CBSE NCERT Based Chapter wise Questions (2025-2026)
Class-X
Subject: MATHEMATICS
Chapter Name : Arithmetic Progression (Chap : 5)
Total : 6 Marks (expected)
SA-I(1)-2 Mark, CBQ(1)-4]
Level - 2 (Higher Order)

SA-I Type :

1. In an A.P. if the sum of its first n terms is $3n^2 + 5n$ and its kth term is 164, find the value of k.

Hints : $t_n = S_n - S_{n-1}$

2. Find how many integers between 200 and 500 are divisible by 8.

Hints : Find first and last term and then use n-th term formula.

3. The 4th term of an AP is zero. Prove that the 25th term of the AP is three times its 11th term.

Hints : use n-th term formula.

4. If the ratio of the sum of the first m and n terms of an AP is $m^2 : n^2$, show that the ratio of its mth and n^{th} terms is $(2m - 1) : (2n - 1)$.

Hints : Use some formula.

5. The sum of four consecutive numbers in an AP is 32 and the ratio of the product of the first and the last term to the product of two middle terms is 7 : 15. Find the numbers.

Hints : Take four numbers as a-3d, a-d, a+d, a+3d.

6. If the ratio of the 11th term of an AP to its 18th term is 2 : 3, find the ratio of the sum of the first five terms to the sum of its first 10 terms.

Hints : Use a_n formula and S_n formula.

7. Find the common difference of an A.P. whose first term is 5 and the sum of its first four terms is half the sum of the next four terms.

Hints : Here, $a_1 + a_2 + a_3 + a_4 = \dfrac{1}{2} (a_5 + a_6 + a_7 + a_8)$ and use a_n formula.

CBQ Type :

8. In a class the teacher asks every student to write an example of A.P. Two friends Geeta and Madhuri writes their progressions as –5, –2, 1, 4, ... and 187, 184, 181, ... respectively. Now, the teacher asks various students of the class the following questions on these two progressions. Help students to find the answers of the questions.

(i) Find the 34th term of the progression written by Madhuri.

(ii) Find the 19th term of the progression written by Geeta.

(iii) Which term of the two progressions will have the same value ?

OR

(iii) Find the sum of first 10 terms of the progression written by Geeta.

9. Jack is much worried about his upcoming assessment on A.P. He was vigorously practicing for the exam but unable to solve some questions. One of these questions is as shown below.

If the 3rd and the 9th terms of an A.P. are 4 and –8 respectively, then help Jack in solving the problem.

(i) What is the first term?

(ii) What is the common difference?

(iii) Which term of the A.P. is –160 ?

OR

(iii) What is the 75th term of the A.P. ?

10. Anuj gets pocket money from his father everyday. Out of the pocket money, he saves ₹ 2.75 on first day, ₹3 on second day, ₹ 3.25 on third day and so on.

On the basis of above information, answer the following questions.

(i) What is the amount saved by Anuj on 14th day?

(ii) What is the total amount saved by Anuj in 8 days?

(iii) What is the total amount saved by him in the month of June, if he starts savings from 1st June?

OR

(iii) On which day, he save ten times as much as he saved on day-1 ?

1. 27
2. 37
5. 2, 6, 10, 14 or 14, 10, 6, 2
6. 6:17
7. 2
8. (i) 88, (ii) 49 (iii) 33 (iii) OR 85
9. (i) 8, (ii) – 2, (iii) 85, (iii) OR – 140
10. (i) ₹6, (ii) ₹29, (iii) ₹191.25, (iii) OR 100.