PERMUTATION AND COMBINATION

Permutation : Arrangement of objects
Combination : selection of objects

* Fundamental Principal of counting

let, Work A can be done in "m" different ways
and another work B can be done in 'n' different ways

(1) Addition Rule : Total no. of ways of doing ~~work~~
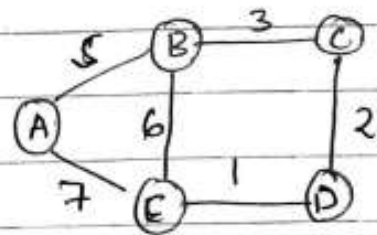either work A or work B is

$$\boxed{m+n}$$

(2) Multiplication Rule : Total no. of ways of doing work A
and work B is $\boxed{m \times n}$

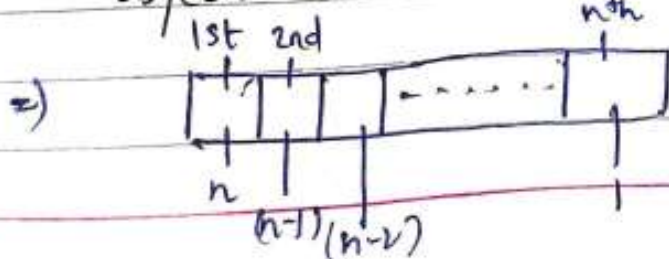Q1) Find the total no. of ways of going A to ~~B~~ E

→ Total ways =
AE + ABE + ABCDE
= 7 + 5×6 + 5×3×2×1
= 7 + 30 + 30
= <u>67</u>.

* <u>Theorem 1</u>
Total no. of ways of arranging "n" different
objects in a row is $\boxed{n!}$

1st 2nd   nth

→ Total ways = $n(n-1)(n-2)\ldots\ldots 1$

=) $n!$

n

$(n-1)(n-2)$