

## IX Mathematics Chapter-polynomials (Algebra)

## CBSE TEST PAPER-06

## Section-A

- $\sqrt{2}$  is a polynomial of degree  
(A) 2 (B) 0 (C) 1 (D) 1/2
- Degree of the polynomial  $4x^4 + 0x^3 + 0x^5 + 5x + 7$  is  
(A) 4 (B) 5 (C) 3 (D) 7
- Degree of the zero polynomial is  
(A) 0 (B) 1 (C) Any natural number (D) Not defined
- Zero of the zero polynomial is  
(A) 0 (B) 1 (C) Any real number (D) Not defined
- If  $x^{51} + 51$  is divided by  $x + 1$ , the remainder is  
(A) 0 (B) 1 (C) 49 (D) 50

## Section - B

- Using factor theorem show  $x - 2$  is a factor of  $x^6 - 64$
- Factorize using factor theorem  $2x^3 + 7x^2 - 9$  (ii)  $4z^3 + 23z^2 - 41z - 42$  (iii)  $6x^3 - x^2 - 12x - 5$   
(iv)  $6x^2 - 13x + 6$  (v)  $p^3(q-r)^3 + q^3(r-p)^3 + r^3(p-q)^3$
- Find value using suitable identity (a)  $999^3$  (b)  $99.8^3$  (c)  $70^3 - 50^3 - 20^3$
- Factorize :  $x^3 + y^3 + z^3 - 3xyz = [(x + y + z)\{(x - y)^2 + (y - z)^2 + (z - x)^2\}]$
- Find the remainder when  $x^3 - 5x + 8$  is divided by  $x - 2$

## Section - C

- Show that  $x - 1$  is a factor of  $x^5 - 1$  while  $x^5 + 1$  is not divisible by  $x - 1$ .
- Using remainder theorem, find the value of  $a$  if the division of  $x^3 + 5x^2 - ax + 6$  by  $(x - 1)$  leaves the remainder 2
- Find value of  $x^3 - 8y^3 - 36xy - 216$  when  $x = 2y + 6$
- Verify  $x^3 - y^3 = (x - y)(x^2 + xy + y^2)$
- Evaluate:  $(x - a)^3 + (x - b)^3 + (x - c)^3 - 3(x - a)(x - b)(x - c)$  if given  $3x = a + b + c$

## Section - D

- Find the value of  $a$ , if  $(x - a)$  is a factor of  $x^3 - ax^2 + 2x + a - 1$ .
- Check whether  $p(x) = 2x^3 - 11x^2 - 4x + 5$  is a multiple of  $g(x) = 2x + 1$  or not
- Factorize by factor theorem :  $x^3 + y^3 + z^3 - 3xyz = [(x + y + z)\{(x - y)^2 + (y - z)^2 + (z - x)^2\}]$
- Find the value of  $m$  so that  $2x - 1$  be a factor of  $8x^4 + 4x^3 - 16x^2 + 10x + m$ .
- If  $a + b + c = 9$  and  $ab + bc + ca = 26$ , find  $a^2 + b^2 + c^2$ .