

Topics : Sequence & Series, Circle, Straight Lines

Type of Questions		M.M., Min.
Single choice Objective (no negative marking) Q.1 to 6	(3 marks, 3 min.)	[18, 18]
Multiple choice objective (no negative marking) Q.7	(5 marks, 4 min.)	[5, 4]

- If $\log 2$, $\log (2^x - 1)$ and $\log (2^x + 3)$ are in A.P., then x is equal to :
 (A) $5/2$ (B) $\log_2 5$ (C) $\log_3 2$ (D) $3/2$
- The first term of an infinite G. P. is the value of x for which the expression $\log_3 (3^x - 8) + x - 2$ vanishes. If the common ratio of the G. P. is $\cos \frac{22\pi}{3}$, then the sum of the G. P. is :
 (A) 1 (B) $3/2$ (C) $4/3$ (D) none of these
- $\sum_{r=1}^n \frac{r}{1.3.5.7.....(2r+1)}$ is equal to
 (A) $\frac{1}{2} \left[1 - \frac{1}{1.3.5.....(2n+1)} \right]$ (B) $\frac{1}{4} \left[1 - \frac{1}{1.3.5.....(2n+1)} \right]$
 (C) $\frac{1}{4} \left[1 + \frac{1}{1.3.5.....(2n-1)} \right]$ (D) none of these
- If the area of the isosceles right angle triangle BAC, right angled at A, is 50. Then the length of the median through A is
 (A) 5 (B) $10\sqrt{2}$ (C) 25 (D) $5\sqrt{2}$
- Length of the chord, along the x-axis, of the circle which is orthogonal to the three circles $x^2 + y^2 - 2x + 3y - 7 = 0$, $x^2 + y^2 + 5x - 5y + 9 = 0$ and $x^2 + y^2 + 7x - 9y + 29 = 0$, is
 (A) $2\sqrt{17}$ (B) $2\sqrt{85}$ (C) $4\sqrt{85}$ (D) $4\sqrt{17}$
- A circle touches the sides AB and AD of a rectangle ABCD at P and Q respectively and passes through the vertex C. If the distance of C from chord PQ is 5 units, then area of the rectangle is
 (A) 45 (B) 25 (C) 50 (D) 75
- The equation of the altitude of the $\triangle ABC$ whose vertices are $A(-4, 2)$; $B(6, 5)$ and $C(1, -4)$ can be:
 (A) $10x + 3y + 2 = 0$ (B) $5x + 9y + 2 = 0$
 (C) $6x - 5y = 0$ (D) $5x - 6y = 0$

Answers Key

1. (B)
2. (C)
3. (A)
4. (D)
5. (D)
6. (B)
7. (A)(B)(D)