DPP No. 38	DPP DAILY PRACTICE PROBLEMS
Subject – Mathematics **Topic :** **Class X : Arithmetic Progression**	**Course: Pinnacle** **Class - X**

Instructions : Single choice objective (Q.1 to Q.3)
Very Short Answer Type (Q.4 & Q.5)
Short Answer Type (Q.6 to Q.8)
Long Answer Type (Q.9 to Q.10)

1. Consider the sequence 1, – 2, 3, – 4, 5, – 6, ..., n $(-1)^{n+1}$. What is the average of the first 300 terms of the sequence ?
(A) – 1 (B) 0.5 (C) 0 (D) – 0.5

2. The sum of the series $45^2 - 43^2 + 44^2 - 42^2 + 43^2 - 41^2 + 42^2 - 40^2 + ...+$ to 30 terms is :
(A) 2000 (B) 1590 (C) 2143 (D) 2220

3. If the first four terms of an arithmetic sequence are :
a, 2a, b and a – 6 – b for some numbers "a" and "b", then the value of the 100^{th} term is :
(A) – 100 (B) – 300 (C) 150 (D) – 150

4. If 5 times the 5^{th} term of an A.P. is equal to 10 times the 10^{th} term. Find its 15^{th} term.

5. A man saves Rs.320 during the first month, Rs.360 in the second month, Rs. 400 in the third month. If he continues his saving in this sequence, in how many month will he save Rs. 20000 ?

6. Divide 32 into four parts which are in A.P. such that ratio of product of extremes to the product of means is 7: 15.

7. Which term of the A.P. 121, 117, 113,.... is its first negative term.

8. Find the sum of all natural numbers not exceeding 1000, which are divisible by 4 but not by 8.

9. If S_n denotes the sum of n terms of an AP whose common difference is d and first term is a, find $S_n - 2S_{n-1} + S_{n-2}$.

10. The vertices of ΔABC are A(4,6), B(1, 5) and C(7,2). A line is drawn to intersect sides AB and AC at D and E respectively such that $\frac{AD}{AB} = \frac{AE}{AC} = \frac{1}{4}$. Calculate the area of ADE and compare it with the area of ΔABC.