MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 19

Total Marks : 23

Max. Time : 22 min.

Topics : Sets & Relation, Sequence & Series

Type of Questions		**M.M., Min.**
Single choice Objective (no negative marking) Q.1,2,3,4,5,6,	**(3 marks, 3 min.)**	**[18, 18]**
Multiple choice objective (no negative marking) Q.7	**(5 marks, 4 min.)**	**[5, 4]**

1. In a certain town 25% families own a phone and 15% own a car, 65% families own neither a phone nor a car. 2000 families own both a car and a phone. Consider the following statements in this regard :

1. 10% families own both a car and a phone.
2. 35% families own either a car or a phone.
3. 40,000 families live in the town.

Which of the above statements are correct ?

(A) 1 and 2 (B) 1 and 3 (C) 2 and 3 (D) 1, 2 and 3

2. $A \cap (B \cup A)' =$

(A) ϕ (B) A (C) B (D) $A \cap B$

3. In a school there are 20 teachers who teach mathematics or physics. Of these, 12 teach mathematics and 4 teach both physics and mathematics, the number of teachers who teach physics are-

(A) 12 (B) 16 (C) 8 (D) 4

4. Sum of all the odd numbers between 1 and 1000 which are divisible by 3 is

(A) 83667 (B) 167334 (C) 82667 (D) 166334

5. Let a_n be the n^{th} term of an A.P. If $\sum_{r=1}^{100} a_{2r} = \alpha$ & $\sum_{r=1}^{100} a_{2r-1} = \beta$, then the common difference of the A.P. is (A) $\alpha - \beta$ (B) $\beta - \alpha$ (C) $\frac{\alpha - \beta}{2}$ (D) none of these

6. The ratio of sums of n – terms of two arithmetic progressions is $(3n - 13) : (5n + 21)$. The ratio of 24^{th} term of the two series is :

(A) 59 : 141 (B) 7 : 17 (C) 1 : 2 (D) none of these

7. The sum of the first three consecutive terms of an A.P. is 9 and the sum of their squares is 35. Then sum to n terms of the series is :

(A) $n(n + 1)$ (B) n^2 (C) $n(4 - n)$ (D) $n(6 - n)$

Answers Key

1. (C)

2. (A)

3. (A)

4. (A)

5. (D)

6. (C)

7. (B)(D)