J.E.E. Main/ Advanced Foundation - XI Maths Worksheet

Time: 60 min **Chapter#11. Conic Sections** **Full Marks:**

Q.1	Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the length of the latus rectum of the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$. (3 marks)
Q.2	If a parabolic reflector is 20 cm in diameter and 5 cm deep, find the focus. (3 marks)
Q.3	Find the equation of the parabola with vertex (0,0), passing through the point (4,5) and symmetric about the x - axis. (2 marks)
Q.4	Find the equation of the circle which passes though the points (3,7), (5,5) and has its centre on the line x - 4y = 1. (5 marks)
Q.5	Find the equation of the circle which passes through the points (2, –2), and (3, 4) and whose centre lies on the line $x + y = 2$. (3 marks)
Q.6	Examine whether the points (2,3) lies inside, outside or on the circle $x^2 + y^2 + 2x + 2y - 7 = 0$. (2 marks)
Q.7	Find the equation of the hyperbola satisfying the give conditions: Vertices (0, ±3), foci (0, ±5). (2 marks)
Q.8	Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the length of the latus rectum of the ellipse $\frac{x^2}{25} + \frac{y^2}{100} = 1$. (3 marks)
Q.9	Find the centre and radius of the circle : $x^2 + y^2 - 8x + 10y - 12 = 0$
Q.10	Find the equation of the hyperbola satisfying the give conditions: Foci (±4, 0), the latus rectum is of length 12. (3 marks)
Q.11	Find the equation of the circle with centre (–a, –b) and radius $\sqrt{a^2 - b^2}$. (2 marks)
Q.12	Find the equation of a circle with centre (2, 2) and passes through the point (4, 5). (3 marks)
Q.13	An equilateral triangle is inscribed in the parabola $y^2 = 4ax$, where one vertex is at the vertex of the parabola. Find the length of the side of the triangle. (5 marks)
Q.14	Find the equation of the parabola that satisfies the following conditions: Vertex (0, 0) passing through (2, 3) and axis is along x-axis. (3 marks)
Q.15	Find the radius of the circle $x^2 + y^2 - 4x + 2y + 1 = 0$. (1 mark)
Q.16	Find the equation of the ellipse that satisfies given conditions:Vertices (±6, 0), foci (±4, 0). (3 marks)
Q.17	Find the equation of the circle with radius 5 whose centre lies on x-axis and passes through the point (2,3).
Q.18	Find the equation of the circle with centre at (-3, 2) and radius 4. (1 mark)
Q.19	Find the equation for the ellipse that satisfies the given conditions: Major axis on the x-axis and passes through the points (4, 3) and (6, 2). (3 marks)
Q.20	Find the equation of the parabola with focus (5, 0) and directrix $x = -5$. (2 marks)