CONIC SECTION

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I. SECTION B

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

   a) $(-\sqrt{2}, -\sqrt{3})$ c) $(2\sqrt{2}, 3\sqrt{3})$
   b) $(3\sqrt{2}, 2\sqrt{3})$ 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) $4(\sqrt{2}+1)$ c) $2(\sqrt{2}-1)$
   b) $2(\sqrt{2}+1)$ 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 $\mathbf{T}(\mathbf{0}, \mathbf{3})$ 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 $\mathbf{P}(\mathbf{16}, \mathbf{16})$ 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)$\in\mathbb{R}X\mathbb{R}$: $|a - 5| < 1$ and $|b - 5| < 1$};
B={(a,b)$\in\mathbb{R}X\mathbb{R}$: $4(a-6)^2 + 9(b-5)^2 \leq 36$}.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 $(\mathbf{1}, \mathbf{7})$ 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) $(5,2\sqrt{6})$ c) $(6,4\sqrt{2})$
   b) $(8,6)$ 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) $(3,\infty)$ c) $(2,3]$
   b) $(3/2,3]$ 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) $2\sqrt{3}y=12x+1$ c) $2\sqrt{3}y = -x - 12$
   b) $\sqrt{3}y=x+3$ 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 $(\mathbf{1}, \mathbf{4})$,then the length of this focal chord is :
(JEE M 2019-9 Jan(M))

a) 25   b) 22   c) 24   d) 20