

DPP-4Q6 CopyQ7 4 digit No  $\rightarrow$  all digit diff.  
(containing 7)

Total - No 7

$$\begin{array}{|c|c|c|c|} \hline & & & \\ \hline \end{array} - \begin{array}{|c|c|c|c|} \hline 0x & & & \\ 7x & & & \\ \hline \end{array}$$

$$\downarrow$$

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

Q8 div- /Q9

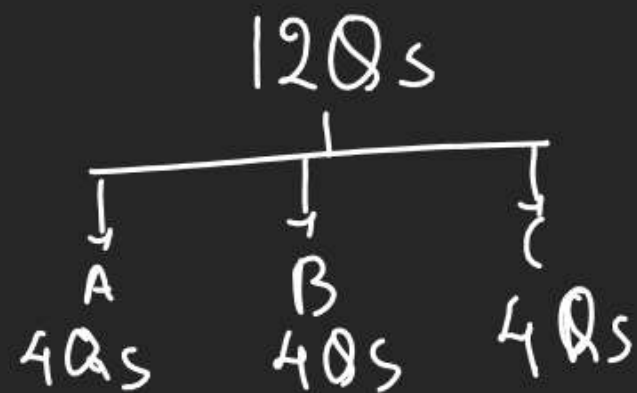
Q A committee of 5 is to be chosen from 9 ppl  
 Now it can be formed of 2 Particular persons  
 either serve together or 2 other persons  
 refuse to serve with each other.

साथ लेंगे AB, साथ नहीं आर्यों  $\rightarrow$  C, D

When  
 AB Included  $\rightarrow$   ${}^7C_3 - {}^5C_1$  दो case में  
 5 CD आर्यों

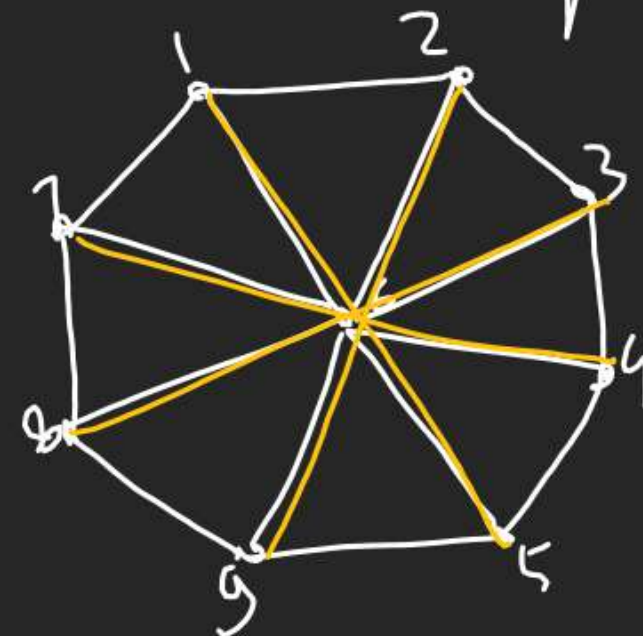
AB Excluded  $\rightarrow$   ${}^7C_5 - {}^5C_3$   
A

Q<sub>10</sub> 12 Qs Paper divided into 3 parts A, B, C  
Each containing 4 Qs. In H.M.W an examinee  
can answer 5 Qs, selecting at least  
one from each part.



$${}^4C_2 \times {}^4C_2 \times {}^4C_1 + {}^4C_2 \times {}^4C_1 \times {}^4C_2 + {}^4C_1 \times {}^4C_2 \times {}^4C_2 \\ + {}^4C_1 \times {}^4C_1 \times {}^4C_3 + {}^4C_1 \times {}^4C_3 \times {}^4C_1 + {}^4C_3 \times {}^4C_1 \times {}^4C_1$$

Q Regular Octagon with centre. T denotes No of  
S denote No of St. Line  $\Rightarrow T \Rightarrow S \Rightarrow 9$   $\Delta$



$$({}^9C_3 - 4) - {}^8C_2$$

Q A farmer 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?

$$= \underbrace{5}_{\substack{\text{Lions} \\ \text{Arr.}}} \times \underbrace{6}_{\substack{\uparrow \\ \text{6 gaps} \\ \text{H} \\ \text{4 gaps} \\ \text{Select}}} \times \underbrace{4}_{\substack{\uparrow \\ \text{4 gaps} \\ \text{H} \\ \text{4 Tigers}}}$$

$$\boxed{9} \\ {}_5C_5$$

9 7 6 5 2

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  $m-n=?$

$$m = {}^{10}C_5 \times 1$$

$$n = {}^9C_5 \times 1$$

9	7	6	5	2
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# Permutation of Alike / Repeated Objects.

↓  
Arrangements

Q No of ways to Arrange "APPLE"



$$= {}^5C_2 \times 1 \times 1 \times 1 \times 1$$

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

Q No of ways to Arr. MUNINI

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

Q No of ways to Permute  
MAHABHARAT.

$$= \frac{10!}{4!2!1!1!1!1!1!1!1!}$$

\* 1) No. of Permutation of  $n$  objects  
of which " $p$ " object alike & rest  
distinct.

$$\frac{n!}{p!1!1!1!1!1!1!1!1!1!} = \frac{n!}{p!}$$

(2) No of Permutation of  $n$  objects  
of which  $p_1$  of 1<sup>st</sup> kind,  $p_2$  of 2<sup>nd</sup> kind,  
 $r$  of 3<sup>rd</sup> kind, Rest distinct

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

Q How many Anagrams  
Can be formed using  
Alphabets of BANANA  
Total word form - himself.  
Alphabets

$$\frac{6!}{3!2!1!} = \frac{720}{6 \times 2} = 60$$

Q No of permutation of Letter of

Word ALLAHABAD. How many of them

(1) Start with A.

$$\begin{array}{c} A \\ | \\ \text{---} \\ 1 \times 8! \\ \hline 2! 3! \end{array}$$

(2) Ends with L.

$$\begin{array}{c} \text{---} \\ \hline 8! \\ \hline 4! \end{array}$$

(3) Start with A  
&  
Ends with L.

$$\begin{array}{c} A \text{ --- } L \\ \hline = \frac{1!}{3!} \end{array}$$

Q 5. Based on ALike / Repeated Objects

Q Find No of arranging Letter of

AAAAA BBBB CCCC DEEF in a Row

If letter C is separated from one another.

12 obj Phle  
Arr.

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

(A) (B) (E)

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

13 gaps  
in 3 gaps

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

3 gaps in  
3 (obj) & ways



Q 21 White & 19 Black Balls  
are arranged in a Row  
Where balls are alike  
find the No. arrangements  
if black balls are separated.

$$\frac{21!}{21!} \times {}^{22}C_9 \times 1 = {}^{22}C_9$$

$\nearrow$  21 Balls arrange ways  
 21 Balls & 22 gaps  
 9 gaps select.  
 $\uparrow$  19 gaps & 19 balls  
 2 ways.

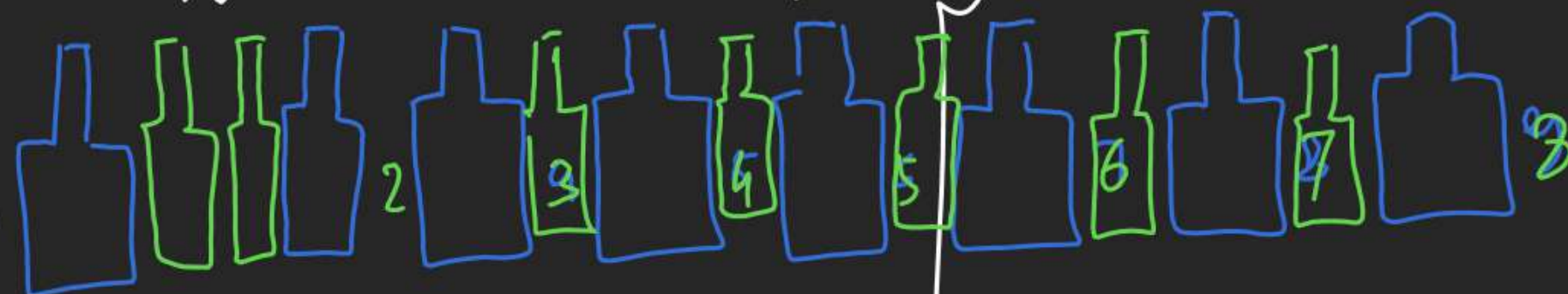
Q No. in which 7 green  
bottles & 8 blue bottles

can be arranged in a

Row if exactly one pair

of green bottle is side by side is

2 Green Bottles साथ साथ  
आके या Separated



$$\frac{8!}{8!} \times {}^9C_1 \times 1 \times {}^8C_5 = 504$$

Q Consider Word "ASSASSINATION" → 13 Alphabet.

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

$$\frac{7!}{4! \cdot 2!} \times {}^8C_6 \times \frac{6!}{3! \cdot 2!}$$

(Cons. Arr.)

(2) A A I A I O N T N

$$\frac{9!}{3! \cdot 2! \cdot 2!} \times {}^{10}C_4 \times \frac{4!}{4!}$$

(3) Without changing order of vowel.

.	A	.	A	.	I	A	.	A	.	O
.	X	.	X	.	X	X	.	X	.	X

$${}^{13}C_6 \times 1 \times \frac{7!}{4! \cdot 2!}$$

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

$x x x y y z z z z$

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



Q1) How many different Arrangements  
can be made by using MATHEMATICS.  
(MM) (TT) (AA) H I E C S

Q2) How many of them begin with "L".

Q3) How many of them begin with T.

①  $\frac{111!}{2!2!2!}$

② L at 1<sup>st</sup> Place =  $1 \times \frac{10!}{2!2!2!}$

③ T at 1<sup>st</sup> Place =  $1 \times \frac{10!}{2!2!}$

T at 1<sup>st</sup> Place (T dī Repeutakī mē 0 ut)

DPP 6  
Morning

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

(MM)  
(TT)  
(AA)  
H  
I  
E  
C  
S

Repeataion + Sare Nahi then (ases  
Leno ho dī jī)

4D	${}^8P_4 \times 4!$
2A, 2A	${}^3P_2 \times \frac{4!}{2!2!}$
2A, 2D	${}^3P_1 \times {}^7P_2 \times \frac{4!}{2!}$

No. of words =  ${}^8P_4 \times 4! + {}^3P_2 \times \frac{4!}{2!2!} + {}^3P_1 \times {}^7P_2 \times \frac{4!}{2!}$