Ravi Maths Tuition

Conic Sections

11th Standard

Mathematics

Multiple Choice Question 42 x 1 = 42

1) The circle $x^2+y^2+2gx+2fy+c = 0$ does not intersect x − axis if _____.

(a) $g^2 > c$ (b) \(g^{ 2 } (c) $g^2 > 2c$ (d) $g^2 < 2c$

2) If the circle $x^2+y^2+2ax+c = 0$ 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) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c^2}$ (c) $\frac{1}{a} + \frac{1}{b} = \frac{1}{c}$ (d) None of these

3) The four distinct points (0,0), (2,0), (0,−2) and (k,−2) are concyclic if k is equal to _____.

(a) -1 (b) -2 (c) 2 (d) 0

4) The locus of the points of trisection of the double ordinates of a parabola is a _____.

(a) pair of lines (b) parabola (c) circles (d) none of these

5) In the parabola y2 = 4ax,the length of the chord passing through the vertex and inclined to the axis at π/4 is _____.

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

6) The eccentricity of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ if its latus rectum is equal to one half of its minor axis is _____.

(a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$ (c) $\frac{1}{\sqrt{3}}$ (d) None of these

7) The difference between the lengths of the major axis and the latus rectum of an ellipse is _____.

(a) $2ae^2$ (b) ae (c) $3ae$ (d) ae^2

8) The eccentricity of the hyperbola whose latus rectum is half of its transverse axis is _____.

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

9) The difference of the focal distances of any point on the hyperbola is equal to _____.

(a) length of conjugate axis (b) length of transverse axis (c) latus rectum (d) none of these

10) The latus rectum of the hyperbola $16x^2 - ay^2 = 144 \quad is$ _____.

(a) 323 (b) $\frac{15}{4}$ (c) $\frac{4}{3}$ (d) $\frac{3}{4}$

11) The curves circles, ellipses, parabolas and hyperbolas are known as _____.

(a) conic sections (b) curve sections (c) line sections (d) plane sections

12) Conic sections or more commonly conics are obtained by intersections of a ...A. .. with a double napped ...B.... Here, A and B respectively are_____.

(a) line, right circular cone (b) cone, plane (c) line, cone (d) plane, right circular cone

13) The equation of the circle is simplest if the centre of the circle is at the _____.

(a) X-axis (b) origin (c) Y-axis (d) None of these

14) The radius of the circle whose centre is (2, 3) and which passes through the point (5, 7), is _____.

(a) 5 units (b) 4 units (c) 3 units (d) 1 unit

15) The equation of the circle with centre (- 3, 2) and radius 4, is _____.

(a) $(x - 3)^2 + (y - 2)^2 = 16$ (b) $(x + 3)^2 + (y + 2)^2 = 16$ (c) $(x - 3)^2 + (y + 2)^2 = 16$

(d) $(x + 3)^2 + (y - 2)^2 = 16$

16) The equation of a parabola is simplest, if the vertex is at the ...A...and the axis of symmetry is along the ...B.... Here, Aand Brespectively are _____.

(a) origin, X-axis (b) origin, Y-axis (c) Both (a) and (b) (d) None of these

17) The number of possible orientations of parabola is _____.

(a) 1 (b) 2 (c) 3 (d) 4

18) The eccentricity of parabola is always _____.

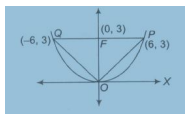
(a) 0 (b) 1 (c) < 1 (d) > 1

19) When the axis of symmetry is along the X-axis the parabola opens to the _____.

(a) right, if the coefficient of x is positive (b) left, if the coefficient of x is negative (c) Both (a) and (b)

(d) Neither (a) nor (b)

20) The area of the triangle formed by the lines joining the vertex of the parabola $x^2 = 12y$ to the ends of its latusrectum is _____.



(a) 12 sq units (b) 16 sq units (c) 18 sq units (d) 24 sq units

21) If' e' is the eccentricity and 'a' is the length of semi-major axis, then the focus is at a distance ...A... from the centre. Here, A stands for _____.

(a) ae (b) $\frac{e}{a}$ (c) $\frac{a}{e}$ (d) None of these

22) If the centre of ellipse is at origin and major axis is along Y-axis,then the equation of ellipse is _____.

(a) $\frac{x^2}{b^2} + \frac{y^2}{a^2} = 1(\text{ where } b > a)$ (b) $\frac{x^2}{b^2} - \frac{y^2}{a^2} = 1(\text{ where } b > a)$

(c) $\frac{x^2}{b^2} + \frac{y^2}{a^2} = 1(\text{ where } a > b)$ (d) $\frac{x^2}{b^2} - \frac{y^2}{a^2} = 1(\text{ where } a > b)$

23) The standard equations of ellipse have ...A... at the origin and the major and minor axes along ...B.... Here, Aand Brespectively are _____.

(a) focus, coordinate axes (b) centre, coordinate axes (c) Both (a) and (b) (d) Neither (a) nor (b)

24) If the foci and vertices of an ellipse be (±1,0) and (±2,0) respectively, then the minor axis of the ellipse is _____.

(a) $2\sqrt{5}$ (b) 2 (c) 4 (d) $2\sqrt{3}$

25) The length of the latusrectum of an ellipse is $\frac{1}{3}$ of the major axis. Its eccentricity is _____.

(a) $\frac{2}{2}$ (b) $\sqrt{\frac{2}{3}}$ (c) $\frac{5\times4\times3}{7^3}$ (d) $\left(\frac{3}{4}\right)^4$

26) Hyperbola is symmetric with respect to _____.

(a) X-axis (b) Y-axis (c) X-axis or Y-axis (d) X-axis and Y-axis

27) If the equation of hyperbola is $\frac{x^2}{9} - \frac{y^2}{16} = 1$ then _____.

(a) transverse axis is along X-axis of length 6 (b) transverse axis is along Y-axis of length 8

(c) conjugate axis is along Y-axis of length 6 (d) None of the above

28) If the equation of hyperbola is $\frac{y^2}{25} - \frac{x^2}{9} = 1$ then _____.

(a) transverse axis is along X-axis of length 6 (b) transverse axis is along Y-axis of length 10

(c) conjugate axis is along Y-axis of length 10 (d) None of the above

29) If $\frac{x^2}{49} - \frac{y^2}{9} = 1$ the foci of this hyperbola is _____.

(a) (58, 0) (b) $(\pm .\sqrt{58}\ ,1)$ (c) $(\pm .\sqrt{58}\ ,0)$ (d) (58, 1)

30) In a hyperbola, if length of transverse axis is 2a and length of conjugate axis is 2b, then the length of latusrectum is _____.

(a) $\frac{b^2}{a}$ (b) $\frac{2b^2}{a}$ (c) $\frac{a^2}{b}$ (d) $\frac{2a^2}{b}$

31) The vertex separates the double napped right circular cone into ...M...parts called ...N....Here, M and N respectively stand for _____.

(a) three, nappes (b) two, shapes (c) two, nappes (d) three, cones

32) The vertex separates the double napped right circular cone into ...M...parts called ...N....Here, M and N respectively stand for _____.

(a) three, nappes (b) two, shapes (c) two, nappes (d) three, cones

33) Different kinds of conic sections are obtained depending on _____.

(a) the position of the intersecting plane with respect to the cone

(b) angle made by intersecting plane with the vertical axis of the cone (c) Both (a) and (b)

(d) Neither (a) nor (b)

34) Different kinds of conic sections are obtained depending on _____.

(a) the position of the intersecting plane with respect to the cone

(b) angle made by intersecting plane with the vertical axis of the cone (c) Both (a) and (b)

(d) Neither (a) nor (b)

35) A circle is the set of all points in a plane that are equidistant from a ...P... point in the ...Q.... Here, P and Q respectively are _____.

(a) any, space (b) fixed, space (c) any, plane (d) fixed, plane

36) If the equation of the circle with centre at (h, k) and radius r is $x^2 + y^2 = r^2$. Then, hand k respectively are _____.

(a) (1,1) (b) (-1,-1) (c) (0,0) (d) None of these

37) Vertex of the parabola $9x^2 - 6x + 36y + 9 = 0$, is _____.

(a) $\left(\frac{1}{3}, -\frac{2}{9}\right)$ (b) $\left(-\frac{1}{3}, -\frac{1}{2}\right)$ (c) $\left(-\frac{1}{3}, \frac{1}{2}\right)$ (d) $\left(\frac{1}{3}, \frac{1}{2}\right)$

38) The length of the latusrectum of the parabola $9x^2 - 6x + 36y + 19 = 0$, is _____.

(a) 36 (b) 9 (c) 6 (d) 4

39) Latusrectum of an ellipse is a line segment ...A... to the major axis through any of the ...B...and whose end points lie on the ellipse. Here, A and B respectively are _____.

(a) perpendicular, foci (b) parallel, vertices (c) parallel, foci (d) perpendicular, vertices

40) The equation $\frac{x^2}{2-r} + \frac{y^2}{r-5} + 1 = 0$ represents an ellipse, if _____.

(a) $r > 2$ (b) $2 < r < 5$ (c) $r > 5$ (d) None of the above

41) The number of possible orientations of hyperbola is/are _____.

(a) One (b) Two (c) Three (d) Four

42) A hyperbola in which length of transverse axis is equal to the length of conjugate axis, is called _____.

(a) equilateral hyperbola (b) obtuse hyperbola (c) acute hyperbola (d) None of the above

2 Marks 317 x 2 = 634

43) Does the point (–2.5, 3.5) lie inside, outside or on the circle $x^2 + y^2 = 25$?

44) Find the area of the triangle formed by the lines joining the vertex of the parabola $x^2 = 12y$ to the ends of its latusrectum.

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

46) Find the equation of the circle with, centre (-2,3) and radius 4.

47) Find the equation of the circle with, centre $\left(\frac{1}{2}, \frac{1}{4}\right)$ and radius $\frac{1}{12}$.

48) Find the equation of the circle with, centre (1, 1) and radius $\sqrt{2}$.

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

50) Find the centre and radius of the circles.$(x + 5)^2 + (y - 3)^2 = 36$

51) Find the centre and radius of the circles, $x^2 + y^2 - 4x - 8y - 45 = 0$

52) Find the centre and radius of the circles. $x^2 + y^2 - 8x - 10y - 12 = 0$

53) Find the centre and radius of the circles, $2x^2 + 2y^2 - x = 0$

54) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2 = 12x$

55) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2 = 6y$

56) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2 = -8x$

57) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2 = -16y$

58) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2 = 10x$

59) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2 = -9y$

60) Find the equation of the parabola that satisfies the given conditions:
Focus (6, 0); directrix x = -6.

61) Find the equation of the parabola that satisfies the given conditions:
Focus (0, -3); directrix y = 3

62) Find the equation of the parabola that satisfies the given conditions:
Vertex (0,0); Focus (3,0)

63) Find the equation of the parabola that satisfies the given conditions:
Vertex (0,0); Focus (-2,0)

64) Find the equation of the parabola that satisfies the given conditions:
Vertex (0, 0) passing through (2, 3) and axis is along x-axis

65) Find the equation of the parabola that satisfies the given conditions:
Vertex (0, 0) passing through (5, 2) and symmetric with respect to y-axis.

66) 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.
$\frac{x^2}{36} + \frac{y^2}{16} = 1$

67) 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.
$\frac{x^2}{4} + \frac{y^2}{25} = 1$

68) 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.
$\frac{x^2}{16} + \frac{y^2}{9} = 1$

69) 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.
$\frac{x^2}{25} + \frac{y^2}{100} = 1$

70) 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.
$\frac{x^2}{49} + \frac{y^2}{36} = 1$

71) 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.
$\frac{x^2}{100} + \frac{y^2}{400} = 1$

72) 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.
$36x^2 + 4y^2 = 144$

73) 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.
$16x^2 + y^2 = 16$

74) 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.
$4x^2 + 9y^2 = 36$

75) Find the equation for the ellipse that satisfies the given conditions:
Vertices (±5, 0), foci (±4, 0)

76) Find the equation for the ellipse that satisfies the given conditions:
Vertices (0, ±13), foci (0, ±5)

77) Find the equation for the ellipse that satisfies the given conditions:
Vertices (±6, 0), foci (±4, 0)

78) Find the equation for the ellipse that satisfies the given conditions:
Ends of major axis (±3, 0), ends of minor axis (0, ±2).

79) Find the equation for the ellipse that satisfies the given conditions:
Ends of major axis (0, $\pm.\sqrt{5}$), ends of minor axis (±1, 0).

80) Find the equation for the ellipse that satisfies the given conditions:
Length of major axis 26, foci (±5, 0)

81) Find the equation for the ellipse that satisfies the given conditions:
Length of minor axis 16, foci (0, ±6)

82) Find the equation for the ellipse that satisfies the given condition:
Foci (± 3, 0), a = 4

83) Find the equation for the ellipse that satisfies the given condition:
b = 3, c = 4, centre at origin; foci on the x-axis.

84) Find the equation for the ellipse that satisfies the given condition:
Centre at (0, 0), major axis on the yaxis and passes through the points (3, 2) and (1,6).

85) Find the equation for the ellipse that satisfies the given condition:
Major axis on the x-axis and passes through the points (4, 3) and (6, 2).

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

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

88) Find the coordinates of the foci, and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$9y^2 - 4x^2 = 36$

89) Find the coordinates of the foci, and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$16x^2-9y^2=576$

90) Find the coordinates of the foci, and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$5y^2-9x^2=36$

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

92) Find the equation of the hyperbola satisfying the given conditions.
Vertices (±2, 0), foci (±3, 0)

93) Find the equation of the hyperbola satisfying the given conditions.
Vertices (0, ± 5), foci (0, ± 8)

94) Find the equation of the hyperbola satisfying the given conditions.
Vertices (0, ± 3), foci (0, ± 5)

95) Find the equation of the hyperbola satisfying the given conditions.
Foci (±5, 0), the transverse axis is of length 8.

96) Find the equation of the hyperbola satisfying the given conditions.
Foci (0, ±13), the conjugate axis is of length 24.

97) Find the equation of the hyperbola satisfying the given conditions.
Foci ($\pm 3\sqrt{5}$, 0), the latus rectum is of length 8.

98) Find the equation of the hyperbola satisfying the given conditions.
Foci (± 4, 0), the latus rectum is of length 12.

99) Find the equation of the hyperbola satisfying the given conditions.
Vertices (± 7, 0), $e=\frac{4}{3}$.

100) An arch is in the form of a semi-ellipse. It is 8 m wide and 2 m high at the centre. Find the height of the arch at a point 1.5m from one end.

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

102) Find an equation of the circle with centre at (0,0) and radius r.

103) Find the equation of the circle with centre (–3, 2) and radius 4.

104) Find the centre and the radius of the circle $x^2 + y^2 + 8x + 10y – 8 = 0$

105) Find the equation of the circle which passes through the points (2, – 2), and (3,4) and whose centre lies on the line $x + y = 2$.

106) Find the coordinates of the focus, axis, the equation of the directrix and latus rectum of the parabola $y^2 = 8x$.

107) Find the equation of the parabola with focus (2,0) and directrix x = – 2.

108) Find the equation of the parabola with vertex at (0, 0) and focus at (0, 2).

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

110) Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the latus rectum of the ellipse $\frac{x^2}{25} + \frac{y^2}{9} = 1$

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

112) Find the equation of the ellipse whose vertices are (± 13, 0) and foci are (± 5, 0)

113) Find the equation of the ellipse, whose length of the major axis is 20 and foci are (0, ± 5).

114) Find the equation of the ellipse, with major axis along the x-axis and passing through the points (4, 3) and (– 1,4)

115) Find the coordinates of the foci and the vertices, the eccentricity,the length of the latus rectum of the hyperbolas

$(i)\frac{x^2}{9} - \frac{y^2}{16} = 1,$
$(ii) y^2 - 16x^2 = 16$

116) Find the equation of the hyperbola with foci (0, ± 3) and vertices $\left(0, \pm\frac{\sqrt{11}}{2}\right)$

117) Find the equation of the hyperbola where foci are (0, ±12) and the length of the latus rectum is 36.

118) The focus of a parabolic mirror is at a distance of 5 cm from its vertex. If the mirror is 45 cm deep, find the distance AB

119) A beam is supported at its ends by supports which are 12 metres apart. Since the load is concentrated at its centre, there is a deflection of 3 cm at the centre and the deflected beam is in the shape of a parabola. How far from the centre is the deflection 1 cm?

120) A rod AB of length 15 cm rests in between two coordinate axes in such a way that the end point A lies on x-axis and end point B lies on y-axis. A point P(x, y) is taken on the rod in such a way that AP = 6 cm. Show that the locus of P is an ellipse.

121) Find the equation of circle whose center is(1, 2) and touches X-axis

122) Find the equation of a circle whose center is(2,0) and touches Y-axis.

123) Find the centre and radius of the circle given by the equation $2x^2 + 2y^2 + 3x + 4y + \frac{9}{8} = 0$

124) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and length of the latusrectum.
$x^2 = -6y$

125) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and length of the latusrectum.
$x^2 = 16y$

126) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and length of the latusrectum.
$y^2 = 8x$

127) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and length of the latusrectum.
$y^2 = -16x$

128) Find the equation of the parabola whose focus is (0, -3) and directrix is y = 3

129) Find the equation of the parabola with vertex at the origin and focus at (-2, 0).

130) Find the equation of the circle which touches both the axes and whose radius is 5

131) Find the equation of the circle with circle=(2,3) and radius=5

132) Find the equation of the parabola with focus (4,0) and directrix is x + 4 = 0

133) If the equation of the parabola is x^2=-8y, then find the equation of directrix.

134) Find the equation of the ellipse, whose distance between directrices is 5 and distance between foci is 4.

135) Find the equation of the parabola which is symmetric about the Y-axis and psses through the point (2,-3).

136) Find the equation of the parabola with vertex at the borigin, the axis along the X-axis and passing through the point (2, 3)

137) Find the equation of the circle with center= $(a\,cos\theta, a\,sin\theta)$ and radius=a

138) Prove that the line lx + my + n=0 will touch the parabola $y^2 = 4ax$, if $ln = am^2$

139) Find the center and radius of each of the following circle.
$x^2 + (y + 2)^2 = 9$

140) Find the center and radius of each of the following circle.
$x^2 + y^2 + 6x - 4y + 4 = 0$

141) Prove that the radius of the circles $x^2 + y^2 = 1$, $x^2 + y^2 - 2x - 6y = 6$ and $x^2 + y^2 - 4x - 12y = 9$ are in AP

142) Draw the shape of the ellipse and find the length of the major and minor axes, coordinates of the vertices, coordinates of the foci, eccentricity and length of the latusrectum of the following. $5x^2 + 12y^2 = 60$

143) Draw the shape of the ellipse and find the length of the major and minor axes, coordinates of the vertices, coordinates of the foci, eccentricity and length of the latusrectum of the following. $16x^2 + 5y^2 = 80$

144) Draw the shape of the ellipse and find the length of the major and minor axes, coordinates of the vertices, coordinates of the foci, eccentricity and length of the latusrectum of the following. $9x^2+4y^2=36$

145) Draw the shape of the ellipse and find the length of the major and minor axes, coordinates of the vertices, coordinates of the foci, eccentricity and length of the latusrectum of the following. $7x^2+10y^2=70$

146) Draw the shape of the ellipse and find the length of the major and minor axes, coordinates of the vertices, coordinates of the foci, eccentricity and length of the latusrectum of the following. $9x^2 + 25y^2 = 225$

147) Find the equation of the ellipse, Whose foci are ($\pm$ 3,0) and passing through (4,1)

148) Find the eccentricity of the hyperbola whose length of latusrectum is 8 and conjugate axis is equal to the half of its distance between the foci.

149) If the equations of the two diameters of a circle are x + y = 6 and x + 2y = 4 and the radius of the circle is 10. Find the equation of the circle.

150) Find the equation of the circle with
center=(-a,-b) and radius= $\sqrt{a^2 - b^2}$

151) If P is a point on the ellipse $\frac{x^2}{16} + \frac{y^2}{25} = 1$ whose foci are S and S', then find the value of PS+PS'.

152) Find the distance between the directrices of the ellipse $\frac{x^2}{36} + \frac{y^2}{20} = 1$.

153) Find the centre and radius of each of the following circles.
$(x - \frac{1}{2})^2 + (y + \frac{1}{3})^2 = \frac{1}{4}$

154) Find the equation of an ellipse whose foci are($\pm$ 4,0) and the eccentricity is $\frac{1}{3}$.

155) The focal distance of a point on the parabola y^2 = 12x is 4. Find the abscissa of this point.

156) If the parabola $y^2 = 4ax$ passes through the point (3,2), find the length of its latusrectum.

157) Find the vertix and the directrix of the parabola $y^2-3x - 2y + 7 = 0$.

158) Find the centre and radius of each of the following circles.
$x^2 + y^2 - 4x + 6y = 5$

159) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latusrectum..(i) $y^2= 12x$

160) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latusrectum . (ii) $y^2 = -8x$

161) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latusrectum .(iii) $.y^2 = 10x$

162) In each of the following questions, find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latusrectum $.x^2 = -9y$

163) Show that the points (5,5), (6,4),(-2,4) and (7,1) are concyclic, i.e, all lie on the same circle.Find the equation, centre and radius of this circle

164) Find the equation of ellipse with center at the origin, major axis on the y-axis and passing through the point (3,2) and (1,6).

165) Find the equation of the parabola whose focus is (2, 0) and directrix is x = -2.

166) Find the center and radius of each of the following circle.
$3x^2 + 3y^2 = 27$

167) Find the center and radius of each of the following circle
$x^2 + y^2 -6x + 5y - 8 = 0$

168) If the line $y = \sqrt{3}x + k$ touches the circle $x^2 + y^2 = 16$, then find the value of k

169) Find the equation of the circle with Center= $\left(\frac{1}{2}, \frac{1}{4}\right)$ and radius = $\frac{1}{2}$ units

170) Find the eccentricity of the ellipse $\frac{x^2}{4} + \frac{y^2}{9} = 1$.

171) Find the length of the latusrectum of the ellipse $3x^2+y^2=12$.

172) 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 $\frac{x^2}{4} + \frac{y^2}{25} = 1$

173) Find the equation of the ellipse whose center lies at an origin, major axis lies on the X-axis, the eccentricity is $\frac{2}{3}$ and the length of the latusrectum is 5 units.

174) Find the equation of the parabola whose focus is (-1, 2) and directrix is x - 2y - 15 = 0.

175) If e and e' are the eccentricities of the hyperbola $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ and its conjugate hyperbola, then prove that $\frac{1}{e^2} + \frac{1}{e'^2} = 1$

176) Find the equation of parabola when the vertex is at (0, 0) and focus is at (0, -4).
As vertex and focus lies on Y- axis, so use the equation of parabola in the form of $x^2 =-4axy$.

177) Find the equation of circle whose center is(1,2) and which passes through the point(4,6)

178) If the latusrectum of an ellipse is equal to the half of its major axis, then find its eccentricity.

179) Find the equation of the ellipse, if the ends of major are$(\pm 2, 0)$ and ends of minor axis are$(0, \pm 7)$.

180) Find the equation of the circle which passes through the centre of circle $x^2+ y^2+ 8x +10y - 7 = 0$ and is concentric with the circle $2x^2 + 2y^2 - 8x - 12y - 9 = 0$

181) Find the equation of the circle passing through the point(2,4) and having its center at the intersection of the lines x-y=4 and 2x + 3y + 7 = 0.

182) Find the equation of ellipse having ends of major and minor axes are (0, $\pm\sqrt{5}$) and ($\pm$ 1, 0)

183) Find the equation of the ellipse, whose focus, directrix and eccentricity are respectively $(-1,1)\,, x-y+3=0 \quad and \quad \frac{1}{2}$

184) Find the equation of the ellipse referred to its axis as the axes of coordinates with latusrectum of length 4 and distance between foci $4\sqrt{2}$

185) Find the equation of ellipse, if it satisfies the condition b=4, c=9, centre at origin, foci on the X-axis.

186) Find the equation of ellipse, if it satisfies the condition b=3, c=8, centre at origin, foci on the Y-axis.

187) Find the equation of the circle whose center is (a,b) and passes through the origin

188) Find the distance between the directrices of the ellipse $\frac{x^2}{36}+\frac{y^2}{20}$ =1.

189) Find the coordinates of a point on the parabola y^2=8x, whose focal distance is 4.

190) Find the equation of the circle, if the end points of whose diameter are the centres of the circles x^2+ y^2+ 6x - 14y - 1 = 0 and x^2+ y^2 - 4x+ 10y - 2 = 0

191) Find the equation of a circle whose diameter are 2x-3y+12=0 and x+4y-5=0 and area is 154 SQ units

192) If the line y=mx +1 is tangent to the parabola y^2=4x, then find the value of m

193) Find the equation of hyperbola, if length of transverse axis is 10 and conjugate axis is 8.

194) Find the equation of the ellipse, whose major axis is on X-axis and passes through(4,3) and (6,2)

195) Draw the shape of hyperbola and find the length of the axes, coordinate of the vertices, coordinate of the foci, eccentricity and length of the latus rectum of the following hyperbola.
$\frac{x^2}{25}-\frac{y^2}{4}=1$

196) Draw the shape of hyperbola and find the length of the axes, coordinate of the vertices, coordinate of the foci, eccentricity and length of the latus rectum of the following hyperbola.
$\frac{x^2}{9}-\frac{y^2}{16}=1$

197) Draw the shape of hyperbola and find the length of the axes, coordinate of the vertices, coordinate of the foci, eccentricity and length of the latus rectum of the following hyperbola.
$x^2-y^2=1$

198) Draw the shape of hyperbola and find the length of the axes, coordinate of the vertices, coordinate of the foci, eccentricity and length of the latus rectum of the following hyperbola.
$3x^2-2y^2=6$

199) Draw the shape of hyperbola and find the length of the axes, coordinate of the vertices, coordinate of the foci, eccentricity and length of the latus rectum of the following hyperbola.
$25x^2-9y^2=225$

200) Find the equation of the ellipse whose axes are along the coordinate axes, vertices are $(\pm5,0)$ and foci at $(\pm4,0)$.

201) Find the equation of the ellipse, whose foci $(0,\pm5)$ and vertices $(0,\pm13)$.

202) Find the equation of the ellipse with vertices at $(0,\pm10)$ and e = 4/5.

203) Find the equation of the ellipse, having eccentricity $\frac{1}{2}$ and semi-major axis is 4.

204) Find the equation of ellipse having major and minor axes along X and Y-axes respectively, the distance between Whose foci is 8 units and the distance between the directions is 18 units.

205) Find the equation of the ellipse, if foci are $(\pm3,0)$ and a=4

206) Find the equation of a circle passing through the point(7,3) having radius 3 units and whose center lies on the line y=x-1.

207) Draw the shape of hyperbola and find the length of the axes, coordinate of the vertices, coordinate of the foci, eccentricity and length of the latus rectum of the following hyperbola.
$\frac{y^2}{16} - \frac{x^2}{49} = 1$

208) The abscissa of two points A and B are the roots of the equation $x^2 + 2ax - b = 0$ and their ordinates are the roots of the equation $x^2 = 0$ and their ordinates are the roots of the equation $x^2 + 2px - q^2 = 0$.Find the equation and the radius of the circle with AB as diameter

209) Find the equation of ellipse, if foci are $(\pm 5, 0)$ and a=6.

210) Find the equation of the ellipse, if length of major axis is 22 and foci $(\pm 3, 0)$

211) Find the equation of an ellipse whose vertices are (0, $\pm$ 10) and eccentricity e = $\frac{4}{5}$

212) Find the equation of the ellipse, where distance between directices is 8 and distance between foci is 2

213) Find the equation of a circle which touches both the axes and the line 3x - 4y + 8 = 0 and lies in the third quadrant.

214) Find the distance between the directions of the hyperbola $x^2 - y^2 = 8$

215) Find the foci of the hyperbola $9x^2 - 16y^2 = 144$

216) Find the equation of the ellipse, if length of major axis is 26 and foci $(\pm 5, 0)$.

217) Find the equation of the ellipse whose foci are (2,3),(-2,3) and whose length of semi-minor axis is $\sqrt{5}$

218) Find the vertex, axis, focus, directrix and length of latusrectum of parabola $y^2 - 8y - x + 19 = 0$

219) Find the equation of the ellipse referred to its axes as the axes of coordinates with latusrectrum of length 8 and distance between foci $6\sqrt{3}$.

220) Find the equation of the ellipse, whose axes along coordinates axes, passing through (4,3) and (-1,4).

221) Find the latusrectum of the hyperbola $16x^2 - 9y^2 = 144$

222) Find the eccentricity of the hyperbola whose length of latusrectum is half of its transverse axis.

223) Find the equation of the ellipse having length of minor axis = 16 and foci $(0, \pm 6)$.

224) If the latusrectum of an ellipse is equal to half of minor axis, then find its eccentricity.

225) Find the focus and directrix of the parabola $3x^2 + 12x + 8y = 0$.

226) Find the equation of circle with
(i) centre = (-3,2) and radius = 5
(ii) centre = (a, a) and radius = $a\sqrt{2}$
(iii) centre= (a, b) and radius = $\sqrt{a^2 + b^2}$
(iv) centre = $\left(\frac{1}{3}, \frac{1}{4}\right)$ and radius = 12
(v) centre = (bsinα , acosα) and radius = 1.

227) Find the equation of the ellipse, if the ends of major axis are $(\pm 3, 0)$ and ends of minor axis are $(0, \pm 2)$.

228) If the eccentricity of an ellipse is 5/8 and distance between its foci is 10, then find latusrectum of the ellipse.

229) Find the equation of the ellipse having foci $(0, \pm 1)$ and length of whose minor axis is unity.

230) If the distance between the foci of a hyperbola is 16 and its eccentricity is $\sqrt{2}$, then find the equation of the hyperbola.

231) Find the equation of the hyperbola whose conjugate axis is 5 and the distance between the foci is 13.

232) Find the equation of the circle concentric with the circle $x^2 + y^2 - 4x - 6y - 3 = 0$ and which touches the Y-axis.

233) Find the centre and radius of the circle of the followings
(i) $(x + 5)^2 + (y - 3)^2 = 36$
(ii) $x^2 + y^2 - 4x - 8y - 45 = 0$
(iii) $x^2 + y^2 - 6x + 4y - 12 = 0$.
(iv) $x^2 + y^2 + 8x + 10y - 8 = 0$
(v) $x^2 + y^2 - 2x + 4y = 8$
(vi) $x^2 + y^2 + 6x - 10y + 16 = 0$
(vii) $x^2 + y^2 + 8x - 10y + 16 = 0$
(viii) $x^2 + y^2 + 10x - 8Y - 36 = 0$
(ix) $3x^2 + 3y^2 + 6x - 4y - 1 = 0$

234) Find the equation of the ellipse with foci at $(\pm 5, 0)$ and x=$\frac{36}{5}$ as one of the directrices.

235) Find the equation of ellipse whose eccentricity is 2/3 latusrectum is 5 and the centre is (0,0).

236) Find the equation of the parabola with vertex at the origin, the axis along the X-axis and passing through the point (2. 3).

237) Find the equation of ellipse, whose axes are along the axes of coordinates and centre at the origin and axes whose latus rectum = 8 and $e = \frac{1}{\sqrt{2}}$.

238) Find the centre and radius of the circle of the followings
$x^2 + y^2 - x - 8y - 45 = 0$

239) Find the eccentricity of the hyperbola, the length of whose conjugate axis is 3/4 of the length of transverse axis.

240) Find the equation of hyperbola having foci $(\pm 5, 0)$ and foci at $(\pm 7, 0)$

241) Find the equation of hyperbola having foci $(\pm 5, 0)$ and length of transverse axis is 8.

242) Find the equation of hyperbola, having foci $(\pm 6, 0)$ and one of the directrix is x = 4.

243) Find the equation of the hyperbola with vertices at (0, $\pm$ 6) and e = $\frac{5}{3}$ Find its foci.

244) Find the equation of the circles whose end points of one of the diameters are
(i) A(2,-3) and (-3, 5)
(ii) P (5, - 3) and Q (2, - 4)
(iii) A(p, q) and B(r, s).

245) Find the equation of an ellipse, if it satisfies the condition b = 3, c = 4, centre at the origin, foci on the X-axis.

246) Find the equation of the circle whose centre is (2, - 5) and which passes through the point (3, 2)

247) Find the equation of hyperbola, having foci $(\pm 4, 0)$ and length of latusrectum is 12.

248) Find the equation of the circle whose centre is (2,-3) and which passes through the intersection of the lines 3x + 2y + 11 and 2x + 3y = 4

249) Find the equation of the hyperbola, having foci ($\pm 3\sqrt{5}$, 0) and length of latusrectum is 8.

250) Find the equation of the hyperbola whose vertices are ($\pm$ 2, 0) and the eccentricity is 2.

251) Find the equation of a circle concentric with the circle $2x + 2y + 8x + 10y - 39 = 0$ and having its area equals to 16π sq units.

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

253) Find the equation of the circle which touches the both axes in the first quadrant and whose radius is a

254) Find the equation of hyperbola, if conjugate axis is 5 and distance between foci is 13.

255) Find the equation of the circle having centre (3,-4) and touching the line 5x + 12y - 19 = 0

256) Find the area of the circle having centre at (1,2) and passing through (4,6)

257) Find the equation of the ellipse which passes through the point (-3, 1) and has eccentricity $\frac{\sqrt{2}}{5}$,which X-axis as its major axis and centre at the origin.

258) A circle of radius 5 units touches the coordinate axes in the first quadrant.If the circle makes one complete roll on X-axis along the positive direction of X-axis, then find its equation in the new position

259) If the latusrectum of an ellipse with axis along X-axis and centre art origin is 10, distance between foci is equal to length of minor axis, then find the equation of ellipse.

260) If lx +my = 1 touches the circle $x^2+y^2 = a^2$, then prove that the point (l,m) lies on the circle $x^2+y^2=a^{-2}$.

261) A visitor with sign board 'DO NOT LITTER' is moving on a circular path in an exhibition.During the movement, he stops at points represented by(3,-2) and (-2,0).Also centre of the circular path is on the line 2x-y=3.What is the equation of the path and what message he wants to give to the public?

262) Find the question of the ellipse, whose focus is (1, -2), the directrix 3x - 2y + 5 = 0 and eccentricity equal to $\frac{1}{2}$

263) Find the equation of an ellipse whose axis lie along the coordinate axes, which passes through the point (-3, 1) and has eccentricity equal to $\sqrt{2/5}$

264) Find the length of the axes, vertices, foci, eccentricity and length of the latusrectum of the following hyperbola.
$49y^2 - 16x^2 = 784$

265) Find the length of the axes, vertices, foci, eccentricity, and length of the latusrectum of the following hyperbola.
$9x^2 - 16y^2 = 144$

266) Find the equation of the hyperbola whose foci are at $(0, \pm\sqrt{10})$ and which passes through the point (2, 3).

267) Find the equation of hyperbola, having directrix x - y + 3 = 0, focus(-1, 1) and eccentricity 3.

268) If two diameters of a circle lie along the lines x - y = 9 and x - 2y = 7 and the area of the circle is 38.5 sq cm, then find the equation of the circle.

269) The sides of a rectangle are given by the equations x = -2, x = 4, y = -2 and y = 5. Find the equation of the circle drawn on the diagonal of this rectangle as its diameter.

270) Find the coordinates of the focus and the vertex, the equation of directrix and the axis of the following
$x^2 = 10y$

271) Find the coordinates of the focus and the vertex, the equation of directrix and the axis of the following
$3x^2 = 8y$

272) Find the coordinates of the focus and the vertex, equation of directrix and length of latusrectum of the following.
$y^2 = 10x$

273) Find the coordinates of the focus and the vertex, equation of directrix and length of latusrectum of the following
$5y^2 = -16x$

274) The vertices of a triangle are A(10, 4) B(-4, 9) and C(-2,-1). Find the equations of its altutude . Also, find the orthocenter.

275) Find equation of the circle with centre (5,-2) and radius 3.

276) Find the co-ordinates of the centre and the radius of the circle $2x^2 + 2y^2 - Y = 0$.

277) Find the equation of the circle which passes through the point of intersection of the lines 3x - 2y - 1 = 0 and 4x + y - 27 = 0 and whose centre is (2, -3).

278) Find the equation of the circle that passes through the points (1, 0), (-1, 0) and (0, 1)

279) Find the equation of the circle with, Centre (a, a) and radius $\sqrt{2a}$.

280) Find the equation of the circle with, Centre (0, 0) and radius $\frac{2}{3}$ a.

281) Find the equation of the circle with, Centre (-3, -4) and radius 5

282) Find the equation of the circle with, Centre $\left(\frac{1}{3}, \frac{1}{4}\right)$ and radius $\frac{1}{5}$.

283) Find the centre and radius of each of the following circles:
$x^2+(y-2)^2=1$

284) Find the centre and radius of each of the following circles:
$2x^2+2y^2-3x+5x-7=0$

285) Find the centre and radius of each of the following circles:
$2x^2+2y^2-4x-8y-17=0$

286) Find the centre and radius of each of the following circles:
$4x^2+4y^2-10x+5y+5=0$

287) Find the equation of a circle touching both the axis and passing through the point (6, 3).

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

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

290) Find the equation of the circle whose centre is (4,5) and which passes through the centre of the circle $x^2+ y^2 + 4x - 6y - 12 =0$.

291) Does the point (4,5) lie inside, outside or on the circle $x^2 + y^2 - 2x - 3 = 0$?

292) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2=20x$

293) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2=12x$

294) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2=8y$

295) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$3x^2=-15y$

296) Find the equation of the parabola with vertices at the origin and directrix x = 5.

297) Find the coordinates of a point on the parabola $y^2 = 20x$ where the ordinate is equal to twice the abscissa.

298) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2=16x$

299) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2=-5x$

300) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2=6y$

301) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2=-18y$

302) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2=16x$

303) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$y^2=-5x$

304) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2=6y$

305) Find the coordinates of the focus, axis of the parabola, the equation of the directrix and the length of the latus rectum.
$x^2=-18y$

306) Find the equation of a parabola for which, Focus is (3, 0) and directrix is x=-3.

307) Find the equation of a parabola for which, Focus is (0, -4) and directrix is y=4.

308) Find the equation of the parabola whose focus is at (2,5) and the directrix is line 3x + 4y + 1= 0.

309) Find the equation of the parabola whose, vertex is at (0, 0) and focus is at (5, 0).

310) Find the equation of the parabola whose, vertex is at (0, 0) and focus is at (0, -2).

311) Find the equation of the parabola whose, vertex is at (0, 0) and focus on the positive of x-axis and length of latus rectum is $\frac{13}{6}$.

312) Find the equation of the parabola whose, vertex is at (0, 0) and focus on the negative of y-axis and length of latus rectum is 17.

313) 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.
$\frac{x^2}{9}+\frac{y^2}{36}=1$.

314) 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.
$\frac{x^2}{81}+\frac{y^2}{16}$ =1

315) 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.
$9x^2+25y^2=225$

316) Find the equation of an ellipse that satisfies the given conditions.
vertices (0, ±7); foci (0, ±3)

317) Find the equation of an ellipse that satisfies the given conditions.
Length of major axis 18; foci (±3, 0)

318) 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.
$x^2+9y^2=9$

319) 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.
$9x^2 + 16y^2 = 144$

320) 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.
$4x^2 + y^2 = 400$

321) 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.
$\frac{x^2}{25} + \frac{y^2}{169}$ =1

322) Find the equation of the ellipse that satisfies the given conditions:
foci (0, ±4); e=$\frac{4}{5}$.

323) Find the equation of the ellipse that satisfies the given conditions:
vertices (±4, 0); foci (±3, 0)

324) Find the equation of the ellipse that satisfies the given conditions:
Length of major axis 20, foci (0, ±5)

325) Find the equation of the ellipse that satisfies the given conditions:
Foci (0, ±3), a = 5

326) Find the equation of the ellipse that satisfies the given conditions:
b = 5, c = 3, axis along y-axis

327) Find the equation of an ellipse whose latus rectum is 8 and whose eccentricity is $\frac{2}{3}$.

328) Find the eccentricity of an ellipse if its latus rectum is $\frac{1}{3}$ of its minor axis.

329) Find the equation of an ellipse whose foci (± 3, 0), centre is at the origin and which passes through the point (4, 1).

330) Find the co-ordinates of foci and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$\frac{x^2}{25} - \frac{y^2}{16}$ =1.

331) Find the co-ordinates of foci and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$\frac{y^2}{16} - \frac{x^2}{1}$ =1

332) Find the co-ordinates of foci and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.

333) Find the equation of the hyperbola whose, Vertices (±6, 0), foci (±8, 0).

334) Find the equation of the hyperbola whose, Vertices (±6, 0), and one of the directrix is x = 4.

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

336) Find the coordinates of the foci and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$\frac{x^2}{16} - \frac{y^2}{36}$ =1

337) Find the coordinates of the foci and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$9y^2-4x^2=36$

338) Find the coordinates of the foci and the vertices, the eccentricity and the length of the latus rectum of the hyperbolas.
$3y^2-2x^2=1$

339) Find the equation of the hyperbola satisfying the given condition.
Foci (0, ±12), the latus rectum is of length 36.

340) Find the equation of the hyperbola satisfying the given condition.
vertices (± 5, 0); foci (± 7, 0)

341) Find the equation of the hyperbola satisfying the given condition.
Foci (0, ±10), passing through (8, $6\sqrt{2}$)

342) Find the equation of the hyperbola satisfying the given condition.
Foci (± 4, 0), e =2

343) Find the eccentricity of the hyperbola with foci on the x-axis if the length of its conjugate axis is $\frac{3}{4}$ of the length of its transverse axis.

344) Find the equation of a hyperbola whose latus rectum is 8 and eccentricity is $\frac{3}{\sqrt{5}}$.

345) Find the equation of the hyperbola whose foci are (6, 4) and (-4,4) and eccentricity 2.

346) Find the equation of the circle whose radius is 5 and which touches the circule $x^2+y^2-2x-4y-20=0$ externally at the point (3,7).

347) Show that equation of the circule which touches the co−ordinates axis and whose center lies on the lines lx + my + n = 0 is $(l+m)(x^2+y^2)+2n(l+m)(x+y)+n^2=0$

348) Find the area of an equilateral triangle inscribed in the circule $x^2+y^2+2gx+2fy+c=0$.

349) Find the equation of the elipse whose axis are along the co−ordinate axis,vertices are (0,±10) and eccentricity c = 3/5.

350) The foci of an elipse are (±2,0) and its eccentricity is 1/3.Find the equation of elipse.

351) Find the equation of the hyperbola,the length of whose latusrectum is 8 and eccentricity is $\frac{3}{\sqrt{5}}$

352) Find the equation of circle passing through the points (4, 1) and (6, 5) and whose centre lies on the straight line 4x + y - 16 =0

353) Find the equation of the circle passing through origin and cutting of intercepts 2a and 2b on the co-ordinate axis.

354) Find the equation of the parabola having focus at point (0, -2) and directrix as y = l.

355) Find the area of the triangle formed by joining the vertex of parabola y^2 = 8x and the two ends of the latus rectum.

356) Find the equation of the ellipse whose foci are (0, ± 3) and a = 5.

357) Find the equation of the ellipse whose major axis on x-axis, passing through points (4, 3) and (6,2).

358) Find the equation of the hyperbola whose foci are (0, ± 12) and length of latus rectum is 36.

359) Find the equation of the hyperbola given that vertices lie along the x-axis, conjugate axis is 5 and passes through (1, -2).

3 Marks 65 x 3 = 195

360) If a parabolic reflector is 20 cm in diameter and 5 cm deep. Find the focus.

361) 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.

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

363) 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.

364) Find the vertex, focus, directrix and length of the lacturectum of the parabola y^2 - 4y - 2x - 8 = 0

365) If the line y = mx + 1 is tangent to the parabola y^2 = 4x, then find the value of m

366) Find the area of the triangle formed by the lines joining the vertex of the $2y^2+3y-4x-3=0$

367) Draw the shape of $\frac{x^2}{64}+\frac{y^2}{25}=1$ and find their vertices, major axis, minor axis, eccentricity, foci, and length of latusrectum.

368) Draw the shape of $\frac{x^2}{100}+\frac{y^2}{400}=1$ and find their vertices, major axis, minor axis, eccentricity, foci, and length of latusrectum.

369) Find the equation of the ellipse, whose foci are $(\pm 4,0)$ and passing through (3,2).

370) Find the equation of the ellipse whose centre is at origin and the X-axis, the major axis, which passes through the points (-3,1) and (2,-2).

371) Find the equation of the ellipse whose focus is(1,-1), the directrix is the line x-y-3=0 and eccentricity is 1/2.

372) Find the eccentricity of the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$, when passes through the points (3,0) and $(3\sqrt{2},2)$

373) Find the coordinates of the foci, the vertices, the length of major axis, the minor axis, the eccentricity and the length of the latusrectum of ellipse $3x^2+2y^2$ -6=0.

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

375) Find the equation of the ellipse passing through (6,4), foci is on Y-axis, centres at the origin having eccentricity 3/4.

376) An arch is in the form of a semi-ellipse. It is 10m wide and 3m high of the centre. Find the height of the arch at a point 2m from one end.

377) Find the equation of the hyperbola whose one directrix is x + =9, the corresponding focus is (2,2) and eccentricity is 2.

378) Find the foci,vertices, eccentricity and length of latusrectum of the hyperbola $5y^2+9x^2=36$

379) Find the lengths of transverse and conjugate axes, eccentricity and coordinate of foci and vertices, length of latusrectum,equation of the directrix of the hyperbola $25x^2-36y^2=225$

380) 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

381) Find the equation of circle which is circumscribed about the triangle whose vertices are (-2,3),(5,2) and (6,-1)

382) Find the equation of circle with origin as centre and passing through the vertices of an equilateral triangle whose median of length is 3a

383) If y=2x is a chord of the circle x+y - 10x = 0, then find the equation of a circle x+y- 10x = 0, then find the equation of a circle with this chord as diameter

384) Find the equation of a circle concentric with the circle x^2+y^2 - 6x +12y+15 = 0 and has double its area

385) Show that the points (x,y) given by $x=\frac{2at}{1+t^2}$ $y=\frac{a(1-t^2)}{1+t^2}$ lies on a circle for all real values of t such that $-1\le t\le 1$, where a is any given real numbers.

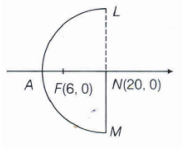
386) Find the equation of the circle concentric with the circle $x^2 + y^2 + 4x + 6y + 11 = 0$ and passing through the point P(5,4)

387) If a latusrectum of an ellipse subtends a right angle at the centre of the ellipse, then write the eccentricity of the ellipse.

388) Find the equation of the circle passing through the vertices of a triangle whose sides are represented by the equations x+y=2, 3x-4y=6 and x-y=0

389) Draw the shape of the ellipse $\frac{x^2}{36}+\frac{y^2}{16}=1$ and find their major axis, minor axis, value of c, vertices, direction, foci, eccentricity and length of latusrectum.

390) The focus of a parabolic mirror as shown In figure is at a distance 6cm from its vertex. If the mirror is 20cm deep, then find the distance LM.



391) Find the equation of the parabola, whose focus is the point (4,0) and whose directrix is x = -4. Also, find the length of latusrectum

392) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the major axis.

393) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the minor axis.

394) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the value of c.

395) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the vertices.

396) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the directrices.

397) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the foci.

398) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the eccentricity.

399) Draw the shape of ellipse $\frac{x^2}{49}+\frac{y^2}{16}=1$ and find the length of latusrectum of given ellipse.

400) Find the equation of parabola whose focus is (2,3) and directrix is x-2y-6=0

401) Find the area of the triangle formed by the lines joining the vertex of the parabola $x^2=12y$ to the ends of its latusrectum.

402) Find out the equation of parabola, if the focus is at (-6,-6) and the vertex is at (-2,2)

403) Find the equation of the parabola whose focus is (1, -1) and vertex is (2,1).

404) Find the equation of the parabola whose vertex is (6, -3) and directrix is 3x-5y+1 = 0.

405) Find the equation of the parabola whose vertex is at (2,1) and the directrix is x-y+1=0

406) Find the length of the line segment joining the vertex of the parabola y^2=4ax and a point on the parabola, where the line segment makes an angle θ to the X-axis.

407) Find the equation of hyperbola, when foci are at $(\pm 5, 0)$ and transvere axis is of length 8.

408) The foci of a hyperbola coincide with the faci of the elipse $\frac{x^2}{25}+\frac{y^2}{9}=1$ find the equation of the hyperbola if its eccentricity is 2.

409) Find the equation of the circle passes through the points (2, 3) and (4, 5) and the centre lies on the straight line y - 4x + 3 = 0.

410) Find the equation of circle circumscribing the triangle whose sides are the lines y = x + 2, 4x - 3y = 0 and 3x - 2y = 0.

411) Does the point (- 1.5,2.5)lies inside or outside or on the circle $x^2 + y^2 = 25$?

412) Find the area of the triangle formed by the lines joining the vertex of the parabola x^2 = - 36y to the ends of the latusrectum.

413) Draw the shape of the hyperbola $\frac{y^2}{9}-\frac{x^2}{27}=1$ and find their centre, transverse axis conjugate axis, value of c, vertices, directrices, foci, eccentricity and latusrectum.

414) Draw the shape of the hyperbola $\frac{x^2}{49}-\frac{y^2}{9}=1$ and find their centre, transverse axis conjugate axis, value of c, vertices, directrices, foci.

415) Draw the shape of the hyperbola $5y^2 - 9x^2 = 36$ and find its centre, transverse axis, conjugate axis, value of c, vertices, directrices, foci, eccentricity and length of latusrectum.

416) Find the equation of the hyperbola, whose vertices are (0, ± 5) and foci (0, ± 8).

417) Find the equation of the hyperbola having foci (0, ± 4) and transverse axis of length 6.

418) Find the equation of the hyperbola whose foci are at (0, ± 6) and length of whose conjugate axis is 2 $\sqrt{11}$.

419) Find the equation of the hyperbola whose eccentricity is $\frac{3}{2}$ and foci are (± 2, 0).

420) Find the equation of hyperbola, if vertices are at (± 7, 0) and e = $\frac{4}{3}$

421) Find the equation of the hyperbola whose focus is (1,1), directrix is 2x + y - 1 = 0 and eccentricity is $\sqrt{3}$

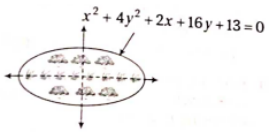
422) Find the equation of hyperbola, the length of whose latusrectum is 8, eccentricity is $\frac{3}{\sqrt{5}}$ and whose transverse and conjugate axes are along the X and Y-axes respectively.

423) Find the equation of the locus of all points such that difference of their distance from (4, 0) and (- 4, 0) is always to 2

424) PSQ is a focal chord of the ellipse $4x^2 + 9y^2 = 36$ such that SP = 4. If S' is the another focus, write the value of S'Q.

Case Study Questions 2 x 4 = 8

425) Mr. Sharma a sincere citizen of "Laxmi Nikunj Society" in Jaipur. He makes a green gardenin his plot which is in the shape of ellipse, i.e.shown in the below figure.



Now, answer the following questions which are based on above garden.

(i) Value of (a + b) is

(a) 2 (b) 1 (c) 3 (d) 4

(ii) Value of eccentricity(e) is

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

(iii) Which of the following is equation of directrices?

(a) $x = \pm\frac{4}{\sqrt{3}} - 1$ **(b)** $x = \pm\frac{4}{\sqrt{3}} + 1$ **(c)** $y = \pm\frac{4}{\sqrt{3}} + 1$ **(d)** $y = \pm\frac{4}{\sqrt{3}} - 1$

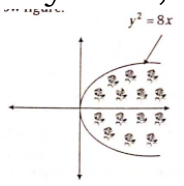
(iv) Length of the latusrectum is

(a) 2 (b) 1 (c) 3 (d) 4

(v) Which of the following is equation of latusrectum?

(a) $x = \pm\sqrt{3} + 1$ **(b)** $y = \pm\sqrt{3} - 1$ **(c)** $x = \pm\sqrt{3} - 1$ **(d)** $y = \pm\sqrt{3} + 1$

426) Salim made a flower-bed in his garden. Surprisingly which is in the shape of a parabola whose equation is $y^2 = 8x$, the flower-bed is shown as in below figure.



Then, answer the following questions which are based on above figure.

(i) Focus of given parabola is

(a) (1, 0) (b) (2, 0) (c) (3, 0) (d) (4, 0)

(ii) Axis of the parabola is

(a) x = 0 (b) x = 1 (c) y = 0 (d) y = 1

(iii) Equation of the directrix of the parabola is

(a) x + 2 = 0 (b) y + 2 = 0 (c) x - 2 = 0 (d) y - 2 = 0

(iv) Length of the latusrectum of the parabola is

(a) 4 (b) 6 (c) 8 (d) 10

(v) If the focal distance of a point on the parabola is 3, then abscissa of the point is

(a) 1 (b) 2 (c) 3 (d) 4

5 Marks 16 x 5 = 80

427) Find the equation of the hyperbola satisfying the given conditions.
Foci $(0, \pm \sqrt{10}\ )$,passing through (2, 3)

428) A rod of length 12cm moves with its ends always touching the coordinate 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.

429) Find the equation of the circle passing through the points (4, 1) and (6, 5) and whose centre is on the line 4x +y = 16.

430) Find the equation of the circle passing through the points (2,3) and (-1, 1) and whose centre is on the line x - 3y - 11 =0.

431) Find the equation of the circle with radius 5 whose centre lies on x-axis and passes through the point (2,3).

432) Find the equation of the circle passing through (0, 0) and making intercepts a and b on the coordinate axes.

433) 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 posts traced by the man.

434) Find the equation of the parabola whose vertex is at (2,1) and the directrix x = y = 1

435) A man running a race leave no space course notes that the sum of the distances from the two flag posts from him is always 10m and the distance between the flag posts is 8 m. Find the equation of the posts traced by the man.

436) If the circle passes through the point (2,3), then find the equation of the circle whose radius is 5 units and centre lies on X-axis.

437) Find the equation of the circle passing through two points on Y-axis at distances 3 from the origin and having radius 5.

438) A circle of radius 2 lies in the first quadrant and touches both the axes of coordinates. Find the equation of the circle with centre at (6, 5)and touching the above circle externally.

439) Find the equation of circle whose centre is (3, - 1) and which cuts off a chord of length 6 units on the tine 2x - 5y + 18 = 0.

440) Find the equation of a circle passing through the points (2, - 6), (6, 4) and (- 3, 1)

441) Find the equation of the circle, whose end points of a diameter are A(1, 5) and B(-1, 3)

442) Find the axis, vertex, directrix and length of latusrectum of the parabola $9y^2$ -16x-12y- 57 = 0

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