Combinations Ex 17.3 Q1

Total vowels are 5

Total consonants are 17

Vowels formed from 5 vowels and 17 consonants by selecting 2 vowels and 3 consonants are.

$= {}^{5}C_{2} \times {}^{17}C_{3} \times 5!$

$= \frac{5!}{2!\,3!} \times \frac{17!}{3!\,4!} \times 120$

$= \frac{5 \times 4}{2} \times \frac{17 \times 16 \times 15}{3 \times 2} \times 120$

$= 10 \times 17 \times 8 \times 5 \times 120$

$= 400 \times 17 \times 120$

$= 6800 \times 120$

$= 816000$

Combinations Ex 17.3 Q2

Total persons=10

Number of persons to be selected=5

Condition $= p_1$ must and p_4, p_5 must not be there

Remaining number of persons required is 4 out of 10-3=7

${}^{7}C_{4} \times 5!$

Combinations Ex 17.3 Q3

(i) Total number of 4 letter words formed from the letters of the word 'MONDAY' is $= {}^{6}C_{4} \times 4! = 360$

(ii) Total number of words formed by using all letters of the word 'MONDAY' is $= 6! = 720$

(iii)

There are two vowels A and O. So, first place can be filled in 2 ways and the remaining 5 places can be filled in 5! ways.

So, total number of words beginning with a vowel $= 2 \times 5! = 240$

Combinations Ex 17.3 Q4

First separate the 3 and then arrange the remaining things

${}^{n-3}C_{r-3}\,(r-2)! \times 3!$

Combinations Ex 17.3 Q5

I N V O L U T E

Number of letters = 8

Wovels = I,O,U,E

Consonents = N,V,L,T,

Number of ways to select 3 wovels = ${}^4C_3$

Number of ways to select 2 consonents = ${}^4C_2$

Number of ways to arrange these five letters

$= {}^4C_3 \times {}^4C_2 \times 5!$

$= 4 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$

$= 2880$

Required number of ways = 2880

********** END **********