



BRILLIANTS' CONVENT

CLASS-XII
2026-27

SUMMER HOLIDAY HOMEWORK



Class-XII

English

1. . ‘*Postcards from Sikkim*’ – A Literary Correspondence Collection

Imagine you are travelling across Sikkim and writing postcards to a friend, capturing your journey through different places, emotions, and experiences.

Task: Create 6–8 handmade postcards that together form a connected travel story.

Instructions:

- Each postcard must use a different writing style, including:
 - Descriptive (imagery-based)
 - Emotional/personal
 - Humorous
 - Reflective/philosophical
 - Dialogue format
 - Poetic form

- The front side should be creatively designed (drawing/painting/collage) to represent Sikkim.
- The back side should contain your written piece.
- Ensure your writing is original, expressive, and uses appropriate literary devices.
- Maintain a sense of continuity so that all postcards together reflect a journey.

Presentation:

- Arrange your postcards in a creative format such as a string envelope, handmade folder, or flip booklet.
- Make your work artistic, imaginative, and engaging—let your postcards bring Sikkim to life through both visuals and words.

2. ENGLISH INVESTIGATORY PROJECT

You are required to prepare your English Investigatory Project as per the following guidelines:

- The project must be prepared in a neat and well-organized ring file.
- Use A4 size sheets.
- Maintain proper margins and clear handwriting.
- The file should be clean, presentable, and systematically arranged.
- Include all relevant sections such as cover page, objectives, report, and conclusion.
- The project should reflect your own understanding and effort.
- Keep the content clear, concise, and meaningful.
- Base your project on real-life observations, surveys, or interactions.

- Include relevant data, examples, or illustrations wherever possible.
- Use headings and subheadings for clarity.
- You may include charts, pictures, or diagrams to enhance the project.
- Arrange all pages in proper sequence.
- The written report should be well-structured and within the prescribed word limit.
- Ensure clarity of ideas and logical flow.
- The work must be original. Avoid copying from the internet or others.
- Submit the project on time in a properly compiled ring file.
- Be prepared to explain your project confidently.
- You should be able to discuss your topic, findings, and learning.

Q1 (To be done by roll no- 1 to 10)

- **Voices from the Fields:** Despite legal protections, farmers in India continue to face exploitation due to lack of awareness and ineffective leadership (with reference to the lesson 'Indigo')

Q2 (To be done by roll no - 11 to 20)

- **Climate vs Convenience:** Although students are aware of climate change, their daily practices do not significantly reflect environmental responsibility. (With reference to 'Journey to the End of the Earth')

Q3 (To be done by roll no - 21 to 30)

- **Dreams in Chains:** Child labour in urban India persists due to poverty and lack of access to quality education, limiting children's opportunities for a better future. (With reference to 'Lost Spring')

Q4 (To be done by 31 to 40)

- **Language and Belonging:** The declining use of mother tongue among students is weakening cultural identity and emotional connection to heritage. (With reference to 'The Last Lesson')

INDEX

1. Cover Page
2. Certificate
3. Acknowledgement
4. Statement of Purpose / Objectives
5. Introduction (Topic Overview & Chapter Link)
6. Action Plan
7. Research Methodology
8. Questionnaire

9. Data Collection (Survey/Interviews)
10. Data Analysis (Charts/Graphs)
11. Findings / Observations
12. Report / Essay (800–1000 words)
13. Conclusion
14. Student Reflection
15. Photographs (if any)
16. Bibliography

Physics

1. Create a technical illustration of a traditional Sikkimese house designed for cold climates. Use arrows and color coding (Red for hot, Blue for cold) to show Conduction, Convection, and Radiation. Calculate the efficiency of "passive solar heating" in these structures. Explain how the material (wood/mud) acts as an insulator to maintain thermal equilibrium.
2. Prepare an Investigatory Project on a research based topic.

Chemistry

1. Topic: “Chemistry and Environmental Challenges in Himalayan States like Sikkim”

Write an article including the following points:

- Air and water pollution in hilly regions
- Impact of plastic waste on tourism and environment
- Soil erosion and landslides due to human activities
- Role of chemistry in sustainable development
- Green chemistry solutions for environmental protection

Include:

- One newspaper clipping OR printed picture
- One real-life example from Sikkim or any Himalayan region
- One preventive measure/solution

3. Prepare an Investigatory Project (Research-based topic to be discussed with the teacher)

Investigatory Project Topics

Electrochemistry & Energy

1. Study of working of electrochemical cells
2. Comparative study of different batteries
3. Corrosion of metals and methods of prevention
4. Preparation and study of galvanic cell
5. Study of electroplating process in daily life
6. Hydrogen as a future fuel
7. Fuel cells and their applications

Environment & Green Chemistry

8. Analysis of water quality in different sources
9. Study of pH in shampoos, soaps and detergents
10. Removal of hardness of water by different methods
11. Study of acid rain and its harmful effects
12. Green chemistry in daily life
13. Water purification techniques and filtration methods
14. Study of biodegradable and non-biodegradable materials

Food & Consumer Chemistry

15. Detection of adulterants in food items
16. Estimation of vitamin C in fruit juices
17. Comparative study of soft drinks on tooth enamel
18. Study of preservatives in packaged foods
19. Analysis of acidity in tea, coffee and soft drinks
20. Detection of artificial colors in sweets and beverages
21. Study of common chemicals used in food preservation

Organic Chemistry Based Topics

22. Preparation of soap and detergent
23. Extraction of essential oils from natural sources
24. Preparation of perfumes using flowers
25. Study of fermentation reactions
26. Preparation of natural indicators from plants
27. Extraction of natural dyes from flowers and leaves
28. Study of polymers and plastics used in daily life

Chemistry in Medicine & Daily Life

29. Comparative study of commercial antacids
30. Study of medicines used in daily life and their chemistry
31. Analysis of ingredients present in toothpaste
32. Study of antiseptics and disinfectants
33. Chemistry involved in cosmetics and perfumes
34. Study of caffeine content in tea and coffee

Instructions for Investigatory Project

- Project should be handwritten neatly.
- Use A4 size sheets/file.
- Include:
 - Cover page
 - Certificate
 - Acknowledgement
 - Index
 - Introduction
 - Aim/Objectives
 - Materials Required
 - Procedure
 - Observations
 - Conclusion
 - Bibliography
- Add relevant pictures/diagrams/charts.
- Viva questions should be prepared properly.

Biology

1. Prepare an Investigatory Project on a research-based topic discussed with the teacher.

Investigatory Project Topics

- Effect of Music on Plant Growth
- Study of Microorganisms in Curd
- Water Quality Testing of Different Sources
- Human Heart Working Model
- Blood Group Detection Study
- Compost Formation and Decomposition
- Hydroponics vs Soil Plant Growth
- Study of Food Adulteration
- Medicinal Plants and Their Uses

- Effect of Light on Seed Germination
- Menstrual Hygiene Awareness Survey
- DNA Model Preparation
- Artificial Ecosystem (Terrarium/Aquarium)
- Mosquito-Borne Diseases Awareness Project
- Balanced Diet Chart for Teenagers
- Plastic Pollution and Its Impact on Living Organisms
- Comparative Study of Plant Cells and Animal Cells
- Study of Pulse Rate Before and After Exercise
- Vermicomposting Project
- Biodiversity Study of Local Area
- Forensic Science: Fingerprint Detection and Analysis

Project Report Format

- Front Page / Cover Page
- Certificate
- Acknowledgement
- Table of Contents
- Objective / Aim of the Project
- Introduction / Theory
- Materials Required
- Procedure
- Observation / Result
- Analysis and Interpretation
- Precaution
- Conclusion
- Bibliography / References

2. Prepare a blog on the Bio-diversity of including:

- Habitat
- Diversity of Plants
- Diversity of Animals.

3. Revise the syllabus covered in class.

Mathematics

1. A trekking trail leading toward the Nathu La Pass rises at a constant incline. If the height of the trail (h) and the horizontal distance covered (x) are related such that the angle of inclination θ is given by:

$$\theta = \tan^{-1}(1) + \tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{3}\right).$$

Find the angle of inclination.

2. A tourist stands at a point P looking at the majestic Tathagata Tsal (Buddha Park) statue. The angle of elevation to the top of the statue is $\alpha = \sin^{-1}\left(\frac{3}{5}\right)$, and the angle of elevation to a point halfway up the statue is $\beta = \cos^{-1}\left(\frac{12}{13}\right)$.

Task: Find the value of $\tan(\alpha - \beta)$. This represents the difference in the "steepness" of the tourist's line of sight between the two points.

3. A rescue boat in the Teesta River needs to calculate its steering angle to reach the base camp. The required angle ϕ is determined by the following principal value branch equation:

i. solve for ϕ

$$\phi = \cos^{-1}\left(\cos\frac{7\pi}{6}\right) + \sin^{-1}\left(\sin\frac{2\pi}{3}\right).$$

ii. Explain why $\cos^{-1}\left(\cos\frac{7\pi}{6}\right)$ is not equal to $\frac{7\pi}{6}$ based on the range of the principal value branch.

Accountancy

1. Prepare a specific project of any company including its
 - Segment reporting
 - Cash flow Statement
2. Revise the syllabus covered in the class.

Business Studies

1. Prepare the project allotted to you in the class from the following topics:
 - Business environment
 - Principles of management
 - Marketing management
 - Stock exchange
2. Revise the syllabus covered in the class.

Economics

1. Prepare the project from the following topics already allotted to you in the class
 - Micro and Small Scale Industries
 - Food Supply Channel in India
 - Contemporary Employment situation in India
 - Disinvestment policy of the government
 - Goods and Services Tax Act and its Impact on GDP
 - Health Expenditure (of any state)
 - Human Development Index

- Inclusive Growth Strategy
- Self-help group
- Trends in Credit availability in India
- Monetary Policy Committee and its functions
- Role of RBI in Control of Credit
- Government Budget & its Components
- Trends in budgetary condition of India
- Exchange Rate determination – Methods and Techniques
- Currency War – reasons and repercussions
- Livestock – Backbone of Rural India
- Alternate fuel – types and importance
- Sarva Shiksha Abhiyan – Cost Ratio Benefits
- Golden Quadrilateral- Cost ratio benefit
- Minimum Support Prices
- Relation between Stock Price Index and Economic Health of a Nation
- Waste Management in India – Need of the hour
- Minimum Wage Rate – Approach and Application
- Digital India- Step towards the future
- Rain Water Harvesting – A solution to water crisis
- Vertical Farming – An alternate way
- Silk Route- Revival of the past
- Make in India – The way ahead
- Bumper Production- Boon or Bane for the farmer
- Rise of Concrete Jungle- Trend Analysis
- Organic Farming – Back to the Nature
- Aatmanirbhar Bharat
- e-Rupee (e- ₹)
- Sri Lanka's Economic Crisis
- Sustainable Development Goals (SDG's)
- Environmental Crisis
- Comparative Study of Economies (Maximum three economies)
- New Education Policy (NEP) 2020: A Promise for a New Education System
- G-20: Inclusive and Action Oriented
- Amrit Kaal: Empowered and Inclusive Economy
- Cashless Economy
- Any other newspaper article and its evaluation on basis of economic principles

2. Revise the syllabus covered in the class.

Political Science

1. Complete the following activities neatly in your Political Science Notebook.

Roll Numbers	Activity	Instructions
1 – 5	Mobile-Free Challenge	Stay without a mobile phone for 24 hours and write on “ <i>Freedom vs Dependency</i> ”. Also mention how people in regions like Sikkim stay connected with nature and simple living.
6 – 10	Constitution in Real Life	Explain any ONE Constitutional Article (14, 19 or 21) with a real-life example related to Sikkim’s culture, environment, equality or tourism.
11 – 14	Family Interview Activity	Interview your elders on “ <i>Politics Earlier and Politics Today</i> ”. Also write how states like Sikkim preserve culture, peace and unity.
15 – 18	Life Survival & Citizenship Manual	Prepare a manual including emergency contacts, first aid, citizen duties, online safety and disaster survival tips related to life in mountain regions like Sikkim.

PROJECT- Some suggested topics are:

1. Disintegration of USSR with special focus on Gorbachev (Roll no 1-5)
2. Arab Spring, ASEAN, European Union, BRICS, SAARC (Roll no 6-10)
3. Cover the negative as well as positive aspects of relationship between (Roll no 11-14)
 - India and Russia
 - India and China
 - India and Israel
4. Partition of India-Theory behind it and its legacy (Roll no 15-18)

General Instruction:

1. It should be a handwritten project on an A-4 size sheets.
2. It should be well researched and pictorial.
3. The project must have table of content.
4. It must include relevant information, facts and figures
5. It should include the following pages (title/cover page/ acknowledgement certificate/ bibliography/ headings/ sub headings)

CS

1. Do the following Python programs practically and make a single pdf file. The format of the file is as follows:

- Program heading (Question)
- Code of the program question
- Screenshot of the output

Questions:

1. WAP to compute x^n of given two integers x and n .
2. WAP for calculating simple interest.
3. WAP to accept a number from the user and display whether it is an even number or odd number.
4. WAP to accept percentage of a student and display its grade accordingly.
5. WAP to print Fibonacci series up to certain limit.
6. WAP to display prime numbers up to a certain limit.
7. WAP to accept a number, find and display whether it's a Armstrong number or not.
8. WAP to accept a number and find out whether it is a perfect number or not.
9. WAP to print the sum of the series $1+x1/1!+x2/2!+\dots+xn/(n)!$ - exponential series.
10. WAP to print the following pattern:
1
1 2
1 2 3
11. WAP to accept a string and display whether it is a palindrome.
12. WAP that counts the number of alphabets and digits, uppercase letters, lowercase letter, spaces and other characters in the string entered.
13. WAP to accept a string (a sentence) and returns a string having first letter of each word in capital letter.
14. WAP to remove all odd numbers from the given list.
15. WAP to display second largest element of a given list.
16. WAP to display cumulative elements of a given list.
17. WAP to display frequencies of all the elements of a list.
18. WAP in Python to display those strings which are string with 'A' of given list.
19. WAP in Python to find and display the sum of all the values which are ending with 3 from a list.
20. WAP to shift the negative number to left and the positive numbers to right.
21. WAP to swap the content with next value divisible by 7.
22. WAP to accept values from user and create a tuple.
23. Write a program to input total number of sections and stream name in 11th class
24. and display all information on the output screen.
25. Write a Python program to input names of 'n' countries and their capital and currency, store it in a dictionary and display in tabular form. Also search and display for a particular country.

Informatics Practices

1. Do the following Python programs practically and make a single pdf file.

- The format of the file is as follows:
- Program heading (Question)
- Code of the program question
- Screenshot of the output

Questions

1. Create a pandas series from a dictionary of values and an array.
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
4. Filter out rows based on different criteria such as duplicate rows.
5. Locate the 3 largest values in a data frame.
6. Subtract the mean of a row from each element of the row in a Data Frame.
7. Replace all negative values in a data frame with a 0.
8. Importing and exporting data between pandas and CSV file.
9. Importing and exporting data between pandas and MySQL database.
10. Given the school result data, analyse the performance of the students on different parameters, e.g subject wise or class wise.
11. For the Data frames created above, analyze and plot appropriate charts with title and legend.
12. Program to plot frequency of marks using Line chart.
13. Program to draw two lines along with proper titles and legends.

Hindi

1. प्रत्येक छात्र/छात्रा अपने अनुक्रमांक के अनुसार दिए गए विषयों से संबंधित एक परियोजना कार्य तैयार करेंगे जिसमें 1000 से 1200 शब्द होंगे। परियोजना कार्य बहुत ही स्वच्छ और त्रुटि रहित होना चाहिए।

अनुक्रमांक - 1,7,13

प्रश्न 1. छायावाद और जयशंकर प्रसाद का कलात्मक मूल्यांकन

जयशंकर प्रसाद की कविताओं 'देवसेना का गीत' और कार्नेलिया का गीत' के आधार पर उनकी काव्यगत विशेषताओं (राष्ट्रप्रेम, प्रकृति चित्रण और विरह वेदना) का विश्लेषण कीजिए तथा उनके जीवन और प्रमुख रचनाओं को दर्शाते हुए एक सचित्र स्क्रेपबुक तैयार कीजिए।

अनुक्रमांक - 2,8,14

प्रश्न 2. केदारनाथ सिंह का 'बनारस' और सांस्कृतिक चेतना

'बनारस' कविता के आलोक में कवि केदारनाथ सिंह के शहर-बोध का वर्णन कीजिए। गंगा, घाट, संगीत और वहाँ की प्राचीनता को दर्शाते हुए 'बनारस का सांस्कृतिक ताना-बाना' विषय पर एक सचित्र परियोजना आलेख बनाएँ।

अनुक्रमांक - 3,9,15

प्रश्न 3. अज्ञेय का व्यक्तिवाद और समाज: एक तुलनात्मक अध्ययन

सच्चिदानंद हीरानंद वात्स्यायन 'अज्ञेय' की कविता 'यह दीप अकेला' और 'मैंने देखा एक बूंद' के केंद्रीय भाव की तुलना कीजिए। 'व्यक्ति का समाज में विलीनीकरण' विषय पर अपने विचार लिखते हुए अज्ञेय जी के साहित्यिक जीवन का परिचय दीजिए।

अनुक्रमांक - 4,10,16

प्रश्न 4. प्रेमचंद की सामाजिक दृष्टि और 'सूरदास की झोपड़ी'

'सूरदास की झोपड़ी' के आधार पर लेखक प्रेमचंद की सामाजिक चेतना, शोषित वर्ग के प्रति सहानुभूति और मानवीय मूल्यों का विश्लेषण कीजिए। सूरदास के चरित्र की उन विशेषताओं को रेखांकित कीजिए जो आज के युवाओं के लिए प्रेरणादायी हैं।

अनुक्रमांक - 5,11,17

प्रश्न 5. विश्वनाथ त्रिपाठी की 'बिस्कोहर की माटी' और लोक-संस्कृति

'बिस्कोहर की माटी' संस्मरण के आधार पर लेखक विश्वनाथ त्रिपाठी के बचपन, ग्रामीण जीवन, लोक-परंपराओं और प्रकृति के सह-अस्तित्व पर एक विस्तृत प्रोजेक्ट फ़ाइल तैयार कीजिए। 'शहरीकरण के बीच लुप्त होती ग्रामीण संस्कृति' विषय पर एक स्व-लिखित लेख भी शामिल कीजिए।

अनुक्रमांक -6,12,18

प्रश्न 6. हजारी प्रसाद द्विवेदी के 'कुटज' से जीवन-दर्शन और जिजीविषा की सीख

आचार्य हजारी प्रसाद द्विवेदी के निबंध 'कुटज' के आधार पर विपरीत परिस्थितियों में जीने की कला (जिजीविषा) और अपराजेय इच्छाशक्ति का विश्लेषण कीजिए। द्विवेदी जी के निबंध-लेखन की शैली और उनके साहित्यिक योगदान पर प्रकाश डालिए।

2. विशेष परीक्षा के लिए पढ़ाए गए पाठ्यक्रम की पुनरावृत्ति कीजिए ।

Physical Education

1. Make the project files as per the topics discussed in the class.
2. Revise the entire syllabus covered so far in the class.