1. What is the common difference in the sequence : 3, 7, 11, 15, ...?

   A. 2 B. 3

   C. 4 D. 5 (C)

Explanation : The difference between consecutive terms is 7 – 3 = 4.

2. What is the 10th term of the AP : 2, 7, 12, ...?

   A. 42 B. 47

   C. 50 D. 52 (B)

Explanation : a = 2, d = 5, a_{10} = a + 9d = 2 + 45 = 47.

3. The sequence 5, 10, 20, 40, ... is :

   A. An AP B. Not an AP

   C. A finite AP D. An AP with d = 5 (B)

Explanation : The difference between terms is not constant.

4. The nth term of an AP is given by :

   A. a_n = a + nd B. a_n = a + (n−1)d

   C. a_n = a − nd D. a_n = d + (n−1)a (B)

Explanation : Formula: a_n = a + (n - 1) d

5. What is the sum of the first 20 terms of the AP : 3, 6, 9, ...?

   A. 600 B. 630

   C. 570 D. 540 (B)

Explanation : S_n = n/2 [2a + (n − 1)d] = 10[6 + 57] = 630

6. Which of the following is not an AP ?

   A. 5, 8, 11, 14 B. 2, 4, 8, 16

   C. −1, −3, −5, −7 D. 10, 10, 10, 10 (B)

Explanation : In option B, the difference between terms is not constant.

7. If the 3rd term of an AP is 16 and the 7th term exceeds the 5th term by 12, what is the common difference?

   A. 2 B. 3

   C. 4 D. 6 (D)

Explanation : 2d = 12 ⟶ d = 6.

8. Which of the following represents the general form of an AP?

   A. a, a × d, a × d^2, ... B. a, a + d, a + 2d, ...

   C. d, d^2, d^3, ... D. a, a^2, a^3, ... (B)

Explanation : This is the general form of an AP.

9. What is the sum of first n terms if the first term is 1 and last term is n?

   A. n^2 B. n(n + 1)

   C. n(n + 1)/2 D. n(n − 1)/2 (C)

Explanation : S = n/2 (a + l) = n(n + 1)/2

10. If an AP has a = 5 and d = 3, what is the sum of the first 10 terms?

    A. 175 B. 185

    C. 190 D. 180 (B)

Explanation : S_{10} = 10/2 [2 × 5 + 9 × 3] = 5 × 37 = 185