ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

SOLUTIONS OF WORKSHEET-10

SUBJECT – MATHEMATICS

1st - Term

Chapter: ALGEBRA **Class: XI**

Topic: Quadratic Equations **Date: 25.07.2020**

Choose the correct option (1 x 15=15)

1. One root of the equation $ax^2 + bx + c = 0$ $(a \neq 0)$ is zero when—

   Ⓐ $a = 0$ Ⓑ $b = 0$ Ⓒ $c = 0$ Ⓓ $x = 0$

2. The roots of the equation $ax^2 + bx + c = 0$ are reciprocal to one another when—

   Ⓐ $a = c$ Ⓑ $a = b$ Ⓒ $b = c$ Ⓓ $a = 0$

3. If the signs of a and c are opposite to that of b then both roots of the equation $ax^2 + bx + c = 0$ are—

   Ⓐ zero Ⓑ positive Ⓒ negative Ⓓ fraction

4. The roots of the equation $ax^2 + bx + c = 0$ $(a \neq 0)$ are equal in magnitude and opposite in signs when—

   Ⓐ $a = 0$ Ⓑ $b = 0$ Ⓒ $c = 0$ Ⓓ $a = c$

5. If $b = c = 0$ then both roots of the equation $ax^2 + bx + c = 0$ $(a \neq 0)$ are—

   Ⓐ zero Ⓑ positive Ⓒ negative Ⓓ imaginary

6. The maximum number of distinct roots in a quardratic equation is—

   Ⓐ 1 Ⓑ 2 Ⓒ 3 Ⓓ infinite

7. If $a = 0$, $b \neq 0$ and c is real and rational then one root of the equation $ax^2 + bx + c = 0$ is real and rational and the other root is—

Ⓐ zero Ⓑ real and rational
Ⓒ imaginary Ⓓ not defined

8. If $a = 0$ and $b = 0$ then both roots of the equation $ax^2 + bx + c = 0$ are—

Ⓐ zero Ⓑ real and rational
Ⓒ imaginary Ⓓ not defined

9. The roots of the equation $ax^2 + bx + c = 0$ are equal when—

Ⓐ $b^2 - 4ac < 0$ Ⓑ $b^2 - 4ac > 0$
Ⓒ $b^2 - 4ac \geqslant 0$ Ⓓ $b^2 - 4ac = 0$

10. If a, b, c are rational numbers and $b^2 - 4ac$ is positive but not a perfect square then both roots of the equation $ax^2 + bx + c = 0$ are—

Ⓐ real Ⓑ rational Ⓒ irrational Ⓓ imaginary

11. The minimum value of $9x^2 - 6x + 1$ is—

Ⓐ 0 Ⓑ 1 Ⓒ 2 Ⓓ 3

12. The maximum value of $4x - x^2 - 2$ is—

Ⓐ 0 Ⓑ 1 Ⓒ 2 Ⓓ 3

13. If 4 is a root of the equation $x^2 + ax - 12 = 0$, then which of the following is its other root?

Ⓐ $a - 4$ Ⓑ -2 Ⓒ 3 Ⓓ -3

14. State which of the following is the sum of the roots of the equation $3x^2 - 5x + 7 = 0$?

Ⓐ 5 Ⓑ $-\frac{5}{3}$ Ⓒ -5 Ⓓ $\frac{5}{3}$

15. State which of the following is the product of the roots of the equation $2x^2 - 3x + 7 = 0$?

Ⓐ $\frac{3}{2}$ Ⓑ $\frac{7}{2}$ Ⓒ $-\frac{7}{2}$ Ⓓ 7

1.C, 2.A, 3.B, 4.B, 5.A, 6.B, 7.D, 8.D,
9.D, 10.C, 11.A, 12.C, 13.D, 14.D, 15.B

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