



SCIENCE APTITUDE TEST

CLASS
6

ANSWER KEY WITH SOLUTIONS

DATE : 05.01.25

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



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PART - I : MENTAL ABILITY

1.

Sol. (d)

2.

Sol. (c)

3.

Sol. (b)

4.

Sol. (c) We know that fish lives in water but it is given that water is called green. Therefore, fish lives in green.

5.

Sol. (d)

6.

Sol. (c)

Here, all except Nylon are the fibres which are obtained naturally whereas Nylon is synthetically obtained fibre.

7.

Sol: (d) All except Dog came under the category of cattle.

8.

Sol. (c)

- 2, 5, 10, 17
- 5 - 2 = 3
- 10 - 5 = 5
- 17 - 10 = 7
- 26 - 17 = 9

9.

Sol. (d)

1 4 9 ? 25 36

$(1)^2 = 1$

$(2)^2 = 4$

$(3)^2 = 9$

$(4)^2 = 16$

$(5)^2 = 25$

$(6)^2 = 36$

10.

Sol: (c)

k l m n o | k l m n o | k l m n o
klmn

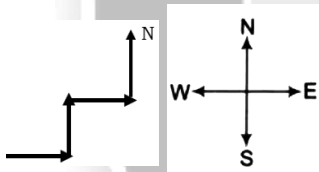
11.

Sol: (b)

a b b a | b a a b | a b b a | b a a b a
abba

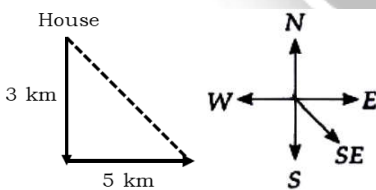
12.

Sol. (d)



13.

Sol. (c)



14.

Sol. (c) This series consists of increasing numbers.

The pattern is +4, +6, +8, +10,

Hence, the next term would be

$29 + 10 = 39$

15.

Sol: (d)

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

PART - I : MATHEMATICS

1.

Sol: (c) Number 5 occurs 20 times in the range from 1 to 100.

Those are = 5, 15, 25, 35, 45, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 65, 75, 85, 95

2.

Sol: (a)

We have to find a hundred-thousand place first. It is present in the international system. The place value to the immediate left of the place is million

3.

Sol: (c)

Greatest 8- digit number = 9,99,99,999

Smallest 8- digit number = 1,00,00,000

Total 8-digit numbers = (Greatest 8-digit)-

(Smallest 8-digit)+1

Total 8-digit numbers

= (9,99,99,999) - (1,00,00,000) + 1

Total 8-digit numbers = 9,00,00,000

4.

Sol: (b) $761+762+763+764+765+766+767+768+769+770 = 7655$

5.

Sol: (b)

By distributive property

6.

Sol: (a)

Zero \div any number gives zero

7.

Sol: (c)

8.

Sol: (c)

The sum of the digits must be a multiple of 3 and the units digit must be even in order for an integer to be divisible by 6.

$$1 + 5 + 9 + 3 + 8 + 4 = 30$$

$$\frac{159384}{6} = 26564$$

9.

Sol: (c)

Factors of 25 are 1, 5, 25

$$1 + 5 + 25 = 31$$

10.
Sol: (c)
The greatest number that divides 10, 30, and 45 exactly is their greatest common factor.
Factors of 10 = 1, 2, 5, 10
Factors of 30 = 1, 2, 3, 5, 6, 10, 15, 30
Factors of 45 = 1, 3, 5, 9, 15, 45
The GCF of 10, 30, and 45 is 5.

11.
Sol: (a)
The even numbers between 68 and 90 is
70, 72, 74, 76, 78, 80, 82, 84, 86, 88, = 10 numbers

12.
Sol: (d) $\frac{45 \div 9}{81 \div 9} = \frac{5}{9}$

13.
Sol: (d) $\frac{7}{1000}$

14.
Sol: (c) $\frac{0.45}{0.9} = \frac{45}{90} = \frac{1}{2} = 0.5$

15.
Sol: (c) $2y + 3 = 11$
Equation is a mathematical statement that shows that two mathematical expressions are equal

16.
Sol: (d) $x = 4$
 $\Rightarrow 3x - 2 \Rightarrow 3(4) - 2 \Rightarrow 12 - 2 = 10$

17.
Sol: (a)
The product of a and b is = ab.
The product is added to their sum = ab + a + b

18.
Sol: (b) 5 more than twice the number = $2x + 5$.

19.
Sol: (c) $x + x + x \dots \dots$ (y times) = xy.

20.
Sol: (b) Angle between 90° and 180° is obtuse angle.

21.

Sol: (c) A triangle whose two sides are equal is known as isosceles triangle.

22.

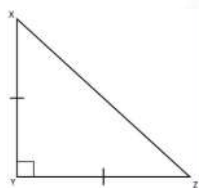
Sol: (a)

Let angle be x Supplement = $180 - x$

angle = 2 (Supplement)

 $x = 2(180 - x)$ $x = 360 - 2x$ $3x = 360$ $x = 120$

23.

Sol: (b) It is given that in $\triangle XYZ$, $m\angle Y = 90^\circ$, $XY = YZ$.

The given triangle is a right-angled isosceles triangle

24.

Sol: (c) $\frac{7}{3}$

We know that in an improper fraction, the numerator is more than the denominator.

25.

Sol: (c)

We know that when numerator are same then number whose denominator is greater is smaller

$$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}$$

26.

Sol: (c)

$$\Rightarrow \frac{3}{10} = 0.3 \text{ because the denominator is } 10.$$

$$\Rightarrow \frac{5}{10} = 0.05 \text{ because the denominator is } 100.$$

$$\Rightarrow 2 + 0.3 + 0.05 = 2.35.$$

27.

Sol: (b)

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

$$\Rightarrow 100 = 4 \times \text{side} \quad \Rightarrow \text{side} = \frac{100}{4}$$

$$\text{side} = 25$$

28.

Sol: (a) A pyramid is a three-dimensional geometric shape that has a polygonal base and triangular faces that converge at a single point called the apex.

29.

Sol: (c) Perimeter of triangle = Sum of all side

Let third side be x

$$\Rightarrow 15 = 4 + 3 + x \quad \Rightarrow 15 - 7 = x \quad \Rightarrow x = 8$$

30.

Sol. (c) $5 \times a$

PART - III : PHYSICS & CHEMISTRY

1.

Sol: (c) 55°

In the diagram:

- The angle labeled 35° is measured with respect to the *surface*.
- However, the angle of incidence and the angle of reflection are always measured with respect to the *normal* (the dashed vertical line).

To calculate the angle of incidence (and hence the angle of reflection), we subtract the given angle from 90°

$$\text{Angle of incidence} = 90^\circ - 35^\circ = 55^\circ$$

Since the angle of reflection equals the angle of incidence, the *angle of reflection is 55° .*

2.

Sol. (b) Light that enters our eyes after it is reflected by an object.

We see objects because light from a source (like the Sun or a bulb) strikes the object, and some of this light is reflected. The reflected light then enters our eyes, allowing us to perceive the object.

3.

Sol. (a) From east to west.

Stars appear to move from east to west due to the Earth's rotation on its axis from west to east. This apparent motion is similar to how the Sun rises in the east and sets in the west. This movement is observed in the night sky as the stars shift their positions over time.

4.

Sol. (a) X is the north pole, Y is the south pole.

In the experiment:

The upper magnet is suspended in air, meaning there is repulsion between the poles of the upper and lower magnets.

Like poles repel, and opposite poles attract.

The upper magnet is suspended in air, which implies a force of repulsion is acting between the two magnets.

Like poles repel each other, so X must be a north pole (repelled by the north pole of the lower magnet), and Y must be a south pole (repelled by the south pole of the lower magnet).

5.

Sol: (d) South.

The Earth acts like a giant bar magnet, with its magnetic poles oriented roughly along the axis of rotation.

The Earth's magnetic north pole is located near the geographical south pole, and the Earth's magnetic south pole is located near the geographical north pole.

This is because the magnetic north pole of a compass needle is attracted to the Earth's magnetic south pole, which lies near the geographic north pole.

6.

Sol: (d) either (a) or (b).

The balloons repel each other because they have like charges.

Like charges (positive-positive or negative-negative) repel each other, while opposite charges (positive-negative) attract.

In this case, both balloons must have acquired the *same type of charge*, either positive or negative, due to rubbing or another charging process.

This is why the balloons push away from each other, demonstrating the principle of electrostatic repulsion.

7.

Sol: (a) P

The circuit shows switches *P, **Q, **R, and **S* connected in parallel and series.

P is the *main switch* that controls the entire circuit. If it is opened, the entire circuit is broken, and the light bulb will stop glowing, regardless of the states of the other switches.

Other switches like *Q, **R, or **S* only affect specific pathways in the circuit, but the bulb will remain glowing as long as the main circuit through *P* is intact.

8.

Sol: (b) The speed of Ram is greater than the speed of Raghu.

Since Raghu and Ram reached point C at the same time, they must have taken different paths that required different distances. Ram traveled a greater distance than Raghu, so for them to reach at the same time, Ram must have been moving faster.

Speed is calculated as

Speed = Distance/Time

Since the time is the same for both, the one who traveled a greater distance (Ram) must have had a greater speed.

Thus, Ram's speed is greater than Raghu's speed.

9.

Sol: (a) 100 km

The distance traveled can be calculated using the formula:

$$\text{Distance} = \text{Speed} \times \text{Time}$$

Given:

- Speed = 50 km/h

Time = 2 hours

Distance = $50 \times 2 = 100$ km

So, the correct answer is (a) 100 km.

10.

Sol: (a) gravitational force.

A stone falling from the roof of a house falls due to the force of gravity, which is the attractive force exerted by the Earth on the stone.

11.

Sol: (b) This statement is incorrect because air is lighter and it expands on heating.

12.

Sol: (c) As, air is transparent and Mercury is a good conductor of electricity.

13.

Sol: (b) The lighter layer has lower density, so it floats over the heavier liquid which has higher density.

14.

Sol: (c) Sand is not soluble in water. So, it can be separated from water using filter paper while other substances are soluble in water, so can't be separated by using filter paper.

15.

Sol: (a) Clouds are the clusters of tiny drops of water floating in the air.

16.

Sol: (c) Chlorine element is represented as Cl.

17.

Sol: (b) The jute fibre is obtained from stem of jute plant.

18.

Sol: (b) We can use the property of solubility of salt into water to detect this malpractice as salt will get dissolved in water but the powdered stone will not.

19.

Sol: (a) Iron is a metal. Other substances are compounds or mixtures.

20.

Sol: (d) Burning of paper as during this process new substances (ash and carbon dioxide gas) are forming.

PART - IV : BIOLOGY

1.
Sol. (c) Leaves
Photosynthesis occurs in the leaves of plants, where sunlight is absorbed to produce food.
2.
Sol: (b) Elephant
An elephant is a herbivore, feeding mainly on plants.
3.
Sol. (a) Absorbing sunlight
Chlorophyll helps plants absorb sunlight, which is essential for photosynthesis.
4.
Sol. (c) Roots
Water absorption in plants mainly occurs through the roots.
5.
Sol. (d) Crow
A crow is an omnivore, as it eats both plants and animals.
6.
Sol. (c) Fish
Fish lay eggs, unlike mammals such as dogs and bats, which give birth to live young.
7.
Sol. (c) Venus flytrap
The Venus flytrap is a carnivorous plant that traps and digests insects.
8.
Sol. (b) Vegetable peels
Vegetable peels are biodegradable, meaning they decompose naturally.
9.
Sol. (b) To breathe underwater
Fish use gills to extract oxygen from water, enabling them to breathe underwater.
10.
Sol. (c) Protecting the body from diseases
Vitamins are essential for protecting the body from diseases and supporting immune function.