

**Comprehensive Test Series-03**  
**Permutation and Combination**

**TIME: 1 hr.**

**MM: 40**

**General Instructions:**

- All Questions are compulsory.
- Each question carries 3 marks.

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- Q.1 In how many ways can the letters of the word ASSASSINATION be arranged so that all the S's are together?
- Q.2 If the different permutations of all the letter of the word EXAMINATION are listed as in a dictionary, how many words are there in this list before the first word starting with E?
- Q.3 In how many ways can 5 girls and 3 boys be seated a row so that no two boys are together?
- Q.4 Find the number of words or without meaning which can be made using all the letters of the word AGAIN. If these words are written as in a dictionary. What will be the 50<sup>th</sup> word?
- Q.5 How many words, with or without meaning, each of 3 vowels and 2 consonants can be formed from the letters of the word INVOLUTE?
- Q.6 To prove  ${}^nC_r + {}^nC_{r-1} = {}^{n+1}C_r$
- Q.7 What is the number of ways of choosing 4 cards form a pack of 52 playing cards? In how many of these
- (i) four cards are of the same suit,
  - (ii) four cards belong to four different suits,
  - (iii) are face cards,
  - (iv) two are red cards and two are black cards,
  - (v) cards are of the same colour?
- Q.8 In how many of the distinct permutations of the letters in MISSISSIPPI do the four I's not come together?
- Q.9 In how many ways can the letters of the word PERMUTATIONS be arranged if the
- (i) words start with P and end with S,
  - (ii) vowels are all together,
  - (iii)there are always 4 letters between P and S?
- Q.10 Find the number of arrangement of the letters of the word INDEPENDENCE. In how many of these arrangements,
- (i) do the words start with P
  - (ii) do all the vowels always occur together
  - (iii) do the vowels never occur together
  - (iv) do the words begin with I and end in P?