CONIC SECTION

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I. SECTION B

31. A hyperbola passes through point p($\sqrt{2}$, $\sqrt{2}$) and has foci at $(\pm 2, 0)$. Then the tangent to this hyperbola at P also passes through the point : (JEE M 2017)

a) $(-\sqrt{2}, -\sqrt{3})$

b) $(3\sqrt{2}, 2\sqrt{3})$

c) $(2\sqrt{2}, 3\sqrt{3})$

d) ($\sqrt{3}$, $\sqrt{2}$)

32. The radius of a circle, having minimum area, which touches the curve $y = 4 - x^2$ and the lines ,$y = |x|$ is : (JEE M 2018)

a) 4($\sqrt{2}$+1)

b) 2($\sqrt{2}$+1)

c) 2($\sqrt{2}$-1)

d))4($\sqrt{2}$-1)

33. Tangents are drawn to the hyperbola $4x^2 - y^2$=36 at the points P and Q. If these tangents intersect at the point T(0,3) then the area (in sq.units) of Δ PTQ is: (JEE M 2018)

a) $54\sqrt{3}$

b) $60\sqrt{3}$

c) $36\sqrt{3}$

d) $45\sqrt{5}$

34. tangent and normal are drawn at P(16,16) on the parabola $y^2 = 16x$, which is intersect the axis of the parabola at A and B,respectively.If C is the centre of the circle through the points P,A and B and $\angle$ CPB=θ, then the value of tanθ is : (JEE M 2018)

a) 2

b) 3

c) 4/3

d) 1/2

35. Two sets A and B are as under:
A={(a,b)$\in$RXR : $|a - 5| < 1$ and $|b - 5| < 1$};
B={(a,b)$\in$RXR : $4(a-6)^2 + 9(b-5)^2 \leq 36$}.Then: (JEE M 2018)

a) A$\subset$B

b) A$\cap$B

c) neither A$\subset$B nor B$\subset$A

d) B$\subset$A

36. If the tangent at (1,7) to the curve $x^2 = y - 6$ touches the circle $x^2 + y^2 + 16x + 12y + c = 0$ then the value of c is : (JEEM 2018)

a) 185

b) 85

c) 95

d) 195

37. Axis of a parabola lies along X-axis.If its vertex and focus are at a distance 2 and 4 respectively from origin, on the positive X-axis then which of the following points does not lie on it? (JEE M 2018)

a) $(5,2\sqrt{6})$

b) (8,6)

c) $(6,4\sqrt{2})$

d) (4,-4)

38. Let $0<\theta<\pi/2$ .If the eccentricty of the hyperbola $\frac{x^2}{cos^2\theta} - \frac{y^2}{sin^2\theta} = 1$ is greater than 2, then the length of its latus rectum lies in the interval:
(JEE M 2019-9 Jan(M)

a) $(3,\infty)$

b) (3/2,3]

c) (2,3]

d) (1,3/2]

39. Equation of a common tangent to the circle $x^2 + y^2 - 6x = 0$ and the parabola $y^2 = 4x$, is:
(JEE M 2019-9 Jan(M))

a) $2\sqrt{3}y=12x+1$

b) $\sqrt{3}y=x+3$

c) $2\sqrt{3}y = -x - 12$

d) $\sqrt{3}y=3x+1$

40. If the line $y=mx+7\sqrt{3}$ is normal to the hyperbola $\frac{x^2}{24}-\frac{y^2}{18}$ then a value of m is:
(JEEM 2019-9 April(M))

a) $\sqrt{5}/2$

b) $\sqrt{15}/2$

c) $2/\sqrt{5}$

d) $3/\sqrt{5}$

41. if one end of a focal chord of the parabola,$y^2 = 16x$ is at (1,4),then the length of this focal chord is :
(JEE M 2019-9 Jan(M))

a) 25

b) 22

c) 24

d) 20