Mathematics

Practice Test Paper 1

(Chapter 5: Arithmetic Progressions)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Use algebraic methods where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. The common difference of the AP 7, 12, 17, 22, … is:

(A) 7 (B) 5

(C) 12 (D) −5

2. Which list is an arithmetic progression?

(A) 2, 4, 8, 16, …

(B) 1, 4, 9, 16, …

(C) 1, 1, 2, 3, …

(D) −3, 1, 5, 9, …

3. The nth term of an AP with first term a and common difference d is:

(A) $a + (n - 1)d$

(B) $a + nd$

(C) $n(a + d)$

(D) $a + (n + 1)d$

4. The tenth term of the AP 2, 7, 12, … is:

(A) 42 (B) 45

(C) 47 (D) 52

5. The sum of the first 20 positive odd integers is:

(A) 210 (B) 400

(C) 420 (D) 200

SECTION B

(4 questions × 2 marks = 8 marks)

6. Write the first four terms of the AP with first term −1.25 and common difference −0.25.

7. The joined-square matchstick pattern continues as shown. Find a formula for the number of matchsticks in stage n and find the number in stage 12.



Stage 1 — 4 sticks

Stage 2 — 7 sticks

Stage 3 — 10 sticks

8. Find the sum of the first 10 terms of the AP 2, 7, 12, ….

9. Determine the first term and common difference of an AP whose third term is 5 and seventh term is 9.

SECTION C

(3 questions × 3 marks = 9 marks)

10. The eleventh term of an AP is 38 and the sixteenth term is 73. Find its thirty-first term.

11. The first 14 terms of an AP have sum 1050 and its first term is 10. Find its twentieth term.

12. A contractor pays a delay penalty of ₹200 for the first day, ₹250 for the second, ₹300 for the third, and so on. Find the total penalty for 30 days.

SECTION D

(Application Based Question - 3 marks)

13. A reading challenge starts with 18 pages on day 1. The reader reads four more pages each day than on the previous day.

(i) State the first term and common difference.

(ii) How many pages are read on day 10?

(iii) Find the total pages read in ten days.