

Topic : Parabola

Type of Questions

Single choice Objective (no negative marking) Q.1,2,3

(3 marks, 3 min.)

M.M., Min.

[9, 9]

Multiple choice objective (no negative marking) Q.4,5

(5 marks, 4 min.)

[10, 8]

Subjective Questions (no negative marking) Q.6,7,8

(4 marks, 5 min.)

[12, 15]

- The parabola having its focus at (3, 2) and directrix along the y – axis has its vertex at–
 (A) (2, 2) (B) $\left(\frac{3}{2}, 2\right)$ (C) $\left(\frac{1}{2}, 2\right)$ (D) $\left(\frac{2}{3}, 2\right)$
- Through the vertex 'O' of the parabola $y^2 = 4ax$, variable chords OP and OQ are drawn at right angles. If the variable chord PQ intersects the axis of x at R, then distance OR:
 (A) varies with different positions of P and Q
 (B) equals the semi latus rectum of the parabola
 (C) equals latus rectum of the parabola
 (D) equals double the latus rectum of the parabola
- Area of the triangle formed by the tangents at the points (4, 6), (10, 8) and (2, 4) on the parabola $y^2 - 2x = 8y - 20$, is (in sq. units)
 (A) 4 (B) 2 (C) 1 (D) 8
- The equation of tangents drawn to the parabola $y^2 + 12x = 0$ from the point (3, 8) is/are
 (A) $3x - y - 1 = 0$ (B) $x - 2y + 13 = 0$ (C) $x + 3y - 27 = 0$ (D) none of these
- The equation $y^2 + 3 = 2(2x + y)$ represents a parabola with the vertex at :
 (A) $\left(\frac{1}{2}, 1\right)$ & axis parallel to x – axis (B) $\left(1, \frac{1}{2}\right)$ & axis parallel to x – axis
 (C) $\left(\frac{1}{2}, 1\right)$ & focus at $\left(\frac{3}{2}, 1\right)$ (D) $\left(\frac{1}{2}, 1\right)$ & axis parallel to y – axis
- The focal distance of a point on a parabola $y^2 = 8x$ is 8. Find it
- Two tangents to the parabola $y^2 = 8x$ meet the tangent at its vertex in the points P and Q. If PQ = 4 units, find the locus of the point of intersection of the two tangents.
- Find the equations of common tangents to the parabola $y^2 = 16x$ and the circle $x^2 + y^2 = 8$.