**MATHEMATICS**

**DPP**

DAILY PRACTICE PROBLEMS

# DPP No. 74

**Total Marks : 33**

**Max. Time : 36 min.**

**Topics : Permutation & Combination, Probability**

| **Type of Questions** | | **M.M., Min.** |
|---|---|---|
| Single choice Objective (no negative marking) Q.1,2,3,4,5,6,7 | (3 marks, 3 min.) | [21, 21] |
| Subjective Questions (no negative marking) Q.8,9,10 | (4 marks, 5 min.) | [12, 15] |

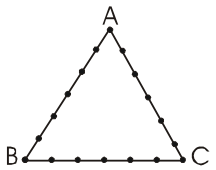
1. Number of natural number between 100 and 1000 such that at least one of their digits is 6, is
(A) 243 (B) 252 (C) 258 (D) 648

**2.** 6 chocolates out of 8 different brands available in the market are choosen, what is the probability that all the chocolates are of different brands.

(A) $\frac{{}^{8}C_{6}}{{}^{13}C_{6}}$ (B) $\frac{{}^{8}C_{6}}{{}^{13}C_{8}}$ (C) $\frac{{}^{8}C_{6}}{8^{6}}$ (D) None of these

**3.** If a, b, c are odd positive integer then number of positive integral solution of a + b + c = 13.
(A) 15 (B) 21 (C) 56 (D) 28

**4.** 18 points are indicated on the perimeter of a triangle ABC (see figure).
If three points are choosen probability that it will form a triangle :-




(A) $\frac{331}{816}$ (B) $\frac{1}{2}$

(C) $\frac{355}{408}$ (D) $\frac{711}{816}$

**5.** A natural number is selected at random from the set X = {x : $1 \le x \le 100$}. Probability that the number satisfies the inequation $x^2 - 13x \le 30$ is

(A) $\frac{9}{50}$ (B) $\frac{3}{20}$ (C) $\frac{2}{11}$ (D) none of these

**6.** A five digits number of the form x y z y x is choosen, probability that x < y is :

(A) $\frac{35}{90}$ (B) $\frac{6}{15}$ (C) $\frac{19}{45}$ (D) $\frac{13}{30}$

**7.** The probability of choosing randomly a number which is from 1 to 90 divisible by 6 or 8 is

(A) $\frac{1}{6}$ (B) $\frac{11}{90}$ (C) $\frac{1}{30}$ (D) $\frac{23}{90}$

**8.** A seven digit number is choosen. What the probability that even number occupy even places ?

**9.** (i) A coin is tossed 20 times find the probability that number of tail obtained is more than number of heads.
(ii) From 52 playing card person A picks one card and then person B picks another cards randomly. Find the probability that these card are of different colours.

**10.** 4 people are selected randomly out of six married couple. Find the probability that
(i) exactly one married couple is formed (ii) exactly two married couple are formed
(iii) they do not form a married couple.

# Answers Key

**1.** (B) **2.** (A) **3.** (B) **4.** (D)

**5.** (B) **6.** (B) **7.** (D) **8.** $\frac{9\times5^3}{9\times10^6}$

**9.** (i) $\frac{1}{2}\left(1-\frac{^{20}C_{10}}{2^{20}}\right)$ (ii) $\frac{26}{51}$

**10.** (i) $\frac{240}{^{12}C_4}$ (ii) $\frac{15}{^{12}C_4}$ (iii) $\frac{240}{^{12}C_4}$