



UDAAN

A QUEST FOR SCIENCE ASPIRANTS

SCIENCE APTITUDE TEST

CLASS 5

ANSWER KEY WITH SOLUTIONS

DATE : 19.01.25

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IIT JEE | NEET | GUJCET | FOUNDATION (6 to10)



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PART - I : MENTAL ABILITY

1.

Sol: (c)

Pattern:-

$1 + 2 = 3$

$3 + 4 = 7$

$7 + 6 = 13$

$13 + 7 = \mathbf{21}$

Hence, the next term would be 21.

2.

Sol: (c)

In the following series one alphabet is skipped in backward direction.

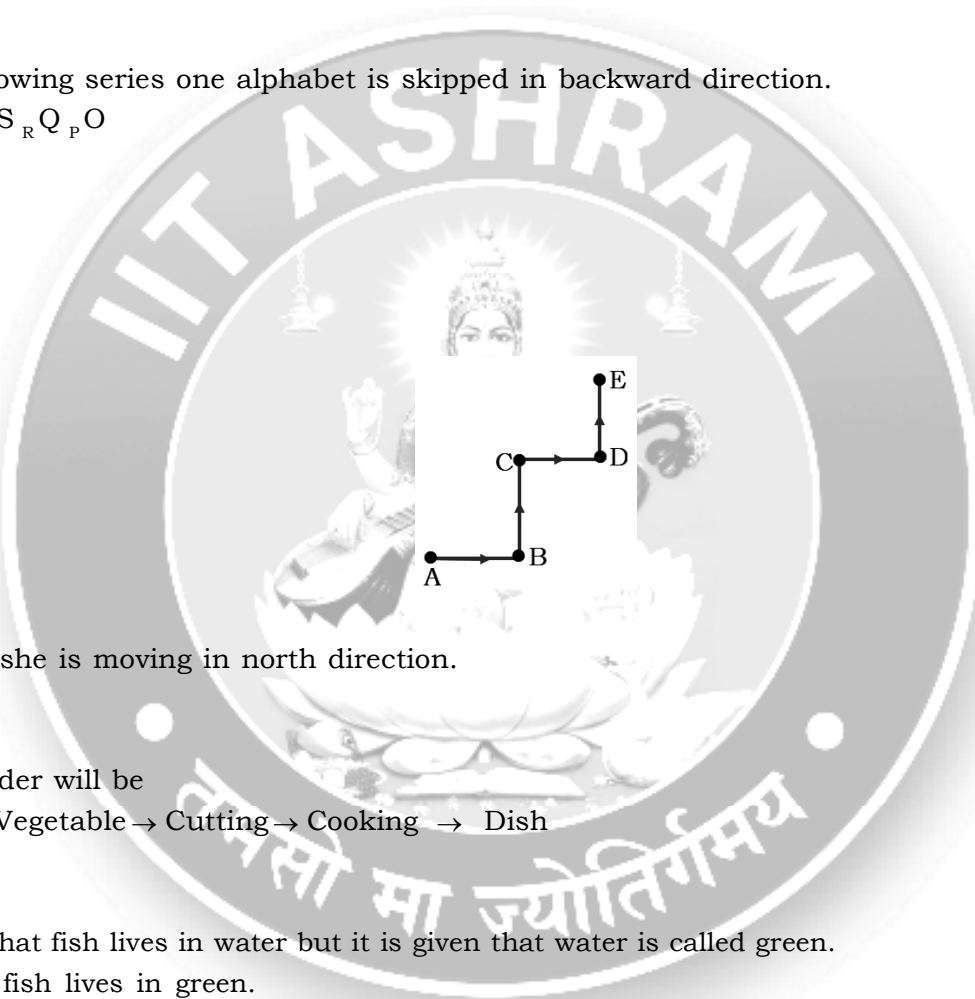
Y_XW_VU_TS_RQ_PO

3.

Sol: (a)

4.

Sol: (d)



Therefore she is moving in north direction.

5.

Sol: (c)

Correct order will be

Market → Vegetable → Cutting → Cooking → Dish

6.

Sol: (b)

We know that fish lives in water but it is given that water is called green.

Therefore, fish lives in green.

7.

Sol: (b)

All except hammer are sharp-edged and have a cutting action.

8.

Sol: (b)

9.

Sol: (c)

Pattern:

$1-1 = 0$

$2-1 = 1$

$4-2 = 2$

$7-4 = 3$

$11-7 = 4$

$16-11 = 5$

$22 - 16 = 6$

Hence, the next term would be 22

10.

Sol: (b)

In the following Series three letters are skipped in forward direction.

A B C D E F G H I J K L M N O P Q R S T U

11.

Sol: (c)

when we look at four options, Options (c) makes meaning word i.e CASTLE (5,6,4,1,3,2)

12.

Sol: (d)

 $P \rightarrow 7, A \rightarrow 2, R \rightarrow 9, R \rightarrow 9, O \rightarrow 4, T \rightarrow 3$

13.

Sol: (b)

Cobler makes things from leather & Carpenter from wood.

14.

Sol: (a)

15.

Sol: (c)

We know that Jewellery is made up of gold. Since, gold is called paper. Therefore, jewellery is made up of paper.

PART - II : MATHEMATICS

1.

Sol: (b)

$$\frac{15}{1000} = 0.015$$

2.

Sol: (c)

The predecessor of $(-99) = (-99) - 1 = (-100)$

3.

Sol: (c)

$$3\ell \ 10m\ell = 3\ell + 0.10\ell = 3.010\ell$$

4.

Sol: (b)

$$\text{Equivalent of } \frac{5}{9} = \frac{5 \times 5}{9 \times 5} = \frac{25}{45}$$

5.

Sol: (d)

6.

Sol: (c)

$$\text{length} = 5 \text{ cm}$$

$$\text{breadth} = 2 \text{ cm}$$

Perimeter of rectangle

$$= 2 \times (\text{length} + \text{breadth})$$

$$= 2 \times (5 + 2)$$

$$= 2 \times 7$$

$$= 14 \text{ cm}$$

7.

Sol: (a)

A hexagon has 6 sides

8.

Sol: (b)

An angle whose measure is more than 90° but less than 180° is called an obtuse angle.

9.

Sol: (a)

$$3.06 < 3.09 < 3.6$$

∴ 3.06 is the smallest.

10.

Sol: (a)

$$360 \div 90 = 4$$

11.

Sol: (b)

$$\frac{12}{7} < \frac{19}{7}$$

12.

Sol: (b)

A ray starts from points and extends infinitely in one direction. So, it has one endpoint.

13

Sol: (c)

An isosceles triangle is a triangle in which two sides are of equal length.

14.

Sol: (d)

Smallest negative integer does not exist.

15

Sol: (b)

$$3160 \times 25 = 79,000$$

16.

Sol: (b)

A fraction whose numerator is less than the denominator is called proper fraction.

17.

Sol: (a)

18.

Sol: (b)

Diameter is the longest chord of circle.

19.

Sol: (a)

Fraction with the same denominator are called like fractions.

20.

Sol: (b)

$$\text{Perimeter of square} = 100 \text{ cm}$$

$$\therefore \text{Perimeter of square} = 4 \times \text{side}$$

$$100 = 4 \times \text{side}$$

$$\frac{100}{4} = \text{side}$$

$$\therefore \text{Side} = 25 \text{ cm}$$

21.

Sol: (c)

$$\text{Area of square} = \text{side} \times \text{side}$$

22.

Sol: (a)

$$(-5) > (-12)$$

23.

Sol: (b)

$$1 \text{ cm} = 0.01 \text{ m}$$

24.

Sol: (d)

A reflex angle is an angle that is more than 180° but less than 360° .

25.

Sol: (a)

$$8 > 7 > -1 > -2$$

26.

Sol: (c)

$$4 - (-4) = 4 + 4 = 8$$

27.

Sol: (c)

An angle is formed when two straight lines or rays meet at a common end point.

28.

Sol: (c)

The angle between north & south direction is 180° .

29.

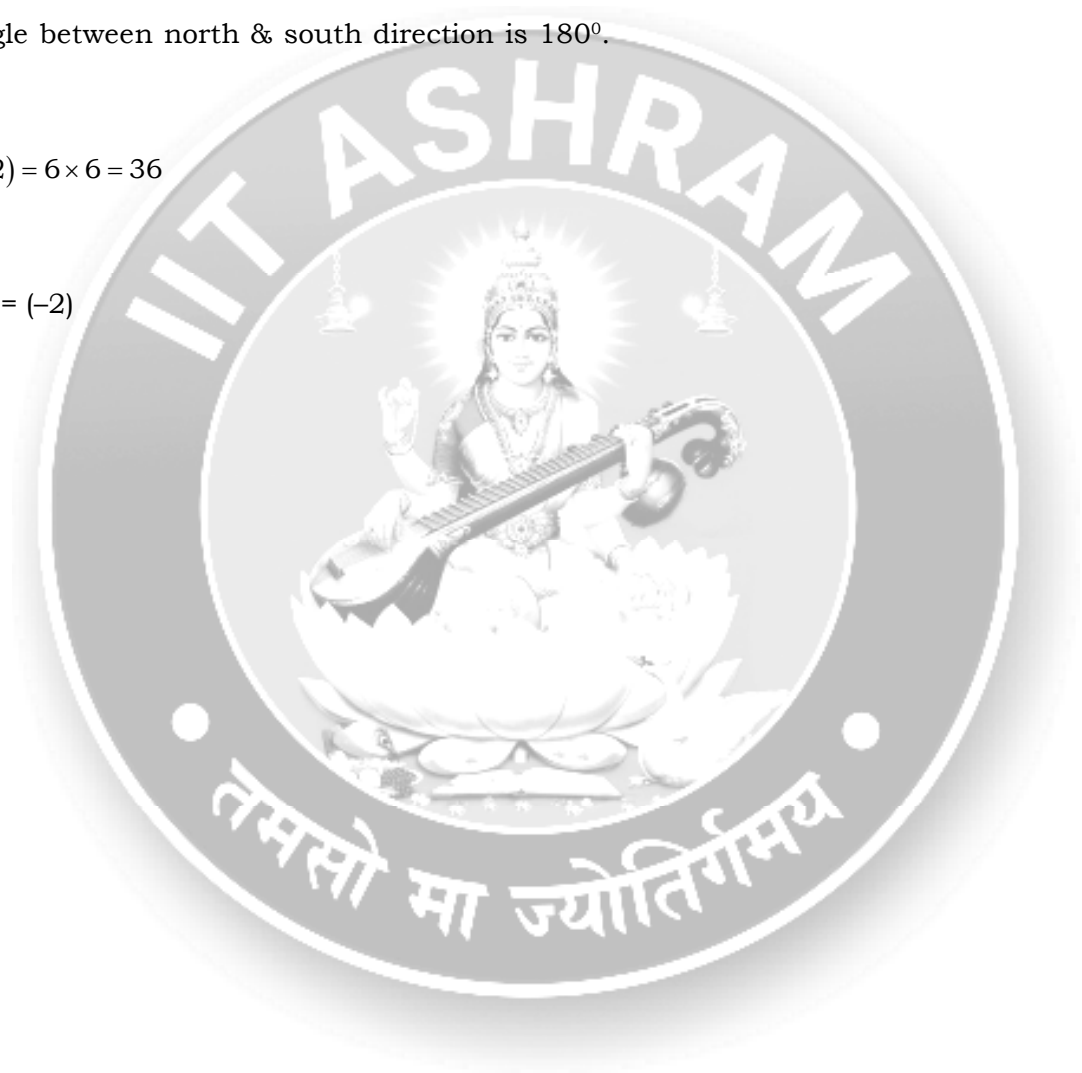
Sol: (c)

$$6 \times (3 \times 2) = 6 \times 6 = 36$$

30.

Sol: (a)

$$(-7) + 5 = (-2)$$



PART - III : PHYSICS & CHEMISTRY

1.

Sol: (c)

(a) is false because asteroids do revolve around the Sun, similar to planets.

(b) is false because the asteroid belt is located between Mars and Jupiter, not Venus and Jupiter.

(d) is false because asteroids can be classified into groups based on their composition, location, and orbit.

(c) is correct as asteroids are smaller, irregularly shaped objects that orbit the Sun, typically found in the asteroid belt.

2.

Sol: (a)

A pulley makes work easier mainly by *changing the direction of your effort*. For example, instead of lifting something heavy straight up, you can pull a rope down, which is easier to do. In some pulley systems, it can also reduce the amount of force needed, but the key idea is that it helps by making the job feel easier.

3.

Sol: (d)

(a) If the object does not move, it could mean the applied force is not appropriate (e.g., too weak or not in the right direction).

(b) It might also mean the object needs more force to overcome resistance (like friction or weight).

(c) Work is only done when the object moves in the direction of the applied force. If there is no movement, no work is done.

Thus, all the options are correct

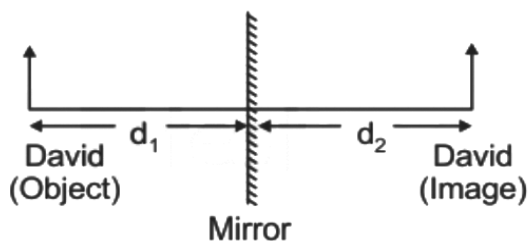
4.

Sol: (c)

When two plane mirrors are arranged parallel to each other, light reflects back and forth between the mirrors multiple times, creating a series of reflections. This results in a large number of images, which appear to extend infinitely in both directions.

5.

Sol:(d)



In the case of a plane mirror, the distance between the object and the mirror (d_1) is the same as the distance between image and mirror (d_2).

Distance between the mirror and David's image, $d_2 = 5$ m

Therefore, $d_1 = d_2 = 5$ m

If David moves 1 m towards the mirror, then $d_1 = 5 - 1 = 4$ m

Again, $d_1 = d_2 = 4$ m Therefore, the distance between David and his image is $d_1 + d_2 = 4 + 4 = 8$ m

6.

Sol: (b)

A speedometer is a device used in vehicles to measure and display the speed at which the vehicle is traveling.

(a) Odometer measures the total distance traveled by the vehicle.

(c) thermometer measures temperature.

(d) Voltmeter measures electrical potential (voltage).

7.

Sol: (b)

To find the volume of the irregular solid object, subtract the final reading of the measuring cylinder from the initial reading, after immersion.

Here,

Initial volume: 70 cm^3

Final volume: 802 cm^3

Volume of the object = Final volume - Initial volume =
 $82 \text{ cm}^3 - 70 \text{ cm}^3 = 12 \text{ cm}^3$

8.

Sol: (d)

According to *Kepler's First Law of Planetary Motion, the path of a planet around the Sun is an **ellipse*, with the Sun at one of the two foci.

While the orbits may appear nearly circular for some planets, they are mathematically elliptical.

9.

Sol: (b)

1 meter (m) = 1000 millimeters (mm).

To convert 10.64 meters to millimeters:

$10.64\text{m} \times 1000\text{mm} / \text{m} = 10,640\text{mm}$

In scientific notation, this is written as:

$1.064 \times 10^4 \text{ mm}$

10.

Sol: (b)

In a torch, the chemical energy stored in the batteries is converted into electrical energy.

The electrical energy then powers the bulb, which produces light energy.

11.

Sol: (a)

The decrease in the size of matter on cooling is called contraction.

12.

Sol: (d)

The puddle disappeared because some water gets evaporated and some water seeped into the ground

13.

Sol: (c)

The crystallisation of sugar is a physical change as during this process only physical property of sugar is changing and no new substance is forming.

14.

Sol: (c) Rusting of iron is a slow change as it takes years to occur. Other changes are fast changes as they occur instantaneously.

15.

Sol: (a)

In solid the particles are tightly packed as the inter-particle force of attraction are strongest in solids.

16.

Sol: (a)

Hardening of cement can't be reversed because it is an irreversible change.

17.

Sol: (d)

Rain water harvesting is a process of collecting rain water in the huge, cemented pits.

18.

Sol: (c)

Spoilage of food is an undesirable change.

19.

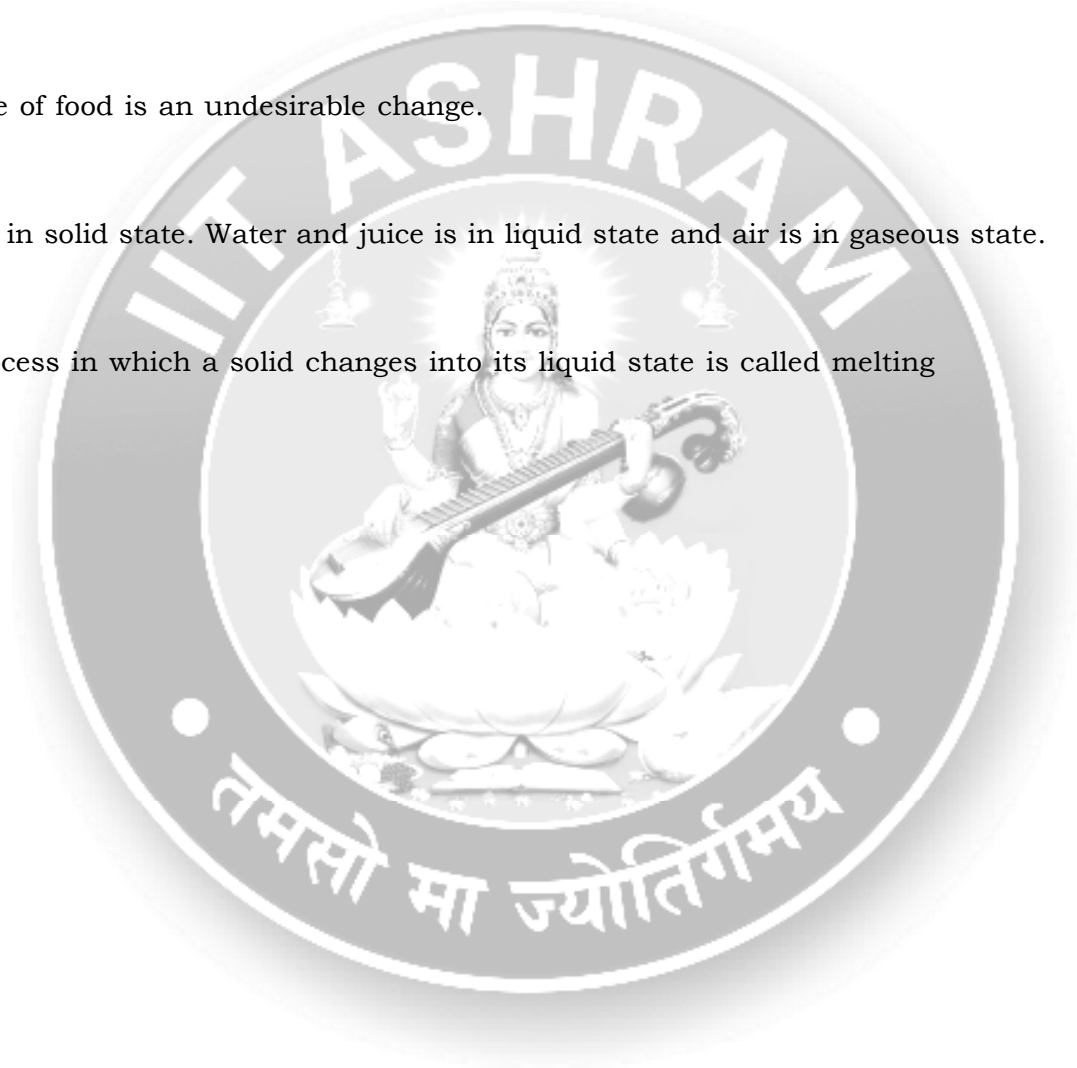
Sol: (a)

Book is in solid state. Water and juice is in liquid state and air is in gaseous state.

20.

Sol: (c)

The process in which a solid changes into its liquid state is called melting



PART - IV : BIOLOGY

1.

Sol: (d) They do not need food

Living things need food for energy, growth, and maintenance. All living organisms need food in some form to survive, so this is the correct answer.

2.

Sol: (d)

After jowar (a type of grain) is harvested, it can either be stored for family use or sold in the market, so both options (a) and (b) are correct.

3.

Sol: (c) Spicy

The tongue detects tastes such as sweet, salty, and sour, but it does not detect "spicy." Spicy is a sensation of pain or heat, not a taste.

4.

Sol: (c) Leaf

The leaves contain chlorophyll and are the primary site of photosynthesis, where sunlight is converted into energy for the plant.

5.

Sol: (c) Deer

A herbivore is an animal that feeds mainly on plants. The deer is a herbivore, unlike the lion, tiger, or crocodile, which are carnivores.

6.

Sol: (c) Heart

The heart is responsible for pumping blood throughout the body, supplying oxygen and nutrients to tissues.

7.

Sol: (b) Aquatic plants

Plants that grow in water are called aquatic plants, as opposed to terrestrial plants that grow on land.

8.

Sol: (b) Sun

The Sun is the primary source of energy for life on Earth, providing heat and light that support photosynthesis and life processes.

9.

Sol: (c) Planting trees

Planting trees helps reduce pollution by absorbing carbon dioxide and releasing oxygen, contributing to cleaner air.

10.

Sol: (b) Absorb water and nutrients

The roots of a plant are responsible for absorbing water and essential nutrients from the soil, supporting the plant's growth and survival.