Chapter-2: Algebraic Expression

1. How many terms are in the expansion of $(x^2 - 2xy + y^2)^2$? [All B.18]
ⓐ 2 ⓑ 3 ⓒ 4 ⓓ 5 **d**

2. What is the remainder when $5x^2 - 3x - 1$ is divided by $(2x + 1)$? [All B.18]
ⓐ $-\frac{5}{4}$ ⓑ $-\frac{4}{5}$ ⓒ $\frac{4}{7}$ ⓓ $\frac{7}{4}$ **d**

3. $(x - 5)$ is a factor of the polynomial $x^3 - ax^2 - 9x - 5$. What is the value of a? [D.B.17]
ⓐ 3 ⓑ −3 ⓒ −5 ⓓ −9 **a**

4. Which one is the homogeneous polynomial? [D.B.17]
ⓐ $x^2 + 2x + 1$ ⓑ $x^3 + 3x^2 + 3x + 1$
ⓒ $x^2 - 2x + y^2$ ⓓ $x^3+3x^2y+3xy^2+y^3$ **d**

5. Which one is the set of divisible terms of the constant of the polynomial $\frac{y(y^3 + 3y)}{y^2}$? [R.B.17]
ⓐ ∅ ⓑ {1} ⓒ {3} ⓓ {1, 3} **d**

6. If $P(x) = 5x^3 + 6x^2 - 2ax - 6$ is divided by $(x - 2)$, then the remainder is 6, what is the value of a? [Dj.B.17]
ⓐ 14.5 ⓑ 13 ⓒ 7 ⓓ 5.5 **b**

7. If $\frac{2x + 1}{x(x - 1)} = \frac{A}{x} + \frac{B}{x - 1}$, then what is the value of A and B respectively? [Dj.B.17]
ⓐ −1 and 3 ⓑ 3 and −1
ⓒ 2 and 1 ⓓ −1 and 2 **a**

8. Which one is the form of partial fraction of $\frac{5x - 7}{(x - 1)(x - 2)}$? [C.B.17]
ⓐ $\frac{2}{x-1} - \frac{3}{x-2}$ ⓑ $\frac{-2}{x-1} + \frac{3}{x-2}$
ⓒ $\frac{5}{x-1} - \frac{7}{x-2}$ ⓓ $\frac{2}{x-1} + \frac{3}{x-2}$ **d**

9. If $\frac{x - 5}{(x + 1)(x - 2)} \equiv \frac{A}{x + 1} + \frac{B}{x - 2}$, where A and B are rational number, then which is the value of A? [Ctg.B.17]
ⓐ −3 ⓑ −2 ⓒ 1 ⓓ 2 **d**

10. Which one is the factor of $a^3 - a^2 - 10a - 8$? [J.B.17]
ⓐ a + 1 ⓑ a − a ⓒ a − 2 ⓓ a + 4 **a**

11. Which one of the following is symmetric? [D.B.16]
ⓐ $a^2 + b + c$ ⓑ $2a^2 - 5bc - c^2$
ⓒ $x^2 - y^2 + z^2$ ⓓ $xy + yz + zx$ **d**

12. What is the Remainder when $p(x) = 36x^2 - 8x + 5$ is divided by $(x - 1)$? [D.B.16]
ⓐ 49 ⓑ 41 ⓒ 33 ⓓ 23 **c**

13. If $Q(y) = 2y^3 + 3y^2 - 7y + 8$, what is the value of $Q(-1)$? [R.B.16]
ⓐ 8 ⓑ 13 ⓒ 16 ⓓ 20 **c**

14. What is the degree of polynomials in two variables of $5x^3 + 3y^3 - 7xy + 4$? [C.B-'16]
ⓐ 2 ⓑ 3 ⓒ 4 ⓓ 5 **b**

15. If $Q(x) = x^3 + 2x^2 + 2x + 1$ and $Q(-1) = 0$ then which one of the factors of Q(x)? [Ctg.B.16]
ⓐ x − 1 ⓑ x + 1
ⓒ $x^2 + x - 1$ ⓓ $x^2 - x + 1$ **b**

16. Which one is the factor of $x^3 + 2x^2 - 5x - 6$? [S.B.16]
ⓐ x − 4 ⓑ x − 1 ⓒ x + 2 ⓓ x + 3 **d**

17. Which one is improper fractions? [Ctg.B.16]
ⓐ $\frac{x + 5}{(x - 1)(x + 2)}$ ⓑ $\frac{x - 1}{(x - 2)(x + 5)}$
ⓒ $\frac{x^3}{(x-1)(x-2)(x-3)}$ ⓓ $\frac{x^3}{x^4 + x^2 - 1}$ **c**

18. If $p(x) = x^2 - 5x + 6$ and p(x) is divided by $(x - 4)$ then which one is the remainder of p(x)? [J.B.16]
ⓐ 2 ⓑ 3 ⓒ 4 ⓓ x + 2 **a**

19. Which one is the factor of $a^3 - a^2 - 10a - 8$? [J.B.16]
ⓐ (a + 1) (a + 2) (a − 3)
ⓑ (a + 1) (a + 2) (a − 4)
ⓒ (a + 1) (a − 2) (a + 3)
ⓓ (a + 1) (a − 2) (a + 4) **b**

20. What is the partial fraction of $\frac{x}{x^2 - 4}$? [J.B.16]
ⓐ $\frac{1}{x+2} + \frac{1}{x-2}$ ⓑ $\frac{1}{2(x+2)} + \frac{1}{2(x-2)}$
ⓒ $\frac{1}{2(x+2)} - \frac{1}{2(x-2)}$ ⓓ $\frac{1}{x+2} - \frac{1}{x-2}$ **b**

21. If $(x - 2)$ is a factor of $p(x) = x^4 - 5x^3 + 7x^2 - a$, then what is the value of 'a'? [B.B.16]
ⓐ 2 ⓑ 4 ⓒ 5 ⓓ 6 **b**

22. If $P(a) = 4a^4 + 12a^3 + 7a^2 - 3a - 2$, then which is the factor of P(a)? [B.B.16]
ⓐ (2a − 1) ⓑ 4a + 1
ⓒ a − 1 ⓓ 4a − 1 **a**

23. If two polynomials P(x) and Q(x) are equal to all of the value of x, then— [D.B.17]
i. their equality are called identical
ii. the polynomials are written as $P(x) \cong Q(x)$
iii. the degree of both polynomials are equal
Which one is correct?
ⓐ i and ii ⓑ i and iii
ⓒ ii and iii ⓓ i, ii and iii **d**

24. In the expression $x^3 + y^3 + z^3 - 3xyz$ [R.B.17]
i. one factor is x + y + z
ii. the expression is symmetric
iii. the expression is cyclic
Which one is correct?
ⓐ i and ii ⓑ i and iii
ⓒ ii and iii ⓓ i, ii and iii **d**

25. Considering a, b, c are variables then the symmetric expression is— [S.B.17]
i. a + b + c
ii. ab + bc + ca
iii. $2a^2 - 5ab + c^2$
Which one is correct?
ⓐ i and ii ⓑ i and iii
ⓒ ii and iii ⓓ i, ii and iii **a**