



Laying the foundation of lifelong success

CHAPTER 1

Real Number

(Previous Years' Questions)

MCQ

1. For any natural number n , 6^n ends with the digit :

- (A) 0
- (B) 6
- (C) 3
- (D) 2

(2026)

2. The HCF of 960 and 432 is:

- (A) 48
- (B) 54
- (C) 72
- (D) 36

(2026)

3. The natural number 2 is:

- (A) a prime number
- (B) a composite number
- (C) prime as well as composite
- (D) neither prime nor composite

(2026)

4. The LCM of 960 and 240 is:

- (A) 960
- (B) 240
- (C) 60
- (D) 15

(2026)

5. The natural number 1 is:
(A) a prime number.
(B) a composite number.
(C) prime as well as composite.
(D) neither prime nor composite. **(2026)**
6. For any natural number n , 5^n ends with the digit :
(A) 0
(B) 5
(C) 3
(D) 2 **(2026)**
7. $(3 \times 11 \times 13 + 3)$ is:
(A) a prime number
(B) divisible by 13
(C) a composite number
(D) an odd number **(2026)**
8. The total number of factors of the square of a prime number is :
(A) 1
(B) 2
(C) 3
(D) 4 **(Comptt., 2025)**

9. If $\text{HCF}(98, 28) = m$ and $\text{LCM}(98, 28) = n$, then the value of $n - 7m$ is:
(A) 0
(B) 28
(C) 98
(D) 198 (2025)
10. If $(-1)^n + (-1)^8 = 0$, then n is :
(A) any positive integer
(B) any negative integer
(C) any odd number
(D) any even number (2025)
11. Which of the following is a rational number between $\sqrt{3}$ and $\sqrt{5}$?
(A) 1.4142387954012
(B) 2.326
(C) π
(D) 1.857142 (2025)
12. The greatest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is:
(A) 13
(B) 65

(C) 875

(D) 1750

(2025)

13. The least number which is a perfect square and is divisible by each of 16, 20 and 50, is:

(A) 1200

(B) 100

(C) 3600

(D) 2400

(2025)

14. The sum of the exponents of prime factors in the prime factorisation of 4004 is:

(A) 5

(B) 4

(C) 3

(D) 2

(2025)

15. The HCF of 40, 110 and 360 is:

(A) 40

(B) 110

(C) 360

(D) 10

(2025)

16. If $1080 = 2^p \times 3^q \times 5$, then $(p - q)$ is equal to :

(A) 6

(B) -1

-
- (C) 1
(D) 0 (2025)
17. If $a^b = 32$ where ' a ' and ' b ' are positive integers, then the value of b^{ab} is
(A) 72
(B) 5^{10}
(C) 2^{10}
(D) 5^{12} (2025)
18. If x is the LCM of 4, 6, 8 and y is the LCM of 3, 5, 7 and p is the LCM of x and y , then which of the following is true?
(A) $p = 35x$
(B) $p = 4y$
(C) $p = 8x$
(D) $p = 16y$ (2025)
19. If $x = ab^3$ and $y = a^3b$ where a and b are prime numbers, then $[\text{HCF}(x, y) - \text{LCM}(x, y)]$ is equal to :
(A) $1 - a^3b^3$
(B) $ab(1 - ab)$
(C) $ab - a^4b^4$
(D) $b(1 - ab)(1 + ab)$ (2025)

20. $(1 + \sqrt{3})^2 - (1 - \sqrt{3})^2$ is:
(A) a positive rational number.
(B) a negative integer.
(C) a positive irrational number.
(D) a negative irrational number. (2025)
21. $(\sqrt{3} + 2)^2 + (\sqrt{3} - 2)^2$ is a/an
(A) positive rational number
(B) negative rational number
(C) positive irrational number
(D) negative irrational number (2025)
22. Let $x = a^2 b^3 c^n$ and $y = a^3 b^m c^2$ where a, b, c are prime numbers. If LCM of x and y is $a^3 b^4 c^3$, then the value of $m + n$ is
(A) 10
(C) 6
(B) 7
(D) 5 (2025)
23. For any prime number p , if p divides a^2 , where a is any real number, then p also divides
(A) a
(B) $a^{\frac{1}{2}}$
(C) $a^{\frac{3}{2}}$

(D) $a^{\frac{1}{8}}$

(2025)

24. Let $a = p^2 q^3 r^n$ and $b = p^3 q^m r^2$, where p, q, r are prime numbers. If LCM of a and b is $p^3 q^4 r^3$, then the value of $3n - 2m$ is

(A) -1

(B) 1

(C) 3

(D) -3

(2025)

25. Let $p = x^2 y^3 z^n$ and $q = x^3 y^m z^2$ where x, y, z are prime numbers. If $\text{LCM}(p, q) = x^3 y^4 z^3$ then the value of $(2m + 3n)$ is

(A) 18

(B) 17

(C) 15

(D) 14

(2025)

26. $\sqrt{0.4}$ is a/an

(A) natural number

(B) integer

(C) rational number

(D) irrational number

(2025)

27. Which of the following cannot be the unit digit of 8^n , where n is a natural number?

- (A) 4
- (B) 2
- (C) 0
- (D) 6

(2025)

28. Two positive integers m and n are expressed as $m = p^5 q^2$ and $n = p^3 q^4$, where p and q are prime numbers. The LCM of m and n is:

- (A) $p^8 q^6$
- (B) $p^3 q^2$
- (C) $p^5 q^4$
- (D) $p^5 q^2 + p^3 q^4$

(Comptt., 2024)

29. If two positive integers p and q can be expressed as $p = 18a^2 b^4$ and $q = 20a^3 b^2$ where a and b are prime numbers, then LCM :

- (A) $2 a^2 b^2$
- (B) $180 a^2 b^2$
- (C) $12 a^2 b^2$
- (D) $180 a^3 b^4$

(2024)

30. If the HCF $(2520, 6600) = 40$ and LCM $(2520, 6600) = 252 \times k$, then the value of k is

(A) 1650

(B) 1600

(C) 165

(D) 1625

(2024)

31. If $a = 2^2 \times 3^x$, $b = 2^2 \times 3 \times 5$, $c = 2^2 \times 3 \times 7$ and LCM $(a, b, c) = 3780$, then x is equal to

(A) 1

(B) 2

(C) 3

(D) 0

(2024)

32. A pair of irrational numbers whose product is a rational number is :

(A) $(\sqrt{16}, \sqrt{4})$

(B) $(\sqrt{5}, \sqrt{2})$

(C) $(\sqrt{3}, \sqrt{27})$

(D) $(\sqrt{36}, \sqrt{2})$

(2024)

33. The smallest irrational number by which $\sqrt{20}$ should be multiplied so as to get a rational number, is:

(A) $\sqrt{20}$

(B) $\sqrt{2}$

(C) 5

(D) $\sqrt{5}$

(2024)

34. The HCF of two numbers 65 and 104 is 13. If LCM of 65 and 104 is $40x$, then the value of x is :

(A) 5

(B) 13

(C) 40

(D) 8

(2024)

35. If $3825 = 3^x \times 5^y \times 17^z$, then the value of $x + y - 2z$ is:

(A) 0

(B) 1

(C) 2

(D) 3

(2024)

36. The greatest number which divides 281 and 1249, leaving remainder 5 and 7 respectively, is :

(A) 23

(B) 276

(C) 138

(D) 69

(2024)

37. The LCM of three numbers 28, 44, 132 is:

(A) 258

(B) 231

(C) 462

(D) 924

(2024)

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

(A) 1

(B) 553

(C) 7

(D) 79

(2024)

39. If the prime factorisation of 2520 is $2^3 \times 3^2 \times b \times 7$, then the value of $a + 2b$ is:

(A) 12

(B) 10

(C) 9

(D) 7

(2024)

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

(A) 10

(B) 6

(C) 9

(D) 18

(2024)

41. If ' p ' and ' q ' are natural numbers and ' p ' is the multiple of ' q ', then what is the HCF of ' p ' and ' q '?

(A) pq

(B) p

(C) q

(D) $p + q$

(2023)

42. If ' n ' is a natural number, then which of the following numbers end with zero ?

(A) $(3 \times 2)^n$

(B) $(2 \times 5)^n$

(C) $(6 \times 2)^n$

(D) $(5 \times 3)^n$

(2023)

43. The ratio of HCF to LCM of the least composite number and the least prime number is :

(A) 1 : 2

(B) 2 : 1

(C) 1 : 1

(D) 1 : 3

(2023)

44. If $p^2 = \frac{32}{50}$, then p is a/an

(A) whole number

(B) integer

(C) rational number

(D) irrational number

(2023)

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

(A) 12

(B) 4

(C) 20

(D) 40

(2023)

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