Mathematics

Practice Test Paper 1

(Chapter 1: Real Numbers)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A: 5 × 1 = 5 marks; Section B: 4 × 2 = 8 marks; Section C: 3 × 3 = 9 marks; Section D: 1 × 3 = 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Use prime factorisation where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. The sum of the exponents in the prime factorisation of 196 is:

(A) 3 (B) 4
(C) 5 (D) 2

2. If the LCM of two positive integers is 3600, which of the following cannot be their HCF?

(A) 600 (B) 500
(C) 400 (D) 150

3. If $p^2 = \frac{32}{50}$, then p is a/an:

(A) whole number (B) integer
(C) rational number (D) irrational number

4. A natural number n is divisible by 6. Which statement is necessarily true?

(A) Both 2 and 3 are prime factors of n.
(B) n is a perfect square.
(C) n is a prime number.
(D) None of these.

5. Which pair consists of two irrational numbers whose product is rational?

(A) $(\sqrt{16}, \sqrt{4})$ (B) $(\sqrt{5}, \sqrt{2})$
(C) $(\sqrt{3}, \sqrt{27})$ (D) $(\sqrt{36}, \sqrt{2})$

SECTION B

(4 questions × 2 marks = 8 marks)

6. Using prime factorisation, find the HCF and LCM of 72 and 120.

7. Show that 12^n cannot end with the digit 0 or 5 for any natural number n.

8. Given that $\sqrt{2}$ is irrational, prove that $\frac{1}{\sqrt{2}}$ is irrational.

9. Explain why $7 \times 11 \times 13 + 13$ is a composite number.

SECTION C

(3 questions × 3 marks = 9 marks)

10. The LCM of two positive integers is 14 times their HCF. The sum of their LCM and HCF is 600. If one integer is 280, find the other.

11. Prove that $\sqrt{5}$ is irrational.

12. Given that $\sqrt{3}$ is irrational, prove that $2 + 5\sqrt{3}$ is irrational.

SECTION D

(Application Based Question - 3 marks)

13. A public library receives 96 History books, 240 Science books and 336 Mathematics books. All the books must be arranged in the minimum number of stacks. Each stack must contain books of only one subject, with the same number of books in every stack.

(i) How many books should be placed in each stack?

(ii) How many stacks of Mathematics books are needed?

(iii) How many stacks are needed altogether?