# Permutations

1. Using all the letters of the word GIFT how many distinct words can be formed?

A. 22 words B. 24 words C. 256 words D. 200 words

ANSWER : 4! = 24words OPTION = B

2. Find out how many distinct three-digit numbers can be formed using all the digits of 1, 2, and 3.

A. 4 B. 5 C. 6 D. 7

ANSWER : 3! = 6 OPTION = C

3. In how many different ways can five friends sit for a photograph of five chairs in a row?

A. 120 ways B. 24 ways C. 240 ways D. 720 ways

ANSWER : 5! = 120 ways OPTION = A

4. In how many different ways can the letters of the word MAGIC can be formed?

A. 24 ways B. 120 ways C. 240 ways D. 720 ways

ANSWER : 5! = 120 ways OPTION = B

5. For the above word how many different types of arrangement are possible so that the vowels are always together?

A. 44 words B. 24 words C. 48 words D. 60 words

ANSWER : 4! \* 2! = 48 words OPTION = C

6. In how many ways can the letters of the word BEAUTY be arranged?

A. 360 B. 5! C. 6! D. 7!

ANSWER : 6! = 720 OPTION = C

7. For the above word, if the vowels are always together than how many types of arrangement can be possible?

A. 4! \* 3! B. 6! C. 4! D. 4! \* 3

ANSWER : 4! \* 3! = 144 OPTION = A

8. A person has 4 coins if different denominations. What is the number of different sums of money the person can form?

A. 12 B. 15 C. 11 D. 16

ANSWER : 2\*\*4 = 16 OPTION = D

# Permutations and Combinations

**1. How many numbers are there between 99 and 1000, having at least one of their digits 7?**

**ANSWER: 252**

**2. How many 5-digit telephone numbers can be constructed using the digits 0 to 9, if each number starts with 67 and no digit appears more than once?**

**ANSWER : 336 OR 8\*7\*6**

**3. Find the number of permutations of the letters of the word ALLAHABAD.**

**ANSWER : 7560**

**4. In how many of the distinct permutations of the letters in MISSISSIPPI do the four Is not come together?**

**ANSWER: 33810**

**5. In a small village, there are 87 families, of which 52 families have at most 2 children. In a rural development programme, 20 families are to be chosen for assistance, of which at least 18 families must have at most 2 children. In how many ways can the choice be made?**

**ANSWER: 52C18 \* 35C2 + 52C19 \* 35C1 + 52C20**

**6. A committee of 3 persons is to be constituted from a group of 2 men and 3 women. In how many ways can this be done? How many of these committees would consist of 1 man and 2 women?**

**ANSWER : 60,6**

**7. Determine the number of 5 card combinations out of a deck of 52 cards, if there is exactly one ace in each combination.**

**ANSWER : 999600**

**8. A group consists of 4 girls and 7 boys. In how many ways can a team of 5 members be selected if the team has**

**(i) no girls**

**(ii) at least one boy and one girl**

**(iii) at least three girls**

**ANSWER : (i) 21 (ii)441 (iii)91**

**9. How many numbers greater than 1000000 can be formed using the digits 1, 2, 0, 2, 4, 2, 4?**

**ANSWER : 360**

**10. 18 mice were placed in two experimental groups and one control group, with all groups equally large. In how many ways can the mice be placed into three groups?**

**ANSWER : 18C3=816**