1. Nov/2020/Paper_12/No.8

(a) Find the number of ways in which 12 people can be put into 3 groups containing 3, 4 and 5 people respectively. [3]

(b) 4-digit numbers are to be formed using four of the digits 2, 3, 7, 8 and 9. Each digit may be used once only in any 4-digit number. Find how many 4-digit numbers can be formed if

(i) there are no restrictions, [1]

(ii) the number is even, [1]

(iii) the number is greater than 7000 and odd. [3]

2. Nov/2020/Paper_23/No.6

A 4-digit code is to be formed using 4 different numbers selected from 1, 2, 3, 4, 5, 6, 7, 8 and 9. Find how many different codes can be formed if

(a) there are no restrictions, [1]

(b) only prime numbers are used, [1]

(c) two even numbers are followed by two odd numbers, [2]

(d) the code forms an even number. [2]

3. June/2020/Paper_12/No.4

(a) (i) Find how many different 5-digit numbers can be formed using the digits 1, 2, 3, 5, 7 and 8, if each digit may be used only once in any number. [1]

(ii) How many of the numbers found in **part (i)** are not divisible by 5? [1]

(iii) How many of the numbers found in **part (i)** are even and greater than 30 000? [4]

(b) The number of combinations of n items taken 3 at a time is 6 times the number of combinations of n items taken 2 at a time. Find the value of the constant n. [4]

4. June/2020/Paper_21/No.4

(a) In an examination, candidates must select 2 questions from the 5 questions in section A and select 4 questions from the 8 questions in section B. Find the number of ways in which this can be done. [2]

(b) The digits of the number 6 378 129 are to be arranged so that the resulting 7-digit number is even. Find the number of ways in which this can be done. [2]