Algebraic Expressions and Linear Equation

QUESTIONS

1. **The Coefficient of x^2y in $3x^2yz^2 + 5xyz - 12xy^2z$ is _____.**

(a) $3z$ (b) $3z^2$

(c) $-12z$ (d) -12

(e) None of these

2. **The factors of the term $-30xy^2$ are**

(a) $-5 \times 2 \times 3 \times x \times y$ (b) $-6 \times 5x^2y$

(c) $-2 \times 3 \times 5 \times x \times y \times y$ (d) All the above

(e) None of these

3. **Which among the following statements is not true?**

(a) The terms with different algebraic factors are called unlike terms.

(b) Numerical Coefficient in any term of a polynomial is called numerical coefficient or coefficient of the term.

(c) Every polynomial is a binomial.

(d) The value of a variable is not fixed.

(e) None of these

4. **The simplified expression of the expression $13x^3 - 12xyz^2 + 10x^2yz + 14xyz^2 + 13xy^2z + y^3$ is _____.**

(a) $13x^3 + 2xyz^2 + 23xy^2z + y3$

(b) $13x^3 + 2xyz^2 + 10x^2yz + 13xy^2z + y^3$

(c) $13x^3 - 2xyz^2 + 10x^2yz + 13xy^2z + y^3$

(d) $13x^3 - 2xyz^2 + 23xy^2 + y^3$

(e) None of these

5. **Find the value of the following expression at $a = -2$ and $b = -3$.**

$a^3 + 3b^2 - 3ab + 5ab^2$

(a) -75 (b) -89

(c) 39 (d) 68

(e) None of these

6. **On subtracting the sum of $-12x^2y^3 + 6x^2y^2$ and $-5y^2x^2 + 13x^3y^2$ from $3x^4 - x^2y + 8x^2y^3 - 23x^3y^2 + x^2y^2$, we get _____.**

(a) $3x^4 - x^2y + 20x^2y^3 - 36x^3y^2$

(b) $3x^4 - 2x^2y^2 - x^2y - 4x^2y^3 + 10x^3y^2$

(c) $3x^4 + 2x^2y^2 + x^2y + 4x^2y^3 - 10x^3y^2$

(d) $3x^4 + x^2y + 4x^2y^3 - 10x^3y^2$

(e) None of these

7. Which one among the following is not a pair of like terms?

(a) $-13xyz^2,\ 6z^2xy$

(b) $3x^2yz^2,\ -3yx^2z^2$

(c) $7x^3yz^2, 3xz^2y^3$

(d) $9xy^3z^2,\ 2z^2xy^3$

(e) None of these

8. The speed of a car is 48 km/hr. The distance (in km) covered by the car in 'm' hours is _____.

(a) $\frac{48}{m}$ (b) 48 + m

(c) 48m (d) (48 − m)

(e) None of these

9. Which among the following expression is not a polynomial?

(a) 1 (b) $1+\frac{1}{x}$

(c) x + 1 (d) $\frac{x^3}{x^2}$

(e) None of these

10. The subtraction of 11 times of x from 22 times of y is _____.

(a) $-11y + 22x$ (b) $11x - 22y$

(c) $22y - 11x$ (d) $11y - 22x$

(e) None of these

11. The expression $(5m - n + 5) - (m - n)$ is a _____

(a) monomial (b) trinomial

(c) binomial (d) quadrinomial

(e) None of these

12. Which among the following statements is correct?

(a) Degree of a constant polynomial is 0.

(b) Every binomial is a quadratic polynomial.

(c) The terms having the same literal factors are called unlike or dissimilar terms

(d) All the above

(e) None of these

13. Evaluate the following algebraic expression for $x = 2, y = -5, z = -4, a = -2, b = -1$:

$13 + 5z^3xy + 3xy^2 + a^2b - 8xyz$

(a) 3039 (b) 2058

(c) 4037 (d) 5251

(e) None of these

14. Add the following: $2x + 3y^2z + 5$ and $7 - 3yz + 3x$

(a) $5x+12+3yz+3y^2z$ (b) $5x+12-3yz+3y^2z$

(c) $7x+10-3yz+5y^2z$ (d) $5x-12+3yz-3y^2z$

(e) None of these

15. Subtract the following: $3x^2+13y^2$ from $3x^2-5y^2$

(a) $18y^2$ (b) $-18y^2$

(c) $8y^2+6x^2$ (d) $7x^2-8y^2$

(e) None of these

16. What should be added to: $3x^2+3-5xyz+3x^2z$ to obtain $13x^2+2-8xyz+12xz^2-3x^2z$?

(a) $10x^2 + 12xz^2 - 3x^2z + 3xyz + 1$

(b) $10x^2 + 12xz^2 + 6x^2z + 8xyz + 1$

(c) $10x^2+12xz^2+1-3x^2z-3xyz$

(d) $10x^2+12xz^2 - 6x^2z + 13xyz + 1$

(e) None of these

17. What should be subtracted from $3m^2 - 4m^3 + m - 9$ to obtain $4m^2 - 2m + 3m^3 - 12$?

(a) $-7m^2+7m^3+3m-3$ (b) $-m^2-7m^3-3m+3$

(c) $-m^2-7m^3+3m-3$ (d) $-7m^2+7m^3-3m+3$

(e) None of these

18. **How much does $3p^2 - 17pq + 8pqr$ exceed $3p^3 + 4p^2 - pq + 3pqr$?**

(a) $-3p^3 + p^2 - 5pqr + 16pq$ (b) $-3p^3 - p^2 + 5pqr - 16pq$

(c) $3p^3 - p^2 + 5pqr - 16pq$ (d) $-3p^3 - p^2 - 5pqr - 16pq$

(e) None of these

19. **How much is $2m^3 - 13m^2 + 5m - 7$ greater than $6m^3 + 11m^2 - 8m + 7$?**

(a) $4m^3 + 24m^2 + 13m + 14$ (b) $-4m^3 - 24m^2 + 13m - 14$

(c) $-4m^3 + 24m^2 + 13m - 14$ (d) $4m^3 + 24m^2 + 3m + 14$

(e) None of these

20. **How much is $5x^5y^4z^3 - 3x^2y^4z^3 + 2x^2yz^3$ less than $8z^3x^2y^4 - 12yx^2z^3 - 3z^3y^4x^5$**

(a) $4x^2z^3y^4 - 14x^2z^3y + 8z^3x^5y^4$ (b) $5x^2y^4z^3 - 10yx^2z^3 - 2x^5y^4z^3$

(c) $5x^2y^4z^3 - 14yx^2z^3 - 8z^3x^5y^4$ (d) $11x^2y^4z^3 - 14yx^2z^3 - 8z^3x^5y^4$

(e) None of these

21. **Simplify: $-P - [P + \{2p + q - 2p - (p - 3q)\} - 3q]$**

(a) $-p + q$ (b) $p + q$

(c) $p - q$ (d) $-p - q$

(e) None of these

22. **Solve: $2p + 3pq + 7p^2q - 3[(2pq + 3p) - \{6 - (p - 3pq) + (2p^2q - 3p + 5)\}]$**

(a) $19p + 8pq + 13p^2q - 33$

(b) $19p + 8pq - 33 + 19p^2q$

(c) $-19p + 6pq + 13p^2q + 33$

(d) $-19p - 6pq + 13p^2q + 33$

(e) None of these

23. **After simplification. Find the value of the following algebraic expression at $m = -3, n = 2$ and $r = -1$.**

$3(m^2 + n^2 - 3mnr + r^2) - [5(2m^2 + n^2 - 2mn) - \{-r^3 + 3(m - 2) + 8mn^2\}]$

(a) 638 (b) -732

(c) -638 (d) 732

(e) None of these

24. Which one among the following statements is not correct?

(a) Equation $3x + 2 = 8$ is true for only one value of x.

(b) Equation $3y = 0$ is true for any value of y.

(c) For $x = -3$, the equation can be formed as $3x + 2 = 7$

(d) For $y = -1$, the equation can be formed as $2y + 2 = 0$

(e) None of these

25. 19 added to thrice a number is same as 8 more than 4 times the number. What is the number?

(a) 17 (b) 28

(c) 11 (d) 19

(e) None of these

26. If a = b, then which one among the following cannot be true?

(a) $a + c = b + c$ (b) $2a + c - d = 2b + c - d$

(c) $a + 2b = 2a + b$ (d) $a + 2b + 3c = 3c - a + 2b$

(e) None of these

27. If K + 13 = 2K − 13, then find the value of $\frac{7K - 130}{5K + 125}$

(a) $\frac{52}{255}$ (b) $\frac{65}{158}$

(c) $\frac{37}{139}$ (d) $\frac{49}{188}$

(e) None of these

28. Which one of the following statements is incorrect?

(a) Shifting one term from one side of an equation to another side with a change of sign is called transposition.

(b) An equation, in which the highest index of the variables present is one, is called a linear equation.

(c) If $x > 0$, then $-x < 0$

(d) If $x < y$, then $-x < y$

(e) None of these

29. Two third of a number is 68 less than four-fifth of the number. Find the number.

(a) 720 (b) 618

(c) 510 (d) 490

(e) None of these

30. One-fourth of a number is subtracted from three-fifth of the number, the result is 910. Find the four-thirteenth of the number.

(a) 600 (b) 700

(c) 800 (d) 900

(e) None of these

31. The present age of Rahul is thrice that of Shivam. Eight years from now, Rahul's age will be one more than twice the age of Shivam. Find the age of Rahul before 8 years from the present.

(a) 20 years (b) 26 years

(c) 19 years (d) 17 years

(e) None of these

32. The sum of the present ages of Ravi and Kishan is 69 years. If 8 years ago, Ravi's age was four years less than double the age of Kishan. Find the difference between their present ages (in years).

(a) 20 (b) 15

(c) 18 (d) 17

(e) None of these

33. Which one of the following is a solution of $\frac{3x-7}{3} > \frac{4x+2}{5}$?

(a) $x > \frac{22}{3}$ (b) $x < \frac{22}{3}$

(c) $x > \frac{41}{3}$ (d) $x < \frac{41}{3}$

(e) None of these

34. A cow grazed a circular park of $\frac{2}{5}$th of the areas was wet, $\frac{7}{15}$th of the area was dry and $\frac{1}{21}$st was green. If the remaining area of $18m^2$ was dug then find the area of the park, which was dry?

(a) 98 m^2 (b) 119 m^2

(c) 147 m^2 (d) 84 m^2

(e) None of these

35. In a two digit number, the units digit is 4 more than the ten's digit. The original number is 7 less than 8 times the sum of digits. Find the three times of the number.

(a) 216 (b) 111

(c) 219 (d) 222

(e) None of these

36. The difference of the digits of two digit number is 6. The sum of the digit cannot be _____.

(a) 12 (b) 8

(c) 6 (d) 9

(e) None of these

37. In an isosceles triangle, the difference between one of the equal sides and the unequal side (longest of the three) is $\frac{1}{9}$th of the sum of the equal side and unequal side. If it is given that the perimeter of the triangle is 112 cm, then what will be the length (in cm) of unequal side?

(a) 50 (b) 55

(c) 40 (d) 45

(e) None of these

38. A sum of ₹ 9510 is made up of 50, 20, 10 and 5 rupee notes. The number of 10 rupee notes is $\frac{21}{31}$ of the number of 50 rupee notes, $\frac{42}{37}$ of the number of 5 rupee notes and $\frac{4}{5}$ of the number of 20 rupee notes. Find the sum of the number of notes of each denomination.

(a) 387 (b) 284

(c) 365 (d) 390

(e) None of these

39. A boy says "I am thinking of a number, when I divide it by 9 and then 1 subtract 17 from it, my answer is $\frac{1}{12}$ of the number I thought. "Find the number.

(a) 513 (b) 414

(c) 612 (d) 810

(e) None of these

40. Solve: $\frac{3}{7}\left(\frac{8x}{13}-\frac{1}{3}\right)-\left(3x+\frac{2-x}{7}\right)=\left(x+\frac{3}{5}\right)\div\frac{2}{7}$

(a) $\frac{-2301}{5545}$ (b) $\frac{-2701}{3545}$

(c) $\frac{-2923}{3744}$ (d) 13

(e) None of these

ANSWER - KEY				
1. (B)	**2.** (C)	**3.** (C)	**4.** (B)	**5.** (B)
6. (A)	**7.** (C)	**8.** (C)	**9.** (B)	**10.** (C)
11. (C)	**12.** (A)	**13.** (A)	**14.** (B)	**15.** (B)
16. (D)	**17.** (C)	**18.** (B)	**19.** (B)	**20.** (D)
21. (D)	**22.** (C)	**23.** (B)	**24.** (C)	**25.** (C)
26. (D)	**27.** (A)	**28.** (E)	**29.** (C)	**30.** (C)
31. (C)	**32.** (B)	**33.** (C)	**34.** (A)	**35.** (C)
36. (D)	**37.** (C)	**38.** (A)	**39.** (C)	**40.** (A)