OPTIMUM
INTERNATIONAL SCHOOL

CLASS – X

Maths **Date:-25/04/2020**

CHAPTER 2 – POLYNOMIALS

- **Watch the online videos "POLYNOMIALS -Lecture 4 & 5 " from Optimum Online E-Learning Platform and try to comprehend the concepts of Zeroes of Cubic polynomials & its relationship with their coefficients . After that try to solve the questions given in your assignment.**
- **Lecture No. 04**
- **Lecture No. 05**

1. **Verify that the numbers given alongside of the cubic polynomials below are their zeroes. Also, verify the relationship between the zeros and coefficients in each of the following cases:**
   i. **f(x) = $2x^3 + x^2$ - 5x + 2; 1/2, 1, -2**

   ii. **g(x) = x^3 - $4x^2$ + 5x - 2; 2, 1, 1**

2. **Find a cubic polynomial with the sum, sum of the product of its zeroes taken two at a time, and product of its zeros as 3, -1 and -3 respectively.**

3. **If the zeros of the polynomial f(x) = $2x^3 - 15x^2$ + 37x – 30 are in A.P., find them.**

4. **Find the zeroes of the following polynomials by factorisation method.**
   i. **$4x^2$ – 3x – 1**

   ii. **$3x^2$ + 4x – 4**

   iii. **5t 2 + 12t + 7**

   iv. **$t^3 - 2t^2$ – 15t**

5. **Given that the zeroes of the cubic polynomial $x^3 - 6x^2$ + 3x + 10 are of the form a, a + b, a + 2b for some real numbers a and b, find the values of a and b as well as the zeroes of the given polynomial.**

6. **Answer the following and justify:**

i. **Can $x^2 - 1$ be the quotient on division of $x^6 + 2x^3 + x - 1$ by a polynomial in x of degree 5?**

ii. **What will the quotient and remainder be on division of $ax^2 + bx + c$ by $px^3 + qx^2 + rx + s$, $p \neq 0$?**

iii. **If on division of a polynomial p (x) by a polynomial g (x), the quotient is zero, what is the relation between the degrees of p (x) and g (x)?**

iv. **If on division of a non-zero polynomial p (x) by a polynomial g (x), the remainder is zero, what is the relation between the degrees of p (x) and g (x)?**

v. **(v) Can the quadratic polynomial $x^2 + kx + k$ have equal zeroes for some odd integer k > 1?**