

# Mathematics

(www.tiwariacademy.net)

(Chapter – 2) (Polynomials)(Exemplar Problems)

(Class – X)

## Exercise 2.1

### Question 5:

If one of the zeroes of the cubic polynomial  $ax^3 + bx^2 + cx + d$  is zero, the product of then other two zeroes is

- (A)  $-\frac{c}{a}$                       (B)  $\frac{c}{a}$                       (C) 0                      (D)  $-\frac{b}{a}$

### Answer 5:

- (B)  $\frac{c}{a}$

### Solution:

Let  $p(x) = ax^3 + bx^2 + cx + d$

Given that, one of the zeroes of the cubic polynomial  $p(x)$  is zero.

Let  $\alpha, \beta$  and  $\gamma$  are the zeroes of cubic polynomial  $p(x)$ , where  $\alpha = 0$ .

We know that,

Sum of product of two zeroes taking at a time =  $\frac{c}{a}$

$$\Rightarrow \alpha\beta + \beta\gamma + \gamma\alpha = \frac{c}{a}$$

$$\Rightarrow 0 \times \beta + \beta\gamma + \gamma \times 0 = \frac{c}{a} \quad [ \because \alpha = 0 ]$$

$$\Rightarrow 0 + \beta\gamma + 0 = \frac{c}{a}$$

$$\Rightarrow \beta\gamma = \frac{c}{a}$$

Hence, product of other two zeroes is  $\frac{c}{a}$ .

