SCHOLARSHIPS worth ₹2 Crore

UDAAN

A QUEST FOR SCIENCE ASPIRANTS

SCIENCE APTITUDE TEST

CLASS - 6

SOLUTIONS

EXAM DATE : 21.12.25

IIT Ashram
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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**

PART - I : MENTAL ABILITY

1.

Sol. (b) 48

Pattern:

Add consecutive odd numbers:

3 → +5 = 8

8 → +7 = 15

15 → +9 = 24

24 → +11 = 35

35 → +13 = 48

2.

Sol. (a) EV

Pattern:

1st letters: A, B, C, D → next E

2nd letters: Z, Y, X, W

→ reverse alphabet → next V

So next pair = EV

3.

Sol. (b) 25Y

Pattern:

Numbers: 1, 4, 9, 16

= squares of 1^2, 2^2, 3^2, 4^2 ? next = 25 (5^2)

Letters: A, D, I, P → pattern is:

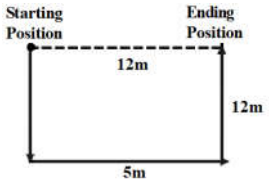
Position numbers: 1, 4, 9, 16

→ next = 25th letter = Y

= 25Y

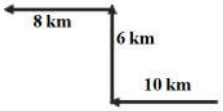
4.

Sol. (a) 5 m



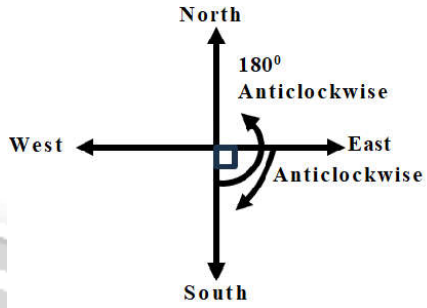
5.

Sol. (b) west



6.

Sol. (c) North



Odd One Out

7.

Sol. (a) sphere

Square, Rectangle, Triangle → 2D shapes

Sphere → 3D shape

Odd: sphere

8.

Sol. (d) 100

$8 = 2^3$

$27 = 3^3$

$64 = 4^3$

$100 = 10^2$

Odd: 100

9.

Sol. (c) Hospital

Doctor, Teacher, Engineer → professions

Hospital → place

Odd: Hospital

10.

Sol. (c) Cloud

Steam = gas

Ice = solid

Water = liquid

Cloud = not a state of matter; it is tiny water droplets.

Odd: Cloud

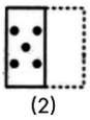
11.

Sol. (c) ƎTIHW

WHITE | ƎTIHW

12.

Sol. (b) 2



(2)

13.

Sol. (c) 3

14.

Sol. (d) 1,6,9; 3,4,7; 2,5,8

Grouping is done on the basis of number of sides.

15.

Sol. (a) Two and three half-leaves are added to the figure alternately. The addition of halfleaves takes place in an ACW direction.

PART - II : MATHEMATICS

1.

Sol. (a) 98,999

99,999 - 1,000 = 98,999

2.

Sol. (b) 13

Number leaving remainder 5 when divided by

smallest multiple of 8

= 8k + 5

= 8(1) + 5

= 8 + 5 = 13

3.

Sol. (c) 70,000

Ten-thousands place = 70,000

4.

Sol. (a) 1,00,000

99,999 + 1 = 1,00,000

5.

Sol. (b) 120

18 - 6 = 12

= 52 - 12 = 40

= 3 × 40 = 120

6.

Sol. (b) 26

$\Rightarrow$ 6×5- 4

$\Rightarrow$ 30 - 4 = 26

7.

Sol. (c) 18

x = 27 - 9 = 18

8.

Sol. (b) 11a-9

9.

Sol. (a) 5240 m

5000m + 240m = 5240 m

10.

Sol. (b) 3.75 kg = 3750 g

3.75 × 1000 = 3750 g

11.

Sol. (b) 14

2.6 ÷ 0.9 = 14

(2.6 & 0.9 are like decimals)

(26 ÷ 9) = 14

12.

Sol. (a) 16.416

68.4 × 0.24 = 16.416

13.

Sol. (a) 2016

72,576 ÷ 36 = 2016

14.

Sol. (a) 178

(9 × 19) + 7 = 171 + 7 = 178

15.

Sol. (a) 6 faces, 12 edges, 8 vertices

Cube properties = 6 faces, 12 edges, 8 vertices

16.

Sol. (b) Right angle

17.

Sol. (b) 2

A rectangle has 2 diagonals.

18.

Sol. (a) (-3)

(-18) + 25 - 10

= 7 - 10

= (-3)

19.

Sol. (b) -72

(-9) × 8 = -72

20.

Sol. (c) -24

(-36) - (-12)

= -36 + 12

= (-24)

21.

Sol. (a) $\frac{11}{8}$

5/8 + 6/8 = 11/8

22.

Sol. (b) 14

7 × 2 = 14

23.

Sol. (b) 8

6.3 ÷ 0.7 (6.3 & 0.7 are like decimals)

= 63 ÷ 7 = 9

24

Sol. (a) $\frac{5}{8}$

$0.625=\frac{625}{1000}=\frac{625\div125}{1000\div125}=\frac{5}{8}$

25.

Sol. (b) 48 cm

Perimeter of rectangle = 2 (l + 6)

= 2 (15 + 9)

= 2 (24)

= 48 cm

26.

Sol. (b) 289 cm²

Area of square = side × side

= 17 × 17

172 = 289 cm²

27.

Sol. (c) 30 cm

Area of rectangle = $l \times b$

$360 = 12 \times l$

$\therefore l = \frac{360}{12} = 30$

28.

Sol. (a) 40

$x + (x + 1) + x + 2 = 123$

$\therefore \quad 3x + 3 = 123$

$\therefore \quad 3x = 120$

$\therefore x = 40$

29.

Sol. (c) 81 m^2

Side = $36 \div 4 = 9$

$$\text{Side of square} = \frac{\text{Perimeter}}{4} = \frac{36}{4} = 9$$

$\therefore$ Area of square = side × side = $9 \times 9 = 81\ m^2$

30.

Sol. (d) 55

Larger = $(84 + 26)/2 = 55$

$\Rightarrow$ $(x + 4) + (x - 4) = 84 + 2\ 6$

$\Rightarrow$ $x + 4 + x - 4 = 110$

$\Rightarrow$ $2x = 110$

$\Rightarrow$ $x = 55$

PART - III : PHYSICS & CHEMISTRY

1.

Sol. (b) An irregular (rough) surface reflects parallel rays of light in different directions. Because of this scattering, the reflection is called diffuse reflection, not regular reflection.

2.

Sol. (a) Statement A: Image formed in a pinhole camera is always upside down $\rightarrow$ True

Statement B: The image can be obtained in a dark room (to see it clearly on the screen) $\rightarrow$ True

Hence, both statements are correct.

3.

Sol. (c) Motion is relative.

Bench and standing train are at rest relative to the man.

A train leaving the platform changes its position with respect to the man, so it is in motion.

4.

Sol. (d)

1 cm = 10 mm

143.27 cm = 143.27 x 10 mm

= 1432.7mm

5.

Sol. (b) Soft iron pieces placed across the poles of a magnet are called keepers. They Prevent loss of magnetism.

6.

Sol. (c) A compass needle is a small bar magnet. It aligns itself with the Earth's magnetic field, pointing towards the north magnetic pole.

7.

Sol. (a) Part A represents the glass covering of the bulb.

This part does not allow electric current to pass, so it is an insulator.

8.

Sol. (a) Among all metals listed:

Silver has the lowest resistance

Therefore, it is the best conductor of electricity

9.

Sol. (a) One dog pulls with 25 N

The other pulls with 60 N

Motion occurs in the direction of the greater force Since 60 N is towards the east, both dogs will move eastward.

10.

Sol. (b) The magnetic needle of a compass is a small bar magnet.

The red-coloured end represents the north-seeking pole (N-pole) of the magnet.

When the compass is free to rotate, this red end aligns itself with the Earth's magnetic field and points towards the geographic north direction.

11.

Sol. (a) Both water (liquid) and water vapor (gas) take the shape of their container.

12.

Sol. (b) Cooling reduces thermal energy ? particles move slower.

13.

Sol. (c) A compound is formed when different types of atoms chemically combine.

14.

Sol. (c) Cotton has air trapped between fibers, so it is compressible.

15.

Sol. (d) Tin is a metal $\rightarrow$ hard, opaque, and lustrous.

16.

Sol. (b) Mass remains the same during change of state: x g solid wax $\rightarrow$ x g liquid wax.

17.

Sol. (c) Spoilage of food is an undesirable chemical change.

18.

Sol. (d) Groundwater, rainwater, and surface runoff are all freshwater sources.

19.

Sol. (a) Air dissolved in water escapes as bubbles when heated.

20.

Sol. (d) Coconut fiber is processed into coir, used for ropes, mats, and brushes.

PART - IV : BIOLOGY

1.

Sol. (d) Root

Carrot is a modified taproot used for food storage.

2.

Sol. (a) Night blindness

Vitamin A is essential for good vision, especially in dim light.

3.

Sol. (b) Pistil

Pistil contains stigma, style, and ovary.

4.

Sol. (b) Knee

A hinge joint allows back-and-forth movement like a door hinge.

5.

Sol. (b) Foot

Snails have a muscular foot that helps them glide.

6.

Sol. (c) Gills

Gills extract oxygen dissolved in water.

7.

Sol. (c) Excretion

Excretion removes harmful metabolic wastes.

8.

Sol. (c) Earthworms

Earthworms convert organic waste into nutrient-rich compost.

9.

Sol. (a) Desert plants have spines instead of leaves to reduce water loss through transpiration.

10.

Sol. (a) Snakes have a flexible backbone because they have many vertebrae connected by strong muscles, enabling smooth slithering movement.