Permutation and Combination Test

Instructions: Choose the correct answer for each question.

1. Create a 3-digit number using the numbers 1, 2, 3, 4, 5, and 6 such that the value is greater than 300 and digits cannot be repeated.

A. 60 B. 72 C. 80 D. 96

2. A computer password consists of 3 letters followed by 5 digits. How many possible passwords can you create if the letters and digits are not repeated?

A. 235,200,000 B. 471,744,000 C. 789,360,000 D. 1,018,800,000

3. If a family wants to have five children, how many possible gender combinations may they have?

A. 16 B. 25 C. 32 D. 64

4a. A conference hall has five doors. You can enter through any door and leave through any door.

A. 15 B. 20 C. 25 D. 30

4b. You should not use the same door as you enter the hall.

A. 15 B. 20 C. 25 D. 30

5. How many even numbers can be formed using all the digits 0, 1, 2, 3, 4 without repetition?

A. 24 B. 36 C. 48 D. 60

6. In how many ways can the letters in the word 'CHAIR' be arranged, with or without meaning?

A. 60 B. 100 C. 120 D. 240

7. A group of 7 students stand in a row to take a photo. In how many ways can they be arranged?

A. 720 B. 2,520 C. 5,040 D. 10,080

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8. A committee of 4 members must be selected from a group of 6 people to take on specific roles such as President, Vice-president, Secretary and Treasurer. How many different arrangements of roles are possible?

A. 120 B. 240 C. 360 D. 720

9a. A family of 5: father, mother, grandma, son, and daughter is to sit on a bench. The father and mother must sit together.

A. 24 B. 36 C. 48 D. 60

9b. All the girls must sit together.

A. 24 B. 36 C. 48 D. 72

9c. All the boys sit together, and all the girls must sit together.

A. 12 B. 24 C. 36 D. 48

9d. The father must sit in the middle.

A. 12 B. 18 C. 24 D. 48

9e. Boys and girls must sit alternately.

A. 0 B. 2 C. 4 D. 6

10a. Arrange the word 'BALLOON' with no restriction.

A. 630 B. 1,260 C. 2,520 D. 5,040

10b. All the vowels must be kept together.

A. 120 B. 180 C. 360 D. 720

10c. L must not be the first letter.

A. 720 B. 840 C. 900 D. 1,260

10d. All the vowels must be kept together and all the consonants must be kept together.

A. 36 B. 48 C. 60 D. 72

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