

CLASS: XI
HOLIDAYS HOMEWORK 2024-25

COMMERCIAL ARTS

Make any five sketches:

Medium - Pencil / Pen / Colour

Size A3 Sheet

Create any two Indian Folk Art.

Madhubani painting

Kalamkari painting

Gond painting

Size A3 Sheet

ACCOUNTANCY

A. OBJECTIVE TYPES QUESTIONS

Q. The art of recording all business transactions in a systematic manner in a set of books is called-

- (a) Accounting
- (b) Book-keeping
- (c) Ledger
- (d) None of these

Q. Cash, goods or assets invested by the proprietor in the business for earning profit is called-

- (a) Profit
- (b) Capital
- (c) Fixed assets
- (d) None of these

Q. Fill in the blanks with appropriate words:

- a. starts where book keeping ends
- b. Management and Employees are the users of accounting information
- c. The process of posting transaction into ledger is termed as
- d. users are groups outside the business entity, who uses the information to make decisions about the business entity.
- e. Changing the accounting policy to show the favourable picture is called

- f. qualitative characteristic of accounting information is reflected when accounting information is clearly presented.
- g. is the first step of accounting.

Q. Which stakeholder group would be most interested in:

- a. tax liabilities of the firm
- b. the potential for pay awards and bonus deals
- c. the ethical or environmental activities of the firm
- d. whether the firm has a long term future
- e. profitability and share performance
- f. the ability of the firm to carry on providing a service or producing a product.

Q. Identify the accounting term highlighted in each of the following cases:

- a. A person to whom goods have been sold on credit
- b. It refer to the amount of goods bought by a business for resale or use in the production.
- c. It refer to the product in which the business unit is dealing.
- d. It is the rebate allowed to the buyers for making prompt payments.
- e. A person from whom goods have been purchased on credit.

SHORT ANSWER TYPE QUESTIONS

Q. With the help of diagram, explain the process of Accounting.

Q. A firm earn a revenue of Rs 21,000 and the expenses to earn this revenue are Rs 15,000. Calculate its Income.

Q10. Determine, if the following are Assets, Liabilities, Capital, Revenue, Expenses or none.

Machinery, Purchase, Sales, Creditors, Capital, Salary, Stock, Furniture, Rent paid, Interest Received

Q. Explain the branches of accounting.

Q. What are the attribute of Accounting

Q. Is Accounting a Science or Art? Justify your answer.

Q What do you mean by Double Entry System? State its various advantages.

Q. How can liabilities be classified?

Q. Discuss the concept of fictitious assets.

Q. Write the note on type of assets with one example of each.

Q. Distinguish between the term Gain and Profit.

Q. i) "Marketing Manager of XYZ Ltd resigns", will this event be recorded in book of accounts. Justify your answer.

ii) Accountant of the firm does not want to give previous year financial figures while preparing financial statement; a practice that has been followed by a firm. Explain which qualitative characteristics of Accounting will not be reflected in this case.

Q. Mr. Sunrise started a business for buying and selling of stationery with ₹ 5,00,000 as an initial investment. Of which, he paid ₹ 1,00,000 for furniture, ₹ 2,00,000 for buying stationery items. He employed a sales person and clerk. At the end of the month he paid ₹ 5,000 as their salaries. Out of the stationery bought, he sold some stationery for ₹ 1,50,000 for cash and some other stationery for ₹ 1,00,000 on credit basis to Mr. Ravi. Subsequently he bought stationery items of ₹ 1,50,000 from Mr. Peace. In the first week of the next month, there was a fire incident and he lost ₹ 30,000 worth of stationery. A part of furniture which cost ₹ 40,000 was sold for ₹ 45,000.

From the above, answer the following:

- i. What is the amount of capital with which Mr. Sunrise started a business?
- ii. What are the fixed asset he bought?
- iii. What is the value of the goods purchased?
- iv. Who is the creditor and state the amount payable to him?
- v. What are the expenses.
- vi. What is the gain he earned?
- vii. What is the loss he incurred?
- viii. Who is the debtor? What is the amount receivable from him?
- ix. What is the total amount of expenses and losses incurred?

PSYCHOLOGY

Watch at least two of any of the following movies based on psychological themes and write reviews based on:

- Personality characteristics of the main character.

- What were the various problems encountered by any one character and how were they resolved.
- Reflect on the relationship that the protagonist shared with other characters.
- State any two overt and covert behaviours of any character from the movie.

The list of movies:

- Life of Pi
- English Vinglish
- Theory of Everything
- A Beautiful Mind
- Pursuit of Happiness
- A Few Good Men
- Bend it Like Beckham
- I am Kalam
- Queen
- Highway

MATHEMATICS

Make a separate notebook for holidays homework

Sets

Which of the following are sets? Justify your answer.

- The collection of all the months of a year beginning with letter M.
- The collection of difficult topics in Mathematics. Let $A = \{1,3,5,7,9\}$. Insert the appropriate symbol or in blank spaces :- (Question- 3,4)
- $2 \in A$
- $5 \in A$
- Write the set $A = \{x : x \text{ is an integer, } -1 < x < 4\}$ in roster form
- List all the elements of the set, $\{x : x \in \mathbb{Z}, -1/2 < x < 11/2\}$
- Write the set $B = \{3,9,27,81\}$ in set-builder form. Which of the following are empty sets? Justify.
- $A = \{x : x \in \mathbb{N} \text{ and } 3 < x < 4\}$
- $B = \{x : x \in \mathbb{N} \text{ and } x = x\}$ Which of the following sets are finite or Infinite? Justify.
- The set of all the points on the circumference of a circle.
- $B = \{x : x \in \mathbb{N} \text{ and } x \text{ is an even prime number}\}$
- Are sets $A = \{-2,2\}$, $B = \{x : x \in \mathbb{Z}, -4 \leq x \leq 0\}$ equal? Why?
- Write $(-5,9]$ in set-builder form

14. Write $\{x : -3 \leq x < 7\}$ as interval.
15. If $A = \{1, 3, 5\}$, how many elements has $P(A)$?
16. Write all the possible subsets of $A = \{5, 6\}$. If $A = \{2, 3, 4, 5\}$, $B = \{3, 5, 6, 7\}$
Find 1) $A \cup B$ 2) $A \cap B$
17. If $A = \{1, 2, 3, 6\}$, $B = \{1, 2, 4, 8\}$ find $B - A$
18. If $A = \{p, q\}$, $B = \{p, q, r\}$, is B a superset of A ? Why?
19. Are sets $A = \{1, 2, 3, 4\}$, $B = \{x : x \in \mathbb{N} \text{ and } 5 \leq x \leq 7\}$ disjoint? Why?
20. If X and Y are two sets such that $n(X) = 19$, $n(Y) = 37$ and $n(X \cap Y) = 12$, find $n(X \cup Y)$.
21. Are the following pair of sets equal? Give reasons.
 $A = \{x : x \text{ is a letter in the word FOLLOW}\}$
 $B = \{y : y \text{ is a letter in the word WOLF}\}$
22. Write the set in roster form $A =$ The set of all letters in the word **T R I G N O M E T R Y**
23. Are the following pair of sets equal? Give reasons
 A , the set of letters in "ALLOY" and B , the set of letters in "LOYAL".
24. Write down the power set of A , $A = \{1, 2, 3\}$
25. Is set $C = \{x : x - 5 = 0\}$ and $E = \{x : x \text{ is an integral positive root of the equation } x^2 - 2x - 15 = 0\}$ are equal?
26. Write down all possible proper subsets of the set $\{1, \{2\}\}$.
27. State whether each of the following statement is true or false.
(i) $\{2, 3, 4, 5\}$ and $\{3, 6\}$ are disjoint sets.
(ii) $\{2, 6, 10\}$ and $\{3, 7, 11\}$ are disjoint sets
28. Fill in the blanks
(i) $(A \cup B)'$ = -----
(ii) $(A \cap B)'$ = -----
29. Write the set of all vowels in the English alphabet which precede k in roster Form
30. Is pair of sets equal? Give reasons.
 $A = \{2, 3\}$ $B = \{x : x \text{ is solution of } x^2 + 5x + 6 = 0\}$
31. Write the following intervals in set builder form: $(-3, 0)$ and $[6, 12]$
32. If $X = \{a, b, c, d\}$ $Y = \{f, b, d, g\}$ Find $X - Y$ and $Y - X$
33. If A and B are two given sets, Then represent the set $(A - B)$, using Venn diagram.
34. List all the element of the set $A = \{x : x \text{ is an integer } x^2 \leq 4\}$

35 .From the sets given below, pair the equivalent sets.

$$A = \{1, 2, 3\}, B = \{x, y, z, t\}, C = \{a, b, c\} D = \{0, a\}$$

36 .Write the following as interval

(i) $\{x : x \in \mathbb{R}, -4 < x \leq 6\}$

(ii) $\{x : x \in \mathbb{R}, 3 \leq x \leq 4\}$

37 .If $A = \{3, 5, 7, 9, 11\}$, $B = \{7, 9, 11, 13\}$, $C = \{11, 13, 15\}$

Find $(A \cap B) \cap (B \cup C)$

Relation and Function

1 . Let $A = \{x, y, z\}$ and $B = \{1, 2\}$, find the number of relations from A to B.

2 .Find x and y, if $(x + 3, 5) = (6, 2x + y)$.

3. Is the following relation a function? Give reason. If it is a function, determine its domain and range.

$$\{(1, 3), (1, 5), (2, 5)\}$$

4. Find the domain and range of the real functions $f(x) = -|x|$.

5. Determine the domain and range of the relation R defined by, $R = \{(x, x+5) : x \in \{0, 1, 2, 3, 4, 5\}\}$.

6. The Cartesian product $A \times A$ has 9 elements among which are found $(-1, 0)$ and $(0, 1)$.

Find the set A and the remaining element $A \times A$

7. If $A \times B = \{(a, x), (a, y), (b, x), (b, y)\}$. Find A and B.

8. What is the domain of the real valued function $f(x) = 1/3x - 2$

9. Is the given relation a function? Give reasons for your answer.

$$h = \{(4, 6), (3, 9), (-11, 6), (3, 11)\}$$

10. What will be the total number of relations from A to B where $n(a) = p$ and $n(b) = q$.

12. Let $A = \{1, 2\}$ and $B = \{2, 3\}$ then find $A \times (A \cap B)$

13. A function f is defined as $f(x) = 3 - 2x$. find the value of $f(7)$.

14. The following figure shows a relationship between the sets P and Q. Write this relation in set-builder form:

15. Let $A = \{1, 2, 3, 4\}$, $B = \{1, 4, 9, 16, 25\}$ and R be a relation defined from A to B as, $R = \{(x, y) : x \in A, y \in B \text{ and}$

$$y = x^2\}$$

i) Depict this relation in roster form.

ii) Find the domain of R.

iii) Find range of R.

iv) Write a co-domain of R.

16. If $R = \{(x + y) \mid x \text{ and } y \text{ are integers and } x^2 + y^2 = 64\}$ is a relation, then find R.

17. Let $A = \{1, 2, 3, 4\}$ and $B = \{10, 12, 13, 14, 20\}$. Whether $f: A \rightarrow B$ defined by $f(1) = 10$, $f(2) = 12$, $f(3) = 13$ and $f(4) = 20$ is a function?

18. If $n(A) = 3$ and $B = \{1, 2, 3\}$ then find $n(A \times B)$

19. Draw the graph of the modulus function.

20. If f and g are two real valued functions defined as $f(x) = 2x + 1$, $g(x) = x^2 + 1$ then find $f + g$, $f - g$, $f \cdot g$ and f/g

21. Given $R = \{(x, y) : x, y \in W, x^2 + y^2 = 25\}$, find the domain and range of R .

22. If $A = \{-1, 1\}$, find $A \times A \times A$.

23. Define a relation R on the set N of natural numbers by $R = \{(x, y) : y = x + 5, x \text{ is a natural number less than } 4;$

$x, y \in N\}$. Depict this relationship using roster form. Write down the domain and range.

24. Determine the domain and range of the relation R defined by, $R = \{(x, x + 5) : x \in (0, 1, 2, 3, 4, 5)\}$.

25. Let $A = \{1, 2, 3, \dots, 14\}$. Define a relation R from set A to A by $R = \{(x, y) : 3x - y = 0, \text{ where } x, y \in A\}$. Write

down its domain, co-domain, and range.

26. $A = \{1, 2, 3, 5\}$ and $B = \{4, 6, 9\}$. Define a relation R from A to B by $R = \{(x, y) : \text{the difference between } x \text{ and } y$

is odd, $x \in A \text{ and } y \in B\}$. Write R in roster form.

27. Let $A = \{9, 10, 11, 12, 13\}$ and let $f: A \rightarrow N$ be defined by $f(n) = \text{the highest prime factor of } n$. Find the range of f .

28. Let $A = \{1, 2, 6, 8\}$ and let R be a relation on A defined by $\{(a, b) : a, b \in A, b \text{ is exactly divisible by } a\}$

(i) Write R in roster form.

(ii) Find the domain of R .

(iii) Find the range of R .

29. If $R = \{(x, y) \mid y = 2x + 7, \text{ where } x \in R \text{ and } -5 < x < 5\}$ is a relation. Then find the domain and Range of R .

30. Draw the graph of $f(x)$ defined by

$$f(x) = \begin{cases} 1 - x, & \text{if } x < 0 \\ 1, & \text{if } x = 0 \\ x + 1, & \text{if } x > 0 \end{cases}$$

31. Let $f(x) = x^2$ and $g(x) = 2x + 1$ be two real functions. Find

$$(f + g)(x), (f - g)(x), (fg)(x), (f/g)(x)$$

32. Let $f: R \rightarrow R$ be given by $f(x) = x^2 + 3$. Find (i) x if $f(x) = 28$ (ii) The pre-images of 39 and 2 under 'f'.

33. Find the range of the following functions given by: $f(x) = 1 - |x - 2|$

34. Find the range of the following functions given by: $f(x) = |x - 3|$

35. Find the domain and the range of the real function f defined by $f(x) = \sqrt{x - 1}$

36. Express the function $f: A \rightarrow R$, $f(x) = x^2 - 1$, where $A = \{-4, 0, 1, 4\}$ in roster form.

37. Let $f = \{(1, 1), (2, 3), (0, -1), (-1, -3)\}$ be a function from Z to Z defined by $f(x) = ax + b$, for some integers

a and b . Determine a, b .

38. Find the range of the following functions $f(x) = \sqrt{9 - x}$

Complex numbers

- Express the following complex number in the form $a + ib$
 $3 - \sqrt{-16}$, $1 - \sqrt{-9}$
- Find the modulus and conjugate of $(4+5i)^2 / (2+3i)^2$
- For any complex number prove that $|z^2| = |z|^2$
- Evaluate i^{-999}
- Find the multiplicative inverse $z = 3 - 2i$
- Check if $z = (3+2i)/2-3i + (3-2i)/2+3i$ is purely real or purely imaginary.
- If z_1, z_2 are $1 - i$ and $-2 + 4i$ respectively find $\text{Im}(z_1 z_2) / \text{Re}(z_1 z_2)$
- Find the real values of x and y if
 $(1 - i)x + (1 + i)y = 1 - 3i$
- If $z_1 = 2 - i$ and $z_2 = -2 + i$ find (i) $\text{Re}(z_1 z_2)$ (ii) $\text{Im}(z_1 z_2)$
- If $(x + iy)^3 = u + iv$, then show that $u/x + v/y = 4(x^2 - y^2)$
- If $(1 + i / 1 - i)^m = 1$ then find the least positive integral value of m .
- Find the modulus of $1 + 2i / 1 - 3i$
- If $(x+iy) / (2-3i) = 4+i$, then find x and y .

Research Project

Make a hand written project on the Golden Ratio. Use two A4 size sheets only.

BIOLOGY

(Biological Classification)

- Define experimental taxonomy?
- Name the fungus which causes "wheat rust"?
- What are distributed organisms which have not been included under any kingdom?
- Compare salient features of Monera & Protista.
- State an economically important use of i) Heterotrophic bacteria. ii) Archaeobacteria.
- Write the importance of classification on organism.
- What are insectivorous plants? Give an example.
- Discuss different systems of classification briefly.
- What are the different groups of fungi?

10. Compare the kingdoms under five kingdom classification in terms of cell type, cell organelles nucleus, motility and cellularity.
11. Who is known as the "Father of classification"?
13. It is advised to grow one pulse crop in between two main crops in the same field why?
15. Explain "Numerical taxonomy".
16. What are the demerits of the five kingdom classification?
20. Write the diagnostic characters of kingdom monera.
21. Name the five kingdoms in which the organisms are grouped together?
22. Which organisms are known as "Jokers of plant kingdom".
23. In which class of fungi sexual reproduction does not occur?
24. Explain phylogenetic system of classification?
25. What is the basis of Whittaker's system of classification?

Note: The questions have to be done in the bio register only.

2. Prepare a Herbarium of 10 medicinal leaves plus 10 flowers as discussed in the class.
3. Revise the chapter- Biological classification and Cell- the unit of life.

PHYSICS

- Q.1 State the number of significant figures in the following:

(a) 0.007 m ²	(b) 2.64 × 10 ²⁴ kg
(c) 0.2370 g cm ⁻³	(d) 6.320 J
(e) 6.032 Nm ⁻²	(f) 0.0006032 m ² .
- Q.2 Give the relationship between light year and meter.
- Q.3 Which of the length measurements is more accurate and why?

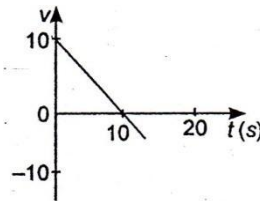
(a) 500.0 cm.	(b) 0.0005 cm.	(c) 6.00 cm.
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- Q.4 Name at least two physical quantities, whose dimensions are ML²T⁻².
- Q.5 If $x = a + bt + ct^2$, where x is in meters and t in second, find the dimensional formula for a , b and c .
- Q.6 Check whether equation

$F.S = \frac{1}{2}mv^2 - \frac{1}{2}mu^2$ is dimensionally correct, where m is mass of the body, v its final velocity, u its initial velocity, F is force applied and S is the distance moved.

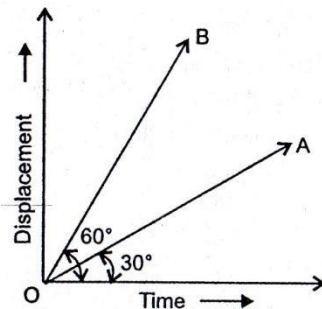
- Q.7 Give the dimensional formula for surface energy, moment of inertia, angular velocity and gravitational force.
- Q.8 The wavelength λ associated with a moving particle depends upon its mass m , its velocity u and Planck's constant h . Show dimensionally the relationship between them.
- Q.9 If $x = at + bt^2$, where x is in metre and t in second, what will be the unit of 'a' and 'b'?
- Q.10 Magnitude of force F experienced by a certain object moving with speed u is given by $F = Ku^2$ where K is a dimensional constant. Find the dimensions of K .
- Q.11 Write the dimensional formula for the following:
 (i) Wien's constant (ii) Planck's constant (iii) Specific heat
 (iv) Latent heat (v) Rydberg's constant.
- Q.12 Name the physical quantity of the dimension given below.
 (i) ML^0T^{-3} (ii) $ML^{-1}T^{-1}$ (iii) $M^{-1}L^3T^{-2}$ (iv) ML^2T^{-3} (v) ML^0T^{-2}
- Q.13 If $\left(P + \frac{a}{V^2}\right)(V - b) = RT$, where the symbols have their usual meanings, (P =Pressure, V =Volume, R = gas constant & T = temperature) then $\left(\frac{a}{b}\right)$ has a dimension of...
- Q.14 Deduce by the method of dimensions, an expression for the energy of a body executing S.H.M. assuming that the energy of the body depends upon (a) the mass m (b) the frequency ν and (c) the amplitude of vibration a .
- Q.15 By using the method of dimension, check the accuracy of the following formula.

$$T = \frac{rh\rho g}{2\cos\theta}$$
 Where T is the surface tension, h is the height of the liquid in a capillary tube, ρ is the density of the liquid, g is the acceleration due to gravity, θ is the angle of contact, and r is the radius of the capillary tube.
- Q.16 Experiments show that the frequency (n) of a tuning fork depends upon the length (l) of the prong, the density (d) and the Young's modulus (Y) of its material. Form dimensional considerations, find a possible relation for the frequency of the tuning fork.
- Q.17 A mass moving with a uniform speed u in a circular path of radius r experiences a force which depends on its mass, speed and radius. Prove that the relation is $f = \frac{mu^2}{r}$ by using method of dimensions.
- Q.18 State the condition, when the magnitude of velocity and speed of an object are equal.
- Q.19 What does the slope of velocity-time graph represent?
- Q.20 What is the significance of the slope of $x-t$ graph?

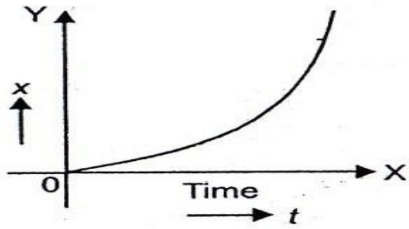
- Q.21 A mass is dropped from certain height. At the same time another equal mass is thrown with a horizontal velocity of u m/s. from the same height. Which one of the two will reach the ground first?
- Q.22 What can you say about the nature of acceleration, associated with a mass whose $v-t$ graph is shown?



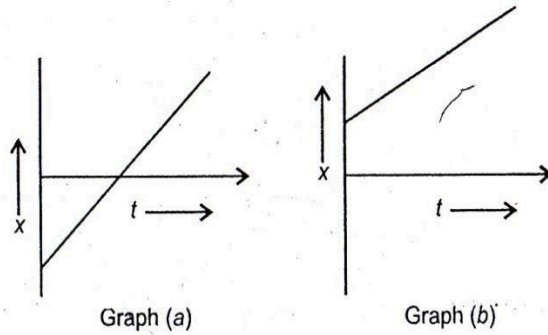
- Q.23 Draw velocity-time graph for an object, starting from rest. Acceleration is constant and remains positive.
- Q.24 The position coordinate of a moving particle is given by $x = 6 + 18t + 9t^2$ (x in meters and t in seconds.) What is its velocity at $t = 2$ Sec.?
- Q.25 A ball is thrown straight up. What is its velocity and acceleration at the top?
- Q.26 The two straight rays OA and OB on the same displacement time graph make angle 30° and 60° with time axis respectively as shown in figure.



- (i) Which ray represents greater velocity?
- (ii) What is the ratio of two velocities represented by OA and OB?
- Q.27 An object moving on a straight line covers first half of the distance at speed u and second half of the distance at speed $2u$. Find (i) average speed, (ii) mean speed.
- Q.28 A drunkard walking a narrow lane takes 5 steps forward and 3 steps backward, followed again by 5 steps forward and 3 steps backward, and so on. Each step is 1 m long and requires 1 s. Plot the $x - t$ graph of his motion. Determine graphically and otherwise how long the drunkard takes to fall in a pit 13 m away from the start.
- Q.29 A ball is thrown vertically upwards. Draw its.
- (i) velocity-time curve
- (ii) acceleration-time curve.
- Q.30 Given figure shows the $x-t$ plot of one dimensional motion of a particle. Is it correct to say that the particle moves in straight line of $t < 0$? If not, suggest a suitable physical context for this graph.



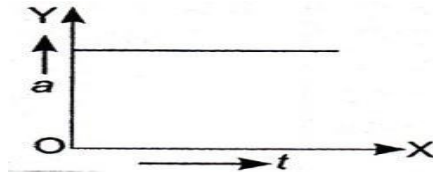
Q.31 What is common between two graphs shown below?



Q.32 The velocity of a particle is

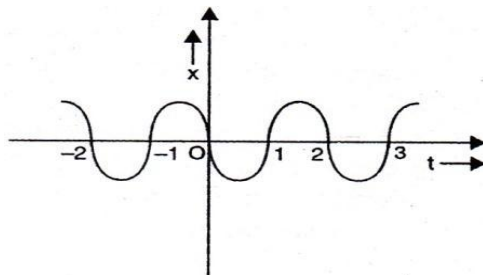
$v = 5 + 2(a_1 + a_2 t)$ where a_1 and a_2 are constants and t is the time. What is the acceleration of the particle?

Q.33 A particle starts from rest, and its acceleration (a) plotted against time (t) is shown here. Plot the corresponding velocity (v) against time (t). Also plot the corresponding displacement (s) against time (t).



Q.34 A woman starts from her home at 8.00 a.m., walks with a speed of 5 km/h on a straight road up to her office 5 km away stays at the office up to 4 p.m., and returns home by an auto with a speed of 25 km/hr. Choose suitable scales, and plot the $x-t$ graph of her motion.

Q.35 Figure gives the $x-t$ plot of a particle executing one-dimensional simple harmonic motion. Give the signs of position, velocity and acceleration variables of the particle at $t = 0.3$ s, 1.2 s and -1.2 s.



Q.36 Draw the following

- (a) Variation of
- (b) Variation of
- (c) Variation of

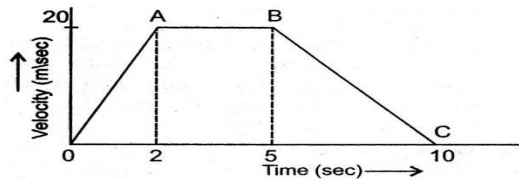
graphs for an object under free fall:
 acceleration with respect to time.
 velocity with respect to time.
 distance with respect to time.

Q.37 The displacement along x -axis is given by

$x = 18t + 5t^2$. Calculate the instantaneous velocity at $t = 2$ s,

(in meter) of a particle moving

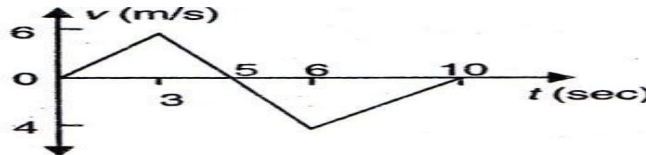
Q.38 The velocity-time graph of an object moving along a straight line is as shown.



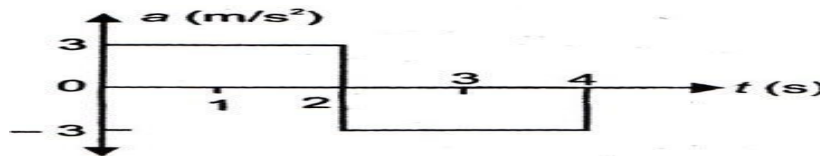
Calculate distance covered by object between.

- (i) $t = 0$ to $t = 5$ sec. (ii) $t = 0$ to $t = 10$ sec.

Q.39 Find the displacement and distance travelled by a body in 10 seconds, using the $v-t$ graph given below.



Q.40 A particle starts from rest at $t = 0$ and has an acceleration as given in the figure below. Draw the $v-t$ graph for 4 seconds.



Q.41 Read each statement below carefully and state with reasons and examples, if it is true or false: A particle in one-dimensional motion

- (a) with zero speed at an instant may have non-zero acceleration at the instant.
 (b) with zero speed may have non-zero velocity.

Q.42 Write the values of the following. (i) $\hat{j} \cdot \hat{k}$ (ii) $\hat{k} \cdot \hat{k}$

Q.43 Find the angle between $\vec{A} = \hat{i} + \hat{j} - 2\hat{k}$ and $\vec{B} = \hat{i} + 2\hat{j} - \hat{k}$.

Q.44 Define dot product of two vectors and give its geometrical Interpretation.

Q.45 Find a unit vector parallel to the vector $3\hat{i} + 7\hat{j} + 4\hat{k}$.

Q.46 Determine a unit vector, which is perpendicular to both $\vec{A} = 2\hat{i} + \hat{j} - \hat{k}$ and $\vec{B} = \hat{i} - \hat{j} + 2\hat{k}$.

Q.47 Write any four importance of vector algebra.

Q.48 Prove that the vectors $(\hat{i} + 2\hat{j} + 3\hat{k})$ and $(2\hat{i} - \hat{j})$ are perpendicular to each other.

Q.49 Determine λ such that:

$(\vec{A} = 2\hat{i} + \lambda\hat{j} + \hat{k}; \vec{B} = 4\hat{i} - 2\hat{j} - 2\hat{k})$ are perpendicular to each other.

Q.50 \hat{i} and \hat{j} are unit vectors along x and y axes respectively. (i) What is the magnitude and direction of the vectors $\hat{i} + \hat{j}$ and $\hat{i} - \hat{j}$? (ii) What are the components of a vector $\vec{A} = 2\hat{i} + 3\hat{j}$ along the directions of $\hat{i} + \hat{j}$ and $\hat{i} - \hat{j}$?

CHEMISTRY

1. Revise chapter - 1 for 1st unit test.
2. Attempt all the questions given in the assignment in your notebook.
3. Make a powerpoint presentation on any chemistry related topics of daily life phenomenon or your chapter related topics.

Chapter-1

1. Which of the following statements is incorrect regarding the concept of moles?
 - a) One mole of any gas at STP occupies 22.4 L.
 - b) One mole of water contains 18 g of H₂O.
 - c) One mole of NaCl contains 6.022×10^{23} molecules of NaCl.
 - d) One mole of C-12 contains 6.022×10^{23} atoms of carbon.
2. Calculate the mass percent of hydrogen in glucose (C₆H₁₂O₆).
 - a) 6.67%
 - b) 53.33%
 - c) 12.00%
 - d) 13.33%
3. If 2.00 g of a compound contains 0.40 g of hydrogen and 1.60 g of carbon, what is the empirical formula of the compound?
 - a) CH
 - b) CH₂
 - c) CH₄
 - d) C₂H
4. A sample of impure zinc weighing 2.5 g was found to contain 1.5 g of pure zinc. What is the percentage purity of the sample?
 - a) 40%
 - b) 60%

- c) 75%
- d) 80%
5. What volume of 0.5 M NaOH solution is required to neutralize 100 mL of 0.25 M HCl solution?
- a) 25 mL
- b) 50 mL
- c) 75 mL
- d) 100 mL
6. The empirical formula of a compound is CH_2O , and its molecular mass is 180 g/mol. What is the molecular formula of the compound?
- a) $\text{C}_3\text{H}_6\text{O}_3$
- b) $\text{C}_6\text{H}_{12}\text{O}_6$
- c) CH_2O
- d) $\text{C}_2\text{H}_4\text{O}_2$
7. If 10.0 g of CaCO_3 is decomposed completely, what volume of CO_2 (at STP) is produced?
- a) 2.24 L
- b) 4.48 L
- c) 1.12 L
- d) 3.36 L
8. What is the molarity of a solution prepared by dissolving 5.85 g of NaCl (molar mass = 58.5 g/mol) in enough water to make 500 mL of solution?
- a) 0.2 M
- b) 0.5 M
- c) 1.0 M
- d) 2.0 M
9. Formation of CO and CO_2 illustrates the law of _____.
- (a) Law of conservation of mass

(b) Law of Reciprocal proportion

(c) Law of Constant Proportion

(d) Law of Multiple Proportion

10. A 0.1 M solution of NaOH is neutralized with 50 mL of 0.1 M H_2SO_4 . What is the volume of NaOH required?

a) 25 mL

b) 50 mL

c) 75 mL

d) 100 mL

11. What is the percentage of nitrogen in ammonium nitrate (NH_4NO_3)?

a) 35%

b) 29.2%

c) 16.5%

d) 22.2%

12. Which of the following pairs of gases contains the same number of molecules

(a) 16 g of O_2 and 14 g of N_2

(b) 6 g of O_2 and 22 g of CO_2

(c) 28 g of N_2 and 22 g of CO_2

(d) 32 g of CO_2 and 32g of N_2

ASSERTION REASON QUESTIONS

1. Assertion (A): One mole of any gas at STP occupies 22.4 litres.

Reason (R): The molar volume of a gas is the same for all gases at the same temperature and pressure.

a) Both A and R are true, and R is the correct explanation of A.

b) Both A and R are true, but R is not the correct explanation of A.

c) A is true, but R is false.

d) A is false, but R is true.

2. Assertion (A): The empirical formula of a compound represents the actual number of atoms of each element in a molecule.

Reason (R): The empirical formula is the simplest whole-number ratio of atoms of each element in a compound.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) A is false, but R is true.

3. Assertion (A): A 1 M solution contains 1 mole of solute per litre of solution.

Reason (R): Molarity is defined as moles of solute per kilogram of solvent.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) A is false, but R is true.

4. Assertion (A): The law of conservation of mass is applicable only to chemical reactions occurring in a closed system.

Reason (R): Mass can neither be created nor destroyed in an isolated system.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) A is false, but R is true.

5. Assertion (A): The molecular formula of a compound is always the same as its empirical formula.

Reason (R): The molecular formula gives the exact number of different types of atoms in a molecule of a compound.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) A is false, but R is true.

6. Assertion (A): A solution of known concentration is called a standard solution.

Reason (R): Standard solutions are used in titrations to determine the unknown concentration of another solution.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) A is false, but R is true.

COMPETENCY BASED QUESTIONS

1. You have a solution of hydrochloric acid (HCl) with a concentration of 0.1 M. You need to prepare 250 mL of a 0.025 M HCl solution. Describe the steps you would take to dilute the solution and calculate the volume of the original 0.1 M solution needed.

2. A compound is found to contain 40% carbon, 6.7% hydrogen, and 53.3% oxygen by mass. Determine the empirical formula of the compound.

3. Calculate the number of grams of sodium chloride (NaCl) needed to prepare 500 mL of a 0.5 M NaCl solution.

4. During a titration, 25.0 mL of 0.1 M NaOH solution neutralizes 50.0 mL of an unknown HCl solution. Calculate the molarity of the HCl solution.

5. A 5.0 g sample of an unknown gas occupies 2.24 litres at STP. Calculate the molar mass of the gas.

6. A metal oxide contains 70% metal by mass. If the atomic mass of the metal is 56 and the oxide has the formula MO, find the atomic mass of oxygen and verify if the given atomic mass of the metal is consistent with the molecular formula.

CASE STUDY QUESTIONS

Case Study 1:

A laboratory technician needs to prepare 1 litre of a 0.1 M NaOH solution for a titration experiment. They have a stock solution of 1 M NaOH.

- 1. Describe the steps the technician should take to prepare the 0.1 M NaOH solution from the 1 M stock solution.
- 2. Explain why it is important to use a volumetric flask for this preparation.

Case Study 2:

In a titration experiment, 50 mL of a 0.1 M H_2SO_4 solution is used to neutralize 100 mL of NaOH solution.

1. Write the balanced chemical equation for the neutralization reaction.
2. Calculate the molarity of the NaOH solution.

Case Study 3:

A reaction between aluminum and chlorine gas produces aluminum chloride. When 13.5 g of aluminum reacts with 35.5 g of chlorine gas, the reaction goes to completion.

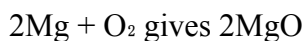
1. Write the balanced chemical equation for the reaction.
2. Determine the limiting reagent and the mass of aluminum chloride produced.

2 MARKS QUESTIONS

1. 3.0 g of H_2 reacts with 29.0 g of O_2 to yield H_2O .
 - i) Which is the limiting reagent ?
 - ii) Calculate the maximum amount of H_2O that can be formed.
 - iii) Calculate the amount of one of the reactants which remains unreacted.
2. Calculate the mole fraction of NaCl and H_2O , if 0.010 moles of NaCl is dissolved in 100 grams of pure water.
3. What is the advantage of using molarity over molality? 2.8 g of KOH is dissolved in water to give 200 cm^3 of solution . Calculate the molarity of KOH in the solution

3 MARKS QUESTIONS

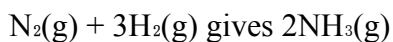
1. In an experiment, 5.3 grams of sodium carbonate (Na_2CO_3) is reacted with 6 grams of acetic acid (CH_3COOH). The products are 4.2 grams of carbon dioxide (CO_2), 0.9 grams of water (H_2O), and 6.2 grams of sodium acetate (CH_3COONa). Verify the Law of Conservation of Mass with this data.
2. A compound contains 40% carbon, 6.7% hydrogen, and 53.3% oxygen. Its molar mass is 180 g/mol. Determine the molecular formula of the compound.
3. In a reaction, 5 grams of ethylene (C_2H_4) reacts with 16 grams of oxygen (O_2) to produce carbon dioxide (CO_2) and water (H_2O). Determine the limiting reagent and calculate the amount of CO_2 produced.
4. A sample of magnesium (Mg) burns in air to form magnesium oxide (MgO). If 12 grams of Mg completely reacts, calculate the volume of oxygen gas (O_2) consumed at STP.



5. Two compounds are formed by elements X and Y. In the first compound, 1.2 grams of X combine with 1.6 grams of Y. In the second compound, 1.2 grams of X combine with 3.2 grams of Y. Show that these data illustrate the Law of Multiple Proportions.

5 Marks Questions

1. Ammonia (NH_3) is produced by the reaction of nitrogen gas (N_2) and hydrogen gas (H_2) according to the equation:

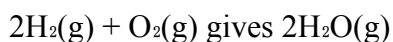


If 5.00 litres of nitrogen gas react with excess hydrogen gas at STP, calculate the volume of ammonia produced.

2. A compound is composed of 21.20% nitrogen, 6.71% hydrogen, and the rest oxygen by mass. Its molar mass is found to be 59.0 g/mol. Determine the empirical and molecular formulas of the compound.

3. In the synthesis of water, 4.50 grams of hydrogen gas (H_2) reacts with 36.0 grams of oxygen gas (O_2). Calculate:

1. the limiting reagent.
2. the mass of water produced.



BUSINESS STUDIES

OBJECTIVE TYPE/MULTIPLE CHOICE QUESTIONS

Q. Nutan General Store is a big businessman deals in selling Nestle products in his locality. He purchased products of Nestle directly from the State Distributor in bulk quantities and sold in the market. Small shopkeepers from different corners of the city. Identify the type of trade followed by Nutan General Store.

- (A) Wholesale Trade
- (B) Retail Trade
- (C) International Trade
- (D) Entrepot Trade

Q. Business Risk is not likely to arise due to:

- a. Change in government policy
- b. Good Management
- c. Employees Dishonesty
- d. Profit Earning

Q. The maritime route linked the east and the west by sea and were used for the trade of spices and known as

Q. The reward a businessman gets for bearing the risks is called

- a. Remuneration
- c. Bonus

b. Commission

d. Profit

Q. Documents such as and Chitti were used under Indigenous Banking System to carry out transactions in which money passed from hand to hand.

Q. The economic activity in which specialised knowledge is required

a. Business

c. Employment

b. Profession

d. None of them

Q. The occupation in which people work for others and get remunerated in return is known as.....

a.. Business

c. Employment

b. Profession

d. None of them

Q. During the Roman Empire,was particularly valued and was known as Black Gold.

Q. Which of the following does not characterise business activity ?

a. Production of goods

c. Presence of risks and services

b. Sale or exchange

d. Salary or Wages

Q.risk involve only possibility of loss or no loss.

Q. Chhavi cooks food at home for her family but Shelly cooks food and sells it to others in a restaurant. Who is engaged in business activity ?

Q. ABC LTD is planting trees on the road side. It is trying to achieve objectives of the business.

Q. risks means chance of loss without the possibility of gain.

Q. Pepper was particularly valued in the Roman Empire and was known as

Q. The maritime routes linked the east and the west by sea and were used for the trade of spices and known as

Q was another source of income generation. It had to be paid for passenger, goods, cattle and carts

Q. Profit is essential for covering of the business. Every business must earn reasonable profit to

Q. Which economic activity requires minimum academic and other qualification ?

Q. A hawker sells toys for children. How will you describe this activity ?

Q. " Business activities are undertaken with the object of earning money." Which characteristics of business is highlighted in this statement ?

Q. Is dairying a genetic or extractive industry? Why?

Assertion- Reasoning Based Questions

Q. Assertion (A) One of the main purposes of business is to earn income by way of

profit.

Reason (R) No business can survive for long without profit.

Codes

- (A) Both A and R are true. R is the correct explanation of A
- (B) Both A and R are true, but R is not the correct explanation of A
- (C) A is correct, but R is incorrect
- (D) A is incorrect, but R is correct

Q. Assertion (A) Business represents exchange of Goods and Services.

Reason (R) Risk and Uncertainties are always there with any form of business.

Codes

- (A) Both A and R are true. R is the correct explanation of A
- (B) Both A and R are true, but R is not the correct explanation of A
- (C) A is correct, but R is incorrect
- (D) A is incorrect, but R is correct

Q. Assertion (A) Profit earning is essential for the survival, growth and expansion of any business.

Reason (R) It is the sole objective of all business firms.

Codes

- (A) Both A and R are true. R is the correct explanation of A
- (B) Both A and R are true, but R is not the correct explanation of A
- (C) A is correct, but R is incorrect
- (D) A is incorrect, but R is correct

Q Assertion (A) Earning Livelihood is the main aim of Economic activities.

Reason (R) It helps people in earning their bread and butter by performing several activities.

Codes

- (A) Both A and R are true. R is the correct explanation of A
- (B) Both A and R are true, but R is not the correct explanation of A
- (C) A is correct, but R is incorrect
- (D) A is incorrect, but R is correct

SHORT ANSWER TYPE QUESTIONS

Q. List out the major items of export and import in the ancient times.

Q. Describe the concept of business

Q. Write a short note on history of commerce in India

Q. Explain the Role of Profit in the Business.

Q. Draw a Chart showing the classification of Business Activities.

Q. Why India was called 'Swarndweep'?

Q. Describe different types of Hundis.

Q. Explain with examples 'Genetic' and 'Construction' Industries.

LONG ANSWER TYPE QUESTIONS

Q. Discuss briefly the major trade centres in ancient India.

Q. What are the types of utilities created by business.

Q. Why do business need multiple objectives ? Explain any five such objectives.

Q. Distinguish between Business, Profession and Service

CASE STUDIES

Q. Rajiv wants to start a wholesale business of readymade garments but he is hesitating as it involves various problems such as searching for customers, for moving goods from place of production to place of consumption (market), informing customers about new design and varieties added in every season, threat of risk loss by fire or accident, storing the excess stocks of goods etc.

He approaches his friend Sandeep who explained him about some branches of Commerce, which can help Rajiv to overcome his hesitation.

A. State the type of business Rajiv is planning to start

B. State the dimension of business can help Rajiv to overcome these hindrances

C. Specify different type of Auxiliaries to trade which can help Rajiv to overcome his problems. Quote the line for each type from para.

Q. Mr. Pankaj is a lecturer in a college of Delhi University. He gets Rs. 90,000 p.m. as remuneration for his livelihood. Mr. Kartik has a computer shop and he sells and repairs computers. Mr. Arun is a C.A. and provides personalised expert services and charge fees for it. He also teaches some slum children in his free time and doesn't charge anything from them.

(i) Identify the type of economic activity they are associated with.

(ii) Teaching the slum children by Mr. Arun refers to which type of human activity & why?

Q. Kaushal's father gifted him a bat on his birthday. The cost of the bat was Rs. 1500. Few months later, Kaushal sold it to Shourya, one of his friends for Rs. 1600. He was very happy to earn a profit of Rs. 100. He was boosted by this transaction and after completing his studies, he started trading in bats & other sports material under the name M/s Kaushal Traders and started earning huge money.

(i) Can the transaction between Kaushal & Shourya be termed as business transaction? Give reason

(ii) Can the transaction between M/s Kaushal Traders & others be termed as business transaction? Give reason

Q. Ganga Ltd is a popular company manufacturing water coolers. Its product is very much liked by people in market. The traders are in race to become the company's distributors. The company had been earning huge

profits for many years. However, in the year 2018, the company's half yearly report shows a major decline in the company's profit. The top management is worried about this. A team of specialist from outside is appointed to solve this serious problem. After a thorough examination, the specialist presented the following reasons for the decline in the profits of the company.

- A. Increase in competitions and change in taste of the consumers
- B. Theft of cash and goods by employees.

Identify and Explain the two causes of decline in profits.

Sankalp is a successful entrepreneur dealing in Automobile sector especially with Two Wheelers at Ahmedabad. He has been constantly earning good profit from his business and investing surplus towards expansion of his business. All the latest Two-Wheeler models are available at his showroom. His marketing and sales team are managed to create new customers from time to time. His unique style of business management has brought him success.

1 Name the type of Business activity in which Sankalp is involved?

- (A) Tertiary industries
- (B) Secondary industries
- (C) Trade
- (D) Auxiliaries to trade

2 Name the type of economic activities performs by Sankalp.

- (A) Business
- (B) Profession
- (C) Employment
- (D) Religious Movement

3 Which type of objectives followed by the entrepreneur?

- (A) Economic Objective
- (B) Social Objective
- (C) Organizational Objective
- (D) Management Objective

4 Which of the following points are involved in the objective identified in part (b) above?

- (A) Profit Earning
- (B) Creating Customers
- (C) Innovation
- (D) All of the above

ECONOMICS

ASSIGNMENT 1

(To be done in Statistics notebook)

1. The progress report of a railway published by the railway department is what kind of data?
2. In an examination, 25 students secured the following marks:

23	28	30	32	35	35	36	40	41	43	44	45	45
----	----	----	----	----	----	----	----	----	----	----	----	----

48	49	52	53	54	56	56	58	61	62	65	68	
----	----	----	----	----	----	----	----	----	----	----	----	--

- a. Arrange these data in the form of a frequency distribution using the following as class intervals:
20-29, 30-39, 40-49, 50-59 & 60-69.
 - b. Arrange the data with cumulative frequencies.
3. Differentiate between primary and secondary data. Also explain three sources of secondary data.
 4. Write the qualities of a good questionnaire
 5. Distinguish between random sampling and stratified random sampling clearly explaining the two in detail.

ASSIGNMENT 2

1. Define the following terms
 - A. Investigator
 - B. Enumerator
 - C. Respondent
 - D. Pilot survey
2. Discuss the merits and demerits of census and sampling methods.
3. Explain Sampling and non-sampling errors.
4. Describe various methods of collecting primary data.
5. Highlight and explain the importance and scope of statistics in real life.

ASSIGNMENT 3

1. Define statistics in singular and plural sense.
2. Statistics is defined as an aggregate of numerical facts. Explain the statement with examples.
3. Discuss the precautions to be considered while making use of the secondary data.
4. Discuss the non-random methods of sampling.
5. Mention the types of statistical series on the basis of construction,.
6. An economic survey revealed that 30 families in a town incur following expenditure in day (rupees)

11	12	14	16	16	17	18	18	20	20	20	21	21	22	22
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

23	23	24	25	25	26	27	28	28	31	32	32	33	36	38
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

a. Convert these data in the form of a frequency distribution, using the following class intervals.

10-14, 15-19, 20-24, 25-29, 30-34 & 35-39.

b. How many families spend more than 29 rupees a day?

7. Construct a simple frequency distribution from the following data

MID VALUE	5	15	25	35	45	55
FREQUENCY	2	8	15	12	7	6

ASSIGNMENT 4

MICRO ECONOMICS

(To be done in Micro Economics notebook)

CHAPTER-1 ECONOMICS, ECONOMY AND CENTRAL PROBLEMS OF AN ECONOMY

VERY SHORT ANSWER TYPE QUESTIONS (1 MARK)

Q. Define an economy.

Q. What is meant by economizing resources?

Q. Name three central problems facing an economy.

Q. What is the shape of a PPC?

Q. When an economy is producing PPC, what does it indicate?

Q. Give two examples of growth of resources.

Q. What does production at any point below PPC indicate?

Q. Give one example of microeconomics study.

Q. Give two examples of underutilization of resources.

Q. What is the opportunity cost?

- Q. Define Marginal rate of transformation.
- Q. Give two examples of Micro variables.
- Q. Why does an economic problem arise?
- Q. What does the rightward shift of PPC indicate?
- Q. Give the meaning of micro economics.
- Q. Define PPC.
- Q. What is meant by scarcity of resources?
- Q. What does a point below PPC indicate?

SHORT ANSWER TYPE QUESTIONS (3/4 Marks)

- Q. What is an economic problem? How does it arise?
- Q. Explain the central problems of an economy.
- Q. Explain the concept of transformation curve with the help of a diagram.
- Q. Why is PPC downward from left to right?
- Q. Why is a PPC concave to its origin?
- Q. Mention the factors which cause an outward shift in PPC.
- Q. Write the differences between a centrally planned economy and a market economy.
- Q. Explain the concept of opportunity cost with the help of an example.
- Q. 'An economy always produces on but not inside a PPC'. Defend or refute with reasons.
- Q. Explain the central problem of 'for whom to produce' with example.
- Q. Explain the central problem of 'what to produce' with examples.
- Q. Explain the central problem of 'how to produce' with examples.
- Q. Explain any two causes of economic problem.
- Q. Explain any two factors which lead to shift of PPC.

Q. How is PPC affected by unemployment in an economy?

Q. Production in an economy is below its potential due to unemployment. Govt. starts income generation schemes. Explain its effect using PPC.

LONG ANSWER TYPE QUESTIONS (6 MARKS)

Q. Economics is concerned with the study of choices in situations of scarcity. How scarcity and choice go together?

Q. Explain briefly any four central problems of the economy.

Q. Explain the central problems relating to allocations of resources.

Q. Explain briefly how central problems are solved in a capitalist economy, a socialist economy and in a mixed economy.

Q. Draw a PPC showing full employment of resources, under utilization of resources and growth of resources. Explain.

Q. Distinguish between microeconomics and macroeconomics.

Q. Explain the difference between a planned economy and a market economy.

GEOGRAPHY

Q1. On a political map of India locate :

- a. all the states and their capitals
- b. all the water bodies and neighbouring countries (in a different map)
- c. Indian Standard Meridian ($82^{\circ} 30'$ East)
- d. Tropic of Cancer ($23 \frac{1}{2}^{\circ}$ N)
- e. Park Strait

Q2. Identify the states and locate them in different map

- a. Through which Tropic of Cancer passes
- b. through which Indian Standard Meridian passes
- c. touching Arabian Sea
- d. touching Bay of Bengal
- e. landlocked States

Q3. In the world political map identify and locate important countries, and water bodies

Q4. Revise all the chapters done in the class. Worksheets will be shared in the WhatsApp.

SOCIOLOGY

PROJECT WORK

RESEARCH BASED ACTIVITY

- Pick any one research question for your project.

- Questionnaire of 18 to 20 questions to be prepared with MCQs
- After getting checked by the subject teacher, a questionnaire is to be filled by from family and friends.
- Tabulation of all questions to be done. Pie charts/ Bar graphs to be prepared for each question.
- Other sections of the project work to be completed

ACADEMIC WORK

Learning checks and assertion and reasoning questions given in Google Classroom to be done and revised.

POLITICAL SCIENCE

Chapter 1 : Constitution: Why and How?

➤ Compare the Indian Constitution with 5 other Constitutions in terms of:

- 1) Time period taken in their formation
- 2) Process of Constitution making
- 3) Basic values enshrined
- 4) Impact on the country
- 5) It's relevance in present times

(in your register).

II) PROJECT WORK: Carry out Research and prepare a 'Project file' on any topic related to those mentioned in the Political Science textbooks. Keep the following points in mind:

- 1) The project should be interdisciplinary(related to the major streams of Humanities)
- 2) The learning outcomes must be clearly defined in the beginning of the file;
- 3) Try to integrate art(through cartoons, maps pictures, tables, concept maps etc.) to make the project interesting and engaging;
- 4) Correlate your project to the present situation as much as possible; Carryout newspaper references and pictures and articles from as many newspapers and scholarly magazines as possible.
- 5) Clearly mention the life skills and values you imbibe through the project in a paragraph towards the end;
- 6) The bibliography (all references which include both primary and secondary sources) must be clearly stated at the end;

7) Summarise the main themes in the form of short points on the last page;

GUIDELINES FOR SUBMITTING THE PROJECT

- Use A4 size sheets – coloured or white
- It should be a hand written project
- You can use newspaper clippings, maps, diagrams and material from the web
- Each illustration should be supported with a write up/relevance to the topic
- The cover page should be written in bold letters with the topic, name and roll number

FOLLOW THE SEQUENCE OF PAGES AS GIVEN BELOW:

a) Cover Page

Title of Project

Name of submitter

School name

Year – 2024-25

b) Acknowledgement

c) Index/Content with page number

d) Introduction

e) Topic wise research with appropriate pictures

f) Newspaper Articles/ Cartoons/Current findings / Case Studies

g) Summary and Conclusion

h) Bibliography

i) **Reflection** – Your reflection / experience while doing this project. Also add your learning.

j) Summary

RUBRICS:(FOR ASSESSMENT)

PRESENTATION :5 MARKS

VALIDITY OF DATA/INFORMATION :5 MARKS

RELEVANCE :5 MARKS

VIVA :5 MARKS

ENGLISH

(TO BE DONE IN ENGLISH NOTEBOOK)

Assignment 1- Writing skills

1. You are the manager, Excel Pharma Ltd. Draft an advertisement for your company for the post of Sales Executive (two) mentioning all details as per your requirements.
2. Vasant International school requires a receptionist. The administrative office drafts an advertisement for publication in the vacant columns of a newspaper. As the Administrative Officer(AO) of the school. Draft a classified advertisement inviting application for walk-in interview along with the testimonials.
3. You are A L Bhagat of C-108, Shakti Nagar, Delhi. You are a Chartered Accountant and you are capable of handling accounts and managing finances, having six years of experience. Draft an advertisement for The Times of India seeking a job (full time/part time).
4. You are Mohan. You intend to start Online hobby classes during the lockdown period at your residence. Write an advertisement to be published in The Hindu. (50 words) (Hints; name of hobby classes, date, time, qualified faculty, mode of admission, contact no etc.)
5. You own an independent house in Hyderabad and want to sell it. Draft an advertisement for a local daily by giving all necessary details.
6. Suppose you are Arnab , Director Study Plus, Australia. You wish to purchase land for setting up a school in India. Write a suitable advertisement inviting offers from land owners. Give necessary details like plot size, area or location and offer an out sight purchase. Do include your address in India.
7. You plan to sell your two wheeler. Draft a suitable advertisement in not more than 50 words under the classified columns of local daily, giving all necessary details.
8. You want to sell off some office furniture such as a table with chair, cupboards etc. as you are moving out of Bengaluru. Draft an advertisement for a local daily.
9. Ravi Teja of 217, DreamLand Apartments, Gachibowli, Hyderabad wants to rent out the second floor of his house to students only. Write an advertisement to be published in the To Let column of a local daily.
10. You want to purchase a newly constructed office in a prime location of Banjara Hills, Hyderabad. Draft an advertisement as per your requirements about location, price etc.

Assignment 2- Reading Skills

I. Read the following passages carefully and answer the questions that follow:

Comprehension 1

THE CUP THAT CHEERS

(1) If you're addicted to coffee, and doctors warn you to quit the habit, don't worry and keep relishing the beverage, because it's not that bad after all! In fact, according to a new study, the steaming cup of java even beat fruits and vegetables as the primary source of antioxidants. The study by the University of Scranton states that coffee is the number one source of antioxidants in American diet, and both caffeinated and decaf versions appear to provide similar antioxidant levels.

(2) "Americans get more of their antioxidants from coffee than any other dietary source. Nothing else comes close to it" said the study's lead researcher, Doctor Joe Vinson, adding that high antioxidant level in food and beverages don't necessarily translate into levels found in the body. Antioxidants in general have been linked to a number of potential health benefits, including protection against heart disease and cancer, but Vinson said that the benefits ultimately depend on how they are absorbed and utilised in the body.

(3) The researchers analysed the antioxidant content of more than 100 different food items, including vegetables, fruits, nuts, spices, oils and common beverages. The data was compared to an existing US Department of Agriculture database on the contribution of each type of food item to the average estimated US per capita consumption.

(4) The results were surprising. Coffee came out on the top, on the combined basis of both antioxidants per serving size and frequency of consumption. It outranked popular antioxidant sources like tea, milk, chocolate and cranberries.

(5) Of all the foods and beverages studied, dates actually have the most antioxidants of all based solely on serving size, but since dates are not consumed anywhere the level of coffee, the drink comes as the top source of antioxidants, Vinson said.

(6) Besides keeping you alert and awake, coffee has been linked to an increasing number of potential health benefits, including protection against liver and colon cancer, type II diabetes, and Parkinson's disease, according to some recently published studies.

(7) The researchers, however, advised that one should consume coffee in moderation, because it can make you jittery and cause stomach pains.

Source: ANI

On the basis of your reading of the passage, answer the following questions in your own words as far as possible. Use one or two sentences only for each answer. (12)

- i. What is the good news about coffee? (1)
- ii. "Nothing else comes close to it" (Para 2) 'It' in this line refers to? (1)
- iii. List the benefits of antioxidants. What factors determine the strength of these benefits? (2)
- iv. On what basis does coffee rank as the top source of antioxidants? (2)
- v. How are dates better than coffee? Why have they not made to the top of antioxidant rich foods? (2)
- vi. Find words from the above passage which almost mean the opposite of: (2)
a. hazards (Para 1-2) b. excess (Para 6-7)
- vii. Find words in the passage that mean the same as: (2)
a. to enjoy (Para 1) b. a drink (Para 1)

COMPREHENSION 2

(1) Spirituality seldom dribbled with soccer, until the ‘Hand of God’ came into play during the quarter final match of the 1986 World Cup football between Argentina and England. Diego Maradona claimed that divine intervention had helped him score the controversial goal.

(2) A short film made in 2003 by Mike Walker – Does God play football? – explored the relationship between God and Tommy, a seven year old football fan. Tommy’s only desire is to have a father of his own to play football with. In the absence of a real Dad, he adopts God as his father with the help of a local priest – very like how the human soul longs for communion with the Universal spirit.

(3) An individual remains unfit for spiritual journey without the requisite physical and mental strength. Vivekananda said: “You will be nearer to Heaven through football than through the study of Bhagavad Gita”. A player’s patience and perseverance is tested on the football field at every moment; the ability to wriggle out of tough situations and hold on to one’s nerves in tight situations. A seeker, too, has to undergo such trials during the inward game of realization.

(4) Look at football as a metaphor for life. The ball is the individual’s ego. Team members are family and friends; trust in teammates is the foundation of a good relationship and helps the player win the match of happiness. The opposition players are obstacles like anger, pride, hatred, that must be overcome to reach the goalpost. The goalpost is the universal consciousness to which a person must ultimately submit the ego, to achieve true bliss. The coach is the guru who teaches the way and the player learns from his mistakes on the field. The referee is the law of karma that reinforces the correct rules for playing. The audience is society that reacts to performance on the field. As in life, a game that has started must end. As long as a person is in the game, one gets the illusion of limited time and space. Only when the game gets over, does one realize the limitlessness of time and space.

(5) Every player is assigned a particular role on the field according to his skills – forward, midfielder, defender, or goalkeeper. Similarly, in life we have designated roles. Our capabilities and choices determine the contribution we make to the world through our work. Like a player who can manoeuvre the ball on the field, a person has the free will to choose his thoughts, words and actions. Football is meditation ‘on the run’. A player is always ‘in the moment’ for the entire duration of the play. The player has no thought of past and no use for the future, as all the scoring opportunities are created in the ‘now’.

(6) Football teaches one to be a good spectator, one who watches the game with passionate detachment. For him, an exciting football match is only that – a game. Wins or losses, even for his favourite team, do not bother him. A good spectator is like a joyful observer of life; he witnesses events around him as they come and go, and remains detached as he is always centered in truth.

(7) Today, football is a faith binding a legion of followers across the world. People, irrespective of their religions, nationalities and cultures, are tuning in simultaneously to watch live football. If this is not universal brotherhood, what else is?

(P. Venkatesh) (Source: <http://spirituality.indiatimes.com>)

(A) On the basis of your reading of the passage, answer the following questions in your own words as far as possible. Use one or two sentences only for each answer:

- i. What claim was made by Diego Maradona when he played for 1986 quarter-final match of the World Cup? (1 mark)
- ii. What is the theme of the short movie ‘Does God play football?’ (2 marks)
- iii. How can we get near to the Almighty by playing football? What are Vivekanand’s views regarding this? (2 marks)
- iv. How does football symbolize life? (2 marks)
- v. How is football meditation ‘on the run’? (1 mark)

vi. What are the similarities between playing the football game and playing the designated role in life? (2 marks)

(B) Find words in the passage which mean the same as the following: (2 marks)

i. a figment of imagination (Para 4)

ii. a planned and controlled movement or series of moves (Para 5)

COMPREHENSION 3

OVERPOPULATION – MAIN THREAT TO PLANET

(1) Climate change and global pollution cannot be adequately tackled without addressing the neglected issue of the world's booming population according to two leading scientists Professor Chris Rapley, Director of the British Antarctic Survey and Professor John Guillebaud.

(2) They believe that dealing with the burgeoning human population of the planet was vital if real progress was to be made on the other enormous problems facing the world. By the middle of the century, the United Nations estimates that the world population is likely to increase to more than nine billion, which is equivalent to an extra 200,000 people each day. Professor Rapley said the extra resources needed to sustain this growth in population would put immense strains on the planet's life support system even if pollution emissions per head could be dramatically reduced.

(3) "Although reducing human emissions to the atmosphere is undoubtedly of critical importance, as are any and all measures to reduce the human environmental 'footprint', the truth is that the contribution of each individual cannot be reduced to zero. Only the lack of the individual can bring it down to nothing," Professor Rapley says in an article for the BBC website.

(4) Professor Rapley says the explosive growth in the human population and the concomitant effects on the environment have been largely ignored by many of those concerned with climate change. "It is a bomb shell of a topic, with profound and emotive issues of ethics, morality, equity and practicability," he says. Professor Guillebaud, who co-chairs the Optimum Population Trust, said it became politically incorrect about 25 years ago to bring up family planning in discussing the environmental problems of the developing world. The world population needed to be reduced by nearly two-thirds if climate change was to be prevented and everyone on the planet was to enjoy a lifestyle similar to that of Europeans, Professor Guillebaud said.

(5) An environmental assessment by the conservation charity WWF and the World Watch institute in Washington found that humans were now exploiting about 20 percent more renewable resources than can be replaced each year.

(6) Professor Guillebaud said this meant it would require the natural resources equivalent to four more Planet Earths to sustain the projected 2050 population of nine billion people.

(7) "The figures demonstrate the folly of concentrating exclusively on lifestyles and technology and ignoring human numbers in our attempts to combat global warming," he said. "We need to think about climate changers – human beings and their numbers as well as climate change." Some environmentalists have argued that it is not human numbers that are important, but the relative use of natural resources and production of waste such as carbon dioxide emissions. They have suggested that the planet can sustain a population of nine billion people or even more provided that everyone adopts a less energy-lifestyle based on renewable sources of energy rather than fossil fuels.

(8) But Professor Guillebaud said: "We urgently need to stabilize and reduce human numbers. There is no way that a population of nine billion – the UN's medium forecast for 2050 – can

meet its energy needs without unacceptable damage to the planet and a great deal of human misery.” (Steve Connor)

(A) On the basis of your reading of the passage, answer the following questions in your own words as far as possible. Use one or two sentences only for each answer: (10 marks)

(i) What is the precondition for tackling climate change and pollution according to Prof. Rapley and Prof. Guillebaud? (1 mark)

(ii) Why is the United Nation’s estimate of the world population increasing to 9 billion by the middle of the twenty first century alarming? (2 marks)

(iii) Why does Prof. Rapley call over population a “bombshell of a topic”? (1 mark)

(iv) What solution does Prof. Rapley and Prof. Guillebaud suggest to save the planet earth from total catastrophe? (2 marks)

(v) How can the earth sustain a population of 9 billion, according to some environmentalists? (2 marks)

(vi) “The figures demonstrate the folly,” Which figures demonstrate which folly? (2 marks)

(B) Find words in the passage which mean the same as the following: (2marks)

(i) increasing rapidly (Para2) (ii) very deep or far reaching (Para 4)

COMPREHENSION 4

Sea Rises, Japan Quakes

(1) Tokyo: A ferocious tsunami spawned by the biggest earthquake ever recorded in Japan (and the fifth worse in the world since 1900) slammed the country’s eastern coast on Friday, killing hundreds – Kyodo says toll could cross 1000, sweeping away houses, boats and cars across cities and farms. Hours later, the tsunami hit Hawaii and set off warnings as far away as the west coast of the US and South America.

(2) Japanese police officials said the toll was at least 1,000 with 300 hundred bodies found in Sendai, a port city in north-eastern Japan and the closest large population to the epicentre. The full extent of injuries weren’t known and the toll is feared to rise substantially.

(3) Walls of water whisked away houses and cars in central Japan, where terrified residents fled the coast. Train services were shut down across central and northern Japan, including Tokyo, and air travel was severely disrupted. A ship carrying over 100 people was swept away by the tsunami, Kyodo News reported.

(4) Even for a country used to earthquakes, this one was horrific because of the tsunami that swallowed everything in its path as it surged several kilometres inland before retreating. The government evacuated thousands of residents near a nuclear plant about 250km northeast of Tokyo after a backup generator failed.

Source: The Times of India

i. How did the tsunami come in Japan? (2 marks)

ii. Where is Sendai situated? (1mark)

iii. Why were the residents living near the nuclear plant asked to evacuate? (1mark)

iv. What is the catastrophe that the country has in store? (2marks)

v. What were the repercussions of the tsunami? (2marks)

vi. Find words in the passage that mean the same as: (4 marks)

a. produced (Para 1)

b. fierce (Para 1)

c. brush with a sweeping movement (3 Para)

d. bring disorder to (Para 3)

Assignment 3- ALS

Project Work

Read any one of the following books :

A) The Broken Earth trilogy, N. K. Jemisin

<https://up-pdf.com/epub-download-the-fifth-season-the-broken-earth-9780356508191-ink>

B) THE DECAMERON Boccaccio Giovanni

<http://pinkmonkey.com/dl/library1/b1.pdf>

C) No One Is Talking About This by Patricia Lockwood

<https://booksvooks.com/fullbook/no-one-is-talking-about-this-pdf-patricia-lockwood.html?page=13>

D) "Say Nothing:by Patrick Radden Keefe

<https://www.up-pdf.com/download-say-nothing-by-patrick-radden-keefe-otk>

E)Pride and Prejudice

by Jane Austen

Prepare a book review and critical appreciation along with the character sketches as a PPT. (20-25 slides) (to be presented in class (10mks)

MUSIC – HINDUSTANI (VOCAL)

1. Description of :

(i) Teental and Dadra.

(ii) Sangeet, Naad and Saptak.

2. Learn Notation of Drut Khayal: Raga Bihag and Jaunpuri.

3. Practice one bhajan and one Folk song (tribal).

4. Description and practice of Alankar and any Film/Non-Film Sufi/Patriotic Song.

COMPUTER SCIENCE

1	Write down the data types of following values: 105, "Computers", 238.7, "New Delhi 110070" , True
2	Government has started a savings scheme for one year of savings based on the age of the student. Write a program to input the age of a student and principal amount deposited by him/her. Calculate Simple Interest as per following conditions: Age Interest rate(%) >=10 and <=12 4 >=13 and <=15 5 >=16 and <=12 6 otherwise 0
3	Write the result of following expression: a. $15 + 22//5 * 2 - 50\%4$ b. $(100-300) < 200$ and $20**2 > 1000$ or $40 < (15+35)$
4	Rewrite the following code after removing error(s) if any. Underline each correction. M = 30: for i in Range(0,M): print[i] if M % 5 = 0: M + 1 = M
5	Identify the valid Python identifiers from the following : account_number, for, firstName, 2book
6	Write the data types of following python objects or variables: a. Rollno = 5 b. Sports = "Football" c. Result = True d. Value = 2.0679
7	Write a program to input salaries of two employees. Display the higher salary.
9	Write two differences between Interpreter and Compiler with reference to a programming language.
10	Write a program to input an integer and find the square and cube of the number.
11	WAP to solve following expression: $D = (A^2 + B^3) / (7A + 2B^4)$ Input the values of A, B from the user.

12	Write a program that takes the name and age of the user as input and displays a message whether the user is eligible to apply for a driving license or not. (the eligible age is 18 years and above).
	Study The chapter Societal Impact (ch-11 of NCERT Class-XI) and solve the questions from exercise given in the chapter from Q1 to Q21.
13	<p>Case Based Question</p> <p>Apeksha, a member of the Creative Club of a school, wrote a story about a sea turtle. She holds the copyright to her story, ``The fisherman and sea turtle''. Copyrights are automatically granted to creators and authors. Another student Yuvika wrote a play based on her story, without her permission.</p> <p>Answer the following questions based on the above case:</p> <ol style="list-style-type: none"> Write any two benefits of copyright? Write the type of property ApekshaRashmi possesses in the form of a story "The fisherman and sea turtle". Specify the rights provided by the copyright law. Yuvika has violated the law which provides the data protection against plagiarism. Write the name of that law. What was the responsibility of Yuvika before writing a play based on Rashmi's story?
14	<p>Fill in the blank by selecting suitable option from the given options:</p> <p>_____ includes websites we visit, emails we send, and any information we submit online, etc., along with the computer's IP address, location, and other device specific details.</p> <ol style="list-style-type: none"> Digital activity Digital footprint Digital calculation Digital society
15	<p>Select the correct statement from the given options:</p> <p>The Government of India's Information Technology Act, also known as IT Act , provides guidelines to the user on the:</p> <ol style="list-style-type: none"> processing, storage and transmission of sensitive information. writing and editing of sensitive information. formatting and reading of sensitive information. formatting and deleting of sensitive information.

PHYSICAL EDUCATION

Prepare a record file, practical no 1 to 3 on Physical Education lab manual (Please see in Physical Education lab Manual).

Practical -1 Fitness tests administration for all items

Practical -2 : Procedure for Asanas, Benefits & Contraindications for each lifestyle disease.

Practical -3 :Any one game of your choice out of the list above. Labelled diagram of field & Equipment (Rules, Terminologies & Skills) Anyone IOA recognised Sports/game choice, Labelled diagram of field and equipment. Also mentions rules terminologies and skills.