CHAPTER TEST: POLYNOMIALS
Mathematics | Class IX (2026/Poly/09/NCERT/001)
Time: 1.5 Hours **Max. Marks: 33**

GENERAL INSTRUCTIONS

– All questions are compulsory.

– The question paper consists of **four sections: A, B, C, and D**.

– Section A contains **5 Multiple Choice Questions (MCQs)** of **1 mark each**.

– Section B contains **4 Short Answer Questions** of **2 marks each**.

– Section C contains **4 Long Answer Questions** of **4 marks each**.

– Section D contains **4 True or False Questions** of **1 mark each**.

– Use of calculators or any electronic devices is **not permitted**.

Section A: Basic Concepts (1 Mark Each)

1. Which of the following is a polynomial?
   (a) $x^2 + \frac{2}{x}$ (b) $\sqrt{x} + 3$ (c) $x^2 + \sqrt{2}x + 1$ (d) $x^{-2} + 5x + 6$

2. The degree of the constant polynomial 0 is:
   (a) 0 (b) 1 (c) Any natural number (d) Not defined

3. If $p(x) = x + 3$, then $p(x) + p(-x)$ is equal to:
   (a) 3 (b) $2x$ (c) 0 (d) 6

4. Zero of the zero polynomial is:
   (a) 0 (b) 1 (c) Any real number (d) Not defined

5. One of the factors of $(25x^2 - 1) + (1 + 5x)^2$ is:
   (a) $5 + x$ (b) $5x$ (c) $10x$ (d) $10x + 2$

Section B: Short Answer Questions (2 Marks Each)

6. Find the value of the polynomial $5x - 4x^2 + 3$ at $x = -1$.

7. Verify whether $-\frac{1}{3}$ is a zero of the polynomial $p(x) = 3x + 1$.

8. Factorise by splitting the middle term: $6x^2 + 5x - 6$.

9. Evaluate the following using suitable identities:
   (a) 103×107
   (b) 99^3

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Section C: Long Answer Questions (4 Marks Each)

10. Factorise using the Factor Theorem:
    $x^3 - 23x^2 + 142x - 120$.

11. If $x + y + z = 0$, show that $x^3 + y^3 + z^3 = 3xyz$.
    Hence, find the value of $(-12)^3 + 7^3 + 5^3$.

12. Expand using appropriate identities:
    (a) $(\frac{1}{4}a - \frac{1}{2}b + 1)^2$
    (b) $(2x + 1)^3$

13. If $x + \frac{1}{x} = 7$, then find the value of $x^3 + \frac{1}{x^3}$.

Section D: True or False (1 Mark Each)

Determine whether each of the following statements is true or false:

1. A binomial can have at most two terms.

2. Every real number is a zero of the zero polynomial.

3. The degree of a cubic polynomial is always 3.

4. $(x + 1)$ is a factor of $x^n + 1$ only if n is an odd positive integer.

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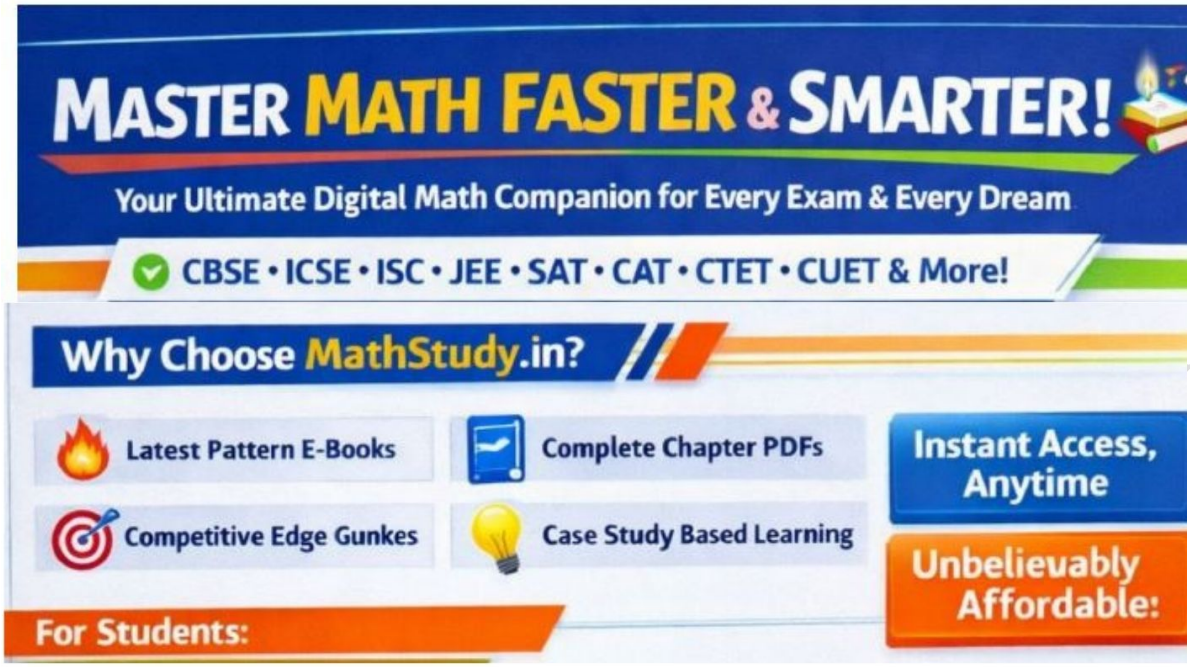

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