KHOJ-2025
Exam for
Young Scientists..!

SCHOLARSHIPS up to ₹5 Crore
SCHOLARSHIP FOR HIGH ACHIEVERS AND NEEDY STUDENTS

SCIENCE APTITUDE TEST

CLASS - 6

SOLUTIONS

TEST CODE - 05

WhatsApp Channel

Result will be Declared on 14th Oct. 2025

Video Solutions will be available on
www.khoj.iitashram.com
They will also be available on the **IIT ASHRAM WhatsApp Channel**.
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PART - I : MENTAL ABILITY

1.

Sol (c) Car
All others (Dog, Cat, Elephant) are animals.
Car is a vehicle.

2

Sol. (a) All Zips are Zups
Zip → Zap → Zup
⇒ So, all Zips are Zups by logic.

3

Sol. (a) Rs 5
Let ball = Rs x
⇒ Bat = Rs x + Rs 90
⇒ x + (x + 90) = 100
⇒ 2x = 10 ⇒ x = Rs 5

4

Sol. (b) 12
Pattern: +2 each time → 2, 4, 6, 8, 10, 12

5

Sol. (c) East
90° right turn from North = East

6

Sol. (d) 32
Pattern: +1, +2, +3, +4, +5, +6
→ Should be 22. 32 breaks the pattern.

7

Sol. (a) 18 days
Each day net climb = 1 ft (3 up – 2 down).
After 17 days, it reaches 17 ft. On 18th day,
it climbs to 20 ft and doesn't slide back.

8

Sol. (a) 5 minutes
5 machines make 5 widgets in 5 mins
⇒ 1 machine makes 1 widget in 5 mins
⇒ 100 machines make 100 widgets in 5 mins
(in parallel).

9

Sol. (a) Friday
Sequence: Monday → Tuesday
→ Wednesday → Thursday → Friday

10

Sol. (c) David
John > Mary > David
⇒ David is shortest.

11

Sol. (c)

12

Sol. (b) 18
Pattern: +3 ? 3, 6, 9, 12, 15, 18

13

Sol. (a) All Bloops are Flimflams
Bloop → Razzy → Flimflam
⇒ So Bloop ? Flimflam

14

Sol. (a) His son
"My father's son" = me.
⇒ "That man's father is me"
⇒ So that man is my son.

15

Sol. (a)

PART - II : MATHEMATICS

1

Sol. (b) 30

$5 \times 6 = 30$

2.

Sol. (a) Rs 150

75×2 = Rs.150

3.

Sol. (c) 60 cm

$15 \times 4 = 60$ cm

4.

Sol. (a) 567

$945 - 378 = 567$

5.

Sol. (c) Rs 60

$100 - 40 = 60$

6.

Sol. (b) 1500 ml

$500 \times 3 = 1500$ ml

7.

Sol. (b) 12

15 - 3 = 12 pencils

8.

Sol. (c) 1000 meters

$200 \times 5 = 1000$ meters

9.

Sol. (d)

In the number 7,532, the digit 7 is in the thousands place.

So, its value = $7 \times 1000 = 7000$.

10.

Sol. (c) A prime number has exactly two distinct factors: 1 and itself.

0 is not prime

1 has only one factor

2 has two factors: 1 and 2

So, 2 is the smallest prime number.

11.

Sol. (b)

In any triangle, the sum of the three interior angles is always 180°.

12.

Sol. (c) A number is divisible by 9 if the sum of its digits is divisible by 9.

Calculation:

For 1475:

Sum of digits = 1 + 4 + 7 + 5 = 17

17 is not divisible by 9.

For 3471:

Sum of digits = 3 + 4 + 7 + 1 = 15

15 is not divisible by 9.

For 5418:

Sum of digits = 5 + 4 + 1 + 8 = 18

18 is divisible by 9.

For 4795:

Sum of digits = 4 + 7 + 9 + 5 = 25

25 is not divisible by 9.

The number 5418 is divisible by 9 as the sum of its digits (18) is divisible by 9.

13.

Sol. (a) Successor means next number,

so. 999 + 1 = 1000

14.

Sol. (c) Perimeter of square

$= 4 \times$ side $= 4 \times 8 = 32$ cm

15.

Sol. (c) Prime factors:

$\Rightarrow$ $6 = 2 \times 3 \Rightarrow 8 = 2^3$

LCM = highest powers of all primes

$= 2^3 \times 3 = 24$

16.

Sol. (c) Even numbers end with 0, 2, 4, 6, or 8.

48 ends with 8 $\rightarrow$ even number

17.

Sol. (b) Simplify 6/8 by dividing both numerator and denominator by 2: $6 \div 2 = 3$, $8 \div 2 = 4 \Rightarrow 3/4$

18.

Sol. (c) By metric conversion:

$\Rightarrow$ 1 kilometre = 1000 metres

19.

Sol. (a) Frequency:

$\Rightarrow$ $2 \rightarrow 3$ times

$\Rightarrow$ others only once

$\Rightarrow$ Mode = most frequent value = 2

20.

Sol. (c) $24 \div 8 = 3$ (no remainder)

$\rightarrow$ 8 is a factor of 24

21.

Sol. (c) Area = Length × Breadth = $6 \times 4 = 24\ cm^2$

22.

Sol. (b) $19 = 10 + 9$

$\Rightarrow$ $10 = X$, $9 = IX$

$\Rightarrow$ So, $19 = XIX$

23.

Sol. (c) The largest 4-digit number is 9999

$\Rightarrow$ (4-digit numbers range from 1000 to 9999)

24.

Sol. (b) A polygon with 6 sides = hexagon.

25.

Sol. (c) All sides equal and all angles equal = square.

26.

Sol. (c) Radius = 5 cm, diameter = 2 × radius = 2 × 5 = 10 cm.

27.

Sol. (c) A square has four 90° angles.

28.

Sol. (b) Two equal sides = Isosceles triangle.

29.

Sol. (b) In a parallelogram, opposite sides are equal and parallel.

30.

Sol. (b)

PART - III : PHYSICS & CHEMISTRY

1.

Sol. (b) Shadow becomes larger

When an object is brought closer to the light source, it blocks more light rays, so its shadow spreads over a larger area. That's why your hand's shadow looks bigger on the wall when you bring it closer to a torch.

2.

Sol. (c) Refraction of light

Refraction means bending of light when it passes from one medium to another (air → water → air). When light comes from the coin at the bottom of the glass, it bends and reaches our eyes. Because of this bending, the coin looks raised or closer to the surface than it actually is.

3.

Sol. (b)

4.

Sol. (b) No day and night cycle

Day and night occur because Earth rotates on its axis. If Earth stopped rotating, one side would always face the Sun and the other side would remain dark for very long time periods. Seasons are due to revolution of Earth around Sun, so they would still happen.

5.

Sol. (d)

6.

Sol. (b)

7.

Sol. (a) Lever

Scissors have two blades joined at a point (fulcrum). When we apply force at the handles, the blades move and cut the paper. This is exactly how a lever works (force applied at one end, work done at the other end, pivot in the middle).

8.

Sol. (b) Newton

This SI unit is given a special name: Newton (N).

9.

Sol. (b) 2,500 g

1 kg = 1,000 g → 2.5 × 1,000 = 2,500 g

10.

Sol. (c) Pressure due to a liquid column depends upon height of the liquid column and the density of the liquid.

(a) Only on the area of the container → Wrong, pressure at a point doesn't depend on container's area.

(b) Only on the mass of the liquid → Wrong, pressure at a point is not directly decided by total mass.

(d) shape of the container → wrong, shape doesn't effect the pressure at a point inside the liquid.

11.

Sol. (c) Wood → It does not allow light to pass through, so it is opaque.

12.

Sol. (b) Wool → Obtained from the hair/fleece of animals.

13.

Sol. (b) Wheat & stones → Separated by hand-picking due to size difference.

14.

Sol. (b) Rusting & Burning → Both form new substances, so they are chemical changes.

15.

Sol. (b) Jute → Obtained from the stem of the plant.

16.

Sol. (b) Pure water → Pure water is a poor conductor of electricity, so this statement is incorrect.

17.

Sol. (c) Iron filings → Only iron filings are attracted by a magnet.

18.

Sol. (d) Sugar dissolved → Sugar dissolves in water to form a homogeneous solution.

19.

Sol. (c) Silk → Silk is smooth, shiny, and has vibrant colors.

20.

Sol. (b) Electron → Electron carries negative charge.

PART - IV : BIOLOGY

1.

Sol. (b) Reduce, Reuse, Recycle
These are the 3 environmental principles to manage waste and conserve resources.

2.

Sol. (c) Earthworms
Vermicomposting is decomposition of organic waste using earthworms, producing nutrient-rich manure.

3.

Sol. (b) Reduce water loss
Fewer or spiny leaves reduce transpiration in desert plants, helping them conserve water.

4.

Sol. (c) Frog
Biotic = living components (plants, animals, microbes). Sunlight, water, and rock are abiotic (non-living).

5.

Sol. (c) Bristles
Earthworms have tiny bristles (setae) on each segment. With muscles, they help in locomotion.

6.

Sol. (d) Transportation
Transportation is the upward movement of water and minerals through xylem. Transpiration is loss of water from leaves.

7.

Sol. (c) It is needed to form blood
Iron is a component of haemoglobin, essential for oxygen transport in blood.

8.

Sol. (a) Both A and R are true, and R is the correct explanation of A
Assertion (A): Earthworms do not have bones but can move easily.True
Reason (R): They use muscles and bristles to move. → True & correct explanation.

9.

Sol. (d) (i) Shoulder joint, (iii) Hip joint
Shoulder → Ball & socket
Hip → Ball & socket
Neck → Pivot joint
Elbow → Hinge joint

10.

Sol. (a) Mulberry plants
Silkworms feed on mulberry leaves, which provide nutrition for silk production.