

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

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