

Topics : Circle, Permutation & Combination, Binomial Theorem

Type of Questions

M.M., Min.

Single choice Objective (no negative marking) Q.1,4,5,6,7,8

(3 marks, 3 min.)

[24, 24]

Multiple choice objective (no negative marking) Q.3

(5 marks, 4 min.)

[5, 4]

Subjective Questions (no negative marking) Q.2

(4 marks, 5 min.)

[4, 5]

- The length of an external common tangent to the two circles $x^2 + y^2 - 4x - 4y + 4 = 0$ and $x^2 + y^2 - 12x - 10y + 52 = 0$ is :
(A) $\sqrt{20}$ (B) $\sqrt{24}$ (C) $\sqrt{26}$ (D) None
- The midpoint of the chord on the line $3x + 4y - 25 = 0$ intercepted by the circle $x^2 + y^2 = 81$ is
- The centre of a circle $S = 0$ lies on $2x - 2y + 9 = 0$ and $S = 0$ cuts orthogonally the circle $x^2 + y^2 = 4$. Then the circle must pass through the point
(A) (1, 1) (B) $(-1/2, 1/2)$
(C) (5, 5) (D) $(-4, 4)$
- Let AB be any chord of the circle $x^2 + y^2 - 2x - 6y - 6 = 0$ which subtends right angle at the point (2, 4), then the locus of the mid point of AB is
(A) $x^2 + y^2 - 3x - 7y - 16 = 0$ (B) $x^2 + y^2 - 3x - 7y + 7 = 0$
(C) $x^2 + y^2 + 3x + 7y - 16 = 0$ (D) $x^2 + y^2 + 3x + 7y - 7 = 0$
- Tangents are drawn to the circle $x^2 + y^2 = 10$ at the points where it is met by the circle $x^2 + y^2 + 4x - 3y + 2 = 0$. The point of intersection of these tangents is :
(A) $\left(\frac{5}{2}, \frac{10}{3}\right)$ (B) $\left(\frac{5}{2}, \frac{10}{3}\right)$ (C) $\left(\frac{10}{3}, \frac{5}{2}\right)$ (D) $\left(\frac{10}{3}, \frac{5}{2}\right)$
- Number of diagonals in sixteen sided regular polygon are
(A) ${}^{16}C_2$ (B) ${}^{16}C_2 - 16$ (C) 16 (D) None of these
- Two cards are drawn one at a time & without replacement from a pack of 52 card. The number of ways in which the two cards can be drawn, are
(A) 2652 (B) 2704 (C) 2500 (D) None of these
- Sum of the last 30 coefficients in the expansion of $(1 + x)^{59}$, when expanded in ascending powers of x, is
(A) 2^{29} (B) 2^{28} (C) ${}^{60}C_{30} - 2^{19}$ (D) 2^{58}

Answers Key

1. (B)

2. (3,4)

3. (B, D)

4. (B)

5. (C)

6. (B)

7. (A)

8. (D)