

# CONCEPT APPLICATION LEVEL - II

## SECTION - A

### ➤ FILL IN THE BLANKS :

- Q.1 Find the product of  $\frac{1}{4}ab$  and  $-8a^2b^2$  .....
- Q.2 The length and breadth of a rectangular paper are  $x$  cm and  $(10 - x)$  cm respectively. Find the area of the paper .....
- Q.3 Find the value of  $x^2 + 6x + 9$  for  $x = 4$  .....
- Q.4 Find the value of  $(2x + 5)(2x - 5)$  .....
- Q.5 Find the value of  $(x + 5)^2 - 20x$  for  $x = 6$  .....
- Q.6 Write the coefficient of  $y^2$  in  $3xy^3$
- Q.7 Find the product  $(1 + x)(1 - x)(1 + x^2)$  .....
- Q.8 Are  $3x^2yz$  and  $-3zyx^2$  like terms ? .....
- Q.9 Find the product of the coefficients of  $x$  in  $-5x^2yz$  and  $2xy$  .....
- Q.10  $(-x + a)(-x + b)$  is equal to .....
- Q.11 ..... are a combination of terms connected by the operations of addition, subtraction, multiplication or division.
- Q.12 A ..... may be negative or positive depending upon the sign of the .....
- Q.13 The numerical factor of the term is called .....
- Q.14 In expression  $2x^2 + 4x$ , the coefficient of  $x^2$  is ..... and coefficient of  $x$  is .....
- Q.15  $5x + 4y$  is an expression having ..... terms.
- Q.16 An algebraic expression is called a ..... if there is only one term in it.
- Q.17 Trinomial is an algebraic expression with ..... terms.
- Q.18  $(-5ab^2c) \times (3a^3bc^2d) =$  .....
- Q.19 Each term in an algebraic expression is a product of one or more numbers, numerical. These numbers are called the ..... of that term.
- Q.20  $x^2 + x - 56 = (x + 8)(\dots\dots\dots)$
- Q.21 Every ..... polynomial has one and only one zero.
- Q.22  $-3x^2yz \times \frac{1}{xyz} =$  .....
- Q.23  $4a^2bc \times \dots\dots\dots = 0$
- Q.24  $4pqr(p^2 - q^2 + r^2) = 4p^3qr - \dots\dots\dots + 4pqr^3$
- Q.25  $3mn(m - n) + 2mn(n - m) = m^2n - \dots\dots\dots$
- Q.26 The value of  $3x^2(x^2 - 2x + 1)$  for  $x = -1$  is .....
- Q.27  $34^2 - 6^2 = \dots\dots\dots \times \dots\dots\dots$
- Q.28  $(20 + 8)(20 - 8) = \dots\dots\dots - \dots\dots\dots$
- Q.29  $(3a + 7)(3a + 8) = (3a)^2 + (7 + 8)(3a) + \dots\dots\dots$
- Q.30  $(6x - 7y)^2 = \dots\dots\dots - 2 \times 6x \times 7y + \dots\dots\dots$
- Q.31  $(4p^2q + 6qr)^2 = 16p^4q^2 + \dots\dots\dots + 36q^2r^2$

**SECTION - B****➤ TRUE / FALSE**

- Q.1 Zero may be a zero of a polynomial.
- Q.2 If  $p(x)$  is a polynomial of degree  $\geq 1$  and 'a' is any real number then  $(x + a)$  is a factor of polynomial  $p(x)$ , if  $p(-a) = 0$ .
- Q.3 In the term  $5ab$ , 5, a and b are the factors of this term.
- Q.4  $(3y^2 + 3xyz) - (2x^2 - 3y^2 + 4z^2 - xyz)$  is  $-2x^2 + y^2 - z^2 + xyz$ .
- Q.5 A constant term contains only variables.
- Q.6 Only like terms can be added or subtracted.
- Q.7 If the polynomial is  $a_0 + a_1x + a_2x^2 + \dots + a_nx^n$ ,  $a_n \neq 0$ , then its degree is n.
- Q.8 Degree of a polynomial is a rational number.
- Q.9 If the polynomial is  $a_0$  ( $a_0 \neq 0$ ), then it is called a zero polynomial of 0 degree.
- Q.10 There are 5 terms in the algebraic expression  $4x^3 - 3x^2 + 2x - 9$ .
- Q.11 The coefficient of x in  $2x^3 + 7x^2 - x$  is 1.
- Q.12 The coefficient of  $y^2$  in  $4y^4 - 3y^3 + 3y^2 - 2$  is 3.
- Q.13 The value of  $-2a^2 + 3a - 6$  at  $a = -1$  is 11.
- Q.14 The degree of the polynomial  $9x^7 - \frac{3}{4}x^4 + 11x$  is 7.
- Q.15 The product of a monomial and another monomial is always a monomial.
- Q.16 The product of two binomials is always a binomial.
- Q.17 The product of  $4p^2q$  and  $pq^2$  is  $4p^2q^3$ .
- Q.18 The product of  $xyz$  and  $-\frac{1}{xyz}$  is  $-1$ .
- Q.19 Distributive law and commutative law holds good for multiplication of polynomials.

**SECTION - C****➤ MULTIPLE CHOICE QUESTIONS**

- Q.1 The coefficient of  $x^0$  in  $3x^3 - 4x^2 + 7x - 2$  is :  
 (A) 7 (B) 2 (C) -2 (D) 0
- Q.2 The number of like terms in  $4x^2y - 6xy^2 + 3x^2y - 2yx + 7xyz$  is :  
 (A) 2 (B) 3 (C) 4 (D) None
- Q.3 The value of expression  $4a^2b - 2ab^2 + 7ab - 3$  at  $a = -1$ ,  $b = 2$  is  
 (A) -27 (B) 1 (C) 27 (D) -1

- Q.4 The sum of  $-2a - b + 3c - d$  and  $2a + 4b + 6c$  is  
(A) Monomial (B) Binomial (C) Trinomial (D) Polynomial with 4 terms
- Q.5 The product of  $-7x^2yz$ ,  $-13y^2$  and  $yz$  is :  
(A)  $91xy^4z^2$  (B)  $91xy^2$  (C)  $91x^2y^4z^2$  (D)  $-91x^2yz^2$
- Q.6 The product of  $-7xy$  and  $x^2 - 4y^2$  is  
(A)  $7x^2y^2 - 28xy^3$  (B)  $-7x^3y + 28xy^3$  (C)  $-7x^2y + 28x^2y^2$  (D)  $-7x^3 - 28xy^3$
- Q.7 The value of the expression  $4xy(x^2 - y^2)$  at  $x = -1$  and  $y = -1$  is  
(A) 4 (B)  $-1$  (C)  $-4$  (D) 0
- Q.8 On simplifying  $3ab(a^2 - b^2) - 3b(a^3 - ab^2 + 4ab)$ , we get  
(A)  $-12ab^2$  (B) 0 (C)  $12a^2b$  (D)  $3a^2b^2$
- Q.9 The value of the expression  $3xy(x^2 - xy + y^2)$  at  $x = 1$ ,  $y = -1$  is  
(A)  $-3$  (B)  $-9$  (C) 3 (D) 1
- Q.10 On simplifying  $4pq(p^2 + q^2) - 4pq(p^2 - q^2)$ , we get  
(A) 0 (B)  $8p^3q$  (C)  $8pq^3$  (D)  $-8pq^3$
- Q.11 The number of terms in the product of  $(x - 4)$  and  $(x^2 - 7x + 12)$  is  
(A) 4 (B) 6 (C) 5 (D) 2
- Q.12 The area of a rectangle is length  $\times$  breadth. If the length is  $(x + 3)$  units and breadth is  $(y - 3)$  units the area is :  
(A)  $xy - 3y + 3x - 9$  (B)  $xy + 3y - 3x - 9$  (C)  $xy + 3y + 3x - 9$  (D)  $xy - 3y - 3x - 9$
- Q.13 The volume of a box is given by the formula length  $\times$  breadth  $\times$  height. If the length is  $4x$  units, breadth is  $3y^2$  units and height is  $2x^2y$  units the volume is :  
(A)  $12x^2y^2$  (B)  $24xy^3$  (C)  $24x^3y^2$  (D)  $24x^3y^3$
- Q.14 The middle term in the expression  $(2y - 3z)^2$  is  
(A)  $12yz$  (B)  $-6yz$  (C)  $-12yz$  (D)  $6yz$
- Q.15 The value of  $13.1^2 - 6.9^2$  is  
(A) 124 (B) 12.4 (C) 1.24 (D) 1124
- Q.16 The degree of  $4x^2y + x^2 - 2y^2$  is  
(A) 2 (B) 3 (C) 4 (D)  $-2$
- Q.17 What must be added to  $2x^2 - 3x - 8$  to get  $3x^2 + x + 6$  ?  
(A)  $x^2 + 4x + 14$  (B)  $-x^2 - 4x - 14$  (C)  $5x^2 - 2x - 2$  (D)  $x^2 - x - 2$
- Q.18 What must be subtracted from  $x^3 + 3x - 9$  to get  $3x^3 + x^2 + 3$  ?  
(A)  $4x^3 + 4x^2 - 6$  (B)  $4x^3 + x^2 + 3x - 6$   
(C)  $-2x^3 - x^2 + 3x - 12$  (D)  $2x^3 - x^2 - 3x + 12$

- Q.19 If  $a = b = 2$ , then the value of  $(a - b)(a^2 + ab - b^2)$  will be  
 (A) 2 (B) 0 (C) 1 (D) 48
- Q.20  $\frac{2}{3}xy \times \frac{3}{4}xz$  is  
 (A)  $\frac{1}{12}x^2y$  (B)  $\frac{1}{2}xyz$  (C)  $\frac{1}{2}x^2yz$  (D)  $\frac{1}{4}x^2y$
- Q.21  $(-3ab) \times (-2a^2b)$  is  
 (A)  $-6ab^2$  (B)  $6a^3b^2$  (C)  $6a^3b^3$  (D)  $-6a^2b^2$
- Q.22  $25x^8y^9z^5 \times (-2xyz)^2$  is  
 (A)  $50x^9y^{10}z^6$  (B)  $100x^{10}y^{11}z^7$  (C)  $-100x^{10}y^{11}z^7$  (D)  $-50x^9y^{10}z^6$
- Q.23 The true statement is  
 (A)  $3x = 3 + x$  (B)  $2(x + 5) = 2x + 5$   
 (C)  $4(x^2 - 3) = 4x^2 - 12$  (D)  $x \times (-5) = x - 5$
- Q.24 The product of  $\left(\frac{3}{2}xyz - \frac{9}{4}xy^2z^3\right)$  and  $\left(\frac{-8}{27}xyz\right)$  is :  
 (A)  $\frac{4}{9}x^2y^2z^2 + \frac{2}{3}x^3y^3z^3$  (B)  $-\frac{4}{9}x^2y^2z^2 + \frac{2}{3}x^2y^3z^4$   
 (C)  $\frac{4}{9}xy^2z^3 + \frac{2}{3}x^2y^3z^2$  (D)  $-\frac{4}{9}x^2y^3z^4 - \frac{8}{3}x^2y^2z^2$
- Q.25  $(3x - 4)(2x + 7)$  is  
 (A)  $6x^2 + 3x - 28$  (B)  $6x^2 + 13x - 28$  (C)  $6x^2 + 29x - 28$  (D)  $6x^2 - 29x - 28$
- Q.26  $\left(\frac{1}{2}x^2 + y^2\right)\left(x^2 - \frac{1}{2}y^2\right)$  is  
 (A)  $\frac{1}{2}x^4 - \frac{1}{2}y^4$  (B)  $\frac{1}{2}x^4 - \frac{3}{4}x^2y^2 + \frac{1}{2}y^4$   
 (C)  $\frac{1}{2}x^4 + \frac{3}{4}x^2y^2 - \frac{1}{2}y^4$  (D)  $\frac{1}{2}x^2 + \frac{3}{4}x^2y^2 - \frac{1}{2}y^2$
- Q.27 When  $a = 3$ ,  $b = 2$ , then  $(a - b)(2a^2 - 3ab + b^2)$  is  
 (A) 4 (B) -4 (C) 20 (D) -20
- Q.28  $(y + 5)(y - 3)$  is  
 (A)  $y^2 - 8y - 15$  (B)  $y^2 + 8y - 15$  (C)  $y^2 + 2y - 15$  (D)  $y^2 - 2y - 15$

- Q.29 Square of  $2x^2 - 3y^2$  is  
 (A)  $4x^2 - 9y^4$  (B)  $4x^4 + 9y^4 - 12x^2y^2$  (C)  $4x^4 + 9y^4 + 12x^2y^2$  (D)  $4x^4 + 9y^4$
- Q.30  $\left(\frac{2}{3}x^2 - \frac{1}{2}y^2\right)\left(\frac{2}{3}x^2 + \frac{1}{2}y^2\right)$  is  
 (A)  $\frac{4}{9}x^4 + \frac{1}{4}y^4$  (B)  $\frac{4}{9}x^2 - \frac{1}{4}y^2$  (C)  $\frac{4}{9}x^4 - \frac{1}{4}y^4$  (D)  $\frac{4}{9}x^4 - \frac{1}{4}y^4 - \frac{2}{3}x^2y^2$
- Q.31 The value of  $\frac{7.87 \times 7.87 - 1.72 \times 1.72}{6.15}$  is  
 (A) 9.59 (B) 10 (C) 6.15 (D) 6.45
- Q.32  $6y^4 \div (-2y^3)$  is  
 (A)  $3y$  (B)  $-3y$  (C)  $3y^3$  (D)  $-3y^3$
- Q.33  $(-72x^2y^3) \div (-8xy)$  is  
 (A)  $-9xy$  (B)  $-9xy^2$  (C)  $9xy^2$  (D)  $9xy$
- Q.34  $(8x^2y^2 + 6xy^2 - 10x^2y^3) \div (2xy)$  is  
 (A)  $4xy + 3y - 5xy^2$  (B)  $4xy^2 - 3y - 5xy^2$  (C)  $4xy - 3y + 5y^2$  (D)  $4xy^2 + 3x - 5x^2y$
- Q.35 The remainder obtained when  $t^4 - 3t^3 + t + 5$  is divided by  $t - 1$  is :  
 (A)  $-4$  (B)  $4$  (C)  $1$  (D)  $5$
- Q.36 The product of two expressions is  $x^5 + x^3 + x$ . If one of them is  $x^2 + x + 1$ , find the other.  
 (A)  $x^3 - x^2 + x$  (B)  $x^3 + x^2 + x$  (C)  $x^3 + x^2$  (D)  $x^3 - x^2$
- Q.37 Find the value of  $k$ , so that  $x - 3$  is a factor of  $3x^2 - 11x + k$ .  
 (A) 6 (B) 3 (C) 9 (D) 27
- Q.38 In the expression  $-7x^2y + 3xy + 3$ , the coefficient of  $x^2$  is  
 (A) 7 (B)  $7y$  (C)  $-7y$  (D)  $-7xy$
- Q.39 The sum of  $a^2 + b^2$  and  $a + b$  is :  
 (A)  $a^3 + b^3$  (B)  $2a^2 + 2b^2$  (C)  $a^2 + b^2 + a + b$  (D) none of these
- Q.40 Which of the following is a pair of unlike terms ?  
 (A)  $4ab, -3ba$  (B)  $6a^3b^3c, -3cb^3a^3$  (C)  $7ab, -ab$  (D)  $3a^2b, -5ab^2$
- Q.41 When the expressions  $5x^2 - 8xy$  and  $-3x^2 + 2xy$  are added, we get :  
 (A)  $2x^2 - 6xy$  (B)  $8x^2 - 10xy$  (C)  $-2x^2 + 6xy$  (D)  $2x^2 + 6xy$
- Q.42 When  $12x + 10y$  is subtracted from  $-13x + 7y$ , we get :  
 (A)  $25x + 3y$  (B)  $-25x - 3y$  (C)  $-25x + 3y$  (D)  $25x - 3y$

- Q.43 Subtract  $1 + x^2 + y^2$  from the sum of  $x^2 - y^2$  and  $1 - x^2 - y^2$ .  
 (A)  $-x^2 - 3y^2$  (B)  $x^2 + y^2$  (C)  $3x^2 - 3y^2$  (D) 2
- Q.44 Subtract the sum of  $3x - 4y + z$  and  $1 - 2x + y$  from the sum of  $3y + z + 6$  and  $x - 2y + 3$ .  
 (A)  $4y + 8$  (B) 0 (C)  $2x + 2y + 2z + 10$  (D)  $2x + 2y + 2z$
- Q.45 The value of  $\left(\frac{1}{2}xyz\right)(-4xy^2)$  is:  
 (A)  $2x^2y^2z^2$  (B)  $-2x^2y^3z$  (C)  $2x^2y^3z^2$  (D)  $-2xyz$
- Q.46 The value of  $x^{52} \times x^{-13} \times 0$  is :  
 (A) 0 (B)  $x^{39}$  (C)  $x^{65}$  (D)  $-x^{39}$
- Q.47 The value of  $25x^3y^2z$  for  $x = 1$ ,  $y = 2$  and  $z = 3$  is :  
 (A) 600 (B) 500 (C) 300 (D) none of these
- Q.48 When the product of  $x^5 \times x^2 \times x^6$  is expressed as a monomial, we get :  
 (A)  $x^{60}$  (B)  $x^{13}$  (C)  $3x^{13}$  (D)  $3x^{60}$
- Q.49 The product of  $-3x^2y$ ,  $4xy^2$  and  $2xyz$  is :  
 (A)  $-9x^4y^4z$  (B)  $24x^4y^4z$  (C)  $-24x^4y^4z$  (D)  $3x^4y^4z$
- Q.50 In its simplest form  $2x(1 - 3y) - x(y - 3)$  is :  
 (A)  $7x - 5xy$  (B)  $5x - 7xy$  (C)  $5x + 7xy$  (D) none of these
- Q.51 Which of the following is the same as  $(x + 3)(2x - 5)$  ?  
 (A)  $2x^2 + x + 15$  (B)  $-2x^2 + x + 15$  (C)  $2x^2 + x - 15$  (D)  $2x^2 - x + 15$
- Q.52 The product  $(y^4 - x^4)(y^2 + x^2)$  is :  
 (A)  $y^6 + x^2y^4 - x^4y^2 - x^6$  (B)  $x^6 - x^2y^4 + x^4y^2 - y^6$   
 (C)  $y^6 - x^2y^4 + x^4y^2 + x^6$  (D)  $y^6 + x^2y^4 - x^4y^2 + x^6$
- Q.53 When  $(7x^2 + 9x - x^0)$  is multiplied by  $15x^2$ , we get  
 (A)  $105x^4 + 135x^3$  (B)  $105x^4 + 135x^3 - 15x^2$   
 (C)  $105x^4 + 135x^3 - 1$  (D)  $105x^4 + 135x^3 + 15x^2$
- Q.54  $(2x + 5y)^2$  is equal to :  
 (A)  $4x^2 + 25y^2 + 10xy$  (B)  $4x^2 - 25y^2 + 20xy$  (C)  $4x^2 + 25y^2 + 20xy$  (D) none of these
- Q.55  $(1 - 2x)^2$  is equal to :  
 (A)  $1 + 4x^2 + 4x$  (B)  $1 - 4x^2 - 4x$  (C)  $-1 + 4x^2 - 4x$  (D)  $1 + 4x^2 - 4x$
- Q.56 On simplification  $(2x + 3y)^2 - (2x - 3y)^2$ , we get :  
 (A)  $4x^2 - 7y^2$  (B)  $4x^2 - 6y^2$  (C)  $24xy$  (D)  $4xy$

- Q.57 If  $x - \frac{1}{x} = 8$ , then the value of  $x^2 + \frac{1}{x^2}$  is :  
 (A) 66 (B) 64 (C) 62 (D) 68
- Q.58 Using the identities, evaluate :  

$$\frac{5.27 \times 5.27 - 0.27 \times 0.27}{5.54}$$
  
 (A) 5 (B)  $\frac{5}{5.54}$  (C) 25 (D)  $\frac{25}{5.54}$
- Q.59 Find the value of x, if:  
 $12x = 50 \times 50 - 38 \times 38$   
 (A) 88 (B) 1 (C) 1900 (D) 44
- Q.60 If  $\left(x + \frac{1}{x}\right) = 16$ , find the value of  $x^2 + \frac{1}{x^2}$ .  
 (A) 254 (B) 258 (C) 256 (D)  $256 - 2x$
- Q.61 If  $\left(x - \frac{1}{x}\right)^2 = 81$ , find the value of  $x^2 + \frac{1}{x^2}$ .  
 (A) 9 (B) 81 (C) 83 (D) 72
- Q.62 If  $x + \frac{1}{x} = 4$ , find the value of  $x^4 + \frac{1}{x^4}$ .  
 (A) 194 (B) 196 (C) 190 (D) 184
- Q.63 The product of  $\left(\frac{9}{2}xyz - \frac{3}{4}xy^2z^3\right)$  and  $\left(\frac{-8}{27}xyz\right)$  is :  
 (A)  $\frac{4}{9}x^2y^2z^2 + \frac{2}{3}x^3y^3z^3$  (B)  $-\frac{4}{3}x^2y^2z^2 + \frac{2}{9}x^2y^3z^4$   
 (C)  $\frac{4}{9}xy^2z^3 + \frac{2}{3}x^2y^3z^2$  (D)  $-\frac{4}{9}x^2y^3z^4 - \frac{8}{3}x^2y^2z^2$
- Q.64  $(y - 5)(y + 3)$  is :  
 (A)  $y^2 - 8y - 15$  (B)  $y^2 + 8y - 15$  (C)  $y^2 - 2y - 15$  (D)  $y^2 - 2y + 15$
- Q.65 Square of  $(2x^2 + 3y^2)$  is :  
 (A)  $4x^2 - 9y^2$  (B)  $4x^4 + 9y^4 - 12x^2y^2$  (C)  $4x^4 + 9y^4 + 12x^2y^2$  (D)  $4x^4 + 9y^4$

Q.66  $\left(\frac{2}{3}x - \frac{1}{2}y\right)\left(\frac{2}{3}x + \frac{1}{2}y\right)$  is :

(A)  $\frac{4}{9}x^4 + \frac{1}{4}y^4$       (B)  $\frac{4}{9}x^2 - \frac{1}{4}y^2$       (C)  $\frac{4}{9}x^4 - \frac{1}{4}y^4$       (D)  $\frac{4}{9}x^4 - \frac{1}{4}y^4 - \frac{2}{3}x^2y^2$

Q.67  $(3x + 4)(2x - 7)$  is :

(A)  $6x^2 - 13x - 28$       (B)  $6x^2 + 13x - 28$       (C)  $6x^2 + 29x - 28$       (D)  $6x^2 - 29x - 28$

Q.68  $\left(\frac{1}{2}x^2 - y^2\right)\left(x^2 + \frac{1}{2}y^2\right)$  is :

(A)  $\frac{1}{2}x^4 - \frac{1}{2}y^4$       (B)  $\frac{1}{2}x^4 - \frac{3}{4}x^2y^2 + \frac{1}{2}y^4$   
 (C)  $\frac{1}{2}x^4 + \frac{3}{4}x^2y^2 - \frac{1}{2}y^4$       (D)  $\frac{1}{2}x^2 + \frac{3}{4}x^2y^2 - \frac{1}{2}y^2$

Q.69 When  $a = 3$ ,  $b = 2$ , then  $(a + b)(2a^2 - 3ab - b^2)$  is :

(A) 4      (B) -4      (C) 20      (D) -20

Q.70 If the polynomials  $(px^3 + 4x^2 + 8x - 4)$  and  $(x^3 - 4x + p)$  are divided by  $(x - 3)$  then the remainder in each case is the same. Then the value of  $p$  is :

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

Q.71 If  $x^2 + \frac{1}{x^2} = 27$ , then value of  $x + \frac{1}{x}$  is

(A) 9      (B) 29      (C)  $\sqrt{29}$       (D) 3

Q.72 The quotient of division of  $x^3 - 3x^2 + 5x - 3$  by  $x^2 - 2$  is

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

Q.73 Value of  $\frac{991 \times 991 \times 991 + 9 \times 9 \times 9}{991 \times 991 - 991 \times 9 + 9 \times 9}$  is :

(A) 991      (B) 9      (C) 1000      (D)  $991 \times 9$

Q.74 What should be added to  $\frac{1}{x^2 - 7x + 12}$  to get  $\frac{2}{x^2 - 6x + 8}$  ?

(A)  $\frac{1}{x^2 + 5x - 16}$       (B)  $\frac{1}{(x + 3)(x + 2)}$       (C)  $\frac{4}{(x - 3)(x + 2)}$       (D)  $\frac{1}{x^2 - 5x + 6}$



**SECTION - D****➤ MORE THAN ONE CORRECT**

Q.1 Which of the following expressions are polynomials ?

(A)  $3x^2 - 4x + 5$       (B)  $\frac{1}{2}x^2 - \frac{2}{3}x + \frac{5}{7}$       (C)  $9x + 2$       (D) 2

Q.2 Which of the following expressions are not polynomials ?

(A)  $\frac{2}{x} + x^3 + 2$       (B)  $\frac{3x^2 - x + 1}{x^2 + 1}$       (C)  $\frac{3x + 2}{x^2}$       (D)  $4x^3 + 5x^{10} - 9x^8 + 1$

Q.3 Which of the following expressions are binomials and trinomials ?

(A)  $\frac{3}{x^2}, 5x$       (B)  $x + \frac{2}{x}, x^2 + 2x - 5$   
 (C)  $x^2 + 2x - 5, 9x^3 + 5x$       (D)  $\frac{7x}{5} - \frac{9}{8}, 3x^2 - 4x + 5$

Q.4 Which of the following terms are like terms ?

(A)  $8ab, -9ab^2$       (B)  $3x^2y, -4yx^2$       (C)  $8xy^2, -11x^3y$       (D)  $\frac{7}{4}xy, -\frac{5}{3}xy$

Q.5 Which of the following terms are unlike terms ?

(A)  $\frac{3}{4}a^2bx, \frac{3}{4}ab^2x, \frac{3}{4}abx^2$       (B)  $-9xy, 5$   
 (C)  $-9x^2, -10x^2, 5x^2$       (D) None of these

Q.6 If the given expression is a complete square, then which of the following formulae we use to factorise it?

(A)  $a^2 + 2ab + b^2 = (a + b)^2$       (B)  $a^2 - 2ab + b^2 = (a - b)^2$   
 (C)  $(a - b)(a + b) = (a^2 - b^2)$       (D)  $(x + a)(x + b) = x^2 + (a + b)x + ab$

Q.7 Which of the following polynomials are of degree 1 and 3 ?

(A)  $-4 + 5x, -5 + 7t + 6t^3$       (B)  $2a + \frac{9}{4}, 9x^2 + 6x - 5$   
 (C)  $\frac{7}{2} + 4x^2 - 3x^3, \frac{-15}{4}$       (D)  $5 + 4x, \frac{7}{2} + 4x^2 - 3x^3$

Q.8 In the term  $\frac{25}{3}a^2bc^3$ , which of the following is/are correct ?

(A) Coefficient of  $a^2 = \frac{25}{3}bc^3$       (B) Numerical coefficient =  $\frac{25}{3}$   
 (C) Coefficient of  $c^3 = \frac{25}{3}a^2b$       (D) Coefficient of  $a^2bc^3 = \frac{25}{3}$

**SECTION - E****➤ MATCH THE COLUMN**

Q.1 Match the Column

**Column-I**

(A)  $a^3 + b^3$

(B)  $a^3 - b^3$

(C)  $(a + b)^3$

(D)  $(a - b)^3$

(E)  $(a + b)^2$

(F)  $(a - b)^2$

**Column-II**

(p)  $a^2 + b^2 + 2ab$

(q)  $a^3 - b^3 - 3ab(a - b)$

(r)  $(a + b)(a^2 - ab + b^2)$

(s)  $a^3 + b^3 + 3ab(a + b)$

(t)  $(a - b)(a^2 + ab + b^2)$

(u)  $a^2 + b^2 - 2ab$

Q.2 Match the Column

**Column-I**

(A)  $\left(\frac{2}{3}a^2b\right)\left(\frac{-9}{4}ab^2\right)$

(B)  $(-pq)(-2.3p^2q^2)(-0.1p^2q)$

(C)  $(-1.5a^2b)(0.3ab^2)(-0.5abc)$

(D)  $\left(\frac{-3}{7}p^3q^2\right)\left(\frac{-14}{9}pq^2\right)\left(\frac{-2}{3}pq\right)$

**Column-II**

(p)  $\frac{-4}{9}p^5q^5$

(q)  $0.225a^4b^4c$

(r)  $\frac{-3}{2}a^3b^3c^2$

(s)  $-0.23p^5q^4$

**SECTION - F****➤ Multiple Matching Questions**

**Direction :** Each question has statements (A, B, C, D ..... ) given in Column I and statements (p, q, r, s ..... ) in Column II. Any given statement in Column I can have correct matching with one or more statement(s) given in Column II. Match the entries in column I with entries in column II.

Q.1

**Column-I**

(A) Monomials

(B) Binomials

(C) Trinomials

(D) Polynomials

**Column-II**

(p)  $\sqrt{6ab} - \frac{a^2b}{5}$

(q)  $a^2 + 2ab + b^2$

(r)  $p^2q^3y$

(s)  $3xy + 4x^2y$

(t)  $\frac{3}{4}xy$

(u)  $x^2 + 3xy + y^2 + 5x^2y + 4xy^2$

**SECTION - G****➤ Assertion & Reason**

**Direction :** Each of these questions contains an Assertion followed by Reason. Read them carefully and answer the question on the basis of following options. You have to select the one that best describes the two statements

- (A) If both **Assertion** and **Reason** are **correct** and Reason is the **correct explanation** of Assertion.  
 (B) If both **Assertion** and **Reason** are correct, but Reason is not **the correct explanation** of Assertion.  
 (C) If both **Assertion** is **correct** but **Reason** is **incorrect**.  
 (D) If both **Assertion** is **incorrect** but **Reason** is **correct**.

Q.1 **Assertion :** Degree of the polynomial  $5x^2 + 3x + 4$  is 2.  
**Reason :** The degree of a polynomial of one variable is the highest value of the exponent of the variable.

Q.2 **Assertion :** Binomials and Trinomials are multinomials.  
**Reason :** An algebraic expression having two or more terms is called a multinomial.

Q.3 **Assertion :** In the expression  $3x^2 + 7y^2 - 2xy + 4x^2 + 8xy + 9y^2$ ,  $3x^2$ ,  $4x^2$  are like terms,  $-2xy$ ,  $8xy$  are like terms and  $7y^2$ ,  $9y^2$  are like terms.  
**Reason :** When the terms have same literal factors they are called unlike terms.

Q.4 **Assertion :** We should multiply  $(-7)^{-1}$  to  $\frac{-7}{4}$  to get the product as  $4^{-1}$ .

**Reason :** If  $\frac{x}{y} = \left(\frac{5}{2}\right)^{-1} \times \left(\frac{8}{9}\right)^0$  then value of  $\left(\frac{x}{y}\right)^{-2}$  is  $\left(\frac{2}{5}\right)^2$ .