

Topics : Fundamentals of Mathematics, Logarithm

Type of Questions

M.M., Min.

Single choice Objective (no negative marking) Q.1,2,3

(3 marks, 3 min.)

[9, 9]

Multiple choice objective (no negative marking) Q.4

(5 marks, 4 min.)

[5, 4]

True or False (no negative marking) Q.5

(2 marks, 2 min.)

[2, 2]

Fill in the Blanks (no negative marking) Q.6,7

(4 marks, 4 min.)

[8, 8]

1. The expression $E = 81^{\log_{0.3} \left(\frac{1}{\sqrt{4+2\sqrt{3}} - \sqrt{4-2\sqrt{3}}} \right)}$ is simplified to.

(A) 16

(B) 4

(C) 2

(D) $\frac{1}{2}$

2. The complete solution set of $x - \sqrt{1-|x|} < 0$ is

(A) $\left[-1, \frac{-1+\sqrt{5}}{2} \right)$

(B) $[-1, 1]$

(C) $\left(-1, \frac{-1+\sqrt{5}}{2} \right)$

(D) $\left(\frac{-1+\sqrt{5}}{2}, \frac{1+\sqrt{5}}{2} \right)$

3. If $\sqrt{1-x} > \sqrt{1+x}$, then the complete solution set of x is

(A) $(-\infty, 0)$

(B) $[-1, 1]$

(C) $(0, 1]$

(D) $[-1, 0]$

4. For the equation $\log_{3\sqrt{x}} x + \log_{3x} \sqrt{x} = 0$, which of the following do not hold good?

(A) no real solution

(B) one prime solution

(C) one integral solution

(D) no irrational solution

5. State whether the following statements are **True** or **False**.

(i) If $\log_a x = \log_b y$, then each is equal to $\log_{ab} xy$.

(ii) The value of x satisfying the equation $\log_3 x + \log_9 x + \log_{27} x = 11$ is a perfect square as well as a perfect cube

6. The value of 'x' satisfying the equation, $4^{\log_8 3} + 9^{\log_2 4} = 10^{\log_x 83}$ is _____.

7. Real x satisfying the equation $9^{\log_3(\log_2 x)} = \log_2 x - (\log_2 x)^2 + 1$ is _____.

Answers Key

1. (A) 2. (A) 3. (D) 4. (A)(B)(D)

5. (i) True (ii) True 6. 10 7. $x = 2$