Section A 1 mark each

Q1. Given that two of the zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$ are 0, the third zero is
(A) $\frac{b}{a}$ (B) $\frac{-b}{a}$ (C) $\frac{-d}{a}$ (D) None of these

Q2. __________ polynomials have zeros − 3 and − 4
(A) one (B) two (C) infinitely many (D) None of these

Q3. Is $x^2 + 6x + \sqrt{7}x$ a polynomial? Why?

Q4. Is $x^3 + \sqrt{x} - 5$ a polynomial? Why?

Q5. If one of the zeroes of the cubic polynomial $x^3 + ax^2 + bx + c$ is −1, then the product of the other two zeroes is
(A) $b - a + 1$ (B) $b - a - 1$ (C) $a - b + 1$ (D) None of these

Q6. Zero of of a polynomial is __________

Q7. A quadratic polynomial in one variable consists of maximum _____________ terms.
(A) one (B) two (C) three (D) None of these

Section B 2 marks each

Q8. If α and β are zeros of polynomial $x^2 - 3x + 9$ then $(\alpha - \beta)^2$ =
(A) 27 (B) - 27 (C) 35 (D) None of these

Q9 One zero of polynomial $3x^2 - 8x + 2k + 1$ is seven times the other. k =
(A) $\frac{2}{3}$ (B) $\frac{-2}{3}$ (C) $\frac{-3}{2}$ (D) None of these

Q10. Find all the integral zeros of $x^3 - 3x^2 - 2x + 6$

Section C 3 marks each

Q11. Find the zeros of the quadratic polynomial $x^2 - 16$ and verify the relationship between the zeros and the coefficients

Q12. Form polynomials with zeros $-\frac{\sqrt{3}}{5}, \frac{\sqrt{3}}{5}$. How many such polynomials are possible?

Q13. Check whether the first polynomials is a factor of 2[nd] polynomial by applying division algorithm. $x^2 + 3x + 1$, $3x^4 + 5x^3 - 7x^2 + 2x + 2$

Q14. Obtain all zeros of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeros are $\frac{\sqrt{5}}{\sqrt{3}}$ and $-\frac{\sqrt{5}}{\sqrt{3}}$.

Q15. Divide $3x^2 - x^3 - 3x + 10$ by $x - 1 - x^2$ and verify the division algorithm.

Q16. If (x - 2) and $\left(x - \frac{1}{2}\right)$ are the factors of the polynomials $qx^2 + 5x + r$ prove that q = r