



Lady Florence

CONVENT SCHOOL

HOLIDAY HOMEWORK

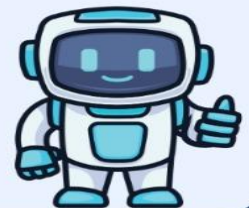
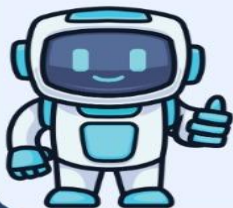
SESSION - 2026-27

GRADE XI



NAME: _____

ROLL NO: _____



Note: -

- *The school will reopen on 6th July, 2026.*
- *Parents can submit the holiday homework between 2nd July to 4th July during school working hours.*

Dear Students,

Kindly follow the given guidelines while completing your Holiday Homework:

- Complete the work neatly and systematically in a separate file/folder as instructed by the subject teacher.
- The work should be creative, innovative, research-based, and connected with real-life applications.
- Include case studies, surveys, newspaper articles, data collection, self-analysis, or experiential learning wherever applicable.
- Avoid copy-pasting from the internet. Originality and independent thinking will be appreciated.
- Use diagrams, charts, mind maps, QR codes, presentations, art integration, and digital tools to enhance your work.
- Maintain good handwriting, proper labeling, presentation, and overall organization.
- Assignments should reflect conceptual understanding, analytical skills, and subject knowledge.
- Reading newspapers, journals, biographies, educational magazines, and reference books during vacations is highly encouraged.
- Practical learning through observation, interviews, field visits, and family interaction should be included wherever possible.
- Submit the Holiday Homework on time after the vacations. Late submission may affect assessment and evaluation.
- Along with academics, students should also focus on physical fitness, hobbies, relaxation, and quality family time for holistic development.
- Complete your work sincerely and make your vacations productive and meaningful.
- Revise the PT-2 syllabus regularly during the vacations for better understanding and retention of concepts.

Holiday Assignment: "Unwind & Imagine"

Dear Students,

This vacation, step away from the academic pressure, turn off your screens, and let your mind relax. There are no strict rules, no themes, and absolutely no pressure to make a "perfect" masterpiece. Your only goal is to create something entirely from your imagination that helps you recharge.

Love and Blessings!!

Guidelines

- ***What to Draw:*** Anything you want. It could be a dream landscape, an abstract pattern of shapes, a character, or just a stream-of-consciousness doodle.
- ***Medium of Choice:*** Use whatever you have at home—watercolors, acrylics, color pencils, oil pastels, sketch pens, or just a simple graphite pencil.
- ***The Canvas:*** You can use a drawing sheet, a page in a sketchbook, a canvas, or even upcycle a piece of cardboard.

Important Reminders

- ***Do not be in any hurry*** to finish your work of art. Give it time and enjoy the process of making it.
- ***Do not copy*** or download designs from the internet; let the ideas be entirely your own.
- ***Do not stress*** about the final result or worry about making mistakes.
- ***Do not treat this as a chore*** or a rigid academic task—just have fun and create at your own pace.

Reflection Note

- *On the back of your artwork, write a short 2-3 sentence note sharing how you felt while creating it and what your imagination brought to life.*

SUBJECT - ENGLISH

Section A - Reading Skills

1. Read the passage carefully and answer the following questions.

Technology has become an inseparable part of human life. It has revolutionized communication, education, healthcare, business, and entertainment. Students today depend on smartphones, laptops, and the internet for online classes, research work, and assignments. Teachers also use projectors and digital boards to make lessons more engaging.

Despite its benefits, excessive use of technology has several disadvantages. Many teenagers spend hours on social media platforms and online games, affecting their studies and health. Eye strain, obesity, and lack of physical activity are common problems. Cybercrime and online fraud are also increasing rapidly.

Technology should be used wisely and in moderation so that people can enjoy its advantages without suffering its harmful effects.

Multiple Choice Questions

1. Technology has revolutionized:
a) only communication
b) only healthcare
c) many fields of life
d) none of these
2. Students use laptops for:
a) cooking
b) research work
c) farming
d) driving
3. Excessive use of technology causes:
a) better health
b) eye strain
c) more exercise
d) happiness
4. Online fraud is related to:
a) cybercrime
b) education
c) transport
d) tourism

Short Answer Questions

5. How has technology changed education?
6. Mention two benefits of technology.
7. What problems are caused by excessive screen time?
8. Why is physical activity important?
9. What is cybercrime?
10. Suggest a suitable title for the passage.

2. Read the passage carefully and answer the following questions.

Trees are one of nature's greatest gifts to mankind. They provide oxygen, fruits, medicine, wood, and shelter to birds and animals. Trees help in reducing pollution and maintaining ecological balance by absorbing carbon dioxide.

Unfortunately, rapid urbanization and industrial development have led to large-scale deforestation. Cutting trees causes global warming, soil erosion, and destruction of wildlife habitats. Many species are becoming extinct due to deforestation.

People must understand the importance of trees and participate in plantation drives to save the environment.

A Photograph (Roll no1-15)

Explain the poem in your own words in about 150–200 words.

Hints:

- Description of the photograph
- Poet's mother's childhood memory
- Passage of time
- Loss and silence
- Theme/message

The Laburnum Top (Roll no 15-30)

Explain the poem in your own words in about 150–200 words.

Hints:

- Description of the tree
- Arrival of the goldfinch
- How the tree becomes lively
- Departure of the bird
- Theme/message

Section E - Project Work**Project on Khushwant Singh**

Prepare a project file (5–7 pages) including:

- Biography
- Early life and education
- Major literary works
- Writing style
- Contribution to Indian literature
- Famous quotes
- Interesting facts

Conclusion

Mention famous works like Train to Pakistan, The Portrait of a Lady, and Delhi: A Novel.

Submission Instructions

- ✓ Complete all work neatly in your holiday homework notebook/file.
- ✓ Project work should be creative and well-presented.
- ✓ Submit after summer vacation

SUBJECT - HINDI

प्रश्न 1. अपठित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए।

समय मानव जीवन की सबसे अमूल्य संपत्ति है। संसार में धन, वस्तुएँ और अन्य सुविधाएँ दोबारा प्राप्त की जा सकती हैं, लेकिन बीता हुआ समय कभी वापस नहीं आता। जो व्यक्ति समय का सदुपयोग करता है, वही जीवन में सफलता प्राप्त करता है। विद्यार्थी जीवन में समय का विशेष महत्व होता है क्योंकि यही समय भविष्य की नींव तैयार करता है। नियमित अध्ययन, अनुशासन और परिश्रम से विद्यार्थी अपने लक्ष्य को प्राप्त कर सकते हैं। आलस्य और समय की बर्बादी मनुष्य को असफल बना देती है। हमें प्रत्येक कार्य समय पर करना चाहिए तथा अपने जीवन को व्यवस्थित बनाना चाहिए। समय का सम्मान करने वाला व्यक्ति समाज में आदर प्राप्त करता है और अपने जीवन में उन्नति करता है।

- i. समय को किस प्रकार की संपत्ति कहा गया है?
- ii. बीता हुआ समय क्यों महत्वपूर्ण है?
- iii. विद्यार्थी जीवन में समय का क्या महत्व है?
- iv. आलस्य मनुष्य को किस ओर ले जाता है?
- v. समय का सदुपयोग करने से क्या लाभ होते हैं?
- vi. विद्यार्थी अपने जीवन को सफल कैसे बना सकते हैं?
- vii. गद्यांश से मिलने वाली शिक्षा अपने शब्दों में लिखिए।
- viii. “समय का महत्व” विषय पर चार पंक्तियाँ लिखिए।

प्रश्न 2. पत्रकारिता के विभिन्न आयाम -

- ix. पत्रकारिता किसे कहते हैं?
- x. समाचार किसे कहते हैं?
- xi. प्रिंट मीडिया क्या है?
- xii. इलेक्ट्रॉनिक मीडिया के दो उदाहरण दीजिए।
- xiii. पत्रकारिता का मुख्य उद्देश्य स्पष्ट कीजिए।
- xiv. सोशल मीडिया के लाभ और हानियाँ लिखिए।
- xv. पत्रकार की जिम्मेदारियों का वर्णन कीजिए।
- xvi. आधुनिक पत्रकारिता की चुनौतियों पर प्रकाश डालिए।

प्रश्न 3. निम्नलिखित विषयों पर लगभग 120–150 शब्दों में लेख लिखिए।

- xvii. “मोबाइल फोन के लाभ और हानियाँ”
- xviii. “जल संरक्षण”

प्रश्न 4. पाठ – नमक का दरोगा पाठ के लेखक प्रेमचंद जी के जीवन परिचय पर लेख विस्तार से लिखिए।

प्रश्न 5. “कबीर” के पद और “मीराबाई” के पदों का भावार्थ लिखिए।

क्रियात्मक कार्य

पत्रकारिता के विभिन्न आयाम की एक पी. पी. टी. तैयार कीजिए।

निम्नलिखित बिंदुओं को शामिल करें —

- प्रस्तावना
- पत्रकारिता का अर्थ
- पत्रकारिता के प्रकार
- प्रिंट मीडिया
- इलेक्ट्रॉनिक मीडिया
- सोशल मीडिया
- पत्रकार के गुण
- पत्रकारिता का समाज पर प्रभाव
- आधुनिक पत्रकारिता की चुनौतियाँ
- निष्कर्ष
- चित्र एवं समाचार कटिंग चिपकाइए।
- सुंदर आवरण पृष्ठ तैयार कीजिए।

SUBJECT - MATHEMATICS

Chapter 1: Sets

1. Write the roster form of the set $A = \{x : x \text{ is a prime number less than } 20\}$.
2. Represent the set of vowels in English alphabet in roster form.
3. Find $A \cup B$ if $A = \{1, 2, 3, 4\}$ and $B = \{3, 4, 5, 6\}$.
4. Find $A \cap B$ if $A = \{2, 4, 6, 8\}$ and $B = \{1, 2, 3, 4, 5\}$.
5. Verify De Morgan's Law for $A = \{1, 2, 3\}$, $B = \{3, 4, 5\}$ and universal set $U = \{1, 2, 3, 4, 5, 6\}$.
6. Find the number of subsets of the set $\{a, b, c, d\}$.

Chapter 2: Relations and Functions

7. Determine whether the relation $R = \{(1, 2), (2, 3), (3, 4)\}$ is a function.
8. Find the domain and range of the function $f(x) = x^2$ where $x \in \{-2, -1, 0, 1, 2\}$.
9. Check whether the relation $R = \{(1, 1), (2, 2), (3, 3)\}$ is reflexive.
10. If $f(x) = 2x + 3$, find $f(5)$.
11. Find whether the relation $R = \{(1, 2), (2, 1), (3, 3)\}$ is symmetric.
12. Find the value of x if $f(x) = 3x - 7$ and $f(x) = 11$.

Chapter 3: Complex Numbers

13. Express $\sqrt{-49}$ in the form $a + ib$.
14. Simplify: $(3 + 4i) + (5 - 2i)$.
15. Find the product of $(2 + 3i)$ and $(1 - 4i)$.
16. Find the modulus of the complex number $5 - 12i$.

17. Find the conjugate of $7 - 9i$.

18. Simplify: $(4 + i) - (2 - 5i)$.

Chapter 4: Linear Inequalities

19. Solve and represent on number line: $3x - 5 > 7$.
20. Solve: $2x + 3 \leq 11$.
21. Find the solution set of $x/2 > 4$.
22. Solve the inequality: $5 - 2x \geq 9$.
23. A student needs at least 70 marks to pass. If she has already scored 45 marks, write and solve an inequality to find the minimum marks needed in the next test out of 30.
24. A taxi charges ₹100 fixed fare and ₹15 per km. If a person has ₹250, form and solve an inequality to find the maximum distance he can travel.
25. Solve: $-3x < 12$.

Real-Life Based Activities

Activity 1: Sets in Daily Life

Objective: To understand the use of sets in everyday situations.

Instructions:

- Conduct a small survey in your class about students who like Cricket, Football, or both.
- Represent the data using Venn diagrams.
- Find union, intersection, and complement of the sets.

Activity 2: Linear Inequalities in Budget Planning

Objective: To apply inequalities in real-life budgeting situations.

Instructions:

- Prepare a monthly pocket money budget.
- Include expenses such as food, transport, and stationery.
- Form inequalities to ensure expenses remain within the budget.
- Represent the solutions on a number line.

SUBJECT - BIOLOGY

LAB MANUAL AND PROJECT/PORTFOLIO WORK-

1. **Complete lab manual.**
2. **Complete an investigatory project from any topic from the following.**

List of Biology Project/Portfolio - Topics

1. **Study of plant cells and animal cells**
2. **Osmosis in raisins and potato**
3. **Study of different types of tissues**
4. **Germination of seeds under different conditions**
5. **Study of microorganisms in curd and bread**
6. **Effect of light on plant growth**
7. **Comparative study of monocot and dicot plants**
8. **Study of biodiversity in local area**
9. **Photosynthesis and factors affecting it**
10. **Human digestive system and nutrition**
11. **Study of blood groups**
12. **Importance of enzymes in digestion**
13. **Study of ecosystem and food chain**
14. **Water pollution and its effects on living organisms**
15. **Respiration in plants and animals**
16. **Medicinal plants and their uses**
17. **Study of balanced diet and**

deficiency diseases Class XI Biology

Portfolio – Instructions

ô 1. General Rules

- **Use A4 size ruled/plain sheets**
- **Write in neat handwriting (blue/black pen)**
- **Use headings, subheadings & diagrams**
- **File length: 20–25 pages**
- **Content must be**

NCERT-based Project

Work (Portfolio)

Format

A). Prepare a BIOLOGY INVESTIGATORY PROJECT on the topic assigned to you by the subject teacher in the class. Use A4 size sheets colourful or designed for the project

including various newspaper clippings, images, latest discoveries and inventions relevant to the topic.

1. COVER PAGE

- **Proper cover design based on the project theme**
- **School logo**
- **Project title**
- **Student's name**
- **Class & Section**
- **Board Roll Number (To be blank)**
- **Subject**
- **Teacher's name**
- **Academic Session**

2. INTRODUCTORY PAGE

3. CERTIFICATE

4. ACKNOWLEDGEMENT

5. INDEX/CONTENTS

6. INTRODUCTION

7. AIM

8. MATERIALS REQUIRED

9. PROCEDURE/EXPERIMENT(S)

10. OBSERVATIONS (• Details about the project)

11. RESULT

12. CONCLUSION

13. BIBLIOGRAPHY

14. THANKYOU PAGE WITH

SCIENCE QUOTE ART

INTEGRATED ACTIVITY:

DRAW A WORKING MODEL ON ANY BIOLOGY TOPIC YOU LIKE & DECORATE IT ACCORDINGLY.

List of Biology Model - Topics

- 1. Plant cell and animal cell model**
- 2. Human heart model**
- 3. Respiratory system model**
- 4. Digestive system model**
- 5. DNA double helix model**
- 6. Human brain model**
- 7. Nephron working model**
- 8. Photosynthesis process model**
- 9. Water cycle model**
- 10. Ecosystem and food chain model**
- 11. Human eye model**
- 12. Blood circulation model**

13. **Types of tissues model**
14. **Cell division model**
15. **Biodiversity conservation model**

WORKSHEET-1

1. **Define biodiversity and explain its importance in maintaining ecological balance.**
2. **Differentiate between taxonomy, systematics and nomenclature with suitable examples.**
3. **Explain binomial nomenclature. Write scientific names of mango, human and housefly.**
4. **Describe the hierarchy of biological classification from species to kingdom with examples.**
5. **What are taxonomical aids? Explain the importance of herbarium, museum and zoological parks.**
6. **Differentiate between botanical garden and herbarium.**
7. **Explain the characteristics of living organisms on the basis of growth, reproduction and metabolism.**
8. **Why are viruses considered as connecting links between living and non-living organisms?**
9. **Explain the role of Carolus Linnaeus in biological classification.**
10. **Write short notes on:**
 - a - Species
 - b - Genus
 - c - Family
 - d - Order

WORKSHEET-2

1. **Explain Whittaker's five kingdom classification system with its merits.**
2. **Differentiate between Monera and Protista on the basis of structure and nutrition.**
3. **Describe the structure and reproduction in bacteria.**
4. **Explain the economic importance of bacteria in human life.**
5. **Differentiate between archaebacteria and eubacteria.**
6. **Explain the characteristics of Kingdom Fungi with suitable examples.**
7. **Describe the different types of nutrition found in fungi.**
8. **Why are lichens considered as symbiotic associations? Explain with examples.**
9. **Differentiate between viruses and viroids.**
10. **Draw neat labelled diagrams of:**
 - a - Bacteriophage
 - b - Amoeba
 - c - Mushroom
 - d - Nostoc

Map Work

On the outline map of India/world, locate and label:

- a. Standard Meridian of India
- b. Indian Ocean
- c. Arabian Sea
- d. Bay of Bengal
- e. Indira Point

Worksheet - 2 (For Roll No. 11 onwards)

1. Geography is called the study of:

- | | |
|--------------------------------|-----------------------|
| a) Atmosphere only | b) Human society only |
| c) Earth as the home of humans | d) Oceans only |

2. Which theory explains the formation of Earth from a nebula?

- | | |
|-----------------------|--------------------|
| a) Nebular Hypothesis | b) Drift Theory |
| c) Evolution Theory | d) Big Bang Theory |

3. The mantle lies between:

- | | |
|-------------------------|--------------------------|
| a) Crust and core | b) Core and lithosphere |
| c) Atmosphere and crust | d) Oceans and continents |

4. India shares its longest international boundary with:

- | | |
|---------------|-------------|
| a) China | b) Nepal |
| c) Bangladesh | d) Pakistan |

5. Which force originates within the Earth?

- | | |
|-------------------|--------------------|
| a) Exogenic force | b) Endogenic force |
| c) Weathering | d) Erosion |

6. Alfred Wegener gave the theory of:

- | | |
|--------------------|----------------------|
| a) Plate Tectonics | b) Continental Drift |
| c) Evolution | d) Gravitation |

7. Which is not an exogenic process?

- | | |
|---------------|---------------|
| a) Weathering | b) Volcanism |
| c) Erosion | d) Deposition |

8. The imaginary supercontinent was called:

- | | |
|-------------|-------------|
| a) Gondwana | b) Eurasia |
| c) Pangaea | d) Laurasia |

9. The Indian Ocean lies to the ___ of India.

- | | |
|----------|----------|
| a) North | b) South |
| c) East | d) West |

10. Which layer is known as the lithosphere?

- | | |
|---------------------------|--------------------|
| a) Crust and upper mantle | b) Core only |
| c) Mantle only | d) Outer core only |

Passage Based Question

Read the passage carefully and answer the questions:

“India occupies an important strategic position in South Asia. The Indian Ocean has helped India develop trade and cultural contacts with different countries.”

- a. Which ocean is mentioned in the passage?
- b. Why is India’s location considered important?
- c. Mention one benefit of India’s central location.

Map Work

On the outline map, locate and label:

- a. Tropic of Cancer
- b. Indian Ocean
- c. Arabian Sea
- d. Bay of Bengal
- e. Indira Point

ACTIVITY WORK

General Instructions

- All work should be handwritten and presented creatively.
- Use colours, diagrams, maps, newspaper cuttings, and pictures wherever required.
- Maintain neatness and proper headings.
- Submit the work in a decorated file/folder.

Group 1 – Roll No. 1 to 5

Activity: Research Paper

Topics (Any One):

- Origin and Evolution of the Earth
- Interior Structure of the Earth
- Importance of India's Geographical Location
- Distribution of Oceans and Continents

Instructions:

Prepare a handwritten research paper (8–10 pages).

Include:

- Introduction
- Main Features
- Diagrams/Maps
- Recent Facts or Examples
- Conclusion
- Add labelled diagrams and one map related to the topic.
- .

Group 2 – Roll No. 6 onwards

Activity: Creative Poster Making

Topics (Any One):

1. Layers of the Earth
2. Continental Drift Theory
3. Geomorphic Processes
4. India and the Indian Ocean

Instructions:

- Prepare a colourful poster on A3 sheet.
- Use creative slogans, diagrams, maps, symbols, and illustrations.
- Poster should be informative as well as attractive.

Common Activity for All Groups

- Newspaper Reading & Weekly Reflection
- Students are encouraged to read newspapers regularly during the holidays.
- Write one weekly reflection based on any important environmental, geographical, scientific, or international news.

Include:

- Date of the news
- Heading/Title
- Summary in 5–6 lines
- Your opinion/reflection

SUBJECT - HISTORY

Worksheet 1 - (Roll no- 1 to 5)

Multiple Choice Questions (MCQs)

1. The earliest known language of Mesopotamia was:
a) Greek b) Sumerian c) Latin d) Persian
2. Which river was associated with Mesopotamian civilization?
a) Nile b) Indus c) Tigris and Euphrates d) Yellow River
3. The Roman Empire was centered around the:
a) Mediterranean Sea b) Black Sea c) Red Sea d) Caspian Sea
4. Who was the founder of the Mongol Empire?
a) Kublai Khan b) Attila c) Genghis Khan d) Timur
5. What was the Yasa?
a) Trade route b) Law code c) Tax system d) Religion
6. Which class worked on feudal estates in Europe?
a) Knights b) Clergy c) Serfs d) Merchants
7. Cuneiform script developed in:
a) China b) Mesopotamia c) Rome d) Egypt
8. Which group prayed for society according to the Three Orders?
a) Peasants b) Clergy c) Knights d) Serfs
9. Nomadic tribes mainly depended on:
a) Agriculture b) Fishing c) Herding animals d) Trade
10. Constantinople was the capital of:
a) Roman Empire b) Byzantine Empire c) Mongol Empire d) Ottoman Empire
11. Assertion (A): The Mongols became successful conquerors.
Reason (R): They had highly trained cavalry forces.
12. Assertion (A): Writing was important in Mesopotamia.
Reason (R): It helped maintain records and trade accounts.

Passage Based Question

Read the passage carefully and answer the questions:

“The Mongols created a vast empire that connected China, Persia, and Eastern Europe. They encouraged trade and communication across regions.”

- Which empire is referred to in the passage?
- Name any two regions connected by the Mongols.
- Mention one positive impact of Mongol rule.

Map Work

On the outline map, locate and label:

- Mesopotamia
- Rome
- Constantinople
- Mongolia
- Mediterranean Sea

Worksheet 2 - (Roll no- 6 onwards)

Multiple Choice Questions (MCQs)

1. Mesopotamian tablets were mainly made of:

- | | | | |
|----------|---------|---------|-----------|
| a) Stone | b) Clay | c) Wood | d) Copper |
|----------|---------|---------|-----------|

2. Ur was an important city of:

- | | | | |
|----------|-----------|----------------|----------|
| a) Egypt | b) Greece | c) Mesopotamia | d) China |
|----------|-----------|----------------|----------|

3. The Roman Emperor Constantine is known for:

- | | | | |
|--------------------------|----------------------------|----------------------|----------------------|
| a) Introducing democracy | b) Supporting Christianity | c) Defeating Mongols | d) Writing the Bible |
|--------------------------|----------------------------|----------------------|----------------------|

4. The Mongols belonged to the region of:

- | | | | |
|-----------|-------------|-----------|----------|
| a) Arabia | b) Mongolia | c) Africa | d) India |
|-----------|-------------|-----------|----------|

5. Which animal was most important in Mongol life?

- | | | | |
|----------|-------------|----------|----------|
| a) Camel | b) Elephant | c) Horse | d) Sheep |
|----------|-------------|----------|----------|

6. Feudalism developed mainly in:

- | | | | |
|----------|-----------|----------|----------|
| a) India | b) Europe | c) China | d) Japan |
|----------|-----------|----------|----------|

7. Knights were mainly associated with:

- | | | | |
|------------|------------|----------|-------------|
| a) Farming | b) Warfare | c) Trade | d) Religion |
|------------|------------|----------|-------------|

8. The clergy belonged to which order?

- | | | | |
|----------------|-----------------|----------------|-----------------|
| a) First Order | b) Second Order | c) Third Order | d) Fourth Order |
|----------------|-----------------|----------------|-----------------|

9. Roman roads were mainly built for:

- | | |
|--------------------------------|-----------------------|
| a) Decoration | b) Religious purposes |
| c) Military movement and trade | d) Agriculture |

10. Which script was used in Mesopotamia?

- | | | | |
|------------------|-----------|--------------|----------|
| a) Hieroglyphics | b) Brahmi | c) Cuneiform | d) Greek |
|------------------|-----------|--------------|----------|

11. Assertion (A): Roman cities became centers of trade.

Reason (R): The Romans developed roads and sea routes.

12. Assertion (A): Peasants suffered in feudal society.

Reason (R): They had to provide services to lords.

Passage Based Question

Read the passage carefully and answer the questions:

“Medieval European society was divided into three orders – the clergy, the nobility, and the peasantry. Each group had different duties and status.”

- Name the three orders mentioned in the passage.
- Which group fought wars?
- Which group worked on land

Map Work

On the outline map, locate and label:

- Ur
- Egypt
- Constantinople
- China
- Mongolia

ACTIVITY WORK

General Instructions

- All work should be handwritten and neatly presented.
- Use creative headings, pictures, maps, newspaper cuttings, and colors.
- Submit the work in a well-decorated file/folder.
- Students should focus on presentation, creativity, and historical understanding.

Group 1 – Roll No. 1 to 5

Activity: Research Paper

Topics (Any One):

- Life in Mesopotamian Cities (Writing and City Life)
- Achievements of the Roman Empire (An Empire Across Three Continents)
- Rise of Genghis Khan (Nomadic Empires)
- Feudal Society in Europe (The Three Orders)

Instructions:

Prepare a handwritten research paper (8–10 pages).

Include:

- Introduction
- Important Features
- Historical Facts
- Conclusion
- Pictures/Maps
- Add one timeline or map related to the topic.

Group 2 – Roll No. 6 onwards

Activity: Creative Poster Making

Topics (Any One):

Development of Early Cities

1. Roman Culture and Architecture
2. Mongol Empire and Trade Routes
3. Life of Peasants and Knights in Medieval Europe

Instructions:

- Prepare a colourful poster on A3 sheet.
- Use slogans, drawings, symbols, maps, and historical facts.
- Posters should be informative and attractive.

Common Activity for All Groups

- Newspaper Reading & Weekly Reflection
- Students are encouraged to read newspapers regularly during the holidays.
- Write one weekly reflection based on any important national or international news related to history, culture, economy, politics, or society.

Include:

- Date of the news
- Heading/Title
- Summary in 5–6 lines
- Your opinion/reflection

SUBJECT - ECONOMICS

Worksheet - 1

1. Define economics and explain the problem of scarcity.
2. Differentiate between microeconomics and macroeconomics.
3. What is the opportunity cost? Explain with one suitable example.
4. State any four central problems of an economy.
5. Explain the meaning of a Production Possibility Curve (PPC).
6. Differentiate between consumer goods and producer goods.
7. Explain the role of statistics in economics.
8. Define statistics in singular and plural sense.
9. Differentiate between primary data and secondary data.
10. Explain the census method of data collection.
11. State any four merits of the sample method.
12. Differentiate between qualitative data and quantitative data.
13. Why does every economy face the problem of “how to produce”?
14. Explain the importance of classification of data.
15. What precautions should be taken while collecting data?

Case Study Questions

16. Case Study – 1

Rohan has ₹1000 to spend during a school trip. He wants to buy books, snacks, and souvenirs, but his money is limited. If he spends more on souvenirs, he will have less money for books and snacks.

- i. Identify the economic problem faced by Rohan.
- ii. Explain the concept of opportunity cost in the above case.

17. Case Study – 2

A school principal wants to know how many hours students spend studying daily. Instead of asking all students, she selects 40 students randomly from different classes and collects information from them.

- i. Which method of data collection is used in the above case?
- ii. State one advantage and one limitation of this method.
- iii. Explain how statistics helps in decision-making in daily life.

Real-Life Based Activities

Activity 1 (Odd Roll No. only)

Visit a nearby market and observe how people make choices while purchasing products according to their budget. Write your observations in 100–120 words.

Activity 2 (Even Roll No. only)

Conduct a small survey of 10 classmates on their favourite subject. Organize the collected data in a table and write two conclusions from it.

General Instructions

General Instructions

- Complete the homework neatly in your Business Studies notebook/file.
- Read all questions carefully before answering.
- Maintain proper handwriting and presentation.
- Attempt all questions.
- Use blue/black pen only.
- Revise all chapters thoroughly for better understanding.
- Submit the holiday homework on the assigned date.
- Prepare case studies and answers independently.

Project Work (Portfolio) Format

- Cover Page
- Proper cover design based on the project theme
- School logo
- Project title
- Student's name
- Class & Section
- Roll Number
- Subject
- Teacher's name
- Academic Session
- Certificate
- Acknowledgement
- Objectives of the Project
- Introduction
- Principle (if any)

- Construction
- Theory with Diagrams
- Working Based on Case Study
- Applications and Limitations
- Conclusion
- Bibliography

Project Topics

- Demand and Supply Analysis of Essential Commodities (Roll No. – 1-7)
- Impact of Inflation on Common People (Roll No. – 8-14)
- Consumer Awareness and Consumer Rights in India (Roll No. – 15-21)
- Study of Unemployment Among Youth in India (Roll No. – 21-28)

- Digital Payment System and Its Growing Importance (Roll No. – 29 onwards)

Assignment

Q.1 Which of the following best describes the term 'Scarcity' in economics?

- (a) Lack of money only
- (b) Unlimited wants but limited resources
- (c) Surplus of goods in the market
- (d) Excess production by firms

Q.2 The central problem of 'For Whom to Produce' is related to which of the following?

- (a) Production techniques
- (b) Distribution of national income
- (c) Allocation of resources among goods
- (d) Consumer preferences only

Q.3 A consumer is said to be in equilibrium when:

- (a) $MU > Price$
- (b) $MU < Price$
- (c) $MU = Price$
- (d) TU is maximum

Q.4 Which of the following is a characteristic of a 'Capitalist Economy'?

- (a) Central planning by the government
- (b) State ownership of all resources
- (c) Private ownership and price mechanism
- (d) Equal distribution of income

Q.5 Which method of data collection is most appropriate when information is needed from a large geographical area at low cost?

- (a) Direct personal interview
- (b) Questionnaire through mail
- (c) Telephone interview
- (d) Schedule through enumerators

Q.6 Distinguish between Positive & Normative Statements with two examples each.

Q.7 Distinguish between Microeconomics and Macroeconomics with two examples each.

Q.8 What are the three central problems of an economy? Briefly explain any one.

Q.9 State and explain the Law of Diminishing Marginal Utility (DMU) with the help of a schedule.

Q.10 What is the difference between Primary Data and Secondary Data? Give one source of each.

Q.11 Why is Statistics considered important in Economics? State any three points of significance.

Q.12 Explain the concept of Production Possibility Curve (PPC) with a suitable diagram. State any two assumptions and two properties of PPC.

Q.13 Compare and contrast a Capitalist Economy, a Socialist Economy, and a Mixed Economy. How does each solve the central problems of an economy?

Q.14 Explain Consumer Equilibrium using the Utility Analysis (Law of Equi-Marginal Utility) in the case of two commodities. Use a proper schedule.

What is a Statistical Survey? Explain the steps involved in conducting a statistical survey with suitable examples.

Q.15 Distinguish between Census Method and Sampling Method of data collection. Under what circumstances is Sampling Method preferred? Give three advantages of each.

Q.16 Define Opportunity Cost. How does the concept of opportunity cost relate to the central problem of resource allocation? Explain with an example using PPC.

Read each case study carefully and answer the sub-questions that follow.

Q.17 Ramesh loves mangoes. On a hot summer afternoon, he starts eating mangoes one by one. He derives immense pleasure from the first mango. The second also gives him satisfaction, but slightly less than the first. By the fourth mango, he is barely enjoying the taste, and at the fifth mango, he is completely indifferent. The following schedule shows his utility from each mango: 1st → MU = 20, 2nd → MU = 15, 3rd → MU = 10, 4th → MU = 5, 5th → MU = 0. The market price of one mango is ₹10.

(i) What law does the above situation illustrate? Define it.

(ii) At which mango does Ramesh reach consumer equilibrium? Give reason.

(iii) What happens to Total Utility when Marginal Utility becomes zero?

Q.18 India is a developing nation with limited resources. The government must choose between producing consumer goods (like food, clothing) and capital goods (like machinery and infrastructure). If all resources are devoted to consumer goods, capital goods production is zero — and vice versa. The government is currently at a point inside the Production Possibility Curve, indicating idle resources. Economists suggest that proper utilisation of idle resources and technological advancement can help the economy grow.

(i) Which central problem of an economy does this case study highlight? Explain.

(ii) What does a point inside the PPC indicate about the economy? How can the economy move to the PPC frontier?

(iii) How can technological progress shift the PPC?

Q.19 XYZ Market Research Agency was hired to study consumer behaviour in a metropolitan city. They used two methods to collect data: (a) Direct interviews with 200 households selected randomly from different localities, and (b) Government census reports and National Sample Survey (NSS) data published by the Ministry of Statistics. The team noticed that the primary data was more accurate and relevant but costly, while secondary data was cheaper and quickly available but may not perfectly match their specific research question.

(i) Identify the primary and secondary sources of data mentioned in the case study.

(ii) What are the precautions that must be taken while using secondary data?

(iii) Why is primary data considered more reliable despite being costlier?

Q.20 During the COVID-19 pandemic, the Government of India used extensive statistical data to formulate economic policies. Data on unemployment rates, GDP growth, inflation, healthcare expenditure, and poverty levels was collected through surveys and government records. This statistical data helped policymakers decide on relief packages, vaccination priorities, and allocation of funds. Without reliable statistics, effective economic planning would not have been possible. As the famous economist Bowley noted, 'Statistics is the science of counting' — but in modern times, it is much more than that.

(i) How did statistics aid economic planning during the pandemic? Give two specific examples from the passage.

(ii) Explain any two limitations of statistics that policymakers must be aware of.

"Statistics is a means, not an end." Explain this statement in context of Economics

SUBJECT – PHYSICAL EDUCATION

Worksheet - 1

Chapter 1: Changing Trends and Career in Physical Education

1. Define physical education.
2. Explain the aims and objectives of physical education.
3. What are the changing trends in physical education?
4. Explain the importance of physical education in modern society.
5. State any four career options in physical education.
6. Differentiate between physical education and sports.
7. Explain the role of media in sports.

Chapter 2: Olympic Value Education

8. What are Olympic values?
9. Explain the motto of the Olympic Games.
10. Write short notes on:
 - a. Excellence
 - b. Friendship
 - c. Respect
11. Explain the importance of fair play in sports.
12. Differentiate between ancient Olympic Games and modern Olympic Games.
13. What are the objectives of Olympic value education?
14. Explain the role of Olympic values in personality development.

Chapter 3: Yoga

15. Define yoga.
16. Explain the importance of yoga in daily life.
17. State any four benefits of pranayama.

Case Study Questions

Case Study – 1

A school introduced yoga and fitness sessions in the morning assembly. Students became more active, disciplined, and focused in their studies and sports activities.

- i) Identify the importance of yoga highlighted in the above case.
- ii) Explain how yoga helps in improving concentration and discipline among students.

Case Study – 2

During an inter-school competition, one player appreciated the opponent's performance and followed all the rules honestly, even after losing the match.

i) Which Olympic value is highlighted in the above case? Explain its importance in sportsmanship.

Real-Life Based Activities

Activity 1

Prepare a chart showing different career opportunities available in the field of physical education and sports.

Activity 2

Practice any three yoga asanas for one week and write their benefits on physical and mental health.

SUBJECT – INFORMATION TECHNOLOGY

SECTION A - Multiple Choice Questions

- Which of the following is an example of system software?
a) MS Word b) Linux c) Photoshop d) Excel
- Which memory is known as volatile memory?
a) ROM b) Hard Disk c) RAM d) DVD
- Which device is used to connect a computer to a network?
a) CPU b) NIC c) ALU d) ROM
- What is the full form of CPU?
a) Central Process Unit b) Central Processing Unit
c) Computer Processing Unit d) Central Program Utility
- Which topology uses a central connecting device?
a) Bus b) Ring c) Star d) Mesh
- Which protocol is used to browse websites on the internet?
a) FTP b) SMTP c) HTTP d) POP3
- Which of the following is an output device?
a) Scanner b) Keyboard c) Printer d) Mouse
- What is the primary function of an operating system?
a) Play games b) Manage computer resources
c) Create presentations d) Browse websites
- Which generation of computers used Integrated Circuits (ICs)?
a) First Generation b) Second Generation
c) Third Generation d) Fourth Generation
- Which storage device has the largest capacity?
a) CD b) DVD c) Blu-ray Disc d) Floppy Disk

Section B – Subjective Questions

11. Explain the functions of an operating system.
12. Differentiate between RAM and ROM.
13. Explain any four characteristics of a computer.
14. What is network topology? Explain any two types of topology.
15. Describe the generations of computers briefly.
16. Explain the difference between application software and system software.
17. What is an IP address? Why is it important in networking?
18. Write the advantages and disadvantages of computer networks.

Section C – Case Study Based Questions

Case Study 1

A school installed a computer network connecting all computers in the computer lab to a central switch for sharing files, printers, and internet connection.

Questions:

1. Which topology is used in the above network?
2. Name the networking device mentioned in the case.
3. State one advantage of computer networking.
4. Which hardware component allows computers to connect to the network?

Case Study 2

Rohan purchased a new computer system for online classes and project work. He noticed that when the power goes off, some data stored temporarily gets erased automatically.

Questions:

1. Which type of memory loses data when power is switched off?
2. Is this memory primary or secondary memory?
3. Name one example of non-volatile memory.
4. Which software helps manage all hardware and software resources of the computer?

Case Study 3

A company uses different software applications for preparing documents, maintaining employee records, and managing the computer system.

Questions:

1. Which type of software is used for preparing documents?
2. Which software category manages computer hardware resources?
3. Give one example of application software.
4. Give one example of system software.

Activity Based Task:**Task 1 – Computer Hardware Study (For Even roll no.)**

1. Identify and list any 10 hardware components of a computer.
2. Write the function of each hardware component.
3. Paste or draw pictures of the hardware devices.

Task 2 – Software Classification (For Odd roll no.)

1. Differentiate between system software and application software.
2. Write any five examples of each.
3. Explain the role of an operating system in a computer system.

SUBJECT – BUSINESS STUDIES

Chapter 1 – Business, Trade and Commerce

1. Define business.
2. Differentiate between business, profession and employment.
3. Explain any four characteristics of business.
4. What is commerce?
5. Explain the role of auxiliaries to trade.

Chapter 2 – Forms of Business Organization

6. What is sole proprietorship?
7. State any four features of partnership.
8. Differentiate between private company and public company.
9. Explain any three merits of cooperative society.
10. What is Joint Hindu Family Business?

Chapter 3 – Private, Public and Global Enterprises

11. What are public enterprises?
12. Explain the features of departmental undertakings.
13. Differentiate between public sector and private sector.
14. What is a multinational company?
15. State any three merits of global enterprises.

Chapter 4 – Business Services

16. Define business services.
17. Explain the types of banking services.
18. What is insurance?

19. Differentiate between life insurance and general insurance.

20. Explain the importance of e-banking.

Case Study Questions

Case Study 1

Rohan started a small bakery in his locality with his own money. He manages all the activities of the bakery himself. He takes all business decisions and bears the profit or loss alone.

Questions:

1. Identify the form of business organisation.
2. State any two features of this form of organisation.
3. Mention one merit and one limitation of this form.
4. Why is this form suitable for small businesses?

Case Study 2

A clothing shop owner uses online banking for payments, mobile banking for checking balance, and ATM services for cash withdrawal. This helps him save time and manage transactions easily.

Questions:

1. Which business service is highlighted in the case?
2. State any two advantages of e-banking.
3. How do banking services help businesses?
4. Name any two modern banking facilities.

Real Life Based Activities

Activity 1 – Survey of Local Businesses (Roll No 1-14)

Objective: To understand different forms of business organizations in the local market.

Instructions:

1. Visit nearby shops or businesses.
2. Identify whether they are sole proprietorship, partnership, or company.
3. Write the name and type of at least five businesses.
4. Mention one advantage of each form of organisation.
5. Paste pictures or draw related diagrams.

Activity 2 – Banking Services Around Us (Roll No 15-28)

Objective: To study the use of banking services in daily life.

Instructions:

1. Visit a nearby bank or interview family members.
2. List the banking services they use.
3. Write how online banking helps people.
4. Collect a sample cheque, deposit slip, or ATM slip and paste it in the file.
5. Prepare a short report on the importance of banking services.

SUBJECT – PHYSICS

WORKSHEET - 1

1. If the units of energy, force and velocity are 50 J, 5 N and 2m/ s, what will be unit of mass, length and time?
2. The units of power, force and time are 1 kW, 1kN and 1 mili second. Find the unit of mass and length.
3. What will be the value of G in CGS units if in SI units it is $6.67 \times 10^{-11} \text{ m}^3 \text{ kg}^{-1} \text{ s}^{-2}$
4. What will be the dimensions of a/b in the relation $E = b \cdot x^2 / at$, where E is energy, x is distance and t is time.
5. In the relation $h = 2T \cos \alpha / r 2\rho g$, where h is the height, T is surface tension p is density and r is the radius of a capillary tube, α is angle of contact and g is acceleration due to gravity. Verify the correctness of the equation.
6. Give one example each of physical quantities which have SI unit but no dimensions, which neither have unit nor dimension.
7. Acceleration due to gravity is 10 m/s^2 . Determine its value in cm/minutes^2
8. If the units of force and length, each are doubled then how many times the unit of energy, Surface tension and stress be affected?
9. If velocity, density and frequency are taken as fundamental quantities, what will be the dimensions of linear momentum and surface tension?
10. If velocity, acceleration and force are chosen as fundamental units, what will be the dimensions of linear momentum, angular momentum and Young's modulus of elasticity?
11. A piece of lead has a mass of 23.94g and a volume of 2.10 cm^3 . Calculate the density in SI units.
12. A body starting from rest accelerates uniformly along a straight line, at the rate of 10 m/s^2 for 5 s. it moves for 2 s with uniform velocity of 50 m/s. then, it retards uniformly and comes to rest in 3 s. draw velocity-time graph of the body and find the total distance travelled by body.
13. A body covers one third of its journey with speed ' u ', next one third with speed ' v ' and the last one-third with speed ' w '. Calculate the average speed of the body during the entire journey.
14. A body travelling along a straight line traversed one-half of the total distance with a velocity v_1 . The remaining part of the distance was covered with a velocity v_1 , for half the time and with velocity v_2 for the other half of time. Find the mean velocity averaged over the whole time of motion.
15. The position of an object moving along x-axis is given by $x = a + bt^2$ where $a = 8.5 \text{ m}$, $b = 2.5 \text{ ms}$ and t is measured in seconds. What is its velocity at $t = 0 \text{ s}$ and $t = 2.0 \text{ s}$. What is the average velocity between $t = 2.0 \text{ s}$ and $t = 4.0 \text{ s}$?
16. The acceleration of a particle in ms^{-2} is given by $a = 3t^2 + 2t + 2$, where time t is in second. If the particle

starts with a velocity $v = 2 \text{ ms}^{-2}$ at $t = 0$, then find the velocity at the end of 2 s.

17. A burglar's car had a start with an acceleration of 2 ms^{-2} . A police vigilant party comes after 5 seconds and continued to chase the burglar's car with a uniform velocity of 20 ms . Find the time in which the police van overtakes the burglar's car.
18. A body starting from rest accelerates uniformly at the rate of 10 cms^2 and retards uniformly at the rate of 20 cms^{-2} . Find the least time in which it can complete the journey of 5 km if the maximum velocity attained by the body is 72 kmh^{-1} .
19. A stone falls from a cliff and travels 24.5 m in the last second before it reaches the ground at the foot of the cliff. Find the height of the cliff.
20. A body is dropped from rest at a height of 150 m , and simultaneously, another body is dropped from rest from a point 100 m above the ground. What is their difference in height after they have fallen (i) 2 s (ii) 3 s ? How does the difference in height vary with time?
21. A parachutist bails out from an aeroplane and after dropping a distance of 40 m , he opens the parachute and decelerates at 2 ms^{-2} . If he reaches the ground with a speed of 2 ms^{-1} , how long is he in the air? At what height did he bail out from the plane?

22. Make a project on any one of following topics :

- Create a simple hydraulic lift to demonstrate Pascal's principle.
 - Demonstrate simple harmonic motion and calculate the period of a pendulum.
 - Show how levers work and calculate mechanical advantage.
 - Construct different types of pulley systems to demonstrate mechanical advantage
 - Show how inclined planes reduce the effort needed to lift objects and calculate the mechanical advantage.
23. Create a flow chart of at least 40 physical quantity including their dimension formula, unit and symbol on a chart paper using your creativity. **(for odd Roll nos.)**
 24. Make a collage /picture on a cartridge sheet of latest scientific research using your creativity and innovation. **(for even Roll nos.)**

SUBJECT – CHEMISTRY

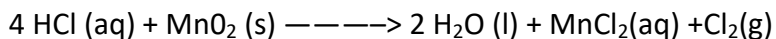
Project: Draw periodic table and their properties

Chapter-1(BASIC CONCEPTS OF CHEMISTRY)

- Calculate the molecular mass of the following:
(i) H_2O (ii) CO_2 (iii) CH_4
- Calculate the mass percent of different elements present in sodium sulphate (Na_2SO_4).
- Determine the empirical formula of an oxide of Iron which has 69.9 % iron and 30.1 % dioxygen by mass.
- Calculate the amount of carbon dioxide that could be produced when
 - 1 mole of carbon is burnt in air.
 - 1 mole of carbon is burnt in 16 g of dioxygen.
 - 2 moles of carbon are burnt in 16 g of dioxygen.
- Calculate the mass of sodium acetate (CH_3COONa) required to make 500 mL of 0.375 molar aqueous solution. Molar mass of sodium acetate is $82.0245 \text{ g mol}^{-1}$
- Calculate the concentration of nitric acid in moles per litre in a sample which has a density 1.41 g mL^{-1} and the mass percent of nitric acid in it is being 69%.
- How much copper can be obtained from 100 g of copper sulphate (CuSO_4)? (Atomic mass of Cu= 63.5 amu)
- Determine the molecular formula of an oxide of iron in which the mass percent of iron and oxygen are 69.9 and 30.1 respectively. Given that the molar mass of the oxide is 159.8 g mol^{-1} (Atomic mass: Fe = 55.85, O = 16.00 amu) Calculation of Empirical Formula. See Q3.
- In three moles of ethane (C_2H_6), calculate the following:
 - Number of moles of carbon atoms
 - Number of moles of hydrogen atoms
 - Number of molecules of ethane
- What is the concentration of sugar ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) in mol L^{-1} if its 20 g are dissolved in enough water to make a final volume up to 2 L?
- If the density of methanol is 0.793 kg L^{-1} , what is its volume needed for making 2.5 L of its 0.25 M solution?
- Pressure is determined as force per unit area of the surface. The S.I. unit of pressure, pascal, is as shown below:
 $1 \text{ Pa} = 1 \text{ Nm}^{-2}$. If mass of air at sea level is 1034 g cm^{-2} , calculate the pressure in pascal.
- What do you mean by significant figures?
- A sample of drinking water was found to be severely contaminated with chloroform, CHCl_3 supposed to be carcinogenic in nature. The level of contamination was 15 ppm (by mass).
 - Express this in percent by mass
 - Determine the molality of chloroform in the water sample.
- Express the following in scientific notation:
 - 0.0048
 - 234,000
 - 8008
 - 500.0
 - 6.0012
- How many significant figures are present in the following?
 - 0.0025
 - 208
 - 5005
 - 126,000
 - 500.0
 - 2.0034

17. Round up the following upto three significant figures:
 (i) 34.216 (ii) 10.4107 (iii) 0.04597 (iv) 2808
18. The following data were obtained when dinitrogen and dioxygen react together to form compounds:
19. In the reaction, $A + B_2 \longrightarrow AB_2$, identify the limiting reagent, if any, in the following mixtures
 (i) 300 atoms of A + 200 molecules of B (ii) 2 mol A + 3 mol B
 (iii) 100 atoms of A + 100 molecules of B (iv) 5 mol A + 2.5 mol B
 (v) 2.5 mol A + 5 mol B
20. Dinitrogen and dihydrogen react with each other to produce ammonia according to the following chemical equation:
 (i) $N_2(g) + 3H_2(g) \longrightarrow 2NH_3(g)$
 (ii) Will any of the two reactants remain unreacted?
 (iii) If yes, which one and what would be its mass?
21. How are 0.50 mol Na_2CO_3 and 0.50 M Na_2CO_3 different?
22. If ten volumes of dihydrogen gas reacts with five volumes of dioxygen gas, how many volumes of water vapour could be produced?
23. Convert the following into basic units:
 (i) 28.7 pm (ii) 15.15 μs (iii) 25365 mg
24. Which one of the following will have largest number of atoms?
 (i) 1 g Au (s) (ii) 1 g Na (s) (iii) 1 g Li (s) (iv) 1 g of $Cl_2(g)$
 (Atomic masses: Au = 197, Na = 23, Li = 7, Cl = 35.5 amu)
25. Calculate the molarity of a solution of ethanol in water in which the mole fraction of ethanol is 0.040.
26. *What will be the mass of one ^{12}C atom in g?*
27. How many significant figures should be present in the answer of the following?
 (i) $\frac{0.02856 \times 298.15 \times 0.112}{0.5785}$ (ii) 5×5.364 (iii) $0.0125 + 0.7864 + 0.0215$
28. Use the data given in the following table to calculate the molar mass of naturally occurring argon.
- | Isotope | Isotopic molar mass | Abundance |
|-----------|-------------------------------|-----------|
| ^{36}Ar | $35.96755 \text{ g mol}^{-1}$ | 0.337 |
| ^{38}Ar | $37.96272 \text{ g mol}^{-1}$ | 0.063 |
| ^{40}Ar | $39.9624 \text{ g mol}^{-1}$ | 99.600 |
29. Calculate the number of atoms in each of the following:
 (i) 52 moles of He (ii) 52 u of He (iii) 52 g of He
30. A welding fuel gas contains carbon and hydrogen only. Burning a small sample of it in oxygen gives 3.38 g carbon dioxide, 0.690 g of water and no other products. A volume of 10.0 L (measured at S.T.P.) of this welding gas is found to weigh 11.6 g. Calculate:
 (i) empirical formula,
 (ii) molar mass of the gas, and
 (iii) molecular formula.
31. Calcium carbonate reacts with aqueous HCl according to the reaction
 $CaCO_3(s) + 2HCl(aq) \longrightarrow CaCl_2(aq) + CO_2(g) + H_2O(l)$.
 What mass of $CaCO_3$ is required to react completely with 25 mL of 0.75 M HCl?
32. Chlorine is prepared in the laboratory by treating manganese dioxide (MnO_2) with aqueous hydrochloric

acid according to the reaction.



How many grams of HCl react with 5.0 g of manganese dioxide? (Atomic mass of Mn = 55 u)

Chapter-2: Atomic Structure

- (i) Calculate the number of electrons which will together weigh one gram.
(ii) Calculate the mass and charge of one mole of electrons.
- (i) Calculate the total number of electrons present in one mole of methane.
(ii) Find (a) the total number and (b) the total mass of neutrons in 7 mg of ^{14}C .
(Assume that mass of a neutron = 1.675×10^{-27} kg).
(iii) Find (a) the total number and (b) the total mass of protons in 34 mg of NH_3 at STP.
Will the answer change if the temperature and pressure are changed?
- How many protons and neutrons are present in the following nuclei
(i) $^{13}_6\text{C}$ (ii) $^{16}_8\text{O}$ (iii) $^{24}_{12}\text{Mg}$ (iv) $^{56}_{26}\text{Fe}$ (v) $^{88}_{38}\text{Sr}$
- Write the complete symbol for the atom (X) with the given atomic number (Z) and atomic mass (A)
(i) $Z = 17, A = 35$
(ii) $Z = 92, A = 233$
(iii) $Z = 4, A = 9$.
- Yellow light emitted from a sodium lamp has a wavelength (λ) of 580 nm. Calculate the frequency (ν) and wave number ($\bar{\nu}$) of yellow light.
- Calculate the energy of each of the photons which
(i) correspond to light of frequency 3×10^{15} Hz
(ii) have wavelength of 0.50 Å.
- Calculate the wavelength, frequency, and wavenumber of light wave whose period is 2.0×10^{-10} s.
- What is the number of photons of light with wavelength 4000 pm which provide 1 Joule of energy ?
- A photon of wavelength 4×10^{-7} m strikes on metal surface ; the work function of the metal being 2.13 eV. Calculate.
(i) the energy of the photon,
(ii) the kinetic energy of the emission
(iii) the velocity of the photoelectron. (Given $1 \text{ eV} = 1.6020 \times 10^{-19} \text{ J}$).
- Electromagnetic radiation of wavelength 242 nm is just sufficient to ionise the sodium atom. Calculate the ionisation energy of sodium in kJ mol^{-1} .
- A 25 watt bulb emits monochromatic yellow light of wavelength 0.57 μm . Calculate the rate of emission of quanta per second.
- Electrons are emitted with zero velocity from a metal surface when it is exposed to radiation of wavelength 6800 Å. Calculate threshold frequency (ν_0) and work function (W_0) of the metal.
- What is the wavelength of the light emitted when the electron in a hydrogen atom undergoes transition from the energy level with $n = 4$ to energy level $n = 2$? What is the colour corresponding to this wavelength? (Given $R_H = 109678 \text{ cm}^{-1}$)
- How much energy is required to ionise a hydrogen atom if an electron occupies $n = 5$ orbit? Compare your

- answer with the ionisation energy of H atom (energy required to remove the electron from $n = 1$ orbit)
15. What is the maximum number of emission lines when the excited electron of a hydrogen atom in $n = 6$ drops to the ground state ?
 16. (i) The energy associated with first orbit in hydrogen atom is $-2.17 \times 10^{-18} \text{ J atom}^{-1}$. What is the energy associated with the fifth orbit ?
(ii) Calculate the radius of Bohr's fifth orbit for hydrogen atom.
 17. Calculate the wave number for the longest wavelength transition in the Balmer series of atomic hydrogen.
 18. What is the energy in joules required to shift the electron of the hydrogen atom from the first Bohr orbit to the fifth Bohr orbit and what is the wavelength of light emitted when the electron returns to the ground state ? The ground state electronic energy is $-2.18 \times 10^{-18} \text{ ergs}$.
 19. The electronic energy in hydrogen atom is given by $E_n (-2.18 \times 10^{-18} \text{ J}) / n^2$. Calculate the energy required to remove an electron completely from the $n = 2$ orbit. What is the longest wavelength of light in cm that can be used to cause this transition?
 20. Calculate the wavelength of an electron moving with a velocity of $2.05 \times 10^7 \text{ m s}^{-1}$.
 21. The mass of an electron is $9.1 \times 10^{-31} \text{ kg}$. If its kinetic energy is $3.0 \times 10^{-25} \text{ J}$, calculate its wavelength.
 22. Which of the following are iso-electronic species?
 $\text{Na}^+, \text{K}^+, \text{Mg}^{2+}, \text{Ca}^{2+}, \text{S}^{2-}, \text{Ar}$

SUBJECT – ACCOUNTANCY

Section A – Multiple Choice Questions

1. Accounting is mainly concerned with:
 - a) Entertainment
 - b) Financial transactions
 - c) Games
 - d) Politics
2. Which of the following is not an objective of accounting?
 - a) Recording transactions
 - b) Preparing reports
 - c) Increasing losses
 - d) Providing information.
3. The accounting concept which assumes business and owner are separate is:
 - a) Going concern concept
 - b) Business entity concept
 - c) Cost concept
 - d) Money measurement concept
4. Revenue should be recognized when it is:
 - a) Earned
 - b) Planned
 - c) Imagined
 - d) Lost
5. The concept which assumes business will continue for a long period is:
 - a) Matching concept
 - b) Going concern concept
 - c) Dual aspect concept
 - d) Accounting period
7. Journal is known as:
 - a) Secondary book
 - b) Subsidiary book
 - c) Book of original entry
 - d) Cash book
8. Purchase of furniture for cash will:
 - a) Increase cash
 - b) Decrease furniture
 - c) Increase furniture and decrease cash
 - d) Increase liabilities
9. Debit the receiver and credit the giver is related to:
 - a) Personal account
 - b) Real account
 - c) Nominal account
 - d) Bank accounts
10. Balance sheet shows:
 - a) Income and expenses
 - b) Assets and liabilities
 - c) Purchases and sales
 - d) Drawings only

Section B – Practical Questions

1. Pass journal entries for the following:

- Started business with cash Rs. 1,00,000.
- Purchased goods for cash Rs. 20,000.
- Sold goods for cash Rs. 15,000.
- Paid salary Rs. 5,000.

2. Prepare accounting equation from the following:

- Started business with cash Rs. 50,000.
- Bought furniture Rs. 10,000.
- Purchased goods on credit Rs. 15,000.

3. Prepare a Balance Sheet from the following:

- Cash Rs. 10,000
- Furniture Rs. 20,000
- Creditors Rs. 15,000
- Capital Rs. 25,000

4. Pass journal entries for the following:

- Commenced business with cash Rs. 80,000.
- Purchased machinery for Rs. 25,000.
- Bought goods on credit from Ram Rs. 15,000.
- Paid wages Rs. 3,000.
- Sold goods to Shyam Rs. 12,000.

5. Prepare Accounting Equation from the following:

- Started business with cash Rs. 1,00,000.
- Purchased furniture Rs. 15,000.
- Bought goods Rs. 20,000 on credit.
- Paid salary Rs. 5,000.
- Received commission Rs. 2,000.

6. Journalise the following transactions:

- Cash deposited into bank Rs. 10,000.
- Received cash from debtor Rs. 5,000.
- Paid electricity bill Rs. 2,000.
- Purchased stationery Rs. 1,500.

7. Calculate the effect on Accounting Equation:

- Owner invested Rs. 50,000.
- Purchased goods Rs. 10,000.
- Sold goods costing ₹6,000 for Rs. 8,000.
- Paid rent Rs. 2,000

Section C – Case Study Questions

Case Study 1

Priya started a business with cash Rs. 1,50,000. She purchased furniture for Rs. 20,000, goods for Rs. 40,000 and sold goods costing Rs. 10,000 for Rs. 15,000 cash.

Questions:

1. What is the capital introduced by Priya?
2. Identify the assets in the business.
3. Prepare the Accounting Equation after each transaction.
4. Calculate the final cash balance.
5. What is the profit earned by Priya?

Case Study 2

Mohit started business with Rs. 2,00,000. He deposited Rs. 50,000 into a bank, purchased goods for cash Rs. 30,000, sold goods for cash Rs. 45,000 and paid rent Rs. 5,000.

Questions:

1. Pass journal entries for all the transactions.
2. Which account will be debited when goods are purchased?
3. Which account will be credited when rent is paid?
4. What is the journal entry for cash sales?
5. Calculate the closing cash balance

Case Study 3

Rohan started a stationery shop with Rs. 2,00,000. He purchased furniture for Rs. 30,000, bought goods worth Rs. 50,000 and sold goods worth Rs. 70,000.

Questions:

1. Identify the assets in the business.
2. What is the capital introduced by Rohan?
3. Which accounting concept is applied here?
4. Prepare the accounting equation.
5. Calculate the total Assets.

Section D – Real-Life Based Activities

Activity 1 – Visit to a Local Shop (Roll No. 1-14)

Objective: To understand how accounting is used in daily business.

Instructions:

1. Visit a nearby grocery or stationery shop.
2. Observe how sales and purchases are recorded.
3. Ask the shopkeeper about credit transactions.
4. Write a short report on:
 - a) Importance of accounting
 - b) Use of bills and invoices
 - c) Maintenance of cash records

Activity 2 – Prepare Home Expense Record (Roll No- 15-30)

Objective: To learn practical use of accounting at home.

Instructions:

1. Record your family expenses for one week.
2. Divide expenses into categories such as:
 - a) Food
 - b) Transport
 - c) Electricity
 - d) Education
3. Prepare a simple table showing total expenses.
4. Identify the category with highest spending.

SUBJECT – PSYCHOLOGY

Part A: Naturalistic Observation

Choose a public place (e.g., a park, a grocery store, or a family gathering). Spend 30 minutes silently observing the interactions between people. Write an 'Observation Report' including:

- ✓ Setting and Time: Where and when did the observation take place?
- ✓ Non-verbal Communication: What did you notice about body language, eye contact, and gestures?
- ✓ Social Dynamics: How did different age groups or genders interact?
- ✓ Reflection: How did your presence (as an observer) potentially change the environment?

Part B: Roots of Psychology Poster

On an **A3 size sheet** or chart paper, create a 'Timeline of Psychology' or a 'Tree of Schools'. Highlight the following schools of thought with their key proponents:

- ✓ Structuralism (Wilhelm Wundt)
- ✓ Functionalism (William James)
- ✓ Behaviorism (John B. Watson)
- ✓ Psychoanalysis (Sigmund Freud)
- ✓ Humanistic Perspective (Carl Rogers/Abraham Maslow)

Part C: Life-Span Development Interview

Interview a grandparent or an elderly neighbor (aged 60+). Ask them about their childhood, their greatest challenges, and what brings them happiness now. Summarize the interview and link it to the concept of 'Human Development'.

Part D: Cinema & Behavior

Watch one of the following movies and write a 2-page report on the psychological themes portrayed (e.g., memory, emotions, perception, or personality):

- ✓ Inside Out (Focus on Emotions)
- ✓ The Social Network (Focus on Social Behavior)
- ✓ English Vinglish (Focus on Self-Esteem and Learning)

Instructions for Submission:

- ✓ The work should be compiled in a neat folder.
- ✓ Include a creative cover page and a Table of Contents.
- ✓ The assignment is due on the first day of school reopening.

SUBJECT – VALUE EDUCATION

Values & Life Skills Assignment

1. Integrity – “The Internship Dilemma”

Case Study:

During his summer internship at a startup, Aryan discovered that the team was inflating user engagement numbers in a report for investors. His supervisor said, “It’s just marketing. No one gets hurt.” Aryan felt uncomfortable because the data misrepresented the product’s real performance. He knew reporting it could risk his internship and team relationships, but staying silent would make him complicit. After discussing with a mentor, he drafted an internal note presenting the real data alongside recommendations to improve engagement ethically. The company revised its approach and later offered him a pre-placement interview based on his credibility.

Tick the correct answer:

1. Why was Aryan uncomfortable with the report?
 - a) He disliked his supervisor
 - b) He wanted to write the report himself
 - c) The data misrepresented the product’s actual performance
 - d) The internship was unpaid
2. What risk did Aryan face by speaking up?
 - a) Losing his internship and damaging team relationships
 - b) Failing his school exams
 - c) Getting sued by the company
 - d) Being transferred to another department
3. How did Aryan handle the situation professionally?
 - a) He posted about it on social media
 - b) He quit immediately
 - c) He ignored it and focused on his own tasks
 - d) He presented factual data and ethical recommendations internally
4. What does this case show about integrity in professional settings?
 - a) Integrity damages career growth
 - b) Integrity is only for senior employees
 - c) Integrity matters only in finance roles
 - d) Integrity builds long-term credibility and trust

Short Answer & Reflection:

1. Write 10 sentences: Analyse a real or hypothetical situation where “everyone does it” is used to justify unethical behavior. What frameworks can help you evaluate such choices?
2. Activity: Integrity Audit – Identify one area where integrity is often compromised. Propose 2 systemic changes that could reduce that behavior.

2. Discipline – “The 120-Day Plan”

Case Study:

Ishita was preparing for a national entrance exam while managing Class 11 coursework. Initially, she studied reactively—cramming before tests and neglecting long-term prep. After scoring poorly in a mock test, she designed a 120-day plan: 2 hours daily for entrance prep, weekly concept reviews, and monthly full-length tests. She used habit stacking—studying right after school—and tracked her progress in a log. She allowed one “flex day” weekly for rest or catch-up. The structured approach reduced burnout and improved her mock scores by 22% over 3 months.

Tick the correct answer:

1. What was the main flaw in Ishita’s initial study approach?
 - a) She studied too much
 - b) She avoided all schoolwork
 - c) She studied reactively without a long-term plan
 - d) She studied alone without guidance
2. Which strategy helped her maintain consistency?
 - a) Studying only on weekends
 - b) Joining multiple coaching centers
 - c) Reducing sleep to study more
 - d) Habit stacking and progress tracking
3. What role did the “flex day” play?
 - a) It prevented burnout and allowed catch-up
 - b) It encouraged procrastination
 - c) It replaced regular study days
 - d) It was unused
4. What key lesson about discipline emerges here?
 - a) Discipline means rigidity with no breaks
 - b) Discipline works only for high-achievers
 - c) Discipline combines structure, flexibility, and self-monitoring
 - d) Discipline is ineffective without coaching

Short Answer & Activity:

1. Write 10 sentences: Evaluate your current study/work system. What’s one habit, one system, and one accountability measure you could implement to improve discipline over the next 90 days?
2. Activity: Discipline System Design – Create a one-page plan for the next 30 days. Include: daily non-negotiables, weekly review time, and a metric to measure progress. Follow it for 7 days and reflect on what worked.

Note for Parents:

At Grade 11, students are navigating identity, ambition, and ethical pressure. Encourage discussions on real-world applications, not just theoretical answers. Focus on systems and decision-making frameworks.

Students are instructed to complete the Holiday Homework neatly in their Moral Education Notebook and on the worksheets provided only.

SUBJECT – POLITICAL SCIENCE

Worksheet 1: Equality

Section A – Very Short Answer

1. What is meant by equality?
2. Define political equality.
3. What is social equality?
4. What is universal adult franchise?
5. Name one thinker associated with equality.

Section B – Short Answer

6. Differentiate between equality and uniformity.
7. Explain natural and social inequalities.
8. What is meant by equality of opportunity?
9. Why is equality important in democracy?
10. Write any two features of equality.

Section C – Long Answer

11. Explain the different dimensions of equality.
12. Discuss the relationship between equality and justice.
13. Explain how inequality exists in society despite legal equality.

Section D – Case-Based Question

14. Read the passage and answer:

"In a society, all citizens have equal voting rights, but some groups are still deprived of education and jobs."

- a) What type of equality is present here?
- b) What type of inequality still exists?
- c) Suggest one way to reduce this inequality.

Section E – Assertion & Reason

15. Assertion: Equality means treating everyone exactly the same.
Reason: People have different needs and conditions.
 - a) Both A and R are true and R is correct explanation
 - b) Both A and R are true but R is not correct explanation
 - c) A is true, R is false
 - d) A is false, R is true

Worksheet 2: Election and Representation

Section A – Very Short Answer (1 mark each)

1. What is an election?
2. Define constituency.
3. What is representation?
4. What is secret ballot?
5. What is Election Commission?

Section B – Short Answer (2–3 marks each)

6. Explain the meaning of Universal Adult Franchise.
7. What are reserved constituencies?
8. Difference between direct and indirect elections.
9. What is proportional representation?
10. What is First Past the Post system (FPTP)?

Section C – Long Answer (4–5 marks each)

11. Explain the role of the Election Commission in India.
12. Compare FPTP and Proportional Representation system.
13. Explain the importance of elections in a democracy.

Section D – Case-Based Question

14. Read the case:

"In a country, the candidate who gets the highest number of votes wins, even if they do not get the majority."

- a) Identify the system used.
 - b) Mention one advantage of this system.
 - c) Mention one disadvantage.
15. **Assertion:** Elections are essential for democracy.
Reason: They allow people to choose their representatives.
- a) Both A and R are true and R is correct explanation
 - b) Both A and R are true but R is not correct explanation
 - c) A is true, R is false
 - d) A is false, R is true