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MM 30

Time 1 hour

Section A1 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. 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
- Q5. Zero of a polynomial is _____
- Q6. 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

- Q7. 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
- Q8. 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

Section C 3 marks each

- Q9. Find the zeros of the quadratic polynomial $x^2 - 16$ and verify the relationship between the zeros and the coefficients
- Q10. Form polynomials with zeros $-\frac{\sqrt{3}}{5}, \frac{\sqrt{3}}{5}$. How many such polynomials are possible?



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Q11. Check whether the first polynomial is a factor of 2nd polynomial by applying division algorithm.
 $x^2 + 3x + 1$, $3x^4 + 5x^3 - 7x^2 + 2x + 2$

Q12. Obtain all zeros of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeros are $\frac{\sqrt{5}}{\sqrt{3}}$ and $-\frac{\sqrt{5}}{\sqrt{3}}$.

Section C 4 marks each

Q13. Divide $3x^2 - x^3 - 3x + 10$ by $x - 1 - x^2$ and verify the division algorithm.

Q14. If $(x - 2)$ and $\left(x - \frac{1}{2}\right)$ are the factors of the polynomial $qx^2 + 5x + r$ prove that $q = r$

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