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**#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 9<sup>th</sup>**

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**PHYSICS**

1. A particle moves with a velocity of 5 m/s in the positive direction for 4 seconds and then with a velocity of 2 m/s in the negative direction for 3 seconds. What is the displacement of the particle?  
(a) 8 m (b) 10 m  
(c) 14 m (d) -2 m
2. A particle moves along a straight line with an initial velocity of 5 m/s. If it experiences a constant acceleration of 3 m/s<sup>2</sup>, how much distance will it cover in the 4th second of its motion?  
(a) 17 m (b) 21.5 m  
(c) 15.5 m (d) 16 m
3. A car is moving with a uniform acceleration. Its velocity increases from 10 m/s to 30 m/s over a distance of 200 m. What is the acceleration of the car?  
(a) 2 m/s<sup>2</sup> (b) 4 m/s<sup>2</sup>  
(c) 8 m/s<sup>2</sup> (d) 1.5 m/s<sup>2</sup>
4. The slope of a distance-time graph represents:  
(a) Acceleration (b) Speed  
(c) Displacement (d) Force
5. A 1000 kg car traveling at 20 m/s comes to a stop in 5 seconds when the brakes are applied. What is the average force exerted by the brakes on the car?  
(a) 2000 N (b) 3000 N  
(c) 4000 N (d) 5000 N

Rough work

6. Which of the following statements is true according to Newton's First Law of Motion?
- (a) A body will continue to move in a straight line unless acted upon by a net force.
  - (b) A body will come to rest unless acted upon by a net force.
  - (c) A body will accelerate unless acted upon by a net force.
  - (d) None of the above.
7. A satellite is orbiting the Earth at a height equal to the radius of the Earth above the surface. If the acceleration due to gravity on the surface of the Earth is  $g$ , what is the acceleration due to gravity at the satellite's position?
- (a)  $g/2$  (b)  $g/4$
  - (c)  $g/6$  (d)  $g/8$
8. The gravitational force between two objects is directly proportional to:
- (a) The square of the distance between them (b) The product of their masses
  - (c) The sum of their masses (d) The difference in their masses
9. A force of 50 N is applied to a block of mass 5 kg placed on a rough horizontal surface. The block moves with a constant velocity. What is the coefficient of kinetic friction between the block and the surface?
- (a) 0.1 (b) 0.2
  - (c) 0.5 (d) 1.0
10. Two masses, 1 kg and 2 kg, are separated by a distance of 2 meters. A third mass of 1 kg is placed at the midpoint between them. What is the net gravitational force on the third mass due to the other two masses? (Take  $G = 6.67 \times 10^{-11} \text{ N m}^2/\text{kg}^2$ )
- (a)  $6.67 \times 10^{-11} \text{ N}$  towards the 2 kg mass (b)  $6.67 \times 10^{-11} \text{ N}$  towards the 1 kg mass
  - (c)  $1.33 \times 10^{-11} \text{ N}$  towards the 2 kg mass (d) Zero

Rough work

11. A ball is dropped from a building of height  $h$ , if the ball describes 65m during its last second of the fall, then the height of building and time of fall are:
- (a)  $h = 130\text{m}$ ,  $t = 13\text{ sec}$  (b)  $h = 130\text{m}$ ,  $t = 7\text{ sec}$   
(c)  $h = 245\text{m}$ ,  $t = 7\text{ sec}$  (d)  $h = 245\text{m}$ ,  $t = 13\text{ sec}$
12. A ball of mass 0.5 kg is moving with a velocity of 10 m/s. What is the magnitude of the force required to stop the ball in 2 seconds?
- (a) 2.5 N (b) 5 N  
(c) 10 N (d) 20 N
13. A rocket of mass 500 kg is acted upon by a force of 1000 N. What is the acceleration produced in the rocket?
- (a)  $1\text{ m/s}^2$  (b)  $2\text{ m/s}^2$   
(c)  $5\text{ m/s}^2$  (d)  $10\text{ m/s}^2$

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Rough work

- 14. Which of the following is not true about Bohr's Model of the atoms ?**
- Electron revolves in fixed orbit around the nucleus
  - Each orbit has a definite amount of energy
  - Electron can jump from one orbit to another
  - The energy of an electron changes continuously, while it moves in a fixed orbit
- 15. Which of the following particle has least mass ?**
- Electron
  - Proton
  - Neutron
  - $\alpha$  - particle
- 16. What is the maximum number of electrons that can be accommodated in an orbit having  $n = 3$  ?**
- 9
  - 12
  - 18
  - 32
- 17. If an atom has an atomic number 11 and mass number 23. Total number of neutrons**
- 11
  - 23
  - 12
  - 10
- 18. What is the number of moles in 22g of carbon dioxide  $[CO_2]$  ?  $[C = 12, O = 16]$**
- 0.25 moles
  - 0.5 moles
  - 1 moles
  - 2 moles
- 19. The percentage composition of carbon in methane is  $[Atomic\ mass\ C=12, H=1]$**
- 12 %
  - 25 %
  - 50 %
  - 75 %
- 20. Which of the following is correct formula of Aluminium sulphate ?**
- $Al(SO_4)_3$
  - $Al(SO_4)_2$
  - $Al_2(SO_4)_3$
  - $Al_2SO_4$
- 21. Which of the following mixture can be separated by the method of filtration ?**
- Salt dissolved in water
  - Sugar dissolved in water
  - Muddy water
  - Alcohol in water.
- 22. If you have a mixture of oil and water, Which separation techniques would you use to obtain pure oil ?**
- Filtration
  - Decantation
  - Centrifugation
  - Distillation

**23. Normal human body temperature is :-**

- a. 273 k
- b. 283 k
- c. 293 k
- d. 310 k

**24. What happens to the density of a substance when it is heated ?**

- a. Density increases
- b. Density decreases
- c. constant
- d. Density Becomes zero

**25. Which of the following process is used to separate a mixture of liquids with different boiling points?**

- a. Filtration
- b. Centrifugation
- c. Distillation
- d. Sublimation

**26. Burning of camphor involves the process**

- a. Condensation
- b. Sublimation
- c. Liquification
- d. All of above

## BIOLOGY

**9TH BOH**

27. Which amongst following is power house of cell  
a. Mitochondria                      b. Platis                      c. Vacoules                      d. Lysosomes
28. Cell divide for growth in which process  
a. Endomitosis                      b. Meiosis                      c. Mitosis                      d. None of above
29. Unit of Nervous system  
a. Axon                      b. Dendron                      c. Nephron                      d. Neuron
30. Regulation of movement of materials between the interior of cell & outer envoirment  
a. Cytoplasm                      b. Nucleus                      c. Cell membrane                      d. Vacoule
31. Nucleus has double layered covering called  
a. Nuclear cover                      b. Nuclear envelope                      c. Cytoplasmic layering                      d. Cell membrane
32. Among following how many are Epithilial tissues  
(i) Squamous    (ii) Stratified squamous  
(iii) Cuboidal    (iv) Ciliated  
a. Only 1                      b. Only 2                      c. Only 3                      d. All of above
33. The fundamental organisational unit of life is  
a. The smallest unit of life                      b. Arise from pre existing members                      c. It is structural & functional unit of life                      d. All the above
34. Fluid substance of cell is  
a. Protoplasm                      b. Mitochondria                      c. Chloroplast                      d. Golgi bodies
35. Phloem have some cells which are tubular with perforated walls they are  
a. Sieve tube                      b. Companion cell                      c. Phloem fibres                      d. All of the above
36. Which tissue form lining of kideney tubules  
a. Squamous epithelium                      b. Columnar epithelium                      c. Cuboidal epithelium                      d. Ciliated epithelium
37. Epithelial tissues are seprated from underlying tissues from  
a. Basement membrane                      b. Fibrous membrane                      c. Elastic membrane                      d. All of the above
38. Which is fat storing tissue in animals  
a. Aerolar                      b. Adipose                      c. Bone                      d. Catilage
39. Specific cells of reproductive organs divide by  
a. Mitosis                      b. Meiosis                      c. Amitosis                      d. All of the above
40. Functions of leucoplast is  
a. Support                      b. Storage                      c. Photosynthesis                      d. Flexibility

**ROUGH-WORK**

## MATHEMATICS

41. If  $\frac{3+2\sqrt{3}}{3-\sqrt{3}} = a + \sqrt{3} b$ , then the value of  $\sqrt{a+b}$ , where a and b are rational numbers, is  
 (a) 5 (b) 8 (c) 2 (d) 16

42. If  $\sqrt{2^n} = 1024$  then  $3^{2(\frac{n}{4}-4)} = ?$   
 (a) 3 (b) 9 (c) 27 (d) 81

43. The value of

$$\sqrt{6+2\sqrt{3}+2\sqrt{2}+2\sqrt{6}} - \frac{1}{\sqrt{5-2\sqrt{6}}}$$

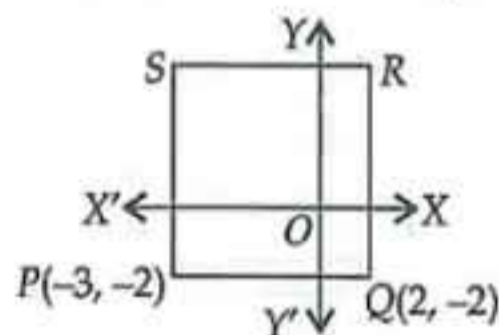
- (a) 2 (b) -1 (c)  $\sqrt{3} + \sqrt{2}$  (d) 1
44. If  $x^4 + \frac{1}{x^4} = 47$ , find the value of  $x^3 + \frac{1}{x^3}$ .  
 (a) 7 (b) 18 (c) 6 (d) 12

45. If  $x = \frac{\sqrt{3}+1}{2}$ , then the value of  $4x^3 + 2x^2 - 8x + 7$  is  
 (a) 8 (b) 10 (c) 15 (d) 14

46. If  $a+b+c=10$  and  $a^2+b^2+c^2=80$  find the value of  $a^3+b^3+c^2-3abc$   
 (a) 700 (b) 710 (c) 1280 (d) 950

47. The area of the triangle formed by the points A(2,0), B(6,0) and C(4,6) is  
 (a) 24 sq. units (b) 12 sq. units (c) 10 sq. units (d) None of these

48. The given diagram is drawn on a Cartesian plane. PQRS is square. The coordinates of S are



- (a) (-3, 3) (b) (3, -3) (c) (-3, -3) (d) (-3, 2)
49. The foot of the perpendicular from P(-3, 2) to the y-axis is M. Coordinate of M are  
 (a) (3, 0) (b) (0, 2) (c) (3/2, -1) (d) (-3, 2)

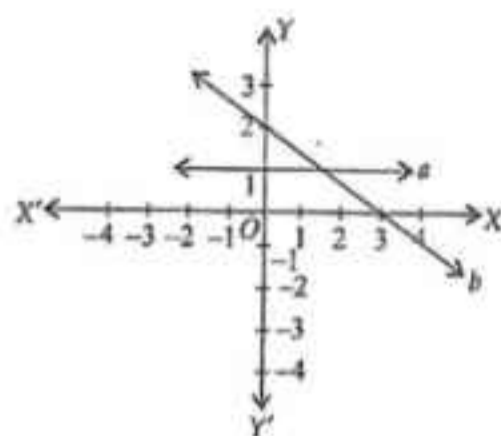
Rough work

50. Find the point of intersection of the straight lines

$x + y - 7 = 0$  and  $4x + 5y - 30 = 0$

- (a) (2, 5) (b) (1, 6) (c) (5, 2) (d) None of these

51. A student wrote the equations of the lines
- $a$
- and
- $b$
- drawn in the following graph as
- $y = 1$
- and
- $2x + 3y = 6$
- respectively. Write the coordinates of point of intersection of line
- $a$
- and
- $b$
- . Also find the area enclosed between these line and Y-axis.

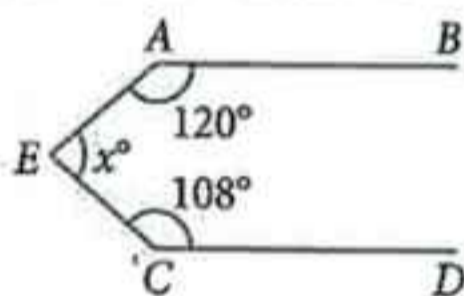


- (a)
- $(3, 1), \frac{3}{4}$
- sq. units (b)
- $(\frac{3}{2}, 1), \frac{3}{4}$
- sq. units (c)
- $(1, 3), \frac{3}{4}$
- sq. units (d)
- $(1, \frac{1}{3}), \frac{3}{2}$
- sq. units

- 52.
- $ax + by + c = 0$
- does not represent equation of line if

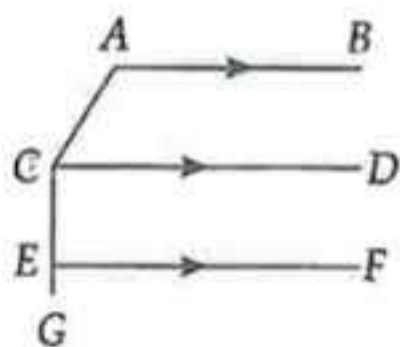
- (a)
- $a = c = 0, b \neq 0$
- (b)
- $c = 0, a \neq 0, b \neq 0$
- 
- (c)
- $b = c = 0, a \neq 0$
- (d)
- $a = b = 0$

53. In the given figure
- $AB \parallel CD$
- . Then the value of
- $x$
- is



- (a)
- $220^\circ$
- (b)
- $140^\circ$
- (c)
- $150^\circ$
- (d)
- $132^\circ$

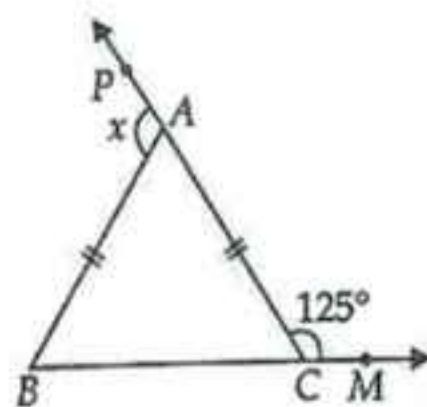
54. In the given figure,
- $AB \parallel CD \parallel EF$
- .
- $CE$
- is joined and produced to
- $G$
- . If
- $\angle BAC = 130^\circ$
- ,
- $\angle ACE = 140^\circ$
- , then find
- $\angle DCE$
- and
- $\angle FEG$
- respectively.



- (a)
- $50^\circ, 130^\circ$
- (b)
- $90^\circ, 90^\circ$
- (c)
- $140^\circ, 40^\circ$
- (d)
- $45^\circ, 135^\circ$

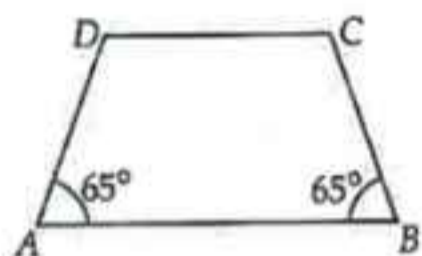
Rough work

55. In figure,  $AB = AC$ ,  $\angle ACM = 125^\circ$  and  $\angle PAB = x$ . Find value of  $x$ .



- (a)  $130^\circ$  (b)  $110^\circ$  (c)  $100^\circ$  (d)  $120^\circ$
56. In a  $\triangle ABC$ , if  $2\angle A = 3\angle B = 6\angle C$ , the measure of  $\angle A, \angle B, \angle C$ , respectively, are  
 (a)  $90^\circ, 60^\circ, 30^\circ$  (b)  $45^\circ, 60^\circ, 85^\circ$  (c)  $30^\circ, 60^\circ, 90^\circ$  (d)  $35^\circ, 55^\circ, 90^\circ$

57. In the given figure  $AB \parallel CD$ , then the measure of  $\angle C$  is



- (a)  $65^\circ$  (b)  $115^\circ$  (c)  $135^\circ$  (d)  $125^\circ$
58. Which is not correct about rectangle EFGH?  
 (a)  $\angle E = \angle F = \angle G = \angle H = 90^\circ$  (b)  $EG = FH$   
 (c)  $EF = GH$  and  $HE = FG$  (d)  $EG$  and  $FH$  are  $\perp$  bisectors
59. The area of the regular pentagon of side 6cm and height 8cm. (in  $\text{cm}^2$ )  
 (a) 40 (b) 60 (c)  $80\sqrt{3}$  (d) 120
60. If the base of a right pyramid is a square of side 4cm and its height is 18cm, then volume of the pyramid is—  
 (a)  $90\text{cm}^3$  (b)  $104\text{cm}^3$  (c)  $100\text{cm}^3$  (d)  $96\text{cm}^3$

#### METNATL ABILITY

Direction (Q.Nos-61): Following question is based on the five words given below, Study the following words and answer the following question.

**TAP NOT MAT PQR STB**

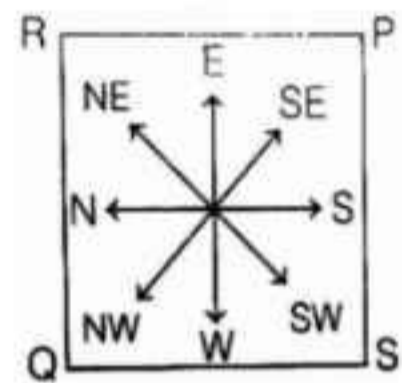
(The new words formed after performing the mentioned operations may not necessarily be a meaningful English word).

61. If in each of the word given, the second alphabet is replaced by its following alphabet and third alphabet is replaced by its preceding alphabet as per the English alphabetical order, then how many words thus formed will be without any vowel?  
 (a) None (b) One (c) Two (d) Three

Rough work

62. Select the related word from the given alternatives.  
Ornithology : Birds: Mycology :?
- (a) Insects                      (b) Mosquito                      (c) Microbes                      (d) Fungi
63. In the following question, group of letters is given, all of which except one, share a common similarity while one is different. Select the odd one.
- (a) uaieo                      (b) cgkos                      (c) eimqu                      (d) hlptx
64. In a certain code, LIFE is written as KMHJEGDF. How is WORD written in that code?
- (a) XVPNSQCE                      (b) XVPNSQEC                      (c) VXNPQSCE                      (d) VXNPQSEC
65. Find the missing letters in the series given below  
a\_yz\_bz\_xb\_xy\_c
- (a) xacyz                      (b) kacyx                      (c) xaycz                      (d) axcyx
66. MABELA, MABLE, MABUSE, MABEPEARL ?  
If the above given words are arranged in the dictionary then the last word is
- (a) MABUSE                      (b) MABEPEARL                      (c) MABELA                      (d) MABLE

Direction (Q. Nos. 67): Read the following information carefully and answer the questions given below.



Four security guards P, Q, R and S have been posted at the four corners of a huge cashew plantations farm as shown in the above figure.

67. From the original position, P and Q move one arm length clockwise and then cross over to the corner diagonally opposite, R and S move one arm length anti-clockwise and cross over to the corner diagonally opposite. The original setting PSQR has now changed to
- (a) RSPQ                      (b) SRPQ                      (c) RQSP                      (d) None of these
68. Rajesh, his sister, his son and his daughter are fond of golf and often play together. The following statements are true for all the four.
- I. The best player's twin and worst player are of the opposite sex.
- II. The best player and the worst player are of the same age. Assuming that both twins are members of the group of four, who is the best player
- (a) Daughter of Rajesh                      (b) Son of Rajesh                      (c) Rajesh                      (d) Sister of Rajesh

**Direction (Q. Nos. 69):** Study the following information carefully and answer the question given below.

There are six persons who all are of different height. A is taller than C and D but shorter than E. The one who is third shortest is 102 cm in height B is taller than A, E is not the tallest. The one who is second tallest is 119 cm in height. Neither A nor C is the third shortest person among all. C is not the shortest among all. F is taller than D.

69. Who among the following is third shortest?

- (a) A (b) C (c) B (d) F

**Direction (Q.Nos-70):** Study the information carefully and answer the question.

S, T, U, V, W, X, Y and Z are sitting around a circle area, with equal distance amongst each other but not necessarily in the same order.

Only two people face the centre and the rest face outside (i.e., in a direction opposite to the centre).

Y sits second to left of W. S sits second to left of Y. Only one person sits between S and Z.

T sits to immediate right of S. T is not an immediate neighbour of Y. V is not an immediate neighbour of Y.

Both the immediate neighbours of X face the centre.

70. Which of the following is true regarding U as per the given sitting arrangement?

- (a) X sits second to left of U.  
(b) Only three people sit between U and Y.  
(c) Z is one of the immediate neighbours of U.  
(d) U faces the centre.

**Direction (Q.Nos-71):** Study the given information carefully and answer the given questions.

Four persons Prakhar, Deepak, Vishal and Rajeev participated in Annual grading of Arihant Publication India Limited. They have taken the objective test. Now, they are waiting for their turn for one to one in head office. They have different serial numbers for one to one round 1, 2, 3 and 4 but not necessarily in the same order. They sat on different chairs-Chair 1, Chair 2, Chair 3 and Chair 4 (from left to right). These four persons are from different cities (branches): Kanpur, Sitapur, Lucknow and Agra. These persons have different years of work experience in Arihant Publication viz. 9 years, 4 years, 6 years and 11 years (from left to right). Ages of these four persons are 42, 40, 36 and 38 but not necessarily in the same order.

Vishal sits to the left of the person who is from Agra (but not exact next) who gives his interview before Vishal who is 2 years younger than Vishal. Deepak is 4 years younger than the person who is from Sitapur and who is next to left of Deepak. The man who sits on Chair 1 is not Prakhar and gives interview next after the 42 years old. 40 years old person sits next to the right of the person who is from Kanpur and there are only one person gives interview between them.

The person who is from Lucknow gives interview next after the person who sits on Chair 4 (who doesn't give interview first); he is older than both the latter and Rajeev. The person who gives the interview on 2<sup>nd</sup> number, sits next to the one who gives interview on 4<sup>th</sup> number, who is more than two years older than the one who gives interview on 2<sup>nd</sup> number.

Rough work

71. What is the age and the branch of the person who sits on chair-1?  
(a) 38-Lucknow (b) 42-Lucknow (c) 36-Kanpur (d) 38-Kanpur
72. A series of letters, digits and symbol is given below  
L•4 Pβ ∅ N 7@9θ6P•D \* EHT↓ M > 3 #  
If the digits/numbers of the dial of clock, are replaced in such a way that ∅ takes the place of 6, N takes the place of 7 and this arrangement goes on in the same way, then what comes in place of 11?  
(a) 7 (b) θ (c) \* (d) 9
73. If the Republic day of India in 1980, falls on Saturday, X was born on March 3, 1980 and Y is older to X by four days, then Y's birthday fell on  
(a) Thursday (b) Friday (c) Wednesday (d) None of these

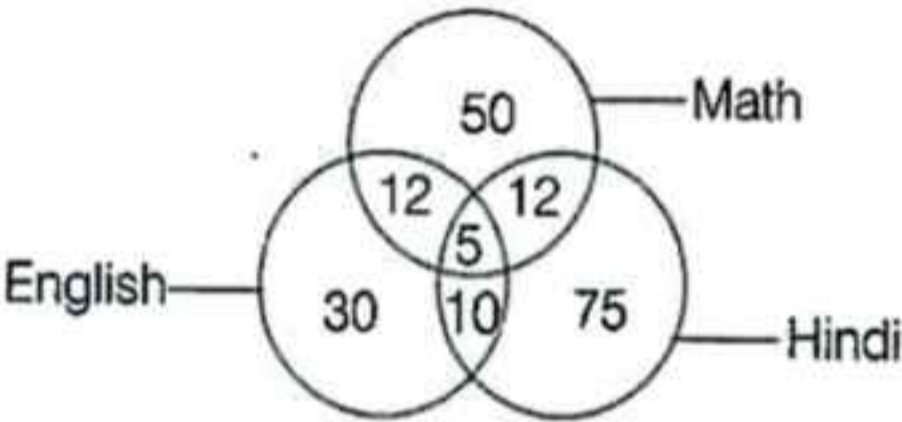
**Direction(Q.Nos-74):** In the following question two rows of numbers are given. The resultant number in each row is to be worked out separately based on the following rules and the question below the rows of numbers are to be answered. The operations of numbers progress from left to right.

**Rules**

- (i) If a two-digit odd number is followed by a two-digit odd number, they are to be added.
- (ii) If a two-digit even number is followed by a two digit odd number which is a perfect square, then even number is to be subtracted from the odd number.
- (iii) If a three-digit number is followed by a two-digit number, the first number is to be divided by then second number.
- (iv) If a prime number is followed by an even number, the two are to be added.
- (v) If an even number is followed by an another even number, the two are to be multiplied.

74. 23 15 12.  
X 24 49  
If 'X' is the resultant of the first row, what is the resultant of the second row?  
(a) 65 (b) 69 (c) 67 (d)None of these

75. Consider the following venn-diagram.

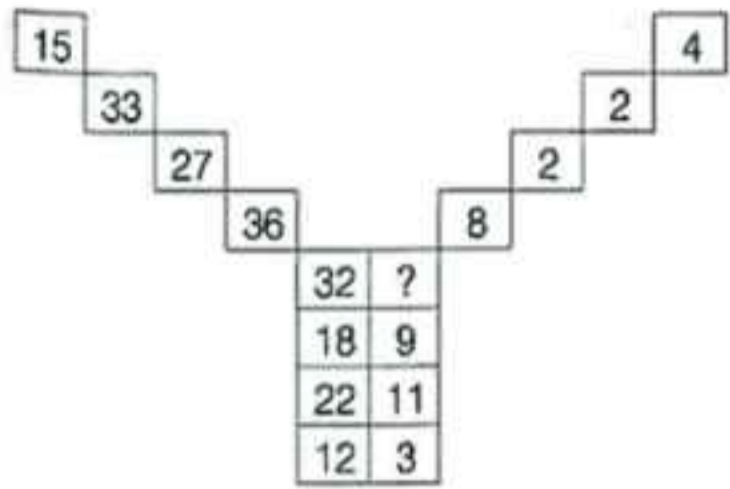


500 candidates appeared in an examination comprising of tests in English, Hindi and Mathematics. The diagram gives the number of candidates who failed in different tests. What is the percentage of the candidates who failed in at least two subject?  
(a) 0.078 (b) 1.0 (c) 6.8 (d) 7.8

Rough work

76. The difference between the ages of two brothers is same as the difference between ages of their father and mother. The age of the elder brother is 25yr. At the time of the birth of younger brother his mother's age was 32 yr. if father's age is 5 yr more than mother's age, then what was the age of father at the time of elder brother's birth?
- (a) 55yr                      (b) 32 yr                      (c) 31 yr                      (d) 57 yr

77. In the following question, which number will complete the given pattern, when placed at the sign of interrogation (?)



- (a) 3                      (b) 4                      (c) 8                      (d) 12-
78. If  $M > N \leq O < P$  and  $T < O > C \geq Z$  are true, then which of the following options is definitely true?
- (a)  $M > O$                       (b)  $C = T$                       (c)  $O = Z$                       (d)  $T < P$

DIRECTIONS ~ (Q. Nos. 79) Based on the information below answer the questions that follow

'P\$ Q' means, 'P is not smaller than Q'

'P@ Q' means, 'P is neither smaller than nor equal to Q.'

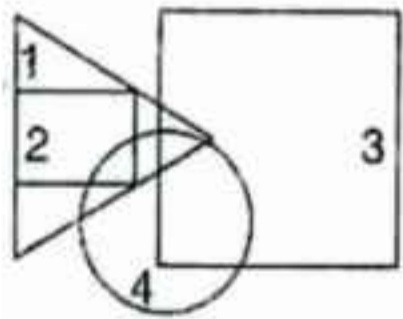
'P#Q' means, P is neither greater than nor equal to Q.

'P & Q' means, P is neither greater than nor smaller than Q.

'P\* Q' means, P is not greater than Q'

79. Statements :- H @ T, T # F, F & E, E \* V  
Conclusions I. V\$ F II. E @ T III. H @ V  
IV. T # V
- (a) I, II and III are true.                      (b) I, II and IV are true.  
(c) II, III and IV are true.                      (d) I, III and IV are true.

Directions (Q. Nos. 80): In the following diagram represents a group of persons. The triangle represents educated persons, the rectangle represents the administrative persons, the square represents the businessman and the circle represents income tax payers.



Rough work

80. From the above figure, it can be concluded that
- (a) All businessmen pay income tax.
  - (b) Some administrative persons are income tax payers.
  - (c) All income tax payers are educated.
  - (d) Educated persons which are not in administrative service do not pay income tax.
81. A word is represented by only one set of numbers as given in any of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'A' can be represented by 01, 13, etc., and 'E' can be represented by 56, 67, etc. Similarly, you have to identify the set for the word 'BOTH'.

Matrix I						Matrix II					
	0	1	2	3	4		5	6	7	8	9
0	F	A	N	O	I	5	S	E	H	B	T
1	I	O	F	A	N	6	H	S	E	T	B
2	A	N	O	I	F	7	B	T	S	E	H
3	O	F	I	N	A	8	E	H	T	B	S
4	N	I	A	F	O	9	T	S	E	H	B

- (a) 88, 30, 85, 86

(c) 69, 67, 68, 59
- (b) 58, 02, 68, 65

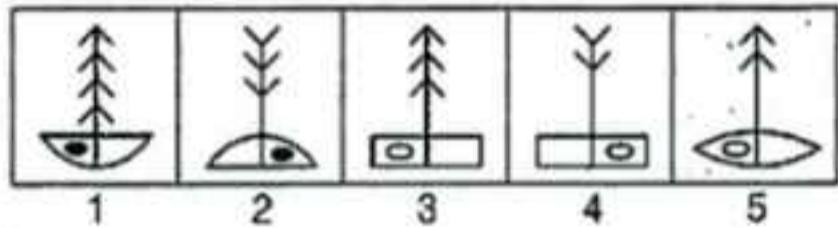
(d) 75, 22, 76, 79

Directions (Q. Nos. 82.): In question below, three Statements I, II and III are given. You are required to find out which of the given statement (s) is/ are sufficient to answer the question. Mark your answer accordingly.

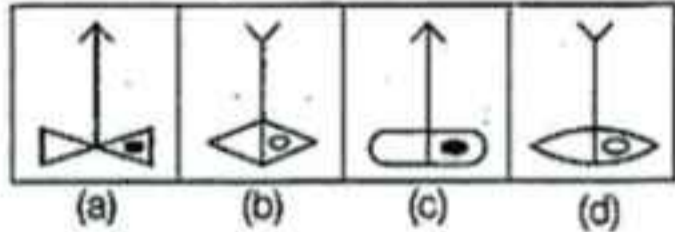
82. Point D is in which direction with respect to Point B?
- I. Point A is to the West of point B, Point C is to the North of Point B, Point D is to the South of Point C.
  - II. Point G is to South of Point D. Point G is 4 m from Point B. Point D is 9 m from Point B.
  - III. Point A is to the West of Point B. Point B is exactly midway between Point A and E. Point F is to the South of Point E. Point D is to the West of Point F.
- (a) I and III                      (b) II and III                      (c) All required                      (d) I and II

83. The following question consists of five problem figure marked 1, 2, 3, 4 and 5 followed by four answer figures (a), (b), (c) & (d). Find out the figure from the answer figures which will continue the given series.

Problem Figures



Answer Figures



Rough work

84. In the following question, there are two sets of figures i.e problem figures and answer figures. Problem figures contain five figures marked by numbers 1, 2, 3, 4 & 5 and answer figures contain four figures marked by letters (a), (b), (c) and (d). A series will be established, if one of the four answer figure is placed in place of the sign '?' in the problem figure and that figure is your answer.

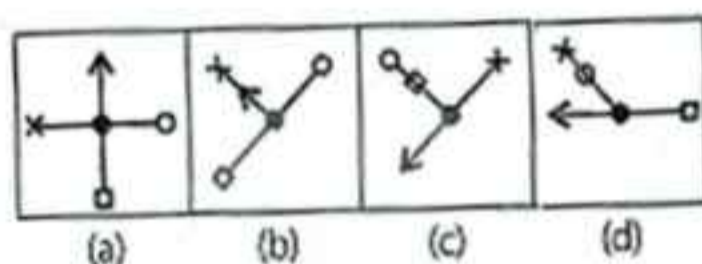
**Problem Figures**

C	=	=	Z		=	O	*	=
□	Z	*	△	C	□	?	*	△
△	O	O	*		C	Z	Z	△
1	2	3	4	5				

**Answer Figures**

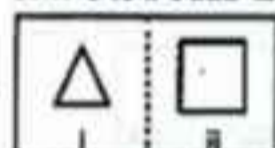
△	=	△	=	Z	=	△	=
□	*	Z	□	O	Z	□	O
C	O	C	*	*	C	*	C
(a)	(b)	(c)	(d)				

85. In the following question the figures follow a series/sequence. One and only one out of the four figures does not fit in the series/sequence, that figure is your answer.

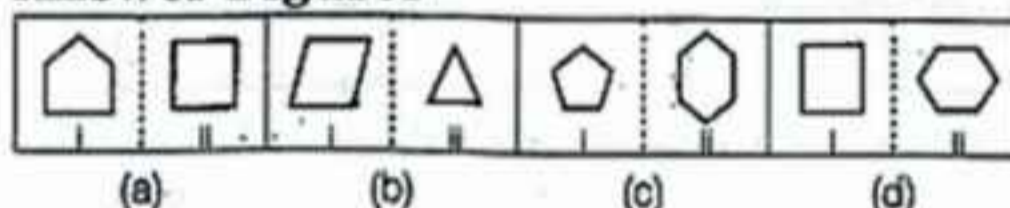


86. In the following question, a pair of problem figures is followed by four numbered pairs of figures. Select the pair that has a relationship similar to that in the problem figures. The best possible answer is to be selected from a group of fairly close choices.

**Problem Figures**

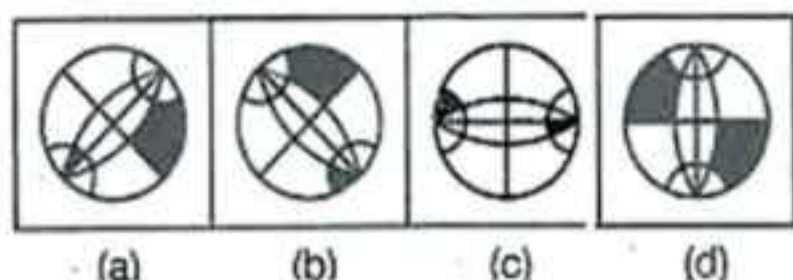


**Answer Figures**

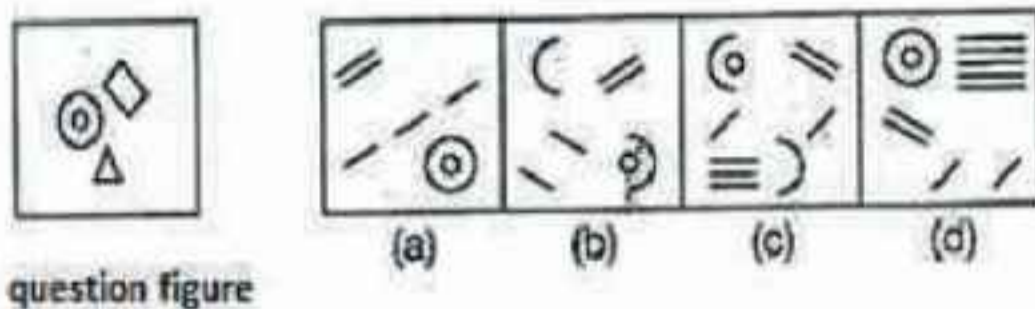


Rough work

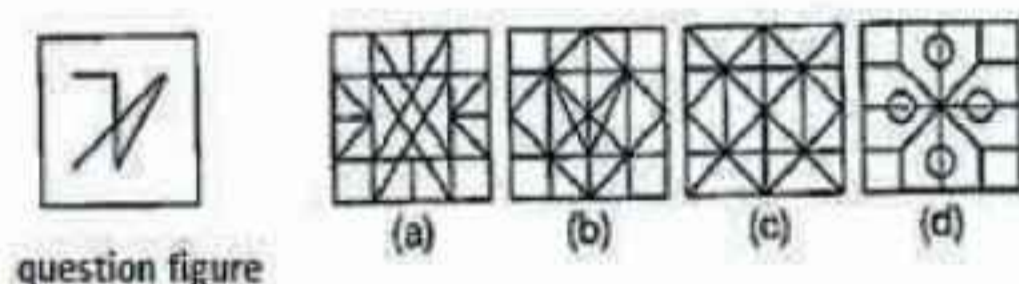
87. In the following question, four figures are given. Three are similar in a certain way and so form a group. Find out what which one of the figures does not belong to that group.



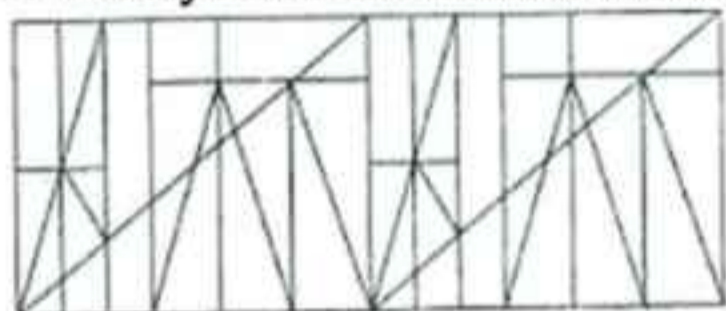
88. In the following question, from the four answer figures, find the figure that can form the figure given in the question figure.



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



90. How many minimum number of straight lines are required to draw the following figure?



- (a) 36 (b) 55 (c) 31 (d) 28
91. Consider the following three-dimensional figure.

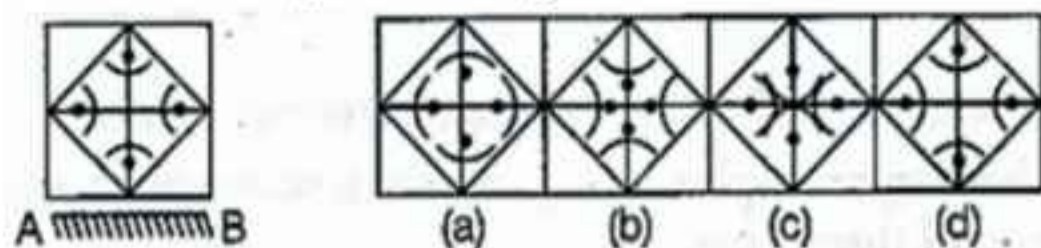


How many triangles does the above figure have?

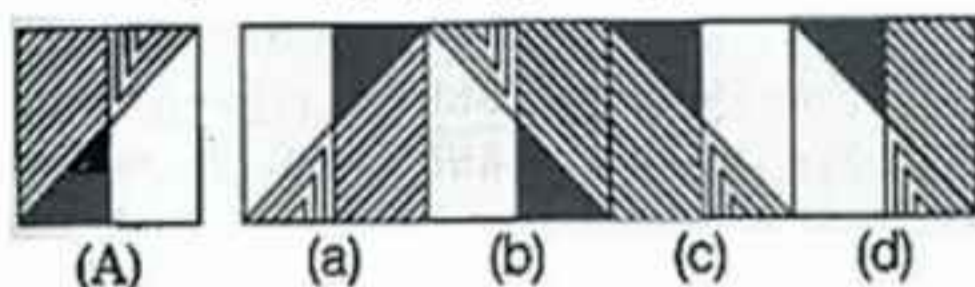
- (a) 18 (b) 20 (c) 22 (d) 24

Rough work

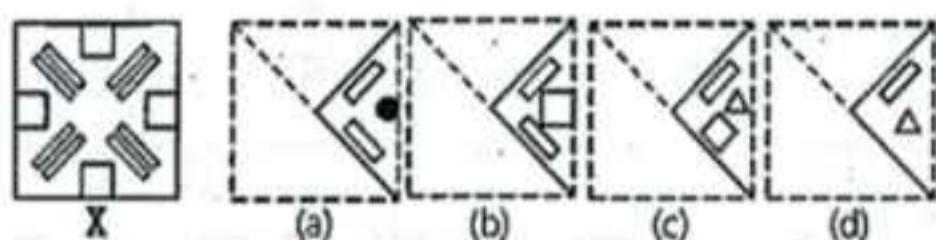
92. In the following question, choose the correct mirror image from the answer figure (a), (b), (c) and (d), when mirror is placed along the line AB.



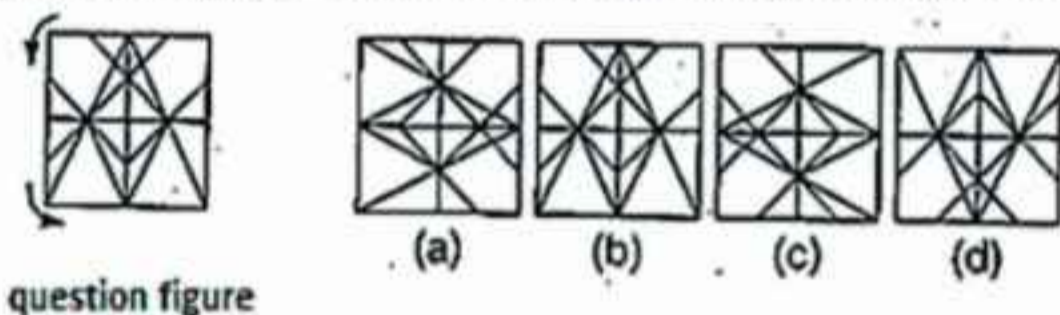
93. Find the water image of the object given in the question figure denoted by (A) out of the figure given in the answer figures (a), (b), (c) and (d).



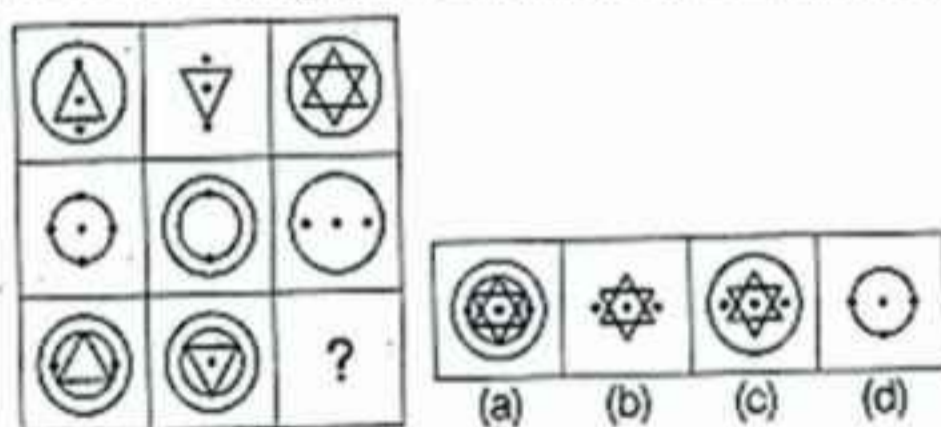
94. In the following question, a sheet (square) of paper is folded and then punch is made. When unfolded the paper, sheet looks like the question figure. See the answer figures and select the one that follows the manner in which the paper is folded and punch is made.



95. In the following question, choose that answer figure which is similar to the question figure, when the question figure is rotated through two places ( $180^\circ$ ) anti-clockwise.

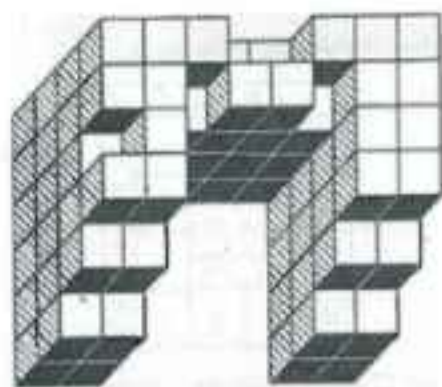


96. In the following question, find out the answer figure which completes the question figure matrix.



Rough work

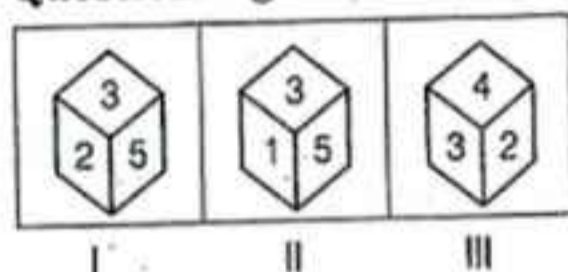
97. How many cubes are there in the following figure?



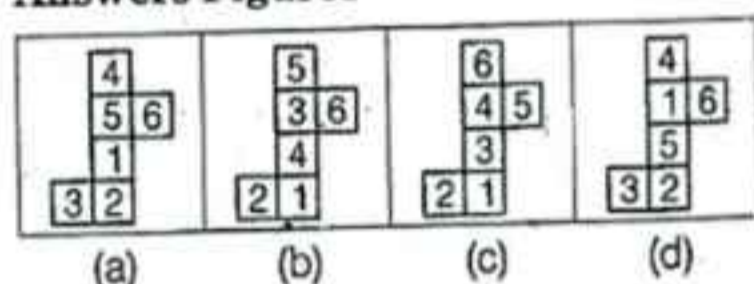
- (a) 101 (b) 111 (c) 121 (d) 131

98. Three views of the same cube are given. All the faces of the cube are numbered from 1 to 6. Select one figure which will result when the cube is unfolded.

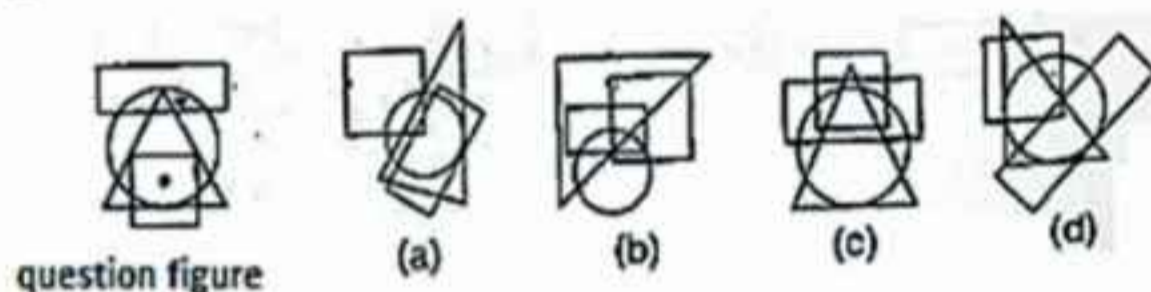
Question Figures



Answers Figures



99. In the following question, one or more dots is/are placed in the question figure. This figure is followed by four alternatives (a), (b), (c) and (d). One out of these four options contains region(s) common to circle, square and triangle, similar to that marked by the dot in question figure. Choose that figure.



Direction (Q. Nos- 100): In the following question four statements are given followed by four conclusions numbered (I), (II), (III) & (IV). You have to take the given statement to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the following conclusion(s) logically follow(s) from the given statements disregarding commonly known facts.

100. **Statements**  
 Some sticks are lamps.  
 Some flowers are lamps.  
 Some lamps are dresses:  
 All dresses are shirts.

**Conclusions**

- I. Some shirts are sticks.  
 II. Some shirts are flowers.  
 III. Some flowers are sticks.  
 IV. Some dresses are sticks.

- (a) None follows (b) Only I follows (c) Only II follows (d) Only III follows

Rough work

## ANSWER KEY

[illegible]



# BRAIN OF HIMACHAL

आपकी प्रतिभा, हमारा मंच - ब्रेन ऑफ हिमाचल

## RESULTS & PRIZE DISTRIBUTION DETAILS

Answer Key Available	Answer Key Challenge	Result Declaration TOP 10 (Class Wise)	Prize Distribution Function	Result Declaration of all Participants
30 <sup>th</sup> Sep. 2025	1 <sup>st</sup> to 3 <sup>rd</sup> Oct. 2025	8 <sup>th</sup> Oct. 2025	12 <sup>th</sup> Oct. 2025	15 <sup>th</sup> Oct. 2025

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

(1). Your Name (2) Roll Number (3) School Name (4) Mobile Number (5) Specific Question(s) being challenged

Your challenge will be reviewed accordingly.

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