

A Specially Designed Initiative  
to Encourage Young Talent by



TALLENTEX 2018 : (08, October 2017)

PAPER CODE

K

**TALLENTEX**

ALLEN'S Talent Encouragement Exam

2018

**CLASS - 8<sup>th</sup> (VIII)**

**Duration: 2 Hrs. | Maximum Marks : 320**

Answer Sheet No.

T

6

Tallentex Roll No.

6

**Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.**

**Things NOT ALLOWED in EXAM HALL :** Blank Paper, clipboard, log table, slide rule, calculator, camera, mobile and any electronic or electrical gadget. If you are carrying any of these, then keep them at a place specified by invigilator at your own responsibility.

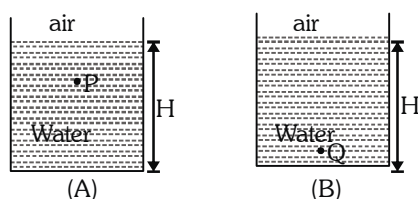
## INSTRUCTIONS

1. This Booklet is your Question Paper. DO NOT break seal of Booklet until the invigilator instructs to do so.
2. Fill your TALLENTEx Roll No. & Answer Sheet No. in the space provided on the cover page.
3. Carefully fill your **PAPER CODE** and present **CLASS** in space provided (**Serial No. 6 & 12**) of optical response sheet.
4. Please make sure that paper you received is of your class only.
5. Please make sure that the **Paper Code** Printed on the **Test Booklet Cover Page** and **Inner Pages** are the same. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of Test Booklet.
6. The Answer Sheet is provided to you separately which is a machine readable Optical Response Sheet (ORS). You have to mark your answers in the ORS by darkening bubble, as per your answer choice, by using black or blue ball point pen.
7. After breaking the Question Paper seal, check there are **12 pages** in the booklet. This Question Paper contains 80 MCQs with 4 choices (Subjects: Physics: 15, Chemistry: 15, Biology: 15, Maths: 15 & Mental ability: 20).
8. Think wisely before darkening bubble as **there is negative marking for wrong answer**. Answer once marked by pen cannot be cancelled.
9. Marking Scheme:
  - a. If darkened bubble is RIGHT answer : 4 Marks.
  - b. If darkened bubble is WRONG answer : -1 Mark (Minus One Mark).
  - c. If no bubble is darkened in any question: No Mark.
10. If you are found involved in cheating or disturbing others, then your ORS will be cancelled.
11. Do not put any stain on ORS and hand it over back properly to the invigilator.
12. You can take along the question paper after the test is over.

## 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.

- A force of 20 N is applied to an object of area 50 m<sup>2</sup>, then the pressure will be  
(1) 0.10 Pa (2) 0.20 Pa (3) 0.30 Pa (4) 0.40 Pa
- The size of pupil is controlled by-  
(1) Cornea (2) Retina (3) Lens (4) Iris
- For containers A and B, which is true ?



- Pressure at P is greater than pressure at Q
- Pressure at Q is greater than pressure at P
- Pressure at P is equal to pressure at Q.
- None of these
- When a ray of light enters from one medium to another medium of same refractive index, then  
(1) Velocity of ray will change  
(2) The ray will bend from its initial direction of motion  
(3) The ray will reflect from the surface of medium and follow laws of reflection  
(4) The ray will continue to move in the same direction.
- If the temperature change in a body is 1K, then corresponding change on Celsius scale is  
(1) 1.2 °C (2) 273 °C (3) 27.315 °C (4) 1 °C
- The diagrams below represent different ways of heat transfer. The arrows in the diagrams show the direction of heat transfer.

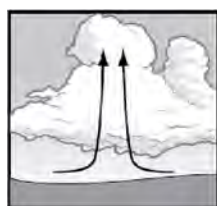


Diagram X



Diagram Y

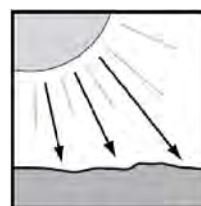


Diagram Z

Which table shows the primary way heat is transferred in each diagram?

(1)

Diagram	How Heat Is Transferred
X	conduction
Y	convection
Z	radiation

(2)

Diagram	How Heat Is Transferred
X	convection
Y	radiation
Z	conduction

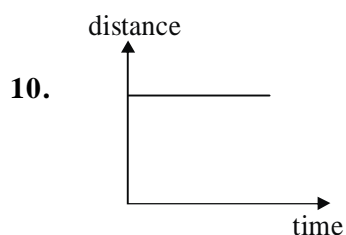
(3)

Diagram	How Heat Is Transferred
X	convection
Y	conduction
Z	radiation

(4)

Diagram	How Heat Is Transferred
X	radiation
Y	conduction
Z	convection

7. If a tuning fork vibrates in a manner such that it makes 625 vibrations in 25 seconds. Then find the frequency of sound?  
(1) 30 Hz (2) 20 Hz (3) 35 Hz (4) 25 Hz
8. In which of the following medium, the speed of sound will be maximum?  
(1) Graphite (2) Sea water  
(3) Air (4) Vacuum
9. **Statement (A)** : Radius of curvature of the plane mirror is infinity.  
**Statement (B)** : Image formed by a plane mirror is erect and same size of an object.  
(1) Both A and B are true (2) Both A and B are false  
(3) A is true and B is false (4) A is false and B is true



The following distance-time graph shows:

- (1) Object has constant speed (2) Object has increasing speed  
(3) Object has decreasing speed (4) Object is at rest
11. A fuse is rated '10 A', then it means :  
(1) It would start working when current exceeds 10 A  
(2) It would blow if current exceeds 10 A  
(3) It would start working when current exceeds 20 A  
(4) It would blow if current exceeds 20 A
12. The rate of flow of charge in a circuit is called  
(1) Electric potential (2) Electric current  
(3) Electric charge (4) All of these
13. A car has speed of 20 m/s. It moves for 2 hours. Find the distance covered.  
(1) 144 km (2) 40 km  
(3) 40 m (4) 144 m
14. Which of the following best describes the velocity of an object?  
(1) 30 m/s (2) 30 m east  
(3) 30 m/s east (4) 30 m/s<sup>2</sup>
15. The necessary requirement for a fuse wire is  
(1) conductor with low melting point (2) conductor with high melting point  
(3) insulator with low melting point (4) insulator with high melting point

## 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. Which of the following salt is used in fire extinguisher?
  - (1) Sodium carbonate
  - (2) Calcium carbonate
  - (3) Sodium bi carbonate
  - (4) None of these
17. A salt is formed by
  - (1) The reaction between metal (Zn, Mg etc) and acid
  - (2) The reaction between an acid and a base
  - (3) The reaction between an acidic oxide and a basic oxide
  - (4) All of the above
18. Cross linking is present in
  - (1) Thermoplastics
  - (2) Thermosetting plastics
  - (3) Natural fibres
  - (4) None of these
19. An element X does not react with dilute sulphuric acid. If it forms an oxide  $\text{XO}_2$ , which turns moist blue litmus into red, what would we call X
  - (1) A metal
  - (2) A non metal
  - (3) A metalloid
  - (4) Noble gases
20. Making cloth from yarn represents which type of change?
  - (1) Chemical change
  - (2) Physical change
  - (3) Both (1) & (2)
  - (4) None of the above
21. Impurities in water
  - (1) Lower the freezing point
  - (2) Increase the boiling point
  - (3) Both of these
  - (4) None of these
22. Which of the following represents a physical change ?
  - (1) Conversion of sulphur to sulphur dioxide
  - (2) Conversion of rhombic sulphur to monoclinic sulphur
  - (3) Combustion of methane
  - (4) Digestion of food
23. Choose the correct option :
 

Column A	Column B
(i) An allotrope of carbon which has lusture	(a) Mercury
(ii) A metal which is in liquid state at room temperature	(b) Carbon fibre
(iii) An allotrope of carbon which is as tensile as steel	(c) Tungsten
(iv) A metal which is a conductor of electricity	(d) Graphite
(1) i-(b), ii-(a), iii-(d), iv-(c)	(2) i-(d), ii-(c), iii-(a), iv-(b)
(3) i-(c), ii-(a), iii-(d), iv-(c)	(4) i-(d), ii-(a), iii-(b), iv-(c)

24. X was a thread of filament from which Y is made. If prepared from plants and animals, it is known as Z where as by humans it is known as W fibres. Synthetic fibres are nylon, rayon, polyester, acrylic etc.,  
What would be **X**, **Y**, **Z** and **W** respectively?
- (1) Wool, pen, plant fibre, synthetic  
(2) Fibre, cloth, natural fibre, synthetic  
(3) Suits, book, animal fibre, artificial  
(4) Socks, paper, artifical fibre, synthetic
25. An aqueous solution turns red litmus solution blue. Addition of excess of which of the following solution would reverse the change?
- (1) Baking Powder (2) Lime Water  
(3) Ammonium Hydroxide Solution (4) Hydrochloric Acid
26. In an experiment following fibres are put in water. Cotton, nylon and polyester. Then identify the correct statement among the following :
- (1) Cotton absorbs maximum amount of water.  
(2) Nylon absorbs maximum amount of water.  
(3) Polyester absorbs maximum amount of water.  
(4) All the three fibres absorb same amount of water.
27. Water is a \_\_\_\_\_ resource.
- (1) renewable, exhaustible (2) renewable, non-exhaustible  
(3) non-renewable, recyclable (4) non-renewable, non-recyclable
28. Which of the following is true ?
- (1) Plastics are not polymers.  
(2) Weaving and knitting are two processes to get plastics.  
(3) Plastics get corroded easily.  
(4) Cellulose is made up of glucose units.
29. When a compound A is heated, a gas B is evolved which turns lime water milky. Compound A is used in the manufacture of glass. Gas B has a property of extinguishing fire and it does not support animal life. The compound A and B are respectively.
- (1)  $\text{NaHCO}_3$  and CO (2)  $\text{CaCO}_3$  and CO  
(3)  $\text{Na}_2\text{SO}_3$  and  $\text{SO}_2$  (4)  $\text{NaHCO}_3$  and  $\text{CO}_2$
30. Which of these will cause a chemical change to occur?
- (1) Grinding of wheat into flour (2) Lighting of a gas stove  
(3) Evaporation of water from a lake (4) Ringing of an electric bell

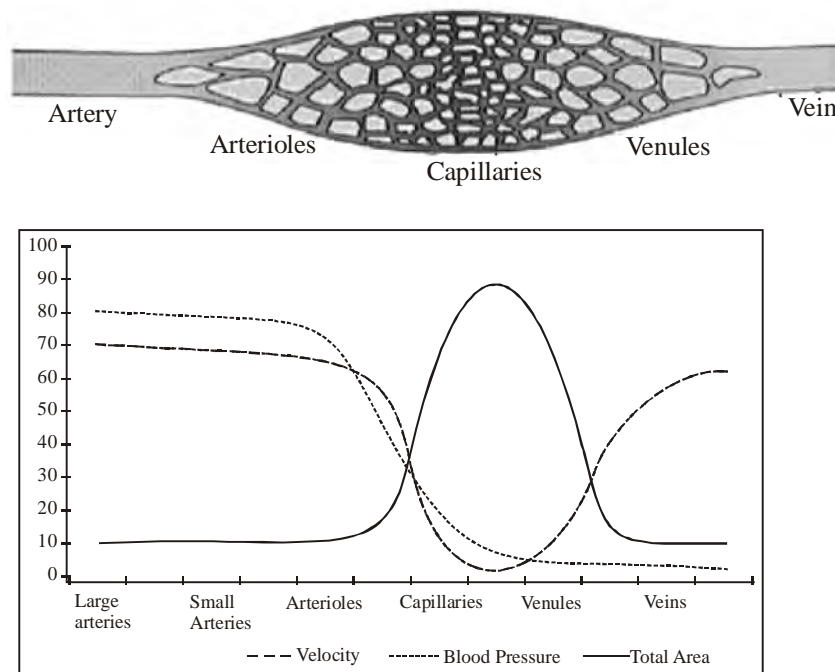
**SECTION-C : BIOLOGY**

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

31. Haemoglobin contains  
(1) Iron (2) Calcium (3) Nitrogen (4) Phosphorus
32. The fluid part of blood is called  
(1) RBC (2) WBC (3) Plasma (4) Platelets
33. Forests control drought by  
(1) Preventing soil erosion (2) Increasing oxygen  
(3) Increasing humidity and rainfall (4) Preventing floods
34. Tropical rain forests have the greatest biodiversity of any type of land ecosystem. How does biodiversity contribute to the sustainability of an ecosystem?  
(1) The presence of more species with different adaptations makes it more likely that some organisms will survive an ecological disaster.  
(2) Greater genetic variation within species makes it more likely that some individuals will survive a disease outbreak.  
(3) The presence of a variety of herbivore species that can feed on a large number of different producer species helps ensure abundant prey for predators in the ecosystem.  
(4) All of the above
35. Which of the following shows anaerobic respiration in human beings?  
(1) Mature RBC (2) Skeletal muscles during heavy exercise  
(3) WBC (4) Both (1) and (2) are correct
36. An athlete's muscle becomes tired after vigorous exercise. Which of the following chemicals increases in quantity in the muscle?  
(1) Glucose (2) Oxygen  
(3) Lactic acid (4) None of these
37. Human activities have many effects on food chains and food webs. Indigenous people try to reduce the negative effects of agricultural practices on ecosystems by using a technique called intercropping (planting many different kinds of crops in the same field at the same time). The most useful reason for planting beans and peas in the field is that they ...  
(1) are harvested before other crops and used as a food source.  
(2) enrich the soil with nitrogen.  
(3) are tall and protect other plants from strong winds.  
(4) provide support for climbing crops.
38. Which of the following should come in the missing step "X" in the given sequence?  
Ploughing → Levelling → X → Sowing seeds → Irrigation  
(1) Broadcasting (2) Transplantation  
(3) Manuring (4) Drilling



39. Blood is transported in the human body through 3 types of blood vessels : Arteries, Veins and Capillaries. The drawing below shows an artery entering an organ, breaking up into smaller arterioles before forming a network of fine capillaries. These capillaries rejoin to form venules that leave the organ as larger veins. The graph shows the velocity of blood, blood pressure and surface area of the blood vessels.



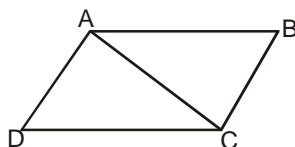
According to the information depicted in the drawing and graph above:

- (1) Even though capillaries are the narrowest they have the largest surface area
  - (2) Blood flows the fastest in veins
  - (3) Blood pressure in arteries is the lowest
  - (4) Blood flows the slowest when it is under high pressure
40. Rhizobium (a bacterium) which helps in nitrogen fixation is present in
- (1) Nodules in legume roots
  - (2) Nodules in stem
  - (3) Nodules in leaves
  - (4) All of the above
41. What will happen if animal cell is placed in pure water?
- (1) It will remain as such
  - (2) It will burst due to absence of cell wall
  - (3) It will shrink
  - (4) It will first swell than shrink
42. Which of the following parts of a plant cell has a function that is most similar to the function of an animal skeleton?
- (1) Cell membrane
  - (2) Cell wall
  - (3) Chloroplast
  - (4) Nucleus
43. Which of the following clues would tell you whether a cell is prokaryotic or eukaryotic?
- (1) The presence or absence of a rigid cell wall.
  - (2) Whether or not the cell is partitioned by internal membrane system.
  - (3) The presence or absence of ribosomes.
  - (4) Whether or not the cell contains DNA.
44. Atmospheric percentage of nitrogen is maintained by
- (1) Lactobacillus
  - (2) Nitrobacter
  - (3) Nitrosomonas
  - (4) Pseudomonas
45. Which of the following is an air pollution indicator ?
- (1) Fungi
  - (2) Red algae
  - (3) Lichens
  - (4) Brown algae

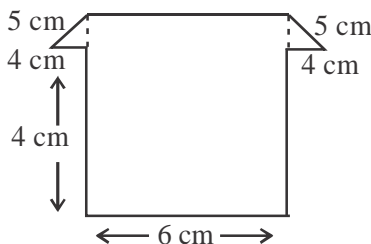
**SECTION-D : MATHEMATICS**

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

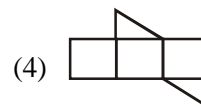
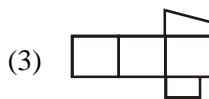
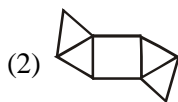
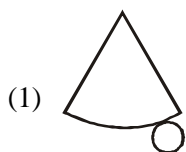
46. What must be subtracted from  $-10$  to get  $+63$  ?  
 (1)  $+73$  (2)  $-73$  (3)  $53$  (4)  $-53$
47. A flask weighs  $64.27$  g when empty and  $150.35$  g when full of water. Find its weight when it is  $0.75$  times full of water.  
 (1)  $128.83$  g (2)  $120$  g (3)  $150$  g (4)  $73.3$  g
48. In the given figure,  $AB = DC$  and  $BC = AD$ . Find the congruent pair of triangles and the property used.



- (1)  $\triangle ABC \cong \triangle CDA$ , SSS (2)  $\triangle ABC \cong \triangle CDA$ , SAS  
 (3)  $\triangle ABC \cong \triangle CAD$ , SSS (4)  $\triangle ABC \cong \triangle DCA$ , SSS
49. For construction of rhombus, the minimum number of dimensions/sides required are  
 (1) one (2) two (3) three (4) four
50. The area enclosed by the following figure is



- (1)  $48 \text{ cm}^2$  (2)  $92 \text{ cm}^2$  (3)  $68 \text{ cm}^2$  (4)  $54 \text{ cm}^2$
51. Which of following is net pattern of solid



52. The difference between the largest and the smallest of the fractions  $\frac{5}{8}, \frac{7}{12}, \frac{1}{3}, \frac{2}{5}$  is  
 (1)  $\frac{1}{4}$  (2)  $\frac{5}{24}$  (3)  $\frac{7}{24}$  (4)  $\frac{13}{21}$

53. Find value of  $x$ :  $\frac{3+x}{9} + \frac{7-3x}{2} = \frac{15+2x}{3}$

- (1)  $\frac{21}{37}$  (2)  $-\frac{21}{37}$  (3)  $\frac{159}{37}$  (4) none of these



54. The diagonal do not necessarily intersect at right angles in a  
(1) Parallelogram (2) Square (3) Rhombus (4) Kite
55. The value of  $\sqrt{1\frac{9}{16}}$  is  
(1)  $\frac{2}{3}$  (2)  $\frac{2}{5}$  (3)  $1\frac{1}{4}$  (4)  $\frac{3}{4}$
56. The value of :  $\sqrt[3]{243} \times \sqrt[3]{375} - \sqrt[3]{24} \times \sqrt[3]{9}$  is \_\_\_\_\_.  
(1) 37 (2) 39 (3) 41 (4) 43
57. Which of the following represents the value of  $x - y$  if  $2^{-x} = \frac{1}{16} \times \frac{1}{1024} \times \frac{1}{2^{3+y}}$ .  
(1) 120 (2) 16 (3) 17 (4) 22
58. Rajiv gave an examination in five subjects, where paper for each subject was of 100 marks. His marks in these subjects were in the ratio 6 : 8 : 10 : 12 : 14. In all subjects together he obtained 70% of the total marks. Find in how many subjects he got more than 65% marks?  
(1) 5 (2) 4 (3) 3 (4) 2
59. The length and breadth of a rectangular field are 120 m and 75 m respectively, then the cost of turfing it at Rs.15/m<sup>2</sup> is  
(1) Rs.390000 (2) Rs.135000 (3) Rs.156000 (4) Rs.225000
60. Evaluate :  $\frac{21}{37} \times \frac{45}{73} + \frac{28}{37} \times \frac{21}{73} + \frac{16}{37}$   
(1)  $\frac{1}{2}$  (2)  $\frac{36}{37}$  (3)  $\frac{71}{73}$  (4) 1

### SECTION-E : MENTAL ABILITY

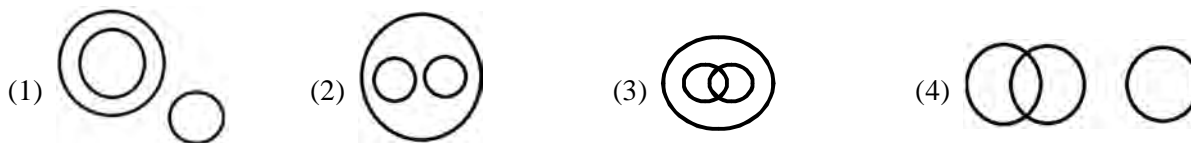
This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

61. If the animals who can walk are called 'swimmers', animals who can crawl are called 'flying', those living in water are called 'snakes' and those who can fly in the sky are called 'hunters', then what will a lizard be called?  
(1) Swimmers (2) Snakes (3) Flying (4) Hunters
62. How many 7's immediately preceded by 6 but not immediately followed by 4 are there in the following sequence?  
7 4 2 7 6 4 3 6 7 5 3 5 7 8 4 3 7 6 7 2 4 0 6 7 4 3  
(1) One (2) Two (3) Four (4) Six
63. Find the missing number assuming that the numbers in each set follow a similar pattern

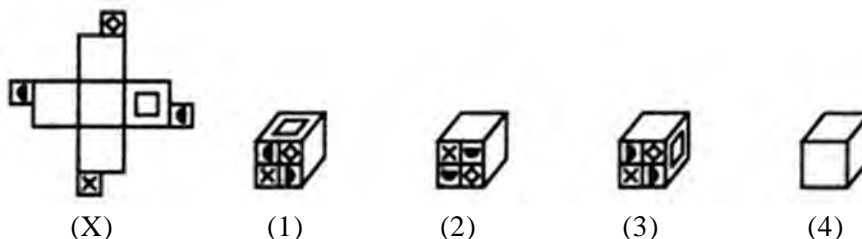
372	580	918
235	405	735
274	350	?

- (1) 432 (2) 366 (3) 345 (4) 482

64. Choose the Venn diagram which best illustrates the relationship among three given classes. Science, Physics, Chemistry



65. Choose the box that is similar to the box formed from the given sheet of paper (X).



- (1) 1, 2 and 3 only      (2) 2 and 3 only      (3) 1, 3 and 4 only      (4) 2, 3 and 4 only

66. In a cricket team, Dhoni is taller than Virat but not as tall as Raina, Rohit is shorter than Dhoni but taller than Shikhar. Who among them is the shortest ?

- (1) Dhoni      (2) Virat  
(3) Shikhar      (4) Cannot be determined

67. Pointing towards a photograph, Ram said, "She is the mother of my brother's son's wife's sister". How is the lady in the photograph related to Ram's brother ?

- (1) Sister      (2) Daughter-in-law      (3) Daughter      (4) None of these

68. Find the correct group of signs to solve the equation.

$$24 * 16 * 8 * 32$$

- (1)  $\div - =$       (2)  $- + =$       (3)  $\times \div =$       (4)  $+ - =$

69. Radha moves towards South-East a distance of 7 m, then she moves towards West and travels a distance of 14 m. From here, she moves towards North-West a distance of 7 m and finally she moves a distance of 4 m towards East and stood at that point. How far is the starting point from where she stood ?

- (1) 3 m      (2) 4 m      (3) 10 m      (4) 11 m

70. In the question given below, a group of letters followed by four combinations of digits/symbols. You have to find out which of the combinations correctly represents the group of letters based on the following coding system and the conditions that follow and mark your answer accordingly.

Letter	M	J	R	A	D	B	W	Z	P	E	I	H	G	U	K
Digits/Symbolcode	8	4	@	9	C	1	2	\$	3	#	5	6	%	7	*

**Conditions :**

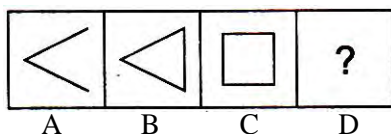
- (i) If both first and last letters are vowels, their codes are to be interchanged.  
(ii) If the first letter is a consonant and the last letter is a vowel, both are to be coded as the code for the vowel.  
(iii) If the first letter is a vowel and the last letter is a consonant, both are to be coded as the code for the consonant.

Find the code for 'IBHJRE'.

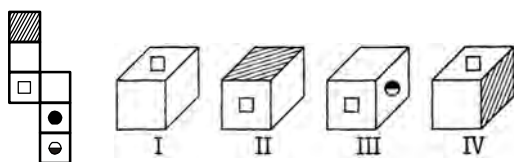
- (1) #614@5      (2) 5164@%      (3) %164@#      (4) #164@5

71. A person starts towards South direction. Which of the following orders of directions will lead him to East direction?
- (1) Right, Right, Right (2) Left, Left, Left  
(3) Left, Right, Right (4) Right, Left, Right
72. In the following question, a set of four figures marked A, B, C and D forming a figure series is given, out of which the last one i.e., Fig. (D) is missing. Identify from the four answer figures, marked (1), (2), (3) and (4), the one which would replace the question mark (?) in Fig. (D), so as to continue the series.

**Question Figure**



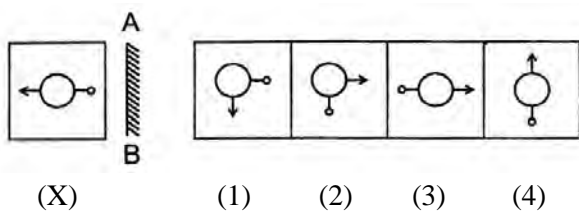
73. In the following question, an unfolded dice is given in the left side while in the right side four answer choices are given in the form of complete dices. You are required to select the correct answer choice(s) which is/are formed by folding the unfolded dice.



- (1) I and II (2) I and IV (3) II and III (4) I and III
74. A man said to Renu, "Your mother's husband's sister is my aunt." How is Renu related to the man?
- (1) Daughter (2) Grand daughter  
(3) Mother (4) Cousin
75. In the following question, you are given a fig. (X) followed by four alternative figures (1), (2), (3) and (4) such that fig. (X) is embedded in one of them. Trace out the alternative figure which contains fig. (X) as its part.



76. In the following question, four alternatives are given which follow a figure (X). You have to select one alternative which exactly matches with the mirror image of the figure in the question.



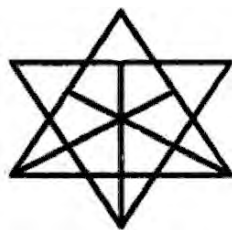
77. Complete the series: 1, 3, 10, 21, 64, 129, ?, 777

(1) 356 (2) 259 (3) 388 (4) 144

78. Which of the following represents water image of TRIANGLE?

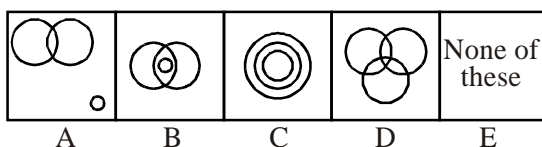
(1) ʎɹɹɹɹɹɹɹɹɹɹɹɹ (2) ʎɹɹɹɹɹɹɹɹɹɹɹɹ  
(3) ʎɹɹɹɹɹɹɹɹɹɹɹɹ (4) none of these

79. Find the number of triangles in the given figure.



(1) 21 (2) 23 (3) 25 (4) 27

80. Each of the questions given below has three items having certain relationship among them. The same relationship is expressed by sets of circles, each circle representing one item irrespective of its size. Match the items with right set of circles.



Rings, Ornaments, Diamond rings

(1) C (2) B (3) A (4) D

**SPACE FOR ROUGH WORK**

ANSWER KEY : 08-10-2017						CLASS – VIII					CODE : K				
Q.No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	4	4	2	4	4	3	4	1	1	4	2	2	1	3	1
Q.No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	3	4	2	2	2	3	2	4	2	4	1	2	4	4	2
Q.No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	1	3	3	4	4	3	2	3	1	1	2	2	2	4	3
Q.No.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	2	1	1	2	4	2	3	2	1	3	2	3	3	2	4
Q.No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	3	2	2	2	4	4	4	4	3	4	1	2	4	4	2
Q.No.	76	77	78	79	80										
Ans.	3	3	1	4	1										