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UDAAN

A QUEST FOR SCIENCE ASPIRANTS

SCIENCE APTITUDE TEST

CLASS - 5

SOLUTIONS

TEST CODE - 28

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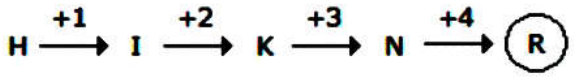
PART - I : MENTAL ABILITY

1.

Sol. (d) 4

2.

Sol. (c) R



3.

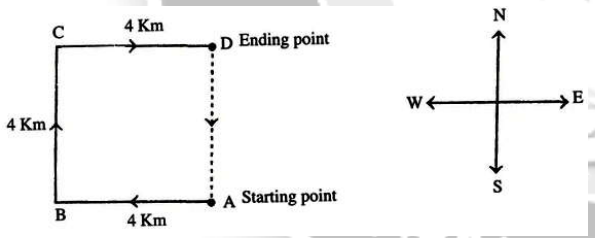
Sol. (a) 20

This is an alternating addition and subtraction series. In the first pattern, 10 is subtracted from each number to arrive at the next. In the second, 5 is added to each number to arrive at the next.

4.

Sol. (a) North

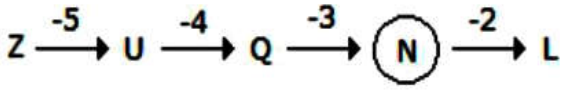
According to the question, the direction diagram of a man is as given below



Let A be the starting and D be the ending point of man. It is clear from diagram that, he is in North direction from his starting point.

5.

Sol. (d) N



6.

Sol. (a) Only I follows

"Some pens are books" and "No book is a pencil" imply "Some pens are not pencils" (1). However, the second conclusion is invalid because "All books are pens" contradicts the first statement.

7.

Sol. (a) Actuate

First letters are common. Second letters are:b, c, c, c, c. One of the four words having c is the last word. Let us see the third letters now, there are: t, c, q, h. Clearly t is the last. Hence Actuate is the last word.

8.

Sol. (d) 4

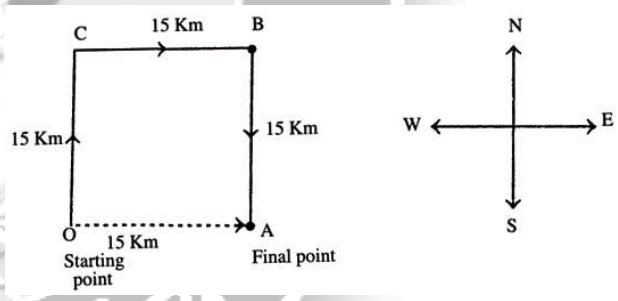
9.

Sol. (b)

All except Friend denote blood relations

10.

Sol. (c) East



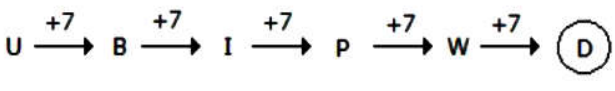
11.

Sol. (a) Chicken

All except Chicken can live in water.

12.

Sol. (a) D



13.

Sol. (d) Locust

All except Locust are reptiles, while locust is an insect.

14.

Sol. (c) South

15.

Sol. (d) Trousers

All except Trousers are garments which cover the upper part of the body.

PART - II : MATHEMATICS

1.

Sol. (c) 300 cm^2

Area = 20 × 15 = 300 cm^2

2.

Sol. (b) 5.03

Five = 5

Three hundredths = $\frac{3}{100}$ = 0.03

Total = 5.03

3.

Sol. (c) $\frac{5}{7}$

Simplest form = No common factors between numerator and denominator except 1.

$\frac{5}{7}$: 5 and 7 have no common factor.

4.

Sol. (c) Rs 1,600

Perimeter = 2 × (25 + 15) = 2 × 40

= 80 m

Cost = 80 × Rs 20 = Rs 1,600

5.

Sol. (b) -11

Predecessor means the integer just before. Before -10 is -11.

6.

Sol. (c) 0

0 is neither positive nor negative.

7.

Sol. (a) Vertex

The vertex is the common endpoint where two rays meet.

8.

Sol. (c) Circle

A circle is a simple closed curve

9.

Sol. (a) 5040

70 × 8 × 9 = (7 × 8 × 9) × 10 = 504 × 10 = 5040.

10.

Sol. (b) 2

A quadrilateral has 4 vertices. Number of diagonals = $\frac{n(n-3)}{2} = \frac{4(4-3)}{2} = 4 \times \frac{1}{2} = 2$.

11.

Sol. (b) 100

1 century = 100 years

12.

Sol. (a) 1700

Days in 4 weeks = 4 × 5 = 20 days.

Total toys = 85 × 20 = 1700.

13.

Sol. (b) 750 cm

7 m = 700 cm $\Rightarrow$ 7 m 50 cm

= 700 + 50 = 750 cm.

14.

Sol. (b) 330 minutes

1 hour = 60 minutes $\Rightarrow$ 5 hours = 300 minutes.

5 h 30 min = 300 + 30 = 330 minutes.

15.

Sol. (b) Pentagon

Polygon names: Triangle (3), Quadrilateral (4), Pentagon (5), Hexagon (6), etc.

16.

Sol. (c) 20

Let other number be x.

$14 \times x = 280 \Rightarrow x = 280 \div 14 = 20.$

17.

Sol. (b) -7

-1 - 6 = -7

18.

Sol. (a) 15

"of" means multiply:

$\frac{3}{5} \times 25 = 3 \times \frac{25}{5} = \frac{75}{5} = 15$

19.

Sol. (a) 3.25

3 = 3.00

$\frac{2}{10} = 0.2$

$\frac{5}{100} = 0.05$

Sum = 3.00 + 0.20 + 0.05 = 3.25

20.

Sol. (b) $\frac{5}{4}$

21.

Sol. (d) -1

Sum = (-4) + 3 = (-1)

22.

Sol. (b) 40 m

Perimeter = 2 × (Length + Breadth)

= 2 × (12 + 8) = 2 × 20 = 40 m

23.

Sol. (d) 4

24.

Sol. (c) 0

Any number multiplied by 0 is 0.

25.

Sol. (c) 0.009

0.009 = 9 thousandths

0.09 = 9 hundredths

0.19 = 19 hundredths

0.9 = 9 tenths

Smallest: 0.009

26.

Sol. (a) 0.3 = 0.30

Adding zeros at the end of decimal doesn't change value: 0.3 = 0.30

27.

Sol. (b) Positive integers

Right of 0: positive integers. Left of 0: negative integers.

28.

Sol. (a) Square

Square area = 5 × 5 = 25 cm^2

Rectangle area = 6 × 4 = 24 cm^2

Square has larger area.

29.

Sol. (b) $1\frac{3}{4}$ m

$3\frac{1}{2} = \frac{7}{2} = \frac{14}{4}$

$1\frac{3}{4} = \frac{7}{4}$

Left: $\frac{14}{4} - \frac{7}{4} = \frac{7}{4} = 1\frac{3}{4}$ m

30.

Sol. (b) 21 cm

Perimeter = 3 × side = 3 × 7 = 21 cm

PART - III : PHYSICS & CHEMISTRY

1.
Sol. (c) Black
There is no atmosphere in space to scatter sunlight, so space appears black.

2.
Sol. (d) All of these
Gravity pulls the box downward.
The table exerts an equal upward force.
Friction prevents sliding.
So all statements together explain why the box stays at rest.

3.
Sol. (d) Gravitational force
Earth's gravity pulls the stone back down.

4.
Sol. (a) q
A plane mirror causes lateral inversion (left-right reversal).

5.
Sol. (b) Black in colour
A shadow is formed due to the absence of light, so it is always black.

6.
Sol. (c) 2.25 m
Length = 15 steps × 15 cm = 225 cm = 2.25 m

7.
Sol. (a) a-4, b-3, c-1, d-2
Circular motion → Tip of fan blade
Rotational motion → Giant wheel
Rectilinear motion → Falling apple
Periodic motion → Pendulum

8.
Sol. (d) Coal
Coal is a fossil fuel and cannot be renewed quickly.

9.
Sol. (b) Standing with a basket on the head
No displacement occurs, so no work is done.

10.
Sol. (b) Chemical → Electrical → Light
Chemical energy of battery is converted into electrical energy, then light.

11.
Sol. (a) Nitrogen
Gases have the largest intermolecular spaces.

12.
Sol. (c) Oxygen
It has no fixed shape, fills the container, and is easily compressible ? gas.

13.
Sol. (a) Naphthalene
This process is called sublimation.

14.
Sol. (d) Melting
Melting is the process in which heat is absorbed for state change. In other options, heat is released.

15.
Sol. (b) Aluminium
Solids have fixed shape and volume.

16.
Sol. (c) Coin, needle
Both are denser than water.

17.
Sol. (b) Groundwater
Lakes are mainly fed by groundwater and rainfall.

18.
Sol. (a) Infiltration
Water seeps into the ground through soil.

19.
Sol. (a) Stratosphere
This layer has stable air and less turbulence.

20.
Sol. (a) Ozone
The ozone layer absorbs harmful ultraviolet radiation.

PART - IV : BIOLOGY

1

Sol. (a) Both A and R are true, and R is the correct explanation of A.

Honey bees live in colonies because they have different roles (queen, workers, drones) and depend on each other for survival.

2.

Sol. (c) A is true, but R is false.

Ants can lift objects heavier than their body, but this is because they have strong muscles, not weak ones.

3.

Sol. (c) Peristalsis

Peristalsis is the wave-like movement of muscles that pushes food down the food pipe.

4.

Sol. (d) Incisors

Incisors are the front teeth used for cutting food.

5.

Sol. (d) Transpiration

Plants lose water through transpiration via tiny pores called stomata.

6.

Sol. (c) Healthy

Farmers choose healthy seeds because they grow better and give good yield.

7.

Sol. (b) Timber

Timber is obtained from trees and is a forest product.

8.

Sol. (a) Environmentalists

Environmentalists work to protect and save forests and the environment.

9.

Sol. (b) Body odour and sweat

Mosquitoes are attracted by body odour, sweat, and carbon dioxide released by humans.

10.

Sol. (b) Wind

Seeds like drumstick and maple are light and winged, so they are carried by wind.