

## CHAPTER-4 | QUADRATIC EQUATIONS

QUIZ  
PART-05

1. The equation  $(x+1)^2 - 2(x+1) = 0$  has:

- A. Two real roots
- B. No real roots
- C. One real root
- D. Two equal roots (A)

**Explanation:** Expanding and solving gives two real roots.

2. A quadratic equation has no real roots if:

- A.  $b^2 - 4ac > 0$
- B.  $b^2 - 4ac = 0$
- C.  $b^2 - 4ac < 0$
- D.  $b^2 - ac < 0$  (C)

**Explanation:** The equation has no real roots if the discriminant is negative.

3. The roots of the quadratic equation  $2x^2 + x + 4 = 0$  are:

- A. Positive and Negative
- B. Both Positive
- C. Both Negative
- D. No real roots (D)

**Explanation:** The discriminant is negative, so no real roots exist.

4. The equation  $x^2 + 6x + 9 = 0$  has:

- A. Two real roots
- B. One real root
- C. No real roots
- D. Two equal roots (D)

**Explanation:** The discriminant is zero, so the equation has two equal roots.

5. If  $D > 0$ , the roots of a quadratic equation are:

- A. Real and distinct
- B. Real and equal
- C. Imaginary
- D. None of these (A)

**Explanation:** When  $D > 0$ , the roots are real and distinct.

6. If  $D = 0$ , the roots of the quadratic equation are:

- A. Real and distinct
- B. Imaginary
- C. Real and equal
- D. None of these (C)

**Explanation:** When  $D = 0$ , the roots are real and equal.

7. If the discriminant of a quadratic equation is a perfect square, the roots are:

- A. Rational
- B. Irrational
- C. Imaginary
- D. None of these (A)

**Explanation:** A perfect square discriminant gives rational roots.

8. The roots of a quadratic equation  $ax^2 + bx + c = 0$  are conjugates if:

- A.  $a, b, c \in \mathbb{Q}$
- B.  $b^2 - 4ac = 0$
- C. The roots are real
- D. None of these (A)

**Explanation:** If  $a, b, c \in \mathbb{Q}$ , the roots are conjugates.

9. The equation  $2x^2 + x + 3 = 0$  has:

- A. Two real roots
- B. No real roots
- C. One real root
- D. Two equal roots (B)

**Explanation:** The discriminant is negative, so no real roots exist.

10. The equation  $3x^2 + x + 4 = 0$  has:

- A. Two real roots
- B. No real roots
- C. One real root
- D. Two equal roots (B)

**Explanation:** The discriminant is negative, so no real roots exist.