Mathematics

(Chapter – 2) (Polynomials) (Practice Test 1)

Class X

Time: 1 hour 15 minutes   **M. M: 25**

General Instructions:
- This question paper contains four sections: A, B, C and D. Each part is compulsory.
- Section A has 5 MCQ of one mark each.
- Section B has 3 questions of two marks each.
- Section C has 3 questions of three marks each.
- Section D has 2 questions of five marks each, attempt any 1 out of 2.
- There is no negative marking.

[Section – A]

1. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is
   (A) 10   (B) -10   (C) 5   (D) -5

2. If the zeroes of the quadratic polynomial $x^2 + (a + 1) x + b$ are 2 and -3, then
   (A) a = -7, b = -1   (B) a = 5, b = -1   (C) a = 2, b = -6   (D) a = 0, b = -6

3. The number of polynomials having zeroes as -2 and 5 is
   (A) 1   (B) 2   (C) 3   (D) more than 3

4. Given that one of the zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$ is zero, the product of the other two zeroes is
   (A) $-\dfrac{c}{a}$ (B) $\dfrac{c}{a}$ (C) 0   (D) $-\dfrac{b}{a}$

5. 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) a – b –1

[Section – B]

6. If one of the zeroes of the quadratic polynomial $(p – 1) x^2 + px + 1$ is -3, then the value of p is?

7. If $x^4 + 3x^2 + 7$ is divided by $3x + 5$, then the possible degrees of quotient and remainder are?

8. If the sum of zeroes of the quadratic polynomial $3x^2 – kx + 6$ is 3, then find the value of k.

[Section – C]

9. Find the condition that zeroes of polynomial $p(x) = ax^2 + bx + c$ is reciprocal of each other.

10. Find a quadratic polynomial whose zeroes are $\dfrac{3+\sqrt{5}}{5}$ and $\dfrac{3-\sqrt{5}}{5}$.

11. Find the quadratic polynomial whose zeroes are -2 and -5. Verify the relationship between zeroes and coefficients of the polynomial.

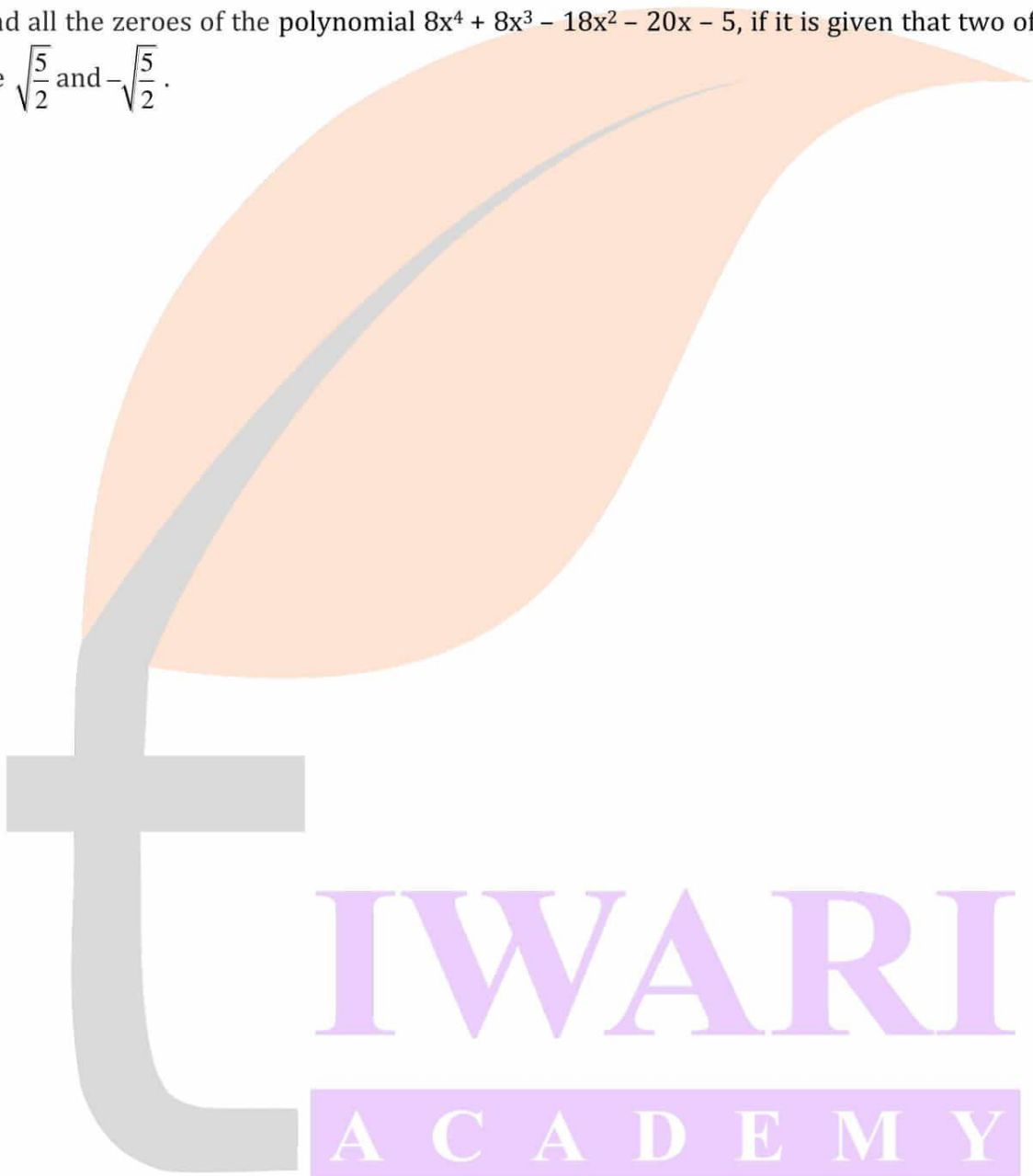12. On dividing $3x^3 + 4x^2 + 5x - 13$ by a polynomial g(x) the quotient and remainder were $3x + 10$ and $16x - 43$ respectively. Find the polynomial g(x).

13. Find all the zeroes of the polynomial $8x^4 + 8x^3 - 18x^2 - 20x - 5$, if it is given that two of its zeroes are $\sqrt{\dfrac{5}{2}}$ and $-\sqrt{\dfrac{5}{2}}$.

Hints and Answers

Section – A

1. -10
2. $a = 0, b = -6$
3. more than 3
4. $\dfrac{c}{a}$
5. $b - a + 1$

Section - B

6. $\dfrac{4}{3}$
7. 3, 0
8. $k = 9$

Section – C

9. coefficient of x^2 = constant tern
10. $\dfrac{1}{25}\left(25x^2 - 30x + 4\right)$

Section – D

12. $g(x) = x^2 - 2x + 3$
13. Zeroes are $\sqrt{\dfrac{5}{2}}, -\sqrt{\dfrac{5}{2}}, -\dfrac{1}{2}$ and $-\dfrac{1}{2}$