DPP-5 (QUADRATIC EQUATION)

BATCH COURSE TIMINGS 7:15P.M-8:15 P.M(EMERGE CLASS 11th)/5 P.M-6:30P.M (EXPERT BATCH)

JAI SHREE RAM

1. If $x^2 - 4x + \log_{1/2}a = 0$ does not have two distinct real roots, then maximum value of a is

(a) ¼ (b) 1/ 16 (c) -1/4 (d) None

2. Sum of the real roots of the equation $x^2 + 5|x| + 6 = 0$

(a) Equals to 5 (b) Equals to 10

(c) Equals to -5 (d) Does not exit

3. If $c > 0$ and $4a + c < 2b$ then $ax^2 - bx + c = 0$ has a root in the interval

(a) (0, 2) (b) (2, 4) (c) (0, 1) (d) (-2, 0)

4 .If α, β are the roots of the equation $(x - a)(x - b) + c = 0$ then roots of the equation $(x - \alpha)(x - \beta) - c = 0$ are

(a) a + b, b + c (b) a, b

(c) a, b + c (d) None of these

5. If roots of equation $x^2 - 2ax + (a^2 + a - 3) = 0$ are real and less

than 3 then

(a) $a < 2$ (b) $2 \le a \le 3$ (c) $3 < a \le 4$ (d) $a > 4$

6. The values of 'a' for which the roots of the equation $x^2 + x + a = 0$ are real and exceed 'a' are -

(a) $0 < a <$¼ (b) $a < 1/4$ (c) $a < -2$ (d) $-2 < a < 0$

7. The values of 'a' for which the roots of the equation $x^2 + x + a = 0$ are real and exceed 'a' are -

(a) $0 < a <$¼ (b) a <¼ (c) $a < -2$ (d) $-2 < a < 0$

8. If roots of the equation $3x^2 + 2(a^2 + 1)x + (a^2 - 3a + 2) = 0$ are of opposite signs, then a lies in the interval -

(a) $(-\infty, 1)$ (b) $(-\infty, 0)$ (c) (1, 2) (d) $\left(\frac{3}{2}, 2\right)$

9. The coefficient of x in the equation $x^2 + px + q = 0$ was taken as 17 in place of 13, its roots were found to be -2 and -15, The roots of the original equation are -

(a) 3, 10 (b) -3, -10 (c) - 5, -18 (d) None of these

10. If $x^2 + ax + b$ is an integer for every integer x then

(a) 'a' is always an integer but 'b' need not be an integer

(b) 'b' is always an integer but 'a' need not be an integer

(c) a and b are always integers.

(d) None of these

11. The least value of $|a|$ for which $\tan\theta$ and $\cot\theta$ are the roots of the equation $x^2 + ax + b = 0$ is-

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(a) 2 (b) 1 (c) ½ (d) 0

12. The equation formed by decreasing each root of

$ax^2 + bx + c = 0$ by 1 is $2x^2 + 8x + 2 = 0$, then-

(a) a = -b (b) b = - c (c) c = - a (d) None of these

13. If the roots of $ax^2 + cx + c = 0$ be in the ratio p : q then $\sqrt{\frac{p}{q}} + \sqrt{\frac{q}{p}} + \sqrt{\frac{c}{a}} =$

(a) -1 (b) 1 (c) 0 (d) 2

14. The difference of maximum & minimum value of

$\frac{x^2 + 4x + 9}{x^2 + 9}$ is

(a) 1/3 (b) 2/3 (c) -2/3 (d) 4/3

15. If α, β be the roots of $x^2 + px - q = 0$ &γ, δ be the roots of

$x^2 + px + r = 0$ then $\frac{(\alpha-\gamma)(\alpha-\delta)}{(\beta-\gamma)(\beta-\delta)}$ =

(a) 1 (b) q (c) r (d) q + r

16. If p, q, r be in H.P. and p & r be different having same sign, then the root of equation $px^2 + 2qx + r = 0$ will be-

(a) Real (b) Equal (c) Imaginary (d) None

ANSWERS

1)b 2)d 3)a 4)b 5)a 6)c 7)c 8)c 9)b 10)b 11)a 12)b 13)c 14)d 15)a 16)c

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