Note: (1) Think and Answer

(2) Marks will be awarded for right answers with appropriate steps

(3) Parents' signature must post-test

(4) Appreciate neatness in the answer sheet

(5) Mind choices

Name: **Date:**

Areas of improvement:

Maximum Marks	**36**
Marks Obtained	
%	

Parent's Signature	**Parent's Signature**

Section A:

Q1. Which of the following expressions are polynomials in one variable, and which are not? State reasons for your answer: [0.5 x 5 = 2.5]

(i) $3x^2 - 4x + 15$

(ii) $y^2 + 2\sqrt{3}$

(iii) $3\sqrt{x} + \sqrt{2x}$

(iv) $x - 4/x$

(v) $x^{12} + y^3 + t^{50}$

Q2. Write the degrees of each of the following polynomials: [0.5 x 5 = 2.5]

(i) $7x3 + 4x2 - 3x + 12$

(ii) $12 - x + 2x3$

(iii) $5y - \sqrt{2}$

(iv) 7

(v) 0

Q3. Classify the following polynomials as linear, quadratic, cubic, and biquadratic, polynomials [0.5 x 6 = 3]

(i) $x + x^2 + 4$

(ii) $3x - 2$

(iii) $2x + x^2$

(iv) $3y$

(v) $t^2 + 1$

(vi) $7t^4 + 4t^3 + 3t - 2$

Section B (Any three questions only) [1 x 4 = 4]

Q4. Write the coefficient of x in $\sqrt{3} - 2\sqrt{2}x + 6x^2$

Q5. State whether the following expression is polynomial or not. In the case of a polynomial, write its degree - $x^4 - x^{3/2} + x - 3$.

Q6. State whether the following expression is polynomial or not. In the case of a polynomial, write its degree - $1/\sqrt{2}x^2 - \sqrt{2}x + 2$.

Q7. Write the coefficient of x^3 in $x + 3x^2 - 5x^3 + x4$.

Section C [2 x 4 = 8]

In each of the following, use the factor theorem to find whether polynomial g(x) is a factor of polynomial f(x) or, not:

Q8. $f(x) = x^3 - 6x^2 + 11x - 6$; $g(x) = x - 3$

Q9. $f(x) = 2x^3 - 9x^2 + x + 12$, $g(x) = 3 - 2x$

Using the factor theorem, factorize each of the following polynomials:

Q10. $x^3 - 6x^2 + 3x + 10$

Q11. $x^4 - 7x^3 + 9x^2 + 7x - 10$

Section D (Any two questions only) [2 x 4 = 8]

Q12. If $x = 1/2$ is a zero of the polynomial $f(x) = 8x^3 + ax^2 - 4x + 2$, find the value of a

Q13. If $x+1$ is a factor of $x^3 + a$, then write the value of a.

Q14. Evaluate using factors: $(979)^2 - (21)^2$

Section E (Any two questions only) [2 x 4 = 8]

Q16: (Compulsory)

Q15. Question 1: If $f(x) = 2x^3 - 13x^2 + 17x + 12$, find

(i) f (2) (ii) f (-3) (iii) f(0)

Q16. If $a + b = 8$ and $ab = 15$, find the value of $a^4 + a^2b^2 + b^4$.

Q17. If $p(x) = x^3 - 5x^2 + 4x - 3$ and $g(x) = x - 2$, show that p(x) is not a multiple of g(x).