

- Note:*(a) Section – A Each question carries 1 mark
(b) Section – B Each question carries 2 marks
(c) Section – C Each question carries 3 marks
(d) Section – D Each question carries 4 marks

Section [A]

1. Check whether $(x + 1)$ is a factor of $x^{51} + 51$.
2. Find the coefficient of x^2 in $(2 - 3x^2)(x^2 - 5)$

Section [B]

3. Without actually calculating the cubes, find the value of $15^3 - 10^3 - 5^3$
4. Calculate 99^3 using suitable identity.

Section [C]

5. If $a + b = 11$, $a^2 + b^2 = 61$ find $a^3 + b^3$
6. Factorise: $8x^2y^3 - x^5$

Section [D]

7. Factorise using factor theorem: $x^3 + 6x^2 + 11x + 6$
8. (a) Volume of a cube is $8x^3 - 36x^2 + 54x - 27$, find possible expression for the sides of the cube.

(b) factorise: $x^2 + \frac{x}{4} - \frac{1}{8}$