Level-2, TEST-CIRCLE

Name: Mob No.

Rough Work

1. The length of intercept, the circle $x^2+y^2+10x-6y+9=0$ makes on the X-axis is:
(a) 2 (b) 4 (c) 6 (d) 8

2. The circle $x^2+y^2+4x-7y+12=0$ cuts on intercept on Y-axis of length:
(a) 1 (b) 3 (c) 5 (d) 7

3. The locus of the centre of a circle which passes through the origin and cuts-off a length $2b$ from the line $x=c$ is:
(a) $y^2+2cx=b^2+c^2$ (b) $x^2+cx=b^2+c^2$
(c) $y^2+2cy=b^2+c^2$ (d) $x^2+cy=b^2+c^2$

4. If a straight line through $C(-\sqrt{8},\sqrt{8})$ making an angle of 135° with the X-axis cuts the circle $x=5\cos\theta$, $y=5\sin\theta$ at point A and B, then the length of AB is:
(a) 3 (b) 5 (c) 8 (d) 10

5. If a circle of constant radius $3k$ passes through the origin and meets the axes at A and B, the locus of the centroid of ΔOAB is:
(a) $x^2+y^2=k^2$ (b) $x^2+y^2=2k^2$
(c) $x^2+y^2=3k^2$ (d) $x^2+y^2=4k^2$

6. The centre of the circle touching Y-axis at (0,3) and making an intercept of 2 units on positive X-axis is:
(a) $(10,\sqrt{3})$ (b) $(\sqrt{3},10)$ (c) $(\sqrt{10},3)$ (d) $(3,\sqrt{10})$

7. A circle passes through the points A(1,0) and B(5,0) and touches the Y-axis at C (0,λ). If $\angle ACB$ is maximum, then:
(a) $|\lambda|=\sqrt{5}$ (b) $|\lambda|=2\sqrt{5}$ (c) $|\lambda|=3\sqrt{5}$ (d) $|\lambda|=4\sqrt{5}$

8. The equation of a circle whose centre is (3, -1) and which intercept chord of 6 units length on straight line $2x-5y+18=0$ is:
(a) $x^2+y^2-6x+2y-28=0$ (b) $x^2+y^2+6x-2y-28=0$
(c) $x^2+y^2+4x-2y+24=0$ (d) $x^2+y^2+2x-2y-12=0$

9. The locus of the centre of a circle which touches externally the circle $x^2+y^2-6x-6y+14=0$ and also touches the Y-axis, is given by the equation:
(a) $x^2-6x-10y+14=0$ (b) $x^2-10x-6y+14=0$
(c) $y^2-6x-10y+14=0$ (d) $y^2-10x-6y+14=0$

10. The locus of the centre of a circle of radius 2 which rolls on the outside of circle $x^2+y^2+3x-6y-9=0$ is:
(a) $x^2+y^2+3x-6y+5=0$ (b) $x^2+y^2+3x-6y-31=0$
(c) $x^2+y^2+3x-6y+11=0$ (d) $x^2+y^2+3x-6y-36=0$

11. The point ([λ+1],[λ]) is lying inside the circle $x^2+y^2-2x-15=0$. Then, the set of all values λ is (where [.] represents the greatest integer function).

(a) [-2,3] (b) (-2,3) (c)[-2,0)∪(0,3) (d) [0,3)

12. The greatest distance of the point (10,7) from the circle $x^2+y^2-4x-2y-20=0$ is:

(a) 5 (b) 10 (c) 15 (d) 20

13. Find equations to the circles touching Y-axis at (0,3) and making intercept of 8 units on the X-axis.

14. Show that the circle $x^2+y^2-2ax-2ay+a^2=0$ touches both the coordinates axes.

15. If the point (λ,-λ) lies inside the circle $x^2+y^2-4x+2y-8=0$, then find the range λ.

16. Find the equation of the circle which passes through the origin and cut-off chords of length 4 and 6 on the positive side of the X-axis and Y-axis, respectively.