

Comprehensive Test Series-02
Permutation and Combination

TIME: 1 hr.

MM: 50

General Instructions:

- All Questions are compulsory.
 - Each question carries 3 marks.
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- Q.1 How many 5-digit telephone numbers can be constructed using the digits 0 to 9 if each numbers starts with 67 and no digit appears more than once?
- Q.2 In how many ways can 5 persons draw water from 5 taps, assuming no tap remains unused?
- Q.3 Evaluate: $\frac{1}{5!} + \frac{1}{6!} + \frac{1}{7!}$
- Q.4 How many 4-digit numbers are there with no digit repeated?
- Q.5 Find r if ${}^5P_r = {}^6P_{r-1}$.
- Q.6 In how many of the distinct permutations of the letters in MISSISSIPPI do four I's not come together?
- Q.7 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?
- Q.8 Find the number of permutations that can be had from the letter of the word DAUGHTER with.
i) D and R occupying end places
ii) no even two vowels together
iii) vowels occupying even places.
- Q.9 Determine n if ${}^{2n}C_3 : {}^nC_2 = 12 : 1$
- Q.10 Determine the number of 5 card combinations out of a deck of 52 cards if there is exactly one ace in each combination.
- Q.11 A bag contains 5 black and 6 red balls. Determine the number of ways in which 2 black and 3 red balls can be selected.
- Q.12 In how many ways can a student choose a programme of 5 courses if 9 courses are available and 2 specific courses are compulsory for every student?
- Q.13 In an examination a candidate has to pass in each of the 5 subjects. In how many ways can he fail?
- Q.14 In an examination, a question paper consists of 12 questions divided into two parts i.e., Part I and Part II containing 5 and 7 questions, respectively. A student is required to attempt 8 questions in all, selecting at least 3 from each part. In how many ways can a student select the questions?
- Q.15 From a class of 25 students, 10 are to be chosen for an excursion party. There are 3 students who decide that either all of them will join or none of them will join. In how many ways can the excursion party be chosen?
- Q.16 In how many ways can the letters of word ASSASSINATION be arranged so that all the S's are together?