



Class – VII

School Accelerated Program

ENTRANCE TEST CUM SCHOLARSHIP TEST (Sample Paper-1)

[Time: 1 Hour 50 Min]

[Max Marks: 400]

A. General:

1. This booklet is a Question Paper containing 100 questions.
2. **Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones, pagers and electronic gadgets** in any form are not allowed to be carried inside the examination hall.
3. The answer sheet, a machine-readable optical mark recognition sheet (OMR Sheet), is provided separately.
4. DO NOT TAMPER WITH THE OMR OR THE BOOKLET.
5. Please fill your roll number correctly in the OMR sheet (answer sheet).
6. Both Question Paper and OMR Answer Sheet will be submitted after completion of this examination.

B. Question Paper Format and marking scheme:

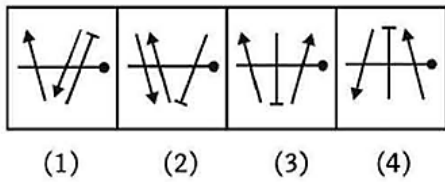
1. The Question Paper consists of five parts (Part I: MAT, Part II: Physics, Part III: Chemistry, Part IV: Biology, Part V: Mathematics).
2. Each Question carries +4 marks for correct answer and -1 mark for incorrect answer.

MAT

- In the series given below, how many 8s are there each of which is exactly divisible by its immediate preceding as well as succeeding numbers?
2 8 3 8 2 4 8 2 4 8 6 8 2 8 2 4 8 3 8 2 8 6
(a) One (b) Two (c) Three (d) Four
- How many 7s are there in the following number series which are preceded by 9 and also followed by 6?
7 8 9 7 6 5 3 4 2 8 9 7 2 4 5 9 2 9 7 6 4 7
(a) Two (b) Three (c) Four (d) Five
- Which of the following diagrams correctly represents the relationship among citizens, men smokers, educated patients.



- Choose the figure which is different from the others.



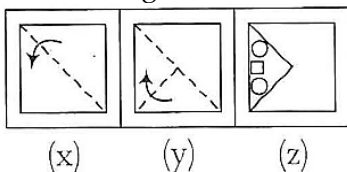
- (a) (1) (b) (2) (c) (3) (d) (4)

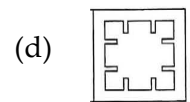
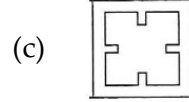
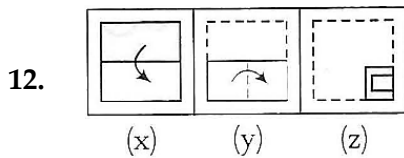
Directions : (Questions 5 & 6). In each of the questions given below, find the next term to fill the blank space.

- 3,5,10,12,24,26,____.
(a) 52 (b) 30 (c) 28 (d) 48
- 3,6,5,20,7,42,9,____.
(a) 60 (b) 54 (c) 72 (d) 66
- Lalit walks 8 km east, turns south-west and walks another 8 km . He again takes a turn towards north-west and walks another 8 km. In which direction from his starting point is he standing now?
(a) North-East (b) South-East (c) West (d) East
- Which of the following number does not fit in the sequence?
3,7,9,11,13,17,19
(a) 3 (b) 7 (c) 17 (d) 9
- L, M, N* and *O* are brothers. *L* is darker than *O*, *N* is the fairest of all. *M* is fairer than *O*. Who is the darkest of all ?
(a) N (b) O (c) L (d) M
- Anjali says, "He is the only son of the father of my sister's brother." How is that person related to Anjali?
(a) Uncle (b) Cousin (c) Brother (d) Father

Directions (Questions 11 & 12) : In the following questions, select the answer figure from the given alternatives which is closest to the unfolded paper.

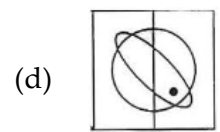
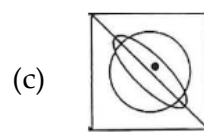
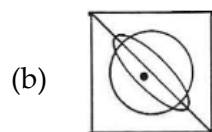
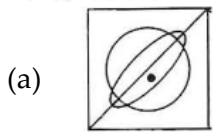
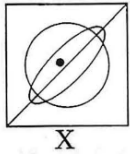
- Problem Figures



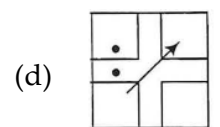
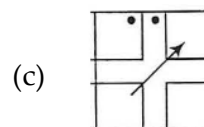
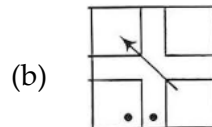
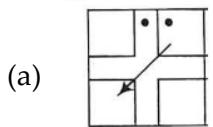
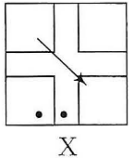


Directions (13 & 14) : In the following questions, choose the correct water image from amongst the four alternatives *a, b, c* and *d* given along with it.

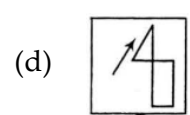
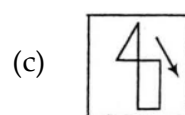
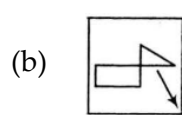
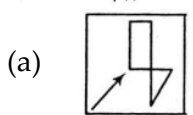
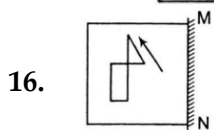
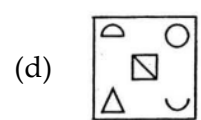
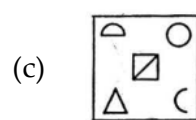
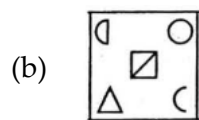
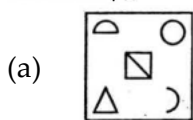
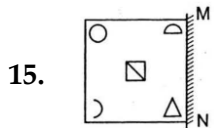
13. Problem Figure



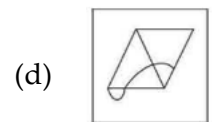
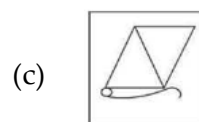
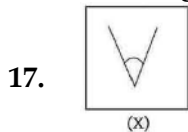
14. Problem Figure



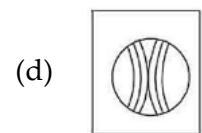
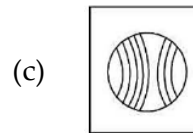
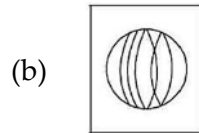
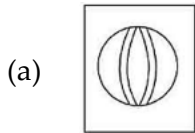
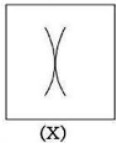
Directions (15 to 16) : In the following questions, choose the correct mirror image from amongst the four alternatives *a, b, c* and *d* given along with it.



DIRECTIONS (Qs. 17-18): In each of the following questions, you are given a figure (X) followed by four alternative figures (a), (b), (c) and (d) such that fig. (X) is embedded in one of them. Trace out the alternative figure which contains fig. (X) as its part.



18.



19. Find the odd word/ letters out from the given alternatives.

- (a) VWY (b) QRT (c) LMO (d) JKL

DIRECTION (Q. 20): Read the information given below carefully and answer the question.

$x + y$ means x is the sister of y .

$x - y$ means x is the son of y .

$x \times y$ means x is the mother of y

$x \neq y$ means x is the father of y

20. Which of the following alternative means 'F is father of J'?

- (a) $F + G \neq H \times I - J$ (b) $J \neq I + H \neq G + F$
(c) $F + G - H \times I - J$ (d) $J + I - H \times G - F$

21. If in a code language PARENT is written as BDFGJK and CHILDREN is written as MOXQUFGJ, how is REPRINT written in that code?

- (a) FGBFXGD (b) BGBFXJK (c) FGBUXJK (d) FGBFXJK

22. If the letters in PRABA are coded as 27595 and THILAK are coded as 368451, how can BHARATI be coded?

- (a) 9657538 (b) 9567538 (c) 9675538 (d) 9567568

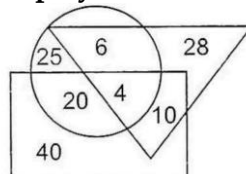
23. Jaya's position from the left in a row of students is 12th and Rekha's position from the right is 20th. After interchanging their positions Jaya becomes 22nd from the left. How many students are there in the row?

- (a) 30 (b) 31 (c) 41 (d) 34

24. Manish ranked sixteenth from the top and twenty-ninth from the bottom among those who has passed an examination. Six boys did not participate in the examination and five failed in it. How many boys were there in the class?

- (a) 40 (b) 44 (c) 50 (d) 55

Directions (25-26) : On the basis of the following Venn-diagram, answer the questions given below. The rectangle represents artists, the circle represents player and the triangle represents doctors,



25. How many artists are players but not doctors?

- (a) 25 (b) 20 (c) 10 (d) 30

26. How many artists are neither player nor doctor?

- (a) 40 (b) 10 (c) 30 (d) 25

27. In the following question, three statements are given followed by four conclusions numbered I, II, III & IV. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts & then decide which of the following conclusions logically follows from the given statements disregarding commonly known facts.

Statements:

Some Cats are Rats.

All bats are tables.

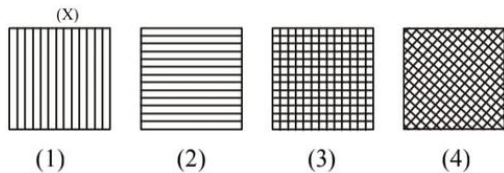
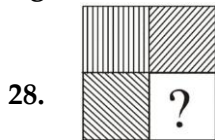
All Rats are Bats.

Conclusion:

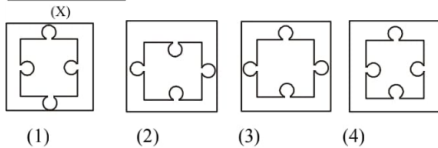
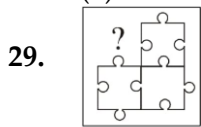
- I. Some Cats are bats
 III. All tables are cats
 (a) Only I & II follow
 (c) Only I & IV follow

- II. All bats are rats
 IV. All bats are cats
 (b) Only II follows
 (d) None of these

DIRECTIONS (Q. 28-29): In each of the following questions, select a figure from the four alternatives, which when placed in the space where the question mark is shown in figure (X) would complete the figure.

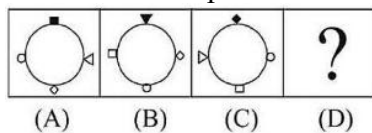


- (a) 1 (b) 2 (c) 3 (d) 4



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

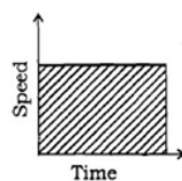
30. In the following question, a figure series is given out of which the last figure is missing, Find which one would complete the series.



- (a) (b) (c) (d)

PHYSICS

31. A person is seated in a train under motion. With reference to which of the following surroundings is he at rest?
 (a) Person watching him from the front seat
 (b) Person watching him from the ground
 (c) Trees on the ground
 (d) A car moving in the opposite direction to the train
32. A graph is show below:



What does the area of the shaded portion in the graph represent?

- (a) Distance (b) Speed (c) Time (d) None of these

33. In a 100 m race Revanth and Rohan ran at an average speed of 8.4 m s^{-1} and 12.2 m s^{-1} respectively. If 12 seconds is the time taken in school records for 100 metre race, then which of the following can be true?
- (a) Revanth broke the record. (b) Rohan broke the record.
 (c) Both Revanth and Rohan broke the record. (d) Neither Revanth nor Rohan broke the record.
34. Identify a correct statement:
- (a) Every oscillatory motion is periodic in nature.
 (b) The motion of a pendulum bob is periodic in nature
 (c) Every periodic motion is oscillatory in nature.
 (d) Both (a) and (b)
35. The time taken for a pendulum to swing from rest position P to Q is 0.2 s . What is the time taken for the pendulum to make 1 complete oscillation? (Assuming P and Q are two extreme positions of pendulum)

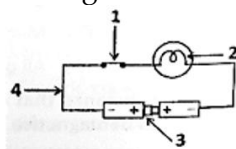


- (a) 0.1 s (b) 0.2 s (c) 0.3 s (d) 0.4 s
36. Study the data given below.

Duration (in hour)	0 – 6	6 – 8
Distance covered (in km)	?	240

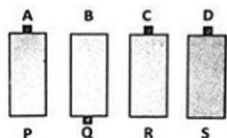
If the average speed of the journey is 80 km h^{-1} , what is the distance travelled during the first 6 hours?

- (a) 640 km (b) 40 km (c) 400 km (d) 480 km
37. The bulb in the circuit shown below does not glow.

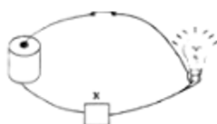


Which labelled part is the cause for this?

- (a) 4 (b) 2 (c) 3 (d) 1
38. Cells are fixed on a board as shown. Connect the terminals with wires to make a battery of four cells



- (a) A-Q, C-D, D-P (b) P-B, R-S, Q-C (c) A-B, Q-R, C-S (d) A-B, Q-R, C-D
39. Identify the energy changes that take place in a complete circuit to enable the bulb to glow.
- (a) Electrical $\rightarrow$ light $\rightarrow$ heat (b) Chemical $\rightarrow$ electrical $\rightarrow$ heat $\rightarrow$ light
 (c) Chemical $\rightarrow$ electrical (d) Electrical $\rightarrow$ heat $\rightarrow$ light
40. Pranati has set up a circuit as shown below.



Which of the following should she put in the blank box marked 'X' to make the bulb glow more brightly?

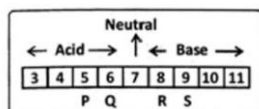
- (a) Bulb (b) Cell (c) Key (d) Wire
41. Manu connected three bulbs to a cell as shown in figure. She found that filament of bulb Q is broken. Which of the following statements is correct?



- (a) Only bulb R will glow (b) Only bulb P will glow
 (c) Both bulbs P and R will glow (d) None of the bulbs will glow
42. What is an 'element' in an electrical appliance essentially made up of?
 (a) A coil of wire (b) An electromagnet
 (c) An insulating material (d) A safety device such as a fuse
43. What is the term for Earth's movement around the Sun?
 (a) Spinning (b) Rotation (c) Revolution (d) Reflection
44. Which part of Earth receives 24 hours of daylight on June 21?
 (a) Equator (b) South Pole (c) North Pole (d) Tropic of Capricorn
45. Why can the Moon block the Sun during an eclipse despite being smaller?
 (a) It spins fast (b) It's closer to Earth
 (c) It reflects sunlight (d) It moves in a circular orbit

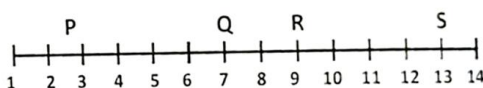
CHEMISTRY

46. Which of the following chemicals are used to neutralise the basic nature of soil?
 (a) Quick lime (b) Organic matter (c) Slaked lime (d) Baking soda
47. A pH scale is given below.



Which combination of two substances will produce a neutral solution?

- (a) P, Q (b) P, R (c) R, S (d) All of these
48. The given figure shows the pH scale. Which of the values P, Q, R or S is the pH value of pure water with a few drops of dilute hydrochloric acid added?



- (a) 3 (b) 7 (c) 13 (d) 9
49. The salt potassium nitrate is formed when potassium hydroxide reacts with
 (a) Carbonic acid. (b) Hydrochloric acid. (c) Nitric acid. (d) Sulphuric acid.
50. Juice prepared from lemon is taken in a glass tumbler and water is added to it. Then a red litmus paper and a blue litmus paper were dipped into it. What changes were observed?
 (a) Red litmus paper turns blue. (b) Blue litmus paper turns red.
 (c) Red litmus paper becomes white. (d) Blue litmus paper becomes white.
51. Which of the following statements are correct?
 I. The tangy taste of cola drinks is due to carbonic acid which is an organic acid.
 II. Inorganic acids are prepared artificially in the industries and are generally corrosive.
 III. Hydrochloric acid reacts with metals to varying degrees therefore, it is stored in glass bottles.
 IV. Organic acids are weak acids and therefore are generally used as food supplements.
 (a) I, II and III only (b) I and IV only (c) II and IV only (d) All of these
52. Why is the rusting of iron grouped under a chemical change?
 (a) It changes its size (b) It becomes powdery.
 (c) A new substance is formed. (d) It changes its shape.
53. Which metal is used for galvanising iron articles to prevent them for rusting ?
 (a) Nickel (b) Chromium (c) Copper (d) Zinc
54. Which of the following will be true of 'ash' that is obtained by burning wood in air?
 (a) Some properties of ash will not be similar to wood.
 (b) The properties of ash will be similar to wood.
 (c) The properties of ash will be different from both wood and air.
 (d) The properties of ash will be similar to both wood and air.

55. When an iron bar of length 12 cm is magnetised, its length was found to have increased. What happens to its mass?
- (a) It increases. (b) It decreases.
(c) It remains the same. (d) It cannot be explained.
56. Cow or buffalo's dung is put in a digester to produce biogas by process P. The obtained biogas is used as a fuel for cooking by process Q. Which statement is correct about processes P and Q?
- (a) Process P is a physical change (b) Process Q is a physical change
(c) Both P and Q are chemical changes (d) Both (a) and (b)
57. The chemical symbol for sodium is
- (a) So (b) Sd (c) Na (d) NA
58. A piece of chalk can be broken into small particles by hammering but a piece of iron cannot be broken into smaller particles by hammering. Which characteristic of matter is best illustrated by above observation
- (a) Particles of matter have space in between them
(b) Particles of matter possess kinetic energy
(c) Particles of matter attract one another and strength of these attraction forces varies from matter to matter
(d) All of these
59. A few substances are arranged in the increasing order of 'forces of attraction' between their particles. Which one of the following represents a correct arrangement?
- (a) Water, air, wind (b) Air, sugar, oil
(c) Oxygen, water, sugar (d) Salt, juice, air
60. Which of the following statements about a compound is incorrect?
- (a) A molecule of a compound has atoms of different elements.
(b) A compound cannot be separated into its constituent elements by physical methods of separation.
(c) A compound retains the physical properties of its constituent elements.
(d) The ratio of atoms of different elements in a compound is fixed.

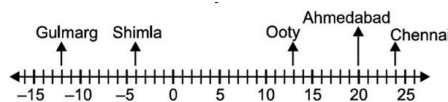
BIOLOGY

61. Which of the following is an example of a plant that can prepare its own food?
- (a) Mushroom (b) Bacteria (c) Green plants (d) Fungi
62. Where is the food prepared by plants stored?
- (a) Roots (b) Leaves (c) Stems (d) All of the above
63. Which pigment is responsible for capturing sunlight during photosynthesis?
- (a) Chloroplast (b) Chlorophyll (c) Cytoplasm (d) Cell wall
64. What is parasitic nutrition?
- (a) A plant making its own food using sunlight, water, and carbon dioxide.
(b) A plant deriving nutrients from dead and decaying organic matter.
(c) A plant living on or in another living organism (host) and deriving nutrients from it.
(d) A plant trapping and digesting insects for nutrients.
65. Rafflesia is an example of:
- (a) An autotrophic plant. (b) A parasitic plant.
(c) An insectivorous plant. (d) A saprophytic plant.
66. Which type of nutrition involves obtaining nutrients from dead and decaying matter?
- (a) Autotrophic (b) Heterotrophic (c) Parasitic (d) Saprotrophic
67. What is the primary benefit of saprotrophic nutrition for the ecosystem?
- (a) It allows plants to grow taller.
(b) It helps in the breakdown of organic matter and nutrient recycling.
(c) It provides food for herbivores.
(d) It increases the rate of photosynthesis.

68. Which of the following statements is true about croton plants?
- Croton plants do not contain chlorophyll.
 - Croton plants are dark red in colour. Hence, they depend on other plants for food.
 - Croton plants have chlorophyll, but it is hidden by dark red colour pigments.
 - Croton plants are parasites
69. Plants absorb nutrients through their _____.
- Roots
 - Stem
 - Leaves
 - Flowers
70. Which of the following statements is false about nutrition?
- Nitrogen and phosphorus are macronutrients
 - Plant hormones are nutrients
 - Manganese and molybdenum are micronutrients
 - Nutrition provides energy for carrying out various functions.
71. The oxygen released in photosynthesis comes from _____.
- Carbon dioxide
 - water
 - carbohydrate
 - stomata
72. In which organelle does respiration takes place in plants?
- Mitochondria
 - Chloroplast
 - Nucleus
 - Vacuole
73. Lungs in human beings corresponds to which of the following in plants?
- Leaves
 - Phloem
 - Stomata
 - Lenticels
74. Which of the following factors affect the process of photosynthesis?
- Sunlight
 - Temperature
 - CO₂ and water
 - All of them
75. Which gas plants do release during photosynthesis?
- Oxygen
 - Carbon dioxide
 - Methane
 - Nitrogen

MATHEMATICS

76. What is the temperature difference between Ooty and Chennai.



- 20°C
 - 11°C
 - 5°C
 - 7°C
77. Which of the following statements is INCORRECT?
- The multiplicative identity for integers is 1.
 - Subtraction does not obey commutative law in integers.
 - Multiplication of two integers with unlike signs is always positive.
 - Multiplicative inverse of integer a is $\frac{1}{a}$.
78. Which of the following statements is CORRECT?
- Statement-1: When a positive integer and a negative integer are added, we always get a negative integer.
- Statement-2: When two negative integers are added, we get a positive integer.
- Only Statement-1
 - Only Statement-2
 - Both Statement-1 and Statement-2
 - Neither Statement- 1 nor Statement- 2
79. In a test, 4 marks are given for every correct answer and -2 marks, for every incorrect answer. Asha answered all the questions and scored 26 marks though she got nine correct answers. Varun also answered all the questions and scored 2 marks though he got five correct answers. How many questions did each answer incorrectly?
- 10,8
 - 9,18
 - 5,9
 - 4,10

- | | (i) | (ii) |
|-----|------------------|------|
| (A) | Loss of ₹20000 | 3000 |
| (B) | Profit of ₹20000 | 3600 |
| (C) | Loss of ₹25000 | 3600 |
| (D) | Profit of ₹30000 | 2000 |

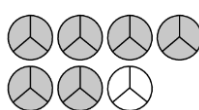
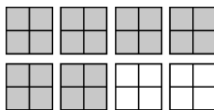
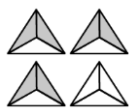
(i) ΔABC

- | | (i) | (ii) |
|-----|--------------------|--------------------|
| (A) | $8\frac{1}{60}$ cm | 5 cm |
| (B) | 5 cm | $10\frac{1}{6}$ cm |
| (C) | $8\frac{1}{60}$ cm | $10\frac{1}{5}$ cm |
| (D) | 8 cm | 23 cm |

- (d) The denominator is 2 more than the numerator.

-

84. Which of the following options represents $\frac{3}{4}$ of 8 parts shaded?

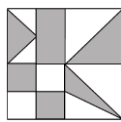


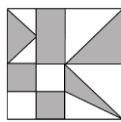
- (a)  (b)  (c)  (d) None of these

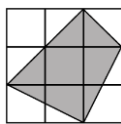
- $$\left[\frac{7}{3} - \frac{2}{6}\right] - \frac{1}{2} + \left[\frac{4}{5} \div \frac{6}{8}\right] + \frac{3}{4} \square \frac{4}{5} \div \left[\frac{6}{8} + \frac{3}{4}\right] - \left[\frac{3}{4} + \frac{5}{6}\right] + 3\frac{1}{3}$$

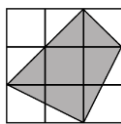
- (a) $>$ (b) $<$
(c) $=$ (d) can't be determined

86. The quotient when 0.00639 is divided by 0.213 is _____.
 (a) 0.3 (b) 0.03 (c) 0.003 (d) 3
87. A farmer has 192 animals, out of which $\frac{7}{16}$ are cattles. $\frac{2}{3}$ of cattle are dairy cows. How many dairy cows he has?
 (a) 128 (b) 84 (c) 56 (d) 112
88. Akshit, Raja, Sanjay and Nikunj each took the same spelling test.
- Akshit spelled $\frac{7}{10}$ of the words correctly.
 - Raja spelled $\frac{3}{4}$ of the words correctly.
 - Sanjay spelled $\frac{4}{5}$ of the words correctly.
 - Nikunj spelled $\frac{2}{3}$ of the words correctly.
- Who spelled the least number of words correctly?
- (a) Akshit (b) Raja (c) Sanjay (d) Nikunj
89. If $63.9805 = 6A + \frac{3}{B} + 9C + \frac{8}{D} + 5E$, then what is the value of $4A + 7B + 6C + D + 3E$?
 (a) 47.603 (b) 4.7603 (c) 147.6003 (d) 47.6003
90. Study the following statements.



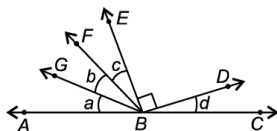
Statement-1: Fraction of shaded part of  is $\frac{7}{16}$.



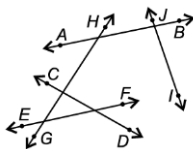
Statement-2: Fraction of shaded part of  is $\frac{4}{9}$.

Which of the following options holds?

- (a) Both Statement-1 and Statement-2 are true. (b) Statement- 1 is true but Statement- 2 is false.
 (c) Statement-1 is false but Statement-2 is true. (d) Both Statement-1 and Statement-2 are false.
91. In the figure (not drawn to scale), ABC is a straight line, $\angle DBE$ is a right angle and $\angle a = \angle b = \angle c = \angle d$. Find $\angle a$.

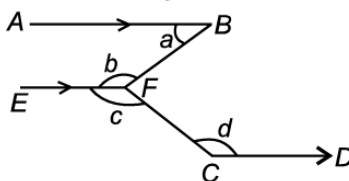


- (a) 22.5° (b) 30° (c) 45° (d) 60°
92. Which line is parallel to AB ?



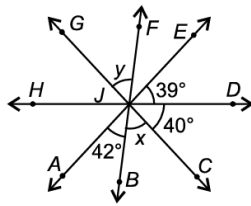
- (a) CD (b) EF (c) GH (d) IJ

93. In the figure, $AB \parallel CD \parallel EF$. Which of the following statements is true?



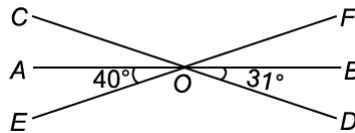
- (a) $a + b = 180^\circ$ (b) $b + c = 180^\circ$ (c) $c + d = 180^\circ$ (d) $a + b + c = 360^\circ$

94. In the figure (not drawn to scale), AJE , BJF , CJG and DJH are straight lines.

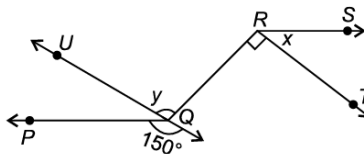


Find $\angle x$ and $\angle y$ respectively.

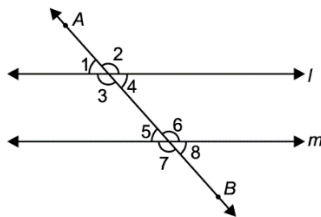
- (a) $50^\circ, 49^\circ$ (b) $59^\circ, 40^\circ$ (c) $59^\circ, 59^\circ$ (d) $49^\circ, 48^\circ$
95. In the given figure, Find the value of $\angle BOC$.



- (a) 101° (b) 149° (c) 71° (d) 140°
96. Which of the following options holds?
- Statement-1:** If two lines intersect, then the vertically opposite angles are equal.
- Statement -2:** Sum of all the angles around a point is 180° .
- (a) Both Statement-1 and Statement-2 are true. (b) Statement- 1 is true but Statement- 2 is false.
- (c) Statement-1 is false but Statement-2 is true. (d) Both Statement-1 and Statement-2 are false.
97. If $RS \parallel PQ$ and $RT \parallel UQ$, then find the value of $8x - 2y$.



- (a) 60° (b) 30° (c) 150° (d) 100°
98. Mohit got an assignment where he had to explain the types of angles formed by a pair of parallel lines.



He completed the assignment but when his teacher checked he saw mistakes. Identify the correct option pointing out the mistake in the parts (i to iv).

- | Types of Angle | Observations |
|---------------------------|--|
| (i) Corresponding | $\angle 1 = \angle 5, \angle 3 = \angle 7, \angle 2 = \angle 6, \angle 4 = \angle 8$ |
| (ii) Alternate interior | $\angle 3 = \angle 6, \angle 4 = \angle 5$ |
| (iii) Vertically opposite | $\angle 1 = \angle 4, \angle 5 = \angle 6$ |
| (iv) Alternate exterior | $\angle 1 = \angle 8, \angle 2 = \angle 5$ |
- (a) Only (i) (b) Only (ii) (c) Both (i) and (iii) (d) Both (iii) and (iv)

99. Which of the following is the smallest 7-digit number?

- (a) 1,000,000 (b) 9,999,999 (c) 100,000 (d) 999,999

100. Which number is greater, 2.5 million or 25 lakh?

- (a) 2.5 million (b) 25 lakh (c) They are equal. (d) Cannot be de