

Polynomials

1. Basic Introduction to Polynomials

Q1. $(x + 2)^3 + 7 = 0$ is polynomial

- (A) Cubic
- (B) Quadratic
- (C) Linear
- (D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q2. $(x + 4)^2 = +5$ is polynomial

- (A) Quadratic
- (B) Linear
- (C) Cubic
- (D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q3. $\sqrt{x} - 2$ Is this a polynomial?

- (A) Yes
- (B) No
- (C) All of these
- (D) None of the this

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Analyzing**

Q4. $10x^{-1} + 6x^2$

- (A) Yes
- (B) No
- (C) All of these
- (D) None of the this

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q5. $6x^4 + 3x^3 + 3x^2 + 2x + 1$ What is the degree of this polynomial?

- (A) 1
- (B) 2
- (C) 3
- (D) 4

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Analyzing**

Q6. $7f^3 - 2f^2 + f$ is

- (A) Cubic Trinomial

- (B) Trinomial
- (C) Quadratic polynomial
- (D) linear polynomial

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q7. $9hb^7q^3+2p^5-8g^4x^2+7x^4y^6$ What is the degree of this polynomial?

- (A) 10
- (B) -9
- (C) 6
- (D) 11

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Analyzing**

Q8. A biquadratic polynomial has a degree ____..

- (A) 1
- (B) 2
- (C) 4
- (D) 8

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Analyzing**

Q9. A mathematical expression consisting of one or more terms, each term being a product of a constant and a non-negative (or zero) power of variable or variables.

- (A) Constants
- (B) Polynomial
- (C) Variable
- (D) Equation

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Analyzing**

Q10. A real number is said to be algebraic if it satisfies a polynomial equation with integral coefficients. Which of the following numbers is not algebraic :

- (A) $\frac{2}{3}$
- (B) $\sqrt{2}$
- (C) 0
- (D) π

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Understanding**

Q11. An algebraic expression in which variables involved are having _____ integral powers is called a polynomial.

- (A) negative
- (B) infinite
- (C) non-negative
- (D) Zero

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q12. $ax^2 + bx + c$, $\{a \neq 0\}$ is a type of polynomial

- (A) Zero polynomial
- (B) Quadratic polynomial
- (C) Linear polynomial
- (D) None of these

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q13. coefficient of the leading term

- (A) Leading term
- (B) Relative maximum
- (C) Leading coefficient
- (D) Relative minimum

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Analyzing**

Q14. Combination of coefficient and variable that is one term

- (A) Monomial
- (B) Binomial
- (C) Trinomial
- (D) Minimum

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q15. Degree of the product of a cubic polynomial and a linear polynomial is :

- (A) 5
- (B) 3
- (C) 4
- (D) none

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Creating**

Q16. Find the degree of polynomial $6x^4 + 3x^2 + 5x + 19$

- (A) Degree 4
- (B) Degree 3
- (C) Degree 2
- (D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q17. Find the degree of the polynomial $7x^5 + 8x^2 - 5x + 3$:

- (A) 2
- (B) 5

(C) 3

(D) 0

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Analyzing**

Q18. For a polynomial involving one variable, the ____ power of the variable is called the degree of the polynomial.

(A) Highest

(B) Lowest

(C) Middle value

(D) Constant

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q19. Give the degree of the polynomial. $1+x^2+x^4-x^7$

(A) 13

(B) 2

(C) 4

(D) 7

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q20. Give the degree of the polynomial. $2y^3+5y^{19}$

(A) 3

(B) 16

(C) 19

(D) 15

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q21. Highest degree of any of the term

(A) Degree of a polynomial

(B) Constants

(C) Degree of a term

(D) Variables

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q22. If there are two terms in a polynomial, it is ____.

(A) Binomial

(B) Monomial

(C) Quadratic

(D) Trinomial

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Analyzing**

Q23. is one where the highest degree is the first term and the subsequent terms are arranged in the descending order of the powers or the exponents of the variable followed by constant values.

- (A) Linear polynomial
- (B) Quadratic polynomial
- (C) Cubic polynomial
- (D) Standard polynomial

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Understanding**

Q24. Numbers multiplied with the variable. It is written before the variable.

- (A) Exponents
- (B) Constants
- (C) Coefficient
- (D) Polynomial

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Remembering**

Q25. $p(x) = x^3 + 2x^2 + 3x + 4$ Degree and Term is

- (A) Degree = 3, Term = 4
- (B) Degree = 4, Term = 2
- (C) Degree = 3, Term = 2
- (D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q26. Polynomials cannot be combined through:

- (A) Addition
- (B) Subtraction
- (C) Multiplication
- (D) Division

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Remembering**

Q27. $qz^3 + 2k^5 - 6n^7h^4 - 4r^6b^2$ What is the leading term of this polynomial?

- (A) 2
- (B) 1
- (C) -6
- (D) -5

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q28. The coefficient of x^2 in the polynomial $2x + 3x^2 + 5x^3$ is?

- (A) 2
- (B) 3
- (C) 5

(D) 1

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q29. The degree of a quadratic polynomial is :

(A) 1

(B) 2

(C) 3

(D) 4

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Remembering**

Q30. The degree of polynomial 0 is

(A) 1

(B) 0

(C) 2

(D) None of these

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Understanding**

Q31. The degree of polynomial $16y^3 + 8y + 8$ is

(A) 2

(B) -3

(C) 3

(D) None of these

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q32. The degree of polynomial $2x^3 + 5xy^2 + 6x^2yz + y^3$

(A) 3

(B) 4

(C) 1

(D) None of these

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q33. The degree of polynomial $4 - 3x^2 + 5x^3 + 7x^8 + x^{25}$

(A) 25

(B) 8

(C) 3

(D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q34. The degree of polynomial 6 is

(A) 1

- (B) 0
- (C) Not define
- (D) 2

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q35. The degree of polynomial $x^3+xy^2+x^2y^2+y^3$

- (A) 4
- (B) 3
- (C) 2
- (D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Understanding**

Q36. The degree of polynomial $y^3 (1-y)$

- (A) 1
- (B) 3
- (C) 4
- (D) 7

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q37. The sum of the exponent of the variable in the term

- (A) Polynomial
- (B) Degree of a polynomial
- (C) Degree of a term
- (D) Variables

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Remembering**

Q38. The term in a polynomial which contains highest power of the variable

- (A) maximum
- (B) Exponent
- (C) Leading coefficient
- (D) Leading term

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Analyzing**

Q39. two terms connected by a plus sign or minus sign

- (A) Monomial
- (B) Binomial
- (C) Trinomial
- (D) Minimum

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q40. What is the degree of a constant polynomial?

- (A) 0
- (B) 1
- (C) 2
- (D) 3

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q41. What is the degree of the polynomial? $12 + x^2 + x^3 + xy + x^2y^2 + y^2$

- (A) 2
- (B) 3
- (C) 4
- (D) 5

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q42. What is the degree of the polynomial? $a^4 + a^3b^3 + b^4 + 1$

- (A) 3
- (B) 4
- (C) 5
- (D) 6

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q43. What is the degree of the polynomial? $x^4 + xyz + x^2y^3z + z^5 + 3$

- (A) 5
- (B) 6
- (C) 4
- (D) 1

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q44. What is the degree of this term? $-2y^6b^3z$

- (A) 6
- (B) 3
- (C) 9
- (D) 10

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Analyzing**

Q45. What will be the degree of the polynomial?

$$6x^3 (x^7 + x^5 + x^3 + 1)$$

- (A) 10
- (B) 8
- (C) 6
- (D) 11

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q46. Which is not a constant?

- (A) 12
- (B) 12.4
- (C) q
- (D) π

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Analyzing**

Q47. $x^2y + xy^2 + 7y$. How many variables are there?

- (A) 1
- (B) 2
- (C) 3
- (D) 7

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Analyzing**

For the polynomial $\frac{x^3 + 2x^2 + 1}{5} - \frac{7}{2}x^2 - x^6$ Write

Q48. The coefficient of x^6 , x^3

- (A) -1, 1/5
- (B) 1, -1/5
- (C) -1, -1/5
- (D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Understanding**

Q49. For the polynomial

$$x^3 + 2x^2 + \frac{1}{5} - \frac{7x^2}{2} - x^6$$

Write the coefficient of x^6 , x^3

- (A) -1, 1/5
- (B) 1, -1/5
- (C) -1, -1/5
- (D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Understanding**

2. Types of Polynomial

Q50. Identify which type of polynomials is this: $-6x^3 + 9x^2 - 2x + 43$

- (A) Linear polynomial
- (B) Quadratic polynomial
- (C) Cubic polynomial
- (D) Biquadratic polynomial

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Analyzing**

Q51. Identify which type of polynomials is this: $7x^4 + 8x - 23$

- (A) Linear polynomial
- (B) Quadratic polynomial
- (C) Cubic polynomial
- (D) Biquadratic polynomial

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Remembering**

Q52. The polynomial of degree 2 is called :

- (A) a linear polynomial
- (B) a quadratic polynomial
- (C) a cubic polynomial
- (D) a biquadratic polynomial

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Remembering**

Q53. Type of $ax + b$ polynomial is

- (A) Zero polynomial
- (B) Quadratic polynomial
- (C) Linear polynomial
- (D) None of these

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q54. What is the degree of $x^2 - 4x + 4$?

- (A) 1
- (B) 2
- (C) 0
- (D) 4

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q55. What is the name of the polynomial, $x^3 - 3x + 7$?

- (A) Quadratic polynomial
- (B) Linear polynomial
- (C) Cubic polynomial
- (D) Polynomial in two variables

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q56. What type of polynomial is $3k$?

- (A) Constant polynomial
- (B) Quadratic

- (C) Cubic
(D) None of the above

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Remembering**

Q57. Which one of the following is a biquadratic polynomial?

- (A) $x^4 + 3x + 21$
(B) $x + 7x^3$
(C) $\sqrt{x} - 12$
(D) None of the above

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q58. Which one of the following is a biquadratic polynomial?

- (A) $2x^5 + 3x + 5$
(B) $2x^4 + 7$
(C) $3x^3 + x^2 - 3x + 2$
(D) $4x^2 + 10x + 4$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q59. Write the coefficient of x^2 in the polynomial $3 - 5x^2 - y$.

- (A) 3
(B) 2
(C) -1
(D) -5

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q60. $x - 1$ is not a _____ polynomial.

- (A) Linear
(B) Quadratic
(C) Cubic
(D) Both (B) & (C)

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q61. Which of the following is Binomial?

- (A) $(x^{-3/2} + 4x^{-1/2} + 7)$
(B) $x + 4x = 5$
(C) $x(x + 4) = 0$
(D) None of these

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Understanding**

Q62. Which of the following is binomial?

- (A) $x(x+1)=x^2$
- (B) $(x+9)^2=7$
- (C) $(x+3)(x+4)=x^2$
- (D) None of these

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Understanding**

Q63. Which of the following is monomial?

- (A) $(x+3)(x+2) = (x+1)(x+2)$
- (B) $(x+4) = 4(x+1)$
- (C) $(x+2) = 4$
- (D) None of these

Correct Answer: **(B)**

Level: **Moderate**

Tagging: **Analyzing**

Q64. Which of the following is monomial?

- (A) $x(x + 2)^2$
- (B) $x(x + 1) = x + 1$
- (C) $(x + 4)^2 = 5$
- (D) $(x + 3)(x + 2) = (x + 1)(x + 4)$

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Understanding**

Q65. Which of the following is monomial?

- (A) $x(x+2)^2=0$
- (B) $x(x+1) = x+1$
- (C) $(x+4)^2=5$
- (D) None of these

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Analyzing**

Q66. Which of the following is monomial?

- (A) $x^0 = 7$
- (B) $x^{-1/2} + 4x^{-1/2} = 0$
- (C) $x^{-3/2}$
- (D) None of these

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Understanding**

Q67. Which of the following is trinomial?

- (A) $(x+1/x)^2=5$
- (B) $x(x+1) = (x^3+4)$
- (C) $(x+1)=0$

(D) None of these

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Understanding**

Q68. Which of the following is trinomial?

(A) $(x^{1/2} + 2x^{-1/3} + 7) = 0$

(B) $(x^{3/2} + 4x^{-1/2} + 7) = 0$

(C) $(x+4)^{-2} = 5$

(D) None of these

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Understanding**

Q69. For what value of a is the polynomial $2x^4 - ax^3 + 4x^2 + 2x + 1$ divisible by $1 - 2x$?

(A) $a = 25$

(B) $a = 24$

(C) $a = 23$

(D) $a = 22$

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Applying**

3. Value and Zeroes of Polynomial

Q70. Find the zeroes of the polynomial $4y^2 - 4y + 1$

(A) $1/4$

(B) $1/2$

(C) $-1/2$

(D) $-1/4$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q71. Find the zeroes of the polynomial $m^2 - 21$

(A) $\sqrt{21}, -\sqrt{21}$

(B) $-7, 7$

(C) $-3, 3$

(D) $2\sqrt{21}, -3\sqrt{21}$

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q72. Find the zeroes of the quadratic polynomial $s^2 + 19s + 90$

(A) $-9, -10$

(B) $8, 10$

(C) $-8, -10$

(D) $9, -8$

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q73. Find the zeroes of the quadratic polynomial $x^2 + 7x + 12$

- (A) -7, -5
- (B) -3, -4
- (C) 4, 7
- (D) 8, 3

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q74. Let $p(x) = ax^2 + bx + c$ be a quadratic polynomial. It can have at most –

- (A) One zero
- (B) Two zeros
- (C) Three zeros
- (D) None of these

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q75. Quadratic polynomial having zeros 1 and -2 is -

- (A) $x^2 - x + 2$
- (B) $x^2 - x - 2$
- (C) $x^2 + x - 2$
- (D) None of these

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q76. The zero of polynomial $2y$ is

- (A) 0
- (B) 1
- (C) 2
- (D) None of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q77. The zeroes of the polynomial $2x^2 - 3x - 2$ are

- (A) 1, 2
- (B) $-1/2, 1$
- (C) $1/2, -2$
- (D) $-1/2, 2$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q78. What could be the possible zero for the following polynomial? $p(x) = x^2 + 4x + 4$

- (A) 0
- (B) 1
- (C) 2
- (D) 4

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q79. Which one is a factor of $x^3 - 3x^2 - 3x + 5$?

- (A) $x - 1$
- (B) $x + 1$
- (C) $x + 2$
- (D) none of these

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q80. If $(x - 1)$ is a factor of $k^2 x^3 - 4kx + 3$, then the value of k is

- (A) 1
- (B) -1
- (C) 2
- (D) -2

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q81. If $(x - 1)$ is a factor of $k^2 x^3 - 2kx + 1$, then the value of k is -

- (A) 1
- (B) -1
- (C) 2
- (D) -2

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q82. If $f(x) = x^2 - 5x + 1$, Find $f(3)$.

- (A) $-113/9$
- (B) -5
- (C) 113
- (D) None of these

Correct Answer: **(B)**

Level: **Moderate**

Tagging: **Evaluating**

Q83. If the polynomial $p(x) = 10x - 4x^2 + 3$ the value of $p(-2)$ is

- (A) -40
- (B) -39
- (C) -38
- (D) None of these

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Evaluating**

Q84. Is 3 is a zero of polynomial $x^2 + 5x + 6$

- (A) Yes
- (B) No

(C) Either (A) or (B)

(D) None of these

Correct Answer: **(B)**

Level: **Moderate**

Tagging: **Understanding**

Q85. Obtain the zeroes of the quadratic polynomial $abx^2 + (b^2 - ac)x - bc$

(A) $-b/a, c/b$

(B) $b/a, -c/b$

(C) $-a/b, a/c$

(D) $-c/b, c/a$

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q86. The product of $(x - a)(x + b)(x + a)(3x - 3b)$ is :

(A) $3[x^4 - (a^2 - b^2)x^2 + a^2b^2]$

(B) $3[x^4 + (a^2 + b^2)x^2 - a^2b^2]$

(C) $3[x^4 - (a^2 + b^2)x^2 + a^2b^2]$

(D) $3[x^4 - (a^2 + b^2)x^2 - a^2b^2]$

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

Q87. The value of polynomial $p(x) = 3x^2 + 4x$ at $x = -1$

(A) 7

(B) -1

(C) 4

(D) 0

Correct Answer: **(B)**

Level: **Moderate**

Tagging: **Evaluating**

Q88. The value of polynomial $p(x) = x^3 + 2x^2 + x + 2$ at $x = 2$ is

(A) 20

(B) 3

(C) -1

(D) 0

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q89. The zero of polynomial $3x - 2$ is

(A) $3/2$

(B) $2/3$

(C) $1/2$

(D) None of these

Correct Answer: **(B)**

Level: **Moderate**

Tagging: **Evaluating**

Q90. The zero of polynomial $px - 1$ is

- (A) $1/p$
- (B) $2/p$
- (C) $3/p$
- (D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q91. The zero of polynomial $x^2 - 3x + 2 = 0$ is

- (A) 2, 1
- (B) 3, 1
- (C) 0, 1
- (D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q92. The zero of polynomial $nx - 1$ is

- (A) $1/n$
- (B) $2/n$
- (C) $3/n$
- (D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Understanding**

Q93. If 2 and 3 are the zeros of $f(x) = 2x^3 + mx^2 - 13x + n$, then the values of m and n are respectively –

- (A) -5, -30
- (B) -5, 30
- (C) 5, 30
- (D) 5, -30

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q94. If 3 is a zero of the polynomial $f(x) = x^4 - x^3 - 8x^2 + kx + 12$, then the value of k is –

- (A) -2
- (B) 2
- (C) -3
- (D) $3/2$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q95. If a, b are the zeros of $f(x) = x^2 + px + 1$ and c, d are the zeros of $f(x) = x^2 + qx + 1$ the value of $E = (a - c)(b - c)(a + b)(b + d)$ is –

- (A) $p^2 - q^2$
- (B) $q^2 - p^2$
- (C) $q^2 + p^2$

(D) None of these

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q96. If c, d are zeros of $x^2 - 10ax - 11b$ and a, b are zeros of $x^2 - 10cx - 11d$, then value of $a + b + c + d$ is –

(A) 1210

(B) -1

(C) 2530

(D) -11

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q97. If $f(x) = ax^2 + bx + c$ has no real zeros and $a + b + c < 0$, then

(A) $c = 0$

(B) $c > 0$

(C) $c < 0$

(D) c is undefined

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Understanding**

Q98. If $p(x) = x^2 + 4x + 3$, evaluate $p(2) - p(-1) + p(1/2)$ is

(A) $3/4$

(B) 4

(C) $77/4$

(D) None of these

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q99. The coefficient of x in $x^2 + px + q$ was taken as 17 in place of 13 and its zeros were found to be -2 and -15 . The zeros of the original polynomial are –

(A) 3, 7

(B) $-3, 7$

(C) $-3, -7$

(D) $-3, -10$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

4. Graphical Representation of Polynomials

Q100. For a linear polynomial, the graph is a:

(A) Parabola

(B) Hyperbola

(C) Straight line

(D) Circle

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q101. Graph of quadratic equation is always a –

- (A) Straight line
- (B) Circle
- (C) Parabola
- (D) Hyperbola

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Remembering**

Q102. How many time, graph of the polynomial $f(x) = x^3 - 1$ will intersect X-axis -

- (A) 0
- (B) 1
- (C) 2
- (D) 4

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q103. The graph of a quadratic polynomial is :

- (A) a straight line intersecting x-axis and y-axis
- (B) a straight line passing through the origin
- (C) a parabola
- (D) none of these

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Understanding**

Q104. The graph of a quadratic polynomial is a:

- (A) Straight line
- (B) Parabola
- (C) Hyperbola
- (D) Circle

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q105. The graph of a quadratic polynomial opens upwards if:

- (A) The coefficient of the linear term is positive
- (B) The coefficient of the quadratic term is positive
- (C) The coefficient of the linear term is negative
- (D) The coefficient of the quadratic term is negative

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q106. The graph of $P(x) = 2x^2 - 4$ is :

- (A) a parabola open upward
- (B) a parabola open downward
- (C) sometimes upward and sometimes downward
- (D) none

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Analyzing**

Q107. The graph of the equation $y = ax^2 + bx + c = 0$, $a \neq 0$:

- (A) cuts x-axis at two distinct points
- (B) cuts x-axis at only one point
- (C) does not cut x-axis at any point
- (D) any one of these

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Remembering**

Q108. The point which does not lie in the graph of $y = 3x^2 - x + 1$ is :

- (A) $(-1, 5)$
- (B) $(-2, -11)$
- (C) $(1, 3)$
- (D) $(2, 11)$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q109. The x-intercepts of a polynomial's graph are the points where:

- (A) The graph touches the y-axis
- (B) The graph crosses the x-axis
- (C) The graph touches the x-axis
- (D) The graph crosses the y-axis

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Understanding**

Q110. The point which does not lie on the line $y = 2x - 5$ is :

- (A) $(1, -3)$
- (B) $(-2, -9)$
- (C) $(3, 1)$
- (D) $(4, -3)$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q111. If the sign of 'a' is positive in a quadratic polynomial then its graph should be =

- (A) Parabola open upwards
- (B) Parabola open downwards
- (C) Parabola open leftwards
- (D) Can't be determined

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Remembering**

Q112. The graph of polynomial $y = x^3 - x^2 + x$ is always passing through the point -

- (A) $(0, 0)$
- (B) $(3, 2)$

- (C) (1, -2)
 (D) all of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Understanding**

Q113. The graph of the quadratic polynomial $ax^2 + bx + c$, $a \neq 0$ is always-

- (A) Straight line
 (B) Curve
 (C) Parabola
 (D) None of these

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Understanding**

Q114. Which of the following curve touches X-axis -

- (A) $x^2 - 2x + 4$
 (B) $3x^2 - 6x + 1$
 (C) $4x^2 - 16x + 9$
 (D) $25x^2 - 20x + 4$

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Understanding**

Q115. If the parabola $f(x) = ax^2 + bx + c$ passes through the points $(-1, 12)$, $(0, 5)$ and $(2, -3)$, the value of $a + b + c$ is -

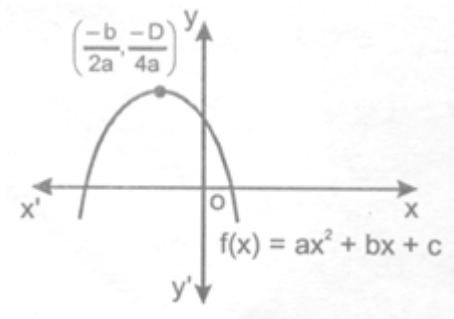
- (A) -4
 (B) -2
 (C) Zero
 (D) 1

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q116. In the diagram given below shows the graphs of the polynomial $f(x) = ax^2 + bx + c$, then



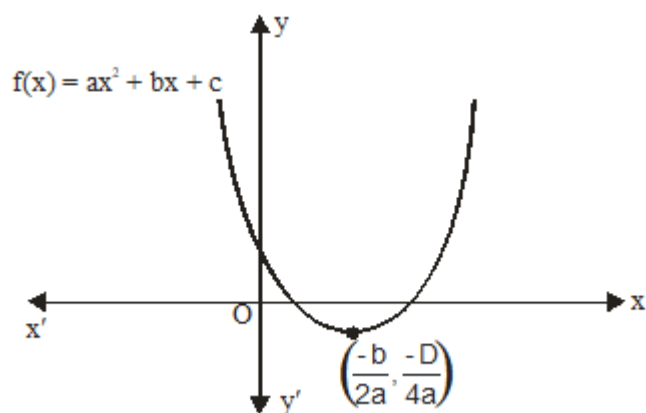
- (A) $a < 0$, $b < 0$ and $c > 0$
 (B) $a < 0$, $b < 0$ and $c < 0$
 (C) $a < 0$, $b > 0$ and $c > 0$
 (D) $a < 0$, $b > 0$ and $c < 0$

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Understanding**

Q117. In the following figure shows the graph of the polynomial $f(x) = ax^2 + bx + c$. Then



- (A) $a > 0, b > 0$ and $c > 0$
- (B) $a > 0, b < 0$ and $c > 0$
- (C) $a > 0, b < 0$ and $c < 0$
- (D) $a > 0, b > 0$ and $c < 0$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Understanding**

Q118. Which of the following curve touches X-axis -

- (A) $x^2 - 2x + 4$
- (B) $3x^2 - 6x + 1$
- (C) $4x^2 - 16x + 9$
- (D) $25x^2 - 20x + 4$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Analyzing**

5. Relationship Between Zeroes and Coefficient of Polynomials

If sum of zeros $= \sqrt{2}$, product of its zeros $= \frac{1}{3}$.

Q119. The quadratic polynomial is –

- (A) $3x^2 - 3\sqrt{2}x + 1$
- (B) $\sqrt{2}x^2 + 3x + 1$
- (C) $3x^2 - 2\sqrt{3}x + 1$
- (D) $\sqrt{2}x^2 + x + 3$

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

If 2 and $-\frac{1}{2}$ as the sum and product of its zeros respectively

Q120. then the quadratic polynomial $f(x)$ is –

- (A) $x^2 - 2x - 4$

(B) $4x^2 - 2x + 1$

(C) $2x^2 + 4x - 1$

(D) $2x^2 - 4x - 1$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q121. A quadratic polynomial whose product and sum of zeroes are $1/3$ and $\sqrt{2}$ respectively is

(A) $3x^2 - x + 3\sqrt{2}$

(B) $3x^2 + x - 3\sqrt{2}$

(C) $3x^2 + 3\sqrt{2}x + 1$

(D) $3x^2 - 3\sqrt{2}x + 1$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q122. A quadratic polynomial, the sum and product of whose zeroes are 5 and - 2 is?

(A) $x^2 - 5x - 2$

(B) $5x - 2$

(C) $x^2 - 5x + 2$

(D) $x^2 - 2 - 5x$

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Analyzing**

Q123. Consider $f(x) = 8x^4 - 2x^2 + 6x - 5$ and $\alpha, \beta, \gamma, \delta$ are its zeros then $\alpha + \beta + \gamma + \delta =$

(A) $1/4$

(B) $-1/4$

(C) $-3/2$

(D) None of these

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Understanding**

Q124. Find a quadratic polynomial, the sum and product of whose zeroes are $-1/4$, $1/4$

(A) $4x^2 - 2x + 1$

(B) $4x^2 - x + 2$

(C) $4x^2 + x + 1$

(D) $x^2 - 4x - 1$

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q125. Find the quadratic polynomial, the sum and product of whose zeroes are -7 and -2

(A) $x^2 + 2x + 7$

(B) $x^2 - 2x - 4$

(C) $x^2 + 7x - 2$

(D) $x^2 - 6x - 3$

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q126. Find the sum and product of the zeroes of polynomial $x^2 - 51$

(A) 5, 50

(B) 0, -51

(C) 51, 0

(D) 5, -10

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q127. If $f(x) = 4x^3 - 6x^2 + 5x - 1$ and α, β and γ are its zeros, then $\alpha\beta\gamma =$

(A) $3/2$

(B) $5/4$

(C) $-3/2$

(D) $1/4$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q128. If the sum of zeros of the polynomial $p(x) = kx^3 - 5x^2 - 11x - 3$ is 2, then k is equal to :

(A) $k = -5/2$

(B) $k = 2/5$

(C) $k = 10$

(D) $k = 5/2$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Understanding**

Q129. If -5 and 6 respectively are the sum and product of the zeroes of a quadratic polynomial, then the polynomial is :

(A) $x^2 - 5x + 6$

(B) $x^2 + 5x - 6$

(C) $x^2 - 5x - 6$

(D) $x^2 + 5x + 6$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q130. If 'a' and 'b' are the zeroes of the quadratic polynomial $2x^2 + 3x + 5$. Find the value of $1/a + 1/b$

(A) $3/5$

(B) $5/3$

(C) $(-3)/5$

(D) $(-5)/3$

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q131. If 2 and $-1/2$ are the sum and product of its zeros respectively then the quadratic polynomial $f(x)$ is -

- (A) $x^2 - 2x - 4$
- (B) $4x^2 - 2x + 1$
- (C) $2x^2 + 4x - 1$
- (D) $2x^2 - 4x - 1$

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q132. If the sum of the two zeros of $x^3 + px^2 + qx + r$ is zero, then $pq =$

- (A) $-r$
- (B) r
- (C) $2r$
- (D) $-2r$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q133. The cubic polynomial with sum, sum of product of whose zeroes taken two at a time and product of its zeroes are 3, -1 and $-1/3$ is?

- (A) $5x^3 - 3x^2 - 3x - 11$
- (B) $3x^3 - 5x^2$
- (C) $3x^3 - 9x^2 - 3x - 1$
- (D) $5x^3 - 3x^2$

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q134. Find a and b , if the zeroes of the polynomial $x^3 - 3x^2 + 1$ are $a - b$, a , $a + b$

- (A) $a = +2, b = -2$
- (B) $a = -2, b = \sqrt{2}$
- (C) $a = 2, b = \sqrt{2}$
- (D) $a = 1, b = \pm\sqrt{2}$

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Creating**

Q135. If α and β are zeroes of the polynomial $x^2 - 4x + 3$, then the value of $\alpha^4\beta^3 + \alpha^3\beta^4$ is :

- (A) 100
- (B) 108
- (C) 110
- (D) none of these

Correct Answer: **(B)**

Level: **Moderate**

Tagging: **Evaluating**

Q136. If a and b are the zeroes of the polynomial $x^2 - 5x - n$. such that $a - b = 1$, find the value of n .

- (A) 6
- (B) 7
- (C) 8

(D) 9

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q137. If a and b are zeroes of the polynomial $2x^2 + 7x - 3$, then the value of $a^2 + b^2$ is

(A) $49/4$

(B) $37/4$

(C) $61/4$

(D) $61/2$

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

Q138. If a, β be the zeros of the quadratic polynomial $2x^2 + 5x + 1$, then value of $a + \beta + a\beta =$

(A) -2

(B) -1

(C) 1

(D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q139. If $x = 2$ and $x = 3$ are zeros of the quadratic polynomial $x^2 + ax + b$, the values of a and b respectively are :

(A) $5, 6$

(B) $-5, -6$

(C) $-5, 6$

(D) $5, 6$

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

Q140. If α, β be the zeros of the quadratic polynomial $2 - 3x - x^2$, then $\alpha + \beta =$

(A) 2

(B) 3

(C) 1

(D) None of these

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Evaluating**

Q141. Quadratic polynomial having sum of its zeros 5 and product of its zeros -14 is-

(A) $x^2 - 5x - 14$

(B) $x^2 - 10x - 14$

(C) $x^2 - 5x + 14$

(D) None of these

Correct Answer: **(A)**

Level: **Moderate**

Tagging: **Evaluating**

Q142. Quadratic polynomial having zeros 1 and -2 is -

- (A) $x^2 - x + 2$
- (B) $x^2 - x - 2$
- (C) $x^2 + x - 2$
- (D) None of these

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

Q143. The sum and product of zeros of the quadratic polynomial are -5 and 3 respectively the quadratic polynomial is equal to -

- (A) $x^2 + 2x + 3$
- (B) $x^2 - 5x + 3$
- (C) $x^2 + 5x + 3$
- (D) $x^2 + 3x - 5$

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

If α and β are the zeros of the polynomial $f(x) = 16x^2 + 4x - 5$

then $\frac{1}{\alpha} + \frac{1}{\beta}$ is equal to -

Q144.

- (A) $2/5$
- (B) $5/2$
- (C) $3/5$
- (D) $4/5$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

If α and β are the zeros of the polynomial $f(x) = 15x^2 - 5x + 6$

then $\left(1 + \frac{1}{\alpha}\right)\left(1 + \frac{1}{\beta}\right)$ is equal to

Q145.

- (A) $13/3$
- (B) $13/2$
- (C) $16/3$
- (D) $15/2$

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

If α, β and γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$,

then $\frac{1}{\alpha} + \frac{1}{\beta} + \frac{1}{\gamma} =$

Q146.

- (A) $-b/a$
- (B) c/d

(C) $-c/d$

(D) $-c/a$

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Let α, β be the zeros of the polynomial $x^2 - px + r$

and $\frac{\alpha}{2}, 2\beta$ be the zeros of $x^2 - qx + r$,

Q147. Then the value of r is –

(A) $\frac{2}{9}(p-q)(2q-p)$

(B) $\frac{2}{9}(q-p)(2p-q)$

(C) $\frac{2}{9}(q-2)(2q-p)$

(D) $\frac{2}{9}(2p-q)(2q-p)$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q148. For the equation $3x^2 + px + 3 = 0$, $p > 0$, if one of the roots is square of other, then $p =$

(A) $1/3$

(B) 1

(C) 3

(D) $2/3$

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q149. If α and β are the zeros of the polynomial $f(x) = 6x^2 - 3 - 7x$ then $(\alpha+1)(\beta+1)$ is equal to –

(A) $5/2$

(B) $5/3$

(C) $2/5$

(D) $3/5$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q150. If a, b and c are not all equal and α and β be the zeros of the polynomial $ax^2 + bx + c$, then value of $(1+\alpha+\alpha^2)(1+\beta+\beta^2)$ is:

(A) 0

(B) positive

(C) negative

(D) non-negative

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q151. If the product of the roots of the equation $(a + 1)x^2 + (2a + 3)x + (3a + 4) = 0$ is 2, then the sum of roots is

- (A) 1
- (B) -1
- (C) 2
- (D) -2

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q152. If the product of zeros of the polynomial $f(x) = ax^3 - 6x^2 + 11x - 6$ is 4, then $a =$

- (A) $3/2$
- (B) $-3/2$
- (C) $2/3$
- (D) $-2/3$

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q153. If the ratio of the roots of polynomial $x^2 + bx + c$ is the same as that of the ratio of the roots of $x^2 + qx + r$, then –

- (A) $br^2 = qc^2$
- (B) $cq^2 = rb^2$
- (C) $q^2 c^2 = b^2 r^2$
- (D) $bq = rc$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q154. If the roots of polynomial $x^2 + bx + ac$ are α, β and roots of the polynomial $x^2 + ax + bc$ are α, γ then the values of α, β, γ respectively are –

- (A) a, b, c
- (B) b, c, a
- (C) c, a, b
- (D) None of these

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q155. If the sum of the zeros of the polynomial $x^2 + px + q$ is equal to the sum of their squares, then –

- (A) $p^2 - q^2 = 0$
- (B) $p^2 + q^2 = 0$
- (C) $p^2 + p = 2q$
- (D) None of these

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q156. If zeros of the polynomial $f(x) = x^3 - 3px^2 + qx - r$ are in A.P., then

- (A) $2p^3 = pq - r$
- (B) $2p^3 = pq + r$
- (C) $p^3 = pq - r$
- (D) none of these

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q157. If $\alpha + \beta = 4$ and $\alpha^2 + \beta^2 = 44$, then α, β are the zeros of the polynomial

- (A) $2x^2 - 7x + 6$
- (B) $3x^2 + 9x + 11$
- (C) $9x^2 - 27x + 20$
- (D) $3x^2 - 12x + 5$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q158. If α and β are the zeros of the polynomial $f(x) = x^2 + px + q$, then a polynomial having $1/\alpha$ and $1/\beta$ is its zeros is

- (A) $x^2 + qx + p$
- (B) $x^2 - px + q$
- (C) $qx^2 + px + 1$
- (D) $px^2 + qx + 1$

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q159. If α and β and γ are the zeros of the polynomial $2x^3 - 6x^2 - 4x + 30$. then the value of $(\alpha\beta + \beta\gamma + \gamma\alpha)$

- (A) -2
- (B) 2
- (C) 5
- (D) -30

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q160. If α, β and γ are the zeros of the polynomial $2x^3 - 6x^2 - 4x + 30$. then the value of $(\alpha\beta + \beta\gamma + \gamma\alpha)$ is

- (A) -2
- (B) 2
- (C) 5
- (D) -30

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q161. If α, β are the roots of the equation $ax^2 + bx + c = 0$, $ab = 3$ and a, b, c are in A.P. then $a + b$ is equal to

- (A) -4
- (B) -1
- (C) 4
- (D) -2

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q162. If α, β are the zeros of polynomial $f(x) = x^2 - p(x + 1) - c$, then $(\alpha + 1)(\beta + 1) =$

- (A) $c - 1$
- (B) $1 - c$
- (C) c
- (D) $1 + c$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q163. If α, β are the zeros of the polynomial $6x^2 + 6px + p^2$, then the polynomial whose zeros are $(\alpha + \beta)^2$ and $(\alpha - \beta)^2$ is -

- (A) $3x^2 + 4p^2x + p^4$
- (B) $3x^2 + 4p^2x - p^4$
- (C) $3x^2 - 4p^2x + p^4$
- (D) None of these

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q164. If α, β are the zeros of the polynomial $x^2 - px + 36$ and $\alpha^2 + \beta^2 = 9$, then $p =$

- (A) 6
- (B) 3
- (C) 8
- (D) 9

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q165. If α, β are zeros of $ax^2 + bx + c$ then zeros of $a^3x^2 + abcx + c^3$ are -

- (A) $\alpha\beta, \alpha + \beta$
- (B) $\alpha^2\beta, \alpha\beta^2$
- (C) $\alpha\beta, \alpha^2\beta^2$
- (D) α^3, β^3

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q166. If α, β are zeros of $ax^2 + bx + c$, $ac \neq 0$, then zeros of $cx^2 + bx + a$ are -

- (A) $-a, -\beta$
- (B) $a, 1/\beta$
- (C) $\beta, 1/a$
- (D) $1/a, 1/\beta$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q167. If α, β be the zeros of the quadratic polynomial $2x^2 + 5x + 1$, then value of $\alpha + \beta + \alpha\beta =$

- (A) -2
- (B) -1
- (C) 1
- (D) None of these

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q168. If α, β, γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$, then $1/\alpha + 1/\beta + 1/\gamma =$

- (A) $-b/d$
- (B) c/d
- (C) $-c/d$
- (D) $-c/a$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q169. If α, β, γ are the zeros of the polynomial $f(x) = ax^3 + bx^2 + cx + d$, then $\alpha^2 + \beta^2 + \gamma^2 =$

- (A) $\frac{b^2 - ac}{a^2}$
- (B) $\frac{b^2 - 2ac}{a}$
- (C) $\frac{b^2 + 2ac}{b^2}$
- (D) $\frac{b^2 - 2ac}{a^2}$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q170. If α, β are the zeros of the quadratic polynomial $4x^2 - 4x + 1$, then $\alpha^3 + \beta^3$ is -

- (A) $1/4$
- (B) $1/8$
- (C) 16
- (D) 32

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q171. Let α, β be the zeros of $x^2 + (2 - \lambda)x - \lambda$. The values of λ for which $\alpha^2 + \beta^2$ is minimum is

- (A) 0
- (B) 1
- (C) 2
- (D) 3

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**

Q172. The condition that $x^3 - ax^2 + bx - c = 0$ may have two of the roots equal to each other but of opposite signs is :

- (A) $ab = c$
- (B) $\frac{2}{3}a = bc$
- (C) $a^2b = c$
- (D) None of these

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q173. The quadratic polynomial whose zeroes are $5 + \sqrt{2}$ and $5 - \sqrt{2}$ is

- (A) $x^2 - 10x + 21$
- (B) $x^2 + x + 1$
- (C) $x^2 + x + 2$
- (D) $x^2 + x + 3$

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q174. The quadratic polynomial whose zeros are twice the zeros of $2x^2 - 5x + 2 = 0$ is -

- (A) $8x^2 - 10x + 2$
- (B) $x^2 - 5x + 4$
- (C) $2x^2 - 5x + 2$
- (D) $x^2 - 10x + 6$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q175. The value of 'a', for which one root of the quadratic polynomial $((a^2 - 5a + 3)x^2 + (3a - 1)x + 2$ is twice as large as the other, is -

- (A) $-1/3$
- (B) $2/3$
- (C) $-2/3$
- (D) $1/3$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

6. Division Algorithm of Polynomials

Q176. A quadratic polynomial is exactly divisible by $(x + 1)$ & $(x + 2)$ and leaves the remainder 4 after division by $(x + 3)$ then that polynomial is

- (A) $x^2 + 6x + 4$
- (B) $2x^2 + 6x + 4$
- (C) $2x^2 + 6x - 4$
- (D) $x^2 + 6x - 4$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q177. For what value of a is the polynomial $2x^4 - ax^3 = 4x^2 + 2x + 1$ divisible by $1 - 2x$?

- (A) $a = 25$
- (B) $a = 24$
- (C) $a = 23$
- (D) None of these

Correct Answer: **(D)**

Level: **Easy**

Tagging: **Evaluating**

Q178. If $(x + 1)$ is a factor of $x^3 + x^2 + x + 1$, then its other factor is :

- (A) $(x^2 - 1)$
- (B) $(x^2 + 1)$
- (C) $x(x + 1)$
- (D) none of these

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q179. If $4x^4 - 3x^3 - 3x^2$ is divided by $1 - 2x$ then remainder will be

- (A) $57/8$
- (B) $-7/8$
- (C) $55/8$
- (D) $-55/8$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q180. If $4x^4 - 3x^3 - 3x^2 + x - 7$ is divided by $1 - 2x$ then remainder will be

- (A) $57/8$
- (B) $-59/8$
- (C) $55/8$
- (D) $-55/8$

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q181. If one of the factors of $x^2 + x - 20$ is $(x + 5)$, then other factor is -

- (A) $(x - 4)$

(B) $(x - 5)$

(C) $(x - 6)$

(D) $(x - 7)$

Correct Answer: **(A)**

Level: **Easy**

Tagging: **Evaluating**

Q182. The degree of the quotient when the polynomial $7x^5 - 13x^4 + 5$ is divided by $x^3 + x^2 + 1$ is :

(A) 4

(B) 3

(C) 2

(D) 1

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q183. The quadratic polynomial in x which leaves a remainder 1 when divided by $(x - 1)$ is :

(A) $10x^2 + x - 12$

(B) $10x^2 + 3x - 12$

(C) $10x^2 - x + 10$

(D) none of these

Correct Answer: **(B)**

Level: **Easy**

Tagging: **Evaluating**

Q184. The remainder when $P(x) = x^3 - 2x + 1$ is divided by $(x - 2)$ is :

(A) 1

(B) 4

(C) 5

(D) -1

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Evaluating**

Q185. When $x^{200} + 1$ is divided by $x^2 + 1$, the remainder is equal to -

(A) $x + 2$

(B) $2x - 1$

(C) 2

(D) -1

Correct Answer: **(C)**

Level: **Easy**

Tagging: **Creating**

Q186. If $-1/3$ is the zeros of the cubic polynomial $f(x) = 3x^3 - 5x^2 - 11x - 3$ the other zeros are :

(A) $-3, -1$

(B) $1, 3$

(C) $3, -1$

(D) $-3, 1$

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

Q187. If 2 is a zero of the polynomials $3x^2 + ax - 14$ and $2x^3 + bx^2 + x - 2$, then the value of $2 - 2b$ is

- (A) -1
- (B) 5
- (C) 9
- (D) -9

Correct Answer: **(C)**

Level: **Moderate**

Tagging: **Evaluating**

Q188. If the polynomial $6x^3 + 16x^2 + px - 5$ is exactly divisible by $3x + 5$, then the value of p is

- (A) -7
- (B) -5
- (C) 5
- (D) 7

Correct Answer: **(D)**

Level: **Moderate**

Tagging: **Evaluating**

Q189. If one root of the polynomial $x^2 + px + q$ is square of the other root, then

- (A) $p^3 - q(3p - 1) + q^2 = 0$
- (B) $p^3 - q(3p + 1) + q^2 = 0$
- (C) $p^3 + q(3p - 1) - q^2 = 0$
- (D) $p^3 + q(3p + 1) - q^2 = 0$

Correct Answer: **(A)**

Level: **Difficult**

Tagging: **Evaluating**

Q190. If the polynomial $3x^3 - x^2 - 3x + 5$ is divided by another polynomial $x - 1 - x^2$, the remainder comes out to be 3, then quotient polynomial is -

- (A) $2 - x$
- (B) $2x - 1$
- (C) $3x + 4$
- (D) $x - 2$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q191. If the polynomial $3x^3 - x^2 - 3x + 5$ is divided by another polynomial $x - 1 - x^2$, the remainder comes out to be 3, then quotient polynomial is -

- (A) $2 - x$
- (B) $2x - 1$
- (C) $3x + 4$
- (D) None of these

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q192. Let $a \neq 0$ and $p(x)$ be a polynomial of degree greater than 2. If $p(x)$ leaves remainders a and $-a$ when divided respectively by $x + a$ and $x - a$, the remainder when $p(x)$ is divided by $x^2 - a^2$ is

- (A) $2x$
- (B) $-2x$
- (C) x
- (D) $-x$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q193. On dividing $x^3 - 3x^2 + x + 2$ by polynomial $g(x)$, the quotient and remainder were $x - 2$ and $4 - 2x$ respectively then $g(x)$:

- (A) $x^2 + x + 1$
- (B) $x^2 + x - 1$
- (C) $x^2 - x - 1$
- (D) $x^2 - x + 1$

Correct Answer: **(D)**

Level: **Difficult**

Tagging: **Evaluating**

Q194. The polynomials $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$ when divided by $(x - 4)$ leaves remainders R_1 & R_2 respectively then value of 'a' if $2R_1 - R_2 = 0$.

- (A) $-18/127$
- (B) $18/127$
- (C) $17/127$
- (D) $-17/127$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q195. The values of a & b so that the polynomial $x^2 - ax^2 - 13x + b$ is divisible by $(x - 1)$ & $(x + 3)$ are

- (A) $a = 15, b = 3$
- (B) $a = 3, b = 15$
- (C) $a = 3, b = 15$
- (D) $a = 3, b = -15$

Correct Answer: **(B)**

Level: **Difficult**

Tagging: **Evaluating**

Q196. What must be subtracted from $4x^4 - 2x^3 - 6x^2 + x - 5$, so that the result is exactly divisible by $2x^2 + x - 1$ is

- (A) -5
- (B) -3
- (C) -6
- (D) -8

Correct Answer: **(C)**

Level: **Difficult**

Tagging: **Evaluating**