Multiple Choice Questions

1. If the product of two co - prime numbers is 553, then their HCF is:

(a) 7 (b) 1
(c) 79 (d) 553

2. $2+\sqrt{2}$ is :

(a) a real number (b) an integer
(c) a rational number (d) an irrational number

3. $2-\sqrt{3}$ is–

(a) an irrational number (b) an integer
(c) a rational number (d) a whole number

4. The number 1.732 is :

(a) a whole number (b) an integer
(c) a rational number (d) an irrational nuber

5. If p is a prime number, then $\sqrt{p}$ is :

(a) Prime number (b) Rational number
(c) Integer number (d) Irrational number

6. If two positive integers 'a' and 'b' are written as $a = pq^2$ and $b = p^3 q^2$, where 'p' and 'q' are prime numbers, then LCM(a, b) =

(a) pq
(b) p^3q^2
(c) p^2q^3
(d) p^2q^2

7. If $2800 = 2^x \times 5^y \times 7$, then the value of (x + y) is :

(a) 5 (b) 8
(c) 4 (d) 6

8. 180 can be expressed as a product of its prime factors as —

(a) $4 \times 9 \times 5$ (b) $2^2 \times 3^2 \times 5$
(c) $10 \times 2 \times 3^2$ (d) $25 \times 4 \times 3$

9. The LCM of smallest 2 - digit number and smallest composite number is —

(a) 4 (b) 20
(c) 40 (d) 12

10. **(HCF × LCM) for the numbers 30 and 70 is:**
(a) 21 (b) 70
(c) 2100 (d) 210

Fill in the blanks :

11. LCM of 120 and 200 is _____ .

12. If two positive integers a and b are such that their HCF is 1, then they are called _____.

Very Short Type Questions

13. Is $\left(1+\sqrt{5}\right)-\left(4+\sqrt{5}\right)$ a rational number?

14. Find the LCM of 150 and 200.

Short Type Questions

15. Find the HCF and LCM of 108, 120 and 252 using prime factorisation method.

16. Find the LCM and HCF of the pairs of integers 336 and 54 and verify that LCM× HCF = product of the two numbers.

Essay Type Questions

17. Prove that $\sqrt{2}$ is an irrational number.

18. Three sets of physics, chemistry and mathematics books have to be stacked in such a way that all the books are stored topic wise and the number of books in each stack is the same. The number of physics books is 192, the number of chemistry books is 240 and the number of mathematics books is 168. Determine the number of stacks of physics, chemistry and mathematics books.

Assertion and Reason

19. **Assertion (A):** Every irrational number is a real number.
Reason (R): Real numbers include rational and irrational numbers.
(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true

20. **Assertion (A):** The decimal expansion of a rational number is always terminating.

Reason (R): Rational numbers can always be written in the form p/q, where p and q are integers, $q \neq 0$.

(a) Both A and R are true, and R is the correct explanation of A.

(b) Both A and R are true, but R is not the correct explanation of A.

(c) A is true, but R is false.

(d) A is false, but R is true

HOTS

21. **Read the following text carefully and answer the questions that follow:**

Khushi wants to organize her birthday party. Being health conscious, she decided to serve only fruits in her birthday party. She bought 36 apples and 60 bananas and decided to distribute fruits equally among all.

i. How many guests Khushi can invite at the most?

ii. How many apples and bananas will each guest get?

iii. If Khushi decides to add 42 mangoes, how many guests Khushi can invite at the most?

OR

If the cost of 1 dozen of bananas is ₹ 60, the cost of 1 apple is ₹ 15 and cost of 1 mango is ₹ 20, find the total amount spent on 60 bananas, 36 apples and 42 mangoes.

1. **(b)** 1
2. **(d)** An irrational number
3. **(a)** An irrational number
4. **(c)** A rational number
5. **(d)** Irrational
6. **(b)** p^3q^2
7. **(d)** 6
8. **(b)** $2^2 \times 3^2 \times 5$
9. **(b)** 20
10. **(c)** 2100
11. 600
12. Co-prime
13. yes
14. LCM(150, 200) = 600.
15. HCM(108, 120, 252) = 12
    LCM(108, 120, 252) = 7560
16. HCF(54, 336) = 6
    LCM(54, 336) = 3024
    HCF × LCM = 6 × 3024 = 18144
18. Number of stacks of physics books = 8
    Number of stacks of chemistry book = 10
    Number of stack of mathematics books = 7.
19. Both A and R are true, and R is the correct explanation of A.
20. A is false, but R is true.
21.
    i. Khushi can invite guests = HCF(36, 60) = 12
    ii. Each guest gets bananas = 5 bananas
    Each guest gets apples = 3 apples
    iii. If Khushi adds 42 mangoes she can invite guests = HCF(36, 60, 42) = 6

    OR

    Total amount spent = ₹ 1680