Std : XII	SLIP TEST	Marks : 40
Date : 11.08.2019	MATHS	Time : 1 hr

I. Choose the correct answer: (10 x 1 = 10)

1. The eccentricity of the hyperbola whose latus rectum is 8 and conjugate axis is equal to half the distance between the foci is

   a) $\frac{4}{3}$ b) $\frac{4}{\sqrt{3}}$ c) $\frac{2}{\sqrt{3}}$ d) $\frac{3}{2}$

2. The length of the diameter of the circle which touches the x-axis at the point(1,0) and passes through the point (2, 3)

   a) $\frac{6}{5}$ b) $\frac{5}{3}$ c) $\frac{10}{3}$ d) $\frac{3}{5}$

3. The radius of the circle $3x^2 + by^2 + 4bx - 6by + b^2 = 0$ is

   a) 1   b) 3   c) $\sqrt{10}$ d)$\sqrt{11}$

4. The radius of the circle passing through the point (6, 2) two of whose diameter are x + y = 6 and X + 2y = 4 is

   a) 10   b) $2\sqrt{5}$ c) 6   d) 4

5. If x +y = k is a normal to the parabola $y^2 = 12x$, then the value of k is

   a) 3   b) -1   c) 1   d) 9

6. The equation of the circle passing through the foci of the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$. I having centre at (0, 3) is

   a) $x^2 + y^2 - 6y - 7 = 0$ b) $x^2 + y^2 - 6y + 7 = 0$

   c) $x^2 + y^2 - 6y - 5 = 0$ d) $x^2 + y^2 - 6y + 5 = 0$

7. Area of the greatest rectangle inscribed in the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is

   a) 2ab   b) ab   c) $\sqrt{ab}$ d) $\frac{a}{b}$

8. The eccentricity of the ellipse $(x - 3)^2 + (y - 4)^2 = \frac{y^2}{9}$ is

   a) $\frac{\sqrt{3}}{2}$ b) $\frac{1}{3}$ c) $\frac{1}{3\sqrt{2}}$ d) $\frac{1}{\sqrt{3}}$

9. The circle passing through (1, −2) and touching the axis of x at (3,0) passing through the point

   a) (−5,2)   b) (2, −5)   c) (5, −2)   d)(−2, 5)

10.   If the coordinates at one end of a diameter of the circle $x^2 + y^2 - 8x - 4y + c = 0$ are (11, 2),

       The coordinates of the other end are

       a) $(-5, 2)$ b) $(2, -5)$ c) $(5, -2)$ d) $(-2, 5)$

II. Answer the following questions: (3 x 2= 6)

11.   Find the general equation of the circle whose diameter is the line segment joining the points

       $(-4, -2)$ and $(1, 1)$.

12.   Examine the position of the point (2,3) with respect to the circle $x^2 + y^2 - 6x - 8y + 12 = 0$

13.   If $y = 4x + c$ is a tangent to the circle $x^2 + y^2 = 9$. Find c.

III. Answer the following questions: (3 x 3= 9)

14.   A line $3x + 4y + 10 = 0$ cuts a chord of length 6 units on a circle with centre of the circle(2,1) .find the equation of the circle in general form.

15.   Find the equation of the circle with centre $(2, -1)$ and passing through the point (3,6) in standard form.

16.   A circle of area 9π square units has two of its diameters along the lines $x + y = 5$ and $x - y = 1$. Find the equation of the circle.

IV. Answer the following questions: (3 x 5 = 15)

17.   Find the equation of the circle passing through the points (1, 1,) (2, −1) and (3,2).

18.   Find the equation of the circle with centre (2,3) and passing through the intersection of the lines

       $3x - 2y - 1 = 0$ and $4x + y - 27 = 0$.

19.   If the equation $3x^2 + (3-p) xy + qy^2 - 2px = 8pq$ represents a circle, find p and q. also determines the centre and radius of the circle.