

8) Every rational number is a real number .

-a) True

b) False

SECTION B (Each question carry 1.5 Marks)

(Attempt any 8 questions)

✓ 1) Prove that $\sqrt{7}$ is an irrational number.

✓ 2) Rationalise the denominator of $\frac{\sqrt{7} + \sqrt{5}}{\sqrt{7} - \sqrt{5}}$

3) Express $0.\overline{47}$ in the form of $\frac{p}{q}$.

✓ 4) If $a = 1 - \sqrt{2}$, then find the value of $a - \frac{1}{a}$:

✓ 5) Insert two Irrational numbers between $\sqrt{2}$ and $\sqrt{7}$.

✓ 6) The present population of town is 200000. Its population increases by 10 % in the first year and 15 % in the second year. Find the population of the town at the end of two years.

7) Find the amount and compound interest on Rs. 2000 in 2 years if the rate is 4 % for the first year and 3 % for the second year.

8) If $x = 5 + 2\sqrt{6}$, find the value of $x^2 + \frac{1}{x^2} \cdot \left(x + \frac{1}{x}\right)^2$.

✓ 9) Find a and b if, $\frac{\sqrt{11} - \sqrt{7}}{\sqrt{11} + \sqrt{7}} = a - b\sqrt{77}$.

✓ 10) Dinesh purchased a scooter for Rs.24000. The value of scooter is depreciating at the rate of 5% per annum. Calculate its value after 3 years.