**STRAIGHT LINE & CIRCLE**

# Time: 1 hours Total Marks: 30

**General Instructions:**

1. *Answers to this Paper must be written on the paper provided separately.*
2. *You will not be allowed to write during the first 5 minutes. This time is to be spent in reading the question paper.*
3. *The time given at the head of this Paper is the time allowed for writing the answers.*
4. *Attempt any 10 questions, each question carries 3 marks.*

**[ 3 ]**

**1. Find the values of k for which the line (k–3) x – (4 – k2) y + k2 –7k + 6 = 0 is**

(a) Parallel to the x-axis,

(b) Parallel to the y-axis,

(c) Passing through the origin.

**[ 3 ]**

**2. Find the values of θ and p, if the equation x cosθ + y sinθ = p is the normal form of the**

**line 3 x + y + 2 = 0.**

**[ 3 ]**

**3. Find the equations of the lines, which cut-off intercepts on the axes whose sum and product are 1 and – 6, respectively.**

**[ 3 ]**

**4. What are the points on the y-axis whose distance from the line = 1 is 4 units.**

**[ 3 ]**

**5. Find the equation of the line parallel to y-axis and drawn through the point of intersection of the lines x – 7y + 5 = 0 and 3x + y = 0.**

**[ 3 ]**

**6. Find the equation of the line passing through the point of intersection of the lines 4x + 7y – 3 = 0 and 2x – 3y + 1 = 0 that has equal intercepts on the axes.**

**[ 3 ]**

**7. If the lines y = 3x +1 and 2y = x + 3 are equally inclined to the line y = mx + 4, find the value of m.**

**[ 3 ]**

**8. Find equation of the line which is equidistant from parallel lines 9x + 6y – 7 = 0and 3x + 2y + 6 = 0.**

**[ 3 ]**

**9. In each of the following Exercises 1 to 5, find the equation of the circle with:**

centre (–a, –b) and radius .

**[ 3 ]**

**10. In each of the following Exercises 6 to 9, find the centre and radius of the circles:**

x2 + y2 – 8x + 10y – 12 = 0

**[ 3 ]**

**11. 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.**

**[ 3 ]**

**12. Does the point (–2.5, 3.5) lie inside, outside or on the circle x2 + y2 = 25**