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INTERACTIVE OLYMPIADS

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IGO INTERNATIONAL CYBER OLYMPIAD	NISO NATIONAL INTERACTIVE SCIENCE OLYMPIAD	NIMO NATIONAL INTERACTIVE MATHS OLYMPIAD	NBTO NATIONAL BIOTECHNOLOGY OLYMPIAD	IEO INTERNATIONAL ENGLISH OLYMPIAD	IGO INTERNATIONAL G.K. OLYMPIAD
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**NATIONAL
INTERACTIVE
MATHS
OLYMPIAD**

NIMO

7
Class

B1
Paper
Code

Academic Partner ——— WWW.EDUSYS.IN

EtG
BOOKS

Creating
SUCCESS
Stories

A Unit of EDUSYS LEARNING MEDIA

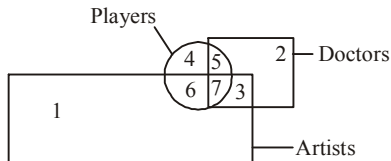
AIEEE • IIT • PMT • OLYMPIADS

IMPORTANT INFORMATION

- You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET**.
- The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 25 Questions each to be answered in 40 minutes. The Question paper for classes 7 to 12 contains 50 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the coordinator teacher.
- Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. The student can retain the Question Paper.

MENTAL ABILITY

- Which numbered space in the figure represents doctors who are players as well as artists?



- (1) 2 (2) 7

(3) 6 (4) None of these
- Choose the correct alternative from the given ones that will complete the series.
1, 4, 9, 16, 25, ?
(1) 49 (2) 60
(3) 36 (4) None of these
- Which number continues this sequence?
[-4] [-2] [0] [2] []
(1) 3 (2) 5
(3) 4 (4) None of these
- Which number is missing?

6	4	5	3
7	5	4	6
5		7	4
8	7	6	5

- (1) 7 (2) 5

(3) 6 (4) None of these
- Which number goes in the blank triangle.

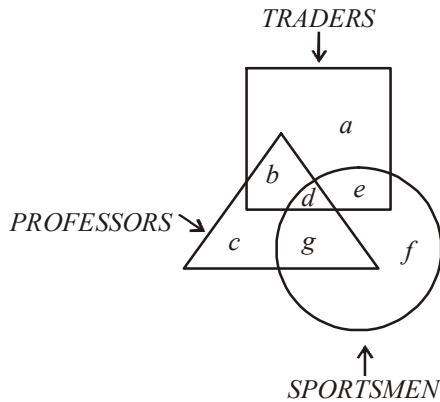
(1) 169 (2) 165

(3) 711 (4) None of these
- Which solid figure could have the shapes below as side views?

(1) Sphere (2) Cube

(3) Cylinder (4) None of these
- If two coins are tossed together. The chances of getting "head, head" is
(1) $\frac{1}{2}$ (2) $\frac{1}{3}$
(3) $\frac{1}{4}$ (4) None of these

8. Professors who are sportsmen but not traders, is shown by which area?



- (1) f (2) g
 (3) b (4) None of these
9. In the following options, 2 of them are alike and one is different. Find the odd one out.
 (1) Fountain pen (2) Note Book
 (3) Pencil (4) None of these
10. What will come in place of question mark, if we continue the sequence – A Z B Y C X D ?
 (1) E (2) W
 (3) F (4) None of these

MATHEMATICS

11. Find A, B & C respectively
 $\frac{7}{3} = \frac{A}{\frac{B}{C}}$
 (1) 2, 1, 3 (2) 1, 2, 3
 (3) 3, 1, 2 (4) None of these
12. In Siberia, the temperature rises from -20°C to 2°C at midday. By how much did it rise?
 (1) 10°C (2) 20°C
 (3) 22°C (4) None of these
13. Suggest a decimal to go between these numbers.
 7.65 and 7.66
 (1) 7.651 (2) 7.64
 (3) 7.67 (4) None of these
14. Mohan takes out 50% of the matches from the matchbox. Then he takes out 5 from what is left. He now finds he has 6 matches left. How many matches were there in all?
 (1) 22 (2) 11
 (3) 30 (4) None of these

15. Find the sum of $\frac{4}{5}$ and $\frac{-6}{7}$.
 (1) $\frac{30}{57}$ (2) $\frac{-2}{35}$

- (3) $\frac{58}{35}$ (4) None of these

16. $-4 \div \left(-\frac{2}{5}\right)$
 (1) 10 (2) -10
 (3) $\frac{2}{5}$ (4) None of these

17. Solve for x .
 $-8x + 4 = 4x - 4$
 (1) $\frac{2}{3}$ (2) $\frac{-2}{3}$
 (3) -2 (4) None of these

18. Find the value of 2^5
 (1) 32 (2) 16
 (3) 25 (4) None of these

19. If 2.54 cm make an inch, how many inches will 60.96 cm make?
 (1) 609.6 inch (2) 6 inch
 (3) 24 inch (4) None of these

20. If $4 \times 4 \times 4 = 64$, then $\sqrt[3]{64} =$
 (1) 8 (2) 4
 (3) 16 (4) None of these

21. Find the square root of expression given below.
 $3 \times 3 \times 4 \times 4$
 (1) 8 (2) 9
 (3) 12 (4) None of these

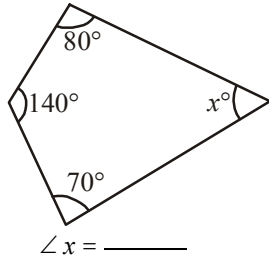
22. Find the product of
 $(3x^2)(-5x)$
 (1) $-15x^2$ (2) $15x^3$
 (3) $-15x^3$ (4) None of these

23. Find the product of
 $(1-4x)(1+x+x^2)$
 (1) $1-3x+3x^2-4x^3$ (2) $1-3x-3x^2-4x^3$
 (3) $1-3x-3x^2+4x^3$ (4) None of these

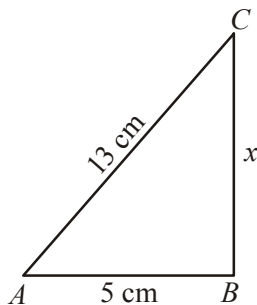
24. $19y - 38z = ?$
 (1) $19(y - z)$ (2) $19(y - 2z)$
 (3) $19(y - 3z)$ (4) None of these

25. Find the product.
 $(x - 10)(x + 5)$
 (1) $x^2 + 5x - 50$ (2) $x^2 - 5x - 50$
 (3) $x^2 - 5x + 50$ (4) None of these

26. Find the value of unknown angle.



- (1) 120° (2) 50°
 (3) 70° (4) None of these
27. Find the area of a right-angled triangle whose one leg is 5 cm and hypotenuse is 13 cm.



- (1) 30 cm^2 (2) 65 cm^2
 (3) 60 cm^2 (4) None of these
28. π is _____ number
 (1) A rational (2) An irrational
 (3) An imaginary (4) None of these

29. If $x = \frac{-2}{7}$, then $|-x|$ is equal to
 (1) $|x|$ (2) x
 (3) 1 (4) None of these

30. The solution of $\sqrt{3}x = 2\sqrt{3} + x$ is
 (1) $3 + \sqrt{3}$ (2) $3 - \sqrt{3}$
 (3) $\frac{\sqrt{3}}{\sqrt{3}-1}$ (4) None of these

31. Two angles in a triangle are in the ratio 4 : 5. If the sum of these angles is equal to the third angle, then third angle is
 (1) 90° (2) 40°
 (3) 50° (4) None of these

32. The ratio of number of males to number of females in a club are 7 : 4. If there are 84 males in the club, the total number of members in the club are
 (1) 126 (2) 132
 (3) 136 (4) None of these

33. The sum of the angles of quadrilateral is
 (1) 180° (2) Depends on the quadrilateral
 (3) 360° (4) None of these

34. In the quadrilateral ABCD, the diagonals AC and BD are equal and perpendicular to each other. Then ABCD is a
 (1) Square (2) Parallelogram
 (3) Rhombus (4) None of these

35. If $\sqrt{\frac{16}{49}} = \frac{x}{49}$, then $x =$
 (1) 4 (2) 28
 (3) 16 (4) None of these

36. The sides of a rectangular field are 80 m and 18 m respectively. The length of the diagonal is
 (1) 84 m (2) 98 m
 (3) 82 m (4) None of these

37. The selling price of goods which cost Rs. 10 and were sold at a gain of 10% is
 (1) Rs. 12 (2) Rs. 11.10
 (3) Rs. 11 (4) None of these

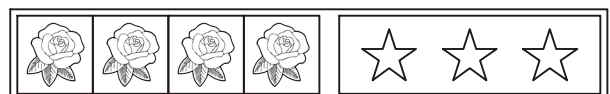
38. The percentage equivalent to $\frac{3}{8}$ is
 (1) 37.5% (2) 3.75%
 (3) 40% (4) None of these

39. Vertical and horizontal cross sections of a right circular cylinder are always respectively
 (1) rectangle, square (2) rectangle, circle
 (3) square, circle (4) None of these

40. Suppose 2 kg of sugar contains 9×10^6 crystals. The number of sugar crystals in 5 kg of sugar is
 (1) 2.25×10^7 crystals (2) 2.3×10^7 crystals
 (3) 2×10^6 crystals (4) None of these

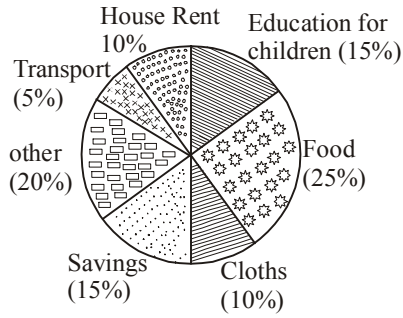
ETG INTERACTIVE SECTION

41. If you have roses to stars in the ratio given below and have 24 roses, how many stars do you have?

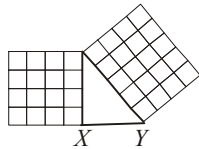


- (1) 12 (2) 20
 (3) 18 (4) None of these

(Q-42-44) : The pie chart gives the expenditure (in percentage) on various items and savings of a family during a month.

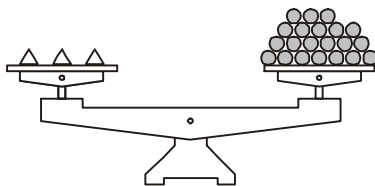


42. Expenditure is maximum on
 (1) Other (2) Education for children
 (3) Food (4) None of these
43. The item on which expenditure is equal to the total savings of the family, is
 (1) Other (2) Education for children
 (3) Cloths (4) None of these
44. If the monthly saving of the family is Rs 3000, then the monthly expenditure on clothes is
 (1) Rs. 1000 (2) Rs. 2000
 (3) Rs. 3000 (4) None of these
45. Which of the following should be attached to side XY to demonstrate the Pythagorean Theorem?



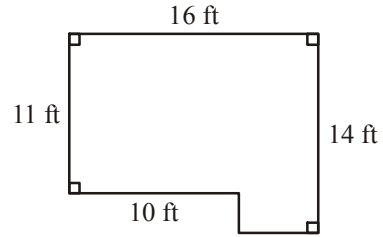
- (1) (2)
- (3) (4) None of these

46. The drawing below is a scale that is balanced. Each Δ represents an x and each \circ represents a 1.



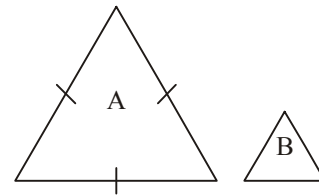
- Which best represents the drawing?
 (1) $3x = 21$ (2) $3 + x = 21$
 (3) $3 + x > 21$ (4) None of these

47. Kirti is going to carpet her living room floor and drew the diagram shown.



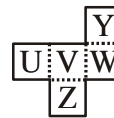
What is the minimum number of square feet of carpet she will need?

- (1) 60 sq ft (2) 244 sq ft
 (3) 194 sq ft (4) None of these
48. A side of the equilateral triangle A is twice the length of a side of triangle B.
 How many triangle B will fit into triangle A?



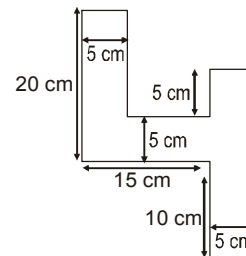
- (1) 3 (2) 4
 (3) 5 (4) None of these

49. A piece of paper is cut out and labeled as shown in the diagram. It is folded along the dotted lines to make an open box. If the box is placed on a table so the top of the box is open, then the label at the bottom of the box is :



- (1) U (2) V
 (3) W (4) None of these

50.



- What is the area of the given figure?
 (1) 235 cm^2 (2) 250 cm^2
 (3) 260 cm^2 (4) None of these



END OF THE EXAM