## Assertion and Reason Questions for Class 10 Maths Chapter - 2 Polynomials

**Directions :** In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

**Q.1.** Assertion :  $x^2 + 7x + 12$  has no real zeroes.

Reason: A quadratic polynomial can have at the most two zeroes.

**Answer :** (d) Assertion (A) is false but reason (R) is true.

**Q.2. Assertion :** If the sum of the zeroes of the quadratic polynomial  $x^{2-}$  2kx + 8 is 2 then value of k is 1.

**Reason :** Sum of zeroes of a quadratic polynomial a  $x^2 + bx + c$  is -b/a

**Answer :** (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

**Q.3. Assertion :**  $P(x) = 4x^3 - x^2 + 5x^4 + 3x - 2$  is a polynomial of degree 3.

**Reason :** The highest power of x in the polynomial P(x) is the degree of the polynomial.

**Answer :** (d) Assertion (A) is false but reason (R) is true.

**Q.4.** Assertion :  $x^3$ +x has only one real zero.

**Reason :** A polynomial of nth degree must have n real zeroes.

**Answer :** (c) Assertion (A) is true but reason (R) is false.

**Q.5. Assertion :** If one zero of polynomial  $p(x) = (k^2 + 4)x^2 + 13x + 4k$  is reciprocal of the other, then k = 2.

**Reason :** If (x - a) is a factor of p(x), then p(a) = 0 i.e., a is a zero of p(x).

**Answer :** (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

**Q.6. Assertion :**  $x^2 + 4x + 5$  has two zeroes.

**Reason :** A quadratic polynomial can have at the most two zeroes.

**Answer :** (d) Assertion (A) is false but reason (R) is true.

**Q.7.** Assertion : Degree of aa zero polynomial is not defined.

**Reason :** Degree of a non-zero constant polynomial is 0.

**Answer :** (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

**Q.8. Assertion :** If the product of the zeroes of the quadratic polynomial  $x^2+3x+5k$  is -10 then value of k is -2.

**Reason :** Sum of zeroes of a quadratic polynomial ax<sup>2</sup>+bx+c is -b/a

**Answer :** (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

**Q.9.** Assertion : The graph y=f(x) is shown in figure, for the polynomial f(x). The number of zeroes of f(x) is 3.

**Reason :** The number of zero of the polynomial f(x) is the number of point of which f(x) cuts or touches the axes.



**Answer :** (c) Assertion (A) is true but reason (R) is false.

**Q.10. Assertion :**  $3-2\sqrt{5}$  is one zero of the quadratic polynomial then other zero will be  $3+2\sqrt{5}$ .

**Reason :** Irrational zeros (roots) always occurs in pairs.

**Answer :** (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

**Q.11. Assertion :**  $(2 - \sqrt{3})$  is one zero of the quadratic polynomial then other zero will be  $(2 + \sqrt{3})$ .

Reason : Irrational zeroes (roots) always occurs in pairs.

**Answer :** (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

**Q.12. Assertion :** If one zero of polynomial  $p(x) = (k + 4) x^2 + 13x + 3k$  is reciprocal of other, then k = 2.

**Reason :** If  $(x - \alpha)$  is a factor of p(x), then  $p(\alpha) = 0$  i.e.  $\alpha$  is a zero of p(x).

**Answer :** (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

**Q.13.** Assertion : A polynomial of degree 5 is divided by a quadratic polynomial. If it leaves a remainder, then the degree of remainder is 1 or 0.

**Reason :** Degree of remainder is always less than divisor.

**Answer :** (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

**Q.14.** Assertion : The polynomial p(x) = 5x - 1/2 is a linear polynomial.

**Reason :** The general form of linear polynomial is ax+b.

**Answer :** (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

**Q.15.** Assertion : The graph of a polynomial intersect x-axis at 3 points and y-axis at 1 points, the polynomial has 3 zeroes.

**Reason :** The number of zeroes that a polynomial p(x) can have is the number of times polynomial intersect x and y axis.

**Answer :** (c) Assertion is correct but reason is wrong.