KHOJ-2025

Exam for Young Scientists..!

SAMPLE QUESTIONS PAPER

CLASS 7

SCIENCE APTITUDE TEST

SCIENCE APTITUDE TEST

TIME : 2 HOURS   **MAX MARK : 300**

INSTRUCTIONS

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

Caution : Class, as given on paper above MUST be correctly marked on the answer OMR sheet before attempting the paper. Wrong Class will give wrong results.

1.   This booklet consists of 75 questions. Question paper consists of 4 sections. Marking scheme is given in table below:

Section	Subject	Questions No.	Making Scheme for each questions	
			Correct Answer	**Wrong Answer**
PART - **I**	Mental Ability	15	4	-1
PART - **II**	Mathematics	30	4	-1
PART - **III**	Physics & Chemistry	20	4	-1
PART - **IV**	Biology	10	4	-1

3.   Answers have to be marked on the OMR sheet. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work.

4.   Blank papers, cellular phones, smart watches, log tables, slide rule, calculator and electronic devices, in any form, are not allowed.

PART - I : MENTAL ABILITY

1. At a ticket counter 35 people are standing in a row. Mohit is 15th from ticket counter. What is his position from the end?
   (a) 19th   (b) 20th
   (c) 21st   (d) 22nd

2. Observe the following sequence:
   2 2 9 9 2 9 2 9 9 2 9 9 2 9 9 9 2 2 9 9
   How many times 9's are followed by 2's?
   (a) 2   (b) 6
   (c) 5   (d) None

3. Study the problem figures carefully and try to establish the relationship between them from the answer figures. Pick out the figure which most appropriately completes the series.
   Problem Figures

   Answer Figures

   (a)   (b)

   (c)   (d)
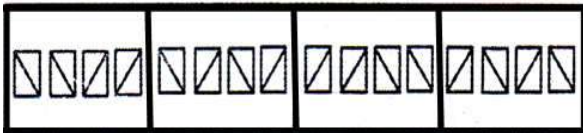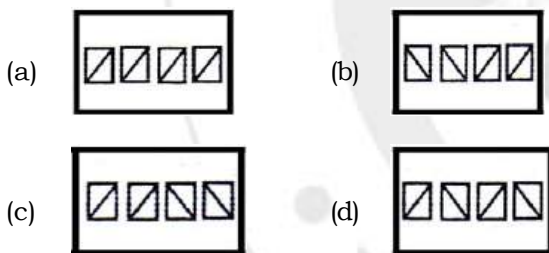
4. A square transparent sheet with a pattern is given in figure X. Find out from amongst the alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

   (X)

   (a)   (b)

   (c)   (d)
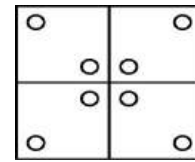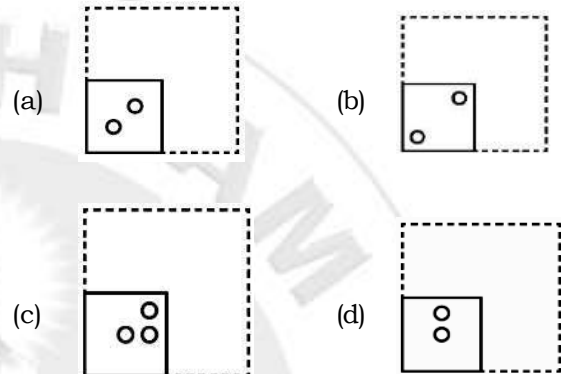
5. A sheet has been folded in the manner as shown in X, Y and Z respectively and punched. You have to choose from the alternatives how it will look when unfolded.

   X   Y   Z

   (a)   (b)

   (c)   (d)
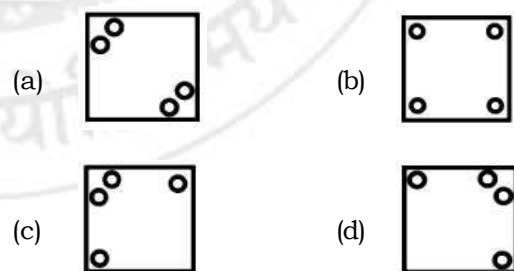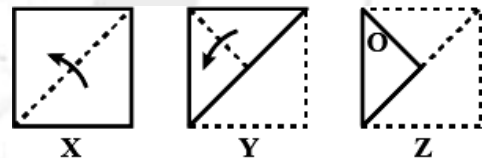
Space for Rough Work

6. Select a figure from the four alternatives, which when placed in the blank space of figure (X) would ocmplete the pattern.

(X)

(a)

(b)

(c)

(d)
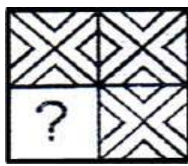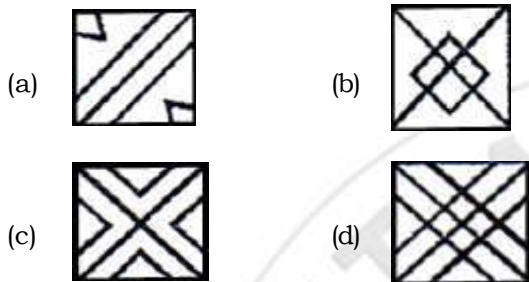
7. Find the missing numbers :
   20, 19, 17, ?, 10, 5
   (a) 12   (b) 14
   (c) 13   (d) 15

8. Find the missing term: AP, CN, EK, GG, ?
   (a) LD   (b) IB
   (c) ID   (d) JB

9. Find the missing term :

   (a) 120   (b) 59
   (c) 62   (d) 22

10. If the following names are arranged alphabetically, which of them will occupy the third position ?
    (a) Surendra   (b) Sindhu
    (c) Shurendra   (d) Sadhana

11. A group of letters is given which are numbered 1, 2, 3, 4, 5 and 6. Below are given four alternatives containing combinations of these numbers. Select that combination of numbers so that letters arranged accordingly form a meaningful word.
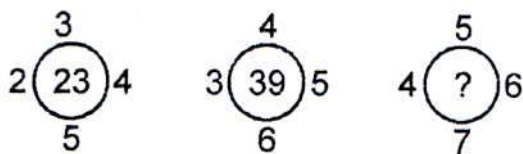
    (a) 1, 4, 3, 5, 2, 6   (b) 2, 5, 4, 1, 6, 3
    (c) 3, 4, 5, 1, 2, 6   (d) 4, 5, 1, 2, 3, 6

12. If Eye is called Hand, Hand is called Mouth, Mouth is called Ear, Ear is called Nose and Nose is called Tongue, with which of the following would a person hear ?
    (a) Eye   (b) Mouth
    (c) Nose   (d) Ear

13. In a certain code FORGET is written as DPPHCU. In the same code DOCTOR will be written as -
    (a) EPDUPS   (b) ROTCOD
    (c) BPAUMS   (d) CPBUNS

14. Five persons were playing cards game sitting in a circle all facing the centre. Mukund was to the immediate left of Rajesh, Vijay was to the right of Anil and between Anil and Nagesh. Who was to the immediate right of Nagesh ?
    (a) Vijay   (b) Rajesh
    (c) Anil   (d) Mukund

15. How many rectangles are there in the given figure?
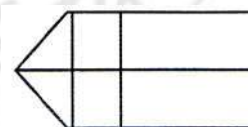
    (a) 6   (b) 7
    (c) 8   (d) 9

Space for Rough Work

PART - II : MATHEMATICS

1. The temperature of a place is 8°C. Next day the temperature falls by 11°C. What was the temperature of the place on the next day?
   (a) 3°C
   (b) 19°C
   (c) -3°C
   (d) -19°C

2. In a class of 40 students, $\frac{1}{5}$ of the total number of students like to eat rice only, $\frac{2}{5}$ of the total number of students like to eat chapati only and the remaining students like to eat both. What fraction of the total number of students like to eat both?
   (a) $\frac{1}{5}$
   (b) $\frac{4}{5}$
   (c) $\frac{2}{5}$
   (d) $\frac{3}{5}$

3. Mohan purchased a notebook for Rs. 27.75, a pencil for Rs. 4.25 and a pen for Rs. 26.45. He gives a 100 rupee note to the shopkeeper. What amount did he get back?
   (a) Rs. 41.55
   (b) Rs. 42.55
   (c) Rs. 43.55
   (d) None of these

4. What is the simplified value of
   $\left(\frac{3}{55} \times \frac{-33}{18}\right) - \left(\frac{39}{125} \times \frac{-15}{78}\right)$?
   (a) $\frac{1}{25}$
   (b) $\frac{1}{50}$
   (c) $-\frac{2}{50}$
   (d) None

5. Which of the following is divisible by 11?
   (a) 65483
   (b) 72493
   (c) 84527
   (d) 92056

6. Which of the following is not a twin prime?
   (a) (11, 13)
   (b) (17,19)
   (c) (23, 29)
   (d) (41,43)

7. What number must be subtracted from 1101010 to get 336414?
   (a) 754696
   (b) 765496
   (c) 764569
   (d) 764596

8. $(-12) \times 7 + (-12) \times (-4) = ?$
   (a) 32
   (b) -32
   (c) -36
   (d) 36

9. What is the equivalent fraction of $\frac{56}{70}$ with numerator 4?
   (a) $\frac{4}{15}$
   (b) $\frac{4}{6}$
   (c) $\frac{4}{5}$
   (d) $\frac{4}{7}$

10. 2 kg 57 g =?
    (a) 2.57 kg
    (b) 2.570 kg
    (c) 2.057 kg
    (d) None of these

11. The weight of 65 magzines is 13 kg. What is the weight of 80 such magazines?
    (a) 14 kg
    (b) 16 kg
    (c) 15 kg
    (d) 17 kg

12. What is the perimeter of regular hexagon having each side of length 6.5 cm ?
    (a) 39 cm
    (b) 38 cm
    (c) 42 cm
    (d) 46 cm

13. Which of the following has no end points?
    (a) A ray
    (b) A line
    (c) A line segment
    (d) An angle

14. The median value of the given data is
    98, 75, 96, 180, 270, 102, 94, 100, 610, 200, 75, 80
    (a) 100
    (b) 98
    (c) 97
    (d) 99

Space for Rough Work

15. The ratio between two numbers is 3 : 5. If each number is increased by 4, the ratio becomes 2 : 3. Find the numbers.

   (a) 12, 20   (b) 18, 30
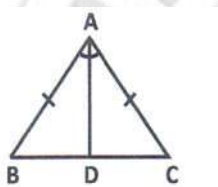
   (c) 24, 40   (d) 15, 25

16. The three even consecutive integers whose sum is 90 are :

   (a) 26, 30, 34   (b) 24, 32, 34

   (c) 24, 28, 38   (d) 28, 30, 32

17. In ΔPQR and ΔXYZ, $\angle X = \angle P = 50^0$, XY = PQ, and XZ = PR. By which property are ΔXYZ and ΔPQR congruent?

   (a) S.S.S. property   (b) S.A.S. property

   (c) A.S.A. property   (d) R.H.S. property

18. In the given figure, AB = AC and AD is the bisector of $\angle BAC$.
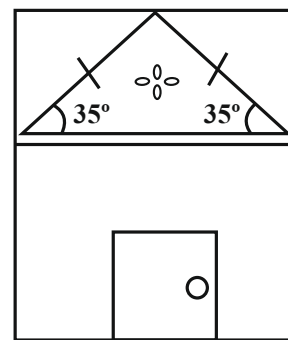

   Which among the following statements is true?

   (a) $\Delta ADB \cong \Delta ABC$ (b) $\Delta ADC \cong \Delta ABC$

   (c) $\angle B = \angle C$ (d) $\angle ABC = \angle CAB$

19. In a ΔABC, if $\angle B$ is an obtuse angle, then the longest side is

   (a) AB   (b) BC

   (c) AC   (d) None

20. Mr. Raghav installed a triangular piece of stained glass above his front door.

   Which of the following best describes the triangle with the given measures?

   (a) Acute equilateral triangle

   (b) Obtuse isosceles triangle

   (c) Right scalene triangle

   (d) Right isosceles triangle

21. In the adjoining figure, it is given that $\angle A = 60°$, $CE \parallel BA$ and $\angle ECD = 65°$ then $\angle ACB =$ ___
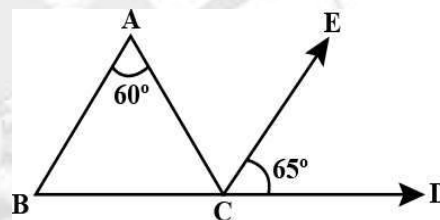
   (a) 60°   (b) 55°

   (c) 70°   (d) 90°

22. Which of the following has a definite length ?

   (a) Ray   (b) Straight line

   (c) Line segement   (d) None

23. Angles are measured in

   (a) compasses   (b) protractor

   (c) degrees   (d) centimetres

Space for Rough Work

24. Ratio of 350 g and 3 kg is :
    (a) 116 : 1   (b) 60 : 7
    (c) 7 : 60   (d) none

25. In a school the total number of students are 3200 out of which 1800 are boys. Remaining are girls. Ratio of girls to boys is:
   (a) 1400 : 1800   (b) 9 : 7
    (c) 7 : 9   (d) 1 : 3

26. The middle terms of proportion are called :
    (a) antecedents   (b) means
    (c) extremes   (d) consequents

27. In a container there are 54 green apples and red apples are 30 more than green apples. What is the ratio of the number of red apples to the total number of apples?
    (a) 5 : 9   (b) 5 : 14
    (c) 14 : 23   (d) 23 : 14

28. Sheetal spent a few minutes preparing tea for her guests. Based on this statement, state the unknown quantity involved.
    (a) Making preparations
    (b) The number of minutes
    (c) Sheetal
    (d) None of these

29. The coefficient of (– x) is_____
    (a) 0   (b) 1
    (c) – 1   (d) x

30. What will be the distance covered by Shalini by taking three rounds around a square park of side 2 cm.
    (a) 6 cm   (b) 12 cm
   (c) 18 cm   (d) 24 cm

PART - III : PHYSICS & CHEMISTRY

1. The displacement-time graphs of two bodies A and B are shown in figure. Which of the following statements is correct?
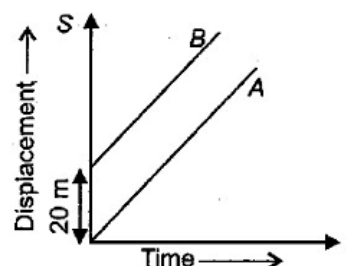
   (a) A is moving faster than B.
   (b) B is moving faster than A.
   (c) B is always 20 m behind A.
   (d) A is always 20 m behind B.

2. If the angle of incidence is 50°, what is the angle between the incident ray and the reflected ray?
   (a) 50^0 (b) 100^0
   (c) 80^0 (d) 130^0

3. A dark patch formed by an opaque body placed in the path of light is called?
   (a) Image   (b) Object
   (c) Shadow   (d) Screen

4. Which of the following is an example of a magnetic substance?
   (a) Iron   (b) Cobalt
   (c) Nickel   (d) All of these

5. When a force is applied to a stationary object, several effects are possible. Which of the following effects is not possible?
   (a) The object moves
   (b) The object rotates
   (c) The object remains stationary

Space for Rough Work

(d)　The mass of the object increases.

6.　Which of the following instrument that automatically stops the current in a circuit if the current exceeds the maximum limit?
(a)　Positive terminal　(b)　MCB
(c)　Negative terminal　(d)　None of these

7.　The figure shows air-filled bulbs connected by a U-tube partly filled with alcohol. What happens to the levels of alcohol in the limbs X and Y when an electric bulb is placed midway between the painted air filled bulbs and electric bulb is lighted?
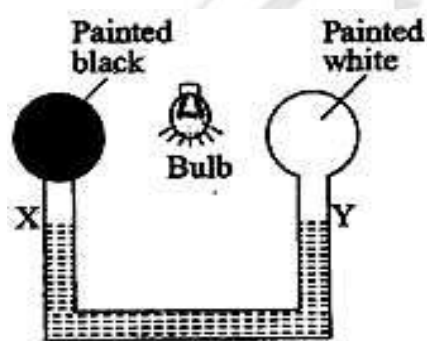
(a)　The level of alcohol falls in both limbs.
(b)　The level of alcohol in the limb X rises while that in limb Y falls.
(c)　The level of alcohol in limb X falls while that in limb Y rises.
(d)　There is no change in the levels of alcohol in the two limbs.

8.　An electrolyte is _____.
(a)　A light electric cell
(b)　A liquid that conducts electricity
(c)　A metal
(d)　None of the above

9.　A pot full of water is put to boil on the stove. Which one of the graphs correctly shows the correct change in temperature over time?
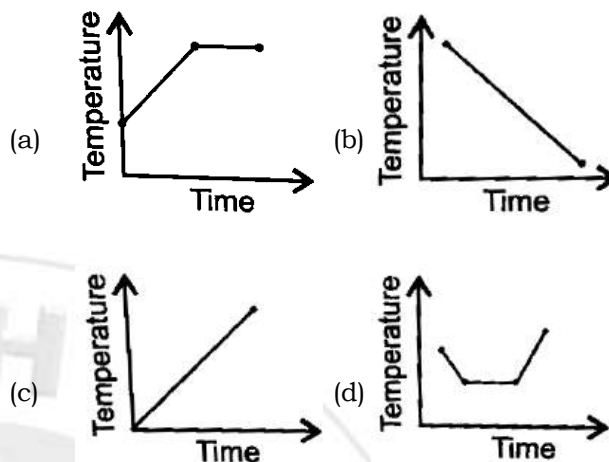
10.　The motion described by a simple pendulum is _____ motion.
(a)　Circular　　　　　(b)　Linear
(c)　Periodic　　　　 (d)　None of the above

11.　What is the pH value of pure water?
(a)　0　　　　　　　　(b)　7
(c)　14　　　　　　　 (d)　-7

12.　Which of the following substances turns red litmus paper blue?
(a)　Acid　　　　　　(b)　Base
(c)　Salt　　　　　　(d)　Water

13.　Which acid is present in vinegar?
(a)　Sulfuric acid　　(b)　Nitric acid
(c)　Citric acid　　　(d)　Acetic acid

14.　What is the chemical formula of sodium hydroxide?
(a)　NaCl　　　　　　(b)　Na_2SO_4
(c)　NaOH　　　　　 (d)　Na_2CO_3

Space for Rough Work

15. What is the main purpose of the primary treatment in a wastewater treatment plant?
    (a) Killing harmful bacteria
    (b) Removing large debris and solid particles
    (c) Adjusting the pH of wastewater
    (d) Separating oil and grease from water

16. What is the purpose of adding alum to water in the purification process?
    (a) To kill bacteria
    (b) To remove colour and suspended impurities
    (c) To add flavour to the water
    (d) To increase the pH of the water

17. Which gas is responsible for the greenhouse effect?
    (a) Oxygen   (b) Carbon dioxide
    (c) Nitrogen   (d) Hydrogen

18. Which of the following substances is commonly used as an antacid to relieve heartburn and indigestion?
    (a) Sodium hydroxide
    (b) Hydrochloric acid
    (c) Magnesium hydroxide
    (d) Sulfuric acid

19. What is the chemical formula of common baking soda?
    (a) $NaCl$ (b) $NaHCO_3$
    (c) $NaOH$ (d) Na_2SO_4

20. Which gas is responsible for the feeling of freshness near green plants?
    (a) Carbon dioxide   (b) Oxygen
    (c) Nitrogen   (d) Hydrogen

PART - IV : BIOLOGY

1. The chemical used in the starch test is
    (a) Safranin   (b) Blue ink
    (c) Iodine   (d) Litmus

2. Amarbel is an example of
    (a) Autotroph   (b) Parasite
    (c) Saprotroph   (d) Host

3. The intestinal juice digests the fats into
    (a) fatty acids   (b) glycerol
    (c) fatty acids and glycerol
    (d) amino acids

4. The part of the digestive system where no digestion occurs
    (a) mouth   (b) stomach
    (c) oesophagus   (d) small intestine

5. Match the following

Column A	Column B
(a) Salivary gland	(i) Bile juice secretion
(b) Stomach	(ii) Storage of undigested food
(c) Liver	(iii) Saliva secretion
(d) Rectum	(iv) Acid release
(e) Small intestine	(v) Digestion is completed
(f) Large intestine	(vi) Absorption of water

    (a) a - iii, b - iv, c - i, d - ii, e - v, f - vi
    (b) a - i, b - ii, c - iii, d - iv, e - v, f - vi
    (c) a - ii, b - i, c - iv, d - iii, e - v, f - vi
    (d) a - iv, b - ii, c - v, d - vi, e - i, f - iii

6. Cellular respiration is carried out in the
    (a) cells   (b) organs
    (c) tissues   (d) muscles

7. Name the type of respiration which causes muscle cramps.
    (a) Aerobic respiration
    (b) Anaerobic respiration
    (c) Both (a) and (b)
    (d) None of these

8. Cockroaches breathe by using an organ called
    (a) nose   (b) tracheae
    (c) both (a) and (b) (d) lungs

9. Which blood vessel carries oxygen-rich blood?
    (a) Arteries   (b) Veins
    (c) Both (a) and (b) (d) None of these

10. Yeasts reproduce by
    (a) fragmentation
    (b) budding
    (c) vegetative propagation
    (d) layering