



Practice Exercise



Multiple Choice Questions

Q 1. Which one is not a polynomial?

- a. $4x^2 + 2x - 1$ b. $y + \frac{3}{y}$
c. $x^3 - 1$ d. $y^2 + 5y + 1$

Q 2. Which of the following algebraic expression is a polynomial in variable x ?

- a. $x^2 + \frac{2}{x^2}$ b. $\sqrt{x} + 1$
c. $x^3 + \frac{3x^{3/2}}{\sqrt{x}}$ d. $x^{-2} + x^{-1} + 5$

Q 3. The polynomial $px^2 + qx + rx^4 + 5$ is of type:

- a. linear b. quadratic
c. cubic d. biquadratic

Q 4. The polynomial of type $p(x) = ax^2 + bx + c$, $a = 0$ is:

- a. linear b. quadratic
c. cubic d. biquadratic

Q 5. Classification of the polynomial $3x^4 + 2x$ is:

- a. monomial b. binomial
c. trinomial d. All of these

Q 6. The zero of the polynomial $p(x) = 2x + 5$ is:

- a. 2 b. 5
c. $\frac{2}{5}$ d. $-\frac{5}{2}$

Q 7. The zeroes of the polynomial $p(x) = 3x^2 - 1$ are:

- a. $\frac{1}{3}$ and 3 b. $\frac{1}{\sqrt{3}}$ and $\sqrt{3}$
c. $-\frac{1}{\sqrt{3}}$ and $\sqrt{3}$ d. $\frac{1}{\sqrt{3}}$ and $-\frac{1}{\sqrt{3}}$

Q 8. If $p(y) = 4 + 3y - y^2 + 5y^3$, then value of $p(-1)$ is:

- a. -5 b. -9
c. 0 d. -6

Q 9. The number of zeroes in $x^2 + 4x + 4$ is:

- a. 1 b. 2
c. 3 d. None of these

Q 10. If $p(x) = x + 3$, then $p(x) + p(-x)$ is equal to:

- a. 3 b. $2x$ c. 0 d. 6

Q 11. The degree of polynomial $p(x) = x + \sqrt{x^2} + 1$ is:

- a. 0 b. 2 c. 1 d. 3

Q 12. The remainder when $x^3 - 2x^2 + 3x + 2$ is divided by $x - 1$, is:

- a. 4 b. -4
c. 3 d. -3

Q 13. If $x^{21} - 15$ is divided by $(x + 1)$, then remainder is:

- a. -14 b. -16
c. -15 d. 17

Q 14. If $(x - 2)$ is a factor of $x^3 - 2x^2 + p$, then the value of p is:

- a. -1 b. 1
c. -2 d. 0

Q 15. If $49x^2 - b = \left(7x + \frac{1}{2}\right)\left(7x - \frac{1}{2}\right)$, then the value of b is:

- a. 0 b. $\frac{1}{\sqrt{2}}$
c. $\frac{1}{4}$ d. $\frac{1}{2}$

Q 16. The value of $5.63 \times 5.63 + 11.26 \times 2.37 + 2.37 \times 2.37$ is:

- a. 237 b. 126
c. 56 d. 64

Q 17. If $x + y = 3$, $x^2 + y^2 = 5$, then xy is:

- a. 1 b. 3 c. 2 d. 5

Q 18. The coefficient of x in the expansion of $(x + 3)^3$ is:

- a. 1 b. 9 c. 18 d. 27

Q 19. The value of $\frac{(361)^3 + (139)^3}{(361)^2 - 361 \times 139 + (139)^2}$ is:

- a. 300 b. 500
c. 400 d. 600

Q 20. Factors of $x^4 - x^2 - 12$ are:

- a. $(x + 2)$, $(x - 2)$, $(x^2 + 3)$
b. $(x + 3)$, $(x - 3)$, $(x^2 + 2)$
c. $(x^2 + 2)$, $(x^2 - 6)$
d. $(x + 2)$, $(x - 2)$, $(x^2 - 3)$

Q 21. Factorisation of $x^2 + 3\sqrt{2}x + 4$ is:

- a. $(x + 2\sqrt{2})(x + \sqrt{2})$ b. $(x + 2\sqrt{2})(x - \sqrt{2})$
c. $(x - 2\sqrt{2})(x + \sqrt{2})$ d. $(x - 2\sqrt{2})(x - \sqrt{2})$

Q 22. One of the dimensions of the cuboid whose volume is $16x^2 - 26x + 10$, is:

- a. $(x - 1)$ b. 2
c. $(8x - 5)$ d. All of these

Q 23. Factors of $(a + b)^3 - (a - b)^3$ are:

- a. ab , $3a^2 + b^2$ b. $(3a^2 + b^2)$, $2a$
c. $2b$, $(3a^2 + b^2)$ d. $(3a^2 + b^2)$, $2ab$

Q 24. If $3x - 2y + z = 0$, then the value of $27x^3 - 8y^3 + z^3$ is:

- a. $-6xyz$ b. $-18xyz$
c. $18xyz$ d. $6xyz$



Assertion & Reason Type Questions

Directions (Q. Nos. 25-29): In the following questions, a statement of Assertion (A) is followed by a statement of a Reason (R). Choose the correct option:

- 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 25. Assertion (A): The expression $3x^4 - 4x^{3/2} + x^2 = 2$ is not a polynomial because the term $-4x^{3/2}$ contains a rational power of x .

Reason (R): The highest exponent in various terms of an algebraic expression in one variable is called its degree.

Q 26. Assertion (A): The degree of the polynomial $(x - 2)(x - 3)(x + 4)$ is 4.

Reason (R): The number of zeroes of a polynomial is the degree of that polynomial.

Q 27. Assertion (A): If $p(x) = x^2 - 4x + 3$, then 3 and 1 are the zeroes of the polynomial $p(x)$.

Reason (R): Number of zeroes of a polynomial cannot exceed its degree.

Q 28. Assertion (A): The remainder when

$p(x) = x^3 - 2x^2 + 3x$ is divided by $(2x - 1)$ is $\frac{9}{8}$.

Reason (R): If a polynomial $p(x)$ is divided by $ax - b$, the remainder is the value of $p(x)$ at $x = \frac{b}{a}$.

Q 29. Assertion (A): Factorisation of the polynomial $\sqrt{3}x^2 + 11x + 6\sqrt{3}$ is $(\sqrt{3}x + 2)(x + \sqrt{3})$.

Reason (R): Factorisation of the polynomial $35y^2 + 13y - 12$ is $(7y - 3)(5y + 4)$.



Fill in the Blanks Type Questions

Q 30. Every real number is a of the zero polynomial.

Q 31. A polynomial of degree 3 in x has at most terms.

Q 32. The quotient of $8x^3 - 5x^2 + 2x$, when divided by $2x$ is

Q 33. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is

Q 34. If $\frac{x}{y} + \frac{y}{x} = -1$, where $x, y \neq 0$, then the value of $(x^3 - y^3)$ is



True/False Type Questions

Q 35. A polynomial of n th degree can have maximum n zeroes.

Q 36. The integral zeroes of the polynomial $x^3 + 3x^2 - x - 3$ are -1 , 1 and -3 .

Q 37. The zeroes of the polynomial $p(x) = 2x^2 + 7x - 4$ are -4 and $\frac{1}{2}$.

Q 38. $(x + 3)$ is a factor of $x^3 + 2x^2 - 4x + 3$.

Q 39. When $p(x)$ is divided by $(x - 2)$, then remainder is $p(2)$.