

**4. 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?**

**Solution:**

Let the five-digit number be ABCDE. Given that first 2 digits of each number is 67. Therefore, the number is 67CDE.

As the repetition is not allowed and 6 and 7 are already taken, the digits available for place C are 0,1,2,3,4,5,8,9. The number of possible digits at place C is 8. Suppose one of them is taken at C, now the digits possible at place D is 7. And similarly, at E the possible digits are 6.

∴ The total five-digit numbers with given conditions =  $8 \times 7 \times 6 = 336$ .