Class – VI

School Accelerated Program

ENTRANCE TEST CUM SCHOLARSHIP TEST (Sample Paper-1)

[Time: 1 Hour 50 Min] **[Max Marks: 400]**

A. *General:*

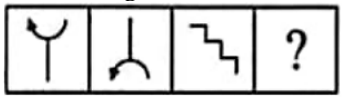
1. *This booklet is a Question Paper containing 100 questions.*
2. ***Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones, pagers and electronic gadgets*** *in any form are not allowed to be carried inside the examination hall.*
3. *The answer sheet, a machine-readable optical 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

1. Select a suitable figure from the Answer Figures that would replace the question mark (?).



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

2. Select a suitable figure from the Answer Figures that would replace the question mark (?).



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

3. Pointing out to a photograph, a man tells his friend, " she is the daughter of the only son of my father's wife. How is the girls related to the man in the photograph?

(a) Daughter (b) Cousin (c) Mother (d) Sister

DIRECTIONS (Qs. 4 to 5): Study the following information and answer the question given below. *S* and *R* are brothers. *T* is daughter of *S*. *U* is the spouse of *R* and mother of *Q*. *P* is the daughter of *V*, who is the spouse of *T*.

4. Who is the grand father of P?

(a) U (b) S (c) R (d) V

5. Who is the cousin of Q?

(a) T (b) *V* (c) *R* (d) *P*

Direction (Qs. 6 to 8) Complete the following series

6. 16,33,67,135, ...

(a) 251 (b) 259 (c) 271 (d) 289

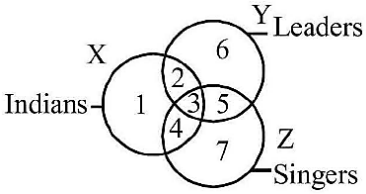
7. 5,9,16,29,54, ...

(a) 103 (b) 105 (c) 109 (d) None of these

8. ……bcc……ac…….aabb…….ab……cc

(a) *aabca* (b) *abaca* (c) *bacab* (d) *bcaca*

Direction (Qs. 9 to 10): Study the following figure carefully and answer the given questions:



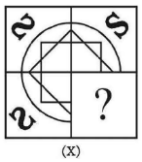
9. Which region denotes Indian leaders who are not singers?

(a) 2 (b) 3 (c) 4 (d) 5

10. Which region represents Indian leaders who are singers?

(a) 2 (b) 3 (c) 4 (d) 5

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



(X)

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

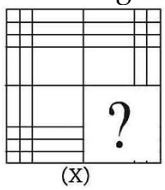
12. In a certain code language, the word 'RECTANGLE' is coded as TGEVCPING, then how is the word 'RHOMBUS' coded?

(a) TJOQDWV (b) UVWTJQN (c) TJQODWU (d) JTQOEWN

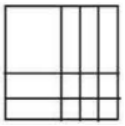
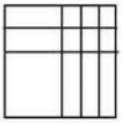
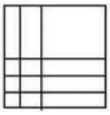
13. In a certain code, RADIO is XZOPL and SHEET is NBGGI, then HEATER is coded as?

(a) BNGZIX (b) BGZGIX (c) BGZIGX (d) GZBIXZ

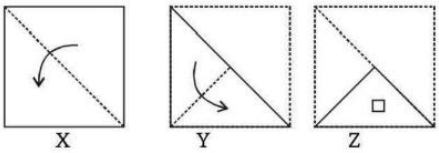
14. In each of the following questions, select a figure from the four alternatives, which when placed in the space where the question mark is shown in figure (*X*) would complete the figure.

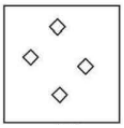
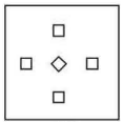
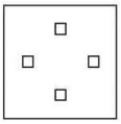
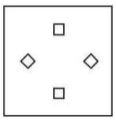


(X)

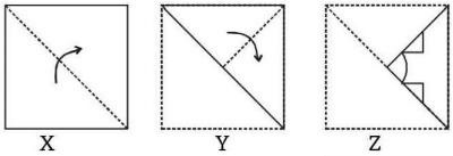
(a)  (b)  (c)  (d) 

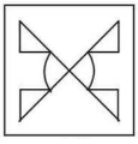
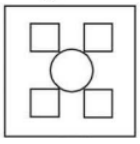
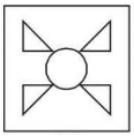
15. Consider the three figures, marked X, Y, and Z showing one fold in X , another in Y and the cut in Z. From amongst the four alternative figures (a), (b), (c) and (d) select the one showing the unfolded position of Z.



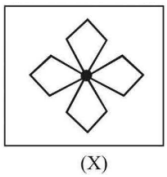
(a)  (b)  (c)  (d) 

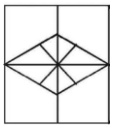
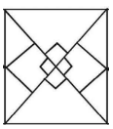
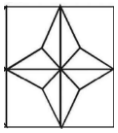
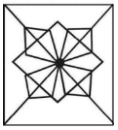
16. Consider the three figures, marked X, Y, and Z showing one fold in X , another in Y and the cut in Z. From amongst the four alternative figures (a), (b), (c) and (d), select the one showing the unfolded position of Z.



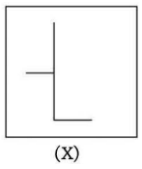
(a)  (b)  (c)  (d) 

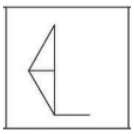
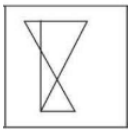
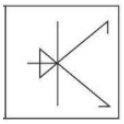
17. Find amongst the four alternatives (a), (b), (c) and (d), the figure which most nearly contains the figure (X).


(X)

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

18. Find amongst the four alternatives (a), (b), (c) and (d), the figure which most nearly contains the figure (X).


(X)

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

Direction (Qs.19 to 20): Find the correct option for the mirror images for the following

19. 312568 | ?

(a) 3ƖƧ9895 (b) 8965Ɩ3

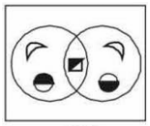
(c) 8ϽƧƖ3 (d) 3Ɩ2Ϭ68

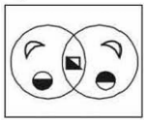
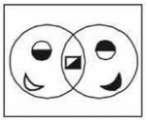
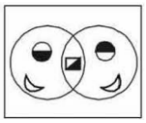
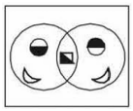
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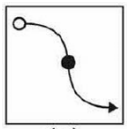
(a) ɹǝsolnsſ (b) ɹǝsolnS

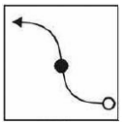
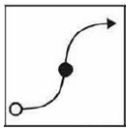
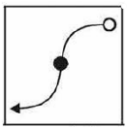
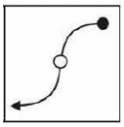
(c) Soulǝsɹ (d) ſuolǝsɹ

Direction (Qs. 21 to 22): Find the correct option for the water images for the following

21. 
(X)

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

22. 
(X)

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

Direction (Qs. 23 to 24): In each of the following questions, four terms/words have been given, out of which three are alike in some manner and one is different. Choose the odd one out.

23. (a) Bottle : Wine (b) Cup : Tea (c) Pitcher : Water (d) Ball : Bat

24. (a) Atom : Electron (b) Train : Engine (c) House : Room (d) Curd : Milk

25. In the following question below are given 3 statements followed by three conclusions numbered I, II & III. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follow from the given statements disregarding commonly known facts.

Statements : All fruits are vegetables. All pens are vegetables.

All vegetables are rains.

Conclusions:

I. All fruits are rains.

II. All pens are rains.

III. Some rains are vegetables.

(a) None follows (b) Only I & II follow (c) Only II & III follow (d) All follows

26. In a row of boys facing the North, A is sixteenth from the left end and C is sixteenth from the right end. B , who is fourth to the right of A , is fifth to the left of C in the row. How many boys are there in the row?

(a) 39 (b) 40 (c) 41 (d) 42

27. Ram and Sham are ranked 13th and 14th respectively in a class of 23. What are their ranks from the last respectively?

(a) 10th: 11th (b) 11th; 12th (c) 11th ; 10th (d) None of these

28. How many 5 s are there in the following sequence which are immediately followed by 3 but not immediately preceded by 7?

8 9 5 3 2 5 3 8 5 5 6 8 7 3 3 5 7 7 5 3 6 5 3 3 5 7 3 8

(a) One (b) Two (c) Three (d) Four

29. AZ, GT, MN, ..., YB

(a) KF (b) RX (c) SH (d) TS

30. Arrange the given words in alphabetical order and choose the one that comes in the 2nd position.

(a) Restrict (b) Rocket (c) Robber (d) Random

PHYSICS

31. The most important quality for scientific inquiry is:

(a) Intellect (b) Observation (c) Curiosity (d) Experimentation

32. First step in the scientific method is:

(a) Hypothesis (b) Experiment (c) Observation (d) Conclusion

33. Which step comes after making an observation?

(a) Conclusion (b) Hypothesis (c) Experiment (d) Analysis

34. The thousandth part of a metre is known as

(a) Centimetre (b) Millimetre (c) Kilometre (d) None of these

35. Which of the following statement(s) is/are correct?

(a) The S.I. unit of distance is kilometre (b) In a kilometre there are 0.001 metres

(c) In a kilometre there are 100 metres (d) None of the above is correct

36. A moving object always remains at the same distance from a fixed point. The moving object is performing which type of motion.

(a) Rectilinear (b) Circular (c) Rotatory (d) All of these

37. Select the one that records the distance travelled by a vehicle.

(a) Manometer (b) Speedometer (c) Odometer (d) None of these

38. Atharv performs an experiment with a bar magnet and steel pins labelled at positions A (left end), B (middle), and C (right end). If position A attracts 10 pins, which of the following represents the most likely distribution for positions B and C?

(a) Position B = 10 pins, Position C = 10 pins

(b) Position B = 2 pins, Position C = 10 pins

(c) Position B = 10 pins, Position C = 2 pins

(d) Position B = 2 pins, Position C = 2 pins

39. If a permanent bar magnet is broken cleanly into three smaller pieces, what happens to the magnetic poles of the resulting fragments?

(a) The middle piece will have no magnetic poles, while the outer pieces will contain isolated single poles.
(b) Two pieces will become pure North poles and one piece will become a pure South pole.
(c) All pieces lose their magnetism completely upon breaking.
(d) Each individual broken piece will automatically possess its own independent North and South poles.

40. Why is it fundamentally impossible to obtain a magnet with an isolated single North pole or single South pole?

(a) Magnetic poles always exist in pairs, even down to the smallest atomic or physical piece.
(b) Magnetic force is purely electrostatic and requires balanced charges.
(c) Breaking a magnet demagnetizes it permanently.
(d) Single poles can only exist in U-shaped magnets but not in bar magnets.

41. When a bar magnet is suspended freely using a thin thread tied precisely at its middle section, it always balances horizontally and comes to rest pointing towards which specific geographical direction?

(a) East-West direction
(b) Northeast-Southwest direction
(c) North-South direction
(d) Vertically downwards towards the Earth's core

42. What are the standard operational safety boundaries of the human body's survival mechanisms regarding temperature? In other words, between what ranges does human body temperature normally remain restricted?

(a) 32°C to 45°C (b) 35°C to 42°C (c) 0°C to 100°C (d) -10°C to 110°C

43. During the COVID-19 pandemic, non-contact infrared thermometers became highly essential tools globally. How do these devices specifically reduce public health risks??

(a) They can read a person's body temperature from a distance without physical contact, minimizing the spread of infectious pathogens.
(b) They destroy viruses on the person's forehead using targeted infrared laser beams.
(c) They read the temperature of the internal organs instead of superficial skin temperatures.
(d) They run on standard batteries without requiring reset procedures.

44. Before clinical thermometers were developed, ancient physicians in India attempted to evaluate fever by assessing a physiological indicator. Which indicator was used, and why is it considered unreliable today?

(a) Skin color; because it changes based on atmospheric room temperature rather than internal health status.
(b) Breathing depth; because humans can intentionally alter their respiratory rhythm.
(c) Pulse rate; because although fever affects it, many other emotional and physical situations can alter it as well.
(d) Sweat composition; because chemical variations require complex laboratory tools.

45. Which of the following correct observations can be generalized regarding the variation of normal body temperature among different human demographics?

(a) Age has absolutely no statistical or biological correlation with baseline body temperature parameters.

(b) Small children have significantly lower temperatures due to underdeveloped metabolic pathways.

(c) Healthy old people exhibit high baseline temperatures because of structural vascular stiffness.

(d) Small children generally have slightly higher body temperatures compared to adults, while healthy old people often exhibit lower body temperatures.

CHEMISTRY

46. Pick one material from the following which is completely soluble in water.

(a) Chalk powder (b) Tea leaves (c) Glucose (d) Saw dust

47. A laboratory researcher is testing the volumetric units of matter. The experimental setup requires exactly one cubic metre of fluid space. Based on standardized SI conversions, how many litres (L) of water correspond precisely to a volume of 1 m^3?

(a) 1 L (b) 100 L (c) 1,000 L (d) 10,000 L

48. Archeologists studying the historical timeline of the Indian subcontinent observe that ancient wheel-turned pottery techniques with applied slips (pigmented coatings) reached highly sophisticated operational levels during the Sindhu-Sarasvatī (Harappan) Civilisation (2600-1900 BCE). When clay pottery is baked completely inside high-temperature kilns, what specialized term is used to describe this specific material?

(a) Cellophane (b) Terracotta

(c) Lustrous composite (d) Amorphous plastic matrix

49. A medical relief worker needs to prepare an oral rehydration solution (ORS) to treat a patient suffering from severe dehydration. If commercial pre-packaged ORS packets are unavailable in the clinic, what formula should be executed using pure water to make an equivalent solution at home?

(a) Mix 50 grams of sawdust and 10 grams of sand in half a litre of hot oil.

(b) Mix six teaspoons of sugar and half a teaspoon of common salt thoroughly in one litre of boiled and cooled water.

(c) Dissolve two tablespoons of chalk powder and one cup of lemon juice in a glass container.

(d) Combine equal parts vinegar, honey, and mustard oil in an opaque metallic tumbler.

50. Analyze the scientific validity of the following statements regarding the physical state of gases in aquatic ecosystems:

Statement I: Gases like oxygen are completely insoluble in water, which forces fish to surface to breathe air.

Statement II: Dissolved oxygen gas in natural water bodies is extremely vital for the metabolic survival of aquatic animals and plants.

Which option represents the correct analytical conclusion?

(a) Statement I is fully true, but Statement II is completely false.

(b) Both Statement I and Statement II are fully true.

(c) Statement I is false, but Statement II is fully true.

(d) Both Statement I and Statement II are completely false.

51. Which of the following represents a chemical change?

(a) Dissolving sugar in water (b) Melting of wax

(c) Burning of magnesium ribbon in air (d) Boiling of water

52. What is the primary reason why gases are easily compressible?

(a) Strong intermolecular forces
(b) Large intermolecular spaces and high kinetic energy
(c) Rigid molecular lattice
(d) High molecular weight

53. Match the following chemistry concepts and techniques (Set 1):
List-I (State of Matter): 1. Solid, 2. Liquid, 3. Gas, 4. Plasma
List-II (Characteristic): A. Definite volume, indefinite shape; B. Definite shape & volume; C. Ionized superheated gas; D. Highly compressible

(a) 1-D, 2-C, 3-A, 4-B (b) 1-A, 2-B, 3-C, 4-D
(c) 1-C, 2-A, 3-B, 4-D (d) 1-B, 2-A, 3-D, 4-C

54. **Assertion (A):** Gases exert pressure on the walls of the container.
Reason (R): Gas molecules possess high kinetic energy and undergo continuous random collisions.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.

55. Which branch of science primarily deals with the study of celestial objects like stars, galaxies, and planets?

(a) Geology (b) Astronomy (c) Botany (d) Zoology

56. Which of the following is a non-standard unit of measurement?

(a) Metre (b) Kilogram (c) Handspan (d) Second

57. Which of the following changes can be reversed?

(a) Burning of paper (b) Cooking of rice
(c) Melting of ice (d) Rusting of iron

58. Match column I with column II and select the correct option.

Column I		Column II	
1.	Pinhole camera principle	A.	Cooking in pressure cookers and boiling water
2.	Air pressure in tyre	B.	Rectilinear propagation of light
3.	Condensation of steam	C	Metal wires and cooking utensils
4.	Conduction of heat/electricity	D.	Bicycle tyre repair method in water basin

(a) 1-B, 2-D, 3-A, 4-C (b) 1-A, 2-B, 3-C, 4-D
(c) 1-C, 2-D, 3-A, 4-B (d) 1-D, 2-C, 3-B, 4-A

59. Match the units of measurement in Column I with physical quantities in Column II:

Column I		Column II	
1.	Kilogram	A.	Temperature
2.	Second	B.	Mass
3.	Metre	C	Time
4.	Kelvin	D.	Length

(a) 1-A, 2-B, 3-C, 4-D (b) 1-D, 2-A, 3-B, 4-C
(c) 1-C, 2-D, 3-A, 4-B (d) 1-B, 2-C, 3-D, 4-A

60. **Assertion (A):** Curiosity is considered the most important spark for scientific discovery.
Reason (R): Without curiosity, humans would never ask 'why' or 'how' things happen around them.
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.

BIOLOGY

61. Which is an example of a shrub?
(a) Spinach (b) Mango tree (c) Tomato plant (d) Lemon
62. Which of the following type of plants has thick, hard and woody stem?
(a) Tree (b) Shrub (c) Herb (d) All of these
63. Which of the following is an example of an amphibian?
(a) Lizard (b) Frog (c) Eagle (d) Whale
64. Which part of a cactus plant helps in photosynthesis?
(a) Leaves (b) Stems (c) Roots (d) Flowers
65. Which of these animals lives in a cold environment?
(a) Penguin (b) Tiger (c) Camel (d) Elephant
66. Which of the following birds cannot fly?
(a) Crow (b) Pigeon (c) Ostrich (d) Sparrow
67. Which of these following lays eggs?
(a) Whale (b) Dog (c) Snake (d) Bat
68. Which type of tree is commonly found in mountain regions?
(a) Cactus (b) Coconut (c) Pine (d) Mango
69. Which of the following cooking methods helps retain maximum nutrients?
(a) Boiling vegetables for a long time (b) Steaming vegetables
(c) Frying food in oil (d) Cooking food at a high temperature
70. What is the primary function of water in our body?
(a) Builds muscles (b) Helps in absorption and digestion of food
(c) Provides energy (d) Acts as a protective food
71. What is the main function of iron in the human body?
(a) Strengthens bones (b) Helps in digestion
(c) Helps in the formation of blood (d) Provides instant energy
72. Which of the following drinks is common in Punjab?
(a) Buttermilk (b) Coffee (c) Black tea (d) Lassi
73. Which of the following is an energy-giving food?
(a) Pulses (b) Fruits (c) Butter (d) Milk
74. Which of the following is a primary source of energy for the body?
(a) Proteins (b) Fats (c) Carbohydrates (d) Vitamins
75. Which region of India is known for the dish “vada pav”?
(a) Punjab (b) Tamil Nadu (c) West Bengal (d) Maharashtra

MATHEMATICS

76. The difference of the greatest 6-digit number and the smallest 4-digit number is _____ .
(a) 988999 (b) 998999 (c) 99899 (d) 998099

77. The largest 4-digit and smallest 4-digit numbers formed by using the digits 4,0,3, 7 (each digit used only once) respectively are _____ .
(a) 4370; 4307 (b) 3740; 3047 (c) 7403; 3704 (d) 7430; 3047

78. The number (11,13) are _____ numbers.
(a) Co-prime (b) Prime
(c) Both prime and co-prime (d) None of these

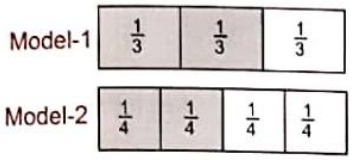
79. The co-prime numbers from the following pairs, are
(a) 7 and 63 (b) 36 and 25 (c) 35 and 21 (d) 63 and 81

80. Which of the following numbers has exactly 4 factors?
(a) 16 (b) 14 (c) 18 (d) None of these

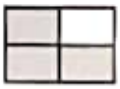
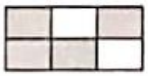
81. If $5476a$ is divisible by 3, then what can be the least value of ?
(a) 1 (b) 2 (c) 3 (d) 6

82. A number is always divisible by 90, if _____ .
(a) It is divisible by both 2 and 45 (b) It is divisible by both 5 and 18
(c) It is divisible by both 9 and 10 (d) All of these

83. The models are shaded to show which of the following?



(a) $\frac{1}{3}=\frac{2}{4}$ (b) $\frac{1}{4}>\frac{1}{3}$ (c) $\frac{2}{3}<\frac{2}{4}$ (d) $\frac{2}{4}<\frac{2}{3}$

84. In which of the following figures does the shaded portion represent $\frac{1}{2}$?
(a)  (b)  (c)  (d) 

85. A pasta recipe requires $2\frac{2}{3}$ kg cheese. Approximately, how much pasta can be made from a 21 kg cheese?
(a) $7\frac{7}{8}$ (b) $7\frac{4}{8}$ (c) $6\frac{7}{8}$ (d) $6\frac{4}{8}$

86. Which of the following options is INCORRECT?
(a) $\frac{3}{4}>\frac{2}{3}$ (b) $\frac{4}{5}>\frac{1}{3}$ (c) $\frac{9}{7}>1$ (d) $\frac{1}{2}<\frac{1}{4}$

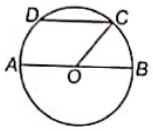
87. Sudha planted tomatoes in 1/2 portion of her kitchen garden. She planted spinach in one-fourth of the remaining portion. What fraction of the garden has spinach?
(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{8}$ (d) $\frac{1}{5}$

88. Which of the following statements is CORRECT?
Statement-1: Mrs Soni bought $7\frac{1}{2}$ litres of milk. Out of this, $5\frac{3}{4}$ litres was consumed. $1\frac{1}{3}$ litres of milk is left with her.
Statement-2 : Amit reads $\frac{3}{5}$ of a book. He finds that there are still 80 pages left to be read. Total number of pages in the book is 200.
(a) Only Statement-1 (b) Only Statement-2
(c) Both Statement-1 and Statement-2 (d) Neither Statement-1 and nor Statement-2

89. Which of the following statements is INCORRECT?
(a) Line AB is same as line BA.
(b) Line segment AB is same as line segment BA.
(c) Ray AB is same as ray BA.
(d) AB perpendicular to CD is same as CD perpendicular to AB.

90. A _____ has two end points and a definite length.
(a) Line (b) Line segment (c) Point (d) None of these

91. How many line segments are there in the given figure?



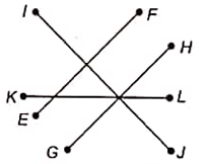
(a) 3 (b) 5 (c) 2 (d) 4

92. How many lines can be drawn to pass through two points simultaneously?
(a) One (b) Two (c) More than three (d) No line

93. State ' T ' for true and ' F ' for false.
(a) Two distinct lines meeting at a point are called concurrent lines.
(b) The centre of a circle is always in its interior.
(c) A line has no end points.

	(a)	(b)	(c)
(a)	F	T	F
(b)	F	T	T
(c)	T	F	F
(d)	T	T	T

94. Raghav drew the line segments shown here on a piece of paper. Which of the following pairs of line segments appears to be perpendicular?



(a) $\overline{GH}$ and $\overline{KL}$ (b) $\overline{GH}$ and $\overline{IJ}$ (c) $\overline{EF}$ and $\overline{KL}$ (d) $\overline{EF}$ and $\overline{GH}$

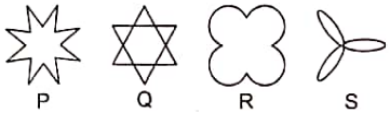
95. $ABCD$ is a kite in which $AB = AD$ and $BC = DC$. The kite is symmetrical about.
(a) Diagonal AC (b) Diagonal BD (c) Side AB (d) Side BC

96. How many of the following letters have at least one line of symmetry?

OLYMPIAD

(a) 3 (b) 4 (c) 5 (d) 6

97. Which of the following figures have at least two lines of symmetry?



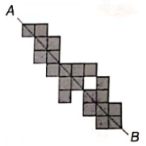
(a) Only P (b) Both P and Q (c) Both Q and R (d) P, Q, R and S

98. Which of the following triangles has only one line of symmetry?
(a) Scalene triangle (b) Isosceles triangle
(c) Equilateral triangle (d) All of these

99. Which of the following shows a symmetric figure?

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

100. What is the smallest number of squares that must be added so that the line AB becomes the line of symmetry?



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