Conic Section

1) The equation of the parabola is $(x+2)^2 = -20(y-3)$, then the axis is:

(1) the x axis (2) the y axis

(3) a line parallel to the y axis (4) y=k.

2) Focus of the parabola $y^2 + 2y + 4x + 5 = 0$ is:

(1) (-2,-1) (2) (2,-1)

(3) (-2,1) (4) (2,1)

3) The axis of the parabola $x^2 + 20y + 4x – 56 = 0$ is:

(1) x+2=0 (2) x-2=0

(3) y+2=0 (4) y-2=0.

4) The line y = 2x+k will intersect the parabola $y^2 = 2x$ if:

(1) k = ¼ (2) $k \leq$ ¼.

(3) k < ¼ (4) k > ¼ .

5) The parametric equation of a parabola is $x=t^2 +1$, y = 2t+1. the Cartesian equation of its directrix is:

(1) x=0 (2) x+1 = 0

(3) y=0 (4) y=1.

6) The focus of the parabola $y^2 – x - 2y + 2 =0$ is:

(1) (1/4, 0) (2) (1, 2)

(3) (3/4, 1) (4) (5/4, 1)

7) The equation of the tangent to the parabola $y^2 = 8(x-1)$ at (3,4) is:

(1) x+y=7 (2) y-x-1=0

(3) x-y+1=0 (4) None.

8) The point on the parabola $y^2 = 4x$which is nearest to the (3,1) is:

(1) (1,2) (2) (1,-2)

(3) (4,4) (4) (4,-4).

9) The equation of the directrix of the parabola $y^2 + 4y + 4x + 2 = 0$ is:

(1) x=-1 (2) x=1

(3) x=-3/2 (4) x=3/2.

10) The equation of the line of symmetry of the parabola $4x^2 – 20x – 12y + 49 = 0$ is:

(1) 2x = 5 (2) x=5.

(3) y = 5 (4) None of these

11) Focus of the parabola $y^2 – 8x – 32 = 0$ is given by:

(1) (2,0) (2) (-2,0)

(3) (0,2) (4) (4,0).

12) Vertex of the parabola $y^2 - 8x\ 4y + 4 = 0$ is at:

(1) (2,-3) (2) (o,2)

(3) (-3,-2) (4) (-2,3)

13) Directrix of the parabola $y^2 = 16x$ is :

(1) y = 4 (2) x = -4

(3) x = 4 (4) y = -4.

14) Focus of the parabola $y^2 = 16x$:

(1) (-4.0) (2) (4,0)

(3) (0,-4) (4) (0,4).

15) Equation of the normal of $y^2 = 20x$ at (5,10) is:

(1) x-y+5 =0. (2) x+y-15 =0.

(3) x+y-5 = 0. (4) x-y+15 = 0.

16) The coordinates of foci of an ellipse $\frac{(x-h)^2}{} + \frac{(y-k)^2}{} = 1$ aregivenby $a^2\ b^2$ (a>b)

(1) (h,k) (2) (h$\pm$ae,k)

(3) (h,k$\pm$ae) (4) none of these

(17) Center of the ellipse $9x^2+5y^2-36x-50y-164 = 0$ is at

(1) (2,5) (2) (1,-2)

(3) (-2,1) (4) (0,0)

18)The eccentricity of the ellipse $\frac{x}{} + \frac{y^2}{} = 1$ 16 25

(1) 0.4 (2) 0.5

(3) 0.6 (4) 0.75

19)The foci of the ellipse $4x^2+3y^2=24$ are the points

(1) ($\pm$2,0) (2) (0,$\pm$2√2)

(3) (0,$\pm$√2) (4) ($\pm$2√2,0)

20)The distance between the foci of the ellipse $5x^2+9y^2=45$ is

(1) 2 (2) 2√2

(3) 4 (4) 4√2

21) The four tangents at the end points of latera recta of an ellipse form a:

(1) Square

(2) parallelogram but not rhombus.

(3) Rhombus but not a square.

(4) rectangle but not a square.

22) the equation of the ellipse with a focus at (0,0) the corresponding directrix: x+6 = 0 and e =1/2 is:

(1) $3x^2 + 4y^2 + 12x - 36 = 0$

(2) $3x^2 + 4y^2 - 12x + 36 = 0$

(3) $3x^2 + 4y^2 - 12x - 36 = 0$

(4) None of these.

23) The length of the LR of the ellipse $49x^2 + 64y^2 = 3136$ is:

(1) 49/64 (2) 64/3136.

(3) 49/4 (4)none of these.

24) The equation of the axes of the ellipse $3x^2 + 4y^2 + 6x – 8y – 50 = 0$ are :

(1) x=0;y=0 (2) x+2=0;y-2=0

(3) x+1=0;y-1=0 (4) (x+1)(y+1)=0.

25) The equation of an ellipse is $3x^2 + 4y^2 = 12$ then the length of its latus rectum is:

(1) 3/2 (2) 8/3.

(3) √3/2 (4) 3

26) Latus rectum of an ellipse is equal to half of its major axis, its eccentricity is:

(1) 1/ √2 (2) ½

(3) 2/3 (4) 4/5.

27) The equation $x^2 / (2-\infty) + y^2 / (\infty-5) = 1$ represents an ellipse if:

(1) $\infty > 5$ (2) $\infty < 2$

(3) $2<\infty<5$ (4) $\infty<2$, $\infty>5$,

28) Sum of the focal distances of any point on the ellipse $25x^2 + 9y^2 = 225$:

(1) 6 (2) 10

(3) 9 (4) 25.

29) One focus of an ellipse is (3,0) and the corresponding directrix is x-6=0, its eccentricity is:

(1) -1/2. (2) -2/3.

(3) 4/5 (4) 1/√2.

30) If e = 1/3, then the ratio of the major axis to the minor axis of the ellipse:

(1) 3:2√2 (2) 9:8

(3) 2√2:3 (4) 8:9.

31) The equation of a hyperbola is $x^2 – 4y^2 = 4$. Its eccentricity is given by:

(1) √5 (2) 2

(3) 2/ √5 (4) √5/2.

32) The length of transverse axis of the hyperbola $3x^2 – 4y^2 = 32$ is:

(1) 3/32 (2) 64/3

(3) 8 √2/ √3 (4) 16 √2/ √3.

33) In a hyperbola, the distance between the foci is 20 and distance between the directrices is 10. The eccentricity is:

(1) √2 (2) 2

(3) 3 (4) √3.

34) The equation of the normal at(2,-3) on the hyperbola $x^2–(y^2 /3)=1$ is:

(1) x-2y=8 (2) 2x-y=8

(3) x+2y=8 (4) 2x+y=1.

35) Equation of the hyperbola whose asymptotes are coordinate axes and passing through the point (8,2) is:

(1) $x^2 - y^2 = 60$. (2) $x.y = 16$.

(3) $x^2 + y^2 = 68$. (4) $x.y = 10$.

36) The equation $x^2/4-a - y^2/4+a = 1$ represents a hyperbola if:

(1) $a>4$ (2) $a\geq 4$.

(3) $-4<a<4$ (4) $a\leq 4$.

37) For the hyperbolas $x^2 / \cos^2 \alpha - y^2 / \sin^2 \alpha = 1$ which of the following is always constant?

(1) abscissa of the vertices.

(2) abscissa of foci.

(3) e

(4) direct ices.

38) In a hyperbola the length of a latus rectum is equal to the length of the either of the axes. Then its eccentricity is:

(1) √2 (2) 2

(3) √2 or 2 (4) √2 or √3/2.

39) Find the angle between the asymptotes of the hyperbola $3x^2 - y^2 = 1$:

1)110^0 2) 120^0

3)140^0 4) 115^0

40) An ellipse of eccentricity has the same foci as that of the hyperbola $y^2/9 - x^2/16 = 1$. Then the length of the longest focal chord of the ellipse is:

(1) 18/5 (2) 50/9.

(3) 25 (4) 10.

41) The eccentricity of the hyperbola $3x^2 -4y^2 =12$ is

(1) √17 /3 (2) √7 / 2

(3) 4/3 (4) 3/√7

42) The normal to the hyperbola $4y^2 -5x^2 =20$ at the point (-4,5) is given by

(1) y+x=1 (2) y-x=9

(3) 5y-4x=41 (4) none of these

43) Eccentricity of the hyperbola $9x^2 - 16y^2 = 144$ is:

(1) 5/4 (2) 4/5

(3) 3/5 (4) 4/3.

44) The centre of the hyperbola $9x^2 - 16y^2 - 18x - 32y =151$ is:

(1) (1,-1) (2) (-1,1)

(3) (1,1) (4) (-1,-1).

45) The foci of the hyperbola $9y^2 - 4x^2 = 36$ are the points:

(1) $(\pm 3,0)$ (2) $(0,\pm 3)$

(3) $(\pm\sqrt{13},0)$ (4) $(0,\pm\sqrt{13})$