

TEST

Class 9 Maths: Rational Numbers

Total Marks: 25

Instructions:

- Answer all questions to the best of your ability.
- Show all your working clearly.

Section A: Multiple Choice Questions (5 Marks)

1. Which of the following is a rational number? (1 mark)
 - (a) $\sqrt{2}$
 - (b) π
 - (c) 0
 - (d) $\sqrt{3}$
2. The decimal expansion of a rational number is: (1 mark)
 - (a) Always non-terminating non-repeating
 - (b) Always terminating
 - (c) Either terminating or non-terminating repeating
 - (d) Always irrational
3. Which of the following is an irrational number? (1 mark)
 - (a) $\frac{2}{3}$
 - (b) 0.5
 - (c) $\sqrt{4}$
 - (d) $\sqrt{5}$
4. Every rational number is: (1 mark)
 - (a) A natural number
 - (b) An integer
 - (c) A real number
 - (d) A whole number
5. The rational number between $\frac{1}{2}$ and $\frac{3}{4}$ is: (1 mark)
 - (a) $\frac{2}{3}$
 - (b) $\frac{5}{8}$
 - (c) $\frac{7}{8}$

- (d) $\frac{1}{4}$

Section B: Short Answer Questions (10 Marks)

1. Write three rational numbers between $\frac{1}{3}$ and $\frac{1}{2}$. (2 marks)
2. Express $0.\overline{6}$ (with 6 bar) in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$. (2 marks)
3. Rationalize the denominator of $\frac{1}{\sqrt{7}}$. (2 marks)
4. Find two irrational numbers between 2 and 3. (2 marks)
5. Show that $\sqrt{2}$ can be represented on the number line. (2 marks)

Section C: Long Answer Questions (10 Marks)

1. Represent $\sqrt{3}$ on the number line. (3 marks)
2. If $x = 2 + \sqrt{3}$, then find the value of $x + \frac{1}{x}$. (3 marks)
3. Rationalize the denominator of $\frac{5}{(\sqrt{3} - \sqrt{5})}$. (4 marks)