



CLASS - 6



**SCHOLARSHIP FOR HIGH ACHIEVERS
AND NEEDY STUDENTS**

SAMPLE QUESTION PAPER

TIME : 1 HOUR

SCIENCE APTITUDE TEST

MAX MARKS : 300

Important Instructions

1. This Question paper contains 4 Parts
Part - I : Mental Ability - 15 Questions | Part - II : Mathematics - 30 Questions | Part - III : Physics & Chemistry - 20 Questions | Part - IV : Biology - 10 Questions
2. Marking Scheme: For each correct answer 4 marks will be awarded and for each wrong answer –1 mark will be deducted. In case of no response zero mark will be awarded
3. There is only one correct answer for each Question.
4. Darken the appropriate circle completely for the correct answer.
5. Use blue/black ballpoint pen only.
6. Fill in all the personal details given in the OMR sheet in the space provided.
7. Rough work is to be done in the space provided for this purpose in the Test Booklet only



IIT Ashram

IIT-JEE | NEET | OLYMPIADS | FOUNDATION (6 to10)

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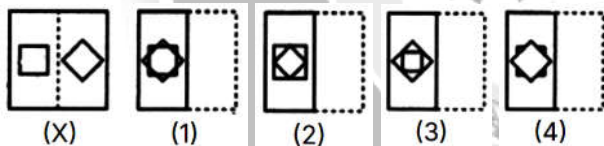
MANJALPUR - IIT ASHRAM : SF - 1 TO 12, Kabir Plaza, Beside Kabir Complex, Above IDBI Bank, Infront of Army Camp
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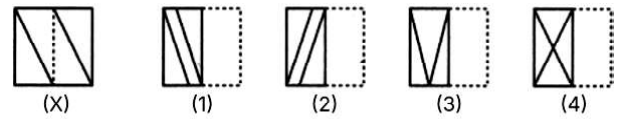
PART - I : MENTAL ABILITY

- Find the missing term:
13, 17, 19, 23, ?
(a) 27 (b) 31
(c) 25 (d) 29
- A family has 6 sons and each son has one sister. How many people are in the family?
(a) 8 (b) 13
(c) 7 (d) 14
- Identify the odd one out:
(a) Triangle (b) Square
(c) Rectangle (d) Circle
- If John is taller than Jack and Jack is taller than Jim, who is the shortest?
(a) John
(b) Jack
(c) Jim
(d) Cannot be determined
- Complete the sequence: BDF, HJL, NPR, ?
(a) TVX (b) TUX
(c) SUV (d) STV
- Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



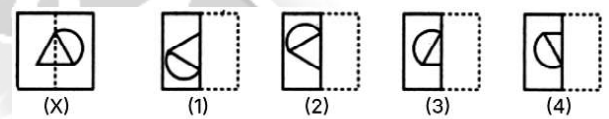
- (a) 1 (b) 2
(c) 3 (d) 4

- Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



- (a) 1 (b) 2
(c) 3 (d) 4

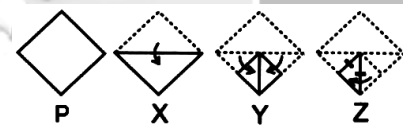
- Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



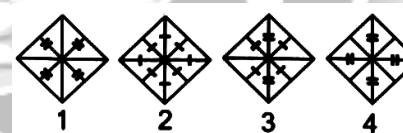
- (a) 1 (b) 2
(c) 3 (d) 4

- Choose a figure which would most closely resemble the unfolded form of figure (z).

Paper cutting process



Answer Figures:

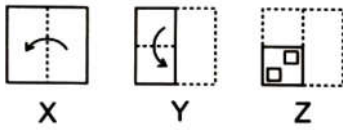


- (a) 1 (b) 2
(c) 3 (d) 4

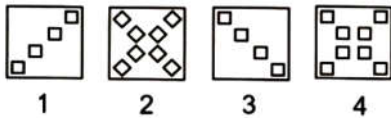
Space for Rough Work

10. Choose a figure which would most closely resemble the unfolded form of figure (z).

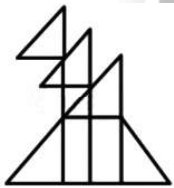
Paper cutting process



Answer Figures:



- (a) 1 (b) 2
(c) 3 (d) 4
11. Swap letters in pairs: GARDEN
GA/RD/EN = ?
(a) AGDRNE (b) AGDREN
(c) AGDNRE (d) AGNRDE
12. Identify the number of triangles in the given figure.



- (a) 10 (b) 7
(c) 8 (d) 9

13. Mr Deepak Mohan walks 5 km towards the south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. What direction is he facing right now?

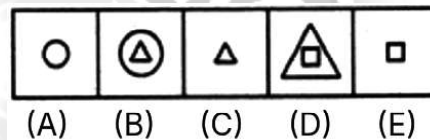
- (a) West (b) South
(c) North-East (d) South-West

14. A clock is so placed that at 2:00 p.m. the minute hand points towards North-west. In which direction does the hour hand point at 6:00 p.m.?

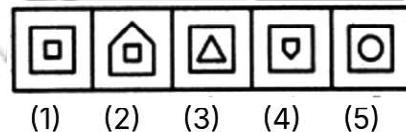
- (a) North-West (b) West
(c) North-East (d) South-East

15. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

Problem Figures:



Answer Figures:



- (a) 1 (b) 2
(c) 3 (d) 4

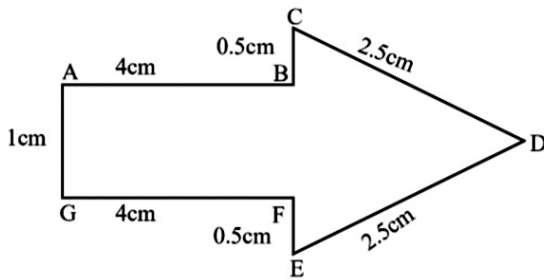
Space for Rough Work

PART - II : MATHEMATICS

1. Take two digit 7 & 9. The smallest 4 - digit number using digit equal number of times is
 (a) 7997 (b) 7799
 (c) 7797 (d) 9977
2. $98 \times 5 = 490$, $98 \times 15 = 490 \times 3$,
 $98 \times 25 = 490 \times 5$, Basis on this pattern
 98×35 will be
 (a) 490×2 (b) 490×4
 (c) 490×7 (d) 490×9
3. Number of lines that can be drawn from two distinct points on a plane
 (a) Two (b) One
 (c) Zero (d) Infinite
4. Correct choice is
 (a) $999+1 = 10 \times 1000$.
 (b) Greatest 2-digit number + 1 = Smallest 3-digit number.
 (c) $9999+1 = 100000$.
 (d) Greatest 3-digit number + 1 = Smallest 3-digit number.
5. The common end point of an angle is called
 (a) Vertex (b) Zero
 (c) End point (d) None of these
6. Find the cost of fencing a square park of side 300m at the rate of Rs 20 per metre.
 (a) Rs 24000 (b) Rs 20000
 (c) Rs 16000 (d) Rs 28000
7. The numbers which we use for counting are known as.
 (a) Natural numbers
 (b) Prime numbers
 (c) Composite numbers
 (d) Rational numbers
8. Property used in $57+0=57$ is
 (a) Commutative law of multiplication.
 (b) Additive identity.
 (c) Closure property.
 (d) Multiplicative identity.
9. Total 5 - digit numbers are
 (a) 10000 (b) 89999
 (c) 90000 (d) 99999
10. A man purchased 26 buttons on one day and 14 on another day. Each button costs Rs.12. The total cost of these buttons is
 (a) 390 (b) 480
 (c) 690 (d) 745
11. The difference between a line and a line segment is
 (a) A line has definite length and a line segment has indefinite length.
 (b) A line has indefinite length and a line segment has definite length.
 (c) A line has no length and a line segment has breadth.
 (d) No difference between line and line segment.

Space for Rough Work

12. Find the perimeter of the given figure.



- (a) 15cm (b) 10cm
(c) 12cm (d) 20cm

13. What will happen to the area of rectangle if its length is doubled and breadth is same?

- (a) Doubled (b) Tripled
(c) Four times (d) Remains same

14. If two angles form a linear pair, then their sum is.....

- (a) 90° (b) 180°
(c) 360° (d) 270°

15. Number of boys in a class are 27 and the girls are 19. Write the total strength of the class.

- (a) XCV (b) XLIV
(c) XLVI (d) XLVII

16. What is the simplest form of the fraction $\frac{120}{525}$

- (a) $\frac{9}{25}$ (b) $\frac{8}{35}$
(c) $\frac{6}{14}$ (d) $\frac{7}{90}$

17. Predecessor of smallest 4-digit number formed by 3,7,0,5 is

- (a) 5073 (b) 3056
(c) 3050 (d) 2035

18. Which of the following number has 9 as a factor?

- (a) 10898 (b) 88884
(c) 909192 (d) 123456

19. Write in product form $2p^2q^3$

- (a) $2 \times p \times q \times q \times q$
(b) $2 \times p \times p \times q \times q$
(c) $2 \times p \times q \times q \times q \times q$
(d) $2 \times p \times p \times q \times q \times q$

20. Difference between the place values of "3" in 3116365 is

- (a) 2999700 (b) 3000700
(c) 2990700 (d) none

21. A piece of wire $\frac{7}{8}$ m long broke into 2 pieces.

One piece was $\frac{1}{4}$ m long. How long is the other piece?

- (a) $\frac{3}{8}$ m (b) $\frac{2}{8}$ m
(c) $\frac{1}{8}$ m (d) $\frac{5}{8}$ m

Space for Rough Work

22. Reduce the 12.5 in the form of $\frac{p}{q}$ in simplest form.

- (a) $\frac{35}{2}$ (b) $\frac{25}{2}$
 (c) $\frac{15}{2}$ (d) None of these

23. Subtract: Rs 17.35 from Rs 23.75

- (a) Rs 6.40 (b) Rs 6.30
 (c) Rs 6.20 (d) Rs 6.50

24. Smallest among $\frac{7}{11}, \frac{7}{12}, \frac{7}{13}, \frac{7}{14}$ is

- (a) $\frac{7}{13}$ (b) $\frac{7}{14}$
 (c) $\frac{7}{11}$ (d) $\frac{7}{12}$

25. The correct sequence of the numbers in ascending order is

- (a) $0 < -1 < -2$ (b) $1 < -1 < 0$
 (c) $-1 < 0 < 1$ (d) $-2 < -3 < -4$

26. Fill in the box:

$$-10 - (-18) [\quad] -10 - (+18)$$

- (a) $>$ (b) $<$
 (c) $=$ (d) None of these

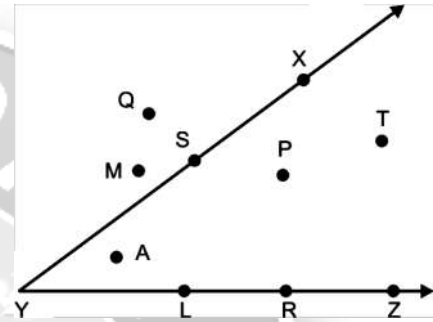
27. Find the value $(-8) - (-10)$

- (a) 1 (b) 6
 (c) 9 (d) 2

28. If the area of a square is 169 m, then its perimeter is

- (a) 13 m (b) 52 m.
 (c) 60 m (d) 104 m.

29. In the given figure, interior points are.....



- (a) M, S, X (b) L, R, Z
 (c) A, P, T (d) none of these

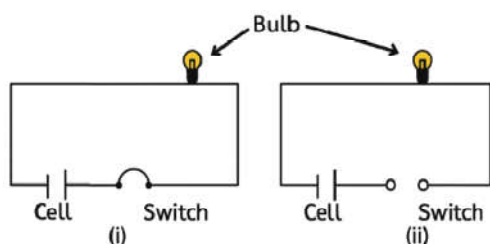
30. There are two numbers. One of the number is 3 times the other number. Their sum is 20. Find the numbers.

- (a) 5, 15 (b) 8, 12
 (c) 4, 12 (d) 6, 14

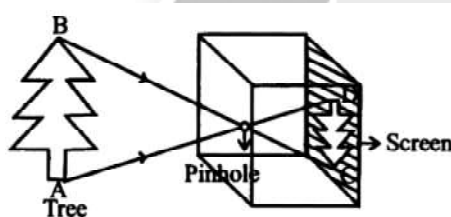
Space for Rough Work

PART - III : PHYSICS & CHEMISTRY

1. Look at the following two diagrams and answer in which case bulb will glow?

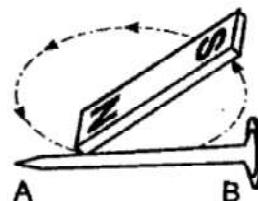


- (a) Both (i) and (ii)
 (b) Only (i)
 (c) Only (ii)
 (d) None of the above is correct
2. The image formed by pinhole camera on the screen in the figure is_____.

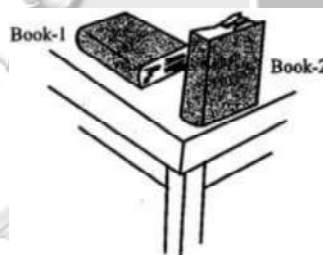


- (a) Erect and enlarged
 (b) Inverted and enlarged
 (c) Erect and diminished
 (d) Inverted and diminished

3. A nail is magnetized as shown in the figure. Which polarity will develop at A and B?



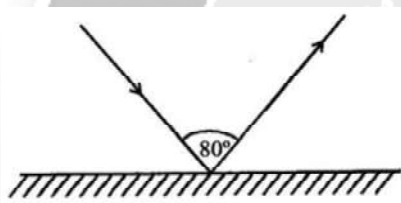
- (a) A - North, B-North
 (b) A - North, B-South
 (c) A - South, B - South
 (d) A - South, B-North
4. Speed of a car is 30 m/s. Find its speed in km/h?
- (a) 110 km/h (b) 5.3 km/h
 (c) 108 km/h (d) 109 km/h
5. Which book will exert more pressure?



- (a) Book 1
 (b) Book 2
 (c) Both exert equal pressure
 (d) Can't be determined

Space for Rough Work

6. Pole star appears to be stationary in all seasons because:
- (a) Pole star does not rotate on its axis.
 - (b) Pole star happens to lie on the axis of equator.
 - (c) Pole star happens to lie on the axis above north pole of the earth.
 - (d) Pole star is most distant of all the stars
7. What causes the formation of shadows?
- (a) Rectilinear propagation of light
 - (b) Curvilinear propagation of light
 - (c) Total internal reflection
 - (d) Refraction
8. The diagram shows a ray of light reflected by a plane mirror. The angle between the incident ray and the reflected ray is 80° . What is the angle of incidence?



- (a) 40°
- (b) 80°
- (c) 50°
- (d) 100°

9. When the strength of the current flowing through a coil is increased __
- (a) Strength of the magnetic field decreases
 - (b) Strength of the magnetic field increases
 - (c) Strength of the magnetic field remains constant
 - (d) None of these
10. A distance is always __.
- (a) Shortest length between two points
 - (b) path covered by the object between two points
 - (c) product of length and time
 - (d) none of these
11. The chemical symbol of Sodium is
- (a) Na
 - (b) N
 - (c) So
 - (d) S
12. Which of the following is an example of homogenous mixture?
- (a) Salt solution
 - (b) copper sulphate solution
 - (c) Potassium permanganate solution
 - (d) all of the above
13. __ causes the particles to move faster.
- (a) heating
 - (b) Cooling
 - (c) contracting
 - (d) solidification
14. Which of the following is the strongest fibre?
- (a) cotton
 - (b) rayon
 - (c) wool
 - (d) nylon

Space for Rough Work

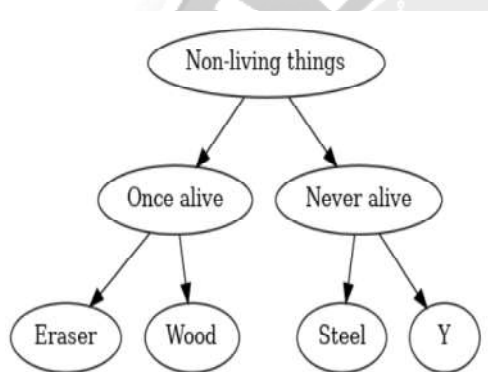
15. Which of the following has a dull surface?
(a) nylon (b) wool
(c) polyester (d) cotton
16. A needle and knife belong to the same group as:
(a) they are transparent
(b) they are hard and magnetic
(c) they float on water
(d) they are poor conductors of heat
17. Which of the following is lustrous, has fixed volume but no fixed shape?
(a) Iron (b) Mercury
(c) Gold (d) Iodine
18. A commonly used chemical for loading is:
(a) Alum (b) Hydrogen
(c) Sulphur (d) Common salt
19. Which process takes place in a washing machine while clothes are being dried?
(a) filtration (b) winnowing
(c) decantation (d) centrifugation
20. Which of the following is both physical and chemical change?
(a) burning of wax candle
(b) Freezing of cream
(c) expansion of an iron ring
(d) melting of chocolate

PART - IV : BIOLOGY

1. Which nutrient protects us against diseases?
(a) Vitamins & minerals
(b) Fats & carbohydrates
(c) Proteins
(d) All of these
2. Which food item gives instant energy because it is directly absorbed into the blood?
(a) Rice (b) Oil
(c) Glucose (d) Bread
3. A child has stunted growth and swollen belly. This may be due to:
(a) Vitamin A deficiency
(b) Protein deficiency
(c) Iron deficiency
(d) Excess carbohydrates
4. Which part of a leaf helps control water loss?
(a) Lamina (b) Midrib
(c) Veins (d) Stomata
5. Which of the following joints allows movement in all directions?
(a) Hinge joint
(b) Ball and socket joint
(c) Fixed joint
(d) Pivot joint
6. Which of the following is NOT a function of the skeleton?
(a) Gives shape to the body
(b) Helps in respiration
(c) Protects internal organs
(d) Helps in movement

Space for Rough Work

7. Assertion (A): The ball and socket joint allows movement in all directions.
Reason (R): The bones in this joint are fixed and do not move at all.
- (a) Both A and R are true, and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true
8. Vermicomposting uses:
- (a) Chemicals (b) Fire
(c) Earthworms (d) Insects
9. Study the diagram as shown below.



Which one of the following is an example of Y?

- (a) Glass bottle (b) Cotton shirt
(c) Exercise book (d) Dried flower

10. Which of the following describes respiration?
Ananya: Animals take in carbon dioxide and give off oxygen.
Sanchit: Animals take in oxygen and give off carbon dioxide.
Saumya: Plants take in carbon dioxide and give off oxygen.
Ranchit: Plants take in oxygen and give off carbon dioxide.
- (a) Ananya and Ranchit
(b) Sanchit and Saumya
(c) Sanchit and Ranchit
(d) Ranchit only

Space for Rough Work