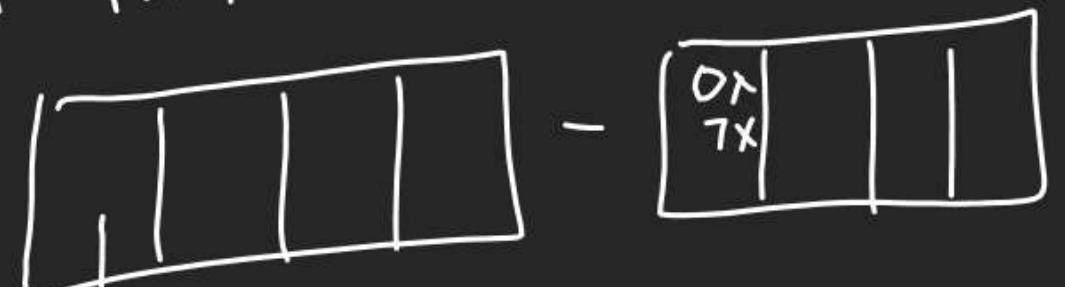


DPP-4Q₆ CopyQ₇ 4 digit No → all digit diff.
(containing 7)

Total - No 7



$$9 \times 9 \times 8 \times 7 - 8 \times 8 \times 7 \times 6.$$

Q₈ div-/Q₉

Q A committee of 5 is to be chosen from 9 ppl
Now it can be formed if 2 particular persons
either serve together or 2 other persons
refuse to serve with each other.

राष्ट्र एवं AB, राष्ट्र-1 ही अरक्षी → C, D

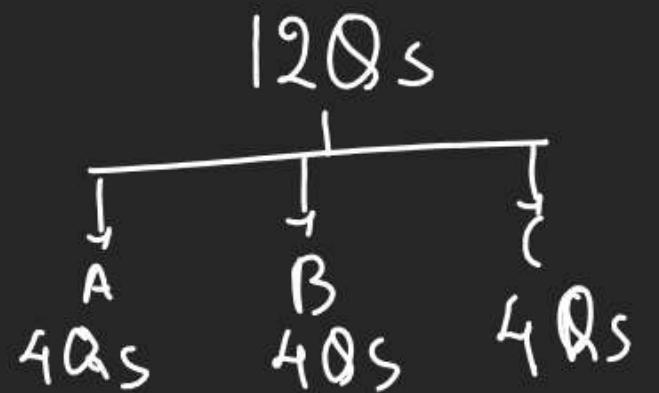
When
AB Included → ${}^7C_3 - {}^5C_1$
Case 1

AB Excluded → ${}^7C_5 - {}^5C_3$
Case 2

Q10 12 Qs Paper divided into 3 parts A, B, C

Each containing 4 Qs. If H M W are examinee

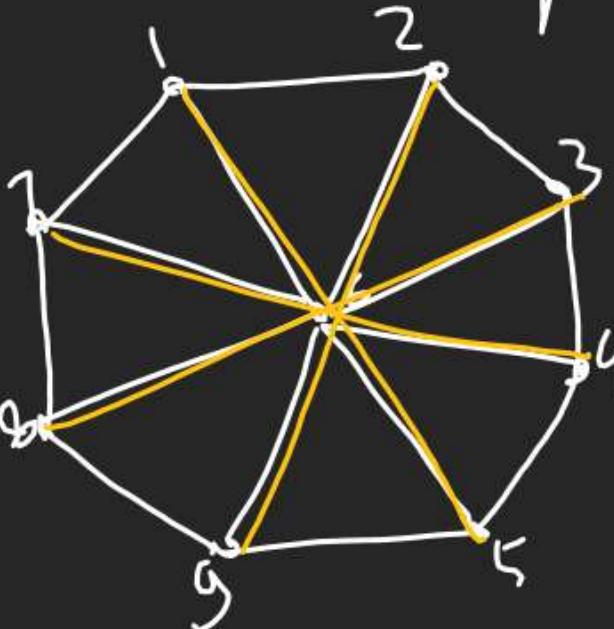
can answer 5 Qs, selecting at least
one from each part.



$$\begin{aligned} & 4_{C_2} \times 4_{C_2} \times 4_{C_1} + 4_{C_2} \times 4_{C_1} \times 4_{C_2} + 4_{C_1} \times 4_{C_2} \times 4_{C_2} \\ & + 4_{C_1} \times 4_{C_1} \times 4_{C_3} + 4_{C_1} \times 4_{C_3} \times 4_{C_1} + 4_{C_3} \times 4_{C_1} \times 4_{C_1} \end{aligned}$$

Q Regular Octagon with centre. T denotes No of

S denote No of St. Line $\Rightarrow T - S = 9$



$$\binom{9}{3} - 4 - \binom{8}{2}$$

Q A tamer of wild animals has to bring one by one 5 lions & 4 tigers to circus arena. The no. of ways this can be done if no 2 tigers immediately follow each other!

$$= \left[\begin{matrix} 5 \\ \text{Lions} \\ \downarrow \\ 2 \end{matrix} \times \left(\begin{matrix} 6 \\ 4 \\ \uparrow \\ 6 \text{ gaps} \\ \text{Arr.} \end{matrix} \right) \times \left(\begin{matrix} 4 \\ 4 \text{ gaps} \\ 4 \text{ tigers} \\ \uparrow \\ 4 \text{ gaps} \end{matrix} \right) \right]$$

Select

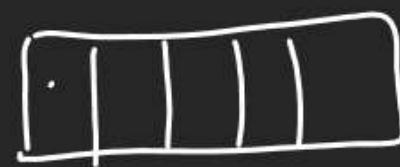
9
5

Q If m denotes No of 5 digit's No. if each successive digit one in their descending order of their magnitude & n is corresponding figure, when digits are in ascending Magnitude then $m-n=?$

9	7	6	5	2
---	---	---	---	---

$$m = {}^{10}_{(5)} \times 1$$

$$n = {}^9_{(5)} \times 1$$



Permutation of Alike/Repeated Objects.

Arrangements:

Q No of ways to Arrange "APPLE"



$$= 5C_2 \times 1 \times 1 \times 1 = 10$$

$$= \frac{5!}{2!} \times 1 = \frac{120}{2} = 60$$

Q No W to Arr. MUINNI

$$= \frac{5!}{2!}$$

Q No W to Permut.

MAHABHARAT.

$$= \frac{10!}{4! 2!}$$

* No. of Permutation of n objects

of which "p" object alike & rest distinct.

$$= \frac{11!}{2!}$$

(2) No of Permutation of n objects
of which p_1 of 1 kind, p_2 of 2nd kind = $\frac{n!}{p_1! p_2! r!}$
 r of 3rd kind, Rest distinct

Q How many Anagrams
can be formed using
Alphabets of BANANA

Total word from - himself.
Alphabets

$$\frac{6!}{3! 2!} = 120$$

$$\frac{720}{6 \times 2} - 1 = 59$$

$$\frac{n!}{p_1! p_2! r!}$$

Q No of Permutation of Letter if

Word ALLAHABAD. How many
of them

(1) Start with A.

$$\begin{array}{c} A \\ \downarrow \\ f \end{array} - - - - -$$

$$1 \times 8! \\ \hline 9! 3!$$

(2) Ends with L.

$$- - - - - L$$

$$8! \\ \hline 4!$$

(3) Starts with A
&
Ends with L.

$$A - - - - - L$$

$$= \frac{17}{3!}$$

Q S. Based on ALIKE / Repeated Objects

Q Find No of arranging Letter of

AAAAA BBB CC D E F in Row

If letter C is separated from one another.

$\frac{12!}{2!}$ Phle
Arr.

$$\frac{12!}{5! 3! 2!} \times \frac{13}{3} \times$$

(A) (B) (E)

13 gaps
in 3 types

$$\frac{13}{3}$$



3 gaps in

3 (obj) ways

9 ways

Q 21 White & 19 Black Balls
are arranged in a row

Where balls are alike

Find the No. of arrangements
if black balls are separated.

$$\frac{21!}{9!} \times \frac{22}{19} \times \frac{1}{1} = \frac{22}{19}$$

\rightarrow
21 Balls out of
R khne के
Ways.

21 Balls out of
22 ways
19 ways
Select.

19 gaps
in 19 balls
 $\frac{20}{2}$
ways.

504

Q No W in which 7 green
bottles & 8 blue bottles

can be arranged in a

Row if exactly one pair
of green bottle is side by side, no



$$\frac{8!}{8!} \times \frac{9}{1} \times 1 \times \frac{8}{5} = 504$$

2 Green Bottles दो पार्स
पार्स से Separated

Q Consider word "ASSASSINATION" \rightarrow 13 Alphabets.

(1) Arr. them if no Vowel are consecutive.

(2) When S is separated

(1) A A I A I O | S S S S N T N

$$\frac{9!}{4! \cdot 2!} \times 8! \left(\frac{8!}{6!} \times \frac{6!}{3! 2!} \right)$$

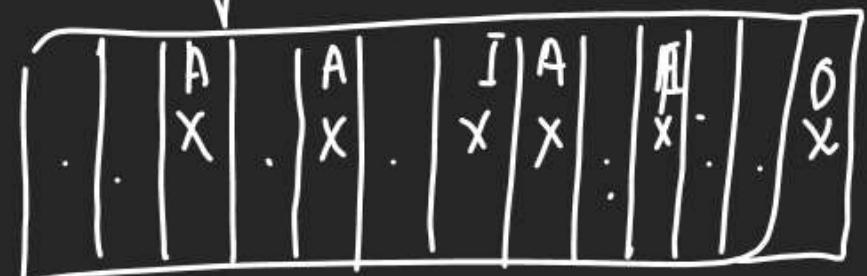
(cons. of 2) Arv.

(2) Σ

(2) AA I A I O N T N

$$\frac{9!}{3! 2! 2!} \times 10! \left(\frac{10!}{4!} \times \frac{14!}{4!} \right)$$

(3) Without changing Order
of Vowel.



$$\frac{13!}{6! \times 1!} \times \frac{7!}{4! \cdot 2!}$$

Q Total No of Arrangement in $x^3 y^2 z^4$

$(XX YY ZZ ZZ$

$$= \frac{9!}{3! 2! 4!}$$

(1) How many different Arrangements

Can be made by using MATHEMATICS.

(MM) (TT) (AA) HIECS

(2) How many of them begin with "L".

(3) How many of them begin with T.

$$\textcircled{1} \quad \frac{11!}{2! 2! 2!}$$

$$\textcircled{2} \quad C \text{ at } 1^{\text{st}} \text{ place} = 1 \times \frac{10!}{2! 2! 2!}$$

$$\textcircled{3} \quad T \text{ at } 1^{\text{st}} \text{ place} = 1 \times \frac{10!}{2! 2!}$$

T at 1st place (After di Repetition & Out)

$\overbrace{D P P}^6$
Morning

(1) How many words can be formed by taking 4 letters at a time out of letters from MATHEMATICS

(MM) • Repetition + Same Nahi then cases
Leno ho $\frac{2!}{2!}$

4D	$8_{C_4} \times 4!$
2A, 2I	$3_{C_2} \times \frac{4!}{2! 2!}$
2A, 2D	$3_{C_1} \times 7_{C_2} \times \frac{4!}{2!}$

$$\text{Total} = 8_{C_4} \times 4! + 3_{C_2} \times \frac{4!}{2! 2!} + 3_{C_1} \times 7_{C_2} \times \frac{4!}{2!}$$