Aptitude Problems and Solutions - Day 1

Q1: Which of the following numbers is divisible by 3?

Options: A) 234 B) 1231 C) 3456 D) 120

Answer: A, C, D

Explanation: A number is divisible by 3 if the sum of its digits is divisible by 3.

- 2+3+4 = 9 -> divisible by 3 -> A
- 1+2+3+1 = 7 -> not divisible -> B
- 3+4+5+6 = 18 -> divisible -> C
- 1+2+0 = 3 -> divisible -> D

Q2: Which of these numbers is divisible by 11?

Options: A) 121 B) 132 C) 242 D) 275

Answer: A, B, C, D

Explanation: For divisibility by 11, subtract and add digits alternately:

- 1-2+1 = 0 -> divisible -> A
- 1-3+2 = 0 -> divisible -> B
- 2-4+2 = 0 -> divisible -> C
- 2-7+5 = 0 -> divisible -> D

Q3: Which number is divisible by 9?

Options: A) 153 B) 729 C) 123 D) 162

Answer: A, B, D

Explanation: If the sum of digits is divisible by 9:

- 1+5+3 = 9 -> A

- 7+2+9 = 18 -> B

- 1+2+3 = 6 -> not divisible -> C

- 1+6+2 = 9 -> D

Q4: What is the LCM of 12 and 18?

Options: A) 36 B) 24 C) 60 D) 72

Answer: A) 36

Explanation:

- 12 = 2^2 × 3

- 18 = 2 × 3^2

- LCM = 2^2 × 3^2 = 4 × 9 = 36

Q5: What is the HCF of 54 and 24?

Options: A) 6 B) 12 C) 18 D) 24

Answer: A) 6

Explanation (Euclidean Algorithm):

- 54 % 24 = 6

- 24 % 6 = 0 -> GCD = 6

Q6: What is the smallest number divisible by 8, 12, and 18?

Options: A) 72 B) 144 C) 216 D) 36

Answer: A) 72

Explanation:

- LCM(8,12,18)

- 8 = 2^3, 12 = 2^2×3, 18 = 2×3^2

- LCM = 2^3 × 3^2 = 72

Q7: Find the smallest number that leaves remainder 1 when divided by 2, 3, and 4.

Options: A) 10 B) 13 C) 25 D) 37

Answer: B) 13

Explanation:

- LCM(2,3,4) = 12 -> 12 + 1 = 13

Q8: Find the HCF (GCD) of 54 and 24.

Options: A) 6 B) 12 C) 18 D) 24

Answer: A) 6 (Same as Q5 - confirmed)

Q9: What is the LCM of 2, 3, and 4? Then add 1.

Answer: 13 (already done in Q7)

Q10: What is the greatest 3-digit number divisible by 24, 36, and 54?

Options: A) 936 B) 972 C) 984 D) 996

Answer: None of these (Correct: 864)

Explanation:

- LCM(24,36,54) = 216

- 1000 ÷ 216 = 4.63 -> Floor = 4

- 216 × 4 = 864