**Tute -8 (19-24 March)**

Q.1 In a company, ID cards have 5 digit numbers.   
a) How many ID cards can be formed if repetion of the digit is allowed?   
b) How many ID cards can be formed if repetion of the digit is not allowed?

Q.2 Using the digits 1, 2, 3 and 5, how many 4 digit numbers can be formed if   
a) The first digit must be 1 and repetition of the digits is allowed?   
b) The first digit must be 1 and repetition of the digits is not allowed?   
c) The number must be divisible by 2 and repetion is allowed?   
d) The number must be divisible by 2 and repetion is not allowed?

Q.3 There are 6 periods in each working day of a school. In how many ways can one organize 5 subjects such that each subject is allowed at least one period?

Q.4 Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?

Q.5 In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

Q.6 In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?

Q.7 In how many ways can 8 Indians and, 4 American and 4 Englishmen can be seated in a row so that all person of the same nationality sit together?

Q. 8 How many different words can be formed using all the letters of the word ALLAHABAD?  
a) When vowels occupy the even positions.  
b) Both L do not occur together.