



**St. Mary's School, Dwarka**  
**Holiday Homework 2026**  
**Class: XII**  
**Worksheet 3**  
**Subject: English Core**

**No. of questions:- 7**

**MM:25**

**General instructions**

- There are four sections-Reading, Writing, Literature and Activity.
- Attempt all questions.
- Read pages 37 to 41 of the lesson 'The Enemy'.
- Kindly go through the recommended reading list provided below.

**READING**

**Q1. Read the passage carefully:-**

**(6 marks)**

1. Human beings often perceive themselves as rational creatures guided primarily by logic and deliberate thought. Yet in unfamiliar or threatening environments, instinct frequently supersedes intellect. Survival, in such circumstances, becomes less a conscious strategy and more an intricate biological response shaped by thousands of years of evolution. The human mind, when confronted with uncertainty, rapidly shifts its priorities from comfort and abstraction to vigilance, adaptation, and self-preservation.
2. This transformation is particularly evident when individuals are displaced from familiar surroundings. Explorers stranded in polar regions, migrants navigating unknown territories, or even ordinary travellers lost in remote landscapes frequently report heightened sensory awareness. Sounds appear sharper, time seems distorted, and minor decisions acquire disproportionate significance. Psychologists suggest that unfamiliar environments intensify the brain's alert systems because uncertainty itself is interpreted as potential danger.
3. Interestingly, survival instincts are not limited to physical endurance alone. Human beings also exhibit psychological survival mechanisms designed to preserve emotional stability during periods of isolation or fear. Individuals may create routines, form emotional attachments to objects, or construct narratives of hope in order to maintain mental resilience. Historical accounts of prisoners, shipwreck survivors, and astronauts demonstrate that psychological adaptability often determines survival as much as physical strength.

4. However, survival instincts can produce contradictory outcomes. In some situations, danger encourages cooperation and empathy, strengthening collective resilience. In others, fear provokes suspicion, aggression, or selfishness. Extreme conditions therefore reveal not a singular “human nature” but the extraordinary variability of human behaviour under pressure. The same environment capable of inspiring courage in one individual may generate panic in another.
5. Modern civilisation frequently creates the illusion that survival instincts are obsolete relics of humanity’s primitive past. Yet crises such as natural disasters, pandemics, and forced displacement repeatedly demonstrate how quickly these instincts re-emerge. Beneath technological sophistication and social convention lies a deeply adaptive impulse: the determination to endure even when certainty collapses.

**Based on the reading of the above passage, answer the following questions. (1x6=6)**

**(i) What does the passage suggest about human behaviour in unfamiliar environments?**

- A. Instinctive responses frequently override rational deliberation.
- B. Individuals become entirely incapable of logical reasoning.
- C. Survival instincts emerge only during physical disasters.
- D. Human beings naturally prefer uncertainty to stability.

**(ii) Why does the author mention explorers, migrants, and travellers in the second paragraph?**

- A. illustrate humanity’s fascination with adventure
- B. demonstrate how unfamiliar surroundings heighten psychological alertness
- C. criticise modern society’s dependence on technology
- D. compare different forms of migration

**(iii) The phrase ‘minor decisions acquire disproportionate significance’ implies that:**

- A. individuals lose the ability to make rational choices
- B. unfamiliar environments simplify decision-making processes
- C. even seemingly trivial choices begin to feel critically important
- D. people exaggerate danger to attract sympathy

**(iv) According to the passage, psychological survival mechanisms help individuals to:**

- A. strengthen physical endurance during crises
- B. preserve emotional stability under stressful conditions
- C. avoid all forms of social interaction
- D. eliminate fear through intellectual reasoning

(v) Which of the following best reflects the author's view of survival instincts?

- A. reveal the remarkable adaptability and variability of human behaviour.
- B. are primitive impulses no longer relevant in modern civilisation.
- C. inevitably encourage aggression and selfishness.
- D. function independently of emotional and psychological states.

(vi) What is the central idea of the passage?

- A. Physical strength is the primary determinant of human survival.
- B. Modern technology has weakened humanity's natural instincts.
- C. Human beings respond identically when confronted with danger.
- D. Survival instincts continue to shape physical and psychological human behaviour.

### WRITING

**Q2.** You are the Head Boy/Head Girl of St. Mary's School Dwarka. The Literary Club of your school is conducting a Book Donation Drive to collect books for underprivileged children in rural schools. Draft a notice requesting students to contribute books and mentioning the dates, venue, and purpose of the drive. (4)

### LITERATURE

**Answer the following questions in 40 to 50 words:-** (2x3=6)

**Q3.** Why does the author describe Antarctica as a place that helps us understand Earth's past, present, and future?

**Q4.** Why does the poet compare her mother's face to a "late winter's moon"?

**Q5.** What does Charley's fascination with Galesburg reveal about his state of mind?

**Answer the following question in 150 words:-** (5)

**Q6.** The author describes phytoplankton as the "grasses of the sea." Explain the significance of phytoplankton in maintaining ecological balance. How does the example of phytoplankton become a warning about climate change and environmental fragility? **Divide your answer into at least three small paragraphs.**

### ACTIVITY

**Q7.** Watch the movie '**Seven Years in Tibet**' and answer the question in 120 words. Divide your answer into at least three small paragraphs. (4)

How do both the film and your lesson 'The Journey to the End of the Earth' present isolation as a positive experience rather than mere loneliness?

**Suggested Reading List**

**“Every page read is a step towards greater understanding of the world and oneself.”**

During the holidays, students are encouraged to read **at least one book** from the suggested reading list given below. These books explore themes such as identity, courage, loneliness, friendship, social criticism, hope, and human resilience—many of which connect meaningfully with the themes studied in Class XII English.

<b>Book &amp; Author</b>	<b>Brief Summary</b>
<b>A Man Called Ove by Fredrik Backman</b>	A grumpy old man’s lonely routine is disrupted by lively neighbours who gradually change his life. Humorous yet emotional, the novel explores grief, friendship, belonging, and the healing power of human connection.
<b>The Catcher in the Rye by J. D. Salinger</b>	Through the voice of teenager Holden Caulfield, the novel captures alienation, confusion, rebellion, and the struggles of growing up. Its honest portrayal of adolescence continues to resonate with young readers worldwide.
<b>The White Tiger by Aravind Adiga</b>	A darkly satirical novel tracing the rise of a poor village boy in modern India. Sharp and provocative, it exposes class inequality, corruption, ambition, and the harsh realities hidden beneath economic progress.

**Subject: Hindi Core**

No. of questions: 10

M.M. 25

प्रश्न 1 निम्नलिखित पद्यांश पर आधारित प्रश्नों के उत्तर निर्देश के अनुसार दीजिए : (5×1=5)

अंबर के आँगन में देखो, कैसे रश्मि बिखरी है,  
युग-युग की सोई जनता, अब राह नई पर निकली है।  
वो जंजीरें टूट चुकी हैं, वो अंधकार अब टलने को,  
नई सुबह के स्वागत में, हम तैयार हैं चलने को।  
कल तक जो थे हम मूक, न मस्तक अपना उठाते थे,  
दुखों की लंबी रातों में, हम केवल आँसू बहाते थे।  
पर अब न सहेंगे अत्याचार, अब न नत होंगे मस्तक पर,  
नव-उम्मीद के सूर्य संग, हम बढ़ेंगे अब निर्भय होकर।  
देखो! कैसा ओज भरा है, देश के इन नौजवानों में,  
हौसलों की उड़ान देखो, जो सीमा को नाप रहे।  
यह न समझो हम निर्बल हैं, यह न समझो हम भोले हैं,  
हम वो आँधी हैं जो लाएँगे, राष्ट्र प्रेम के नए सवेरे।  
मेहनत की इस पावन माटी में, पसीना जो बहाएँगे,  
धरती के इस कण-कण से, हम सोना फिर बरसाएँगे।

(i) काव्यांश में "नई राह" पर चलने का क्या अर्थ है?

- (क) नई सड़क पर चलना
- (ख) नए विचारों और प्रगति की ओर बढ़ना
- (ग) देश छोड़कर विदेश जाना
- (घ) पुरानी परंपराओं का पालन करना

(ii) कवि ने नौजवानों को क्या माना है?

- (क) निर्बल
- (ख) आँधी
- (ग) भोला
- (घ) मूक

(iii) "पसीना बहाकर धरती से सोना बरसाने" का तात्पर्य है?

- (क) खदानों से सोना निकालना
- (ख) बहुत अधिक मेहनत करके समृद्धि लाना
- (ग) किसानों का काम छोड़ देना
- (घ) जमीन को बेचना

(iv) नवयुग के नौजवानों में कौन-सी भावनाएँ और गुण व्याप्त हैं?

(v) इस काव्यांश के लिए एक उचित शीर्षक सुझाएँ और कारण भी स्पष्ट करें।

**प्रश्न 2** 'वन संरक्षण' विषय पर 100 से 120 शब्दों में अनुच्छेद लिखिए। (5×1=5)

**प्रश्न 3** मुद्रित माध्यमों में लेखन में किन बातों का ध्यान रखना चाहिए ? (2×2=4)

**प्रश्न 4** एंकर-बाइट क्या है?

**दिए गए प्रश्नों के उत्तर दीजिए :** (1½×4=6)

**प्रश्न 5** भक्तिन की कहानी अधूरी है; पर उसे खोकर मैं इसे पूरी नहीं करना चाहती।' इस कथन का क्या आशय है?

**प्रश्न 6** लेखक ने पाठ का नाम 'बाज़ार दर्शन' क्यों रखा होगा?

**प्रश्न 7** यौवन के उन्माद से कवि हरिवंश राय बच्चन का क्या तात्पर्य है?

**प्रश्न 8** काले मेघा पानी दे' पाठ से हमें क्या शिक्षा मिलती है?

**प्रश्न 9** यशोधर बाबू दफ़्तर पैदल क्यों जाते थे? (1×1=1)

**परियोजना कार्य:**

**प्रश्न 10** लेखिका महादेवी वर्मा की किसी एक प्रसिद्ध रचना का सार लगभग 120 शब्दों में चित्र सहित लिखिए। (4×1=4)

**Subject: Mathematics**

No. of questions: 10

M.M. 25

Q1. If  $A = \begin{bmatrix} 1 & 3 \\ 2 & 1 \end{bmatrix}$ , find the determinant of the matrix  $A^2 - 2A$ . (1)

Q2. Evaluate the determinant (1)

$$\Delta = \begin{vmatrix} 1 & \sin \theta & 1 \\ -\sin \theta & 1 & \sin \theta \\ -1 & -\sin \theta & 1 \end{vmatrix} \text{ Also, prove that } 2 \leq \Delta \leq 4.$$

Q3. For what value of x the matrix  $A = \begin{bmatrix} x-1 & 1 & 1 \\ 1 & x-1 & 1 \\ 1 & 1 & x-1 \end{bmatrix}$  is singular? (1)

Q4. Solve  $\begin{vmatrix} x-2 & 2x-3 & 3x-4 \\ x-4 & 2x-9 & 3x-16 \\ x-8 & 2x-27 & 3x-64 \end{vmatrix} = 0$  (1)

Q5. Find  $A^{-1}$ , where  $A = \begin{bmatrix} 1 & 2 & -3 \\ 2 & 3 & 2 \\ 3 & -3 & -4 \end{bmatrix}$ . Hence solve the system of equations (4)

$$x + 2y - 3z = -4, 2x + 3y + 2z = 2, 3x - 3y - 4z = 11$$

Q6. If  $A = \begin{bmatrix} 1 & -1 & 1 \\ 2 & 1 & -3 \\ 1 & 1 & 1 \end{bmatrix}$ , find  $A^{-1}$  and hence solve the system of linear equations (4)

$$x + 2y + z = 4, -x + y + z = 0, x - 3y + z = 2$$

Q7. Determine the product  $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix} \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$  and use it to solve the system of equations (4)

:

$$x - y + z = 4, x - 2y - 2z = 9, 2x + y + 3z = 1$$

Q8. Determine the product  $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix} \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$  and use it to solve the system of equations (4)

$$: x + 3z = 9, -x + 2y - 2z = 4, 2x - 3y + 4z = -3$$

Q9. Solve the following system of equations, using matrix method (4)

$$x + 2y + z = 7, x + 3z = 11, 2x - 3y = 1$$

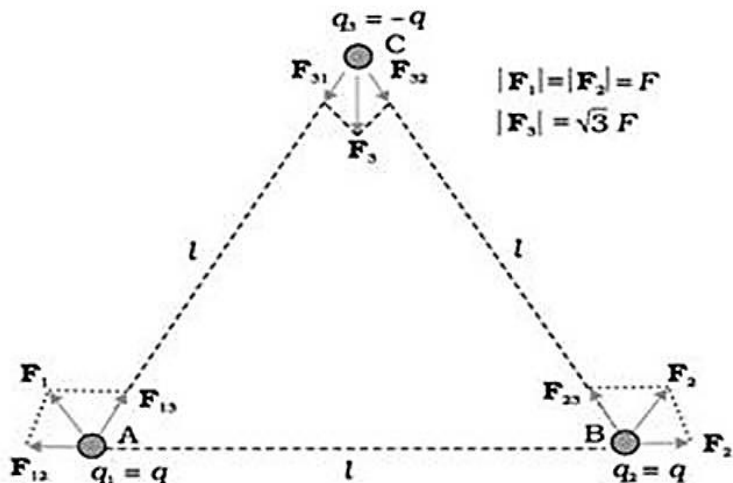
Q10. Show that  $A = \begin{bmatrix} 2 & -3 \\ 3 & 4 \end{bmatrix}$  satisfies the equation  $x^2 - 6x + 17 = 0$ . Hence, find  $A^{-1}$ . (1)

**Subject: Physics****No. of questions: 10****M.M. 25**

Topic : Electrostatics

**Please write answers to this worksheet in your classwork notebook.**

- Q1.** Two charges, one  $+5 \mu\text{C}$  and another  $5 \mu\text{C}$ , are placed 1 mm apart. Calculate the dipole moment. (1)
- Q2.** A charge  $q$  is placed at the centre of the line joining two equal charges  $Q$ . Show that the system of three charges will be in equilibrium if  $q = Q/4$ . (2)
- Q3.** How many electrons should be removed from a coin of mass 1.6g, so that it may just float in an electric field of intensity  $10^9 \text{ NC}^{-1}$ , directed upward? (2)
- Q4.** Consider the charges  $q$ ,  $q$  and  $-q$  placed at the vertices of an equilateral triangle, as shown in figure. What is the force on each charge? (2)



- Q5.** Two charges  $3 \times 10^{-8} \text{ C}$  and  $2 \times 10^{-8} \text{ C}$  are located 15 cm apart. Find the point on the line, joining the two charges, where the electric potential is zero. (2)
- Q6.** A point charge causes an electric flux of  $-1.0 \times 10^3 \text{ Nm}^2 / \text{C}$  to pass through a spherical Gaussian surface of 10.0 cm radius centred on the charge. (i) If the radius of the Gaussian surface was doubled, how much flux would pass through the surface? (ii) What is the value of the point charge? (2)
- Q7.** Two-point charges  $q_1 = +0.2 \text{ C}$  and  $q_2 = +0.4 \text{ C}$ , are placed 0.1m apart. Calculate the electric field at (a) the midpoint between the charges. (b) A point on the line joining  $q_1$  and  $q_2$  such that it is 0.05 m away from  $q_2$  and 0.15m away from  $q_1$ . (3)
- Q8.** A charge is distributed uniformly over a ring 'a'. Obtain an expression for the electric intensity  $E$  at a point on the axis of the ring. Hence, show that for a point at large distances from the ring, it behaves like a point charge. (3)

Q9. Three capacitors of capacitances 3 pF, 6 pF, and 9 pF are connected in parallel. (i) What is the total capacitance of the combination? (ii) Determine the charge on each capacitor if the combination is connected to a 90V supply. (3)

Q10. (i) Define electric flux and give its SI unit. If the electric field intensity is  $E=6i + 3j+4k$ , calculate the electric flux through a surface of area 15 units in the X-Z plane.

(ii) Find the amount of work done in rotating an electric dipole of dipole moment  $3 \times 10^{-8}\text{Cm}$ , from its position of stable equilibrium, to the position of unstable equilibrium, in a uniform electric field of intensity  $10^4\text{N/C}$ .

(iii) Draw a graph showing the variation of the electric potential with distance  $r$  due to a point charge.

(iv) What is the angle between the direction of electric field intensity and the electric dipole moment vector at any (a) axial point and (b) equatorial point of an electric dipole?

(1.5+1.5+1+1=5)

**Activity:** During thunderstorms, clouds accumulate large amounts of electric charge due to friction between water droplets and ice particles. When the potential difference becomes very large, discharge occurs between clouds or between cloud and Earth in the form of lightning.

This activity demonstrates:

- Charging by friction
- Attraction due to electrostatic force
- Sudden discharge similar to lightning

Explain the reason for the following real life applications

Real-Life Application

- Lightning conductors protect buildings by safely transferring charge to Earth.
- Aircraft and tall buildings use grounding systems based on electrostatic principles.

**Subject: Chemistry**

**Section A: Very Short Answer**

- Q1. Define the rate of a reaction. (1)
- Q2. What is the unit of the rate constant (k) for a zero-order reaction?

**(1)Section B: Short Answer Type I**

- Q3. Distinguish between the Order and Molecularity of a reaction (any two points). (2)
- Q4. A reaction is second order with respect to a reactant. How is the rate of reaction affected if the concentration of the reactant is reduced to half? (2)
- Q5. Identify the reaction order from each of the following rate constants: (2)
- (a)  $k = 2.3 \times 10^{-5} \text{ L mol}^{-1} \text{ s}^{-1}$
- (b)  $k = 3 \times 10^{-4} \text{ s}^{-1}$

**Section C: Short Answer Type II**

- Q6. (a) For a reaction  $R \rightarrow P$ , the half-life ( $t_{1/2}$ ) is independent of the initial concentration of the reactant. What is the order of this reaction? (2)
- (b) How does a catalyst increase the rate of a chemical reaction? (1)
- Q7. Derive the integrated rate equation for a first-order reaction. (3)
- Q8. Explain the effect of temperature on the rate constant of a reaction. Briefly describe the concept of Activation Energy ( $E_a$ ). (3)
- Q9. The rate constant for a first-order reaction is  $60\text{s}^{-1}$ . How much time will it take to reduce the initial concentration of the reactant to its 1/16th value? (3)

**Section D: Long Answer / Numerical**

Q10. Answer the following:

- (a) Why molecularity is applicable only for elementary reactions and order is applicable for elementary as well as complex reactions? (2)
- (b) The rate of a chemical reaction doubles for an increase of 10 K in absolute temperature from 298K. Calculate the activation energy ( $E_a$ ). (Given:  $R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$ ,  $\log 2 = 0.3010$ ) (3)

**Subject: Computer Science**

Q1. Predict the output: (2)

```
a = [1,2,3]
b = a
b[0] = 100
print(a)
print(b)
```

Also explain the concept used in the program.

Q2. Find the errors and rewrite the correct code: (2)

```
def average(L):
    s = 0
    for i in range(len(L)):
        s = s + i
        avg = s/len(L)
        print(avg)
    L = [10,20,30]
average(L)
```

Q3. What will be the output of the following code? (2)

```
t = (10,20,30,40)
```

```
print(t[1:3])
```

```
print(t[-1])
```

```
print(len(t))
```

Q4. Differentiate between mutable and immutable data types with suitable examples. (2)

Q5. Explain the difference between append( ) and extend( ) functions in Python lists with examples. (2)

Q6. Explain any four string functions with suitable examples. (2)

Q7. Observe the following code carefully and answer the questions given below: (3)

```
def mystery(n):
    if n == 1:
        return 1
    else:
        return n + mystery(n-1)
print(mystery(5))
```

- a) Name the type of function used.
- b) What will be the output?
- c) Explain the working of the function.

Q8. Write a Python program to input 10 numbers in a list and display: (3)  
a) Largest number b) Smallest number c) Sum of all even numbers

Q9. Case Study – Library Management System (3)  
A school library stores book names in a list.

Write Python functions for the following:

- a) Add a new book name
  - b) Remove a book name
  - c) Display total number of books
- Use suitable function calls.

Q10. A) Case Study – Student Result Analysis (2)  
A school stores marks of students in a dictionary where:

- • Key → Student Name
- • Value → Marks

Example:

Result = {"Riya":85, "Aman":72, "Karan":91, "Megha":67}

Write Python code to:

- a) Display names of students scoring above 80
- b) Find the highest marks scored
- c) Count the number of students scoring below 75
- d) Display the average marks of all students

b) Case Study – Online Shopping Cart System (2)

An online shopping website stores item prices in a tuple.

Prices = (1200, 450, 999, 1500, 750)

Write Python code to:

- a) Display the costliest item price
  - b) Display the cheapest item price
  - c) Calculate the total bill amount
  - d) Count the number of items whose price is greater than 1000
- Use appropriate Python functions and statements.

**Subject: Biology**

- Q1. What is Emasculation? Why is it necessary in artificial hybridization of bisexual flowers? (1)
- Q2. Differentiate between Spermiogenesis and Spermiation. (1)
- Q3. List any two symptoms of Down's Syndrome. Mention the chromosomal cause of this disorder. (2)
- Q4. What is a Point Mutation? Give one example of a disease caused by it. (2)
- Q5. Define Transcription Unit. Name the three regions present in it. (2)
- Q6. Explain the structure of a Polynucleotide chain (DNA). Mention the three components of a nucleotide and the types of bonds linking them. (3)
- Q7. What are STIs? Mention any two examples and suggest two methods to prevent them. (3)
- Q8. Read the passage and answer the following questions:  
The process of translation is the synthesis of proteins from RNA. The cellular factory responsible for synthesizing proteins is the ribosome. The ribosome consists of structural RNAs and about 80 different proteins. In its inactive state, it exists as two subunits: a large subunit and a small subunit. When the small subunit encounters an mRNA, the process of translation begins.
1. Which molecule acts as an adapter to bring amino acids to the ribosome? (1)
  2. What is the function of the enzyme 'Peptidyl transferase'? (1)
  3. In which direction is the mRNA read during translation? (1)
  4. What are UTRs and what is their significance? (1)
- Q9. Read the passage and answer the following questions:  
Phenylketonuria (PKU) is an inborn error of metabolism that is inherited as an autosomal recessive trait. The affected individual lacks an enzyme that converts the amino acid phenylalanine into tyrosine. As a result, phenylalanine is accumulated and converted into phenylpyruvic acid and other derivatives. Accumulation of these in the brain results in mental retardation.
1. Is PKU a Mendelian disorder or a Chromosomal disorder? (1)
  2. What happens to the excess phenylpyruvic acid in the body? (1)
- Q10. Explain the Hershey-Chase Experiment (Blender Experiment). How did it prove that DNA, and not protein, is the genetic material? Use a diagrammatic representation to support your answer. (5)

**Subject: Business Studies**

**No. of questions: 10**

**M.M: 25**

- Q.1 Safe Drive Helmets Ltd. manufactures premium safety gear. The Operations Head ensures that every single helmet undergoes automated impact testing, and all defective batches are scrapped instantly to maintain zero-compromise safety standards. Which objective of management is Safe Drive Helmets Ltd. fulfilling here? (1)
- a) Organizational Objective
  - b) Social Objective
  - c) Personal Objective
  - d) Political Objective
- Q.2 Henri Fayol suggested that inside an enterprise, there must be a designated place for every physical resource and a specific seat for every employee, and everything must remain in its allocated slot to eliminate chaos and lost time. Which principle of management is this? (1)
- a) Equity
  - b) Stability of Personnel
  - c) Order
  - d) Discipline
- Q.3 The enforcement of the Real Estate (Regulation and Development) Act [RERA] forced property developers to overhaul their financial reporting systems and maintain transparency in project completion timelines. This shift is a direct result of which component of the business environment? (1)
- a) Technological Environment
  - b) Legal Environment
  - c) Political Environment
  - d) Social Environment
- Q.4 A firm's management conducts thorough market forecasting and drafts an extensive blueprint for its yearly production run. However, mid-year, a sudden geopolitical conflict cuts off international shipping lanes, stopping their raw material supply and rendering the original blueprint useless. This highlights that: (1)
- a) Planning is a mental exercise.
  - b) Planning is a primary function of management.
  - c) Planning is dynamic and faces limitations in unforeseen external crises.
  - d) Planning focuses on achieving goals.
- Q.5 Chronos Watches Ltd. manufactures classic luxury watches and sporty fitness smartbands. Both product lines require completely different manufacturing setups, distinct marketing channels, and separate consumer bases. To manage this complexity, the company creates two standalone product divisions, each with its own dedicated resources and individual profit-and-loss accountability. This structural design is called a: (1)

Std. XII Worksheet 3

- a) Functional Structure
- b) Divisional Structure
- c) Decentralized Team Layout
- d) Informal Network

Q.6 The Managing Director of Pinnacle Pharma Ltd. believes that management is an exclusive domain of high-level intuitive decision-making that cannot be structured into systematic academic principles or verified through controlled observation.

Evaluate this viewpoint by explaining whether Management possesses the attributes of a Science, referencing the core features of a science. (3)

Q.7 Vanguard Retail operates a nationwide chain of electronics stores. The HR department notices that whenever store managers are left with no clear guidelines on how to handle major festive sales rushes, they run into operational chaos.

Explain how the structural process of Organising provides clarity in working relationships and leads to the optimum utilization of resources during such high-pressure sales events. (3)

Q.8 Innovate Mobility Ltd. is planning to launch an affordable autonomous electric delivery van. The top management team meets to brainstorm and evaluate the different strategic alternatives available for mass production. In the light of the Planning Process, explain the significance of the steps: "Evaluating alternative courses" and "Selecting an alternative." Highlight how a manager should make the final selection. (4)

Q.9 Astra Apparels has two manufacturing units. Unit A is headed by Mr. Roy, who actively encourages workers to give feedback and rewards them for proposing cost-saving methods. Unit B is headed by Mr. Sen, who strictly penalizes any worker who tries to offer an unprompted suggestion or tweak a predefined workflow.

Identify the specific principle of management pioneered by Henri Fayol that distinguishes Unit A from Unit B. Discuss its practical benefits for a modern production floor. (4)

Q.10 Hyper Loop Delivery Networks is a pan-India e-commerce logistics startup. The founders are analyzing how changing external forces could impact their growth path. The market is seeing rapid changes: an increasing preference for paperless digital transactions (Social/Technological trends), strict green emission norms introduced by the National Green Tribunal (Legal dimension), and shifting political foreign direct investment (FDI) guidelines for retail e-commerce.

(a) Define what is meant by the term Business Environment.

(b) Discuss any four distinct features or characteristics of the business environment that Hyper Loop Delivery Networks must keep in mind to build an adaptive business model. (6)

**Subject: Accountancy**

**No. of questions:10**

**M.M: 25**

Q.1 Debt-to-Equity Ratio is a key structural matrix used by long-term lenders. If a company issue fresh bonus shares to its existing shareholders by capitalizing its General Reserve, this ratio will: (1)

- (a) Increase
- (b) Decrease
- (c) Not Change
- (d) Double

Q.2 Identify which of the following financial events represents a "Cash Equivalent" item according to AS-3 / Revised Cash Flow standards: (1)

- (a) Investment in equity shares of a blue-chip company.
- (b) Bank deposits with a maturity period of 12 months.
- (c) Highly liquid commercial paper with a maturity period of 60 days from purchase.
- (d) Undrawn bank overdraft limit facilities.

**Answer Q3 & Q4 on the basis of following:**

MedTech Solutions partnership firm consists of three doctors: Dr. Amit, Dr. Sumit, and Dr. Vineet. Their capital setup involves a fixed structure where each has contributed ₹4,00,000. For the year ended March 31, 2026, the firm's accountant distributed the entire net profit of ₹1,80,000 equally among them without providing for Interest on Capital @ 6% p.a. as mandated by their signed deed.

Q.3 To evaluate the corrective adjustment, the total amount of Interest on Capital that was completely omitted from the firm's accounts is: (1)

- (a) ₹24,000
- (b) ₹72,000
- (c) ₹10,800
- (d) ₹36,000

Q.4 To rectify this mistake via a past adjustment entry without opening up the closed accounts, which of the following is true? (1)

- (a) Dr. Amit's Current Account will be debited.
- (b) No rectifying entry is needed since profits are shared equally and capitals are equal.
- (c) Dr. Vineet's Capital Account must be debited.
- (d) The adjustment can be completely skipped.

Q.5 State the major heading under which "Provision for Employee Benefits" (payable upon retirement after 7 years) is presented in a company Balance Sheet: (1)

- (a) Shareholders' Funds
- (b) Non-Current Liabilities

(c) Current Liabilities

(d) Other Non-Current Assets

Q.6 A corporate lender is evaluating the financial health of two retail enterprises.

Company A has an Operating Ratio of 65%.

Company B has an Operating Ratio of 82%.

Interpret these metrics from an efficiency standpoint. Explain which company possesses better cost control parameters and why. (3)

Q.7 Calculate the interest due on drawings for Mr. Rohan, a partner in Vanguard Designs, @ 12% p.a. for the year ended March 31, 2026, under these two independent alternative scenarios:

Scenario A: If he withdrew ₹15,000 at the beginning of each month for the first six months of the financial year.

Scenario B: If he withdrew ₹45,000 on October 1, 2025, to pay for his child's school tuition. (3)

Q.8 Prepare a **Comparative Balance Sheet** for Orion Industrial Units Ltd. and comment briefly on its structural changes: (4)

Balance Sheet Component	31st March 2026 (₹)	31st March 2025 (₹)
Share Capital	8,00,000	5,00,000
Reserves and Surplus	2,00,000	2,00,000
Long-term Borrowings	4,00,000	3,00,000
Current Liabilities	2,00,000	1,00,000
<b>Total Liabilities</b>	<b>16,00,000</b>	<b>11,00,000</b>
Non-Current Assets	11,00,000	7,00,000
Current Assets	5,00,000	4,00,000
<b>Total Assets</b>	<b>16,00,000</b>	<b>11,00,000</b>

Q.9 Suresh and Ramesh are partners sharing profits in a 3:2 ratio. On April 1, 2025, their fixed capital balances were ₹3,00,000 and ₹2,00,000 respectively. During the year, the firm generated a profit of ₹1,50,000. The partnership deed allows for Interest on Capital @ 10% p.a.

However, before the profits could be allocated, it was discovered that Ramesh had taken an advance loan from the firm of ₹1,00,000 on July 1, 2025. The deed is completely silent regarding interest on partner loans taken from the firm. Show the allocation of profits by drafting the Profit and Loss Appropriation Account. (4)

Q.10 Calculate the following performance ratios: (6)

1. Gross Profit Ratio
2. Operating Profit Ratio
3. Net Profit Ratio
4. Return on Investment (ROI)

Std. XII Worksheet 3

Share Capital (Equity): ₹6,00,000

Reserves and Surplus (Retained Earnings): ₹2,00,000

12% Long-term Secured Bonds: ₹4,00,000

Revenue from Operations (Net Sales): ₹18,00,000

Gross Profit Rate: 33.33% on Revenue from Operations

Operating Expenses incurred: ₹2,40,000

Tax Rate applicable: 30%

**Subject: Economics**

- Q1. What are externalities? Give an example of a positive externality and its impact on welfare of the people. (2)
- Q2. Explain the expenditure method of estimating National Income. (2)
- Q3. Explain how 'distribution of Gross Domestic Product' is a limitation in taking Gross Domestic Product as an index of welfare. (2)
- Q4. Give the meaning of factor income to abroad and factor income from abroad. Also give an example of each. (2)
- Q5. Explain how 'non-monetary exchanges' are a limitation in taking domestic product as an index of welfare? (2)
- Q6. Distinguish between domestic product and national product. When can domestic product be more than the national product? (3)
- Q7. Explain why subsidies are added to and indirect taxes deducted from domestic product at market price to arrive at domestic product at factor cost? (3)
- Q8. How will you treat the following while estimating domestic product of India? Give reasons. (3)
- i. Rent received by a resident Indian from his property in Singapore.
  - ii. Profits earned by a branch of an American Bank in India.
  - iii. Salaries paid to Koreans working in Indian embassy in Korea
- Q9. Is net export a part of NFIA? Explain. (3)
- Q10 Distinguish between Real Gross Domestic Product and Nominal Gross Domestic Product. Which of these is a better index of welfare of the people and why? (3)

**Subject: History**

- Q1. Who was the British East India Company official who successfully deciphered the Brahmi and Kharosthi scripts in the 1830s? (1)  
(A) John Marshall  
(B) James Prinsep  
(C) Colin Mackenzie  
(D) Alexander Cunningham
- Q2. Which early Mahajanapada emerged as the most powerful and dominant kingdom between the sixth and fourth centuries BCE? (1)  
(A) Kosala  
(B) Magadha  
(C) Kuru  
(D) Gandhara
- Q3. The highly celebrated legal or administrative edicts of Emperor Ashoka were predominantly composed in which language and script across his core territories? (1)  
(A) Sanskrit and Devanagari  
(B) Prakrit and Brahmi  
(C) Pali and Kharosthi  
(D) Greek and Aramaic
- Q4. What unique royal title was frequently adopted by Kushana rulers to claim divine status and match contemporary Roman imperial practices? (1)  
(A) Devanamppiya  
(B) Devaputra  
(C) Piyadassi  
(D) Maharaja
- Q5. The historic Junagadh rock inscription in Gujarat, which records the structural repair of the famous Sudarsana Lake, belongs to which dynamic ruler? (1)  
(A) Chandragupta Maurya  
(B) Rudradaman  
(C) Samudragupta  
(D) Ashoka
- Q6. Analyze three primary factors that contributed directly to the rise of Magadha as the most powerful Mahajanapada. (3)
- Q7. Outline the principal administrative pillars, committees, and subcommittees instituted by the Mauryan state to govern its vast empire. (3)

- Q8. Discuss the historical significance of land grants (agraharas) and evaluate their structural impact on early Indian rural economies. (3)
- Q9. Detail the diverse strategies and agricultural technologies adopted by early farmers to augment agricultural production from c. sixth century BCE. (3)
- Q10. Examine the dynamic political history, administrative structures, and ideological contributions of the Mauryan Empire. How did Ashoka use 'Dhamma' to unify his diverse empire? (8)

**Subject: Political Science**

**Objective:** - To enable the students to know about the inventions of new concepts in world politics and constitution of India.

- To develop 21<sup>st</sup> century managerial skills of co-ordination, self-direction and time management.
- To understand contemporary political issues in context to our past.

To develop a global perspective and an international outlook.

**Research Activity:** - Research and collect the information on recent revolution of political ideas in the world and India, in the following areas.

- Comparison between NITI Aayog and Planning Commission and their contribution in India's Development.
- Health Epidemic – A new source of security threat

**Assignment: - Project Work**

**Project Ideas**

- Various media platforms used during political campaigns.
- One Nation, One Election: Pros and Challenges
- Right to Information (RTI) and Transparency
- Digital Governance and E-Governance in India
- Citizenship Amendment Act (CAA) Debate and Public Opinion
- Strategic planning of Indian Policy Makers.
- Russia-Ukraine War and Its Impact on India
- Human Rights acts and its ratification in India.
- Refugee Crisis and International Human Rights
- Political Impact on Indian Legislations.
- Political Impact on India's international standing.
- AI and Democracy
- Indian political stand on United Nations General Assembly 2022.
- Relevance of SAARC as a forum of regional cooperation.
- Division of Germany with special focus on the construction and dismantling of the Berlin wall.
- CIS- Central Asian Republics.
- Arab Spring
- Crisis in Middle East with special focus on Operation Desert Storm, Operation Iraqi Freedom, Iraq today.
- European Union and BREXIT.
- BRICS
- India's Nuclear Policy.
- U.S. dominance in World politics in the Post-Cold War era.

- India's role in Non Aligned Movement.
- Civil Society Movements - Role and participation in India.
- Relevance of the United Nations in a Unipolar World.
- Understanding Resource Geopolitics and Environment degradation
- India's external relations -Critical analysis of the foreign policy of India especially with its immediate neighbours (Pakistan, China, Srilanka, Nepal, Myanmar)
- Popular movements in the Post-Independence era and their outcomes.
- Project on the role played by the regional aspirations in backing the secessionist and insurgency movement in India
- India's response to ASEAN as a dialogue partner.

### **GUIDELINES FOR THE PROJECTS:**

It must be emphasized that the process of doing the project is as important as the final project.

Once the project/projects are chosen, there should be a process of brainstorming to make out a draft/structure for the project before embarking on research.

Internet sites could be referred, but care must be taken in selecting, using and citing these sites.

Avoid plagiarism

Marks to be awarded for content and originality and not for decorative elements and embellishments.

Projects must be the original work of the student.

Project may be supported by- Data, fact sheets, maps, articles, newspaper clips

Maximum of 25-30 page projects.

**No. of questions: 10**

**M.M. 25**

- Q.1 Why the Warsaw Pact was also called the 'Eastern Alliance'? (2)
- Q.2 What is Battle of Iwo Jima? (2)
- Q.3 What was the 'Marshall Plan'? (2)
- Q.4 What is NATO and when it was established? (2)
- Q.5 Why did India not support any of the two blocs during the Cold War? (3)
- Q.6 Explain any two effects of the end of Cold War. (3)
- Q.7 Which treaties were signed by Soviet Union and US to limit their arms? (3)
- Q.8 What was the Cuban Missile Crisis? (3)
- Q.9 Explain any six factors that helped in making Soviet Union as a superpower after the Second World War. (5)
- Q.10 What do you think about the statement that NAM has become irrelevant today? Give reasons to support your opinion. (5)

**Subject: Geography**

- Q1. In political outline map of world mark the major seaports of the world:- (1x5 =5)
1. Europe: North Cape, London, Hamburg
  2. North America: Vancouver, San Francisco, New Orleans
  3. South America: Rio De Janeiro, Colon, Valparaiso
  4. Africa: Suez, Durban, and Cape Town
  5. Asia: Yokohama, Shanghai, Hong Kong, Aden, Karachi, Kolkata, Australia: Perth, Sydney, Melbourne
- Q2. In a political map of world mark the major airports of the world- (1x5= 5)
1. Asia: Tokyo, Beijing, Mumbai, Jedda, Aden
  2. Africa: Johannesburg & Nairobi
  3. Europe: Moscow, London, Paris, Berlin, and Rome
  4. North America: Chicago, New Orleans, Mexico City
  5. South America: Buenos Aires, Santiago  
Australia: Darwin and Wellington
- Q3. In the world political map mark the following features (1x2=2)
1. Country with the highest and the lowest HDI in the world
  2. Industrial regions of the world -Ruhr region, Silicon Valley, Appalachian region, Great lakes region
- Q4 Which area is called the Rust Bowl of the USA? (1)
- Q5 Which is the most important industrial complex of Europe? (1)
- Q6 Distinguish between metallic industries & non-metallic industries. (2)
- Q7 Distinguish between public sector and private sector industries. (2)
- Q8 Mention any two major problems of the Ruhr industrial region. (2)
- Q9 Define the term Technopolis. (2)
- Q10 Mention the characteristics of modern large scale industries. (3)

**Subject: Informatics Practices**

Q1. Choose the correct answer from the following: (1×3=3)

i) Which function is used to create a DataFrame?

- A. pd.Series()      B. pd.DataFrame()      C. pd.Array()      D. pd.Table()

ii) A DataFrame is:

- A. One-dimensional    B. Two-dimensional      C. Three-dimensional    D. None of these

iii) Which attribute displays column labels of a DataFrame?

- A. df.rows      B. df.columns      C. df.values      D. df.indexes

Q2. Answer the following (1+1=2)

- a) What is a DataFrame in Pandas?
- b) Name any two ways to create a DataFrame.

Q3. What is the use of shape attribute and head( ) function in DataFrame? (2)

Q4. Find the Output (2)

```
import pandas as pd

data = {'Name':['Aman','Riya'], 'Marks':[85,90]}

df = pd.DataFrame(data)

print(df)
```

Q5. Find the errors. (2)

```
import pandas as pd
data = {'Name':['Aman','Riya'] 'Marks':[85,90]}
df = pd.dataframe(data)
```

Q6. A school stores student details in a DataFrame. (3)

```
import pandas as pd
data = { 'Name':['Aman','Riya','Kabir'], 'Marks':[85,92,78] }
df = pd.DataFrame(data)
a) Display complete DataFrame.
b) Display only Marks column.
c) Find maximum marks.
```

Q7. Competency-Based Question (3)

Write a program to:

- Create a DataFrame containing product names and prices
- Display products with price greater than 500

Q8. A company stores employee details. (3)

Write a program to:

- Create DataFrame
- Display employee names
- Display average salary

Q9. Predict the output: (2)

```
import pandas as pd
data = { 'A':[10,20], 'B':[30,40] }
df = pd.DataFrame(data)
print(df.shape)
```

Q10. Write a program to: (3)

- Create a DataFrame storing city names and temperatures
- Display cities where temperature is above 30

**Subject: Psychology**

No. of questions: 10

M.M. 25

- Q1. Shweta has been writing for the school magazine and wants to pursue journalism. Which intelligence is her skill reflecting? (1)
- Q2. \_\_\_\_\_ are enduring beliefs about an ideal mode of behaviour. (1)
- Q3. High ability, creativity and commitment are found in individuals with intelligence? (2)
- Q4. Does heredity influence intelligence? (2)
- Q5. Write a note on the test that can be given only to literate groups based on the type of items. (2)
- Q6. Shirin learnt an answer and was able to recall it exactly the way it had been learnt. According to Arthur Jensen, what level of learning is she using? (2)
- Q7. Psychological attributes are multi-dimensional. Describe any three such attributes. (3)
- Q8. What are some of the erroneous practices associated with intelligence testing? (4)
- Q9. Which intelligence is associated with Indian culture? Write a detailed note on the same. (4)
- Q10. Explain "Maslow's humanistic approach, keeping in mind an individual who is feeling low. (4)

**Activity: Prepare project file( Case Profile) suggested format for preparing a case profile**

- 1. Introduction**
- 2. Identification of data**
- 3. Case History**
- 4. Concluding comments**

**Subject: Physical Education**

- Q1. Write the purpose of community sports. (1)
- Q2. What are the advantages of run for health? (1)
- Q3. Explain the causes of Scoliosis. (1)
- Q4. Define the causes of Knock-knee? (1)
- Q5. What are precautions and symptoms of Round Shoulders? (2)
- Q6. What exercises children under 5 years of age must do? (3)
- Q7. What do you mean by knock-out tournament? Discuss the advantages and disadvantages of knock-out tournament. (3)
- Q8. What do you mean by intramurals? Mention the significance of intramurals for school children. (3)
- Q9. What do you mean by extramural? Elucidate the significance of extramural. (5)
- Q10. What do you mean by knock-out tournament? Draw the fixtures of 23 teams on knockout basis. (5)

**Subject: Home Science**

No. of questions: 10

M.M. 25

Q1. True or False: (1)

- a) Household work has no economic value.
- b) Gender discrimination affects work opportunities.

Q2. Define gender equality. (2)

Q3. What is child labour? (2)

Q4. Mention any two problems faced by working women. (2)

Q5. State any two rights of children related to education and work. (2)

Q6. Mention any four types of unpaid work done at home. (2)

Q7. Explain how gender stereotypes influence career choices. (3)

Q8. Discuss the importance of equal opportunities at the workplace. (3)

Q9. Explain the harmful effects of child labour on society. (3)

Q10. Activity-based: (5)

Prepare a “Time Use Survey” of your family members for one day. Record the time spent on:

- Paid work
- Household work
- Leisure activities
- Study/work-related activities

Write a short conclusion about division of work at home.

**Subject: Painting**

**Instructions:**

- Complete the artwork on an A-2 size ivory sheet.
- Use water colours for colouring.
- Add proper shading, highlights, and shadows to create depth and realism.
- Ensure the drawing follows the principles of perspective and proportion.
- Maintain neatness and overall presentation quality.

Q1. Make a picture composition of scene at the metro station. (10)

Q2. Make a scene outside a temple. (10)