Chapter 1: Real Numbers

Total Q. 10 Total Marks : 24.

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1. Palak had 65 oranges and 117 apples which she wanted to pack in separate packets in such a way that there would be equal number of oranges or apples in each packet. So, she figure out that she needed to use the concept of HCF to find this special number.

If this number is expressible in the form of $65m - 117$, then the value of m is:

(a) 4
(b) 2
(c) 1
(d) 3

[1 Mark]

2. The LCM of smallest prime number and the smallest composite number is:

(a) 1
(b) 2
(c) 4
(d) 8

[1 Mark]

3. Which of the following statements is NOT true?

(a) Every integer greater than 1 can be expressed as a product of prime numbers.
(b) The factorisation of a composite number into primes is unique, apart from the order of factors.
(c) The Fundamental Theorem of Arithmetic is valid for all integers, including negative integers and zero.
(d) The HCF of two numbers is always less than or equal to their LCM.

[1 Mark]

4. In question number 4, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.
A number q is prime factorised as $3^2 \times 7^2 \times b$, where b is a prime number other than 3 and 7 .

Assertion (A): q is definitely an odd number.
Reason (R): $3^2 \times 7^2$ is an odd number.
(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

[1 Mark]

5. Two triangles have the sides of lengths 34 cm and 85 cm respectively. What is the greatest length of tape that can measure the sides of both them exactly?

[2Mark]

6. Find the HCF and LCM of 135 and 225 and verify that LCM $\times HCF = P$roduct of two numbers.

[2 Mark]

7. Prove that $\frac{1}{\sqrt{2}}$ is irrational.

[3 Mark]

8. The LCM of $6^4, 8^2$ and k is 12^4 where k is a positive integer. Find the smallest value of k. Show your steps.

[1 Mark]

9. Prove that $\frac{\sqrt{5}}{7}$ is an irrational number.

[5 Mark]

10. Read the source given below and answer the questions that follow:

For the screening of an informational documentary, three schools were selected by the district administration.

Name of the school	Na. of students
CA.V. Public School	78
Bal Vidya Bhawan	117
Bombay Public School	130

- During the screening, multiple rooms are used simultaneously, and each room can accommodate an equal number of students.
- All students in a particular room belong to the same school
- As a token of appreciation the district administration has provided an equal number of chocolates to each school
- When distributing these chocolates, each school distributes chocolates equally among its students, ensuring fairness and consistency.

(A) Find the maximum number of students that can be seated in one room. Show your work.

[1 Mark]

(B) What is the minimum number of rooms required? Show your work.

OR

If the students from Bal Vidya Bhawan are absent, what is the maximum number of students that can be seated in one room, ensuring that the rooms are filled with an equal number of students from both schools?

[2 Mark]

(C) What is the minimum number of chocolates provided to each school? Show your work.

[1 Mark]