

**GATE 2021**

# **GENERAL APTITUDE**

धमाकेदार ट्रिक के साथ 🔥🔥

**TIME & WORK - 4,  
MAN DAYS CONCEPT**



**AVINASH SIR**



 unacademy

# AVINASH SINGH SIR

GATE | EE (CE)



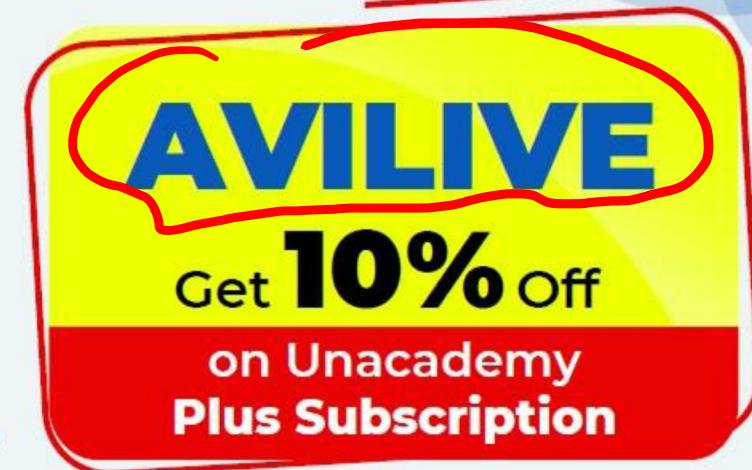
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CAT (Quantitative Section)



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**Subjects Taken:**  
General Aptitude  
Engineering Mathematics  
Digital Electronics



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Customized study plan and track your performance.

### Personal Coach

One on one guidance on preparation strategy.

**PLUS**

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Crash Courses

Weekly Tests

Doubt Solving

English & Hindi

RIB



### Preparatory Study Material

Specialised notes & practice sets.

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### Study Booster Sessions

Receive Essential Guidelines via Regular workshops



### Personalised Test Analysis

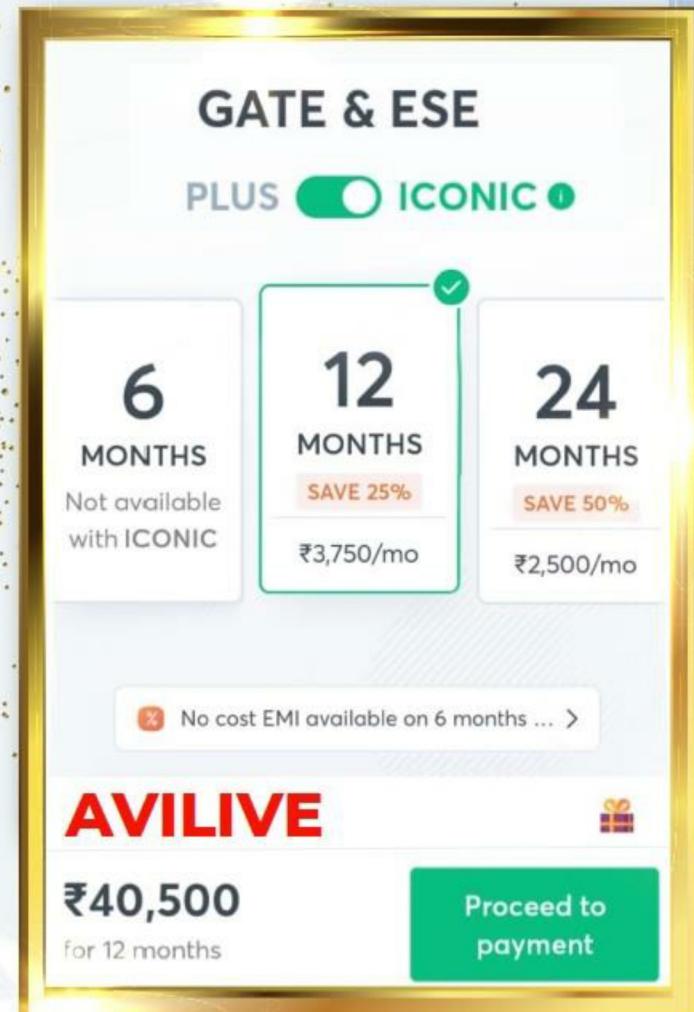
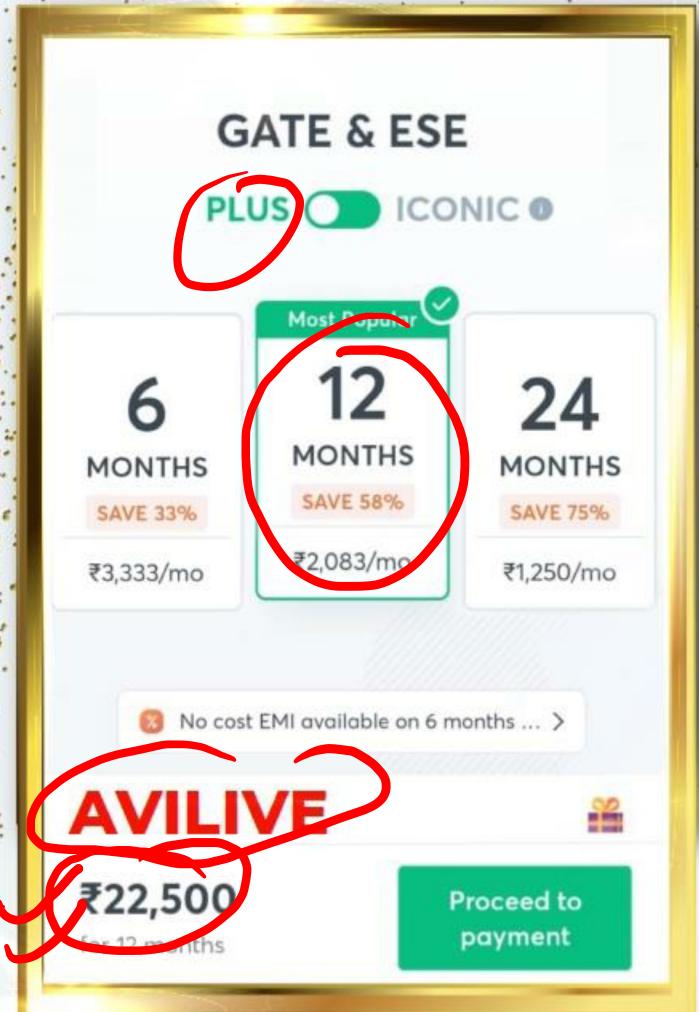
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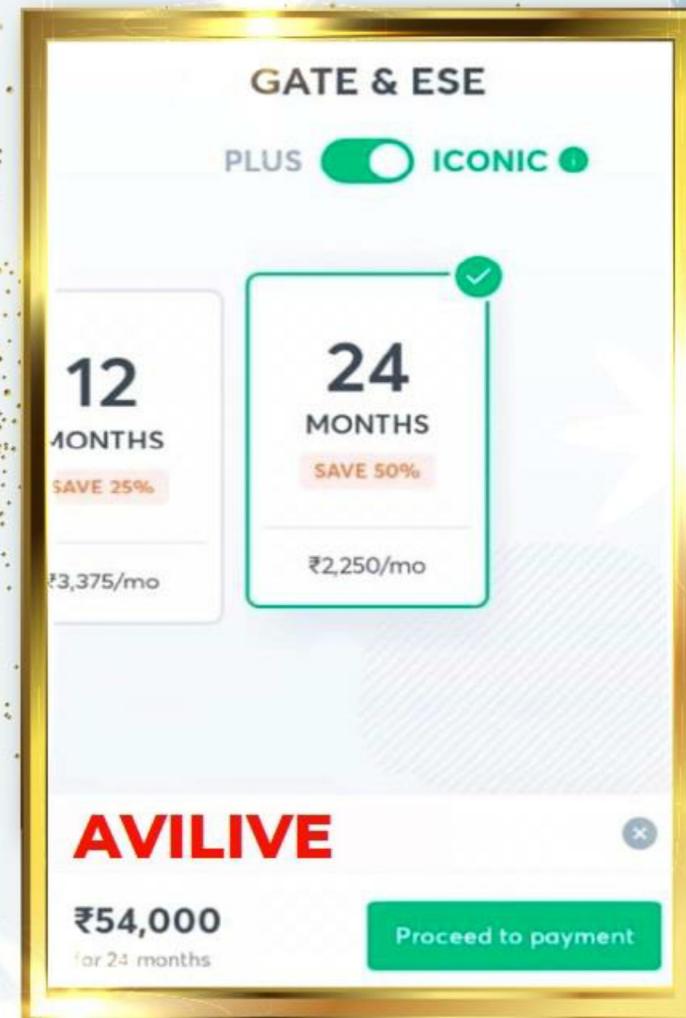
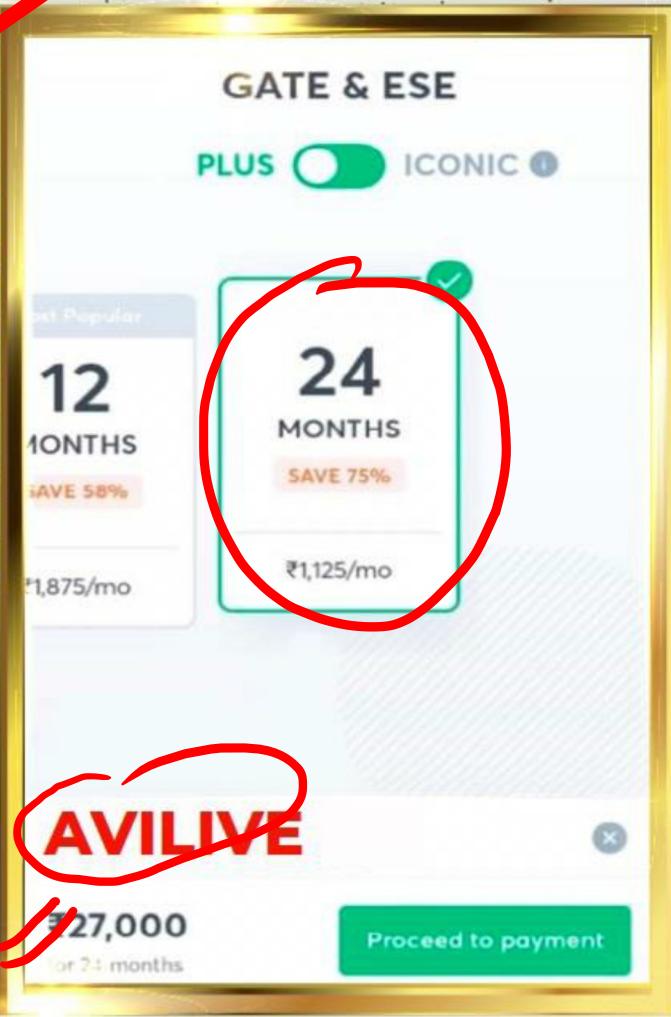
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# Complete Package To CRACK GATE/ESE

The image displays a grid of 15 educational modules for GATE/ESE preparation, arranged in three rows and five columns. Each module is represented by a colored box containing the subject name, a Unacademy logo, and a photo of the instructor.

- FLUID MECHANICS** (Top Left): Instructor - MRIGANK SIR
- STRENGTH OF MATERIALS** (Top Middle): Instructor - Abhishek Sir
- DESIGN OF STEEL STRUCTURE** (Top Right): Instructor - BABULAL SIR
- GEOTECHNICAL ENGINEERING** (Second Row, Left): Instructor - ABHISHEK SIR
- REINFORCED CEMENT CONCRETE (RCC)** (Second Row, Middle): Instructor - Aishwary Sir
- RCC** (Second Row, Right): Instructor - KSHITIJ SIR
- OPEN FLOW CHANNEL** (Second Row, Far Right): Instructor - Mrigank Saurav Sir
- IRRIGATION ENGINEERING** (Third Row, Left): Instructor - CHETAN SIR
- STRUCTURAL ANALYSIS** (Third Row, Middle): Instructor - AISHWARY SIR
- SURVEYING** (Third Row, Right): Instructor - KSHITIJ SACHAN SIR
- GEOTECHNICAL ENGINEERING** (Bottom Left): Instructor - AISHWARY SIR
- ENVIRONMENTAL ENGG** (Bottom Middle Left): Instructor - Mrigank Saurav Sir
- ENGINEERING HYDROLOGY** (Bottom Middle Right): Instructor - CHETAN SIR
- HIGHWAY ENGINEERING** (Bottom Right): Instructor - KSHITIJ SACHAN SIR





## **Analytical Aptitude**

- Venn Diagram
- Syllogism
- Series
- Coding & Decoding
- Odd Man out
- Distance & Direction
- Blood Relation
- Seating Arrangements
- Clock & Calendar

5.00/-  
1M+

## **Quantitative Aptitude**

- Number System
- Sequence & Series
- Ratio & Proportion
- Time, Speed & Distance
- Percentage
- Profit, Loss & Discount
- Average
- Allegation & Mixture
- Time & Work
- Powers, exponents and logarithms
- Algebra
- Permutation & Combination
- Probability
- Data Interpretation
- Mensuration and geometry

## **Spatial Aptitude**

- Shape Matching - Two Dimensional
- Visual Comparison - Two Dimensional
- Group Rotation - Two Dimensional
- Combining Two Dimensional Shapes
- Cube Views in Three Dimensions
- Cubes in Two and Three Dimensions
- Other Solids in Two and Three Dimensions
- Block Counting in Three Dimensions
- Two-Dimensional Mirror Reflections
- Paper folding and Cutting

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# TIME & WORK

EC | EE | ME | CE | IN | CS | CH

2010

2021

2010 (IIT Guwahati)

Number of  
question - 1

2011 (IIT Madras)

Number of  
question - 1

2012 (IIT Delhi )

Number of  
question - 0

2013 (IIT Bombay)

Number of  
question - 1

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2014 (IIT Kharagpur)

Number of  
question - 1

2015 (IIT Kanpur )

Number of  
question - 0

2016 (IISc Bangalore)

Number of  
question - 3

2017 (IIT Roorkee)

Number of  
question - 3

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2018 (IIT Guwahati)

Number of  
question - 2

2019 (IIT Madras)

Number of  
question - 5

2020 (IIT Delhi)

Number of  
question - 1

2021 (IIT Bombay)

?

Boost Your Preparation with Avinash Singh Sir

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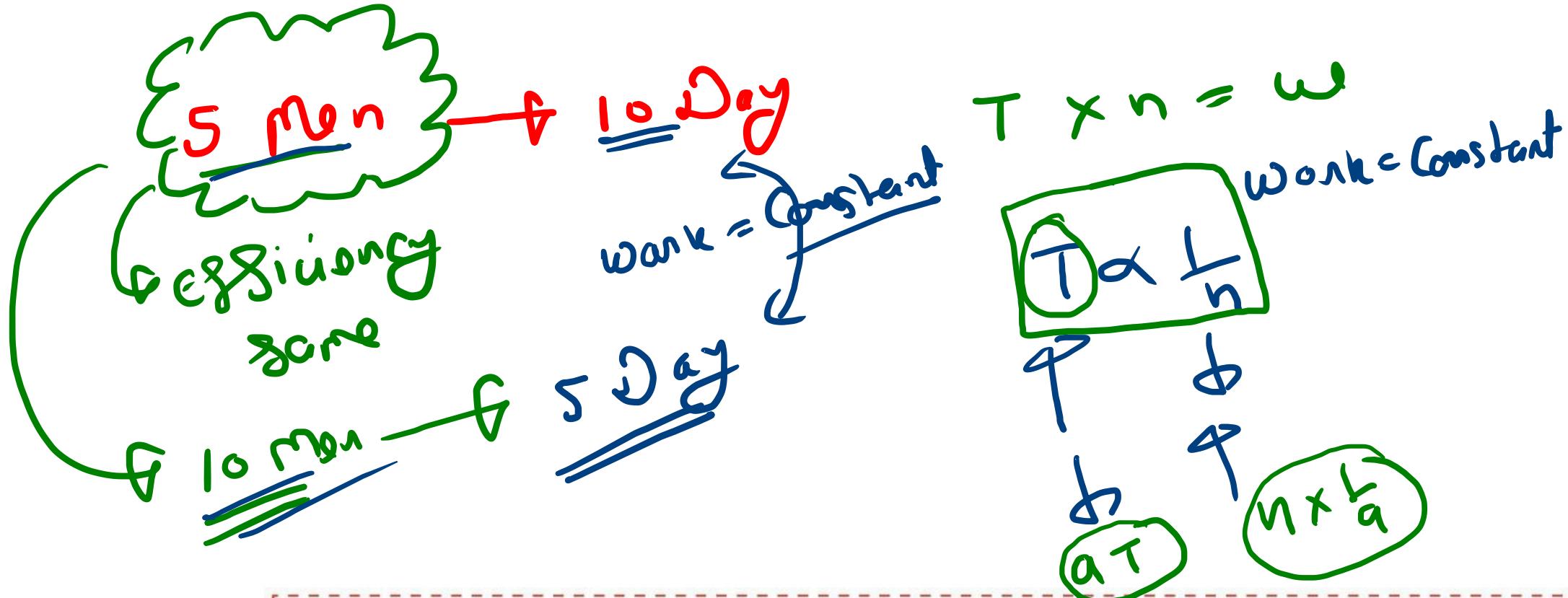
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✓ Group of Man/Women/Children/Machine/Robot

$$Time \times Efficiency = Work$$



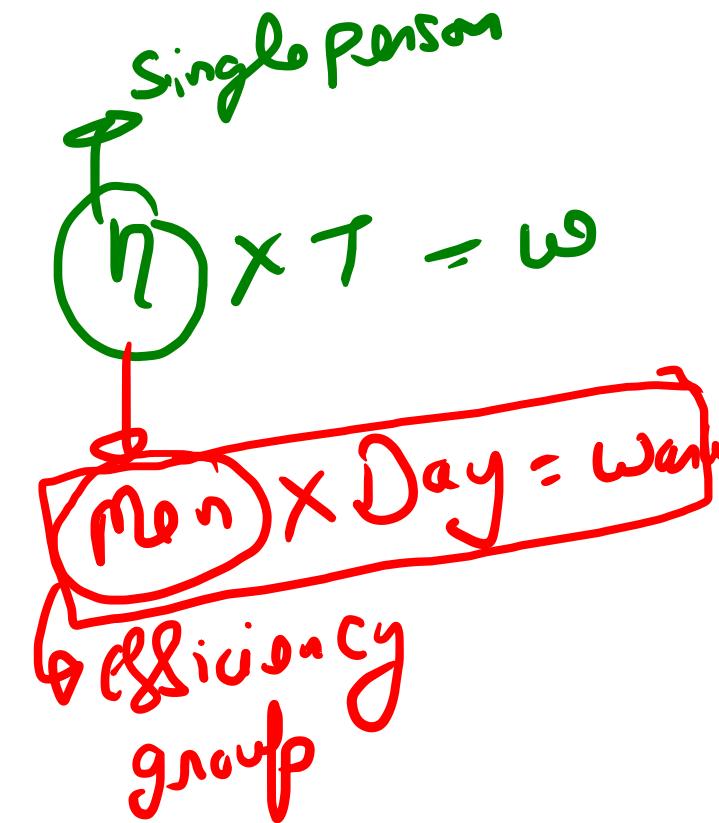
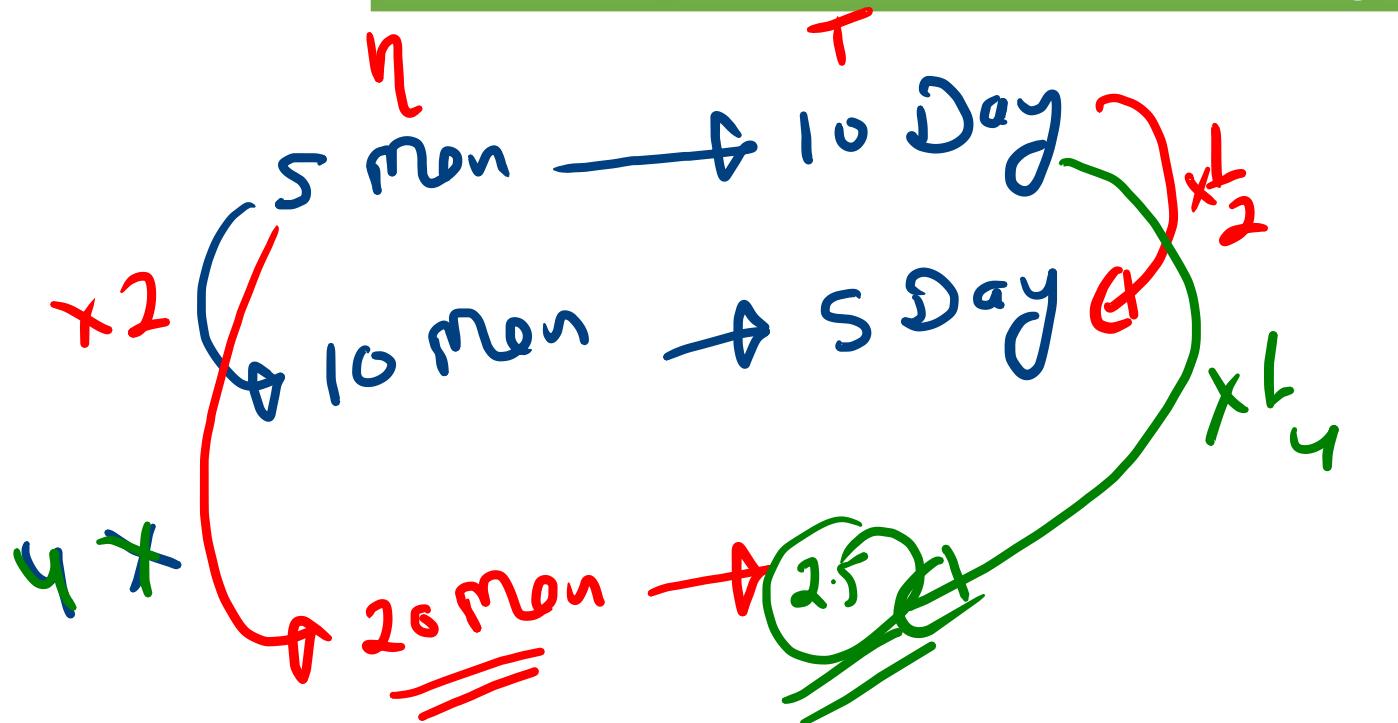
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## Concept of *Man × Day*



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✓ 1) 25 men can finish the work in 12 days, 30 men can finish the same work in how many days?

A) 8

B) 10

C) 12

D) 9

M-I

$$\begin{aligned} & \text{25 m} \rightarrow 12 \text{ D} \\ & \times \frac{1}{5} \left( \text{as } M \rightarrow \text{work done} \right) \rightarrow 6 \text{ D} \\ & \times \frac{1}{6} \left( \text{as } M \rightarrow \text{work done} \right) \rightarrow 10 \text{ D} \end{aligned}$$

30 m → 2

M-II

$$\begin{aligned} & M_1 D_1 = M_2 D_2 \\ & T.W. = 25 \times 12 = 30 \times D \\ & \frac{25 \times 12}{30} = D = 10 \end{aligned}$$

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- ~~\*\*~~ 2) 14 men can complete a work in 22 days. How many days will 11 men take to complete  $1\frac{1}{4}$  times the present work?
- A) 35      B) 28      C) 17.5      D) 21

[VIZAG STEEL PLANT, 2015]

$$M_1 D_1 = M_2 D_2$$

$$14 \times 22 = 11 \times D$$

$$D = 28$$

1.25 times

$$1\frac{1}{4} \text{ times} \rightarrow 28 \times 1\frac{1}{4}$$

$$= 28 \times \frac{5}{4}$$

$$\Rightarrow 35 \text{ Days}$$

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3) 4 men can complete a piece of work in 5 days. How many men are required to complete 3 times the work in 4 days? [RRB-2014(JE), BILASPUR]

A) 5

B) 15

C) 80

D) 20

$$4 \times S = 4 \times M \Rightarrow M = S$$

~~15~~

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Q) 12 men complete a work in 9 days. After they have worked for 6 days, 6 more men join them. How many days will they take to complete the remaining work?

A) 2 days

B) 3 days

[VIZAG STEEL PLANT, 2015]

C) 4 days

D) 5 days

$$\text{Total work} = M \times D$$
$$= 12 \times 9$$

$$\text{Completed work} = M \times D$$
$$= 12 \times 6$$

$$\text{Remaining work} = M \times D$$
$$= 12 \times 3$$

$$M_1 D_1, \quad M_2 D_2$$
$$12 \times 3 = (12+6) \times D \Rightarrow D = \frac{12 \times 3}{18}$$
$$D = 2 \text{ days}$$

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\*\*\*\*\*

5) In a camp there is ration for 250 men for 40 days. After 10 days 50 more men join. Find in how many days, remaining ration would last?

- A) 23      B) 24      C) 25      D) NOTA

$$M_1 \times D_1 = M_2 \times D_2$$

$$250 \times (40 - 10) = (250 + 50) \times D$$

$$\frac{250 \times 30}{300} = D \Rightarrow D = 25$$

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- ✓ 6) A group of workers estimate to finish a work in 10 days, but 5 workers could not join the work. If the rest of them finished the work in 12 days, the number of members present in the team originally is
- [ESE 2017, 2 MARKS]
- A) 50      B) 45      C) 35      D) 30

$\left\{ \begin{array}{l} M \\ D \end{array} \right.$       M

$x \times 10 = (x - 5) \times 12 \Rightarrow 10x = 12x - 60$

$2x = 60$

$x = 30$

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~~7~~, 12 men can complete a work in 90 days. 30 days after they started work, 2 men left and 8 men joined. How many days will it take to complete the remaining work?

A) 90

B) 60

C) 40

D) 50

$$M_1 \times D_1 = M_2 \times D_2$$
$$12 \times (90 - 30) = (12 - 2 + 8) \times D$$

$$\frac{12 \times 60}{18} = D \Rightarrow D = 40$$

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## Group of Two (Man/Women/Children/Machine/Robot)



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$$1 : 5 \\ 5 : 25 \\ 5m + 25w \rightarrow 20 \text{ days}$$

~~$$1 : 5 \\ 1m + 5w \neq$$~~

~~$$1 : 5 \\ 10m + 50w \neq$$~~

~~$$1 : 5 \\ 25m + 40w \neq$$~~



# Avinash Singh

Teaching isn't my job, it's my passion

16 Watch mins

16 Watch mins (last 30 days)

0 Followers

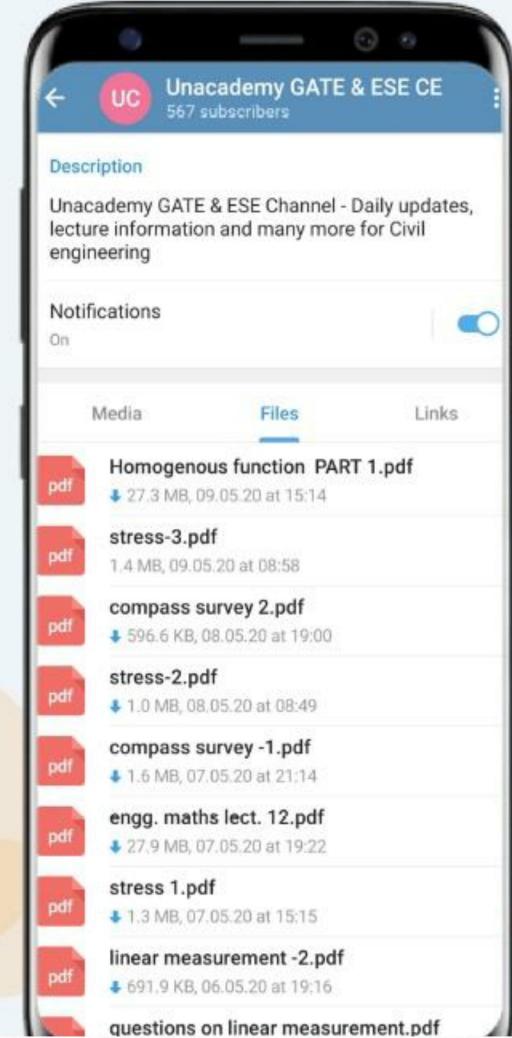
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Topic wise  
S: 00 PM → Reasoning  
→ Venn Diagram

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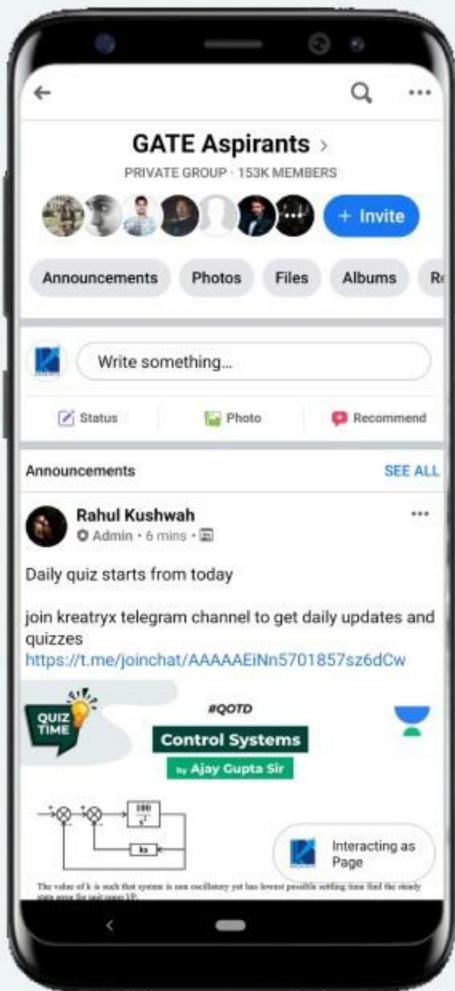
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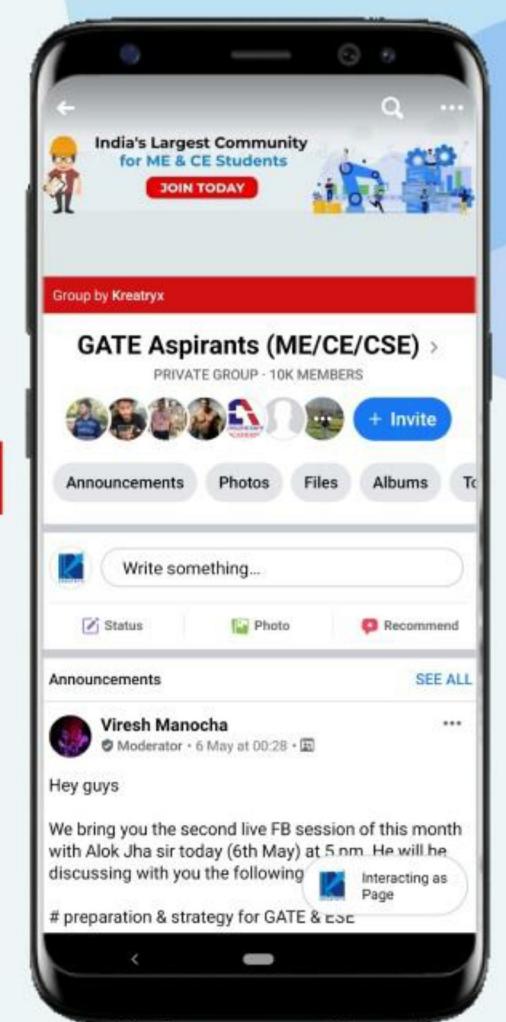
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GATE Aspirants (ME,CE,CSE)

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# Thank You



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