

**3. How many 4-letter code can be formed using the first 10 letters of the English alphabet, if no letter can be repeated?**

**Solution:**

Let the 4 digit code be 1234.

At the first place, the number of letters possible is 10.

Let's suppose any 1 of the ten occupies place 1.

Now, as the repetition is not allowed, the number of letters possible at place 2 is 9. Now at 1 and 2, any 2 of the 10 alphabets have been taken. The number of alphabets left for place 3 is 8 and similarly the number of alphabets possible at 4 is 7.

Therefore the total number of 4 letter codes= $10 \times 9 \times 8 \times 7=5040$ .