



# Nishant eAcademy

## CBSE Sample Paper Class 11 Mathematics 2021-22

Subject: Mathematics Class: 11 Maximum Marks: 80 Duration: 3 hours

### Section A: Objective Type Questions (20 marks)

1. Choose the correct answer: a) If A and B are two events such that  $P(A) = 0.4$  and  $P(B) = 0.6$ , then  $P(A \cap B)$  is equal to: i. 0.24 ii. 0.16 iii. 0.10 iv. 0.06  
b) If the quadratic equation  $x^2 - 5x + k = 0$  has equal roots, then the value of k is: i. 4 ii. 5 iii. 6 iv. 7
2. State whether the following statement is true or false: "Every rational number is a whole number."

### Section B: Short Answer Questions (40 marks)

3. Solve the following equations: a)  $3x + 5 = 17$  b)  $2(x + 3) = 10$
4. Find the value of the following determinants:  
a)  $\begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix}$  b)  $\begin{vmatrix} 2 & 1 \\ 4 & -3 \end{vmatrix}$
5. Prove that the sum of the angles of a triangle is 180 degrees.

### Section C: Long Answer Questions (20 marks)

6. Solve the following pair of linear equations using the substitution method:  $2x + 3y = 8$   $4x - y = 7$
7. Prove that the diagonals of a parallelogram bisect each other.
8. A train travels a distance of 360 km in 6 hours. Find its speed in km/h.