



**IMPERIAL HERITAGE SCHOOL
SECTOR-102, GURUGRAM**

**HOLIDAY HOMEWORK
GRADE XII COMMERCE
2026-27**

***Exploring, Creating, Achieving...
Even on Holidays!***

“Curiosity Never Goes on Vacation—and neither does the joy of learning.”

Dear Parents,

Warm greetings!

At Imperial Heritage School, we view learning as a continuous journey—one that extends far beyond the classroom walls. The purpose of holiday homework is not merely to keep students occupied, but to inspire them to explore, reflect, and grow independently. It is an opportunity for children to connect classroom knowledge with the world around them, while discovering their own unique ways of learning.

The Purpose Behind Holiday Homework

Holiday assignments are thoughtfully designed to:

- Sustain the rhythm of learning even during the break
- Encourage application of concepts in everyday life
- Develop responsibility, discipline, and effective time management
- Strengthen analytical thinking, creativity, and problem-solving abilities

Learning Through Projects

Each assignment is aligned with CBSE guidelines and focuses on experiential, project-based learning. These tasks are curated to ensure meaningful engagement, allowing students to bridge theory with practical understanding in a creative and enjoyable manner.

Assessment Parameters

Holiday homework will form a part of Internal Assessment and will be evaluated on:

- Content
- Presentation
- Relevance
- Creativity
- Originality
- Timely Submission

Kindly Note the Project/Practical written work assigned will be evaluated as CBSE project.

Guidelines for Students

- **Be Authentic:** Your work should reflect your own ideas and efforts.
- **Plan Ahead:** Break tasks into small parts and complete them gradually.
- **Follow Instructions:** Read each guideline carefully before beginning.
- **Maintain Neatness:** Clear, organized work always creates a strong impression.
- **Think Creatively:** Present your work in an innovative and engaging manner.
- **Read Daily:** Cultivate the habit of reading to expand your imagination and language skills.
- **Practice Mathematics:** Consistency is key—regular practice leads to mastery.
- **Seek Guidance, Not Substitution:** Parents may guide, but students must complete the work independently.
- **Prioritize Quality:** Focus on depth, clarity, and meaningful content.

A Fresh Thought for Our Learners

“Where Questions Bloom”

When holidays stretch like open skies,
Let wonder wake and questions rise.

Not all learning lives in books,
It hides in paths and curious looks.
In silent thoughts, in things you make,
In every risk you choose to take,
In colours mixed or stories spun,
In problems solved just for the fun.

A restless mind, a seeking heart,
That’s where true journeys always start.
So learn, explore in your own way—
Let curiosity lead each day.

Submission Date: 6th July, 2026

We eagerly await the thoughtful and creative work our students will present. May this vacation be a time of joyful discovery, meaningful experiences, and personal growth. Wishing you all a safe, refreshing, and enriching summer break!

Warm regards,

**Ms. Neelu Sharma
Principal**

ENGLISH

I. CBSE ASL BASED PROJECT

Topic - Stolen Childhoods, Silent Cries

Integrated Chapter - Lost Spring (Flamingo)

Objective - Creating a project on child servitude is an impactful way to raise awareness about this pressing issue and advocate for the rights and well-being of children. Here's a project outline:



Students will listen to podcasts/ interviews/radio or TV documentaries on the given topic and do thorough research on the same. Prepare a report including surveys, statistical data, graphs etc countering or agreeing with the speakers in 800 to 1000 words and submit.

Your project file should contain the following details:

1: Cover page

- Prepare a creative cover page giving relevant details of your project.

2: Index

- Make 3 columns – Serial no, topic, page no.

3: Statement of Purpose

- Write down at least five objectives of the given project.

4: Acknowledgement

- Sample to be provided by the teacher.

5: Certificate of Completion

- Sample to be provided by the teacher.

6: Action Plan

- Sample to be provided by the teacher.

7: Materials Used

- List down all the materials used by you in making of the project.

8: Report

- Report to be written in approx.1000 words.

9: Student Reflections

- Share your views/conclusion on the given topic and write the learning outcomes

10: Evidence of your report

- Photographs and other pieces of evidence of the research to be pasted.

11: Bibliography

- Pen down the sources from where the information was accessed.

Note:

1. Make a file of your choice with A4 size sheets only.
2. Sheets can be colourful or plain.
3. The presentation should be neat.
4. The project must showcase your creativity.
5. Student findings should be his/her original work.

II. HOLIDAY HOMEWORK WORKSHEET

Complete the Holiday HW Worksheet uploaded on ERP. Q/As to be done in the notebook.

III. SUGGESTED READING

‘Silas Marner’ by George Eliot is a long reading text prescribed by CBSE for extensive study. Please find the link below for online reading. Write the summary of the novel in 120-150 words and present it creatively with an illustration. Happy Reading!

https://cbseacademic.nic.in/web_material/doc/novels/1_Silas%20Marner,%20by%20George%20Eliot%20-%20Class%20-%20XII.pdf



ACCOUNTANCY

The Objectives of Accounting project are:

- To Maintain systematic financial records of financial transactions.
- To estimate and ascertain profits and losses.
- Preparing financial reports to assess the financial position.
- To forecast future payments, expenditure and budgets.



Guidelines for Presentation of Project Report

1. The total length of the project will be a minimum 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence:
 - The cover page should include the title of the Project, student information, school and year.
 - List of contents.
 - Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
 - Introduction. Topic with suitable heading.
 - Planning and activities done during the project, if any.
 - Observations and findings from the Balance sheet of a particular organisation.
 - Conclusions (summarized suggestions or findings, future scope of study).
 - Photographs (if any).
 - Appendix

Needs to include:

1. Acknowledgement
2. Certificate
3. Index
4. Content
 - (a) Accounting Ratio
 - (b) Cash Flow statement
 - (c) Common size and comparative statement
- B. Specific Project
 - (a) Segment analysis of (any company).
 - (b) Source Material (Take balance sheet from newspaper or Internet)
 - (c) Graphical presentation
5. Cash Flow Statement
6. Conclusion
7. Bibliography

One specific project based on Financial Statement Analysis of a Company covering following aspects from the following:

- 1. Comparative and Common size financial statements**
- 2. Accounting Ratios**
- 3. Segment Reports**
- 4. Cash Flow Statements**

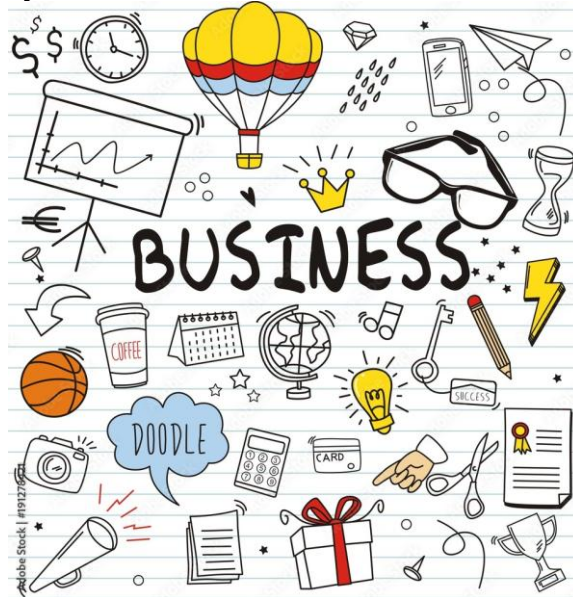
Marking Scheme:

1.	Initiative, cooperativeness and participation	2 Marks
2.	Creativity in presentation	2 Marks
3.	Content, observation and research work	4 Marks
4.	Analysis of situations	4 Marks
5.	Viva	8 Marks
6.	Total	20 Marks

BUSINESS STUDIES

The objectives of the project work are to enable learners to:

- Develop a practical approach by using modern technologies in the field of business and management
- Get an opportunity for exposure to the operational environment in the field of business management and related services
- Inculcate important skills of problem solving, time management, information collection, processing, analysing and synthesizing relevant information to derive meaningful conclusions
- Get involved in the process of research work; demonstrate his or her capabilities while working independently



Guidelines for Presentation of Project Report

1. The total length of the project will be 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence:
 - The cover page should include the title of the Project, student information, school and year.
 - List of contents.
 - Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
 - Introduction. Topic with suitable heading.
 - Planning and activities done during the project, if any.
 - Observations and findings of the visit.
 - Conclusions (summarized suggestions or findings, future scope of study).
 - Photographs (if any).
 - Appendix

The students can choose **any one** of the topic from the list given below

1. Digital Transformation in Retail:

- Examine how traditional retail businesses are adapting to digital transformation trends, such as e-commerce platforms, multichannel strategies, and data-driven marketing.

2. Cryptocurrency: Opportunities and Risks for Businesses:

- Investigate the potential benefits and risks of adopting cryptocurrencies as a payment method
- Investment vehicle for businesses, considering factors like volatility, security, and regulatory concerns.

3. **Impact of COVID-19 on Business Models:**

- Analyze how the COVID-19 pandemic has affected various industries and business models, including shifts to remote work, e-learning, telemedicine, and digitalization of services.

4. **Green Marketing Strategies:**

- Investigate how companies incorporate green marketing strategies to promote environmentally friendly products, reduce carbon footprint, and enhance brand reputation in the era of climate change awareness.

5. **Innovations in Retail Technology:**

- Investigate innovative retail technologies, such as augmented reality (AR), virtual reality (VR), cashless stores, and personalized recommendation algorithms.
- Assess their impact on customer engagement, sales conversion, and retail trends.

6. **Marketing:**

- Identify one product/service which you would like to manufacture/provide
- Make a project on the identified product/service keeping in mind the following:
 1. Why have they selected this product/service?
 2. Find out '5' competitive brands that exist in the market.
 3. What permission and licences would be required to make the product?
 4. What are your competitors' Unique Selling Propositions?[U.S.P.]?
 5. Does your product have any range of details?
 6. What is the name of your product?
 7. Enlist its features.
 8. Draw the 'Label' of your product.
 9. Draw a logo for your product.
 10. Draft a tagline.
 11. What is the selling price of your competitor's product?
 - (i) Selling price to consumer
 - (ii) Selling price to retailer
 - (iii) Selling price to wholesalerWhat is the profit margin in percentage to the Manufacturer. Wholesaler. Retailer.
 12. How will your product be packaged?
 13. Which channel of distribution are you going to use? Give reasons for selection?
 14. Decisions related to warehousing, state reasons.
 15. What is going to be your selling price? (i) To consumer (ii) To retailer (iii) To wholesaler
 16. List 5 ways of promoting your product.
 17. Any schemes for (i) The wholesaler (ii) The retailer (iii) The consumer
 18. What is going to be your 'U.S.P'?
 19. What means of transport will you use and why?
 20. Draft a social message for your label.
 21. What cost effective techniques will you follow for your product?
 22. What cost effective techniques will you follow for your promotion plan?

(A prototype of the product would be made by the students)

7. **Principles of Management:**

- The students are required to visit any one of the following:
 1. A departmental store.
 2. An Industrial unit.
 3. A fast food outlet.

The students are required to observe the application of the general Principles of management advocated by Fayol.

Fayol's principles 1. Division of work. 2. Unity of command. 3. Unity of direction. 4. Scalar chain 5. Esprit de corps 6. Fair remuneration to all. 7. Order. 8. Equity. 9. Discipline 10. Subordination of individual interest to general interest. 11. Initiative. 12. Centralisation and decentralisation. 13. Stability of tenure. 14. Authority and Responsibility

ASSESSMENT

The marks will be allocated on the following heads.

1.	Initiative, cooperativeness and participation	2 Marks
2.	Creativity in presentation	2 Marks
3.	Content, observation and research work	4 Marks
4.	Analysis of situations	4 Marks
5.	Viva	8 Marks
6.	Total	20 Marks

PHYSICAL EDUCATION

The students are supposed to make a project file as per the details given below.

Instructions:

- This project needs to be done on one side of ruled paper and the other side of the plain paper provided in your Lab Manual (physical education practical file).
- The Lab Manual has to be covered with a brown paper cover sheet.
- Inside the Lab Manual, you may use coloured pens, but keep it colourful without making it too flashy, a clean and professional look is best.

Cover Page of the Project:

On white paper, it has to be pasted outside on the brown paper cover and should be printed neatly and clearly as mentioned below: -

Title (e.g., "Physical Education Practical File-048")

Session: 2026-27 (Academic Year)

School Name:

Your Name:

Class and Section:

Roll No: For XII class, Board Exam Roll Number.

Second Page: Index

- You have to complete the Index according to the details given in your Lab Manual. No page should be left blank in the Index.

Inside the File – Topics:

- Write all fitness test administrations with details, including pasted coloured pictures (SAI Khelo India Test / H.P.E. Tests) and Brockport Physical Fitness Test also.
- Write the procedure for Asanas, their benefits, and contraindications for any two Asanas for each lifestyle disease (obesity, diabetes, asthma, hypertension, and back pain), with coloured pictures ($2 \times 5 = 10$; at least 10 yoga postures).
- Write about any one of the following: the IOA (Indian Olympic Association) sport/game of your choice. Include a labelled diagram of the field and equipment, along with rules, terminologies, and skills associated with the game. And paste the coloured photograph of related sports equipment.

NOTE:- No black & White photos allowed in physical education Lab manual (practical file).

ECONOMICS

PROJECT WORK



Project (Option One) : What's Going Around Us

The purpose of this project is to –

- Enable the student to understand the scope and repercussions of various Economic events and happenings taking place around the country and the world.

Examples and suggestive topics:

- “Flames of Inflation: How India Managed Rising LPG Prices without Burning Household Demand”
 - “Glitter in Crisis: Rising Gold & Silver Prices and Their Ripple Effects on India’s Economy”
 - “From Play to Pay: How the Rising Gaming Profession is Shaping India’s Economy”
 - “India-EU Free Trade Agreement: A Boon or Threat to Indian Industries? (Called “mother of all deals”
 - “Middle East Conflict (2026) and Its Impact on Indian Economy”
 - “Oil Price Shock 2026: Is India Too Dependent on Imported Energy?”
 - “From Kirana to Quick Commerce: How 10-Minute Delivery is Changing India’s Economy”
 - “Climate Change and Economy: Are Extreme Weather Events Slowing India’s Growth?”
-
- Provide an opportunity to the learner to develop economic reasoning and acquire analytical skills to observe and understand economic events.
 - Make students aware about the different economic developments taking place in the country and across the world.
 - Develop the understanding that there can be more than one view on any economic issues and to develop the skill to argue logically with reasoning.
 - Compare the efficacy of economic policies and their respective implementations in real world situations and analyse the impact of Economic Policies on the lives of common people.
 - Provide an opportunity to the learner to explore various economic issues both from his/her day to day life and also issues which are of broader perspective.

Scope of the project:

Student may work upon the following:

- Introduction
- Details of the topic
- Pros and Cons of the economic event/happening
- Major criticism related to the topic (if any)
- Students' own views/perception/ opinion and learning from the work
- Conducting survey and presenting the same in form of diagrams
- Any other valid idea as per the perceived notion of the student who is actually working and presenting the Project-Work.

II. Project (Option Two): Analyse any concept from the syllabus.

The purpose of this project is to –

- Develop interest of the students in the concepts of Economic theory and application of the concept to real life situations.
- Provide opportunity to the learners to develop economic reasoning vis-a-vis the given concept from the syllabus.
- Enable the students to understand abstract ideas, exercise the power of thinking and to develop his/her own perception
- To develop the understanding that there can be more than one view on any economic issue and to develop the skill to argue logically with reasoning
- Compare the efficacy of economic policies in real world situations
- To expose the student to the rigour of the discipline of economics in a systematic way
- Impact of Economic Theory/ Principles and concepts on the lives of common people

Scope of the project:

Following essentials are required to be fulfilled in the project.

Explanation of the concept:

- Meaning and Definition
- Application of the concept
- Diagrammatic Explanation (if any)
- Numerical Explanation related to the concept etc. (if any)
- Students' own views/perception/ opinion and learning from the topic.

Marking Scheme :

Marks are suggested to be given as –

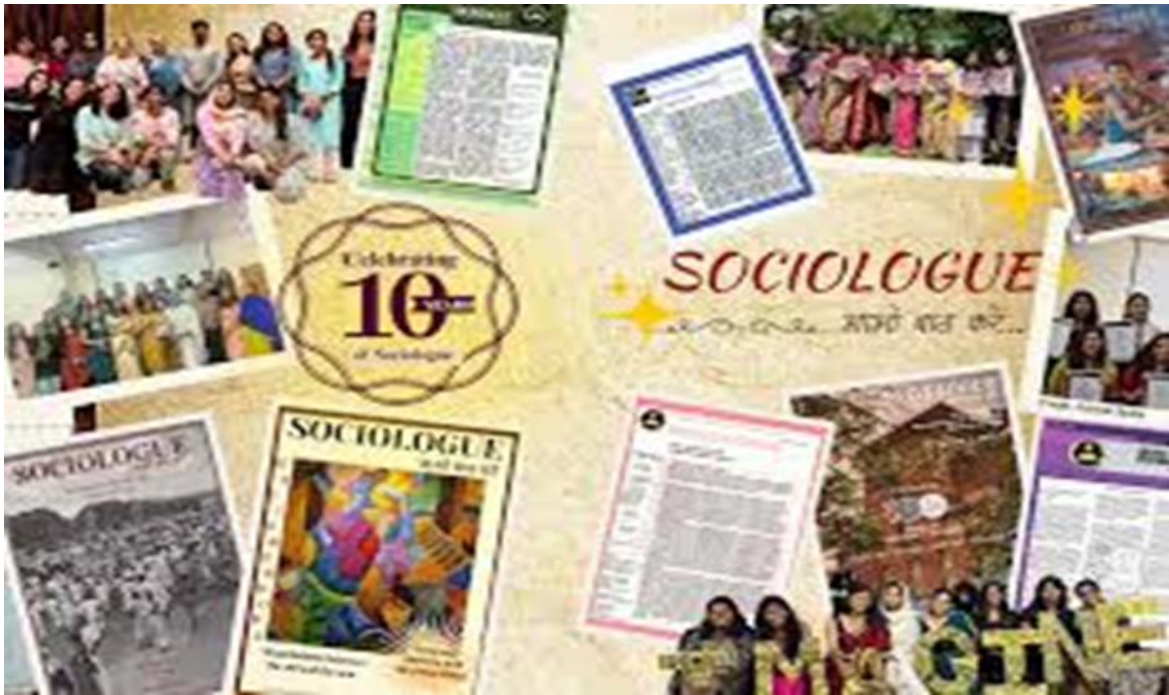
S. No.	Heading	Marks Allotted
1.	Relevance of the topic	3
2.	Knowledge Content/Research Work	6
3.	Presentation Technique	3
4.	Viva-voce	8
	Total	20 Marks

Suggested List:

• 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
• <i>Aatmanirbhar</i> 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	• Any other topic

SOCIOLOGY

“The goal of sociology is to understand the laws of social phenomena.” -August Comte



PROJECT WORK GUIDELINES

Students are required to prepare a Sociology project during the holidays. Follow the steps given below carefully to complete your project in a systematic and meaningful way.

Project work will help students:

- By undertaking this project, students will be able to:
- Understand key concepts, theories, and perspectives of sociology in real-life contexts.
- Relate classroom learning to everyday social issues such as inequality, globalization, culture, and social change.
- Learn basic research methods such as observation, surveys, interviews, and data collection.
- Analyse social phenomena objectively and develop reasoned arguments based on evidence.
- Recognize and appreciate diversity in terms of caste, class, gender, religion, and region.
- Present ideas clearly through written reports, charts, graphs, and oral presentations.
- Become more sensitive to social issues and develop a sense of responsibility towards society.

STEP 1: SELECTION OF TOPIC

- Students must select a **social issue** as the topic for their research work.
- The topic should be relevant to contemporary society.
- Selection of the topic must be done only after taking approval from the subject teacher.

STEP 2: PREPARATION OF ROUGH DRAFT

Prepare a rough draft of your project in the following order:

1. Index

- List all the sections of your project along with page numbers.

2. Acknowledgement

- Write a short note expressing gratitude to your teacher, school, and anyone who helped you in completing the project.

3. Introduction

- Introduce your topic clearly.
- Explain what the issue is and why it is important in society.

4. Statement of Purpose

- State the objectives of your study.

5. Methodology

- Explain how you collected information.
- Sources may include:
 - Newspapers
 - Magazines
 - Internet articles
 - Interviews/Questionnaire

6. Presentation of Evidence

- Collect relevant data such as:
 - News reports
 - Case studies
 - Statistics
- Summarize the information in your own words.
- Explain how each piece of evidence is related to your topic and why it is significant.

STEP 4: QUESTIONNAIRE PREPARATION

- Prepare a questionnaire based on your topic (20 questions).
- Questions should be:
 - Clear and relevant
 - A mix of objective and descriptive types
- The questionnaire should help in collecting primary data.

STEP 5: SURVEY IN SOCIETY

- Conduct a small survey in your neighbourhood/society using your questionnaire.
- Try to collect responses from at least 20-25 people.
- Ensure:
 - Respectful communication
 - Honest data collection
 - No forcing of responses

STEP 6: DATA ANALYSIS

- Organize the collected data in a systematic manner.
- You may use:
 - Tables
 - Charts/graphs (optional)
- Analyse the responses by:
 - Identifying patterns and trends
 - Comparing different responses
 - Interpreting what the data suggests about your topic

IMPORTANT INSTRUCTIONS

- Choose a social issue that allows meaningful research and analysis.
- Write neatly and present your work in a well-organized manner.
- Use your own words; avoid copying directly from sources.
- Maintain clarity in data presentation and analysis.
- Support your project with real-life examples and current data wherever possible.

MATHEMATICS

PART A - Write the following Math activities in your Practical file.

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 not one-one but is 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 find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point.
6. To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.

PART B - Attempt the following project. (Use A4 size sheets).

Topic: Inverse Trigonometric Functions

Inverse trigonometric functions are defined by restricting domains of trigonometric functions. Principal value branches ensure functions become one-to-one and graphs help in visualizing behaviour and restrictions. Inverse trigonometric functions (like $\sin^{-1}x$, $\cos^{-1}x$, $\tan^{-1}x$) are used to find angles when the values of trigonometric ratios are known. They have many important applications in mathematics, science, engineering, and real-life applications.

After completing this project, students will be able to understand inverse trigonometric functions, study principal value branches, interpret graphs and properties and improve visualization of mathematical concepts.

Instructions: You are required to study and analyse the inverse trigonometric functions.

For each function, you must:

1. Define each function clearly.
2. Write its principal domain and range.
3. Draw neat graphs.
4. Write properties of the function.
5. Conclusion.

Note: Your project should have a cover page, title and objectives.

PART C (To be done in Practice Notebook)

1. Do all examples of Chapters 1, 2, 3, 4 and 5.
2. Do 10 questions daily of chapters 1, 2, 3, 4 and 5 from NCERT Exemplar and other reference books.
3. Do the revision assignment uploaded on ERP.

ARTIFICIAL INTELLIGENCE

Activity 1: Capstone Project Work (to be done on A3 sheet)

Select a real-world problem such as:

- Pollution analysis
- Student performance analysis
- Social media addiction
- Water conservation
- Fitness tracking

Activity 2: AI Tool Activity (to be done on A3 Sheet)

Use any AI image recognition tool such as:

- Google Lens
- Teachable Machine

Identify objects from images and note observations with colourful images.

Activity 3: Infographic Design (To be done on Canvas and takeout the coloured print out)

Create an infographic on:

- Climate Change
- AI in Education
- Digital Safety
- Pollution analysis

Activity 4: Python Programs

(Practical File work to be done in the online Google Word File and share that file directly on kanchan.chowdhary@imperialheritageschool.com)

Input & output (Screenshot) both to be included in the file.

1. Create a numpy array and then split it into 2 equal parts. Display both parts.
2. Write a numpy program to check that none of the elements of a given array are zero.
3. Write the Python code to create a pandas data frame using any sequence data type.
 - a. display the data frame
 - b. display first 5 records
 - c. display last 10 records
 - d. display the number of missing values in the data set.
4. Demonstrate Train Test Split in linear regression.
5. Write a code for loading and displaying images in OpenCV using Colab.
6. Write a code to convert an image into grayscale.
7. Write a code to detect edges in the image.
8. Write a programme for the visualization of the regression line
9. Write a programme to predict GPA score after entering s SAT scores.
10. Write a program to create both Rank 1 and Rank 2 arrays using NumPy.
11. Create a data frame and apply the head and tail functions.
12. Program creates for extract specific portions using slicing
13. Write a program to convert the list into a pandas dataframe
14. Write a program to add columns to the data frame
15. Write the program to import data from CSV to a DataFrame

Activity 5: Do the revision assignment in the notebook uploaded on ERP.

COMPUTER SCIENCE

Activity 1: Database Survey Project (to be done on A3 sheet)

Conduct a survey.

Example Topics:

- Favourite apps
- Screen time
- Online learning habits

Store collected data in MySQL table with 5 entries and perform 5 data analysis. Paste the screenshots on an A3 sheet.

Activity 2: AI + Coding Poster (to be done on A3 sheet)

Create a poster on: "Future of AI and Programming."

Activity 3: "The Secret Code of Cyber Fortress" (to be done in Notebook)

CLUE 1 – The Memory Vault

Clue:

I store multiple values in a single variable.

I allow duplicate values and can be modified after creation.

Questions

1. Identify the data structure.
2. Is it mutable or immutable?
3. Predict the output:

```
L=[10,20,30]
```

```
L[1]=50
```

```
print(L)
```

CLUE 2 – The Function Chamber

Clue: I help programmers divide large programs into smaller reusable blocks.

Questions

1. Identify the concept.
2. What will be the output?

```
def calc(a,b=5):
```

```
    return a+b
```

```
print(calc(10))
```

CLUE 3 – The Recursive Tunnel

Clue: I am a function that calls myself again and again until a stopping condition occurs.

Questions

1. Identify the concept.
2. Predict the output:

```
def fun(n):
```

```
    if n==1:
```

```
        return 1
```

```
    return n*fun(n-1)
```

```
print(fun(4))
```

CLUE 4 – The String Decoder

Clue: I am used to store textual data and support indexing and slicing.

Questions

1. Identify the data type.
2. Predict the output:

```
s="COMPUTER"  
print(s[-5:-2])
```
3. What does negative indexing mean?
4. Write a statement to reverse the string PYTHON.

CLUE 5 – The SQL Gateway

Clue:

I am used to retrieve data from a database table.

Questions

1. Identify the SQL command.

```
SELECT * FROM STUDENT;
```
2. Write SQL query to display all records from STUDENT table.

```
SELECT * FROM STUDENT  
WHERE MARKS > 80;
```
3. Which clause is used to filter records?
4. Predict the output rows selected:

```
SELECT * FROM STUDENT  
WHERE MARKS > 80;
```

Activity 4: Python & MySQL Programs

(Practical File work to be done in the online Google Word File and share that file directly on kanchan.chowdhary@imperialheritageschool.com)

Input & output (Screenshot) both to be included in the file.

1. Read a text file line by line and display each word separated by a #.
2. Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file.
3. Remove all the lines that contain the character 'a' in a file and write it to another file.
4. Create a binary file with name and roll number. Search for a given roll number and display the name; if not found, display an appropriate message.
5. Create a binary file with roll number, name, and marks. Input a roll number and update the marks.
6. Write a random number generator that generates random numbers between 1 and 6 (simulates a dice).
7. Write a Python program to implement a stack using list.
8. Create a CSV file by entering user-id and password, read and search the password for the given userid.

Database Management (4 Questions with different Queries)

Create a student table and insert data. Implement the following SQL commands on the student table:

- o ALTER table to add new attributes / modify data type/drop attribute
- o UPDATE table to modify data
- o ORDER By to display data in ascending/descending order
- o DELETE to remove tuple(s)
- o GROUP BY and find the min, max, sum, count, and average

Activity 5: Do the revision assignment in the notebook uploaded on ERP.