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III Term Unit Test, 2010-11

Time: 90 min. Subject: Maths Class- XI M.M. 40

- Question no. 1-5 carry 1 mark each.
- Question no. 6-10 carry 3 marks each.
- Question no. 11-14 carries 5 marks each.

Select correct option for the question numbered 1 – 5:

1. Points (-1, 2), (5, 0) and (2, 1) are:

   (**a**) collinear (b) vertices of a right angled triangle

   (c) forming an isosceles triangle (d) forming an equilateral triangle.

2. Radius of the circle represented by $x^2 + y^2 + 8x - 16y + 64 = 0$ is:

   (a) 16 (**b**) 4

   (c) 2 (d) not possible to find

3. Locus (Path) of a point equidistance from (3,2,1) and (1,2,3) is

   (a) $2x + y - z = 0$ (b) $x + y + z = 0$

   (**c**) $x - z = 0$ (d) $x + y = 0$.

4. The parabola having focus at (5, 0) and directrix $x + 5 = 0$ is

   (a) $x^2 = 20y$ (b) $x^2 = -20y$ (c) $y^2 = -20x$ (**d**) $y^2 = 20x$

5. Coordinates of a point on XOZ-Plane are: (a) (0, 2, 1) (**b**) (1, 0, 2) (c) (1, 2, 0) (d) (2, 1, 0)

6. Write the equation of a line cutting equal intercept on co-ordinate axes & passing through (2, 3).

7. Prove that equation of a line through (a,b) and parallel to $Ax + By + C = 0$ is $A(x-a) + B(y-b)=0$

8. Write the equation of a circle which touches the Y-axis at origin and having center at (3, 0).

9. Find eccentricity, focus and length of Latus rectum for the hyperbola $9x^2 -- 16y^2 = 144$.

10. Find the ratio in which the YZ- plane divides the segment joining the points (2, 4, 5) and (3, 5, -4).

11. Find the equation of circle passing through (0,-1) & (2, 0) and whose center is on the line $3x + y = 5$.

12. A man is running a race-course noticed that sum of his distances from two flag posts is always 10m and the flag posts are 8m apart. Find the equation of path he is running on.

13. Find the distance of the line $4x + 7y + 5 = 0$ from the point (1, 2) along the line $2x – y = 0$.

14. Which points trisects the line segment joining the points (4, 2, -6) and (10, -16, 6).