



# Aakash

Medical | IIT-JEE | Foundations

# KNOWLEDGE BYTES

July 2025

**CLASS 9**





# Aakash

Medical | IIT-JEE | Foundations

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# PREFACE

## What is Knowledge Bytes ?

Knowledge Bytes is a collection of riddles, interesting facts, mnemonics, and puzzles that will make your learning fun and engaging.

We want you to be delighted about studying. Knowledge Bytes helps you to know more about the subject in a fun, motivating and educational way and helps to implement what you learn in a creative way.

### Benefits



Saves Time



Develops Learning Skills



Stimulates Interest



Leads to Increased Comprehension

## EXPLORE

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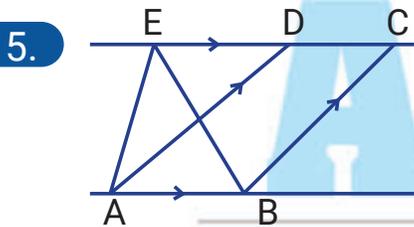
# Areas of Parallelograms and Triangles

## Crossword

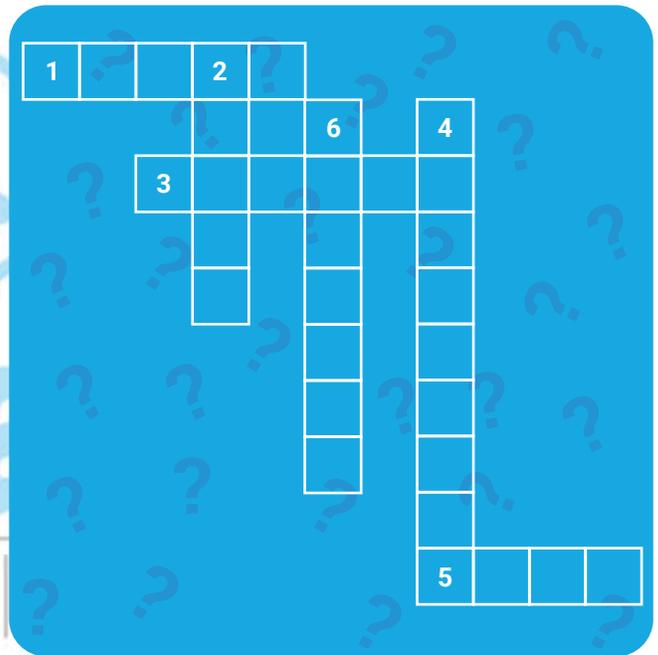
### ACROSS

1. Two parallelograms on the same base and in between the same parallels have \_\_\_\_\_ area.

3. \_\_\_\_\_ divides the triangle into two triangles of equal area.



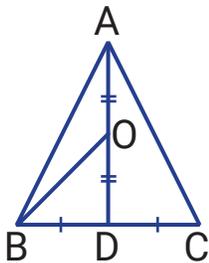
If area  $(\triangle ABE) = K \times$  area  $(\square ABCD)$  then, K equals \_\_\_\_\_



### DOWN

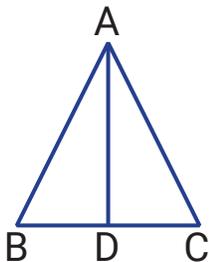
2. \_\_\_\_\_ of two congruent triangles are always equal.

4.



If area  $(\triangle BOD) = K \times$  area  $(\triangle ABC)$  then, K = \_\_\_\_\_

6.



If  $\frac{BD}{DC} = \frac{5}{7}$  and

area  $(\triangle ABC) = 36 \text{ cm}^2$ , then

area  $(\triangle ABD) =$  \_\_\_\_\_  $\text{cm}^2$

# Useful Formulas Involving Triangles

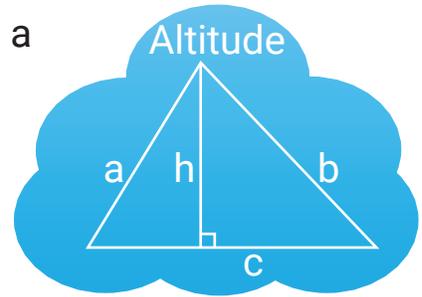
## Length of Altitude, Median and Angle Bisector

### Altitude

The formula for the length of altitude of a triangle is derived from Heron's formula :

$$h = \frac{2\sqrt{s(s-a)(s-b)(s-c)}}{c}$$

where  $s = \frac{1}{2}(a + b + c)$  and  $a, b, c$  are the lengths of the sides of the triangle.

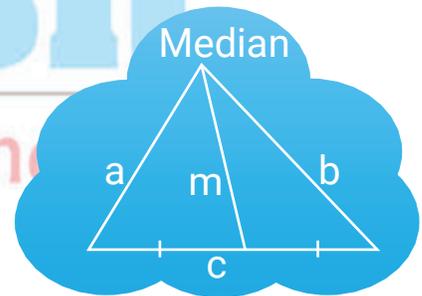


### Median

The formula for the length of a median of a triangle is :

$$m = \frac{1}{2}\sqrt{2a^2 + 2b^2 - c^2}$$

where  $a, b, c$  are the lengths of the sides of the triangle.

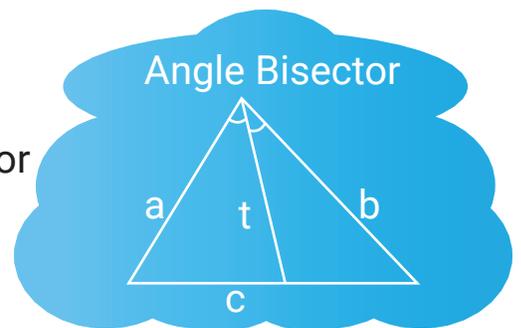


### Angle Bisector

The formula for the length of an angle bisector of a triangle is :

$$t = \sqrt{ab\left(1 - \frac{c^2}{(a+b)^2}\right)}$$

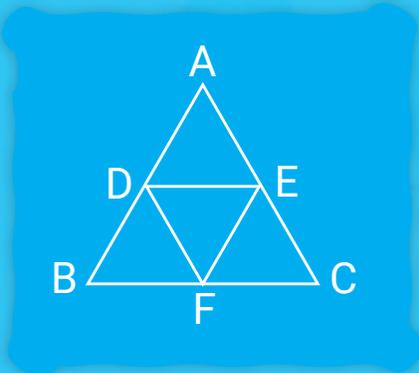
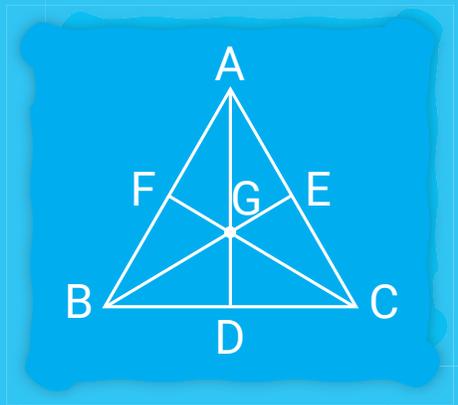
where  $a, b, c$  are the lengths of the sides of the triangle.



## Interesting Facts

If AD, BE and CF are the medians of  $\triangle ABC$

$$\begin{aligned}\therefore \text{ar}(\triangle AGF) &= \text{ar}(\triangle AGE) \\ &= \text{ar}(\triangle GEC) = \text{ar}(\triangle GCD) \\ &= \text{ar}(\triangle GDB) = \text{ar}(\triangle BGF) \\ &= \frac{1}{6} (\text{ar}(\triangle ABC))\end{aligned}$$

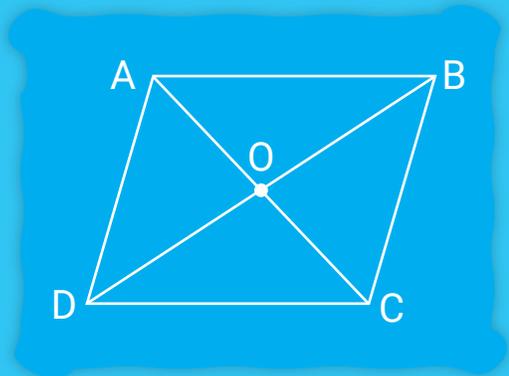


If D, E and F are the midpoints of sides BA, AC and CB respectively, then

$$\text{ar}(\triangle DEF) = \frac{1}{4} (\text{ar}(\triangle ABC))$$

In a parallelogram ABCD, O is any point inside it, then

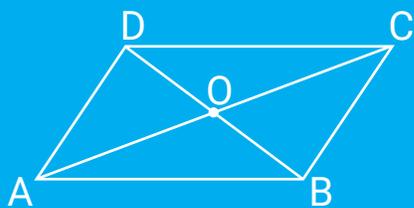
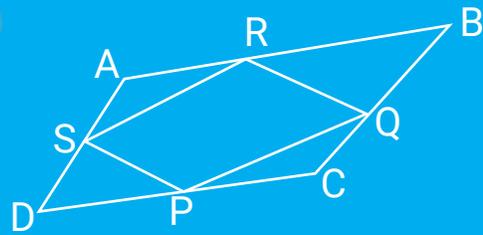
$$\begin{aligned}\text{ar}(\triangle AOB) + \text{ar}(\triangle COD) \\ = \text{ar}(\triangle AOD) + \text{ar}(\triangle BOC)\end{aligned}$$



If P, Q, R and S are the midpoints of sides CD, BC, AB and AD respectively of parallelogram ABCD

then,

$$\text{ar}(\text{parallelogram PQRS}) = \frac{1}{2} (\text{ar} (\text{ABCD}))$$

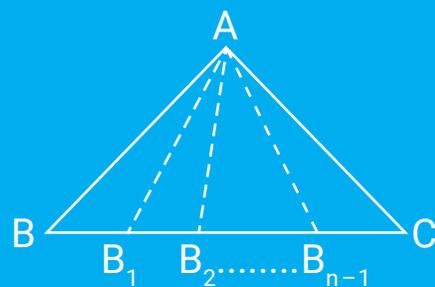


AC and BD are the diagonals of a parallelogram ABCD

$$\begin{aligned} \text{Hence, } \text{ar}(\triangle AOB) &= \text{ar}(\triangle BOC) = \text{ar}(\triangle COD) \\ &= \text{ar}(\triangle AOD) \\ &= \frac{1}{4} (\text{ar} (\text{||}^{\text{gm}} \text{ABCD})) \end{aligned}$$

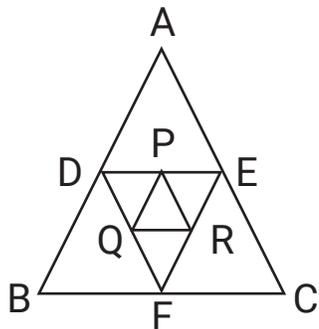
∴ In  $\triangle ABC$ , side BC has been divided into n-equal parts.

$$\begin{aligned} \text{Then, } \text{ar}(\triangle ABB_1) &= \text{ar}(\triangle AB_1B_2) = \dots \\ &= \text{ar}(\triangle AB_{n-1}C) \\ &= \frac{1}{n} (\text{ar} (\triangle ABC)) \end{aligned}$$



## Area Quiz

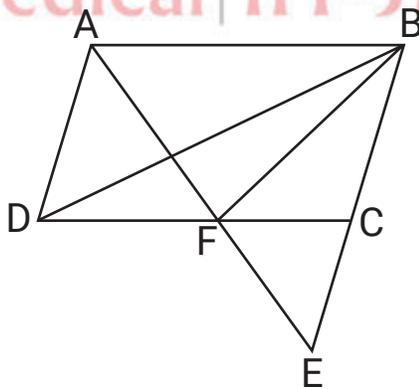
1



If D, E and F are the mid points of sides of  $\triangle ABC$ , P, Q and R are mid points of sides of  $\triangle DEF$  such that area  $\triangle PQR = K \times \text{area} (\triangle ABC)$ , then K equals

- (a)  $\frac{1}{4}$  (b)  $\frac{1}{8}$   
(c)  $\frac{1}{9}$  (d)  $\frac{1}{16}$

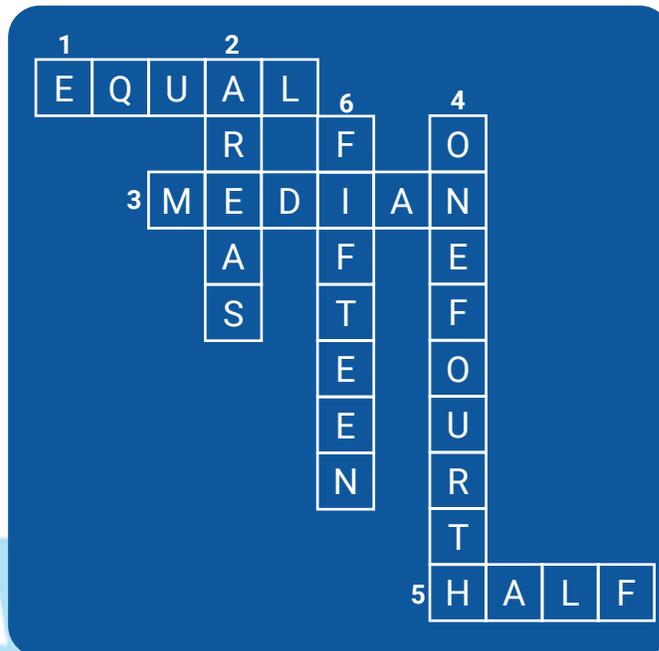
2



ABCD is a parallelogram in which BC is produced to E such that  $CE = BC$ . AE intersects CD at F. If area  $(\triangle DFB) = 13 \text{ cm}^2$ , then the area of parallelogram ABCD is

- (a)  $50 \text{ cm}^2$  (b)  $52 \text{ cm}^2$   
(c)  $26 \text{ cm}^2$  (d)  $39 \text{ cm}^2$

## Answer (Crossword)



## Answer (Area Quiz)

1

Ans. (d)  $\frac{1}{16}$

2

Ans. (b)  $52 \text{ cm}^2$

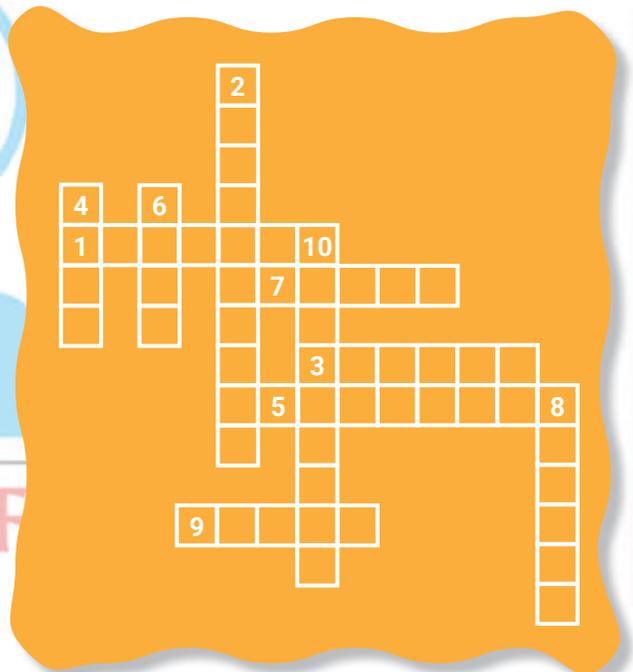


# Work and Energy

## Crossword

### ACROSS

1. \_\_\_ potential energy is due to change in the shape of the body.
3. Energy is a \_\_\_ quantity.
5. When a body is thrown up, work done by gravity on the body is \_\_\_.
7. Work is said to be done when the \_\_\_ acting on a body produces motion in it.
9. The amount of work done in one second.



### DOWN

2. A solar cell converts light energy into \_\_\_ energy.
4. Work done by the force of gravity on the Moon around the Earth is \_\_\_.
6. The unit of power is \_\_\_.
8. The ability to do work.
10. Total energy of the universe remains \_\_\_.



# Facts About Energy

1. The word energy comes from the Greek word *energeia*.
2. In space when an object is accelerated to a certain speed then the force is removed from it. But, the object doesn't lose its speed because there is no air friction in space. So, work done by object moving in space is also zero.
3. An object that falls from a height also performs work due to gravitational force.
4. Most types of energy are either a form of kinetic energy or potential energy.
5. Energy can be transformed from one form to another.

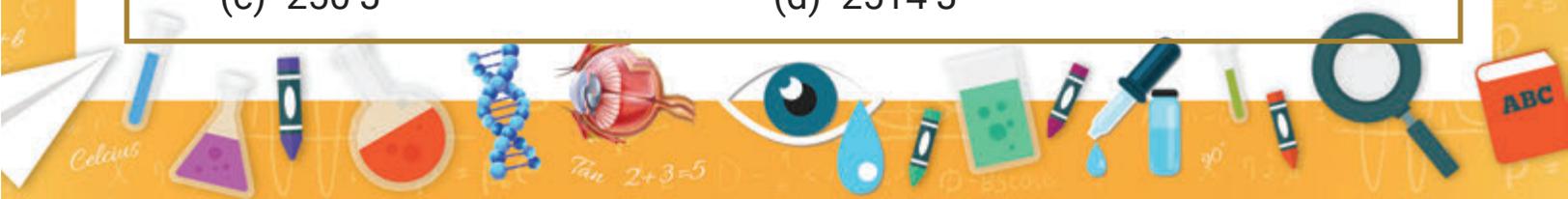
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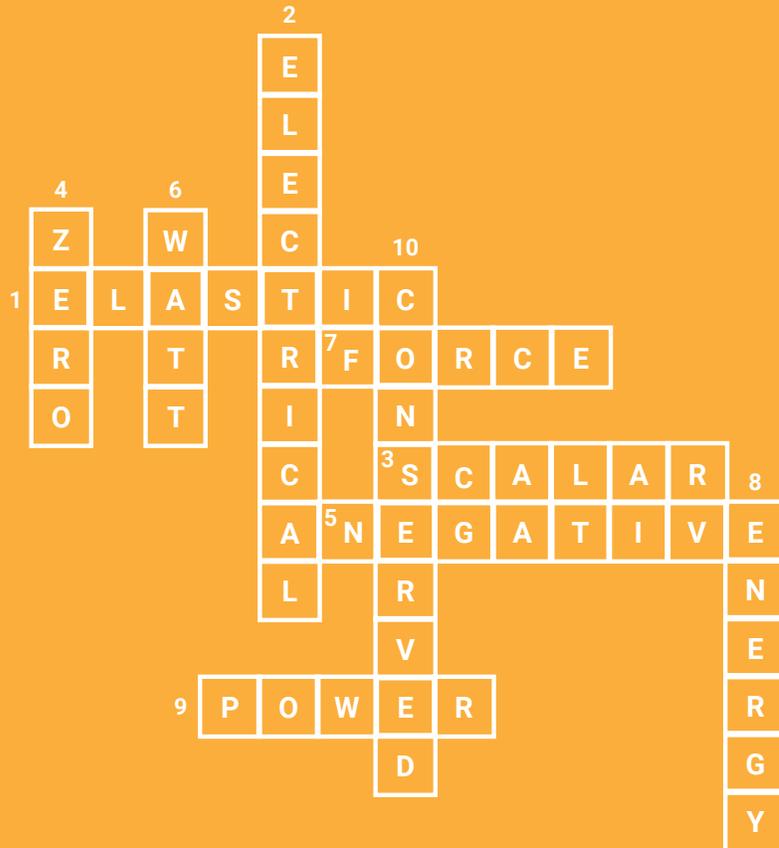


## Quiz

- 1 When a body falls freely under gravity then the work done by the gravity is  
(a) Positive (b) Negative  
(c) Zero (d) Infinity
- 2 When a gas filled in a cylinder fitted with a movable piston is allowed to expand the work done by the gas is positive  
(a) True (b) False
- 3 When a body slides against a rough horizontal surface, the work done by friction is \_\_\_\_  
(a) Positive (b) Zero  
(c) Negative (d) Constant
- 4 When a body is lifted the work done by the gravitational force is positive  
(a) True (b) False
- 5 For a body moving in a circular path, the work done by the centripetal force is \_\_\_\_  
(a) Negative (b) Positive  
(c) Constant (d) Zero
- 6 When a coolie walks on a horizontal platform with a load on his head, the work done by the coolie on the load is zero  
(a) True (b) False
- 7 A gardener pushes a lawn roller, through a distance of 20 m. If he applies a force of 20 kg wt in a direction inclined at  $60^\circ$  to the ground. Find the work done by him. ( $g = 9.8 \text{ m/s}^2$ )  
(a) 400 J (b) 1960 J  
(c) 250 J (d) 2514 J



## Answer (Crossword)



Quiz



## Answer (Quiz)

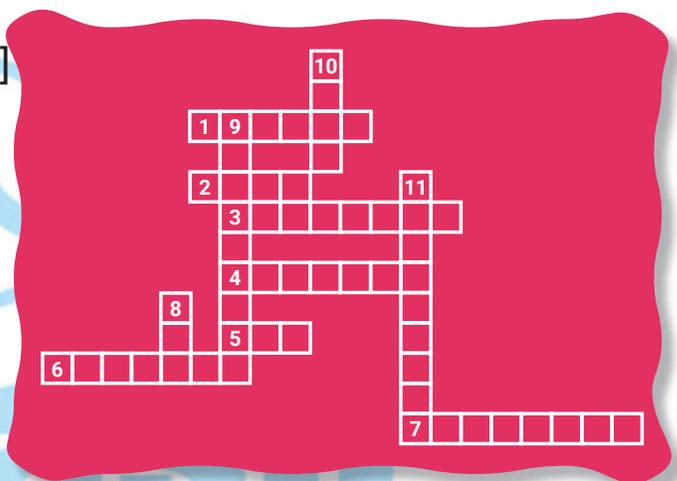
- |                |             |
|----------------|-------------|
| 1 (a) Positive | 2 (a) True  |
| 3 (c) Negative | 4 (b) False |
| 5 (d) Zero     | 6 (a) True  |
| 7 (b) 1960 J   |             |



# Atoms and Molecules

## ACROSS

1. Positively charged chemical species. [6]
2. Amount of the substance which has mass equal to its gram atomic mass. [4]
3. The smallest particle of compound which can exist in free state. [8]
4. Cs is symbol of \_\_\_\_\_. [7]
5. Valency of magnesium in MgO is \_\_\_\_\_. [3]
6. Combining capacity of an element. [7]
7. Number of moles of the solute dissolved in per litre of the solution. [8]



## DOWN

8. Electrically charged chemical species. [3]
9. Total number of atoms constituting a molecule. [9]
10. The smallest particle of an element. [4]
11. Metal with valency three. [9]





## Jumbled Words

The underlined word in the following sentences have been jumbled up. Write them in correct form.

1. Molecules that have more than two atoms in them are known as oytcimpalo molecules.
2. Atomicity of pktrnoy is one.
3. Atoms of different elements join together in a tcaonnst pooortinp.
4. tmoalyli is the number of moles of the solute dissolved in per 1000 g or 1 kg of the solvent.
5. A chemical formula represents iminsopcoto of a molecule.
6. Negatively charged species are called snoian.
7. The term 'atom' was coined by tcmdeoirus.





## Quiz

Q.1

Which of the following statements is not true about an atom?

- (a) Atoms of different elements are identical in mass.
- (b) Atoms are the basic units from which molecules and ions are formed.
- (c) Atoms are always neutral in nature.
- (d) Atoms aggregate in large numbers to form the matter.

Q.2

Which of the following contains maximum number of molecules?

- (a) 1 g  $\text{CO}_2$
- (b) 1 g  $\text{N}_2$
- (c) 1 g  $\text{H}_2$
- (d) 1 g  $\text{CH}_4$

Q.3

What is the molecular mass of  $\text{H}_2\text{SO}_4$  ?

- (a) 64 u
- (b) 98 u
- (c) 36 u
- (d) 56 u

Q.4

Select the relation between atomic number, mass number and number of neutrons.

- (a) Mass number = Atomic number + Number of neutrons
- (b) Mass number = Atomic number/Number of neutrons
- (c) Mass number = Atomic number  $\times$  Number of neutrons
- (d) Mass number = Atomic number - Number of neutrons

Q.5

The term "mole" in chemistry was introduced by

- (a) Lavoisier
- (b) Wilhelm Ostwald
- (c) John Dalton
- (d) Neils Bohr

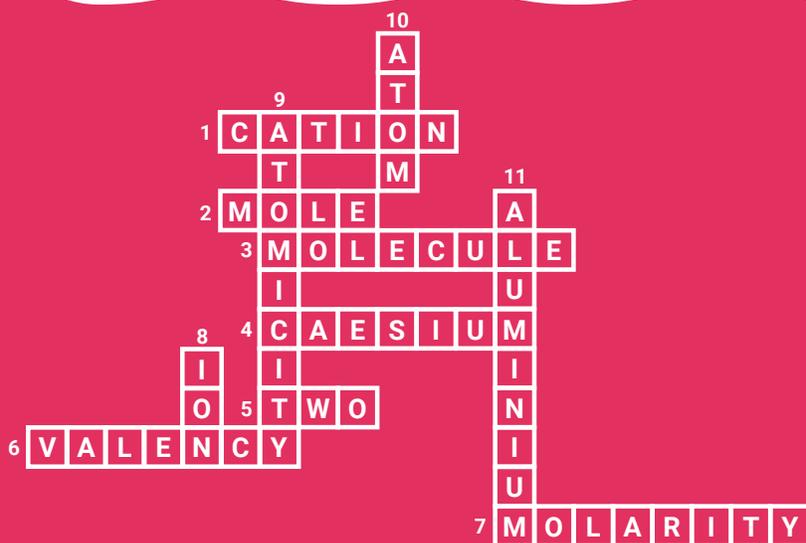


# Puzzle

Complete the table.

| SYMBOL | VALENCY | ION              |
|--------|---------|------------------|
|        |         | Na <sup>+</sup>  |
| N      |         |                  |
|        |         | S <sup>2-</sup>  |
|        |         | H <sup>-</sup>   |
| Al     |         |                  |
| O      |         |                  |
|        |         | Ca <sup>2+</sup> |
| Fe     | 3       |                  |
| Cl     | 1       |                  |
|        |         | Zn <sup>2+</sup> |

# Answer (Crossword)





## Answer (Jumbled Words)

The underlined word in the following sentences have been jumbled up. Write them in correct form.

1. Molecules that have more than two atoms in them are known as polyatomic molecules.
2. Atomicity of krypton is one.
3. Atoms of different elements join together in a constant proportion.
4. Molality is the number of moles of the solute dissolved per 1000 g or 1 kg of the solvent.
5. A chemical formula represents composition of a molecule.
6. Negatively charged species are called anions.
7. The term 'atom' was coined by Democritus.



## Answer (Quiz)

Ans.  
1(a)

Atoms of different elements are identical in mass.

Ans.  
2(c)

1 g H<sub>2</sub>

Ans.  
3(b)

98 u

Ans.  
4(a)

Mass number = Atomic number + Number of neutrons

Ans.  
5(b)

Wilhelm Ostwald

## Answer (Puzzle)

| SYMBOL | VALENCY | ION              |
|--------|---------|------------------|
| Na     | 1       | Na <sup>+</sup>  |
| N      | 3       | N <sup>3-</sup>  |
| S      | 2       | S <sup>2-</sup>  |
| H      | 1       | H <sup>-</sup>   |
| Al     | 3       | Al <sup>3+</sup> |
| O      | 2       | O <sup>2-</sup>  |
| Ca     | 2       | Ca <sup>2+</sup> |
| Fe     | 3       | Fe <sup>3+</sup> |
| Cl     | 1       | Cl <sup>-</sup>  |
| Zn     | 2       | Zn <sup>2+</sup> |

# Why do we fall ill?

## Interesting Facts

1. The 1976 film, "The Boy in the Plastic Bubble," depicts a person with a deficient immune system, who must live out his life in a completely sterile environment because his body is unable to fight infections. Though the story is fictional, the immune system disease — Severe Combined Immunodeficiency (SCID), or "bubble boy disease" — is very real, occurring in about 1 in every 100,000 births.



It can be treated only through bone marrow transplant from a matching sibling donor. However, gene therapy has also recently been proved promising.

2. Despite persistent efforts by the great minds of the world in order to improve the conditions of the health sector in general and treating of diseases in particular there are many diseases which do not have a cure. Let's go through them:
  - (a) Various types of allergies like atopic dermatitis, allergic rhinitis (Hay fever) are incurable.
  - (b) Arthritis
  - (c) Metastatic Cancer
  - (d) Depression
  - (e) HIV/AIDS: There is no cure for it, but the medication exists to control the symptoms.
  - (f) Though there is a vaccine to prevent polio but there is no cure if one has it.





## DID YOU KNOW?

- Your immune system can attack itself. It is known as autoimmune disease.
- Autoimmune diseases occur when the immune system destroys its own healthy tissues. In such cases, white blood cells in the body cannot distinguish between pathogens and the body's normal cells, setting off a reaction that destroys healthy tissues.
- Women are more likely to be diagnosed with autoimmune diseases. There are over 80 different types of autoimmune disorders like rheumatoid arthritis, psoriasis, Myasthenia gravis and Crohn's disease.
- Globally, approximately one in three of all adults suffer from multiple chronic conditions.
- Globally, the death from heart diseases is still on the top of the list since last two decades.
- Cancer is the second leading cause of death globally, and is responsible for an estimated 9.6 million deaths in 2018. Globally, about 1 in 6 deaths is due to cancer.
- TB remains the world's most deadly infectious disease; it claims more than a million lives each year globally.
- For example: According to the National Tuberculosis Control Programme Report, as many as 4.4 lakh people died in 2018 of TB, which is 29 per cent of the total 1.5 million deaths due to TB in the world.





## Speculate the Sickness

- 1 It spreads by contaminated food to your nervous system, but 2 drops of vaccine can save you when taken on time.
- 2 It spreads by the *Culex* mosquito and causes your leg to swell like an elephant.
- 3 Long time ago, a waitress known as Mary Mallon spread this disease as she herself was immune to it.
- 4 It causes fever, cough, red rashes all over the body and it is caused by a virus.
- 5 It spreads by *Anopheles* mosquito and is cured by quinine.
- 6 It causes swelling below the ear and its pathogen lives in our salivary glands.
- 7 You'd have whooping coughs if you caught this infection.
- 8 It is a black throat infection caused by *Corynebacterium*.
- 9 If you don't have citrus fruits in your diet, this is the deficiency you develop.
- 10 Lack of vitamin B<sub>1</sub> causes this disease.
- 11 Iodised salt is what you need to prevent this disease.
- 12 An immune deficiency spreading by sexual contact or blood transfusion.
- 13 A severe lung infection, spreads by air/droplet, caused by a *Mycobacterium*.

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| T | E | P | E | R | T | U | S | S | I | S |
| U | F | S | U | D | C | M | U | M | P | S |
| B | I | A | M | I | S | A | G | J | P | T |
| E | L | V | E | P | C | L | O | G | O | Y |
| R | A | B | A | H | U | L | I | S | L | P |
| C | R | E | S | T | R | P | T | O | I | H |
| U | I | R | L | H | V | O | R | T | O | O |
| L | A | I | E | E | Y | M | E | Q | I | I |
| O | S | B | S | R | I | A | I | D | T | D |
| S | I | E | W | I | W | A | I | D | S | S |
| I | S | R | I | A | G | A | I | T | S | C |
| S | R | I | S | M | A | L | A | R | I | A |



???



## Riddles

1

In the given picture it is also known as the “death tunnel”, what is it?

- ◆ Hospital
- ◆ Extermination camp
- ◆ Uranium mine
- ◆ Chinese prison



2

What is the Zika Virus (ZIKV) named after?

- ◆ Monkey
- ◆ Forest
- ◆ Beach
- ◆ Mosquito



3

Melasma is also known as?

- ◆ Herpes
- ◆ Freckles
- ◆ Mask of pregnancy
- ◆ Albinism



## Beyond the Bravery

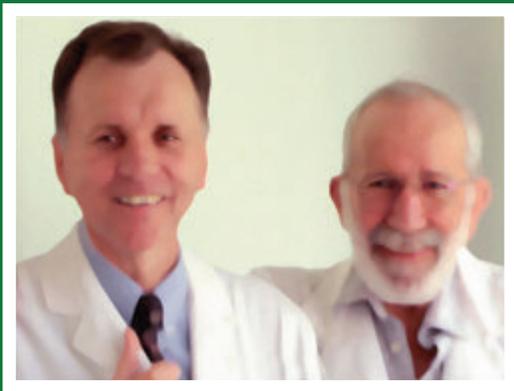
### Boy who took a needle for the world:

James Phipps was the 8 years old boy on which the first vaccine was tested by Edward Jenner. He was Edward's gardener's son. Edward knew in his heart that the only those milkmaids were immune to smallpox who had first contracted cowpox, so he took fluids from their pustles, made a cut in the boy's hands and inoculated him with the fluid. Even after 20 times of inoculation with the live smallpox virus, he never got the disease even once. Later in life, Pasteur gave him, his wife and kids a cottage to live, which is currently a part of Edward Jenner Museum.



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### Not possible to test on others? No problem, I'll try myself!!



Dr. Barry Marshall tested *Helicobacter pylori* on himself to prove that this bacteria causes the peptic ulcers. His fellow Robin Warren developed the antibiotic which cured this condition. Both the scientists then went on to win Nobel Prize for this discovery.



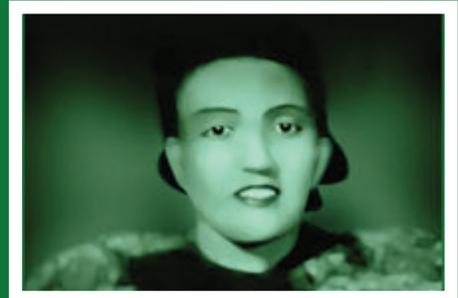
## All heroes don't wear capes, some wear labcoats too

Joseph Meister was a 9 years old boy, bit by a rabid dog, on which rabies vaccine was first tested by Louis Pasteur. Pasteur administered a series of 13 injections, after which Meister never developed rabies. Later in life, Meister served as caretaker of Pasteur's tomb at the Pasteur's Institute in Paris.



## The Immortal Lady

Henrietta Lacks was a 31 years old mother of five when she died in 1951, but her name and memory live on in the form of a remarkable lineage of continually dividing cells that have achieved, to all intents and purposes, "immortality". Her cancer cells have continued to live well beyond her death in labs around the world, replicating so prolifically that laid end-to-end they could be wrapped around the earth three times. Her surgeon, Howard Jones, took a tissue biopsy of her cancerous womb without her knowledge or consent, which was passed to George Otto Gey, a physician and cancer researcher in the same Baltimore hospital who was astonished by the ability of the cells to replicate in laboratory culture.





## Answer (Speculate the Sickness)

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| T | E | P | E | R | T | U | S | S | I | S |
| U | F | S | U | D | C | M | U | M | P | S |
| B | I | A | M | I | S | A | G | J | P | T |
| E | L | V | E | P | C | L | O | G | O | Y |
| R | A | B | A | H | U | L | I | S | L | P |
| C | R | E | S | T | R | P | T | O | I | H |
| U | I | R | L | H | V | O | R | T | O | O |
| L | A | I | E | E | Y | M | E | Q | I | I |
| O | S | B | S | R | I | A | I | D | T | D |
| S | I | E | W | I | W | A | I | D | S | S |
| I | S | R | I | A | G | A | I | T | S | C |
| S | R | I | S | M | A | L | A | R | I | A |



## Answer (Riddles)

1

Ans. **Hospital**

Tuberculosis, also known as “the white plague”, had a high mortality rate before streptomycin was introduced as a treatment in 1943. There may have been as many as 64,000 deaths at Waverly Sanatorium in Kentucky. During the TB years, tunnel was also used to transport the dead, so they wouldn’t be seen by other patients. The tunnel is supposed to be haunted by those who made their last journey through it.



2

Ans. **Forest**

Zika virus (ZIKV) is spread by daytime-active *Aedes* mosquitoes. Its name comes from the Zika Forest of Uganda, where the virus was first isolated in 1947. Zika virus is related to the Dengue, Yellow fever, Japanese encephalitis, and West Nile viruses. From 2007 to 2016, the virus spread eastward, across the Pacific Ocean to the Americas, leading to the 2015–16 Zika virus epidemic.

3

Ans. **Mask of pregnancy**

Melasma (a.k.a. chloasma) is a tan or dark skin discoloration. Melasma is thought to be caused by sun exposure, genetic predisposition, hormone changes and skin irritation. Although it can affect anyone, melasma is particularly common in women, especially pregnant women and those who are taking oral or patch contraceptives or hormone replacement therapy (HRT) medication.

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# Natural Vegetation

## TYPES OF VEGETATION

Major types of vegetation in our country

Tropical Evergreen Forests



Tropical Deciduous Forests



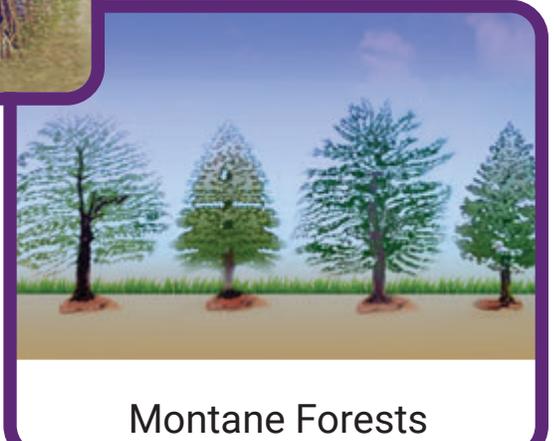
Mangrove Forests



Tropical Thorn Forests and Scrubs



Montane Forests



# Vocabulary

It is one of the most important parts of English. Let's learn how the following words are used as different "Parts of Speech".

## 1 Air

As **Noun** → Birds fly in the air.

As **Verb** → Raina opened the windows to air the room.

## 2 Bark

As **Noun** → The bark of Neem tree is antiseptic.

As **Verb** → Dogs bark at strangers.

## Bridge

3 As **Noun** → The army crossed the bridge.

As **Verb** → Let us bridge the generation gap here.

## Button

4 As **Noun** → My blazer has a costly button.

As **Verb** → He never buttons up his shirt.

## Fair

5 As **Noun** → Sonepur fair is one of the biggest fairs in Asia.

As **Adjective** → Nitin is fair in most of his dealings.

As **Adjective** → The Americans have fair complexion.

As **Adjective** → Make a fair copy of this letter.



# Statement Analysis-I

**Read the following Statement and Assumptions.**

Give answer (a) if only assumption 1 is implicit.

Give answer (b) if only assumption 2 is implicit.

Give answer (c) if either assumptions 1 or 2 is implicit.

Give answer (d) if neither assumption 1 nor 2 are implicit.

Give answer (e) if both assumptions 1 and 2 are implicit.

1. **Statement :** Vitamin E tablets improve circulation, keep your complexion in glowing condition.

### Assumptions

- (1) People like a glowing complexion.
- (2) Complexion becomes dull in the absence of circulation.

2. **Statement :** "The function will start at 6 pm." You are requested to take your seats before 6 pm.

### Assumptions

- (1) Function will start as scheduled.
- (2) If an invitee is not in his seat before 6 pm, the function will not start.

3. **Statement :** The state government has decided to appoint four thousand primary school teachers during next financial year.

### Assumptions

- (1) There are enough schools in the state to accommodate four thousand primary school teachers during the next financial year.
- (2) The eligible candidates may not be interested to apply as the government may not finally appoint such a large number of primary school teachers.





# Missing Numbers

## Directions (1 and 2)

In the given figure, each of the nine boxes must be filled with an integer from 1 to 9, so that each row and column are equal in sum which is unique. No repetition is allowed.

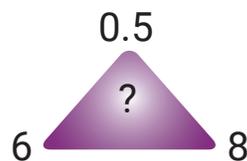
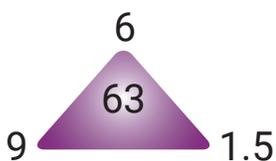
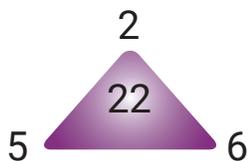
|   |   |   |
|---|---|---|
| 8 | p | y |
| x | n | m |
| 4 | 9 | z |

- The value of  $x + y$  is  
 (a) 7 (b) 10  
 (c) 9 (d) 11
- The value of  $m + y - x$  is  
 (a) 13 (b) 10  
 (c) 15 (d) 16
- In the given figure below, find the value of ?

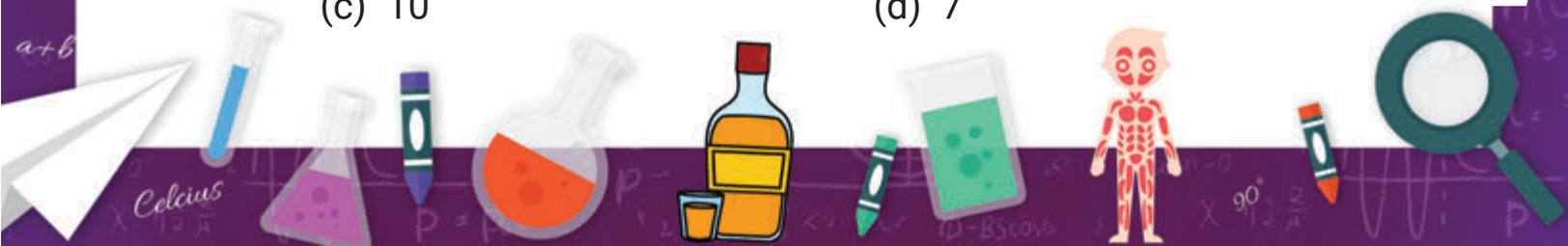
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- (a) 9 (b) 11  
 (c) 8 (d) 13
- In the given figure below, find the value of ?



- (a) 8 (b) 9  
 (c) 10 (d) 7



## Answer (Statement Analysis-I)

1. **Ans :** (e)

**Explanation :** Both assumptions are implicit. Generally, only those good features of a product are highlighted which people crave for. So, 1 is implicit. If circulation is improved, complexion also improves.

2. **Ans :** (a)

**Explanation :** It is mentioned in the invitation that you are requested to take your seats before 6 pm. It means that function will start as scheduled. Hence, assumption 1 is implicit. It is not given that the function will not start if invitees do not come on-time.

3. **Ans :** (a)

**Explanation :** As per the requirement of teachers in primary school only, the government may have taken such decision. So, 1 is implicit. Assumption 2 is absurd as it is against the government's decision.

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## Answer (Statement Analysis-II)

1. **Ans :** (2) only II follows.

2. **Ans :** (4) Neither I nor II follows

**Explanation :** The statement mentions that the commercial banks violate a directive issued by the RBI. The remedy is only to make the banks implement the Act. So, none of the course of action follows.



# Missing Numbers

1. Ans: (c) 9

2. Ans: (b) 10

Remaining numbers are 1, 3, 5, 6, 7 clearly  $8 + x + y = 15 = 4 + 9 + 2$   
so,  $x = 3$ , now by further analysis  
 $y = 6, m = 7$

3. Ans: (c) 8

Just add 3 to all the number and you will get that number after two spaces.

4. Ans: (d) 7

$$5 \times 2 + 6 \times 2 = 22$$

$$9 \times 6 + 1.5 \times 6 = 63$$

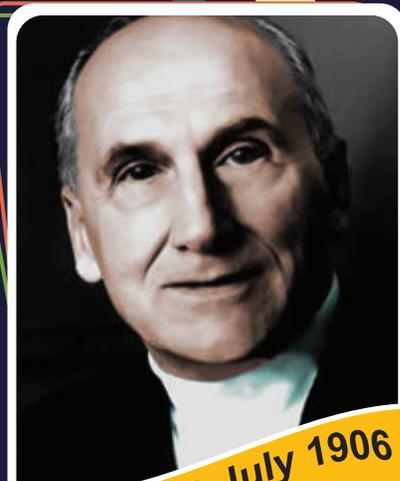
$$6 \times 0.5 + 8 \times 0.5 = 7$$



**NOBEL PRIZE FOR CHEMISTRY**

*Happy Birthday*

**Vladimir Prelog**



Born - 23 July 1906  
Died - 07 Jan 1998

Yugoslavian-Swiss chemist who shared the 1975 Nobel Prize for chemistry with John W. Comforth for his work on the stereochemistry of organic molecules and reactions. Stereochemistry is the study of the three-dimensional arrangements of atoms within molecules. He authored systematic naming rules for molecules and their mirror-image version, that is, which configuration will be referred to as “dextro” and which will be the “levo” (right or left). Also, by X-ray diffraction, he elucidated the structure of several antibiotics.

NEET 2025 Wasn't Easy. Our Results Say Otherwise.

## 5 AAKASHIANS IN TOP 10 AIR NEET(UG) 2025



## OUR NATIONAL TOPPERS IN NEET (UG) 2025



Our Problem *Solvers* shine bright in **JEE (Advanced) 2025**

### Our Top 100 AIR



# Aakashians Create History in International Olympiads

(Classroom Program Students)



**Dhruv Advani**

**IBO 2023**



**Gold Medalists**

**34<sup>th</sup> International Biology Olympiad**



**Rohit Panda**



Chirag Falor



International Olympiad on Astronomy & Astrophysics



Dhiren Bhardwaj



32<sup>nd</sup> International Biology Olympiad



Anshul



32<sup>nd</sup> International Biology Olympiad



Amritansh Nigam



33<sup>rd</sup> International Biology Olympiad



Prachi Jindal



33<sup>rd</sup> International Biology Olympiad



Tanishka Kabra



54<sup>th</sup> International Chemistry Olympiad

**1484 Students Scored Above MAS**

**420**

Classroom Students  
Qualified in  
NSEs\* 2024-25

(Group A & B)

**49**  
NSEA\*

(Group A & B)

**229**  
NSEB\*

(Group A & B)

**70**  
NSEC\*

(Group A & B)

**38**  
NSEP\*

**34**  
NSEJS\*

**Aakashians Qualified for INO-2025**



**Krishna Agrawal**  
NSEA | NSEP | NSEC



**Mohit Shekher Shukla**  
NSEA | NSEP | NSEC



**Utkarsh Awadhya**  
NSEB | NSEP | NSEC



**Rupayan Pal**  
NSEC | NSEP | NSEP



**Devansh Garg**  
NSEJS



**Aaron Thakkar**  
NSEJS

and many more...

\*NSEA-National Standard Examination in Astronomy | NSEB-National Standard Examination in Biology | NSEC-National Standard Examination in Chemistry  
NSEP-National Standard Examination in Physics | NSEJS-National Standard Examination in Junior Science | INO-Indian National Olympiad

## Aakashians Qualified for RMO 2024

899

Classroom Students

Qualified  
in IOQM  
2024



Joish Achyuta  
Class - VIII



Dhanush Damu  
Class - IX



Arnav Singh  
Class - X



Pranit Goel  
Class - XI



Aayush Agarwal  
Class - XII

and many more...

## Aakashians Qualified for INMO 2025

161

Classroom Students

Qualified  
in RMO 2024-25



Kotha D Reddy  
Reg. No. 00006657265



Abhipraya Verma  
Reg. No. 00010407513



Aditya Singh  
Reg. No. 00012631688



Rujul Garg  
Reg. No. 00005153903



Mohit Shekher Shukla  
Reg. No. 00006093814

and many more...

## Aakashians Qualified for OCSC/IMOTC-2025

25

Classroom Students

Qualified  
in INOs 2025



Pranit Goel  
Qualified INMO



Harshit Singh  
Qualified INJSO



Subhrojit Paul  
Qualified INBO



Mohit Shekher Shukla  
Qualified INChO



Rujul Garg  
Qualified INPhO



Aditya Singh  
Qualified INAO Jr

and many more...

## Aakashians Qualified for Merit Certificate

1019

Classroom Students

Qualified  
in IMO (Level-I)  
2023-24



Intl.  
Rank  
1

Prisha Miglani  
Class - IX



Intl.  
Rank  
2

Sushant Agarwal  
Class - X



Intl.  
Rank  
4

Ekaashar Gupta  
Class - IX



Intl.  
Rank  
7

Harshit Singh  
Class - VIII

438

Classroom Students

Qualified  
in IMO (Level-II)  
2024

and many more...

## Aakashians Qualified for Merit Certificate

4902

Classroom Students

Qualified  
in NSO (Level-I)  
2024-25



Intl.  
Rank  
2

Meghav Ladani  
Class - X



Intl.  
Rank  
2

Anubhab Manna  
Class - VIII



Intl.  
Rank  
3

Arnav Gupta  
Class - IX



Intl.  
Rank  
7

Parshti Bajpai  
Class - IX



Intl.  
Rank  
10

Shreya  
Class - VIII

and many more...