

## 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.

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

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

$$=\frac{5\times4}{2}\times\frac{17\times16\times15}{3\times2}\times120$$

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

$$= 400 \times 17 \times 120$$

= 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

Combinations Ex 17.3 Q3

- (i) Total number of 4 letter words formed from the letters of the word 'MONDAY' is =  ${}^6C_4 \times 4! = 360$
- (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

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

Combinations Ex 17.3 Q5

## INVOLUTE

Number of letters = 8 Wovels = I,O,U,E Consonents = N,V,L,T, Number of ways to select 3 wovels =  ${}^{4}C_{3}$ Number of ways to select 2 consonents =  ${}^{4}C_{2}$ Number of ways to arrange these five letters  $= {}^{4}C_{3} \times {}^{4}C_{2} \times 5!$  $= 4 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ 

= 2880

Required number of ways = 2880

\*\*\*\*\*\*\* END \*\*\*\*\*\*\*