1. If a number is divisible by both 5 and 12, which of the following is also a divisor of the number?
   A. 2
   B. 6
   C. 60
   D. 30

2. Which of the following numbers is an irrational number?
   A. 0.333...
   B. √64
   C. √2
   D. 1.25

3. If two positive numbers a and b are written as $a = x^3y^2$ and $b = xy^3$; x, y being prime numbers, then the LCM (Least Common Multiple) of a and b is:
   A. x^3y^3
   B. x^3y^2
   C. x^4y^5
   D. x^5y^3

4. According to Euclid's Division Lemma, for any two positive integers a and b, there exist unique integers q and r such that $a = bq + r$, where $0 \leq r < b$. If $a = 37$ and $b = 5$, what is the value of r?
   A. 1
   B. 2
   C. 7
   D. 5

5. What is the decimal expansion of the rational number 1/7?
   A. Terminating
   B. Non-terminating repeating
   C. Non-terminating non-repeating
   D. None of the above

6. The Fundamental Theorem of Arithmetic states that every composite number can be expressed as a product of primes in a unique way, up to the:
   A. Order of the primes
   B. Magnitude of the primes
   C. Sum of the primes
   D. Difference of the primes

7. If the HCF (Highest Common Factor) of 210 and 55 is expressible in the form $210 \times 5 + 55y$, then the value of y is:
   A. -1
   B. 1
   C. -9
   D. 9

8. Which of the following is not a prime number?
   A. 11
   B. 17
   C. 19
   D. 21

9. The square root of which of the following numbers would be an irrational number?
A. 144
B. 169
C. 196
D. 200

10. The product of a non-zero rational and an irrational number is:
A. Always rational
B. Always irrational
C. Sometimes rational
D. Cannot be determined

11. The HCF of two numbers is 11 and their LCM is 7700. If one of the numbers is 275, what is the other number?
A. 308
B. 280
C. 310
D. 385

12. For the number 5^12, which of the following is not a divisor?
A. 5^3
B. 5^6
C. 5^11
D. 5^13

13. If the prime factorization of a natural number n is 2^3 × 3^5 × 5^2, what is the total number of divisors of n?
A. 96
B. 48
C. 120
D. 72

14. If p and q are both prime numbers, which of the following numbers must be an irrational number?
A. (p × q)/2
B. p/q
C. √(pq)
D. 2p + 3q

15. A rational number in its decimal expansion is 0.123123123... What is the equivalent fraction?
A. 123/999
B. 123/1000
C. 41/333
D. 123/990

16. What is the smallest natural number that, when divided by 20, 28, and 32, leaves a remainder of 4 in each case?
A. 404
B. 252
C. 348

D. 140

17. The product of two numbers is 2028 and their HCF is 13. What is their LCM?
A. 156
B. 248
C. 644
D. 1560

18. If a number is expressed as 5^m × 7^n, where m and n are natural numbers, which of the following could be the value of the number?
A. 175
B. 2450
C. 25
D. All of the above

19. The Euclidean algorithm is used to calculate which of the following?
A. Prime numbers
B. HCF of two numbers
C. LCM of two numbers
D. Square root of a number

20. Which of the following is the correct representation of the number 0.216 in the form of p/q where p and q are integers and q ≠ 0?
A. 216/1000
B. 27/125
C. 54/250
D. 108/500

Here are the answers to the MCQs:

1. C. 60
2. C. √2
3. A. x^3y^3
4. B. 2
5. B. Non-terminating repeating
6. A. Order of the primes
7. C. -9
8. D. 21
9. D. 200
10. B. Always irrational
11. A. 308
12. D. 5^13
13. A. 96
14. C. √(pq)
15. A. 123/999
16. A. 404
17. B. 248
18. D. All of the above
19. B. HCF of two numbers
20. B. 27/125

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