Discover Study Point

Exam Paper: Maths | Total Marks: 50 | Passing Marks: 35 | Time: 2 hrs

Section A

Answer in very short: **8**

1. If the sum of zeroes of the quadratic polynomial $3x^2 - kx + 6$ is 3, then find the value of k.
2. Find the quadratic polynomial if its zeroes are $0, \sqrt{5}$.
3. Find zeroes of $t^2 - 15$
4. For what value of k, the pair of equations $4x - 3y = 9, 2x + ky = 11$ has no solution?
5. Calculate the area bounded by the line $x + y = 10$ and both the co-ordinate axes.
6. Find the distance between $(2,3)$, (4,1)
7. Find the distance between (-5, 7), (-1, 3)
8. Name the type of quadrilateral formed, if any, by the following points, and give reasons for your answer.
   (-3, 5), (3, 1), (0, 3), (-1,-4)

Answer in short: (Each of 2 marks question) **18**

9. Determine if the points (1, 5), (2, 3) and (-2,-11) are collinear.
10. Find the values of y for which the distance between the points P (2, -3) and Q (10, y) is 10 units.
11. Find the point on the x-axis which is equidistant from (2, -5) and (-2, 9)
12. Get the solution of the equation with substitution method: $0.2x - 0.3y = 1.3, 0.4x + 0.5y = 2.3$
13. Get the solution of the equation with elimination method: $\frac{x}{2} - \frac{y}{3} = -1, x - \frac{y}{3} = 3$
14. Get the solution of the equation with cross multiplication method: $8x - 5y = 9, 3x + 2y = 4$
15. Find a quadratic polynomial each with the given numbers as the sum and product of its zeroes respectively. (Each sum of 2 marks) (a) $\frac{1}{4}, -1$ (b) $\sqrt{2}, \frac{1}{3}$
16. Find the coordinates of the point which divides the joint of (-1, 7) and (4, -3) in the ratio 2:3.

Answer in short (Each of 3 marks) **12**

17. Check whether the first polynomial is a factor of the second polynomial by dividing the second polynomial by the first polynomial. $x^3 - 3x + 1,\ x^5 - 4x^3 + x^2 + 3x + 1$
18. Solve the equation by reducing them to a pair of linear equation:
$$\frac{1}{3x+y} - \frac{1}{3x-y} = \frac{3}{4},\ \frac{1}{2(3x+y)} - \frac{1}{2(3x-y)} = \frac{-1}{8}$$
19. Rahul can row downstream 20 km in 2 hours, and upstream 4 km in 2 hours. Find his speed of rowing in still water and the speed of the current.
20. Find the area of the triangle whose vertices are: (-5, -1), (3, -5), (5,2)

Answer in Long (Each of 4 Marks) **12**

21. Find the coordinates of the points which divide the line segment joining A (-2, 2) and B (2, 8) into four equal parts.
22. On dividing $x^3 - 3x^2 + x + 2$ by a polynomial g(x), the quotient and remainder were $x - 2$ and $-2x + 4$, respectively. Find g(x).
23. The sum of the digits of a two-digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the digits. Find the number.

BEST OF EFFORTS