

KH

Exam for
Young Scientists..!



J-2023

SCIENCE APTITUDE TEST

CLASS 6

ANSWER KEY WITH SOLUTION

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PART - I : MENTAL ABILITY

1.

Sol. (c) The pattern of the series are previous term $\times 2$ Hence, the next term would be $24 \times 2 = 48$

2.

Sol. (c) Given series consists of alternate letters in reverse order. so, the missing terms would be P and L.

3.

Sol. (d) Series is cab/cab/cab/cab/cab. So, pattern cab is repeated.

4.

Sol. (b) In the first row, $6 + 9 = 15$
In the second row, $8 + 12 = 20$ \ In the third row, missing number = $4 + 6 = 10$.

5.

Sol. (c) The new arrangement is as follows: HTNAOPORPROMMSIH.

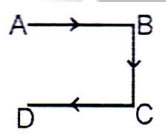
6.

Sol. (d)



7.

Sol. (a) Man walks three paces in East, then moves 2 paces towards South, then turn right and move three paces towards West, then he turned about.



\therefore Now he was facing East.

8.

Sol. (c) Number of students behind Anil in rank = $(31-7) = 24$

So, Anil is 25th from the bottom.

Number of students behind Sunil in rank = $(31-11) = 20$

So, Sunil is 21st from the bottom.

9.

Sol. (c) 5

10.

Sol. (b)

11.

Sol. (b)

12.

Sol. (d) Given expression $= 116 + \frac{92}{46} - \frac{28}{7} = 116 + 2 - 4 = 114$

13.

Sol. (c) One of outcomes of 'Match' is 'Victory'.
Likewise 'Success' is one of the outcomes of ' Examination'.

14.

Sol. (d)

The figure may be labelled as follows :

In this case, six pentagons have been formed by combination of three triangles and two rhombuses - ADFHJ, CFHJL, EHJLB, GJLBD, ILBDF and KBDFH. four other pentagons are formed by the combination of three triangles and one rhombus - LCFHM, LBEHM, BKFHM and BLIFM. Thus there are 10 pentagons in the figure.



15.

Sol. (c)

PART - II : MATHEMATICS

1.

Sol. (d) $\frac{3}{8} \div \left(\frac{15-4}{24}\right) = \frac{3}{8} \div \frac{11}{24} = \frac{3}{8} \times \frac{24}{11} = \frac{9}{11}$

2.

Sol. (c) 0 Because 0 is additive identity of integer.

3.

Sol. (a) co primes because HCF of 12 and 23 is 1

4.

Sol. (b) $20 = 2 \times 2 \times 5$

$$25 = 5 \times 5$$

$$30 = 2 \times 3 \times 5$$

So $LCM = 4 \times 5 \times 5 \times 3 = 300$

5.

Sol. (a) XVV is meaningless because in Roman number V, L and D can never be repeated.

6.

Sol. (a) Rhombus and square are quadrilaterals in which opposite sides are parallel and all sides are equal.

7.

Sol. (c) $\frac{60 \text{ hrs}}{600 \text{ min}} = \frac{60 \times 60 \text{ min}}{600 \text{ min}} = \frac{6}{1}$

8.

Sol. (b) 1 Because predecessor of 1 is zero but zero is not a natural number

9.

Sol. (b) -78

10.

Sol. (b) 25 cmPerimeter of square = $4 \times \text{side}$ $100 = 4 \times \text{side}$

side = 25 cm

11.

Sol. (d) Number of angle of measure $30^\circ, 20^\circ, 40^\circ, 50^\circ, 60^\circ, 90^\circ$

12.

Sol. (b) $\frac{6}{2^{\text{nd}} \text{ term}} = \frac{12}{36} \Rightarrow 2^{\text{nd}} \text{ term} = \frac{6 \times 36}{12} = 18$

13.

Sol. (d) $\frac{7}{9} - \frac{4}{9} + 3 \frac{1}{3} = \frac{7}{9} - \frac{4}{9} + \frac{10}{3} = \frac{7-4+30}{9} = \frac{33}{9} = \frac{11}{3} = 3 \frac{2}{3}$

14.

Sol. (d) Twelve point zero six one

15.

Sol. (b) $8q, -3p$

16.

Sol. (a) Total score = marks of mathematics and science = $100 + x$

17.

Sol. (d) 700 cm

As 1 meter = 100 centimeter

So, 7 meter = 700 centimeter

Ans = 700 cm

18.

Sol. (b) [S_1, S_2 are sides are P_1, P_2 are perimeter of square]

$$\frac{S_1^2}{S_2^2} = \frac{9}{1} \Rightarrow \frac{S_1}{S_2} = \frac{3}{1} \quad \frac{4S_1}{4S_2} = \frac{3}{1} \quad \text{So,} \quad \frac{P_1}{P_2} = \frac{3}{1}$$

19.

Sol. (b) $39 \frac{2}{10} = \frac{392}{10} = 39.2$

20.

Sol. (d) $\frac{1}{2} + \frac{1}{x} = 2 \Rightarrow \frac{1}{x} = 2 - \frac{1}{2} \Rightarrow \frac{1}{x} = \frac{3}{2} \Rightarrow x = \frac{2}{3}$

21.

Sol. (c) 1 metre = 1000 mm

22.

Sol. (b) 43 ys = XLIII

23.

Sol. (c) Factors 1, 5, 25

$$\text{Sum} - 1 + 5 + 25 = 31$$

24.

Sol. (c) 59, 61

25.

Sol. (b) two quarters

$$\frac{1}{2} = 2 \times \frac{1}{4}$$

one half = 2 quarters

26.

Sol. (c) 7

Because Sum of odd of consecutive integers divisible by that odd number.

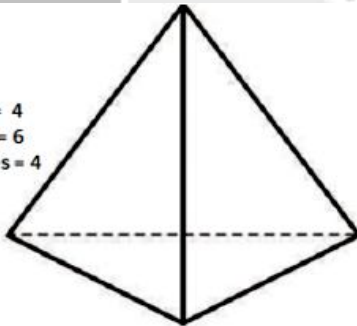
27.

Sol. (b) $1 \text{ cm} = \frac{1}{100} \text{ m} = 0.01 \text{ m}$

28.

Sol. (c) 6

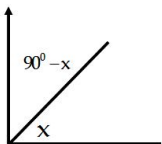
Number of faces = 4
 Number of edges = 6
 Number of vertices = 4



29.

Sol. (a) Number of packets = $\frac{52.5}{2.5} = 21$

30.

Sol. (b) 55° 

$$x - (90^\circ - x) = 20^\circ$$

$$2x = 110^\circ$$

$$x = 55^\circ$$

PART - III : PHYSICS & CHEMISTRY

1.

Sol. (d) as because Light year, meter and Kilometer are the units to measure distance.

A light-year is the distance a beam of light travels in a single Earth year, which equates to approximately 6 trillion miles (9.7 trillion kilometers)

2.

Sol. (c) The swinging of a pendulum is an example of oscillatory motion and all oscillatory motions are periodic motions because Oscillatory motion is the type of motion in which an object moves to and fro about a fixed point.

3.

Sol. (b) Moon comes between the earth and the sun

Solar eclipse occurs when the Moon passes between the Sun and Earth, casting the Moon's shadow on Earth.

4.

Sol. (a) From Earth the Venus comes directly in between the Sun and brings it closest to Earth, making it appear exceptionally bright in our night sky. Meanwhile, its elliptical orbit around the Sun is also responsible for its visibility from Earth.

5.

Sol (a) The closer the magnetic field lines are, the stronger the magnetic field at that point. The magnetic field lines are closer or denser at the poles. So, the magnetic field is strongest around the both poles of the magnet.

6.

Sol. (c) An electromagnet is a kind of magnet whose magnetic field is created by the flow of electric current. The magnetic field disappears when the current stops.

7.

Sol. (a) The function of switch in an electric circuit is to either make or break the electric circuit. A switch is used to turn current to an electrical appliance either on or off.

8.

Sol. (b) Function of a miniature circuit-breaker is to protect an installation or appliance against sustained overloading and short-circuit faults.

9.

Sol. (c) In a pinhole camera, the image of the object is received on the screen. Thus, the image formed is real and inverted.

10.

Sol. (d) force, when applied to an object can make it move, stop its motion, speed up, slow down and/or change its direction of motion. In other words, a force, when applied to an object may change its state of motion.

11.

Sol. (d) Nylon is not natural fibre.

12.

Sol. (b) Wool is a good insulator of heat

13.

Sol. (c) Electron → negatively charged
 Proton → Positively charged
 Neutron → neutral

14.

Sol. (b) oxygen, Nitrogen are gases so easily compressed.

15.

Sol. (c) liquid changes into vapour → Boiling point

16.

Sol. (c) Rusting of Iron → Chemical change

17.

Sol. (b) In Solid state molecules are tightly packed

18.

Sol. (c) Mercury is liquid at room temperature

19.

Sol. (c) x = Winnowing

20.

Sol. (c) Dust and smoke are harmful for living beings

PART - IV : BIOLOGY

1.

Sol. (a) Right to forest act was implemented in 2007

2.

Sol. (c) The small bead like structure is called ovule

3.

Sol. (b) Nervous system is mainly consist of brain and spinal cord

4.

Sol. (c) The animal like tiger snake are carnivores and cow is a herbivores

5.

Sol. (d) For the disposal of garbage we can prepare the manure from biodegradable garbage and recycle the non- degradable garbage

6.

Sol. (d) Appendicular skeleton is made of girdles, hind limb of bones and fore limb of bones

7.

Sol. (c) A plant has a weak stem and cannot stand upright it spreads on the ground it called creeper

8.

Sol. (b) Scurvy is caused by the deficiency of vitamin C

9.

Sol. (d) A - (r) ; B - (p) ; C - (q) ; D - (s)

10.

Sol. (d) Protein deficiency often leaves its mark on the skin, hair and nail. Growth become stunted and face becomes swollen.