

"Section-B"

Marks: 36

Q.2. Attempt any nine (9) of the following parts. All parts carry equal marks.

- (i) Solve for a, b, c, d when $\begin{bmatrix} a+b & b+2c \\ c & a-d \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 2 & 1 \end{bmatrix}$
- (ii) Simplify : $\sqrt[5]{x^5} \cdot \sqrt[4]{x^4}$
- (iii) Solve the equation for x , $\log_3(5x+1) = 2$
- (iv) Evaluate $\frac{m+l-k}{k^2+l^2-m}$ when $k = -2$, $l = 3$, $m = 4$
- (v) Find the values of $x^2 + y^2$ and xy , when $x + y = 7$ and $x - y = 3$
- (vi) Factorize : $25a^2b^2 - 20abc + 4c^2 - 16b^2$
- (vii) Find 'k' when $x^3 + 9x^2 - (3k - 4)x + 2$ is exactly divisible by $x - 1$.
- (viii) If product of two polynomials is $x^4 + 5x^3 - 6x^2 - 2x - 28$ and their H.C.F is $x - 2$, Find their L.C.M.
- (ix) Simplify : $\frac{3}{y-2} - \frac{y}{y^2-4}$
- (x) Find the square root of $x^2y^2 + 8xy + 16$ by factorization method.
- (xi) Solve for x when $|3x - 5| + 7 = 11$
- (xii) Find $|\overline{AB}|$ for $A(-3, 7)$ and $B(5, \theta)$.

"Section-C"

Marks: 24

Note:- Attempt any three (3) questions. All questions carry equal marks.

- Q.3. If two angles of a triangle are congruent, then prove that the sides opposite to those angles are also congruent.
- Q.4. Prove that: Any point on the right bisector of a line segment is equidistant from the end points of the segment.
- Q.5. Prove that: From a point outside a line, the perpendicular is the shortest distance from the point to the line.
- Q.6. Construct a ΔABC with measures $m\angle A = 60^\circ$, $m\overline{AB} = 4 \text{ cm}$, $m\overline{AC} = 5 \text{ cm}$.