**Self-Assignment -1**

**Topic: Polynomials and factorization**

**Class: 9th Max. Marks: 25**

**Answer all questions. Each question carries 1/2 mark. 10 × 1/2 = 5M**

1. What is the coefficient of x² in the polynomial 4x3 – x² + 7x + 1?
2. Rajiv said, “The expression x + 3 is a polynomial”. Do you agree with Rajiv? Justify.
3. What is the degree of zero polynomial?
4. If P(x) = 3x – 2, then find the value of 3P(2) – 2P(3)?
5. Find the zero of the polynomial ?
6. Write a quadratic polynomial having no zeroes?
7. Give an example of bi-quadratic polynomial which is binomial?
8. If 2/3 is zero of the polynomial P(x), then what is the factor of the polynomial P(x)?
9. Which identity is suitable to find the value of (98)² without multiplication?
10. Define ‘Remainder theorem’?

**Answer all questions. Each question carries 1 mark. 4 × 1 = 4M**

1. Check whether (x – 1) is a factor of the polynomial x3 + 4x² - 3x + 1?
2. Factorize 4x² + 4x – 3?
3. Find the remainder when x3 – kx² + 7x + k is divided by (x – k)?
4. Divide (27x3 – 64y3) by (3x – 4y)?

**Answer all questions. Each question carries 2 marks. 4 × 2 = 8M**

1. If x + =7 then find the value of x² + ?
2. If x² + ax + b and x² + bx + a have a common factor, then show that 1 + a + b = 0?
3. Draw a geometrical figure to prove (a – b)² = a² - 2ab + b²?
4. The volume of a cuboid is x*3* – 4x² + 4x – 3. If height is (x – 3), find its area of the base?

**Answer all questions. Each question carries 4 marks. 2 × 4 = 8M**

1. Verify that a3 + b3 + c3 – 3abc =

Or

Factorize 4x4 – 12x3 + 7x² + 3x – 2.

1. If ax² + 2a²x + b3 is exactly divided by (x + a) then show that a = b or a² + ab + b² = 0.

Or

When the polynomial x² + bx + c is divided by (x – 1) leaves remainder ‘0’ and (x + 2) leaves remainder 12 . Find ‘b’ and ‘c’?