PROBLEM SET-04

Q.1 Find the number of ways in which two squares can be selected from an 8 by 8 chess board of size 1×1 so that they are not in the same row or in the same column.

Q.2 Number of different natural numbers which are smaller than two hundred million & using only the digits 1 or 2 is:

(A) $(3) \cdot 2^8 - 2$ (B) $(3) \cdot 2^8 - 1$

(C) $2(2^9 - 1)$ (D) none

Q.3 Q.3 5 Indian & 5 American couples meet at a party & shake hands. If no wife shakes hands with her own husband & no Indian wife shakes hands with a male, then the number of hand shakes that takes place in the party is

(A) 95 (B) 110 (C) 135 (D) 150

Q.4 The number of n digit numbers which consists of the digits 1&2 only if each digit is to be used atleast once, is equal to 510 then n is equal to:

(A) 7 (B) 8 (C) 9 (D) 10

Q.5 Number of six digit numbers which have 3 digits even &3 digits odd, if each digit is to be used atmost once is

Q.6 Find the number of odd integers between 1000 and 8000 which have none of their digits repeated.

Q.7 Number of four digit numbers with all digits different and containing the digit 7 is

(A) 2016 (B) 1828 (C) 1848 (D) 1884

Q.8 A 5 digit number divisible by 3 is to be formed using the numerals 0,1,2,3,4&5 without repetition. The total number of ways this can be done is :

(A) 3125 (B) 600 (C) 240 (D) 216

Q.9 A committee of 5 is to be chosen from a group of 9 people. Number of ways in which it can be formed if two particular persons either serve together or not at all and two other particular persons refuse to serve with each other, is

(A) 41 (B) 36 (C) 47 (D) 76

Q.10 A question paper on mathematics consists of twelve questions divided into three parts A, B and C, each containing four questions. In how many ways can an examinee answer five questions, selecting atleast one from each part.

(A) 624 (B) 208 (C) 2304 (D) none

Q.11 Consider 8 vertices of a regular octagon and its centre. If T denotes the number of triangles and S denotes the number of straight lines that can be formed with these 9 points then T − S has the value equal to

(A) 52 (B) 56 (C) 48 (D) 44

ANSWER KEY

1.	(1568)	2.	(A)	3.	(C)
4.	(C)	5.	(64800)	6.	(1736)
7.	(C)	8.	(D)	9.	(A)
10.	(A)	11.	(A)		