

**Your Talent, Your Future – Shine with BOH 2025!**

**#PathToExcellence**



# **BRAIN OF HIMACHAL**

**आपकी प्रतिभा, हमारा मंच - ब्रेन ऑफ हिमाचल**

## **ASPIRE TALENT HUNT EXAM-2025**

**For 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, (11<sup>th</sup> & 12<sup>th</sup> Science)**

**SAPMLE TEST PAPER**

**CLASS 6<sup>th</sup>**

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**PHYSICS**

- 1. What is a shadow?**  
(a) A reflection of light  
(c) The bending of light  
(b) The absence of light  
(d) A type of light wave
  
- 2. Which object can create a shadow?**  
(a) Transparent glass  
(c) An opaque Object  
(b) A clear liquid  
(d) A mirror
  
- 3. What happens to a shadow when the light source moves closer to the object?**  
(a) The shadow gets larger  
(c) The shadow disappears  
(b) The shadow gets smaller  
(d) The shadow stays the same size
  
- 4. Which of the following materials is most likely to produce a clear shadow?**  
(a) Glass  
(c) Wood  
(b) Water  
(d) Air
  
- 5. Which of the following is a conductor of electricity?**  
(a) Plastic  
(c) Iron  
(b) Wood  
(d) Rubber
  
- 6. What is a simple circuit made of?**  
(a) Battery, switches, and wire  
(c) Battery, wire, and nail  
(b) Battery, light bulb, and magnet  
(d) Switch, bulb, and rubber
  
- 7. What happens when a circuit is complete?**  
(a) The electricity flows and the device works  
(c) The electricity is stopped  
(b) The device does not work  
(d) The device overheats
  
- 8. Which component is used to open or close an electrical circuit?**  
(a) Battery  
(c) Switch  
(b) Bulb  
(d) Wire

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Rough work

### Rough work

**14. What is the primary difference between synthetic and natural fibers.**

- a.** Synthetic fibres are made from animal hair.
- b.** Natural fibres are always stronger than synthetic fibres
- c.** synthetic fibres are man-made while natural fibres comes from plant or animals.
- d.** Natural fibres can be produced in laboratories

**15. Which of the following is correct sequence in the production of cotton fabric**

- a.** Ginning→Weaving→Spinning
- b.** Spinning→Ginning→Weaving
- c.** Ginning→Spinning→Weaving
- d.** Weaving→Ginning→Spinning

**16. Which of the following process is not involved in the preparation of fabric from yarn?**

- a.** Spinning
- b.** Ginning
- c.** Weaving
- d.** Knitting

**17. When a metal spoon is placed in a cup of hot tea, it becomes hot after a while. This demonstrates the property of :-**

- a.** Malleability
- b.** Conductivity
- c.** Solubility
- d.** Hardness

**18. Which of the following substance would be most difficult to classify based on lustre ?**

- a.** Diamond
- b.** Charcoal
- c.** Plastic
- d.** Graphite

**19. Why is it difficult to classify air based on its states of matter.**

- a.** Because it is not visible
- b.** Because it is a mixture of different gases
- c.** Because it does not have a definite shape
- d.** Because it is compressible

**20. A certain material is known to be both a good conductor of electricity and malleable but does not react with water, this material is likely to be**

- a.** Sodium
- b.** Iron
- c.** Gold
- d.** Zinc

**21. If you have to classify diamond and graphite into groups, which property would be most misleading if considered done?**

- a.** Hardness
- b.** Electrical Conducting
- c.** Lustre
- d.** Chemical composition

**22. Which of the following techniques is used to separate a mixture of two immiscible liquids, such as oil and water?**

- a.** Filtration
- b.** Evaporation
- c.** Decantation
- d.** Sedimentation

**23. Which of the following scenarios best demonstrates the process of condensation?**

- a.** Formation of clouds in the sky
- b.** Water droplets forming on the outside of a cold glass
- c.** Water boiling in a pot
- d.** Water droplets forming on the inside of a cold glass

**24. What is the primary cause of water cycle on Earth?**

- a.** Rotation of Earth
- b.** Gravitational pull of the moon
- c.** Heat energy from the sun
- d.** Earth's magnetic field

**25. Which of the following methods is not typically used to purify drinking water?**

- a.** Filtration
- b.** Distillation
- c.** Boiling
- d.** Heating

**26. Which of the following methods is least effective in removing soluble impurities from water?**

- a.** Filtration
- b.** Distillation
- c.** Boiling
- d.** Reverse osmosis

27. Which among them are nutrient of body  
a. Protein      b. Fat      c. Vitamins      d. All of above

28. Which nutrient turn in violet color in solution of castic soda  
a. Lipid      b. Protein      c. starch      d. sugar

29. Which are called energy giving foods  
a. Lipid      b. Protein      c. Carbohydrates      d. Mineral

30. Which vitamin helps to fight against diseases  
a. Vit A      b. Vit C      c. Vit B      d. Vit D

31. Scurvy is due to deficiency of  
a. Vit A      b. Vit B      c. Vit C      d. Vit D

32. Based on most characters, plants are of how many types  
a. Herb & Shrub      b. Shrub & Trees      c. Herb , shrubs & Trees      d. Amoeba , Herb, Shrubs

33. Plant with green & tender stem are called  
a. Shrub      b. Herb      c. Tendril      d. Tree

34. Loss of  $H_2O$  from leaves is due to  
a. Translocation      b. Transpiration      c. Osmosis      d. Diffusion

35. Part of plant which help in  $H_2O$  mineral absorption from soil  
a. Stem      b. Shoot      c. Leaf      d. Root

36. We are able to bend our body due to  
a. Joints      b. Bone      c. Catilage      d. Ribs

37. Below stomach which bones are present  
a. Rib cage      b. Shoulder bone      c. Pelvic bone      d. All of above

38. In ear which structure is present which makes it flexible  
a. Bone      b. Muscle      c. Cartilage      d. Ribs

39. Which animal has many rings on body  
a. Human      b. Cow      c. Frog      d. Earth worm

40. In which animal has streamlined body  
a. Frog      b. Cockroach      c. Snail      d. Fish

## **MATHEMATICS**

41. Determine the difference of the place value and the face value of 5 in 78654321  
(a) 50,000 (b) 5 (c) 49995 (d) 10000

42. Total number of 3-digit numbers using the digits 6, 0, 4 is (without repetition of digits)  
(a) 6 (b) 10 (c) 8 (d) 4

43. Determine the smallest 3-digit number, which is exactly divisible by 6, 8 and 12  
(a) 121 (b) 120 (c) 123 (d) 125

44. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds, respectively. If they change simultaneously at 7 a.m., at what time will they change simultaneously again?  
(a) 7 minutes 40 seconds (b) 7 minutes 18 seconds  
(c) 7 minutes 12 seconds (d) 7 minutes 24 seconds

45. Find the least number, which, when divided by 6, 15 and 18 leave the remainder 5 in each case.  
(a) 90 (b) 95 (c) 105 (d) 115

46. A vendor supplies 32 litre of milk to a hotel in the morning and 68 litres of milk in the evening. If the milk cost Rs 45 per litre, how much money is due to the vendor per day?  
(a) Rs 5500 (b) Rs 4500 (c) Rs 6500 (d) Rs 7500

47. Write the successor of the number 1099999  
(a) 999999 (b) 1100000 (c) 1099100 (d) 1099910

48. The weight of 72 books is 9 kg. What is the weight of 40 such books?  
(a) 9 kg (b) 6 kg (c) 10 kg (d) 5 kg

49. If it has rained 276 mm in the last 3 days, how many cm of rain will fall in one full week (7 days)? Assume that the rain continues to fall at the same rate?  
(a) 64.4 (b) 644 (c) 74.4 (d) 777

50. Namita travels 20 km 50 m every day. Out of this, she travels 10 km 200 m by bus and the rest by auto. How much distance does she travel by auto  
(a) 8.850 km (b) 9.850 km (c) 7.850 km (d) 9.550 km

51. Rani had Rs 18.50. she bought one icecream for Rs 11.75. How much does she have now?  
(a) Rs 6.75 (b) Rs 6.85 (c) 5.75 (d) 5.85

52. Naresh walked 2km. 35 m in the morning and 1 km 7 m in the evening. How much distance did he walk in all?  
(a) 4.042 km (b) 3.442 km (c) 3.042 km (d) 3.444 km

## Rough work

53. How many  $\frac{2}{3}$  kg pieces can be cut from a cake of weight 4 kg?  
 (a) 4 (b) 6 (c) 8 (d) 10

54. Raj travels 360 km. on three-fifths of his petrol tank. How far would he travel at the same rate with of full tank of petrol?  
 (a) 600 km (b) 500 km (c) 800 km (d) 900 km

55. What should be subtracted from the product of -13 and -7 to get -120?  
 (a) 211 (b) -29 (c) 110 (d) 87

56. Find the additive inverse of the number obtained by subtracting -9 from the additive inverse of -23.  
 (a) 32. (b) -14 (c) -32 (d) 14

57. Find circumference of a circle of radius 13 cm  
 (a) 81.714 cm (b) 81.724 cm (c) 81.734 cm (d) 81.704 cm

58. The length and breadth of a rectangle field are 340m and 160m. A watchman walked 5 rounds around the field. Find the distance covered by him.  
 (a) 5000 cm (b) 2500 (c) 7500 (d) 7000 cm

59. How many square tiles each of side 0.25 m will be required to pane the floor of a room which is 4m broad and 3m long?  
 (a) 182 tiles (b) 192 tiles (c) 172 tiles (d) 202 tiles

60.  $(-12) \times (-9) - 6 \times (-8)$  is equal to  
 (a) 156 (b) 60 (c) -156 (d) -60

### MENTAL ABILITY

61. Find the 11<sup>th</sup> letter to the left of 20<sup>th</sup> letter from left in the English alphabet.  
 (a) D (b) J (c) K (d) I

62. From the given alternative words, select the words which cannot be formed using the letters of the given word  
 INTERDEPENDENT  
 (a) REPENT (b) RETREAT (c) DEPEND (d) DEEPEN

63. Given below are some group of letters. Which of the options can be joined at the end of these letters to make them meaningful words?  
 LEN, SAN, WOR, SEE  
 (a) A (b) D (c) B (d) K

Rough work

64. If in the following numbers, first and last digits are interchanged, then which one of the given options will be the least number?

418 319 179 589 409

(a) 179 (b) 589 (c) 319 (d) 418

65. Select the related word from the given alternative.

Colour : Red :: Profession : ?

(a) Lawyer (b) Court (c) School (d) Black

66. Which of the following is the same as 'India', 'Pakistan', 'Afghanistan'?

(a) Germany (b) England (c) Sri Lanka (d) USA

67. Select the related letters from the given alternatives.

EFG : HIJ :: PQR : ?

(a) STU (b) RST (c) TUS (d) SUT

68. In the following question, choose the missing term in place of question mark (?) on the basis of the relationship between the words given on the right side of the sign of analogy.

ACE : 135 :: DFG : ?

(a) 467 (b) 642 (c) 681 (d) 246

69. The following question consist of two words having a certain relationship to each other. Select the alternative whose words are having the same relationship amongst them.

Triangle : Hexagon

(a) Cone : Sphere (b) Rectangle : Octagon  
(c) Pentagon : Heptagon (d) Angle : Quadrilateral

70. In the following question, there is a certain relationship between two given group of letters on one side of (::) and group of letters is given on another side of (::) while another group of letters is to be found from given options, having the same relationship with this group of letters as the group of letters of the given pair bear. Choose the best option.

CLOUD : COULD :: SMILE : ?

(a) MILSE (b) SLIME (d) SILME (d) MILES

71. What comes in place of question mark (?) in the series given below?

17, 20, 23, 26, 29, ?

(a) 31 (b) 34 (c) 30 (d) 32

72. Arrange the following words in a logical sequence.

1. Trillion 2. Thousand 3. Billion 4. Hundred 5. Million

(a) 1, 2, 4, 3, 5 (b) 1, 5, 3, 2, 4 (c) 4, 2, 3, 5, 1 (d) 4, 2, 5, 3, 1



Direction for question (83-84): Find the missing number from the given alternatives

83.



(a) 10

(b) 15

(c) 13

(d) 12

84.

9	6	8
5	8	4
7	4	?
11	2	7

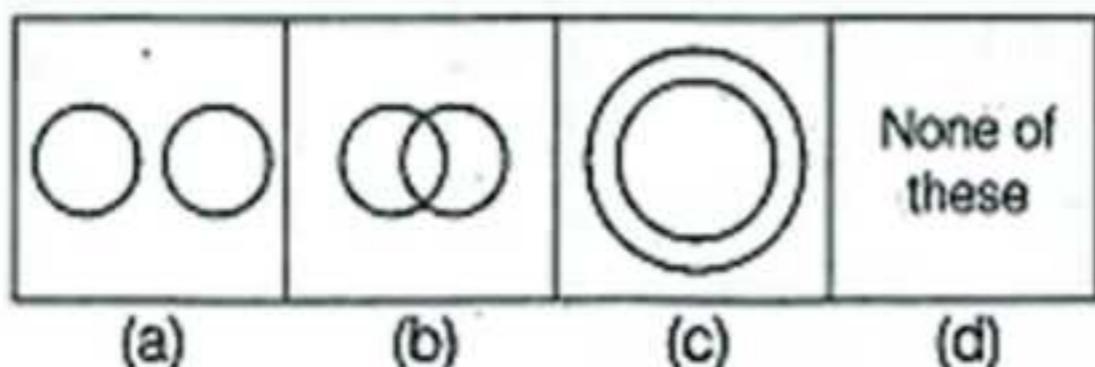
(a) 4

(b) 7

(c) 3

(d) 6

85. Which one of the following diagrams best depicts the relationship between Meerut and Uttar Pradesh?



DIRECTION (Q. Nos 86):- Read the given question and decide which of the following statements is/are sufficient to answer the question

86.

**Question:** Which word represents 'blue' in the code language?

**Statements**

- 'Here is a pen' is written as 'Hya eys e pena'.
- 'Here is a blue pen' is written as 'Hya eys e Nel pena'

(a) Statements I and II together are sufficient.  
 (b) Statement I alone is sufficient.  
 (c) Statements I and II together are insufficient.  
 (d) Statement II alone is sufficient.

87.

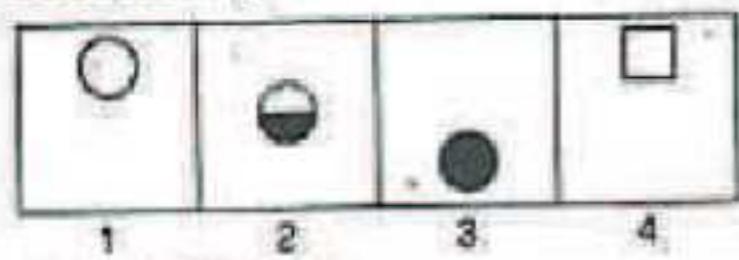
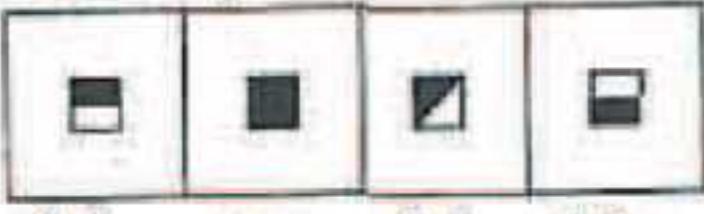
**While attending your friend's party, you see your friend's muffler catching fire from the candle on the table behind him. You would**

(a) ask your friend to see behind him.  
 (b) rush to call friend's mother.  
 (c) rush and take out the muffler from his neck, drop it and pour water on it.  
 (d) take out the muffler and throw it away.

Rough work

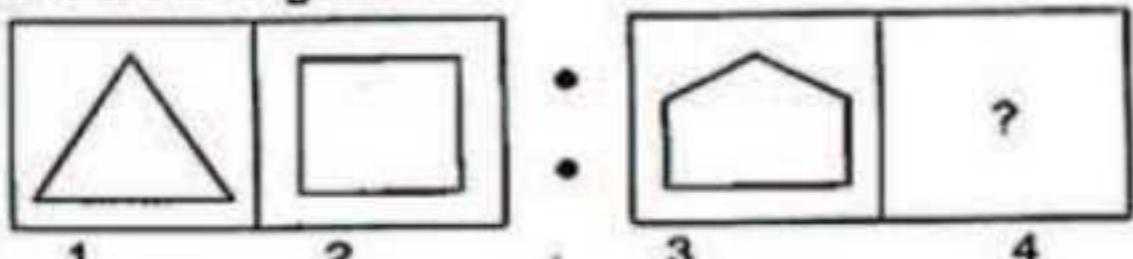
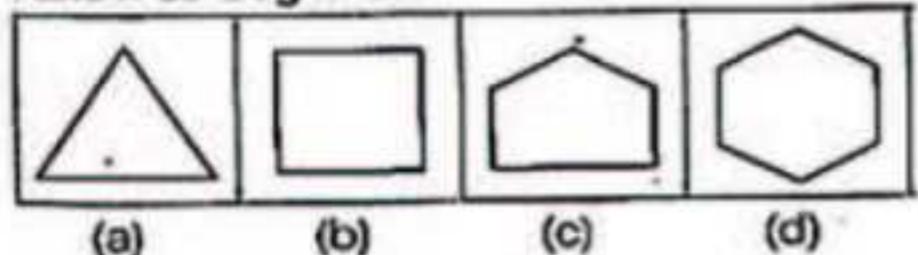
**Direction for (Q. Nos - 88):** In the following question consists of four type problem figures marked 1, 2, 3 and 4 and four answer figures marked (a), (b), (c) and (d). Select a figure from the answer figures which will continue the series established by the four problem figures.

88.

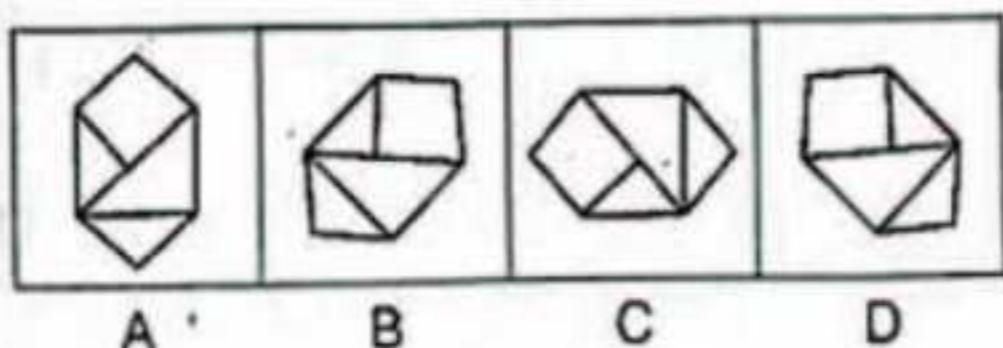
**Problem Figures****Answer Figures**

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

89. Find the figure from the answer figures that will replace the question mark (?) from the problem figures

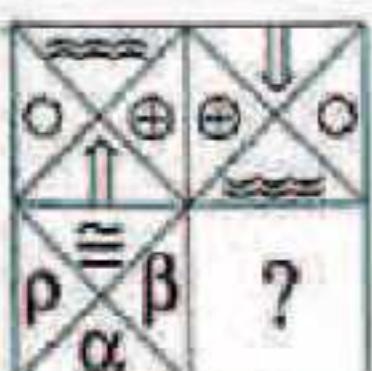
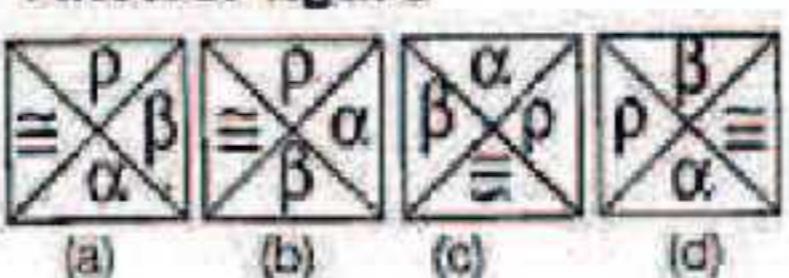
**Problem Figures****Answer Figures**

90. In the following question, a group of four figures is given. Out of which three figures are similar to each other in a certain way and one is different from others. Find the odd figure out.



(a) A (b) C (c) B (d) D

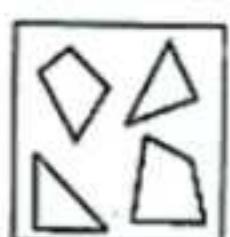
91. In the following question, a part of the given question figure is missing. Find out from the given answer figures (a), (b), (c), and (d), that can replace the '?' to complete the question figure.

**Question figure****Answer figure**

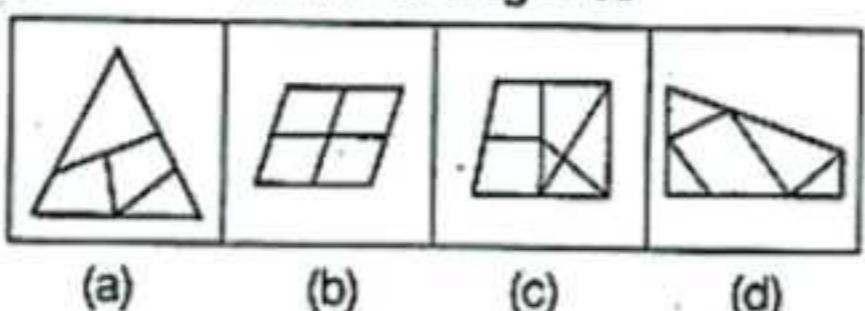
Rough work

92. In the following question, find a figure from the answer figures, that can be formed by joining the pieces given in the question figure.

Question Figure

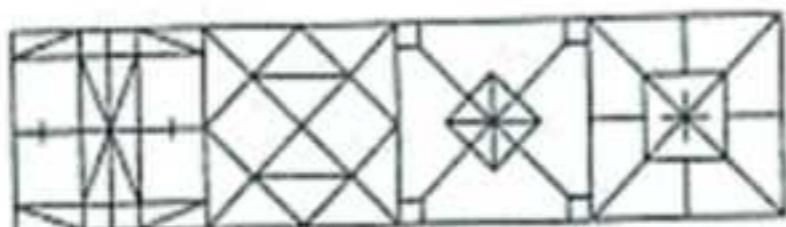
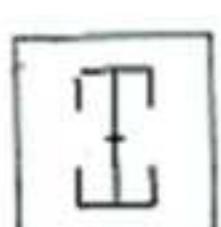


Answer Figures



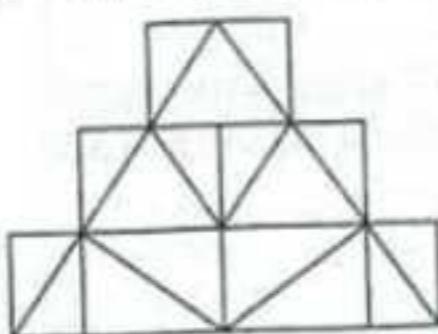
(a) (b) (c) (d)

93. In the following question, find the answer figure in which question figure is embedded.



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

94. How many triangles are present in the given figure?



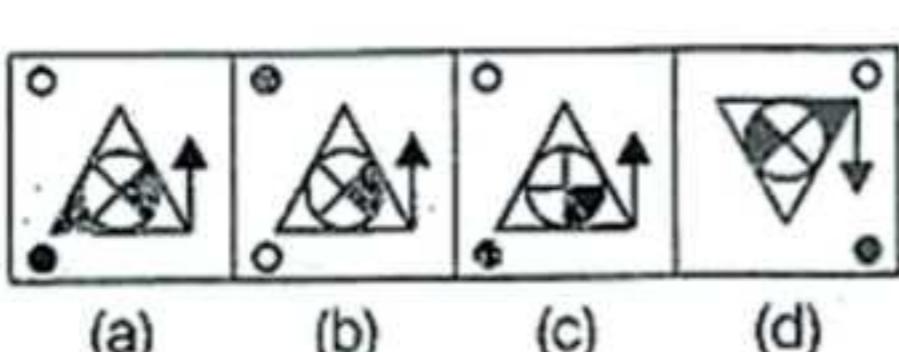
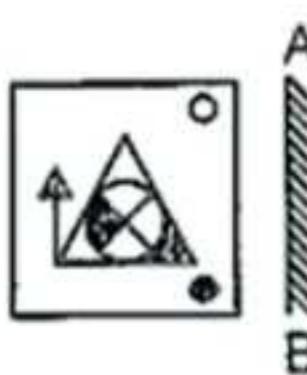
(a) 23

(b) 22

(c) 20

(d) 21

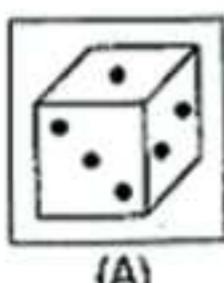
95. In the following question, choose the correct image from the alternatives (a), (b), (c) and (d), when mirror is placed along the line AB.



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

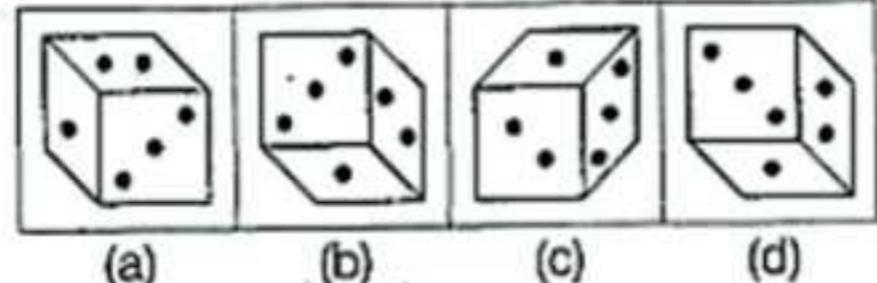
96. Find the water image of the object given in the question figure denoted by (A) out of the figure in the answer choices (a), (b), (c) and (d).

Question Figure



(A)

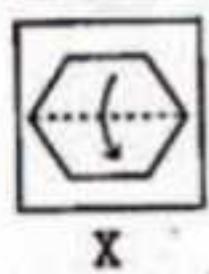
Answer Figures



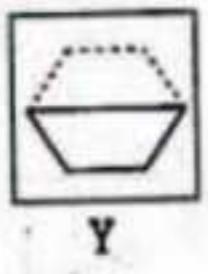
Rough work

97. In the following question, a transparent sheet is folded in the manner shown in the question figure(s). select the figure out of the answer choices showing the unfolded pattern after the punches (cut)

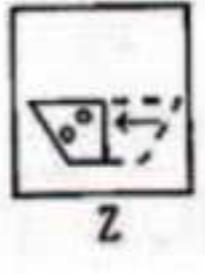
Question Figures



X



Y



Z

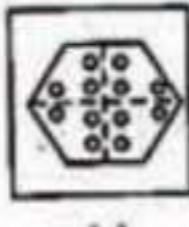
Answer Figures



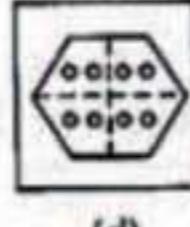
(a)



(b)



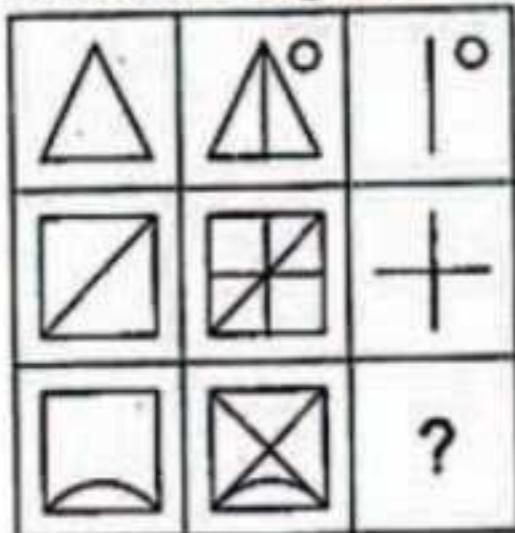
(c)



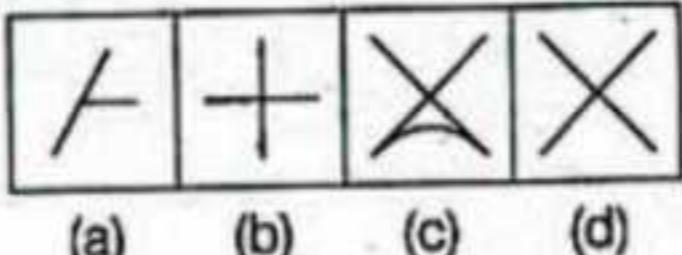
(d)

98. In the following question, find out the answer figure which completes the question figure matrix.

Question Figure



Answer Figures



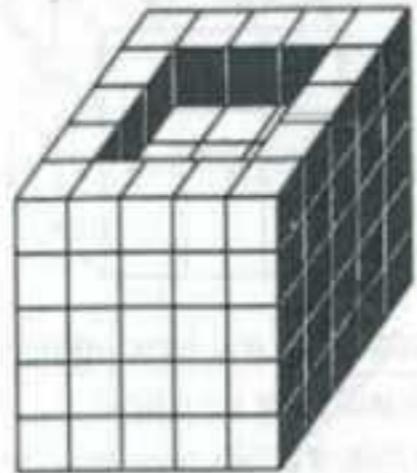
(a)

(b)

(c)

(d)

99. How many cubes are there in the following figure?



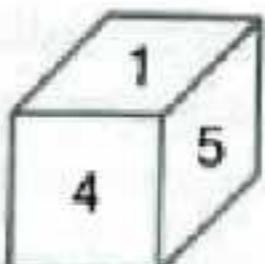
(a) 125

(b) 120

(c) 116

(d) 112

100. What will be the digit on the opposite face of the particular face having digit 4 in the dice given below?



(a) 3

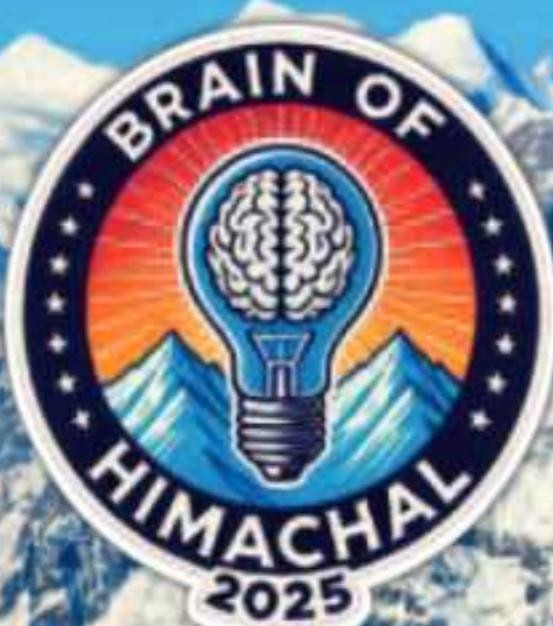
(b) 1

(c) 2

(d) 6

Rough work

# ANSWER KEY



# BRAIN OF HIMACHAL

आपकी प्रतिभा, हमारा मंच - ब्रेन ऑफ हिमाचल

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Answer  
Key  
Available

30<sup>th</sup> Sep.  
2025

Answer  
Key  
Challenge

1<sup>st</sup> to 3<sup>rd</sup> Oct.  
2025

**Result  
Declaration**  
**TOP 10 (Class Wise)**

8<sup>th</sup> Oct.  
2025

Prize  
Distribution  
Function

12<sup>th</sup> Oct.  
2025

**Result  
Declaration of  
all Participants**

15<sup>th</sup> Oct.  
2025

For Answer Key Challenges, please write to "challenge.boh2025@gmail.com" with the following details:-

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