kd education academy (9582701166)

Time : 6 Hour

STD 11 Maths

Total Marks : 304

kd 90+ ch- 10 conic sections basic to jee

* **Match the following.** **[10]**

1.

Part (A)	Part (B)
1. The length of latus rectum of parabola $x^2 = 4ay$	(a) $2a$
2. The length of major axis of ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1, a > b$	(b) $(\pm a, 0)$
3. The coordinates of vertex of hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$	(c) $y = b/e, y = -b/e$
4. The equation of directrix of ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1, a < b$	(d) $(-a, 0)$
5. The coordinates of focus of parabola $y^2 = -4ax$	(e) $4a$

2.

Part (A)	Part (B)
1. The coordinates of focus of hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = -1$	(a) $(-g, -f)$
2. The equation of major axis of ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1, a > b$	(b) $(0, \pm be)$
3. The length of latus rectum of hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = -1$	(c) $y = 0$
4. The coordinates of centre of circle $x^2 + y^2 + 2gx + 2fy + c = 0$	(d) $2b$
5. The length of major axis of ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1, a < b$	(e) $\frac{2a^2}{b}$

* **Choose the right answer from the given options. [1 Marks Each]** **[148]**

3. If the equation $\frac{\lambda(x+1)^2}{3} + \frac{(y+2)^2}{4} = 1$ represents a circle then λ:
   (A) 1 (B) $\frac{3}{4}$ (C) 0 (D) $-\frac{3}{4}$

4. The length of the latus-rectum of the parabola $x^2 - 4x - 8y + 12 = 0$ is
   (A) 4 (B) 6 (C) 8 (D) 10

5. If the circles $x^2 + y^2 = a$ and $x^2 + y^2 - 6x - 8y + 9 = 0$, touch externally, then a =
   (A) 1 (B) -1 (C) 21 (D) 16

6. Choose the correct answer.
   The distance between the foci of a hyperbola is 16 and its eccentricity is 2. Its equation is:
   (A) $x^2 - y^2 = 32$ (B) $\frac{x^2}{4} - \frac{y^2}{9} = 1$ (C) $2x - 3y^2 = 7$ (D) none of these.

7. If the circles $x^2 + y^2 + 2ax + c = 0$ and $x^2 + y^2 + 2by + c = 0$ touch each other, then:
   (A) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c}$ (B) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c}$ (C) $a + b = 2c$ (D) $\frac{1}{a} + \frac{1}{b} = \frac{2}{c}$

8. The center of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is:

(A) (2, -3) (B) (-2, 3) (C) (-4, 6) (D) (4, -6)

9. If the point $(\lambda, \lambda+1)$ lies inside the region bounded by the curve $x=\sqrt{25-y^2}$ and y-axis, then λ belongs to the interval:

(A) $(-1,\ 3)$ (B) $(-4,\ 3)$

(C) $(-\infty,\ -4)\cup(3,\ \infty)$ (D) None of these

10. The equation $x^2 + y^2 - 2x + 4y + 5 = 0$ represents:

(A) A point (B) A pair of straight lines

(C) A circle of non zero radius (D) None of these

11. The radius of the circle represented by the equation $3x^2+3y^2+(\lambda-6)y+3=0$ is:

(A) $\frac{3}{2}$ (B) $\frac{\sqrt{17}}{2}$ (C) $\frac{2}{3}$ (D) None of these

12. If the circle $x^2 + y^2 + 2ax + 8y + 16 = 0$ touches x-axis, then the value of a is:

(A) ±16 (B) ±4 (C) ±8 (D) ±1

13. If $2x^2+\lambda xy+2y^2(\lambda-4)x+6y-5=0$ is the equation of a circle, then its radius is:

(A) $3\sqrt{2}$ (B) $2\sqrt{3}$ (C) $2\sqrt{2}$ (D) None of these

14. Equation of the diameter of the circle $x^2 + y^2 - 2x + 4y = 0$ which passes through the origin is:

(A) x + 2y = 0 (B) x − 2y = 0 (C) 2x + y = 0 (D) 2x − y = 0

15. Determine the area enclosed by the curve $x^2 - 10x + 4y + y^2 = 196$:

(A) 15π (B) 225π (C) 20π (D) 17π

16. Choose the correct answer.
The area of the circle centred at (1, 2) and passing through (4, 6) is:

(A) 5π (B) 10π (C) 25π (D) none of these.

17. The circle with radius 1 and centre being foot of the perpendicular from (5, 4) on y-axis, is:

(A) $x^2 + y^2 - 8x - 15 = 0$ (B) $x^2 + y^2 - 10x + 24 = 0$

(C) $x^2 + y^2 - 8y + 15 = 0$ (D) $x^2 + y^2 + 2y = 0$

18. The equations of the tangents to the ellipse $9x^2+16y^2=144$ from the point (2, 3) are:

(A) y = 3, x = 5 (B) x = 2, y = 3 (C) x = 3, y = 2 (D) x + y = 5, y = 3

19. If the focus of a parabola is (-2, 1) and the directrix has the equation x + y = 3, then its vertex is

(A) $(0,3)$ (B) $\left(-1,\ \frac{1}{2}\right)$ (C) $(-1,2)$ (D) $(2,-1)$

20. If the circles $x^2 + y^2 = 9$ and $x^2 + y^2 + 8y + c = 0$ touch each other, then c is equal to:

(A) 15 (B) -15 (C) 16 (D) -16

21. If the parabola $y^2 = 4ax$ passes through the point (3, 2), then the length of its latusrectum is:

(A) $\frac{2}{3}$ (B) $\frac{4}{3}$ (C) $\frac{1}{3}$ (D) 4

22. The vertex of the parabola $x^2 + 8x + 12y + 4 = 0$ is

(A) (-4, 1) (B) (4, -1) (C) (-4, -1) (D) (4, 1)

23. The focus of the parabola $y = 2x^2 + x$ is

(A) $(0,0)$ (B) $\left(\frac{1}{2},\frac{1}{4}\right)$ (C) $\left(-\frac{1}{4},0\right)$ (D) $\left(-\frac{1}{4},\frac{1}{8}\right)$

24. If the circle $x^2 + y^2 = 9$ passesthrough (2, c) then c is equal to:

(A) $\sqrt{5}$ (B) $\sqrt{6}$ (C) $\sqrt{3}$ (D) $\sqrt{7}$

25. The coordinates of the focus of the parabola $y^2 - x - 2y + 2 = 0$ are

(A) $\left(\frac{5}{4},1\right)$ (B) $\left(\frac{1}{4},0\right)$ (C) $(1,1)$ (D) None of these

26. If V and S are respectively the vertex and focus of the parabola $y^2 + 6y + 2x + 5 = 0$, then SV =

(A) 2 (B) $\frac{1}{2}$ (C) 1 (D) None of these

27. If the point (2, k) lies outside the circles $x^2 + y^2 + x - 2y - 14 = 0$ and $x^2 + y^2 = 13$ then klies in the interval:

(A) $(-3,\ -2) \cup (3,\ 4)$ (B) $-3,\ 4$ (C) $(-\infty,\ -3) \cup (4,\ \infty)$ (D) $(-\infty,\ -2) \cup (3,\ \infty)$

28. The equation of the circle which touches the axes of coordinates and the line $\frac{x}{3}+\frac{y}{4}=1$ and whose centres lie in the first quadrant is $x^2 + y^2 - 2cx - 2cy + c^2 = 0$, where c is equal to:

(A) 4 (B) 2 (C) 3 (D) 6

29. The equation of the parabola whose vertex is (a, 0) and the directrix has the equation x + y = 3a, is

(A) $x^2 + y^2 + 2xy + 6ax + 10ay + 7a^2 = 0$

(B) $x^2 - 2xy + y^2 + 6ax + 10ay - 7a^2 = 0$

(C) $x^2 - 2xy + y^2 - 6ax + 10ay - 7a^2 = 0$

(D) None of these

30. The eccentricity of the conic $9x^2 + 25y^2 = 225$ is:

(A) $\frac{2}{5}$ (B) $\frac{4}{5}$ (C) $\frac{1}{3}$ (D) $\frac{1}{5}$

31. The equation of the circle passing through (3, 6) and whose centre is (2, -1) is:

(A) $x^2 + y^2 - 4x + 2y = 45$ (B) $x^2 + y^2 - 4x - 2y + 45 = 0$

(C) $x^2 + y^2 + 4x - 2y = 45$ (D) $x^2 + y^2 - 4x + 2y + 45 = 0$

32. The circle $x^2 + y^2 - 3x - 4y + 2 = 0$ cuts x-axis:

(A) (2, 0), (-3, 0) (B) (3, 0), (4, 0) (C) (1, 0), (-1, 0) (D) (1, 0), (2, 0)

33. The equation of the incircle formed by the coordinate axes and the line 4x + 3y = 6 is:

(A) $x^2 + y^2 - 6x - 6y + 9 = 0$ (B) $4(x^2 + y^2 - x - y) + 1 = 0$

(C) $4(x^2 + y^2 + x + y) + 1 = 0$ (D) None of these

34. Find the equation of the circle.
Centered at (3, -2) with radius 4:

(A) $x^2 + y^2 + 6x - 4y = 3$ (B) $x^2 + y^2 - 6x + 4y = 3$

(C) $x^2 + y^2 - 3x + 2y = -3$ (D) $x^2 + y^2 + 3x - 2y = -3$

35. The eccentricity of the ellipse, if the distance between the foci is equal to the length of the latus-rectum, is:

(A) $\frac{\sqrt{5}-1}{2}$ (B) $\frac{\sqrt{5}+1}{2}$ (C) $\frac{\sqrt{5}-1}{4}$ (D) none of these

36. Choose the correct answer.

The length of the latus rectum of the ellipse $3x^2 + y^2 = 12$ is:

(A) 4 (B) 3 (C) 8 (D) $\frac{4}{\sqrt{3}}$

37. Find the area of $x^2 + y^2 = 49$:

(A) 154 (B) 49 (C) 88 (D) None

38. The equation of the conic $9x^2 - 16y^2 = 144$ is

(A) $\frac{5}{4}$ (B) $\frac{4}{3}$ (C) $\frac{4}{5}$ (D) $\sqrt{7}$

39. The length of latus rectum of the parabola $(x - 2a)^2 + y^2 = x^2$ is:

(A) 2a (B) 3a (C) 6a (D) 4a

40. The locus of a planet orbiting around the sun is:

(A) A circle (B) A straight line (C) A semicircle (D) An ellipse

41. The diameter of a circle described by $9x^2 + 9y^2 = 16$ is:

(A) $\frac{16}{9}$ (B) $\frac{4}{3}$ (C) 4 (D) $\frac{8}{3}$

42. The equation of the circle passing through the origin which cuts off intercept of length 6 and 8 from the axes is:

(A) $x^2 + y^2 - 12x - 16y = 0$

(B) $x^2 + y^2 + 12x + 16y = 0$

(C) $x^2 + y^2 + 6x + 8y = 0$

(D) $x^2 + y^2 - 6x - 8y = 0$

43. If the length of the tangent from the origin to the circle centered at (2, 3) is 2 then the equation of the circle is:

(A) $(x + 2)^2 + (y - 3)^2 = 3^2$

(B) $(x - 2)^2 + (y + 3)^2 = 3^2$

(C) $(x - 2)^2 + (y - 3)^2 = 3^2$

(D) $(x + 2)^2 + (y + 3)^2 = 3^2$

44. The equation of the circle drawn with the two foci of $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ end-point of a diameter is

(A) $x^2 + y^2 = a^2 + b^2$

(B) $x^2 + y^2 = a^2$

(C) $x^2 + y^2 = 2a^2$

(D) $x^2 + y^2 = a^2 - b^2$

45. Find the Center of circle $x^2 + y^2 - 4x - 8x + 25 = 0$:

(A) (2, 4)

(B) (-2, -4)

(C) (4, 2)

(D) (-4, -2)

46. The equation $16x^2 + y^2 + 8xy - 74x - 78y + 212 = 0$ represents

(A) A circle

(B) A parabola

(C) An ellipse

(D) A hyperbola

47. If the parabola $y^2 = 4ax$ passes through the point (3, 2), then the length of its latusrectum is:

(A) $\frac{2}{3}$

(B) $\frac{4}{3}$

(C) $\frac{1}{3}$

(D) 4

48. If the equation $(4a - 3)x^2 + ay^2 + 6x - 2y + 2 = 0$ represents a circle, then its centre is:

a. (3, -1)
b. (3, 1)
c. (-3, 1)
d. None of these

49. The radius of the circle represented by the equation $3x^2 + 3y^2 + (\lambda - 6)y + 3 = 0$ is:

a. $\frac{3}{2}$
b. $\frac{\sqrt{17}}{2}$
c. $\frac{2}{3}$
d. None of these

50. If $2x^2 + \lambda xy + 2y^2(\lambda - 4)x + 6y - 5 = 0$ is the equation of a circle, then its radius is:

a. $3\sqrt{2}$
b. $2\sqrt{3}$
c. $2\sqrt{2}$
d. None of these

51. The number of integral values of λ for which the equation $x^2 + y^2 + \lambda + (1 - \lambda)y + 5 = 0$ is the equation of a circle whose radius cannot exceed 5, is:

a. 14
b. 18
c. 16
d. None of these

52. If the centroid of an equilateral triangle is (1, 1) and its one vertex is (-1, 2), then the equation of its circumcircle is:

a. $x^2 + y^2 - 2x - 2y - 3 = 0$
b. $x^2 + y^2 + 2x - 2y - 3 = 0$
c. $x^2 + y^2 + 2x + 2y - 3 = 0$
d. None of these

53. The vertex of the parabola $(y + a)^2 = 8a(x - a)$ is

a. (-a, -a)
b. (a, -a)
c. (-a, a)
d. None of these

54. The equation of the parabola whose vertex is (a, 0) and the directrix has the equation x + y = 3a, is

a. $x^2 + y^2 + 2xy + 6ax + 10ay + 7a^2 = 0$
b. $x^2 - 2xy + y^2 + 6ax + 10ay - 7a^2 = 0$
c. $x^2 - 2xy + y^2 - 6ax + 10ay - 7a^2 = 0$
d. None of these

55. The eccentricity of the conic $9x^2 + 25y^2 = 225$ is:

a. $\frac{2}{5}$
b. $\frac{4}{5}$
c. $\frac{1}{3}$
d. $\frac{1}{5}$
e. $\frac{3}{5}$

56. The eccentricity of the ellipse, if the distance between the foci is equal to the length of the latus-rectum, is:

a. $\frac{\sqrt{5}-1}{2}$
b. $\frac{\sqrt{5}+1}{2}$
c. $\frac{\sqrt{5}-1}{4}$
d. none of these

57. The difference between the lengths of the major axis and the latus-rectum of an ellipse is

a. ae

b. 2ae

c. ae^2

d. $2ae^2$

58. A point moves in a plane so that its distances PA and PB from two fixed points A and B in the plane satisfy the relation PA − PB = k ($k \neq 0$), then the locus of P is

a. A hyperbola.

b. A branch of the hyperbola.

c. A parabola.

d. An ellipse.

59. If the eccentricity of the hyperbola $x^2 - y^2 \sec^2\alpha = 5$ is $\sqrt{3}$ times the eccentricity of the ellipse $x^2 \sec^2 \alpha + y^2 = 25$, then α =

a. $\frac{\pi}{6}$

b. $\frac{\pi}{4}$

c. $\frac{\pi}{3}$

d. $\frac{\pi}{2}$

60. The distance between the directrices of the hyperbola $\mathrm{x} = 8\sec\theta, \mathrm{y} = 8,$ is

a. $8\sqrt{2}$

b. $16\sqrt{2}$

c. $4\sqrt{2}$

d. $6\sqrt{2}$

61. If the tangent to the circle $x^2 + y^2 = r^2$ at the point (a, b) meets the coordinate axes at the point A and B, and O is the origin, then the area of the triangle OAB is

(A) $\frac{r^4}{2ab}$ (B) $\frac{r^4}{ab}$ (C) $\frac{r^2}{2ab}$ (D) $\frac{r^2}{ab}$

62. If the line $3x + 4y - 1 = 0$ touches the circle $(x-1)^2 + (y-2)^2 = r^2$, then the value of r will be

(A) 2 (B) 5 (C) $\frac{12}{5}$ (D) $\frac{2}{5}$

63. If $\frac{x}{\alpha} + \frac{y}{\beta} = 1$ touches the circle $x^2 + y^2 = a^2$, then point $(1/\alpha, 1/\beta)$ lies on a/an

(A) Straight line (B) Circle (C) Parabola (D) Ellipse

64. The length of the tangent from the point $(4, 5)$ to the circle $x^2 + y^2 + 2x - 6y = 6$ is

(A) $\sqrt{13}$ (B) $\sqrt{38}$ (C) $2\sqrt{2}$ (D) $2\sqrt{13}$

65. Tangents drawn from origin to the circle $x^2+y^2-2ax-2by+b^2=0$ are perpendicular to each other, if

(A) $a-b=1$ (B) $a+b=1$ (C) $a^2=b^2$ (D) $a^2+b^2=1$

66. The equation of the tangents to the circle $x^2+y^2+4x-4y+4=0$ which make equal intercepts on the positive coordinate axes is given by

(A) $x+y+2\sqrt{2}=0$ (B) $x+y=2\sqrt{2}$ (C) $x+y=2$ (D) None of these

67. The gradient of the tangent line at the point $(a\cos\alpha, a\sin\alpha)$ to the circle $x^2+y^2=a^2$, is

(A) $\tan\alpha$ (B) $\tan(\pi-\alpha)$ (C) $\cot\alpha$ (D) $-\cot\alpha$

68. $y-x+3=0$ is the equation of normal at $\left(3+\frac{3}{\sqrt{2}}, \frac{3}{\sqrt{2}}\right)$ to which of the following circles

(A) $\left(x-3-\frac{3}{\sqrt{2}}\right)^2+\left(y-\frac{\sqrt{3}}{2}\right)^2=9$ (B) $\left(x-3-\frac{3}{\sqrt{2}}\right)^2+y^2=6$

(C) $(x-3)^2+y^2=9$ (D) $(x-3)^2+(y-3)^2=9$

69. Which of the following lines is a tangent to the circle $x^2+y^2=25$ for all values of m.....

(A) $y=mx+25\sqrt{1+m^2}$ (B) $y=mx+5\sqrt{1+m^2}$

(C) $y=mx+25\sqrt{1-m^2}$ (D) $y=mx+5\sqrt{1-m^2}$

70. Line $y=x+a\sqrt{2}$ is a tangent to the circle $x^2+y^2=a^2$ at

(A) $\left(\frac{a}{\sqrt{2}}, \frac{a}{\sqrt{2}}\right)$ (B) $\left(-\frac{a}{\sqrt{2}}, -\frac{a}{\sqrt{2}}\right)$ (C) $\left(\frac{a}{\sqrt{2}}, -\frac{a}{\sqrt{2}}\right)$ (D) $\left(-\frac{a}{\sqrt{2}}, \frac{a}{\sqrt{2}}\right)$

71. The equations of the tangents to the circle $x^2+y^2=13$ at the points whose abscissa is 2, are

(A) $2x+3y=13, 2x-3y=13$ (B) $3x+2y=13, 2x-3y=13$

(C) $2x+3y=13,\ 3x-2y=13$ (D) None of these

72. If a line passing through origin touches the circle $(x-4)^2+(y+5)^2=25$, then its slope should be

(A) $\pm\frac{3}{4}$ (B) 0 (C) ± 3 (D) ± 1

73. If the line $y\cos\alpha = x\sin\alpha + a\cos\alpha$ be a tangent to the circle $x^2+y^2=a^2$, then

(A) $\sin^2\alpha=1$ (B) $\cos^2\alpha=1$ (C) $\sin^2\alpha=a^2$ (D) $\cos^2\alpha=a^2$

74. The angle between the tangents to the circle $x^2+y^2=169$ at the points $(5,12)$ and $(12,-5)$ is .... ^{o}

(A) 30 (B) 45 (C) 60 (D) 90

75. An infinite number of tangents can be drawn from $(1,2)$ to the circle $x^2+y^2-2x-4y+\lambda=0$, then $\lambda=$

(A) -20 (B) 0

(C) 5 (D) Cannot be determined

76. The line $(x-a)\cos\alpha+(y-b)\quad \sin\alpha=r$ will be a tangent to the circle $(x-a)^2+(y-b)^2=r^2$

(A) If $\alpha=30^o$ (B) If $\alpha=60^o$

(C) For all values of α (D) None of these

77. If the line $lx+my+n=0$ be a tangent to the circle $(x-h)^2+(y-k)^2=a^2,$ then

(A) $hl+km+n=a^2(l^2+m^2)$ (B) $(hl+km+n)^2=a(l^2+m^2)$

(C) $(hl+km+n)^2=a^2(l^2+m^2)$ (D) None of these

78. The line $x\cos\alpha+y\sin\alpha=p$ will be a tangent to the circle $x^2+y^2-2ax\cos\alpha-2ay\sin\alpha=0$, if $p=$

(A) 0 or a (B) 0 (C) $2a$ (D) 0 or $2a$

79. The equations of the tangents to the circle $x^2+y^2=36$ which are inclined at an angle of 45^o to the x-axis are

(A) $x+y=\pm\sqrt{6}$ (B) $x=y\pm 3\sqrt{2}$ (C) $y=x\pm 6\sqrt{2}$ (D) None of these

80. If the line $y=\sqrt{3}x+k$ touches the circle $x^2+y^2=16$, then $k=$

(A) 0 (B) 2 (C) 4 (D) 8

81. The equations of the tangents to the circle $x^2+y^2=50$ at the points where the line $x+7=0$ meets it, are

(A) $7x\pm y+50=0$ (B) $7x\pm y-5=0$ (C) $y\pm 7x+5=0$ (D) $y\pm 7x-5=0$

82. If the length of tangent drawn from the point $(5,3)$ to the circle $x^2+y^2+2x+ky+17=0$ be 7, then k =

(A) 4 (B) -4 (C) -6 (D) $\frac{13}{2}$

83. If the point $(2,0),(0,1),(4,5)$ and $(0,c)$ are con-cyclic, then c is equal to

(A) $-1,\ -\frac{3}{14}$ (B) $-1,\ -\frac{14}{3}$ (C) $\frac{14}{3},\ 1$ (D) None of these

84. Area of the circle in which a chord of length $\sqrt{2}$ makes an angle $\frac{\pi}{2}$ at the centre is

(A) $\frac{\pi}{2}$ (B) 2π (C) π (D) $\frac{\pi}{4}$

85. The equation of the circle whose diameter lies on $2x+3y=3$ and $16x-y=4$ which passes through $(4,6)$ is

(A) $5(x^2+y^2)-3x-8y=200$ (B) $x^2+y^2-4x-8y=200$

(C) $5(x^2+y^2)-4x=200$

(D) $x^2+y^2=40$

86. The equation of the circle with centre at $(1,-2)$ and passing through the centre of the given circle $x^2+y^2+2y-3=0$, is

(A) $x^2+y^2-2x+4y+3=0$
(B) $x^2+y^2-2x+4y-3=0$
(C) $x^2+y^2+2x-4y-3=0$
(D) $x^2+y^2+2x-4y+3=0$

87. The equation of the circle which passes through the points $(2,3)$ and $(4,5)$ and the centre lies on the straight line $y-4x+3=0$, is

(A) $x^2+y^2+4x-10y+25=0$
(B) $x^2+y^2-4x-10y+25=0$
(C) $x^2+y^2-4x-10y+16=0$
(D) $x^2+y^2-14y+8=0$

88. The equation of the circle passing through the origin and cutting intercepts of length 3 and 4 units from the positive axes, is

(A) $x^2+y^2+6x+8y+1=0$
(B) $x^2+y^2-6x-8y=0$
(C) $x^2+y^2+3x+4y=0$
(D) $x^2+y^2-3x-4y=0$

89. The equation of a circle which touches both axes and the line $3x-4y+8=0$ and whose centre lies in the third quadrant is

(A) $x^2+y^2-4x+4y-4=0$
(B) $x^2+y^2-4x+4y+4=0$
(C) $x^2+y^2+4x+4y+4=0$
(D) $x^2+y^2-4x-4y-4=0$

90. Consider two curves $C_1: y^2=2x$ and $C_2: x^2+y^2-3x+2=0$, then

(A) C_1 and C_2 touch each other only at one point
(B) C_1 and C_2 touch each other exactly at two points
(C) C_1 and C_2 intersect (but do not touch) at exactly two points
(D) C_1 and C_2 neither intersect nor touch each other

91. If (x,y) is a variable point on the curve $x^2+y^2-2x-2y-2=0$, then minimum value of the expression $\frac{8}{(x-1)^2}-\frac{(y-1)^2}{4}$ is equal to

(A) -2
(B) -1
(C) 1
(D) 2

92. The locus of the centre of the circle $\frac{1}{2}(x^2+y^2)+x\cos\theta+y\sin\theta-4=0$ is :-

(A) $x^2-y^2=1$
(B) $x^2+y^2=1$
(C) $y^2=x^2$
(D) $x^2+y^2=2$

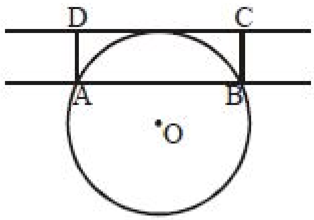
93. The locus of the mid point of a chord of the circle $x^2+y^2=4$ which subtends a right angle at the origin is

(A) $x+y=2$
(B) $x^2+y^2=1$
(C) $x^2+y^2=2$
(D) $x+y=1$

94. Let a circle $S=0$ touches both the circles $x^2+y^2=400$ and $x^2+y^2-10x-24y+120=0$ externally and also touches $x-$ axis. The radius of circle $S=0$ is

(A) 200
(B) 33
(C) 120
(D) 240

95. A variable straight line AB divides the circumference of the circle $x^2+y^2=25$ in the ratio $1:2$. If a tangent CD is drawn to the smaller arc parallel to AB , such that $ABCD$ is a rectangle, then locus of C & D is (as shown in the figure)



(A) $x^2+y^2=\frac{175}{4}$ (B) $x^2+y^2=36$ (C) $x^2+y^2=40$ (D) $x^2+y^2=20$

96. The centres of a set of circles, each of radius 2, lie on the circle. $x^2+y^2=36$ The locus of any point in the set is -

(A) $4\leqslant x^2+y^2\leqslant 16$ (B) $16\leqslant x^2+y^2\leqslant 64$

(C) $36\leqslant x^2+y^2\leqslant 64$ (D) $16\leqslant x^2+y^2\leqslant 36$

97. The equation of the locus of the mid points of the chords of the circle $4x^2+4y^2-12x+4y+1=0$ that subtend an angle of $\frac{2\pi}{3}$ at its centre is

(A) $16(x^2+y^2)-48x+16y+31=0$ (B) $16(x^2+y^2)-48x-16y+31=0$

(C) $16(x^2+y^2)+48x+16y+31=0$ (D) $16(x^2+y^2)+48x-16y+31=0$

98. Tangents are drawn to a unit circle with centre at the origin from each point on the line $2x+y=4$. Then the equation to the locus of the middle point of the chord of contact is

(A) $2(x^2+y^2)=x+y$ (B) $2(x^2+y^2)=x+2y$

(C) $4(x^2+y^2)=2x+y$ (D) none

99. Tangents are drawn to the circle $x^2+y^2=1$ at the points where it is met by the circles, $x^2+y^2-(\lambda+6)x+(8-2\lambda)y-3=0$. λ being the variable . The locus of the point of intersection of these tangents is :

(A) $2x-y+10=0$ (B) $x+2y-10=0$ (C) $x-2y+10=0$ (D) $2x+y-10=0$

100. The locus of the centers of the circles which cut the circles $x^2+y^2+4x-6y+9=0$ and $x^2+y^2-5x+4y-2=0$ orthogonally is

(A) $9x+10y-7=0$ (B) $x-y+2=0$ (C) $9x-10y+11=0$ (D) $9x+10y+7=0$

101. The number of direct common tangents to the circles $x^2+y^2=4$ and $x^2+y^2-8x-8y+7=0$, is

(A) 0 (B) 1 (C) 2 (D) 3

102. The circles $x^2+y^2+2x-2y+1=0$ and $x^2+y^2-2x-2y+1=0$ touch each other :-

(A) externally at $(0,1)$ (B) internally at $(0,1)$

(C) externally at $(1,0)$ (D) internally at $(1,0)$

103. The number of integral values of λ for which $x^2+y^2+\lambda x+(1-\lambda)y+5=0$ is the equation of a circle whose radius cannot exceed 5 , is

(A) 14 (B) 18 (C) 16 (D) None of these

104. A variable line $ax+by+c=0$, where a,b,c are in $A.P.$, is normal to a circle $(x-\alpha)^2+(y-\beta)^2=\gamma$, which is orthogonal to circle $x^2+y^2-4x-4y-1=0$. The value of $\alpha+\beta+\gamma$ is equal to

(A) 3 (B) 5 (C) 10 (D) 7

105. Let $S=0$ is the locus of centre of a variable circle which intersect the circle $x^2+y^2-4x-6y=0$ orthogonally at $(4,6)$. If P is a variable point of $S=0$, then least value of OP is (where O is origin)

(A) $\sqrt{13}$ (B) $2\sqrt{13}$ (C) 10 (D) 13

106. Consider the equation of circles

$S_1: x^2+y^2+24x-10y+a=0$

$S_2: x^2+y^2=36$ which of the following is not correct

(A) Number of non-negative integral values of $'a'$ such that $S_1=0$ represents a real circle 170

(B) If $S_1=0$ and $S_2=0$ has no point in common, then number of integral values of a is more than 49

(C) If $S_1=0$ and $S_2=0$ intersect orthogonally then $a=36$

(D) If $a=0$, then number off common tangents to the circles $S_1=0$. and $S_2=0$ are 3

107. The length of common chord of the circles $x^2+y^2+2x+4y-20=0$ and $x^2+y^2+6x-8y+10=0$ is

(A) $5\sqrt{\frac{3}{2}}$ (B) $2\sqrt{\frac{3}{2}}$ (C) 5 (D) $\frac{5\sqrt{5}}{2}$

108. If from origin two tangents are drawn to the circle $(x-2)^2+y^2=1$, then length of chord of contact is-

(A) 1 (B) $\frac{1}{2}$ (C) $\sqrt{3}$ (D) $\frac{\sqrt{3}}{2}$

109. Tangents drawn from origin O two the circle $x^2+y^2+2gx+2fy+c=0$ touch the circle at the points P and Q. Then the equation of the circumcircle of the triangle OPQ is

(A) $x^2+y^2+2gx+2fy=0$ (B) $x^2+y^2+gx+fy=0$

(C) $x^2+y^2-gx-fy=0$ (D) $x^2+y^2-2gx-2fy=0$

110. Length of chord of contact of tangents drawn from the point $(4,4)$ to the circle $x^2+y^2-2x-2y-7=0$ is-

(A) $2\sqrt{2}$ (B) $3\sqrt{2}$ (C) $4\sqrt{2}$ (D) $5\sqrt{2}$

111. The circumference of the circle $x^2+y^2-2x+8y-q=0$ is bisected by the circle $x^2+y^2+4x+12y+p=0$, then $p+q$ is equal to

(A) 25 (B) 100 (C) 10 (D) 48

112. The common chord of two intersecting circles c_1 & c_2 can be seen from their centres at the angles of 90^o and 60^o respectively . If the distance between their centres is equal to $\sqrt{3}+1$ then the radii of c_1 & c_2 are :

(A) $\sqrt{3}$ & 3 (B) $\sqrt{2}$ & $2\sqrt{2}$ (C) $\sqrt{2}$ & 2 (D) $2\sqrt{2}$ & 4

113. Two circles whose radii are equal to 4 and 8 intersect at right angles. The length of their common chord is

(A) $\frac{16}{\sqrt{5}}$ (B) 8 (C) $4\sqrt{6}$ (D) $\frac{8\sqrt{5}}{5}$

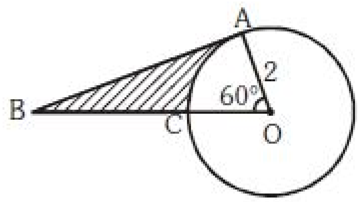
114. The chord of contact of the tangents drawn from a point on the circle, $x^2+y^2=a^2$ to the circle $x^2+y^2=b^2$ touches the circle $x^2+y^2=c^2$ then a,b,c are in :

(A) $A.P.$ (B) $G.P.$ (C) $H.P.$ (D) $A.G.P.$

115. The distance between the chords of contact of tangents to the circle ; $x^2+y^2+2gx+2fy+c=0$ from the origin & the point (g,f) is :

(A) $\sqrt{g^2+f^2}$ (B) $\frac{\sqrt{g^2+f^2-c}}{2}$ (C) $\frac{g^2+f^2-c}{2\sqrt{g^2+f^2}}$ (D) $\frac{\sqrt{g^2+f^2+c}}{2\sqrt{g^2+f^2}}$

116. In the given figure, AB is tangent to the circle with centre O , the ratio of the shaded region to the unshaded region of the triangle OAB is



(A) $\frac{2\sqrt{3}-2}{\pi}$ (B) $\frac{3\sqrt{3}-2}{\pi}$ (C) $\frac{2-\sqrt{3}}{\pi}$ (D) $\frac{3\sqrt{3}}{\pi}-1$

117. The angle between the pair of tangents from the point $(1,1/2)$ to the circle $x^2+y^2+4x+2y-4=0$ is-

(A) $\cos^{-1}\frac{4}{5}$ (B) $\sin^{-1}\frac{4}{5}$ (C) $\sin^{-1}\frac{3}{5}$ (D) None of these

118. Number of integral points interior to the circle $x^2+y^2=10$ from which exactly one real tangent can be drawn to the curve $\sqrt{(x+5\sqrt{2})^2+y^2}-\sqrt{(x-5\sqrt{2})^2+y^2}=10$ are (where integral point (x,y) means $x,y\in I$)

(A) 12 (B) 14 (C) 16 (D) 18

119. The area of the triangle formed by the positive x-axis and the normal and the tangent to the circle $x^2+y^2=4$ at $(1,\sqrt{3})$ is

(A) $2\sqrt{3}$ (B) $\sqrt{3}$ (C) $1/\sqrt{3}$ (D) 1

120. Consider circle $S: x^2+y^2=1$ and $P(0,-1)$ on it. A ray of light gets reflected from tangent to S at P from the point with abscissa -3 and becomes tangent to the circle S. Equation of reflected ray is

(A) $3x+4y-5=0$ (B) $-3x+4y+5=0$ (C) $3x-4y+5=0$ (D) $3x-4y-5=0$

121. The focus of the parabola $4y^2-6x-4y=5$ is

(A) $(-8/5,2)$ (B) $(-5/8,1/2)$ (C) $(1/2,5/8)$ (D) $(5/8,-1/2)$

122. The latus rectum of the parabola $y^2=5x+4y+1$ is

(A) $\frac{5}{4}$ (B) 10 (C) 5 (D) $\frac{5}{2}$

123. The equation of the latus rectum of the parabola represented by equation $y^2+2Ax+2By+C=0$ is

(A) $x=\frac{B^2+A^2-C}{2A}$ (B) $x=\frac{B^2-A^2+C}{2A}$ (C) $x=\frac{B^2-A^2-C}{2A}$ (D) $x=\frac{A^2-B^2-C}{2A}$

124. PQ is a double ordinate of the parabola $y^2=4ax$. The locus of the points of trisection of PQ is

(A) $9y^2=4ax$ (B) $9x^2=4ay$ (C) $9y^2+4ax=0$ (D) $9x^2+4ay=0$

125. If a double ordinate of the parabola $y^2=4ax$ be of length $8a$, then the angle between the lines joining the vertex of the parabola to the ends of this double ordinate is .... $^\circ$

(A) 30 (B) 60 (C) 90 (D) 120

126. The locus of the intersection point of $x\cos\alpha-y\sin\alpha=a$ and $x\sin\alpha-y\cos\alpha=b$ is

(A) Ellipse (B) Hyperbola (C) Parabola (D) None of these

127. The equation of the hyperbola whose directrix is $2x+y=1$, focus $(1,1)$ and eccentricity $=\sqrt{3}$, is

(A) $7x^2+12xy-2y^2-2x+4y-7=0$

(B) $11x^2+12xy+2y^2-10x-4y+1=0$

(C) $11x^2+12xy+2y^2-14x-14y+1=0$

(D) None of these

128. The equation of the directrices of the conic $x^2+2x-y^2+5=0$ are

(A) $x=\pm1$ (B) $y=\pm2$ (C) $y=\pm\sqrt{2}$ (D) $x=\pm\sqrt{3}$

129. The equation $13[(x-1)^2+(y-2)^2]=3(2x+3y-2)^2$ represents

(A) Parabola (B) Ellipse (C) Hyperbola (D) None of these

130. A point ratio of whose distance from a fixed point and line $x=9/2$ is always $2:3$. Then locus of the point will be

(A) Hyperbola (B) Ellipse (C) Parabola (D) Circle

131. The eccentricity of the conic $4x^2+16y^2-24x-3y=1$ is

(A) $\frac{\sqrt{3}}{2}$ (B) $\frac{1}{2}$ (C) $\frac{\sqrt{3}}{4}$ (D) $\sqrt{3}$

132. The equation $14x^2-4xy+11y^2-44x-58y+71=0$ represents

(A) A circle (B) An ellipse

(C) A hyperbola (D) A rectangular hyperbola

133. The points of intersection of the curves whose parametric equations are $x=t^2+1,\ y=2t$ and $x=2s,\ y=\frac{2}{s}$ is given by

(A) $(1,\ -3)$ (B) $(2,2)$ (C) $(-2,4)$ (D) $(1,2)$

134. Curve $16x^2+8xy+y^2-74x-78y+212=0$ represents

(A) Parabola (B) Hyperbola (C) Ellipse (D) None of these

135. The equation $x^2-2xy+y^2+3x+2=0$ represents

(A) A parabola (B) An ellipse (C) A hyperbola (D) A circle

136. The equation $y^2-x^2+2x-1=0$ represents

(A) A hyperbola (B) An ellipse

(C) A pair of straight lines (D) A rectangular hyperbola

137. Equation $\sqrt{(x-2)^2+y^2}+\sqrt{(x+2)^2+y^2}=4$ represents

(A) Parabola (B) Ellipse

(C) Circle (D) Pair of straight lines

138. The centre of $14x^2-4xy+11y^2-44x-58y+71=0$

(A) $(2,3)$ (B) $(2,-3)$ (C) $(-2,3)$ (D) $(-2,-3)$

139. For all real values of m, the straight line $y=mx+\sqrt{9m^2-4}$ is a tangent to the curve :

(A) $9x^2+4y^2=36$ (B) $4x^2+9y^2=36$ (C) $9x^2-4y^2=36$ (D) $4x^2-9y^2=36$

140. The curve $xy=c, (c>0)$, and the circle $x^2+y^2=1$ touch at two points. Then the distance between the points of contacts is

(A) 1 (B) 2 (C) $2\sqrt{2}$ (D) None of these

141. The equation of a line passing through the centre of a rectangular hyperbola is $x-y-1=0$. If one of the asymptotes is $3x-4y-6=0$, the equation of other asymptote is

(A) $4x-3y+17=0$ (B) $-4x-3y+17=0$

(C) $-4x+3y+1=0$ (D) $4x+3y+17=0$

142. The number of possible tangents which can be drawn to the curve $4x^2-9y^2=36$, which are perpendicular to the straight line $5x+2y-10=0$ is

(A) 0 (B) 1 (C) 2 (D) 4

143. Let P is a point on hyperbola $x^2-y^2=4$, which is at minimum distance from $(0,-1)$ then distance of P from $x-$ axis is

(A) 0 (B) $\frac{1}{2}$ (C) 1 (D) $\sqrt{2}$

144. If for a hyperbola the ratio of length of conjugate Axis to the length of transverse axis is $3:2$ then the ratio of distance between the focii to the distance between the two directrices is

(A) $13:4$ (B) $4:13$ (C) $\sqrt{13}:2$ (D) $2:\sqrt{13}$

145. The locus of middle points of the chords of the circle $x^2+y^2=a^2$ which touch the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ is

(A) $(x^2-y^2)^2=a^2x^2+b^2y^2$ (B) $(x^2+y^2)^2=a^2x^2+b^2y^2$

(C) $(x^2-y^2)^2=a^2x^2-b^2y^2$ (D) $(x^2+y^2)^2=a^2x^2-b^2y^2$

146. $P(6,3)$ is a point on the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$. If the normal at point P intersect the $x-$ axis at $(10,0)$, then the eccentricity of the hyperbola is

(A) $\sqrt{\frac{5}{3}}$ (B) $\frac{\sqrt{13}}{3}$ (C) $\sqrt{\frac{5}{2}}$ (D) $\frac{\sqrt{13}}{2}$

147. The graph of the conic $x^2-(y-1)^2=1$ has one tangent line with positive slope that passes through the origin. The point of the tangency being (a,b) then find the value of $\sin^{-1}\left(\frac{a}{b}\right)$

(A) $\frac{5\pi}{12}$ (B) $\frac{\pi}{6}$ (C) $\frac{\pi}{3}$ (D) $\frac{\pi}{4}$

148. Area of the quadrilateral formed with the foci of the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ and $\frac{x^2}{a^2}-\frac{y^2}{b^2}=-1$ is

(A) $4(a^2+b^2)$ (B) $2(a^2+b^2)$ (C) (a^2+b^2) (D) $\frac{1}{2}(a^2+b^2)$

149. If the product of the perpendicular distances from any point on the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ of eccentricity $e=\sqrt{3}$ from its asymptotes is equal to 6, then the length of the transverse axis of the hyperbola is

(A) 3 (B) 6 (C) 8 (D) 12

150. With one focus of the hyperbola $\frac{x^2}{9}-\frac{y^2}{16}=1$ as the centre , a circle is drawn which is tangent to the hyperbola with no part of the circle being outside the hyperbola. The radius of the circle is

(A) $less\ than\ 2$ (B) 2 (C) $\frac{11}{3}$ (D) $none$

*** Given section consists of questions of 2 marks each.** **[34]**

151. Find the equation of the circle with centre (0, 2) and radius 2

152. Find the equation of the circle with centre (-a, -b) and radius $\sqrt{a^2-b^2}$

153. Find the equation of a circle with centre (2, 2) and passes through the point (4, 5).

154. Find the coordinates of the foci, and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$\frac{x^2}{16}-\frac{y^2}{9}=1$

155. Find the coordinates of the foci, and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$\frac{y^2}{9}-\frac{x^2}{27}=1$

156. Find the coordinates of the foci, and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas. $49y^2 - 16x^2 = 784$

157. Find the equation of the hyperbola, whose vertices (0, $\pm$3) and foci (0, $\pm$5).

158. Find the equation of hyperbola which has Vertices $(\pm 7,0), e=\frac{4}{3}$

159. If a parabolic reflector is 20 cm in diameter and 5 cm deep, find the focus.

160. Find the equation of the parabola which is symmetric about the y-axis, and passes through the point (2, -3).

161. Find the coordinates of the centre and radius of each of the following circles:
$\mathrm{x}^2+\mathrm{y}^2-\mathrm{ax}-\mathrm{by}=0$

162. Find the equation of the circle whose centre is (1, 2) and which passes through the point (4, 6).

163. Find the coordinates of the centre and radius of each of the following circles:
$\frac{1}{2}(\mathrm{x}^2+\mathrm{y}^2)+\mathrm{x}\cos\theta+\mathrm{y}\sin\theta-4=0$

164. Find the centre and radius of the following circles:
$\mathrm{x}^2+\mathrm{y}^2-4\mathrm{x}+6\mathrm{y}=5$

165. Find the equation of the circle passing through the point of intersection of the lines x + 3y = 0 and 2x - 7y = 0 and whose centre is the point of intersection of the lines x + y + 1 = 0 and x - 2y + 4 = 0.

166. If the line $\mathrm{y}=\sqrt{3}\mathrm{x}++\mathrm{k}$ touches the circle $x^2 + y^2 = 16$, then find the value of k.
[**Hint:** Equate perpendicular distance from the centre of the circle to its radius]

167. If the latus rectum of an ellipse is equal to half of minor axis, then find its eccentricity.

*** Given section consists of questions of 3 marks each.** **[57]**

168. 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.

$36x^2 + 4y^2 = 144$

169. 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.

$4x^2 + 9y^2 = 36$

170. An arc is in the form of a parabola with its axis vertical. The arch is 10 m high and 5 m wide at the base. How wide is it 2 m from the vertex of the parabola?

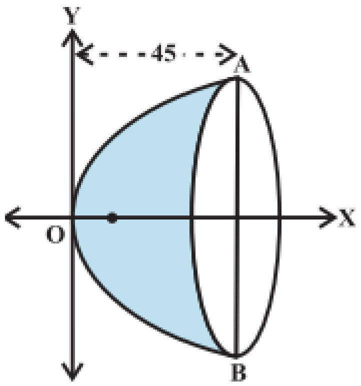
171. The cable of a uniformly loaded suspension bridge hangs in the form of a parabola. The roadway which is horizontal and 100 m long is supported by vertical wires attached to the cable, the longest wire being 30 m and the shortest being 6 m. Find the length of a supporting wire attached to the roadway 18 m from the middle.

172. A rod of length 12 m moves with its ends always touching the coordinates axes. Determine the equation of the locus of a point P on the rod, which is 3 cm from the end in contact with the X-axis.

173. A man running a racecourse notes that the sum of the distances from the two flag posts from him is always 10 m and the distance between the flag posts is 8 m. Find the equation of the path traced by the man.

174. Find the coordinates of the foci, the vertices, the lengths of major and minor axes and the eccentricity of the ellipse $9x^2 + 4y^2 = 36$.

175. The focus of a parabolic mirror as shown in is at a distance of 5 cm from its vertex. If the mirror is 45 cm deep, find the distance AB



176. If the lines 2x - 3y = 5 and 3x - 4y = 7 are the diameters of a circle of area 154 square units, then obtain the equation of the circle.

177. Show that the points (3, -2), (1, 0), (-1, -2) and (1, -4) are concyclic.

178. Find the equation of the circle passing through the points:
(5, -8), (-2, 9) and (2, 1)

179. Find the equation of the circle which passes through the points (3, 7), (5, 5) and has its centre on the line x - 4y = 1.

180. Find the equation of the circle which circumscribes the triangle formed by the lines
$2x + y - 3 = 0$, $x + y - 1 = 0$ and $3x + 2y - 5 = 0$

181. Find the equation of a circle,
Which touches x-axis at a distance 5 from the origin and radius 6 units.

182. Find the equation of ellipse whose eccentricity is $\frac{2}{3}$, latus rectum is 5 and the centre is (0, 0).

183. If the line y = mx + 1 is tangent to the parabola $y^2 = 4x$ then find the value of m.
[**Hint:** Solving the equation of line and parabola, we obtain a quadratic equation and then apply the tangency condition giving the value of m]

184. Write the coordinate centre of the ellipse $\frac{x^2-ax}{a^2}+\frac{y^2-by}{b^2}=0$

185. Find the coordinates of the centre and radius of the circle $(x\cos\alpha+y\sin\alpha-a)^2+\ (x\sin\alpha-y\cos\alpha-b)^2=k^2$.

186. If e and e' be the eccentricity of a hyperbola and its conjugate, then prove that $\frac{1}{e^2}+\frac{1}{(e')^2}=1$.

*** Given section consists of questions of 5 marks each.** **[55]**

187. Find the equation of the circle which passes through the origin and cuts off chords of lengths 4 and 6 on the positive side of the x-axis and y-axis respectively.

188. Find the equation of the circle, the end points of whose diameter are (2, -3) and (-2, 4). Find its centre and radius.

189. Find the equation of the circle whose diameter is the line segment joining (-4, 3) and (12, -1). Find also the intercept made by it on y-axis.

190. The sides of a square are x = 6, x = 9, y = 3 and y = 6. Find the equation of a circle drawn on the diagonal of the square as its diameter.

191. Show that the point $(\mathrm{x},\ \mathrm{y})$ given by $\mathrm{x}=\frac{2\mathrm{at}}{1+\mathrm{t}^2}$ and $\mathrm{y}=\mathrm{a}\left(\frac{1-\mathrm{t}^2}{1+\mathrm{t}^2}\right)2$ lies on a circle for all real values of t such that $-1\le\mathrm{t}\le1$, where a is any given real number.

192. Prove that the radii of the circles $x^2 + y^2 = 1$, $x^2 + y^2 - 2x - 6y - 6 = 0$ and $x^2 + y^2 - 4x - 12y - 9 = 0$ are in A.P.

193. Find the vertex, focus, axis, directrix and latus-rectum of the following parabolas:
$4(y - 1)^2 = -7(x - 3)$.

194. Find the equation of the parabola, if

The focus is at (0, -3) and the vertex is at (-1, -3).

195. Find the equation of the set of all points the sum of whose distances from the points (3, 0) and (9, 0) is 12.

196. If the lines $2x - 3y = 5$ and $3x - 4y = 7$ are the diameters of a circle of area 154 square units, then obtain the equation of the circle.

197. If one end of a diameter of the circle $x^2 + y^2 - 4x - 6y + 11 = 0$ is (3, 4), then find the coordinate of the other end of the diameter.

----- जब तक किसी काम को हम शुरू नहीं करते,तब तक वह नामुमकिन ही लगता है| -----