CHAPTER-5 | Prime Time

QUIZ PART-18

1. A prime number has:
   A. one factor
   B. two factors
   C. three factors
   D. many factors (B)

Explanation : A prime number has exactly two factors: 1 and itself.

2. In the prime puzzle, what kind of numbers are filled in the boxes?
   A. odd numbers only
   B. prime numbers only
   C. even numbers only
   D. multiples of 10 only (B)

Explanation: The puzzle is solved using prime numbers only.

3. What is the prime factorization of 91?
   A. 3 × 31
   B. 5 × 19
   C. 7 × 13
   D. 9 × 11 (C)

Explanation: 91 = 7 × 13, and both 7 and 13 are prime.

4. Which is the prime factorization of 245?
   A. 5 × 5 × 7
   B. 5 × 7 × 7
   C. 7 × 35
   D. 49 × 5 (B)

Explanation: 245 = 5 × 49 = 5 × 7 × 7.

5. Which of these is true for 562?
   A. divisible by 2 only
   B. divisible by 2 and 10
   C. divisible by 4
   D. divisible by 8 (A)

Explanation : 562 ends in 2, so it is divisible by 2. Its last two digits 62 are not divisible by 4, and it does not end in 0.

6. Which statement is correct for 440?
   A. divisible only by 2
   B. divisible by 2, 4, 8, and 10
   C. divisible only by 10
   D. not divisible by 8 (B)

Explanation : 440 ends in 0, so it is divisible by 2 and 10. Its last two digits 40 are divisible by 4, and last three digits 440 are divisible by 8.

7. Are 81 and 18 co-prime?
   A. Yes
   B. No
   C. Only sometimes
   D. Cannot say (B)

Explanation : 81 = 3 × 3 × 3 × 3 and 18 = 2 × 3 × 3. They share 3, so they are not co-prime.

8. Are 30 and 415 co-prime?
   A. Yes
   B. No
   C. Only if 415 is prime
   D. Cannot say (B)

Explanation : 30 = 2 × 3 × 5 and 415 = 5 × 83. They share 5, so they are not co-prime.

9. What does commutativity of multiplication mean?
   A. grouping changes the answer
   B. order changes the answer
   C. order does not change the answer
   D. multiplication works only for primes (C)

Explanation : In multiplication, changing the order of numbers does not change the product.

10. What is the common factor of 12, 15, and 16?
    A. 1
    B. 2
    C. 3
    D. There is no common factor (A)

Explanation : The only number that divides 12, 15, and 16 is 1, so their common factor is 1.