Circles

15

1m	2m	5m	6m	Total
1(u)	–	–	1A	7
1	–	(or)1(A)	–	6
–	1(U)	(or)–	1	8

1 MARK QUESTIONS

(Understanding)

1. Find the centre of the cirlce $x^2 + y^2 - 4x - y - 5 = 0$
2. Find the centre of the cirlce $3x^2 + 3y^2 - 6x - 12y - 2 = 0$
3. Find the radius of the circle $x^2 + y^2 - 4x - y - 5 = 0$
4. If the radius of the circle $x^2 + y^2 + 4x - 2y - k = 0$ is 4 units find k.
5. If $x^2 + y^2 - 4x - 8y + k = 0$ represents a point circle find k.
6. If the radius of the circle $x^2 + y^2 - 2x + 3y + k = 0$ is $\frac{5}{2}$, find k.
7. Show that the circle $x^2 + y^2 + 4x - 3y + 4 = 0$ touches x - axis
8. Show that the circle $x^2 + y^2 - x + 4y + 4 = 0$ touches y - axis
9. Show that the circle $x^2 + y^2 - 2x + 2y + 1 = 0$ touches both the co-ordinate axes.
10. Find the equation of the circle with centre (1, 1) and r = $\sqrt{2}$ units.
11. Find equation of circle given centre c (–1,–2) and diameter r = 25 units
12. Write the equation of a point circle with centre at (1, 0).
13. Find the other end of the diameter of the circle $x^2 + y^2 = 25$ if one end is (5, 0).
14. Find the length of the chord of the circle $x^2 + y^2 - 6x + 15y - 16 = 0$ intercepted by the x – axis.
15. Find the length of the chord of the circle $x^2 + y^2 + 3x - y - 6 = 0$ intercepted by the y – axis.

16. Find the length of the chord of the circle $x^2 + y^2 + 3x - 2 = 0$ intercepted by y axis
17. If one end of the diameter of the circle $x^2 + y^2 + 2x + 6y - 22 = 0$ is (3, –7), find the co-ordinate of the other end.
18. Find the centre and radius of the following circles. $2x^2 + 2y^2 + 6x - 10y + 9 = 0$
19. Find the equation of the circle with centre (–2, –1) and the radius is 2.
20. Find the equation of the circle which cuts intercepts of the lengths *'a'* and *'b'* on axes and passing through the origin.

    if $x^2 + y^2 + ax + 2y + 5 = 0$ is find a point circle 'a'.

2 MARKS QUESTIONS

(Understanding)

1. Find the equation of circle two of the diameters are $x + y = 6$ and $x + 2y = 4$ and its radius is 10 units.
2. Find the equation of circle two of the diameters $x + y = 4$ and $x - y = 2$ and passing through the point (2, –1)
3. Find the equation of the circle with centre at (–2, 1) and passing through the origin.
4. Find equation of circle having A(5, 1) and B(1,3) as end points of its daimeter.
5. If one end of the diameter of the circle $x^2 + y^2 + 2x + 6y - 22 = 0$ is (3, –7), find the co-ordinate of the other end.
6. Find the equation of the circle whose centre is same as the centre of the circle $x^2 + y^2 + 6x + 2y + 1 = 0$, and passing through the point (–2, –1).
7. Find the equation of the circle whose centre is (–2, 3) and passing through the centre of the circle $x^2 + y^2 - 6x + 4y + 9 = 0$.
8. Find the length of the chord of the circle $x^2 + y^2 - 6x - 4y - 12 = 0$ on the coordinate axes.
9. Find the length of the chord intercepted by the circle $x^2 + y^2 - 8x - 6y - 6 = 0$ and the line $x - 7y - 8 = 0$
10. Show that the line $3x - 4y + 6 = 0$ touches the circle $x^2 + y^2 - 6x + 10y - 15 = 0$.
11. Find the centre and radius of the circle $x^2 + y^2 - 2x.\ \cos\alpha - 2y.\sin\alpha = 1$
12. Prove that the length of the chord $x + 2y = 5$ of the circle $x^2 + y^2 = 9$ is 4 units.

5 MARKS QUESTIONS

(Application)

1. Find the equation of the circle passing through the origin, having its centre on the x - axis and radius 2 units.
2. Find the equation of the circle passing through (2,3) having its centre on the x - axis and radius 5 units.
3. Find the equation of the circle find the equation of the circle passing through the points (5,1), (3,4) and has its centre on the x - axis.
4. Find the equation of the circle passing through the points (–1, 2) and (3, –2), and has its centre on $x = 2y$.
5. Find the equation of the circle passing through the points (0,2), (3,0), (3,2)
6. Find the equation of the circle passing through the points (1,1), (–2,2), (–6,0)
7. Find the equation of the circle passing through the points (5,7, (6,6), (2,–2)
8. Find k if the line $3x + y + k = 0$ touches the circle $x^2 + y^2 - 2x - 4y - 5 = 0$
9. Find the equation of the circle passing through the points (0,0) and (1,1) and has its centre on x-axis.
10. Find the equation of the circle passing through the points (5,3), (1,5) and (3, –1).
11. Find equation of circle passing through the points (1, 2) and (2, 1) and having centre on y-axis.
12. Find equation of circle passing through the points (0, –3) and (0, 5) and having centre on the line $x - 2y + 5 = 0$.
13. Find the equation of circle passing through the points (1, 1) and (2, 2) and having radius 1 unit.
14. Find the equation of cirlce passing through the points (1, 1), (5, –5) and (6, –4).
15. Find the equation of cirlce passing through the points (0, 1), (2, 3) and (–2, 5).

6 MARKS QUESTIONS

(Application)

1. Show that the points (0, 0), (1, 1), (5, –5), (6, –4), are concyclic.
2. Show that the points (2, –4), (3, –1), (3, –3), (0, 0), are concyclic.
3. Show that the points (1, 0), (2, –7), (8, 1), (9, –6), are concyclic.
4. Show that the following points (2,0), (–1, 3), (–2, 0) and (1, –1) are concyclic.

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