CHAPTER 7 - PERMUTATIONS AND COMBINATIONS

Questions based on Focus Area

1. A group consists of 4 girls and 7 boys. In how many ways, can a team of 5 members can be selected if the team should have at least 3 girls?

2. How many chords can be drawn through 21 points on a circle?

3. How many three digit numbers can be formed by using the digits 1,2,3,4,5,6?

4. How many chords can be drawn through 32 points on a circle?

5. How many four digit numbers can be formed using the digits 9,8,7,6,5,4, if no digits are repeated?

6. In how many ways a committee of 3 persons can be formed from a group of 2 men and 3 women?

7. A committee of 7 has to be formed from 9 boys and 4 girls. In how many ways can this be done if committee consists of at least 3 girls?

8. Given 5 flags of different colours, how many different signals can be generated if each single requires the use of 2 flags one below the other?

9. What is the number of ways of choosing 4 cards from a pack of 52 playing cards? In how many of these:
   i)   Four cards are of the same suit?
   ii) Cards are of the same colour?

10. In how many ways can cricket of 11 players be selected from 15 players?

11. A bag contains 5 white, 6 red and 4 blue balls. Determine the number of ways in which 2 white, 3 red and 2 blue balls can be selected.

12 . If there are 12 persons in a party and each of them shake hands with all others, what is the total number of handshakes?

13. How many 3 digit numbers can be formed with the digit 0,1,2,3 and 4?

14 . A committee of 3 persons is to be constituted from a group of 2 men and 3 woman.

   a) In how many ways can this be done?

   b) How many of these committees would consist of 1 man and 2 women?

15. Given that $^nC_{11} = {^nC_9}$, where 'n' is a natural number, find the value of 'r' making ^nC_r the largest.

16. a) Write the value of $^7C_5$.

   b) If $^{2n}C_3 : {^nC_3} = 12 : 1$, then find n.

17. a) $^nC_{n-1}$ =………………

   b) If $^nC_9 = {^nC_8}$, find $^nC_2$