



# SCIENCE APTITUDE TEST

## CLASS - 7

## SOLUTIONS

TEST CODE - 28S

WhatsApp Channel



**Result will be Declared on 14th Oct. 2025**

Video Solutions will be available on

[www.khoj.iitashram.com](http://www.khoj.iitashram.com)

They will also be available on the **IIT ASHRAM WhatsApp Channel**.

Just scan the QR codes below & never miss an update!

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**ALKAPURI (H.O.)** : UG – 1 to 2, Concorde Complex, Above PNB, R.C. Dutt Rd., Alkapuri, Vadodara.

**M : 9081062221, 9033063029.**

**MANJALPUR - IIT ASHRAM** : SF-1 TO 12, Kabir Plaza, Beside Kabir Complex, Above IDBI Bank, Infront of Army Camp Manjalpur, Nr. Gupta Hospital, Bhavan's Makarpura Road, Manjalpur . **M : 9033063027 / 9033063028**

**ANAND - IIT ASHRAM** : 2nd Floor, HR Stone Building, Beside Croma Showroom, A.V. Road, Nr. Town Hall, Anand. **M: 9227777098, 8460009041.**

**Bhayli - IIT ASHRAM** : Akshar Pavilion, 3rd floor, Tower A, Nilamber Circle, Main rd, Bhayli, Vadodara, Gujarat 391410. **M : 6358891896, 9081062221**

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# IIT Ashram

IIT JEE | NEET | GUJCET | FOUNDATION (6 to 10)

## 10<sup>th</sup> CBSE Board Results 2025

SCI -100 | SS -100



**99.00%**

**Kushagrah**



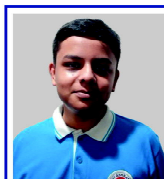
**98.80%**

**Devansh**



**98.50%**

**Harshil**



**98.40%**

**Jay D.**



**98.66%**

**Rudra**

MATH -100



**97.60%**

**Aryan**



**97.60%**

**Khwahish**



**97.40%**

**Naman**



**97.40%**

**Rusha**



**97.40%**

**Siddhant**

MATH -100



**96.60%**

**Diza**



**96.50%**

**Kaushar**



**96.00%**

**Harleen**



**96.00%**

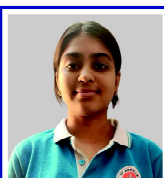
**Rakti**



**95.75%**

**Swara**

ENG -100



**95.60%**

**Jayani**



**95.60%**

**Parita**



**95.50%**

**Shaurya**



**95.20%**

**Krishiv**



**95.05%**

**Shruja**

And Many More....



# IIT Ashram

IIT JEE | NEET | GUJCET | FOUNDATION (6 to 10)



## 10<sup>th</sup> GSEB Board Result 2025



 SCI 100 SS 100 99.81% ile Naysa P.	 MATH 100 SCI 100 99.60% ile Pahal B.	 SS 100 99.35% ile Khushi P.	 SCI 100 99.22% ile Chirag R.	 99.14% ile Rutvi S.	 MATH 100 99.00% ile Darsh G.
 98.62% ile Dhanesh B.	 MATH 100 98.31% ile Darshil P.	 98.20% ile Vihaan T.	 98.20% ile Drashti S.	 98.20% ile Aanya K.	 98.20% ile Kshitij N.
 97.99% ile Varada M.	 97.88% ile Saksham U.	 MATH 100 SCI 100 97.76% ile Nivedya J.	 97.64% ile Dhyey P.	 97.50% ile Maharsh B.	 MATH 100 97.40% ile Shubh P.
 97.27% ile Pankti P.	 97.14% ile Devansh A.	 SCI 100 97.02% ile Vihaan P.	 96.76% ile Kathit S.	 96.68% ile Nisarg S.	 96.63% ile Dhwani P.
 96.50% ile Evan C.	 96.36% ile Disha S.	 MATH 100 96.36% ile Samarth T.	 96.22% ile Devanshi P.	 95.93% ile Mahaveer V.	 95.93% ile Abhinav P.

And Many More....

## PART - I : MENTAL ABILITY

1.

**Sol. (a)** Hint: Use the position of letters in the alphabet.

2.

**Sol. (b)** West

Explanation: Start facing North.

Turn right → now facing East; walk 2 km.

Turn left from East → now facing  
North; walk 3 km.

Turn left from North → now facing

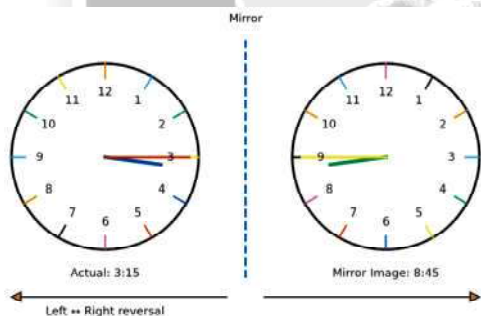
West; walk 2 km.

So, after the final turn and walk, the boy is facing West.

3.

**Sol. (b)** West.Explanation: Boy: facing North →  $90^\circ$ clockwise →  $180^\circ$  anticlockwiseNorth →  $90^\circ$  clockwise = EastEast →  $180^\circ$  anticlockwise = West

4.

**Sol. (a)** 8:45

Mirror

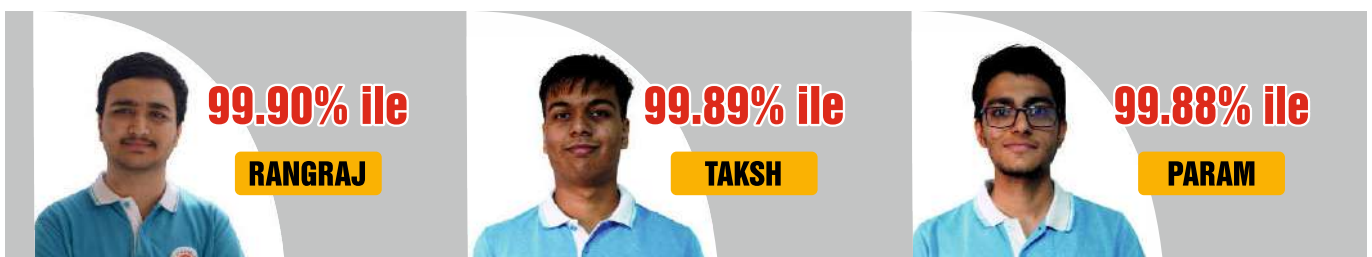
12 12 11 1 11 1

10 2 10 2

9 9 3

Here's a clean, visual explanation of why the mirror image of 3:15 is 8:45.

**27** Students secured above **99% ile** in **JEE Main 2025**



and many more....



5.

**Sol. (a)** EV

First letter from the beginning (A - Z), second letter from reversing (Z- A).

6.

**Sol. (c)** 30Pattern is  $n^2 + n$ . $1^2 + 1 = 2$ ,  $2^2 + 2 = 6$ ,  $3^2 + 3 = 12$ ,  $4^2 + 4 = 20$ ,  $5^2 + 5 = 30$ .

7.

**Sol. (a)** All mothers are women and some mothers and some women may be engineers.

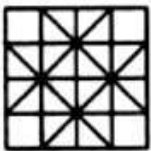
8.

**Sol. (c)**

9.

**Sol. (c)**

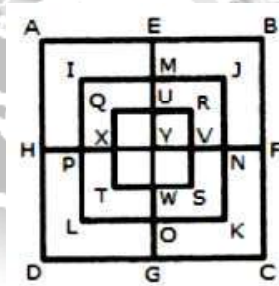
10.

**Sol. (b)**

11.

**Sol. (c)**

The figure may be labelled as shown.



12.

**Sol. (c)**

If D is Male, the answer is Nephew.

If D is Female, the answer is Niece.

As the sex of D is not known, hence, the relation between D and A cannot be determined.

**Note:** Niece - A daughter of one's brother or sister, or of one's brother-in-law or sister-in-law.

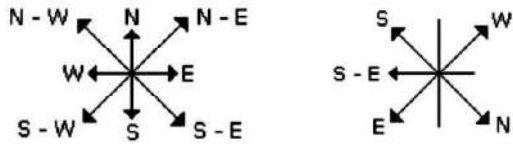
Nephew - A son of one's brother or sister, or of one's brother-in-law or sister-in-law.

13.

**Sol. (c)**

The first letters are in alphabetical order with a letter skipped in between each segment: C, E, G, I, K. The second and third letters are repeated; they are also in order with a skipped letter: M, O, Q, S, U.

14.

**Sol. (c)**

It is clear from the diagrams that new name of West will become South-East.

15.

**Sol. (a)**

Gemo means fair; linea means warning; geri means report; mitu means card; and gila means weather. Thus, gemo gila is the correct choice.



**35** Students secured admissions in different fields of **Biology** in 2024.

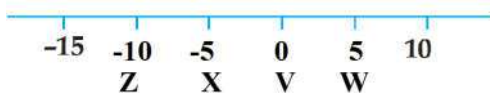


and many more....

## PART - II : MATHEMATICS

1.

Sol. (b)



$$0 = V$$

2.

Sol. (d) 11, 8, 5, 2, -1, -4, -7

3.

Sol. (c)

4.

Sol. (a) closure property

5.

Sol. (c) Fall in temperature by  $5^{\circ}\text{C}$ 

6.

Sol. (c) The numbers 24, 12 and 6 are composite.

7.

Sol. (b) 100, 101, ..., 200  $\Rightarrow$  Total no. = 101

# IIT Ashram

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## ADMISSION OPEN

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CLASS - VI TO XADMISSION-CUM SCHOLARSHIP  
TEST ON EVERY SUNDAY

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CLASSES : VI, VII, VIII

**JEE MAIN/ADVANCED**  
(PCM)  
CLASSROOM PROGRAM  
CLASSES : XI & XII

**FOUNDATION**  
CLASSROOM PROGRAM  
CLASSES : IX & X

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CLASSROOM PROGRAM  
CLASSES : XI & XII

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Alkapuri, Vadodara - 390007. (Guj.) India.

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www.iitashram.com

8.

**Sol. (c)**

9.

**Sol. (a)**  $\frac{5}{3}$ 

10.

**Sol. (b)**  $24 \div 12 = 2 \quad \Rightarrow 60 \div 12 = 5 \quad \Rightarrow \frac{2}{5}$ 

11.

**Sol. (d)**  $\frac{5}{6}$ 

$$\frac{10}{12} = \frac{5}{6} \Rightarrow \frac{15}{18} = \frac{5}{6} \Rightarrow \frac{20}{24} = \frac{5}{6}$$

12.

**Sol. (c)**

Daily use = 3 match sticks

$$\Rightarrow \text{Weekly use} = 3 \times 7 = 21$$

$$\Rightarrow 3 \times 7 = 21 \text{ match sticks}$$

$$\Rightarrow \text{Used} - \text{Unused} = 40 - 21 = 19 \quad \Rightarrow \text{Fraction} = \frac{19}{40}$$

13.

**Sol. (c)** Shamim secured 15.5 marks in Mathematics

14.

**Sol. (d)** 4.123, 5.124, 6.125, 7.126

15.

**Sol. (c)**  $900.853 - 473.2 = 427.653$ 

16.

**Sol. (a)**  $7204\text{m} = \frac{7204}{1000} = 7.204\text{km}$ 

17.

**Sol. (b)**  $2.2 \times 0.2 \times 0.001 = 0.00044$



18.

**Sol. (b)**  $(-3)^2 = (-3)^6$

19.

**Sol. (b)**

20.

**Sol. (c)**

21.

**Sol. (d)** Perimeter of square =  $4 \times \text{Side} = 4 \times (2x + 3) = 8x + 12$

22.

**Sol. (d)**  $3xy^2 + 5y - x^2 = 2xy^2 + 5y$  (Binomial)

23.

**Sol. (c)**  $9 - 5m \Rightarrow 9 - 5(2) \Rightarrow 9 - 10 \Rightarrow -1$

24.

**Sol. (c)**

(a)  $5y - 3 = -18, y = -3 \rightarrow \text{Yes}$

(b)  $3x - 9 = 0, x = 3 \rightarrow \text{Yes}$

(c)  $3z + 8 = 3 + z, 2z = -5, z = -5/2 \rightarrow \text{No}$

(d)  $9y + 8 = 4y - 7, 5y = -15, y = -3 \rightarrow \text{Yes}$

25.

**Sol. (d)** I : II

$$\Rightarrow 2 : 5 \Rightarrow 2x : 5x \Rightarrow 5x = 95 \Rightarrow x = 19 \Rightarrow 1^{\text{st}} = 2 \times 19 = 38$$

26.

**Sol. (a)**  $\frac{6x-2}{9} + \frac{3x+5}{18} = \frac{1}{3} \Rightarrow \frac{2(6x-2) + (3x+5)}{18} = \frac{1}{3} \Rightarrow \frac{12x-4+3x+5}{18} = \frac{1}{3}$

$$\Rightarrow \frac{15x+1}{18} = \frac{1}{3} \Rightarrow 45x+3=18 \Rightarrow 45x=15 \Rightarrow x=\frac{1}{3}$$

27.

**Sol. (c)** Line segment has two end points.

28.

**Sol. (c)**

29.

**Sol. (c)** At 5:20 the angle formed between the two hands of a clock is acute

30.

**Sol. (b)**  $AB \parallel CE$

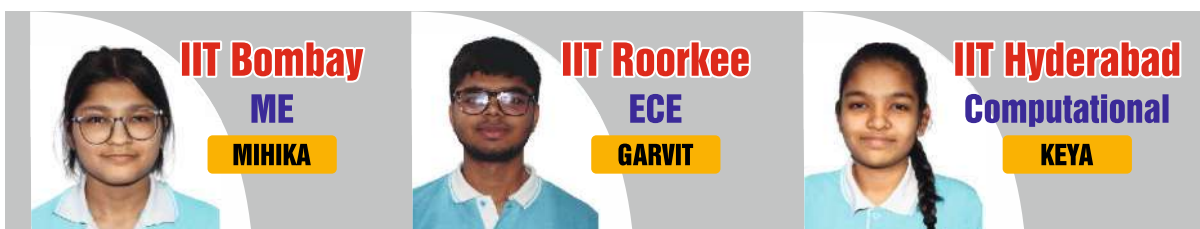
$$\therefore \angle BAC = \angle ACE = 60^\circ$$

$$\text{Now, } \angle CBA + 60 + 65 = 180^\circ$$

$$\angle ACB = 55^\circ$$



**65** Students secured admissions to **IITs** in 2024.



and many more....

## PART - III : PHYSICS &amp; CHEMISTRY

1.

**Sol. (d)** Mirror

Sun, candle, and electric heater give out heat energy.

A mirror does not produce heat; it only reflects light.

2.

**Sol. (a)** Ammeter

Electric current is measured in amperes.

The instrument designed to measure it is called an ammeter.

- Voltmeter → measures voltage
- Thermometer → measures temperature
- Barometer → measures air pressure

3.

**Sol. (c)** Sound needs a medium to travel

Sound cannot travel in vacuum (space).

It needs air, water, or solid to pass vibrations.

That's why astronauts use radios in space.

4.

**Sol. (c)** Oscillatory motion

Swinging of a pendulum, vibrating strings, and a child on a swing are examples.

The object moves repeatedly back and forth around a fixed point.

5.

**Sol. (b)** Black absorbs more heat, white reflects more

Black surfaces absorb almost all the heat and light falling on them.

White surfaces reflect most of the heat. That's why black cars feel hotter in summer.

6.

**Sol. (b)** 256 waves pass in one second

Frequency = number of vibrations (waves) per second.

256 Hz = 256 sound waves reach your ear every second.

7.

**Sol. (b)** Refraction

Refraction = bending of light when it changes medium.

Example: pencil in water looks bent.

**Total Selections In IIT ASHRAM Till Date****1103**

in JEE Advanced

**5386**

in JEE Main

**557**

in NEET

8.

**Sol. (a)** Each part becomes a separate magnet with two poles  
You cannot isolate a single magnetic pole.  
Cutting a magnet gives two smaller magnets, each with North and South poles.

9.

**Sol. (c)** Both astronauts and spacecraft are in free fall  
Gravity still acts in space, but both the spacecraft and astronauts fall at the same rate but due to orbital velocity they are in a state of perpetual freefall, therefore astronauts appear to float (weightlessness).

10.

**Sol. (b)** It gives an upright, magnified image at close distance  
Concave mirrors can magnify objects if the object is close.  
Dentists use them to see enlarged images of teeth for better examination.

11.

**Sol. (b)** Mixture  
Mixture  $\rightarrow$  Air ( $O_2$ ,  $N_2$ ,  $CO_2$ , Ar) is a physical mixture of gases.

12.

**Sol. (c)** Protons = Electrons  
Protons = Electrons  $\rightarrow$  In a neutral atom, positive and negative charges balance.

13.

**Sol. (b)** Pressure is low  
Pressure is low  $\rightarrow$  At high altitude, lower air pressure reduces boiling point of water.

14.

**Sol. (c)** Both oxygen and water  
Both oxygen and water  $\rightarrow$  Rusting is an electrochemical process requiring moisture + oxygen.

15.

**Sol. (c)** Using separating funnel  
Separating funnel  $\rightarrow$  Works because oil and water are immiscible liquids of different densities.

16.

**Sol. (b)** Carbon dioxide  
Carbon dioxide  $\rightarrow$  Reaction of acid (vinegar) with base (baking soda) releases  $CO_2$  bubbles.

17.

**Sol. (a)** Filtration and evaporation  
Filtration & evaporation  $\rightarrow$  Water dissolves salt but not sand; filter  $\rightarrow$  evaporate water  $\rightarrow$  get salt.



18.

**Sol. (b)** Ne

Ne → Correct chemical symbol of Neon is Ne (first capital, second small letter).

19.

**Sol. (c)** Sodium chlorideSodium chloride → Salts are formed from acid + base reaction, e.g.,  $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl}$ .

20.

**Sol. (b)**  $\text{NaHCO}_3$  $\text{NaHCO}_3$  → Baking soda is sodium hydrogen carbonate ( $\text{NaHCO}_3$ )

**PART - IV : BIOLOGY**

1.

**Sol. (b)** Leaf

Leaves contain chlorophyll and perform photosynthesis to make food.

2.

**Sol. (b)** Chlorophyll

Chlorophyll captures sunlight to convert carbon dioxide and water into food.

3.

**Sol. (b)** Gills

Fish take in oxygen dissolved in water using gills.

4.

**Sol. (c)** Excretion

Excretion removes metabolic wastes like urea, carbon dioxide, and sweat.

5.

**Sol. (c)** Goat

Herbivores eat only plants. Lion, tiger, eagle are carnivores.

6.

**Sol. (b)** Cactus

Cactus has fleshy stems to store water and spines to reduce water loss.

7.

**Sol. (c)** Spiracles

Spiracles are tiny openings on insect bodies that connect to tracheae for respiration.

8.

**Sol. (b)** Arteries

Arteries carry oxygen-rich blood away from the heart to different body parts.

9.

**Sol. (a)** Villi

Villi increase the surface area of the small intestine for efficient absorption of nutrients.

10.

**Sol. (b)** Lenticels

Lenticels are small openings in the bark of stems that allow oxygen and carbon dioxide exchange.