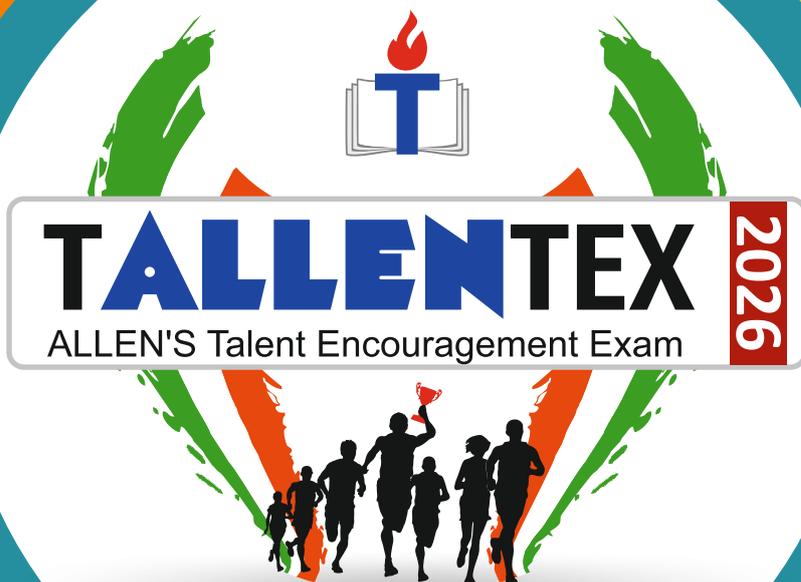


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**SAMPLE TEST PAPER**

**CLASS IX**

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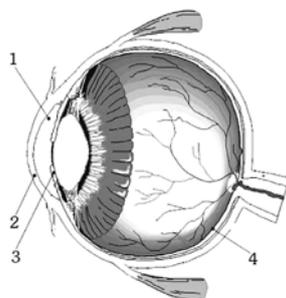
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**SECTION-A : PHYSICS**

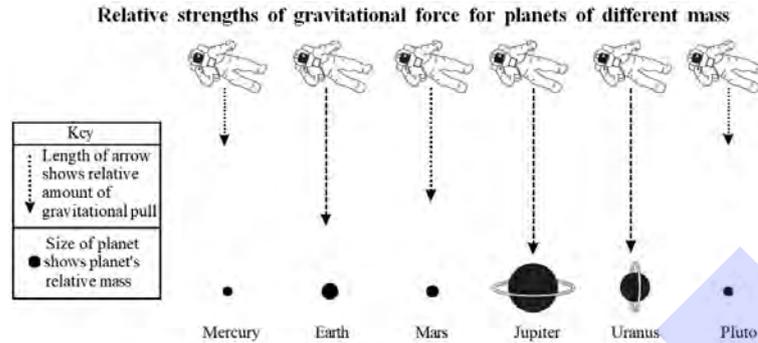
This section contains **15 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

1. In the figure of human eye shown below, which of the labelled part give it its distinctive colour?



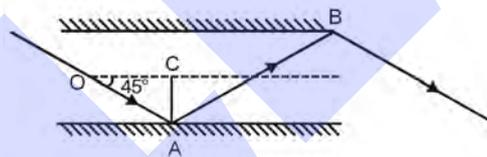
- (1) 1 (2) 2  
(3) 3 (4) 4
2. Velocity of a car at  $t = 0$  is  $u$ , moves with a constant acceleration  $\alpha$  and then decelerates at a constant rate  $[\beta]$  for some time and gain its initial velocity. If the total time taken is  $T$ , the maximum velocity of car is given by
- (1)  $u - \frac{\alpha\beta T}{\alpha + \beta}$  (2)  $u + \frac{\alpha\beta T}{\alpha + \beta}$   
(3)  $u - \frac{\alpha\beta T}{\alpha - \beta}$  (4)  $u + \frac{\alpha\beta T}{\alpha - \beta}$
3. India has built and launched several satellites, the first Indian satellite built by ISRO was :
- (1) INSAT-IA (2) Aryabhata  
(3) Apple (4) Bhaskara-I
4. At what altitude, the value of  $g$  would become one fourth than on the surface of the Earth ? (where  $g$  is acceleration due to gravity,  $R$  is radius of Earth)
- (1)  $\sqrt{2}R$   
(2)  $4R$   
(3)  $R$   
(4)  $\frac{R}{2}$
5. Mars orbits the sun at a distance of  $2.3 \times 10^{11}$  meter. The mass of the sun is  $2 \times 10^{30}$  kg and mass of mars is  $3.4 \times 10^{23}$  kg. Approximately what is the gravitational force that the sun exerts on mars ( $G = 6.7 \times 10^{-11}$  N)
- (1)  $1.6 \times 10^{20}$  N (2)  $1.6 \times 10^{21}$  N  
(3)  $3.7 \times 10^{21}$  N (4)  $3.7 \times 10^{32}$  N

6. The diagram shows the relative strengths of the gravitational force for planets of different masses. The size of each planet represents the planet's relative mass. The arrow length indicates the relative amount of gravitational pull that each planet would exert on an astronaut in space.



The relationship between the mass of the planets ( $M$ ) and the relative strength of their gravitational pull is ( $F$ )

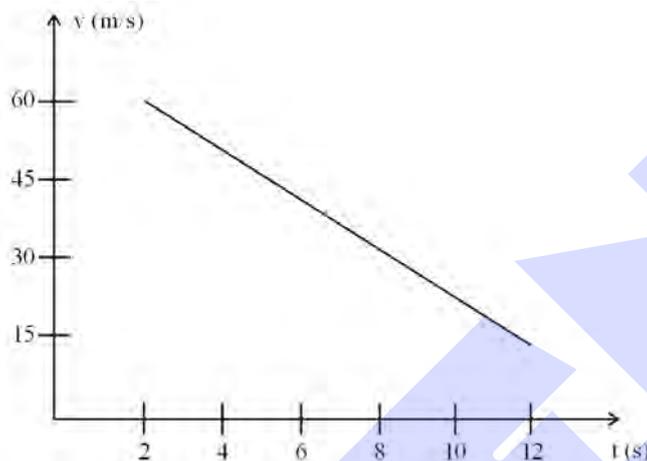
- (1)  $F \propto M$                       (2)  $F \propto \frac{1}{M}$                       (3)  $F \propto M^2$                       (4)  $F \propto \frac{1}{(M)^2}$
7. 10 N force acts on 2 kg body at rest. Neglecting all other forces on the body, we can say that the body
- (1) has an acceleration of  $5 \text{ m/s}^2$ .  
 (2) has momentum of 30 N-s after 3 seconds of force application.  
 (3) has a speed of 10 m/s after 2 seconds of force application.  
 (4) all of above options are true.
8. Two plane parallel mirrors A and B, reflect a ray of light as shown below.

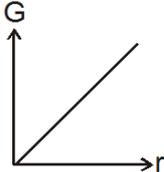
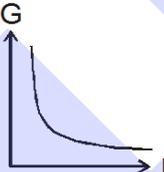
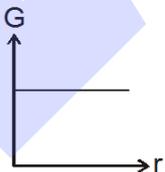
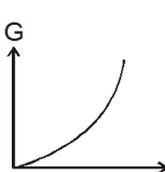


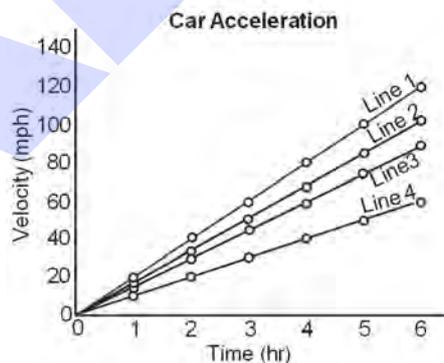
What is the angle of reflection at the point of incidence A?

- (1)  $90^\circ$                       (2)  $45^\circ$                       (3)  $30^\circ$                       (4)  $60^\circ$
9. On a  $60 \text{ cm} \times 60 \text{ cm}$  carrom board, a carrom-coin placed at the centre is hit by the striker. The coin moves to the front edge, rebounds and strikes to the mid point of the right side limb and stops. The displacement of the coin is
- (1)  $30\sqrt{2} \text{ cm}$                       (2)  $30+30\sqrt{2} \text{ cm}$                       (3)  $30 \text{ cm}$                       (4)  $60 \text{ cm}$
10. Objects on the surface of Earth experience a large downward force although the universal gravitational constant is very small. Which of the following best explains this phenomenon?
- (1) Objects on Earth's surface exert a gravitational pull as strong as Earth's, regardless of the gravitational constant.  
 (2) The universal gravitational constant only describes relationships between small objects in outer space.  
 (3) Earth's mass is large enough that its gravity remains strong even when multiplied by a small constant.  
 (4) The universal gravitational constant increases in proportion with the mass of an object.

11. How many types of tectonic plate boundaries are classified on the basis of geologic characteristics and process associated with it  
 (1) 2 (2) 3 (3) 4 (4) 5
12. What is the rate of change of velocity of the body having uniformly accelerated motion if its velocity increases by 10 m/s in 5 seconds.  
 (1) 5 m/s<sup>2</sup> (2) 2 m/s<sup>2</sup> (3) 0 m/s<sup>2</sup> (4) 10 m/s<sup>2</sup>
13. A toy car of 400 g has the given graph for its motion. The magnitude of force acting on it would be:-



- (1) 1.8 N (2) 2 N (3) 6 N (4) 3.6 N
14. According to the law of gravitation, Gravitation force  $F = \frac{Gm_1m_2}{r^2}$ .  
 Here  $m_1$  = mass of first body,  $m_2$  = mass of second body,  $r$  = separation between them  
 $G$  = universal gravitational constant. The graph between  $G$  and  $r$  is
- (1)  (2)  (3)  (4) 
15. The graph below represents the change in velocity of four cars over a period of 6 seconds. Which line represents the car with the greatest acceleration?



- (1) Line 1 (2) Line 2 (3) Line 3 (4) Line 4

**SECTION-B : CHEMISTRY**

This section contains **15 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

16. An element M has an atomic number 9 and atomic mass 19. It's ion will be represented by:  
 (1) M (2) M<sup>2+</sup> (3) M<sup>-</sup> (4) M<sup>2-</sup>

17. Sudha tested the solubility of four salts, A, B, C and D at different temperatures and collected the following data.

Salt dissolved	Temperature				
	290K	313K	323K	343K	353K
<b>Solubility (g/100g water)</b>					
A	28	32	60	84	102
B	45	48	49	54	56
C	29	32	38	43	50
D	23	36	41	52	60

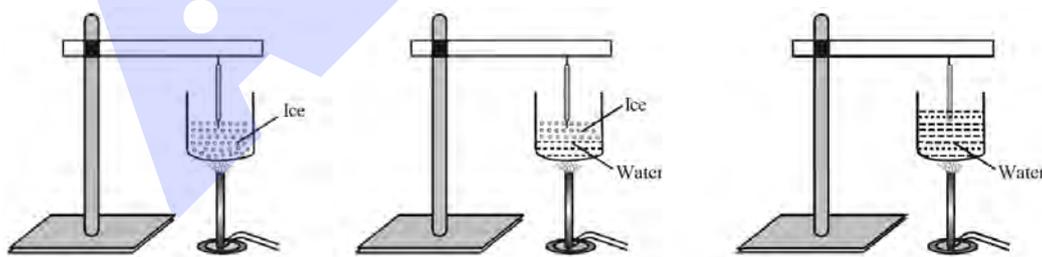
A student prepared a saturated solution of A at 323 K and then added 25 g water to it. What mass of A must be added to make the saturated solution at 323 K?

- (1) 35 g                      (2) 20 g                      (3) 25 g                      (4) 15 g
18. **Statement - 1** : Petroleum is a dark oily liquid and a mixture of various constituents.  
**Statement - 2** : The process of separating various constituents of petroleum is known as Refining.
- (1) Both statements 1 and 2 are correct and statement 2 is the correct explanation of the statement 1.  
 (2) Both statements 1 and 2 are correct and statement 2 is not the correct explanation of the statement 1.  
 (3) Statement 1 is correct, but statement 2 is incorrect.  
 (4) Statement 1 is incorrect, but statement 2 is correct.
19. Two liquids A and B have same boiling point. Liquid A is kept at sea level and B is kept at mountain top. Which of the following is correct observation on heating?
- (1) Liquid A boils at lower temperature than B  
 (2) Liquid B boils at lower temperature than A.  
 (3) Both A and B boils at same temperature.  
 (4) Can not be determined
20. Match the Column

Column-I		Column- II	
(A)	Chlorine	(p)	Thermometer
(B)	Copper	(q)	Fertilizers
(C)	Nitrogen	(r)	Water purification
(D)	Mercury	(s)	Electric wires

- (1) A-q, B-s, C-r, D-p                      (2) A-r, B-q, C-s, D-p  
 (3) A-r, B-s, C-q, D-p                      (4) A-p, B-s, C-r, D-q
21. A family consumes 12 kg of L.P.G. in 30 days. Calculate the average energy consumed per day, if the calorific value of L.P.G. is 50 KJ/Kg.
- (1) 10,000 J/day                      (2) 15000 J/day                      (3) 20,000 J/day                      (4) 25000 J/day
22. Among the following, the substance which does not have fixed set of properties is
- (1) Water                      (2) Sodium chloride                      (3) Iron                      (4) Lemonade

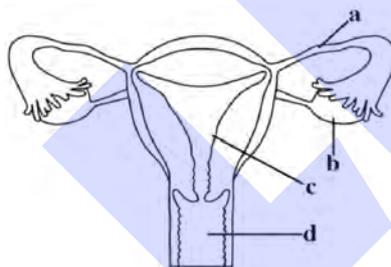
23. Choose the correct statement :
- (1) The value of latent heat of vapourization is less than the value of latent heat of fusion for  $H_2O$ .
  - (2) The substance having high specific heat takes more time to increase its temperature by  $1^\circ C$ .
  - (3) Water is used in radiators of cars because it has low specific heat.
  - (4) Latent heat of fusion for water is 540 calories/gm
24. Which of the following is true about combustion?
- (1) Combustion occurs in the presence of oxygen.
  - (2) The substances react with hydrogen in combustion.
  - (3) It produces light and heat.
  - (4) Both (1) and (3)
25. Which of the following is non-renewable source of energy?
- (1) Solar Energy
  - (2) Biogas
  - (3) Geothermal energy
  - (4) Coal
26. Which one among the following do not show sublimation ?
- (1)  $I_2(s)$
  - (2)  $CO_2(s)$
  - (3)  $CCl_4(l)$
  - (4)  $NH_4Cl (s)$
27. The substances which have very low ignition temperature will \_\_\_\_\_.
- (1) catch fire easily
  - (2) not catch fire
  - (3) catch fire after sometime
  - (4) none of these
28. From given sets of examples of colloids, choose sets where both examples are aerosols.
- (a) Smoke and fog
  - (b) Smog and froth
  - (c) Dust in air and clouds
  - (d) Soda water and whipped cream
- (1) a and c
  - (2) a, b and d
  - (3) c, b and d
  - (4) c and d
29. In an experiment to note the temperature of ice, as heat is supplied to it till it is completely converted into water, the temperature as noted by a student at the instant when complete ice just melted will be



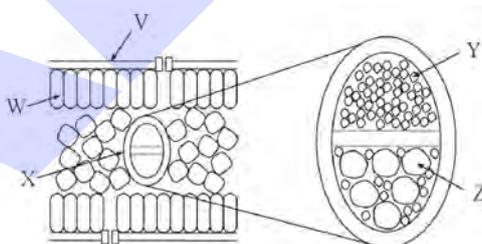
- (1)  $0^\circ C$
  - (2)  $0^\circ C$  gradually rising to  $100^\circ C$
  - (3)  $0^\circ C$  suddenly rising to  $100^\circ C$
  - (4) none of these
30. When candle burns in air, what are the products formed?
- (1)  $CO_2 + H_2O + \text{Heat}$
  - (2)  $CO_2 + H_2$
  - (3)  $CO + H_2$
  - (4)  $CO + O_2$



35. The time and frequency of irrigation varies from  
 (1) Crop to crop      (2) Soil to soil      (3) Season to season      (4) All of these
36. Which of the following statement is incorrect for cell organelle?  
 (1) Membrane biogenesis is the function of ER.  
 (2) Leucoplast is double membrane bound organelle and pigments are absent.  
 (3) Lysosome and ribosome both are single membrane bound organelles.  
 (4) Ribosome is an universal cell organelle.
37. Which of the following statement is incorrect about food preservation ?  
 (1) Sugar reduces the moisture content which inhibits the growth of bacteria which spoil food.  
 (2) Sodium benzoate and sodium metabisulphite are chemical preservatives that prevent microbial growth.  
 (3) Salting is used to preserve amla, raw mangoes, tamarind etc.  
 (4) In the process of pasteurization, milk is heated to about 70°C for 15 to 30 minutes and then suddenly chilled and stored.
38. Labelled part which provides the support for development of baby?



- (1) a      (2) b      (3) c      (4) d
39. Refer to the following diagram of a leaf cross section. The cell type W is likely to contain an abundance of which organelle?



- (1) Chloroplasts      (2) Mitochondria  
 (3) Ribosomes      (4) Smooth endoplasmic reticulum
40. Dolly sheep was genetically similar to -  
 (1) The mother from which enucleated egg cell was taken.  
 (2) Scottish blackface ewe.  
 (3) The mother from which nucleated udder cell was taken.  
 (4) Both surrogate mother and the donor mother.



**SECTION-D : MATHEMATICS**

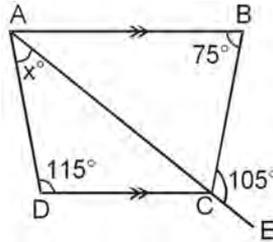
This section contains **15 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

46. If  $(x + a)(x + b)(x + c) = x^3 - 10x^2 + 45x - 15$ , then  $a^2 + b^2 + c^2$  is equal to  
 (1) 100 (2) 10 (3) 20 (4) 50
47. How many positive integers between 10 and 2016 are divisible by 3 and have all of their digits the same?  
 (1) 9 (2) 12 (3) 6 (4) 18
48. The cube root of 140608 is  
 (1) 42 (2) 152 (3) 72 (4) 52
49. The value of  $\frac{\sqrt{63} - \sqrt{45}}{\sqrt{7} - \sqrt{5}}$  is  
 (1)  $\sqrt{7} + \sqrt{5}$  (2)  $\sqrt{9}$  (3)  $\sqrt{3}$  (4) 9
50.  $(3^5 \div 3^8)^5 \times 3^{-5} = \underline{\hspace{2cm}}$ .  
 (1)  $3^{-19}$  (2)  $3^{20}$  (3)  $3^{-20}$  (4)  $\frac{1}{3}$
51. If  $x^2 + y^2 + z^2 - xy - yz - zx = 0$ , then which of the following is true?  
 (1)  $x \neq y \neq z$  (2)  $x = y = z$  (3)  $x \neq y = z$  (4)  $x = y \neq z$
52. The area of a square is  $100\frac{601}{900}$  cm<sup>2</sup>, then the length of the side of the square is  
 (1)  $10\frac{1}{30}$  cm (2)  $10\frac{7}{30}$  cm (3)  $10\frac{3}{5}$  cm (4)  $10\frac{9}{30}$  cm
53. The area of parallelogram is 91 cm<sup>2</sup> and one of its altitude is 13 cm. The length of its corresponding side is  
 (1) 13 cm (2) 5 cm (3) 6 cm (4) 7 cm
54. If  $(2x - 3)$  is a factor of  $2x^4 - x^3 - 3x^2 - 2x + a$ , then the value of 'a' is  
 (1) -3 (2) 2 (3) -2 (4) 3
55. The sides of a hexagon are produced in order, which of the following is the sum of its exterior angles?  
 (1) 540° (2) 270° (3) 360° (4) 720°
56. A grey squirrel has 65 nuts gathered in its nest, and a red squirrel has 114 nuts gathered in its nest. A wily woodpecker steals nuts from both squirrels nests. It steals  $\frac{2}{3}$  as many nuts from the nest of the grey squirrel as it steals from the nest of the red squirrel. After the woodpecker takes the nuts from both nests, the red squirrel has twice as many nuts left as the grey squirrel has. How many nuts does the grey squirrel is left with?  
 (1) 33 (2) 36 (3) 48 (4) 30

57. The Monday after Thanksgiving is now called "Cyber Monday" and is the busiest online shopping day of the year. On Cyber Monday 2004, credit card users for one company spent  $\frac{4}{5}$  of the amount of money they spent on Cyber Monday in 2005. What percent more money was spent in 2005?

- (1) 30%                      (2) 25%                      (3) 20%                      (4) 35%

58. In the diagram, AB is parallel to DC and ACE is a straight line. The value of  $x^\circ$  is



- (1) 35°                      (2) 30°                      (3) 40°                      (4) 45°

59. If the perimeter of a semi-circular protractor is 72 m, find the radius of protractor.  $\left(\pi = \frac{22}{7}\right)$

- (1) 15 m                      (2) 14 m                      (3) 16 m                      (4) None of these

60. Seema types 270 words in half an hour. How many words would she type in 5 minutes?

- (1) 36                      (2) 45                      (3) 40                      (4) 50

**SECTION-E : MENTAL ABILITY**

This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

61. A man starts from his house and walks 10 km in South direction, then he turns right and goes 6 km, again he turns right and goes 10 km and finally turns right and goes 6 km. At what distance is he from the starting point and in which direction ?

- (1) 2 km, North                      (2) 3 km, South  
(3) At the starting point                      (4) 4 km, East

62. If 'YAASPYAW' stands for 'ACCURACY', how will you write 'QSAACQQ'?

- (1) TOMORROW                      (2) REASONS                      (3) SUCCESS                      (4) IAGRAM

63. In the following number series how many 8's are there which are exactly divisible by the numbers which are preceded and followed by it ?

**8 2 4 5 1 7 2 8 4 8 4 2 2 8 2 6 9 8 4 5 4 8 3 2 8 4 3 1 8 3**

- (1) 1                      (2) 2                      (3) 3                      (4) 4

64. A dice is numbered from 1 to 6 in different ways. If 1 is opposite to 5 and 2 is opposite to 3, then

- (1) 4 is adjacent to 3 and 6                      (2) 2 is adjacent to 4 and 6  
(3) 4 is adjacent to 5 and 6                      (4) 6 is adjacent to 3 and 4

65. If 'BARS' = 10 and 'BEERT' = 10, 'DEEZ' will be ?  
 (1) 15                                      (2) 12                                      (3) 14                                      (4) 10

66. Find out the alternative figure which contains figure (X) as its part.



(X)



67. In the give question, three sequences of letters/ numbers are given which correspond to each other in some way. In each question, you have to find out the letters/numbers that come in the vacant places marked by (?). These are given as one of the four alternatives under the question. Mark your answer as instructed.

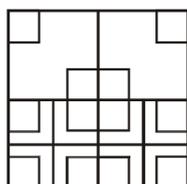
—	A	C	—	B	D	—	C	D	C	D
2	—	4	1	—	1	4	—	—	—	—
c	d	—	b	c	—	a	?	?	?	?

- (1) a, b, a, b                                      (2) a, c, a, c,                                      (3) c, b, c, b                                      (4) c, d, c, d
68. When the following figure is folded to form a cube, how many dots would lie opposite to the face bearing five dots ?



- (1) 1                                      (2) 2                                      (3) 3                                      (4) 4
69. Saurav starts from a definite point and moves towards East travelling a distance of 2 m. Then he turns to right and travels 5 m. From here he turns to right and travels 8 m. Finally he turns to right and moves 13 m. How far is he now from his starting point?  
 (1) 8 m                                      (2) 26 m                                      (3) 14 m                                      (4) 10 m

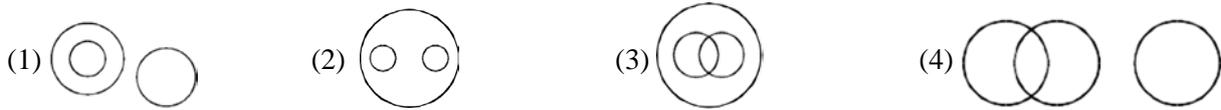
70. How many squares are there in the given figure?



- (1) 24                                      (2) 20                                      (3) 27                                      (4) 34
71. If  $a * b = a + b^2$  and  $a \# b = a^2 + b$ , then what is the value of  $(4 * 3) - (4 \# 3)$  ?  
 (1) 6                                      (2) 8                                      (3) -6                                      (4) -4

72. Choose the Venn diagram which best illustrates the three given classes in the question.

Atmosphere, Hydrogen, Oxygen



73. Find the missing term.

B	H	J
K	F	Q

T	A	U
G	H	O

L	N	Z
R	C	?

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

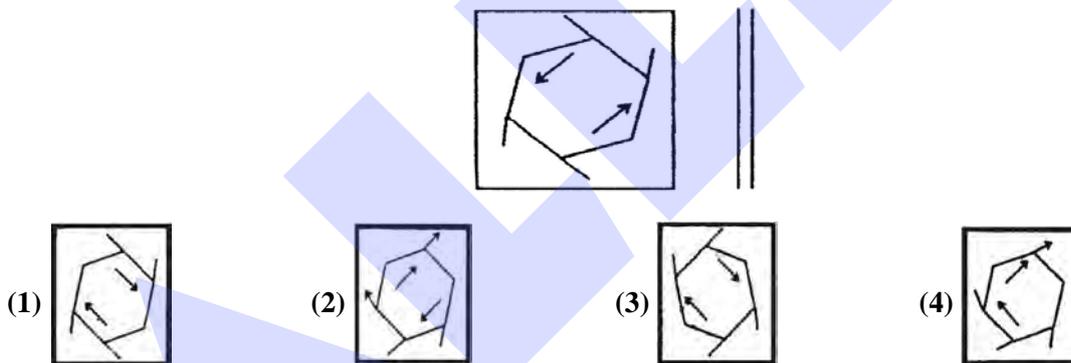
74. According to the given information answer the following question.

- (i) Ankit and Bobby are brothers                                      (ii) Chandni is sister of Ankit  
(iii) Deepak is brother of Esha                                      (iv) Esha is daughter of Bobby

Who is the uncle of Deepak?

- (1) Ankit                                      (2) Bobby                                      (3) Esha                                      (4) None of these

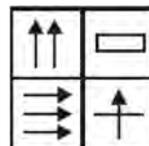
75. There is a figure to the left of the vertical parallel lines. Examine the figures given in the alternatives and find the one which is the exact mirror image of the figure given to the left the vertical lines.



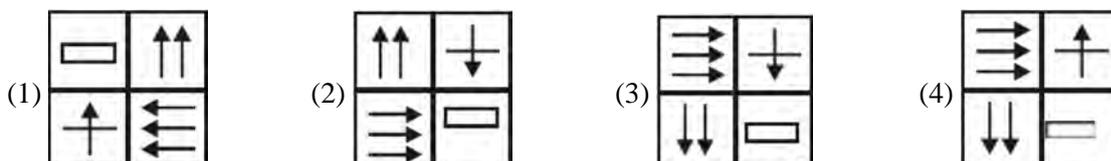
76. Find the next number in the given series. 4, 10, 23, 50, 105, ?

- (1) 215                                      (2) 210                                      (3) 216                                      (4) 439

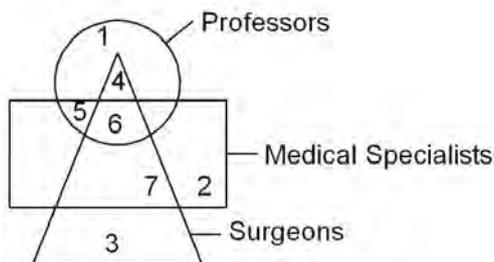
77. Choose the correct water image of the question figure, from the given answer figures.



(X)

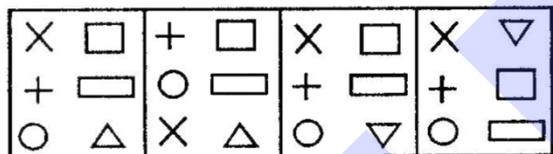
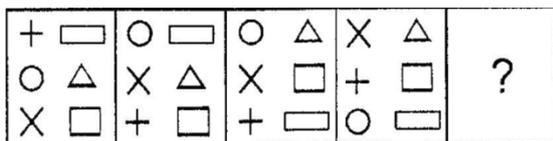


78. Study the following diagram and then answer the given question. Write only the number.



Which number indicates Professors who are Medical Specialists ?

- (1) 12                      (2) 9                      (3) 10                      (4) 11
79. Sarita is the wife of the grandson of Somesh's mother. How is Somesh related to Sarita?  
 (1) Grandmother              (2) Father              (3) Father-in-law              (4) Husband
80. The figures in the following question follow a series. Select the figure from the given alternatives which would continue the series.



- (1)              (2)              (3)              (4)

ANSWER KEY															
Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	3	2	2	3	2	1	4	2	3	3	2	2	1	3	1
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	3	4	2	2	3	3	4	2	4	4	3	1	1	1	1
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	1	2	2	2	4	3	4	3	1	3	1	1	4	3	4
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	2	2	4	2	3	2	1	4	4	3	1	2	1	2	2
Que.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	3	3	4	2	4	2	1	3	4	3	3	2	1	1	3
Que.	76	77	78	79	80										
Ans.	3	3	4	3	1										