

- (a) A is true, R is false.
 (b) A is false, R is true.
 (c) Both A and R are true.
 (d) Both A and R are false.
- (xi) A retailer purchased an item for ₹ 1500 from a wholesaler and sells it to a consumer for 1650. The sales are intra-state and rate of GST is 10%. The amount of GST paid by the retailer is :
 (a) ₹ 15 (b) ₹ 30
 (c) ₹ 150 (d) ₹ 165
- (xii) The probability of the sun rising from the east is $P(S)$. The value of $P(S)$ is :
 (a) $P(S) = 0$ (b) $P(S) < 0$
 (c) $P(S) = 1$ (d) $P(S) < P(S) \leq 1$
- (xiii) If 3 is the root of the quadratic equation $x^2 - px + 3 = 0$, then p is equal to :
 (a) 4 (b) 3 (c) 5 (d) 2
- (xiv) A list of number whose n^{th} term is $3n-5$, represents an A.P.
Statement -1: The 11th term of the list $3x-5$ is 27.
Statement -2: The common difference of an A.P. cannot be negative number.
 (a) Both the statements are true.
 (b) Both the statements are false.
 (c) Statement 1 is true, and statement 2 is false.
 (d) Statement 1 is false, and statement 2 is true.
- (xv) A (1, 4), B (4, 1) and C (x, 4) are the vertices of ΔABC . If the centroid of the triangle is G (4, 3), then x is equal to :
 (a) 2 (b) 1 (c) 7 (d) 4
- Q.2. (i) Using Properties of proportion, find $a : b$, given : [4]

$$\frac{a^3 + 3ab^2}{b^3 + 3a^2b} = \frac{63}{62}$$
- (ii) Find the equation of a line parallel to the line $2x + y - 7 = 0$ and passing through the intersection of the lines $x + y - 4 = 0$ and $2x - y = 8$ [4]
- (iii) Show that $(x - 1)$ is a factor of the polynomial $3x^3 + 8x^2 - 15x + 4$. Hence factorize the polynomial completely. [4]
- Q.3. (i) In a recurring deposit account for 2 year, the total amount deposited by a person is ₹ 9600. If the interest earned by him is one-twelfth of his total deposit, then find : [4]
 (a) the interest he earns.
 (b) his monthly deposit.
 (c) the rate of interest.
- (ii) Rohit invested ₹ 9600 in ₹ 100 shares at ₹ 20 premium paying 8% dividend. Rohit sold the shares when the price rose to ₹ 160. He invested the proceeds (excluding dividend) in 10% ₹ 50 shares at ₹ 40. Find the : [4]
 (a) the original number of shares
 (b) the sale proceeds
 (c) new number of shares
 (d) change in two dividends
- (iii) Use graph paper sheet for this question : [5]
 Take 2 cm = 1 unit along both the axes.
 (a) Plot A, B, C where A (0, 4), B (1, 1) and C (4, 0)
 (b) Reflect A and B on the x-axis and name them as E and D respectively.
 (c) Reflect B through origin and name it F. Write down the coordinates of F.
 (d) Reflect B and C on the y-axis and name them as H and G respectively.
 (e) Join points A, B, C, D, E, F, G, H and A in order and name the closed figure formed.

SECTION 'B' - 40 Marks

(Attempt any four questions from this section)

- Q.4. (i) Solve the following inequation, write the solution set and represent it on the real number line : [3]

$$-2\frac{5}{6} < \frac{1}{2} - \frac{2x}{3} \leq 2, x \in W$$

- (ii) When $x^3 + 3x^2 - kx + 4$ is divided by $x - 2$, the remainder is k . Find the value of the constant k . [3]
 (iii) The following bill shows the GST rate and the marked price of articles : [4]

S.No.	Item	Marked price	Discount	Rate of GST
(a)	LED TV set	₹ 12000	-	20%
(b)	Dry fruits	₹ 1200	₹ 200	10%
(c)	MP4 player	₹ 6000	₹ 600	15%

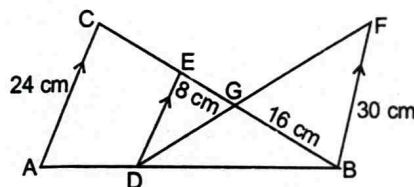
Find the total amount to be paid (including GST) for the above bill.

- Q.5. (i) Mr. Gowami deposits ₹ 1000 every month in a recurring deposit account for 5 years at 8% interest per annum. Find the matured value. [3]
 (ii) A bag contains 25 cards, numbered through 1 to 25. A card is drawn at random, what is the probability that the number on the drawn card is : [3]
 (a) multiple of 5 (b) a perfect square
 (c) a prime number ?
 (iii) A trader buys x articles for a total cost of ₹ 600. [4]
 (a) Write down the cost of one article in terms of x . If the cost per article were ₹ 5 more, the number of articles that can be bought for ₹ 600 would be four less.

- (b) Write down the equation in x for above situation and solve it to find x .
 Q.6. (i) Salman invests a sum of money in ₹ 50 shares, paying 15% dividend quoted at 20% premium. If his annual dividend is ₹ 600, calculate : [3]
 (a) the number of shares he bought.
 (b) his total investment.
 (c) The rate of return on his investment.
 (ii) A bag contains 6 red balls and some blue balls. If the probability of drawing a blue ball is twice that of a red ball. Find the number of total possible outcomes. [3]

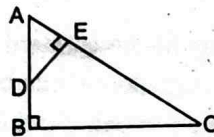
- (iii) In the given figure, $AC \parallel DE \parallel BF$, [4]
 If $AC = 24$ cm, $EG = 8$ cm, $GB = 16$ cm, $BF = 30$ cm :

- (a) Prove : $\triangle GED \sim \triangle GBF$
 (b) Find the length of DE
 (c) Find $DB : AB$



- Q.7. (i) Given a line segment AB joining the points $A(-4, 6)$ and $B(8, -3)$, Find : [3]
 (a) the ratio in which AB is divided by the y -axis at point M (say).
 (b) the coordinates of the point of intersection M .
 (ii) The first and last terms of a G.P. are 3 and 96 respectively. If the common ratio is 2, find :
 (a) 'n' the number of terms of the G.P.
 (b) sum of n terms.

- (iii) If $A = \begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 4 \\ -1 & 7 \end{bmatrix}$ and $C = \begin{bmatrix} 1 & 0 \\ -1 & 4 \end{bmatrix}$, find $AC + B^2 - 10C$ [4]
- Q.8. (i) Using ruler and compass only construct $\angle ABC = 60^\circ$, $AB = 6$ cm and $BC = 5$ cm. [5]
- (a) construct the locus of points equidistant from AB and BC.
 (b) construct the locus of points equidistant from A and B.
 (c) Mark the point which satisfies both the conditions (a) and (b) as 'P'.
 (d) Hence construct a circle with centre P and passing through A and B.
- (iii) A(a, b), B(-4, 3) and C(8, -6) are the vertices of $\triangle ABC$. Point D is on BC such that $BD : DC$ is 2 : 1 and M (6, 0) is the mid point of AD. Find : [5]
- (a) coordinates of point D
 (b) coordinates of point A.
 (c) equation of a line passing through M and perpendicular to line BC.
- Q.9. (i) Solve the following inequation and write the solution set : [3]
- $$13x - 5 < 15x + 4 < 7x + 12, x \in \mathbb{R}$$
- Represent the solution set on a real number line.
- (ii) Solve the quadratic equation $x^2 - 3(x+3) = 0$, give your answer correct to two significant figures. [3]
- (iii) The sum of the first three terms of an A.P. is 42 and the product of the first and the third term is 52. Find the first term and the common difference. [4]
- Q.10. (i) If y is mean proportional between x and z prove that : [3]
- $$xyz(x+y+z)^3 = (xy + yz + zx)^3.$$
- (ii) If $X = \begin{bmatrix} 4 & 1 \\ -1 & 2 \end{bmatrix}$, show that $6X - X^2 = 9I$, where I is the unit matrix of order 2. [3]
- (iii) ABC is a right angled triangle with $\angle ABC = 90^\circ$, D is any point on AB and DE is perpendicular to AC. Prove that : [4]
- (a) $\triangle ADE \sim \triangle ACB$
 (b) If $AC = 13$, $BC = 5$ cm and $AE = 4$ cm. Find the lengths of DE and AD.
 (c) Find, area of $\triangle ADE$: area of quadrilateral BCED.



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