PROBLEM SET-05

Q.1   The kindergarten teacher has 25 kids in her class. She takes 5 of them at a time, to zoological garden as often as she can, without taking the same 5 kids more than once. Find the number of visits, the teacher makes to the garden and also the number of of visits every kid makes.

(A) $^{25}C_5 - {}^{24}C_5$ (B) $^{24}C_5$ (C) $^{24}C_4$ (D) none

Q.2   Number of ways in which 8 people can be arranged in a line if A and B must be next to each other and C must be somewhere behind D, is equal to

(A) 10080   (B*) 5040   (C) 5050   (D) 10100

Q.3   In a certain algebraical exercise book there are 4 examples on arithmetical progressions, 5 examples on permutation - combination and 6 examples on binomial theorem. Number of ways a teacher can select for his pupils atleast one but not more than 2 examples from each of these sets, is

Q.4   In how many different ways a grandfather along with two of his grandsons and four grand daughters can be seated in a line for a photograph so that he is always in the middle and the two grandsons are never adjacent to each other.

Q.5   The number of 5 digit numbers such that the sum of their digits is even is

(A) 50000   (B*) 45000   (C) 60000   (D) none

Q.6   A forecast is to be made of the results of five cricket matches, each of which can be win, a draw or a loss for Indian team. Find

(i) the number of different possible forecasts

(ii) the number of forecasts containing 0,1,2,3,4 and 5 errors respectively

Q.7   The number of ways in which 8 distinguishable apples can be distributed among 3 boys such that every boy should get atleast 1 apple & atmost 4 apples is K · $^7P_3$ where K has the value equal to

(A) 14   (B) 66   (C) 44   (D*) 22

Q.8   A women has 11 close friends. Find the number of ways in which she can invite 5 of them to dinner, if two particular of them are not on speaking terms & will not attend together.

Q.9   A rack has 5 different pairs of shoes. The number of ways in which 4 shoes can be chosen from it so that there will be no complete pair is

(A) 1920   (B) 200   (C) 110   (D*) 80

Q.10   Find the number of different ways in which 8 different books can be distributed among 3 students, if each student receives atleast 2 books.

ANSWER KEY

1.   **(B)**   2.   **(B)**   3.   **(3150)**   4.   **(528)**   5.   **(B)**

6.   **(i), (243); (ii), (1,10,40,80,80,32)**   7.   **(D)**   8.   **(378)**

9.   **(D)**   10.   **(2940)**