Mathematics

Practice Test Paper 8

(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 total number of prime factors of 2658, counted with multiplicity, is:

(A) 2 (B) 3

(C) 4 (D) 5

2. The HCF of $2^5 \times 3^2$ and $2^3 \times 3^4$ equals:

(A) 24 (B) 36

(C) 72 (D) 216

3. The product $0 \times \sqrt{3}$ is:

(A) irrational (B) a positive integer

(C) rational and equal to 0 (D) undefined

4. Which of the following can be the HCF of two positive integers whose LCM is 420?

(A) 18 (B) 24

(C) 35 (D) 64

5. If x is irrational, which statement about x^2 is correct?

(A) It is always irrational.

(B) It is always rational.

(C) It may be rational.

(D) It is always negative.

SECTION B

(4 questions × 2 marks = 8 marks)

6. Find the least positive integer by which 3564 must be divided to make a perfect square. Also find that square.

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

8. How many zeros occur at the end of $2^7 \times 3^4 \times 5^5$? Explain using its prime factors.

9. Two distinct positive integers have sum 60. Find their greatest possible HCF, and give a pair that attains it.

SECTION C

(3 questions × 3 marks = 9 marks)

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

11. Find the smallest positive integer which becomes divisible by both 90 and 144 when 20 is added to it.

12. Three bells ring every 9, 12 and 15 minutes. They ring together at 8:00 a.m. Find their next simultaneous ringing time. How many times do they ring together from 8:00 a.m. to 5:00 p.m., including both endpoints?

SECTION D

(Application Based Question - 3 marks)

13. Three schools send 78, 117 and 130 students to an event. Each room must seat students from only one school, with the same maximum number in every room. The organiser also wants to give each school the same number of chocolates, shared equally among its students.

(i) How many students should sit in each room?

(ii) How many rooms are needed altogether?

(iii) What is the least positive number of chocolates that can be given to each school under the stated condition?