

Chapter 07

PERMUTATIONS AND COMBINATIONS

PERMUTATION:

In case of permutation, order is extremely important.

Let us consider a number with three digits 1, 2 and 3.

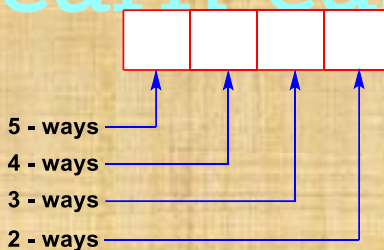
Then possible numbers are 123, 132, 213, 231, 312, 321.

When a number of objects taken some or all at a time, is arranged in a definite order then such arrangements are called as **permutation**.

Now consider five vowels: a, e, i, o, u.

Suppose we have to create four letters word with five vowels with or without meaning. So we are asking to go for all possible arrangements of four letters.

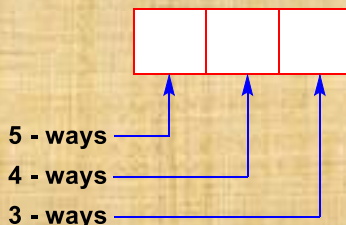
First of all create four blocks:



Total number of ways = $5 \times 4 \times 3 \times 2 = 120$ ways,

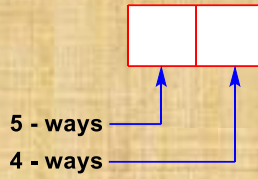
(Using Multiplication rule).

If we have been asked to form three letters word, then



Total number of ways = $5 \times 4 \times 3 = 60$ ways.

If we have been asked to form two letters word, then



Total number of ways = $5 \times 4 = 20$ ways.

