1. All questions are compulsory.
2. The question paper consists of 8 questions divided into four sections A, B, C and D.
3. Section A contains 2 questions of 1 marks each, which are multiple choice questions. Section B contains 2 questions of 2 marks each, section C contains 2 questions of 3 marks each and Section D contains 2 questions of 4 marks each.
4. There is no overall choice in the paper. However internal choice is provided in 1 question of 4 marks . In questions with choices only one of the choices to be attempted.
5. Use of calculators is not permitted.

SECTION – A

Question numbers 1 to 2 carry 1 mark each. In each question, four options are provided, out of which one is correct. Select and write the correct option.

1. The slope of X-axis is   - - - - - .
    (A)   0
    (B)   1
    (C)   2
    (D) Not Defined

2. A set of all points in a plane , the sum of whose distances from two fixed points in the plane is a constant is called - - - - .
    (A) a circle
    (B) a parabola
    (C) an ellipse
    (D) a hyperbola

SECTION – B

Question numbers 3 to 4 , carry 2 marks each.

3. Find the equation of the circle with centre (3, -4) and radius 6.

4. Reduce the equation $6x + 8y - 24 = 0$ into (i) siope – intercept form and (ii) Intercept form.

SECTION - C

Question numbers 5 to 6, carry 3 marks each.

5) Using Slope, show that the points $(1,0)$, $(4,3)$, $(1, 2)$ and $(-2, -1)$ are the vertices of a parallelogram.

6) Find the eccentricity, co-ordinates of foci and length of Latus rectum of the hyperbola $\dfrac{x^2}{64} - \dfrac{y^2}{36} = 1$.

SECTION - D

Question numbers 7 to 8, carry 4 marks each.

7. The vertices of $\triangle PQR$ are P(4, 6) ,Q(1 ,5) and R(- 7, 1) .

Find the equation of (i) median through the vertex P.

(ii) altitude through the vertex R.

8. **Attempt any one of the following**

Prove by using the principle of mathematical induction

$$1 + 3 + 5 + \dots + (2n - 1) = n^2.$$

OR

$$\frac{1}{1.2} + \frac{1}{2.3} + \frac{1}{3.4} + \dots + \frac{1}{n(n+1)} = \frac{n}{n+1}.$$

*** The End ***