CLASS XI
SAMPLE PAPER
MATHS

Time: - 1 ½ hr   F.M-50
(Answer ALL questions)

Group-A [2×10=20]

1)
a)   Find the radius and the center of $2x^2 + 2y^2 + 14x – 2y + 7 = 0$.
b)   Obtain the equation in parametric form of the circle $x^2 + y^2 = a^2$.
c)   Determine whether the point (4, 3) lies outside the circle $x^2 + y^2 – 3x –2y – 4 =0$ or not?
d)   Under what condition the equation given below will represent a circle: $ax^2 + by^2 + 2hxy + 2gx + 2fy + c = 0$.
e)   What is the length of latus rectum of the parabola $2x^2 + 3y = 0$.
f)   What is the eccentricity of the hyperbola $\dfrac{x^2}{16} - \dfrac{y^2}{9} = 1$
g)   Find the distance between the foci of the ellipse $3x^2 + 4y^2 = 1$.
h)   The equation $Ax^2 + By^2 = 1$ represent an ellipse with axis parallel to x – axis, A > B > 0. (T / F).
i)   Find the eccentricity of the parabola $y^2 = 8x$ is _____.
j)   Find the paramatic form of the equation of the hyperbola $\dfrac{x^2}{a^2} - \dfrac{y^2}{b^2} = 1$

Group-B [6 × 5 =30]
2)
a) Find the equation of the circle passes through the points (0, 1), (1, 0), (2, 1). Find its co-ordinate of center and radius.
b) Find the equation of the circle whose diameter is the rectangle formed by the lines x = 4, x = - 4, y = 2, y = -3.
c)
3) Find the equation of the circle which has its center on x- axis and which passes through the points (4, 7) and (12, 9)?

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4) Find the equation of the parabola passing through the points (1 , 2)
, (-2 , 3) and (2 , -1) and the axis parallel to x – axis.

5) Obtain the equation of the hyperbola with eccentricity 3/2 and foci
at (± 2 , 0).

6) Obtain the co-ordinates of center, foci, the vertices, end point of
minor axis, end point of laterarecta ,the length of the latusrectum,
the equation of directrices and eccentricity of the ellipse:
$3x^2 + 4y^2 + 6x + 8y – 5 = 0$.

7) Obtain the co-ordinates of center, foci, the vertices, end point of conjugate axis, end point
of laterarecta ,the length of the latusrectum, the equation of directrices and eccentricity of
the hyperbola:
$x^2 - 2y^2 - 6x - 4y + 5 = 0$.

Ranjan Ku Mohapatra
mahapatra.ranjan@rediffmail.com
+91-9437534728