

Chapter 1 Real Numbers

UNIT TEST

Duration: 1 hour

Marks: 30

SECTION A

Each carry 1 mark

1. The HCF of two numbers a and b is 5 and their LCM is 200. Find the product ab .

- a) 1 b) 1000 c) 40 d) None of these.

2. In a school there are two sections, namely A and B, of class X. There are 30 students in section A and 28 students in section B. Find the minimum number of books required for their class library so that they can be distributed equally among students of section A or section B.

- a) 58 b) 420 c) 2 d) None of these

3. The LCM of two prime numbers p and q ($p > q$) is 221, the value of $3p - q$ is

- a) 4 b) 28 c) 38 d) 48

4. Assertion: The H.C.F. of two numbers is 16 and their product is 3072. Then their L.C.M. = 162.

Reason: If a and b are two positive integers, then $H.C.F. \times L.C.M. = a \times b$

(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 but 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.

SECTION B

Each carry 2 marks

5. 144 cartons of Coke cans and 90 cartons of Pepsi cans are to be stacked in a canteen. If each stack is of the same height and if it contains equal cartons of the same drink, what would be the greatest number of cartons each stack would have?

6. Given that $\text{HCF}(306, 1,314) = 18$. Find $\text{LCM}(306, 1,314)$.

7. Show that $5\sqrt{6}$ is an irrational number.

SECTION C

Each carry 3 marks

8. Find the greatest number that will divide 382, 509 and 636 leaving remainders 4, 5 and 6 respectively.

9. Prove that $(3 + 2\sqrt{5})^2$ is irrational.

SECTION D

Each carry 5 marks

10. Find the largest number which on dividing 1251, 9377 and 15628 leaves remainders 1, 2 and 3 respectively.

11. Show that there is no positive integer n , for which $\sqrt{n-1} + \sqrt{n+1}$ is rational.

SECTION E

12. Today, she has planned a prime number game. She announces the number 2 in her class and asked the first student to multiply it by a prime number and then pass it to second student. Second student also multiplied it by a prime number and passed it to third student. In this way by multiplying to a prime number the last student got 173250. He told this number to Shalvi in class. Now she asked some questions to the students as given below.

Today, she has planned a prime number game. She announces the number 2 in her class and asked the first student to multiply it by a prime number and then pass it to second student. Second student also multiplied it by a prime number and passed it to third student. In this way by multiplying to a prime number the last student got 173250. He told this number to Shalvi in class. Now she asked some questions to the students as given below.

- i) How many students are in the class?
- ii) What is the highest prime number used by student? (Or) What is the least prime number used by students?
- iii) Which prime number has been used maximum times?

UNIT TEST

- 1. b) 1000
- 2. b) 420
- 3. c) 38
- 4. (d) Assertion (A) is false but Reason (R) is true.
- 5. 18
- 6. 22,338
- 7. Proof
- 8. 126
- 9. Proof
- 10. 625
- 11. Proof
- 12. i) 7 ii) 11 or 2 iii) 5