

A Specially Designed Initiative
to Encourage Young Talent by



TALLENTEX 2018 : (15, October 2017)

PAPER CODE

M

TALLENTEX

ALLEN'S Talent Encouragement Exam

2018

CLASS - 8th (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.

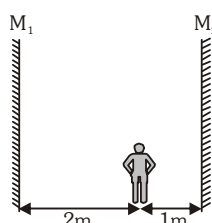
INSTRUCTIONS

1. This Booklet is your Question Paper. DO NOT break seal of Booklet until the invigilator instructs to do so.
2. Fill your TALLENTX 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

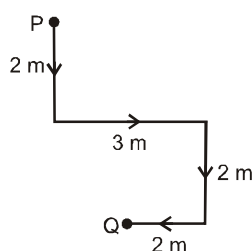
This section contains **15 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

- Three confused sleigh dogs are trying to pull a sled across the Alaskan snow. Alutia pulls east with a force of 35 N, Seward also pulls east but with a force of 42 N, and big Kodiak pulls west with a force of 53 N. What is the net force on the sled?
(1) 77 N (2) 24 N (3) 0 N (4) 13 N
- Which among the following statements is wrong?
(i) Objects that emit their own light are called luminous objects.
(ii) The image of the object is always formed at the retina of the eye.
(iii) Image formed in a plane mirror is upright.
(iv) The angle of incidence is always greater than the angle of reflection.
(1) option (i) is wrong (2) option (ii) is wrong
(3) option (iii) is wrong (4) option (iv) is wrong
- In tug of war game, persons pull a rope on either side. The nature of force present in the rope is—
(1) Gravitational force (2) Electromagnetic force
(3) Tension (4) Normal force
- Two mirrors labelled M_1 for left mirror and M_2 for right mirror in the figure are parallel to each other and 3 m apart. A person standing 1 m from the right mirror (M_2) looks into this mirror and sees a series of images. The first image of person formed in mirror M_1 is I_1 and that formed in mirror M_2 is I_2 . The distance between I_1 and I_2 is—

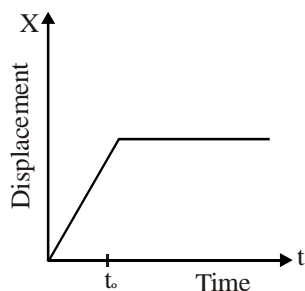


- (1) 2 m (2) 4 m (3) 6 m (4) 8 m
- Freezing point on a thermometer is marked as 20° and boiling point as 150° . A temperature of 60° C on this thermometer will be read as—
(1) 25° (2) 65° (3) 98° (4) 110°
- Which of the following is true?
(1) $\frac{C-0}{100} = \frac{F-0}{180} = \frac{K-273}{100}$ (2) $\frac{C-0}{25} = \frac{F-32}{9} = \frac{K-273}{5}$
(3) $\frac{C-0}{100-0} = \frac{F-32}{212-32} = \frac{K-273}{373-273}$ (4) $\frac{C-100}{30} = \frac{F-32}{180} = \frac{K-273}{100}$
- A source is producing 1500 sound waves in 3 seconds if the wavelength of sound waves is 68 cm, then the velocity of the sound waves will be
(1) 306 m/s (2) 306 cm/s (3) 340 m/s (4) 316 m/s

8. Pitch of the sound depends on
 (1) Amplitude of sound (2) Frequency of sound
 (3) Loudness of sound (4) Speed of sound.
9. Which of these are characteristics of diffused reflection?
 P : Reflected rays go in one direction
 Q : Reflected rays are not parallel to each other
 R : It is caused by irregularities of the reflecting surface
 (1) P and Q (2) Q and R (3) only P (4) only Q
10. A body moves from P to Q according to the path given in the following figure. What will be the distance and displacement ?



- (1) 8 m, $\sqrt{11}$ m (2) 9 m, $\sqrt{17}$ m (3) 8 m, 5 m (4) 8 m, $\sqrt{13}$ m
11. Five balls, numbered 1 to 5, are suspended using separate threads. Pairs (1,2), (2,4) and (4,1) show electrostatic attraction while pairs (2,3) and (4,5) show repulsion. Therefore, ball 1 must be:
 (1) positive (2) negative (3) neutral (4) none of these
12. Electricians wear rubber hand gloves while working with electricity because rubber is
 (1) Conductor (2) Insulator (3) Resistor (4) All of these
13. Figure shows the displacement time graph of a particle moving on the X-axis:



- (1) the particle is continuously going in positive X direction
 (2) the particle is at rest
 (3) the velocity increases up to a time t_0 , and then becomes constant.
 (4) the particle moves at a constant velocity up to time t_0 and then stops.
14. A boy walking round a circular track with constant speed 0.5 km/min is performing :
 (1) Uniform motion (2) Nonuniform motion
 (3) Can not say (4) None of these
15. A switch is used to turn an appliance on and off. Which is the safest position for the switch?
 (1) On the live wire (2) on the neutral wire
 (3) on the heating element (4) on the earth wire

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. Ramesh was suffering from a problem of acidity after overeating. Neha suggested him baking soda solution as a remedy. Which property did she think of while choosing the remedy?
- Ability of acids and basic aqueous solution to neutralise each other's effect.
 - Acids are sour and bases are bitter in taste.
 - Acids turn blue litmus red and bases turn red litmus blue.
 - All of these
17. Which acid is used to remove deposits formed inside boilers in various industries?
- Potassium hydroxide
 - Hydrochloric acid
 - Aq. solution of NaCl
 - Carbonic acid
18. Which is known as artificial silk ?
- Rayon
 - Nylon
 - Orlon
 - Polyester
19. The non-metal which is used during mountain - climbing expeditions to help in respiration at high elevations is:
- Hydrogen
 - Oxygen
 - Carbon dioxide
 - Nitrogen
20. Which of the following statement(s) is/are correct?
- Evaporation is a chemical change
 - Digestion of food is a chemical change
 - Burning of paper is a physical change
 - All of the above are correct
21. Constituents of water are:
- Hydrogen and Nitrogen
 - Hydrogen and Carbon
 - Hydrogen and Oxygen
 - Oxygen and Nitrogen
22. Anaerobic bacteria digest animal waste and produce biogas (Change A). The biogas is then burnt as fuel (Change B). The following statements are related to these changes. Choose the correct one:-
- A is a chemical change whereas B is a physical change
 - B is a chemical change whereas A is a physical change
 - Both A and B are physical changes
 - Both A and B are chemical changes

23. Choose the correct statement from the following—
- (1) Highly reactive metals mostly occur in carbonate and chloride forms
 - (2) Metals like Zn, Al, Pb, Sn are usually form amphoteric oxides
 - (3) The rate of reaction with which metals react is same for all the metals
 - (4) Only (1) & (2)
24. Teflon is used for making
- (1) Anti stick surface of pan
 - (2) Electric wire
 - (3) Automobile batteries
 - (4) Soles of shoes.
25. Which of the following is **NOT** a base?
- (1) Potassium Hydroxide
 - (2) Calcium Hydroxide
 - (3) Sodium Hydroxide
 - (4) Sodium Chloride
26. Rampur bushair and Bakharwal are the breeds of
- (1) Sheep
 - (2) Goat
 - (3) Yak
 - (4) Camel
27. Which of these is **NOT** a step in water cycle:
- (1) Precipitation
 - (2) Respiration
 - (3) Evaporation
 - (4) Condensation
28. Windows of aeroplane are made up of _____.
- (1) Polyethene
 - (2) Polypropylene
 - (3) PVC
 - (4) Polymethylmethacrylate
29. An element “X” occurs in nature as carbonate form and can displace iron from its salt solution but not Aluminium. Element ‘X’ is:
- (1) Magnesium
 - (2) Calcium
 - (3) Nickel
 - (4) Zinc
30. Iron pillar near the QutubMinar in Delhi is famous for the following facts. Which of these facts is responsible for its long stability?
- (1) It is more than 7 metres high.
 - (2) It weighs about 6000 kg.
 - (3) It was build more than 1600 years ago.
 - (4) It has not rusted after such a long time

SECTION-C : BIOLOGY

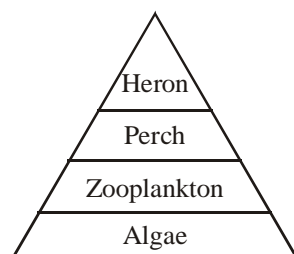
This section contains **15 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

31. Number of RBC increases if one lives at a higher altitude because
- (1) There is less oxygen on mountains
 - (2) More heat is required in body for producing body warmth
 - (3) There are no germs in mountain air
 - (4) There is more oxygen on mountain

32. _____ are the substances that the capillaries exchange between blood and tissues.

- (1) Oxygen, carbon dioxide, RBC, food (2) Oxygen, carbon dioxide, food
(3) Water, plasma, WBC, RBC, food (4) Oxygen, carbon dioxide, WBC, RBC

33. The diagram below shows an energy pyramid for a lake ecosystem.



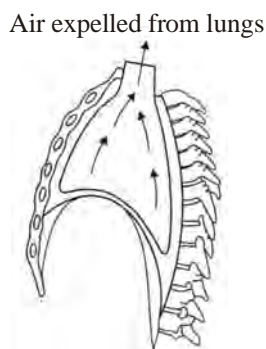
Which of the following best describes the role of the perch in this energy pyramid?

- (1) Producer (2) Decomposer
(3) Primary consumer (4) Secondary consumer

34. Core area of biosphere reserve is an area

- (1) in which all human activities are allowed
- (2) which is legally protected for conservation
- (3) where hunting can be done
- (4) where research, education training can be done

35. In the given mechanism, diaphragm, sternum and intercostal muscles work together to_____the thoracic volume and thereby plunonary volume. This leads to_____in intra-pulmonary pressure to slightly _____the atmospheric pressure, causing expiration.



Select the correct sequence of words to complete the above paragraph.

- (1) decrease, decrease, below (2) increase, decrease, above
(3) decrease, increase, above (4) increase, increase, below

36. Which cell organelle is a site for cellular respiration?

- (1) Mitochondria (2) Chloroplast
(3) Nucleus (4) Ribosome

37. More irrigation is needed for which of the following crops ?

- (1) Wheat (2) Peas (3) Mustard (4) Rice

38. Soil erosion takes place by

- (1) Wind (2) Plants (3) Water (4) (1) and (3) both

39. Match the Columns

Column-I

- (A) Stomata
- (B) Xylem
- (C) Root hairs
- (D) Phloem

Column-II

- (p) Absorption of water
- (q) Transpiration
- (r) Transport of food
- (s) Transport of water
- (t) Synthesis of carbohydrates

- (1) A → (q); B → (s); C → (p); D → (r)
- (2) A → (p); B → (q); C → (r); D → (s)
- (3) A → (q); B → (p); C → (r); D → (s)
- (4) A → (r); B → (s); C → (q); D → (p)

40. When a natural predator living being is applied on the other pathogen organism to control them, this process is called

- (1) Genetic engineering
- (2) Biological control
- (3) Artificial control
- (4) Confusion technique

41. Endocytosis is shown by

- (1) Only plant cells
- (2) Only prokaryotic cells
- (3) Only animal cells
- (4) Both (1) and (3)

42. Mitochondria and chloroplast have their own DNA and protein synthesizing machinery. Choose the correct option according to this statement.

- (1) This statement is true
- (2) This statement is false
- (3) This statement is true for mitochondria but false for chloroplast
- (4) This statement is false for mitochondria but true for chloroplast.

43. Functional unit of mitochondria is

- (1) Grana
- (2) Matrix
- (3) Cristae
- (4) Oxysomes

44. Choose the correct option—

- (i) Bacteria - Prokaryote, Unicellular, Heterotrophs
- (ii) Virus - Prokaryote, Unicellular, Autotrophs
- (iii) Algae - Eukaryote, Multicellular, Autotrophs
- (iv) Protozoa - Prokaryote, Unicellular, Heterotrophs

- (1) i and ii
- (2) i and iii
- (3) ii and iv
- (4) ii and iii

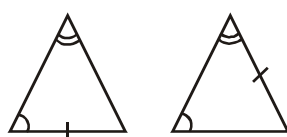
45. The fungi look like a group of fine threads called

- (1) Flagella
- (2) Fronds
- (3) Hyphae
- (4) Calyx

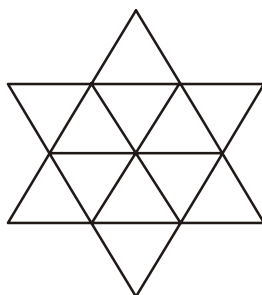
SECTION-D : MATHEMATICS

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. $(-2485) \times (7) + (2485) \times (-3) =$
 (1) 24850 (2) -24850 (3) 9940 (4) -9940
47. Find the length of the rectangle, if its perimeter is given as 8 cm and difference of its length and breadth is given as 0.8 cm (length > breadth).
 (1) 1.6 cm (2) 2 cm (3) 2.4 cm (4) 2.8 cm
48. The triangles shown in the adjoining figure are



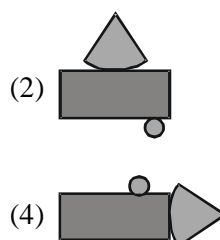
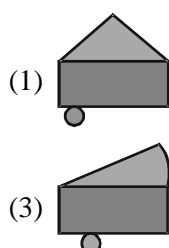
- (1) congruent by ASA (2) congruent by AAS
 (3) congruent by SAS (4) not congruent
49. Triangle can be constructed by taking its side as _____.
 (1) 5 cm, 7 cm, 13 cm (2) 6 cm, 13 cm, 20 cm
 (3) 7 cm, 18 cm, 25 cm (4) 8 cm, 15 cm, 22 cm
50. In the given figure, each triangle is an equilateral triangle. If perimeter of the given figure is 24 cm, find the area of the given figure. (sq cm)



- (1) $6\sqrt{3}$ (2) $8\sqrt{3}$ (3) $10\sqrt{3}$ (4) $12\sqrt{3}$
51. The diagram below shows a solid consisting of a cone and a cylinder.



Which of the following is the net of the solid?



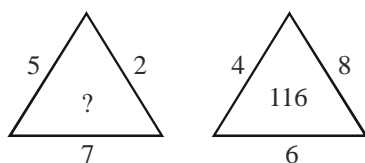
52. Simplify : $222 - \left[\frac{1}{3} \left\{ 42 + (56 - 8 + 9) \right\} + 108 \right]$
- (1) 87 (2) 88 (3) 89 (4) 90
53. Manit's age 20 years hence will be three times his age 12 years ago. Manit's present age is:
- (1) 28 (2) 30 (3) 36 (4) 42
54. The lengths of the diagonals of a rhombus are 16 cm and 12 cm. Then the area of the rhombus is
- (1) 10 cm^2 (2) 36 cm^2 (3) 96 cm^2 (4) None of these
55. If the product of two equal numbers is 1444, then the numbers are :
- (1) 48, 48 (2) 38, 38 (3) 32, 32 (4) 42, 42
56. What number will come in place of question mark ?
- $$(\sqrt{8} \times \sqrt{8})^{1/2} + (9)^{1/2} = (?)^3 + \sqrt{8} - 340$$
- (1) 7 (2) 19 (3) 18 (4) 9
57. Which of the following is equal to $4^{15} + 8^{10}$?
- (1) 2^{31} (2) 2^{30} (3) 2^{15} (4) 2^{10}
58. If 6 is added with the tens digit and 4 is added to the unit digit of a two digit number, then the new number so formed using new digits is 3 times than the original number. The original number is
- (1) 64 (2) 128 (3) 32 (4) 45
59. If the base of triangle is halved and is height is doubled then the area of the resulting triangle
- (1) increases (2) decreases
(3) doubled (4) remains same
60. When a certain number 'm' is divided by 5 and added to 8, the result is equal to 3m subtracted from 4. The value of m is
- (1) 2 (2) $\frac{4}{3}$ (3) $-\frac{1}{3}$ (4) $-\frac{5}{4}$

SECTION-E : MENTAL ABILITY

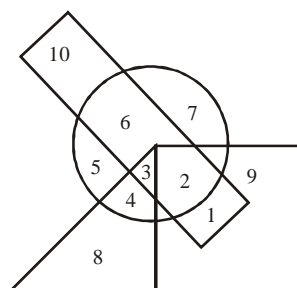
This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

61. If 'Car' is called 'Truck', 'Truck' is called 'Scooter'. 'Scooter' is called 'Bicycle', and 'Bicycle' is called 'Bike', then which vehicle is used for loading the goods?
- (1) Car (2) Truck (3) Scooter (4) Bicycle
62. Find the missing term (?)
- WFB, TGD, QHG, ?
- (1) NIJ (2) NIK (3) NJK (4) OIK

63. In this question, which number when placed at the sign of interrogation (?) shall complete the given pattern?



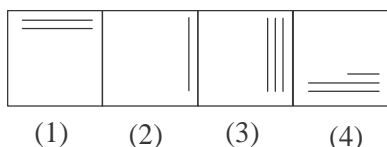
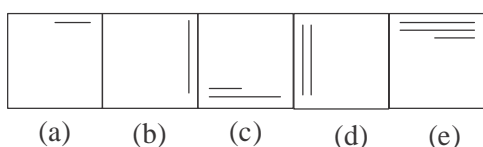
- (1) 70 (2) 78 (3) 196 (4) 100
64. In the following figure, the girls who are singer and dancer are indicated by which number ?



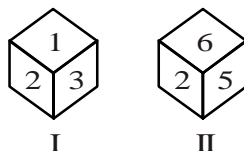
The triangle represents boys, the circle singer, the rectangle girls and the square dancer.

- (1) 1 (2) 2 (3) 6 (4) 10
65. A cube is painted red on two adjacent surface and black on the surfaces opposite to red surfaces and green on the remaining surfaces. Now, the cube is cut into sixty four smaller cubes of equal size. How many cubes will have no surface painted?
- (1) 0 (2) 4 (3) 8 (4) 16
66. In a class of 45 students, a boy is ranked 20th. When two boys joined, his rank dropped by one. What is his new rank from the end ?
- (1) 25th (2) 26th (3) 27th (4) 28th
67. Pointing to a photograph, Ravi tells his friend, "She is the grand daughter of the elder brother of my father." How is the girl in the photograph related to Ravi?
- (1) Niece (2) Sister
(3) Aunt (4) Sister-in-law
68. If '+' means 'minus', '×' means 'divided by' '÷' means 'multiplied by' and '-' means 'Plus' then, which of the following will be the value of the expression.
- $$28 \times 4 + 17 \div 2 - 9$$
- (1) 18 (2) -22 (3) -18 (4) 22
69. One morning at 7 O'clock, Naresh started walking with his back towards the Sun. The, he turned towards left, walked straight and then turned towards right and walked straight. Then, he again turned towards left. Now, in which direction is he facing?
- (1) North (2) East
(3) West (4) South

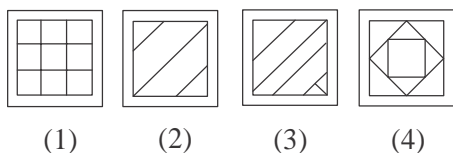
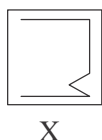
70. If in a certain code language 'RAMAN' is written as '23.5' and 'CAP' is written as '10', then how will 'CAPACITY' be written in that code?
- (1) 48 (2) 39 (3) 49 (4) 35
71. Darshan moved a distance of 80 m towards the north. He then turned to the left and covers a distance of 35 m, turned left again and walked 90 m. Finally, she turned to the right at an angle of 45° . In which direction was he moving finally ?
- (1) North-East (2) North-West (3) South-East (4) South-West
72. In the following question, there are five figures (a), (b), (c), (d) and (e) called problem figures followed by four other figures 1, 2, 3 and 4 called the Answer Figures. Select figure from amongst the answer figure which will continue the same series as established by the five problem figure.



73. Where is the invisible number in the two positions of the same cube?



- (1) Opposite of 2 (2) Opposite of 3 (3) Opposite of 4 (4) Opposite of 6
74. Ravi introduces Raman as the son of the brother of his father's wife. How is Raman related to Ravi?
- (1) Son (2) Cousin (3) Uncle (4) Son-in-law
75. You are given a figure (X) followed by four alternatives (1), (2), (3) and (4), such that figure (X) is embedded in one of them. Find the option which contains figure (X).



76. Find the mirror image of G O K U L?

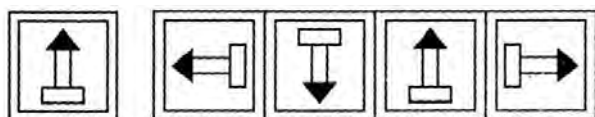
- (1) J U K O D (2) G O K U L (3) J U X O D (4) L U K O G

77. Find the missing term

10, 26, 74, 218, ?, 1946, 5834

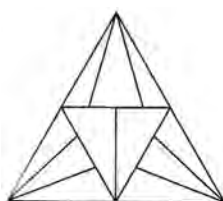
- (1) 420 (2) 430 (3) 600 (4) 650

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



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

79. Find the number of triangles in the following diagram—



- (1) 22 (2) 23 (3) 19 (4) 20

80. Find the correct venn diagram among the following options for correct relationship for given words: Dogs, Animals, Pets

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

SPACE FOR ROUGH WORK

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