AVIRAL CLASSES
IIT-JEE | NEET | FOUNDATIONS

MATHEMATICS
CRASH COURSE

LECTURE-04

TOPICS : Quadratic Equations

1. If $x^{\frac{2}{3}} + x^{\frac{1}{3}} - 2 = 0$ then the roots of the equation are -

   (a) $1, -8$

   (b) $1, -1 + i$

   (c) $1, -2$

   (d) None of these

2. The numbr of real solutions of the equation

   $|x|^2 + 3|x| + 2 = 0$ are

   (a) 4 (b) 3

   (c) 2 (d) 0

3. The condition that $x^3 - px^2 + qx - r = 0$ may have two of its roots equal to each other but are of opposite signs is

   (a) $r = p/q$

   (b) $r = 2p^3 + pq$

   (c) $r = p^2 q$

   (d) $r = pq$

4. If the roots of the equation

   $a(b-c)x^2 + b(c-a)x + c(a-b) = 0$ are equal, then a, b, c are in

   (a) H.P. (b) G.P.

   (c) A.P. (d) None of these

5. The number of real roots of the equation

   $\frac{2x-3}{x-1} + 1 = \frac{6x^2 - x - 6}{x-1}$ is

   (a) 3 (b) 1

   (c) 2 (d) none of these

6. If $x = \sqrt{7 + 4\sqrt{3}}$ then $x + 1/x =$

   (a) 4 (b) 6

   (c) 3 (d) 2

7. The least value of the expression $\frac{x^2 - 6x + 5}{x^2 + 2x + 1}$ is

   (a) $-1/2$ (b) $-1/3$

   (c) -1 (d) None of these

8. If α, β are the roots of the equations

   $3x^2 - 6x + 5 = 0$ then the equation whose roots are

   $\alpha + \beta$ and $\frac{2}{\alpha + \beta}$ is

   (a) $x^2 - 3x + 2 = 0$

   (b) $x^2 + 3x - 2 = 0$

   (c) $x^2 + 3x - 2 = 0$

   (d) $x^2 - 3x - 2 = 0$

9. The number of positive integral solutions of

   $\frac{x^2(3x-4)^3(x-2)^4}{(x-5)^5(2x-7)^6} \le 0$ is

   (a) 4 (b) 2

   (c) 3 (d) 1

10. If the roots, of $x^2 - bx + c = 0$ are two consecutive integers, than $b^2 - 4c$ is

    (a) 2 (b) 1

    (c) 0 (d) None of these