

Model Question Paper 3
ANALYTICAL GEOMETRY 3

11th Standard

Maths

Reg.No. :

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Answer all the Questions

Time : 02:00:00 Hrs

Total Marks : 60

10 x 1 = 10

Part A

- 1) The radius of the circle $x^2 + y^2 - 2x + 4y - 4 = 0$ is.....
(a) 1 (b) 2 (c) 3 (d) 4
- 2) The centre of the circle $x^2 + y^2 - 2x + 4y - 4 = 0$ is.....
(a) (2, 4) (b) (1, 2) (c) (-1, 2) (d) (-2, -4)
- 3) If $2x + 3y = 0$, and $3x - 2y = 0$ are the equations of two diameters of a circle, then its centre is.....
(a) (1, -2) (b) (2, 3) (c) (0, 0) (d) (-3, 2)
- 4) If the line $y = 2x - c$ is a tangent to the circle $x^2 + y^2 = 5$ then the value of c is
(a) ± 5 (b) $\pm\sqrt{5}$ (c) $\pm 5\sqrt{5}$ (d) $\pm 5\sqrt{2}$
- 5) The length of the tangent from (4, 5) to the circle $x^2 + y^2 = 25$ is.....
(a) 5 (b) 4 (c) 25 (d) 16
- 6) If the circle has both X and Y axes as tangents and has radius 1 unit, then the equation of the circle is
(a) $x^2 + (y - 1)^2 = 1$ (b) $x^2 + y^2 = 1$ (c) $(x - 1)^2 + (y - 1)^2 = 0$ (d) $(x - 1)^2 + y^2 = 1$
- 7) which of the following point lies inside the circle $x^2 + y^2 - 4x + 2y - 5 = 0$
(a) (5, 10) (b) (-5, 7) (c) (9, 0) (d) (1, 1)
- 8) The number of tangents that can be drawn from a point to the circle is
(a) 1 (b) 2 (c) 3 (d) 4
- 9) If two touch each other externally, then the distance between their centres is.....
(a) $r_1 - r_2$ (b) $\frac{r_1}{r_2}$ (c) $\frac{r_2}{r_1}$ (d) $r_1 + r_2$
- 10) The number of points in which two circles each other internally is.....
(a) 1 (b) 2 (c) 0 (d) 3

Part B

10 x 3 = 30

- 11) Find the equation of the circle whose centre is (-4, 5) and circumference is 8π units.
- 12) Find the circumference and area of the circle $x^2 + y^2 - 6x - 8y + 15 = 0$
- 13) Find the equation of the circle which passes through (2, 3) and whose centre is on x-axis and radius is 5 units.
- 14) Find the equation of the circle described on the line joining the points (1, 2) and (2, 4) as its diameter.
- 15) Find the equation of the circle passing through the points (1, 0), (0, -1) and (0, 1)
- 16) Find the equation of the circle passing through the points (1, 1), (2, -1) and (3, 2).
- 17) Find the equation of the circle that passes through the points (4, 1) and (6, 5) and has its centre on the line $4x + y = 16$.
- 18) Find the equation of the circle whose centre is on the line $x = 2y$ and which passes through the points (-1, 2) and (3, -2).
- 19) Find the cartesian equation of the circle whose parametric equations are $x = \frac{1}{4}\cos\theta$, $y = \frac{1}{4}\sin\theta$ and $0 \leq \theta \leq 2\pi$
- 20) Find the parametric equation of the circle $4x^2 + 4y^2 = 9$

Part C

4 x 5 = 20

- 21) If A and B are the two points (-2, 3) and (4, -5), find the equation of the locus of a point such that $PA^2 - PB^2 = 20$
- 22) Find a point on x-axis which is equidistant from the points (7, -6) and (3, 4).
- 23) Determine the equation of the straight line whose slope is 2 and y-intercept is 7.
- 24) Find the co-ordinates of the points on the straight line $y = x + 1$ which are at a distance of 5 units from the straight line $4x - 3y + 20 = 0$
