सीधे नकल न करें।
- परियोजना को व्यवस्थित एवं आकर्षक रूप में प्रस्तुत करें।
- कार्य समय पर जमा करवाना अनिवार्य है।

Painting

You are required to complete the following Art Project Work during the summer holidays neatly and creatively.

Project Topics:

1. Two Sheets of Figure Composition or Landscape
 - Medium: Water Colours
 - Use proper colour combination, shading, and composition.
 - Sheet Size: A2 / Half Imperial (as instructed).
2. One Sheet of Indian Folk Art (Choose any one of the following styles):
 - Madhubani Painting
 - Gond Art
 - Pichwai Painting

➤ Instructions:

- Maintain neatness and originality in your work.
- Draw borders and write the title neatly on each sheet.
- Use good quality colours and drawing sheets.
- Submit the completed work after the holidays.
- Avoid copying directly; add your own creativity and imagination

Note: Project work will be assessed on creativity, presentation, colour harmony, and overall effort.

Mathematics

Complete the following Lab Manual Activities-

1. **Activity 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. **Activity 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.

3. **Activity 4** - To demonstrate a function which is one-one but not onto.
4. **Activity 5** - 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. **Activity 9** - To find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point.

Physics

I. Write the following experiments and activities of Section A in the Practical file.

Section A - Experiments

- To determine resistance per cm of a given wire by plotting a graph for potential difference versus current.
- To verify the laws of combination (series) of resistances using a meter bridge.
- To determine the resistance of a galvanometer by the half-deflection method and to find its figure of merit.
- To find the frequency of AC mains with a sonometer.

Section A - Activities

- To measure resistance, voltage (AC/DC), and current (AC) and check the continuity of a given circuit using a multimeter.
- To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse, and a power source.
- To assemble the components of a given electrical circuit.
- 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.

Students may also write **Section B Experiments and Activities** (if possible).

General Instructions for Practical File:

1. Keep your practical record well-organized and neat. Clearly document the experiments and activities.
2. The format for documenting any experiment and activity in the practical file is mentioned below.
 - **On Ruled page:** Aim, Apparatus, Theory (only important content), Precautions, Sources of error, Result
 - **On White page:** Ray diagram/ Circuit diagram, figure, Observations, Observation table.
 - **Do not write dates on your practicals.**

II. INVESTIGATORY PROJECT:

- Prepare content of **ONLY ONE** of the suggested and allocated Investigatory projects.
- Minimum pages - around 25 to 30 pages
- **List of Projects are mentioned below.**

a) EMF of a cells:

To study various factors on which the internal resistance/EMF of a cell depends. (Roll No -1,8,30,31)

b) LDR:

To study the variations in current flowing in a circuit containing an LDR because of a variation in (a) the power of the incandescent lamp, used to illuminate' the LDR (keeping all the lamps at a fixed distance), (b) the distance of an incandescent lamp (of fixed power) used to 'illuminate' the LDR. (Roll No - 15,17,18,19)

c) RI using equi convex Lens:

To find the refractive indices of (a) water and (b) oil (transparent) using a plane mirror, an equi convex lens (made from a glass of known refractive index), and an adjustable object needle. (Roll No - 6, 4, 24)

d) Transformer:

To investigate the relation between the ratio of (i) output and input voltage and (ii) the number of turns in the secondary coil and primary coil of a self-designed step up/ step down transformer. (Roll No - 5, 16, 28)

e) Hollow Prism :

To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids. (Roll No -10, 11, 20, 21, 23)

f) Coulomb 's law:

To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law. (Roll No - 2, 26)

g) Self Inductance:

To study the factor on which the self-inductance of a coil depends by observing the effect of this coil when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency. (Roll No - 13, 14)

h) Capacitor Filter: To construct and study the effect of a capacitor filter in reducing ripples from the output of a Full wave rectifier circuit and obtaining a smoother DC output. (Roll No - 25,27,29)

i) **Bridge Rectifier:** To construct a bridge rectifier using p-n junction diodes and study its output waveform and rectification process. (Roll No - Not Assigned to anyone)

j) **Mutual Inductance:** To study the phenomenon of mutual inductance between two coils by observing the induced emf produced in the secondary coil due to change of current in the primary coil. (Roll No - 7, 9, 12, 32)

k) **Temperature coefficient:**

To investigate the effect of temperature on the resistance of different conducting materials such as copper, aluminium, nichrome, manganin, and tungsten filament, and to compare their temperature coefficients of resistance. (Roll No - Not Assigned to anyone)

l) **Tangent Galvanometer:**

To study the Earth's magnetic field using a compass needle and a bar magnet by plotting the magnetic field lines and using a tangent galvanometer. (Roll No - Not Assigned to anyone)

m) **Dispersion of different colours of white light:**

To investigate the dispersion of white light through a triangular glass prism by measuring the angle of deviation for different colors and calculating the corresponding refractive indices for each wavelength. (Roll No - 3, 22)

Note: The projects which are not assigned to anyone may be taken up by students if they wish to do so and are unable to complete the projects assigned to them.

Chemistry

I. Students will make a project file on the assigned topics below:

1. Project Title: "Colligative Properties and their Practical Importance"
(Roll no. 1-4)

Content to include:

- ❖ Definition and types of colligative properties
- ❖ Mathematical expressions (without derivations)
- ❖ Real-life applications (e.g., antifreeze in radiators, salt on icy roads)
- ❖ Abnormal molar mass, van't Hoff factor - brief explanation
- ❖ Case studies or examples to support understanding

2. Project Title: "Electrochemistry in Batteries and Everyday Life"
(Roll no. 5-8)

Content to include:

- ❖ Explanation of redox reactions in electrochemical cells
- ❖ Types of cells: Galvanic vs Electrolytic (focus on Galvanic)
- ❖ Nernst equation and its implications
- ❖ Applications: batteries (dry cell, lead-acid, lithium-ion), corrosion, electroplating
- ❖ Environmental impact of battery disposal and recycling

3. Project Title: "Rates of Chemical Reactions and their Applications"
(Roll no. 9-12)

Content to include:

- ❖ Factors affecting rate of reaction
- ❖ Order and molecularity of reactions
- ❖ Real-world examples: food spoilage, drug expiry, combustion, preservation

- ❖ Graphical representation of zero and first-order reactions
 - ❖ Role of catalysts in industries and nature (e.g., enzymes)
4. Project Title: "Transition Elements: Properties and Uses"
(Roll no. 13-16)

Content to include:

- ❖ General characteristics of d-block elements
- ❖ Important compounds and their applications (e.g., KMnO_4 , $\text{K}_2\text{Cr}_2\text{O}_7$)
- ❖ Magnetic and catalytic behavior
- ❖ Comparison of d- and f-block elements
- ❖ Role of transition metals in daily life, industries, and biological systems

General Instructions for Project File:

- The project must be handwritten.
- The project should be presented in a neat folder.
- One can be as creative as possible while making the Project.

Project Structure (15 -20 pages):

1. Cover Page
2. Acknowledgment
3. Index
4. Introduction
5. Aim of the Project
6. Theory
7. Explanation of the concepts used
8. Observation
9. Conclusion
10. Bibliography
11. Teacher's Observations & Signature

II. Write experiments number in your practical file.

10.1,10.2,10.3,6.1,6.2,6.3,9.1,9.2,8

General Instructions:

- Keep your practical record well-organized and neat. Clearly document the experiments and activities.
- The format for documenting any experiment and activity in the practical file should encompass details such as the aim, necessary apparatus, a brief explanation of the theory, precise procedure, precautions, sources of error and result on ruled page of your practical file.
- Do not write dates on your practicals.

Biology

1. Students will make a project file on the assigned topics below:
2. Cancer: Causes and prevention - (Antara Sharma, Aviraj, Pankhuri, Aayushi)
3. Foetal development monthwise - (Atulya Rai, Vanshika, Abhinav, Ishani)
4. Drug Addiction - (Krishan Neduman, Zaheer Khan, Sanskriti Dutt Sundriyal, Manvi)
5. Applications of genetics in Modern Sciences (genetic engineering, DNA fingerprinting, general therapy) - (Karandeep singh, Divija Pannu, Mayank Sandhoya)
6. General Instructions for Project File:
7. The project must be handwritten.
8. The project should be presented in a neat folder.
9. Write the headings and subheadings clearly.
10. The Project should be creative, informative and well presented.
11. Project should follow the given sequence: (15-20 pages)
 1. Cover Page
 2. Acknowledgment
 3. Index
 4. Introduction
 5. Aim/Objective of the Project
 6. Theory/Content

7. Explanation
8. Observation/Analysis
9. Conclusion
10. Bibliography
11. Teacher's Remarks & Signature

12. Write the following experiments of Section B (Spotting) in your practical files:

1. Study of flowers adapted to pollination by different agencies (Wind, insects, birds).
2. Study of pollen germination on stigma through a permanent slide or scanning electron micrograph.
3. Identification of stages of gamete development i.e. T.S. of testis and T.S. of ovary through permanent slides (grasshopper/mice).
4. Study of meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Study of Mendelian inheritance using seeds of different colour/sizes of a plant.
7. To study prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widows peak and colour blindness.
8. Exercise on controlled pollination -emasulation, tagging and bagging.
9. To identify common disease causing microorganisms like *Ascaris*, *Entamoeba*, *Plasmodium* and any fungus causing ringworm through slides, models or images or specimens. Comment on symptoms of diseases they cause.
10. To study the specimens showing symbiotic association in root nodules of leguminous plants, *Cuscuta* on host, lichens.

	<p>11. To study homologous and analogous organs with the help of flash cards/models.</p> <p>➤ General Instructions for Practical File:</p> <ul style="list-style-type: none"> • Keep your practical record well-organized and neat. Clearly document the experiments. • Do not write dates on your practicals.
<p>Physical Education</p>	<p>Write the following practical in your practical file of Physical Education.</p> <ul style="list-style-type: none"> • Practical-1 (Fitness tests administration) • Practical-2 (Procedure for Asanas, Benefits and Contraindication for any two Asanas for each lifestyle disease) <p>Instructions:</p> <ul style="list-style-type: none"> • Cover the practical file with white chart. • Write the heading with black pen. • Do not write dates on your practicals.
<p>Computer Science</p>	<p>Write the following program in your practical file of Computer Science .</p> <p><u>Part- I (Functions)</u></p> <ol style="list-style-type: none"> 1. W.A.P using menu driven to perform the arithmetic operator. 2. W.A.P using menu driven program to find the area of circle, rectangle and Triangle. 3. W.A.P to show Fibonacci series. 4. W.A .P to show factorial of a number 5. W.A P to calculate sum of two numbers 6. W.A P to show table of a number. <p><u>Part-II (FILE HANDLING)</u></p> <ol style="list-style-type: none"> 1. Write a program to Read a files entire content

2. Write a program to Read a file line by line
3. Write a program to display size of file in bytes.
4. Write a program to display number of lines.
5. Write a program to get roll numbers, names and marks of the students of a class and store these details in a file called "Marks.txt".
6. Write a program to read a text file line by line and display each word separated by a'#'
7. Write a program to get student data from user and write onto a binary file.
8. Write a program to open file stu.dat and search for records with roll numbers as 12 or 14.
9. Write a program to create a csv file to store student data. Obtain data from user and write 5 records into the file

Instructions:

- Paste or draw output with each practical.
- Cover the practical file with white chart.
- Write the heading with black pen.

**Hindustani
Music Vocal**

Write the following topics in your practical file of Hindustani Music Vocal.

1. Raag Bhairav Vilambit Khayal with simple elaborations and few tanas.
2. One Drut Khayal with simple elaboration and few tanas in Raag Bhairav.
3. Write the Thekas of Jhaptala, Rupaktala and Dhamartala with Dugun and Chaugun, keeping Tala with hand beats.

Instructions:

- Cover the practical file with white chart.

	<ul style="list-style-type: none"> • Write the heading with black pen.
Yoga	<p>Write a project on 'SHAT KRIYAS' with the following points:</p> <ul style="list-style-type: none"> • Meaning • Six purification processes - Kaphalabhati , Trataka, Neti, Dhauti, Nauli, Basti • Procedure of kriyas, Benefits and Precautions
Marketing	<p>I. PREPARE A PROJECT ON ANY ONE OF THE FIVE TOPICS GIVEN BELOW.</p> <ol style="list-style-type: none"> 1. Under Product & Branding (Any One) <ul style="list-style-type: none"> • Quick Commerce & Its Impact on FMCG Marketing (Blinkit, Zepto, Swiggy Instamart) • D2C (Direct-to-Consumer) Brands in India — Mamaearth, boAt, Wow Skin Science 2. Under Pricing (Any One) <ul style="list-style-type: none"> • Dynamic Pricing in the Digital Age — OTT, Airlines, Cab Aggregators • Freemium Pricing Model — Spotify, Canva, YouTube Premium 3. Under Distribution (Any One) <ul style="list-style-type: none"> • Hyperlocal Distribution Models in Urban India • Omnichannel Retailing — How brands sell online + offline together 4. Under Promotion (Any One) <ul style="list-style-type: none"> • Influencer Marketing vs Traditional Advertising — A Comparative Study • Meme Marketing & Viral Campaigns by Indian Brands (Zomato, Swiggy) 5. Under Emerging Trends (Any One) <ul style="list-style-type: none"> • AI and Personalization in Digital Marketing • Sustainability Marketing & Greenwashing — Are brands honest?

- Marketing to Gen Z — Strategies, Platforms & Preferences

General Instructions Project File — (Mandatory Structure)

1. Introduction— topic background, objectives, methodology
2. Core & Advanced Issues — key concepts + real-world challenges
3. Learning & Understanding — data, analysis, diagrams, survey
4. Observations — field findings, comparisons, insights
5. Conclusion + Bibliography

II. PRACTICAL FILE — 8 KEY ACTIVITIES (DO ANY TWO)

- PLC of 8-10 products with diagrams (include EV, IT, Railway sectors)
- Collect 8-10 FMCG packages — analyse eco-friendly packaging & SDG links
- Pricing study — cost-plus numerical + internal/external factors
- Field visit to retailer/wholesaler — trace distribution channel of 5 products
- Promotion mix analysis — collect 5 real ads, compare mediums
- Digital marketing study — analyse one brand's Instagram/YouTube strategy
- PPT on direct vs indirect distribution channels with examples
- Service quality assessment using SERVQUAL model on a local business

I. LAB SKILL COMPETENCY

- Design a digital advertisement on Canva for a self-created product

**Applied
Mathematics**

- Create a mock social media marketing page for a brand

I. Complete the following practical in the interleaf practical file (using spreadsheet) -

1. Matrix multiplication and the inverse of a matrix.
2. Plot the graphs of functions on excel and study the graph to find out the point of maxima/minima

II. Project Work-

1. *Jashan* - Investigating Graphs of functions for their properties
2. *Ananya* - Each day newspaper tells us about the maximum temperature, minimum temperature, and humidity. Collect the data for a period of 30 days and represent it graphically. Compare it with the data available for the same time period for the previous year.

Project Structure (Sequence of Pages):

Your project should follow this exact order-

- Cover Page
- Certificate
- Acknowledgement
- Index/Table of Contents
- Introduction
- Main Content -
Functions (Description, Graph, Domain, Range)
Temperature and Humidity (Data Collection, Graphical representation, Data analysis and comparison)
- Conclusion
- Bibliography

General Instructions -

- The project must be handwritten and done neatly on A4 size sheets.
- Use the blank side of the sheet for relevant graphs or data charts.
- Use a simple, neatly bound folder. Avoid expensive plastic covers; prefer eco-friendly materials.
