

Section A 1 mark each

1. Is $7x^2 + 4\sqrt{x} - 11$ a polynomial in one variable?
2. Write the given polynomial in standard form and also write its degree
 $4x + 3 - 7x^3 + 4x^2$
3. Find value of polynomial $3 - 7x^2 + 25$ at $x = -\frac{1}{2}$
4. Verify if $x = 5$ is a zero of the polynomial $3x^2 - 5x - 50$
5. Find the remainder when $x^3 - 5x + 8$ is divided by $x - 2$

Section B 2 marks each

6. Find m if $x - 3$ is a factor of $x^3 + x^2 - mx + 15$

Factorise the following polynomials

7. $2x^2 + 3y^2 + 8z^2 - 2\sqrt{6}xy - 4\sqrt{6}yz + 8zx$
8. $125a^3 - 343b^3$
9. $(p - q)^3 + (q - r)^3 + (r - p)^3$

Evaluate using suitable identities

10. $(98)^3$

Write in expanded form

11. $(2a + b - 3c)^2$

Section C 3 marks each

12. Find dimensions of a cuboid if its volume is $15ax^2 + 10ax - 25a$

Factorise the following polynomials using factor theorem

13. $4z^3 + 23z^2 - 41z - 42$
14. Evaluate $(x - a)^3 + (x - b)^3 + (x - c)^3 - 3(x - a)(x - b)(x - c)$
given $3x = a + b + c$

Find remainder by actual division and verify your answer using remainder theorem

15. When $x^3 + x^2 - 2x + 1$ is divided by $x - 3$

Section D 6 marks each

Factorise the following polynomial using factor theorem

16. $6x^2 - 13x + 6$