REAL NUMBERS

MULTIPLE CHOICE (1 mark)

1. If p and q are two distinct prime numbers, then HCF is

   a) 2 b) 0 c) either 1 or 2 d) 1

2. If p and q are two distinct prime numbers, then LCM (p, q) is

   a) 1 b) p c) q d) pq

3. Let p be a prime number. The sum of its factors is

   a) p b) 1 c) p + 1 d) p – 1

4. The LCM of the smallest two digits composite number and the smallest composite number is

   a) 12 b) 20 c) 4 d) 44

5. The HCF of smallest prime number and the smallest composite number is

   a) 2 b) 4 c) 6 d) 8

6. The smallest number divisible by all the natural numbers between 1 and 10 (both inclusive) is

   a) 2020 b) 2520 c) 1010 d) 5040

7. Let n be a natural number. Then, the LCM (n, n+1) is

   a) n b) n + 1 c) n (n + 1) d) 1

8. If 3 is the least prime factor of m and 5 is the least prime factor of n, then the least prime factor of (m + n) is

   a) 11 b) 2 c) 3 d) 5

9. If HCF (x, 8) = 4, LCM (x, 8) = 24, then x is

   a) 8 b) 10 c) 12 d) 14

10. If two positive integers m and n are expressible in the form $m = pq^3$ and $n = p^3q^2$, where p, q are prime numbers, then HCF (m, n) =

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

11. If $a = 2^3 \times 3$, $b = 2 \times 3 \times 5$, $c = 3^n \times 5$ and LCM (a, b, c) = $2^3 \times 3^2 \times 5$, then n =

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

12. If n is any natural number, then $6^n - 5^n$ always end with

    a) 1 b) 3 c) 5 d) 7

ASSERTION AND REASONING (1 mark)

Each of the following examples contains Assertion (A) and Reason (R) has following four choices (a), (b), (c) and (d), only one of which is the correct answer. Mark the correct answer.

(a) A is true, R is true; and R is correct explanation for A.
(b) A is true, R is true; R is not a correct explanation for A.
(c) A is true, R is false.
(d) A is false, R is true.

1. A: If LCM (60, 72) = 360, then HCF (60, 72) = 12.

   R: HCF (a, b) x LCM (a, b) = a + b.

2. A: The product of $(5 + \sqrt{3})$ and $(2 - \sqrt{3})$ is an irrational number.

   R: The product of two irrational numbers is an irrational number.

3. A: HCF and LCM of two natural numbers are 25 and 815 respectively.

   R: LCM of two natural numbers is always divisible by their HCF.

4. A: HCF (234, 47) = 1.

   R: HCF of two co-primes is always 1.

5. A: $\sqrt{11}$ is an irrational number.

   R: If p is a prime number, then $\sqrt{p}$ is an irrational number.