GATE-2023 CRASH COURSE

GENERAL APTITUDE

Quantitative

Work

Reasoning

COUNTING THEORY

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QUANTITATIVE APTITUDE

Numbers

Counting

- Quants
- Arithmetic
- Numerical Ability

Where do we use Numbers in Life?

- Counting
- Comparision
- Measurement
- Combination (Mixing)
- Distribution (Sharing)

ATM

password

PIN

PASSCODE

= 10,000

0000

9999

$\boxed{10} \times \boxed{10} \times \boxed{10} \times \boxed{10}$

0

1

2

3

4

5

9 ...

OR

या (+)

AND (X)

और

Counting

0, 2, 4, 6, 8

Even

Number of ways to do a work

- The question starts with HOW MANY DIFFERENT WAYS

A ..... ?

TH	H	T	U
10	10	10	5

$10 \times 10 \times 10 \times 5$

5,000

AND (×)
OR (+)

PASSCODE

PIN

1

10 × 10 × 10 × 10 × 10 × 10

10,00,000

ATM PIN Generate

ENTER PIN CODE

Enter Your Phone Passcode or Pin (selection)

- 4 DIGITS

0-9	0-9	0-9	0-9

- 6 DIGITS

AND	'x'
OR	'+'

How many four digits number can be formed using 1, 2, 3, 4 & 5?

- 4 DIGITS (Repetition)

Th H T U

5 × 5 × 5 × 5

= 625

- 4 DIGITS (Without Repetition)

Th H T U

5 × 4 × 3 × 2

(5-1) (5-2) 5

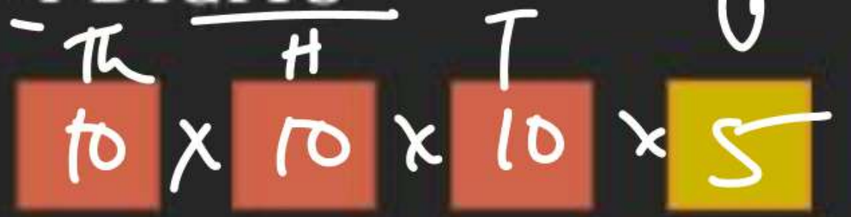
= 120

1 2 3 4 5

AND	'x'
OR	'+'

Enter The Phone Passcode or Pin (Even)

- 4 DIGITS



0 –
2 –
4 –
6 –
8 –

5000

AND	'x'
OR	'+'

Enter The Phone Passcode or Pin (Even)

- 4 DIGITS (Without Repetition)

(10-1) (10-2) (10-3)

0-9

9

$= 72 \times 35$

$= 2520$

0
2
4
6
8

AND	'x'
OR	'+'

How many three digits number can be formed using 1, 2, 3, 4 & 5?

- 3 DIGITS (Repetition Allowed)

H	T	U
5	5	5

$5 \times 5 \times 5 = 125$

- 3 DIGITS (Without Repetition)

H	T	O
5	4	3
	(5-1)	(5-2)

$5 \times 4 \times 3 = 60$

AND 'x'

OR '+'

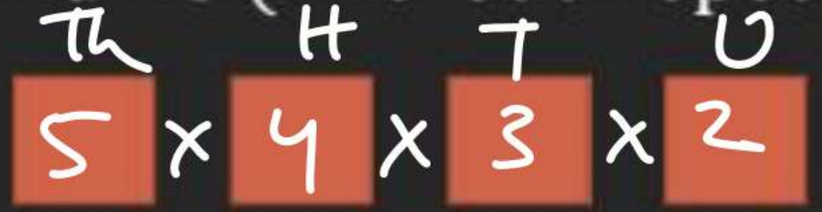
How many four digits number can be formed using 1, 2, 3, 4 & 5?

- 4 DIGITS (Repetition)

$5 \times 5 \times 5 \times 5$

$= 625$

- 4 DIGITS (Without Repetition)



$= 120$

AND	'x'
OR	'+'

How many three digits number can be formed using 0 to 9 ?

- 3 DIGITS (Repetition Allowed)

H T U

9 × 10 × 10

(10-1)

= 900

1 2 3 ... 9

- 3 DIGITS (Without Repetition)

H T U

9 × 9 × 8

(10-1) (10-2)

0-9

81 × 8

648

AND	'x'
OR	'+'

Q.1

In how many ways four letters can be posted in 6 post boxes, if each box can take any number letters?

$6 \times 6 \times 6 \times 6$

L_1 L_2 L_3 L_4

$= 36 \times 36$

$= 1296$

Q.2

In how many ways can you arrange 5 Novels on a shelf?

$$\underset{(5-1)}{5} \times \underset{(5-2)}{4} \times 3 \times 2 \times 1$$

$= 120$

Q.3

A license plate begins with 3 letters. If the possible letters are A, B, C, D and E, how many different ways these letters can be written if no letter is used more than once?

$5 \times 4 \times 3$

$(5-1)(5-2)$

$= 60$

Q.4 Four persons P, Q, R and S are to be seated in a row. R should not be seated at the second position from the left end of the row. The number of distinct seating arrangements possible is? [GATE 2021 (CE)]

P Q R S

(A) 6

(B) 9

(C) 18

(D) 24

$3 \times 3 \times 2 \times 1$

(4-1) (4-2) (4-3)

Q.4 Five different book (P, Q, R, S, T) are to be arranged on a shelf. The books R and S are to be arranged first and second, respectively from the right side of the shelf. The number of different orders in which P, Q and T may be arranged is?

[GATE 2019 (EC)]

(A) 12

(B) 2

(C) 120

(D) 6

P Q R S T

$3 \times 2 \times 1$ | S R

$(3-1)(3-2)$

thank you