Tallentex Form No. **4**

Answer Sheet No. **T 4**

TALLENTEX 2016 : (04, October 2015)

PAPER CODE

G

TALLENTEX 2016
ALLEN'S Talent Encouragement Exam
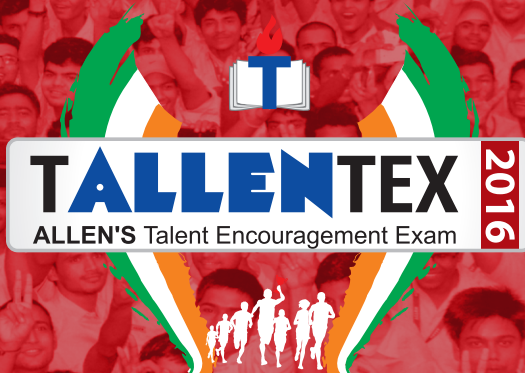
CLASS - 7th (VII)

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

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 Form No. & Answer Sheet No. in the space provided on the top of this page.
3. Fill your **PAPER CODE** in space provided (Point No. 6) of optical response sheet (ORS).
4. 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.
5. After breaking the Question Paper seal, check the following:
   a. There are **16 pages** in the booklet containing question no. 1 to 80 under 2 Parts i.e. Part-I & Part-II.
   b. Part-I contains total 20 questions of IQ (Mental Ability).
   c. Part-II contains total 60 questions under 4 sections, which are Physics, Chemistry, Biology & Mathematics.
6. Think wisely before darkening bubble as there is negative marking for wrong answer. Answer once marked by pen cannot be cancelled.
7. 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.
8. If you are found involved in cheating or disturbing others, then your ORS will be cancelled.
9. Do not put any stain on ORS and hand it over back properly to the invigilator.
10. You can take along the question paper after the test is over.

PART-I

IQ (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.

1. P, Q, R and S are playing a game of carrom. P, R and S, Q are partners. S is to the right of R who is facing west. Then, Q is facing which direction ?
(1) North
(2) South
(3) East
(4) West

2. A tourist drives 20 km towards East and turns to the right and drives 6 km. Then he turns to his right and drives 6 km. He then turns to left and drives 4 km. Finally he turns to his right and travels 14 km. How far is he from his starting point and in which direction ?
(1) 20 km, East
(2) 10 km, South
(3) 16 km, West
(4) 10 km, West

3. Anuj started walking positioning his back towards the sun. After sometime, he turned left, then turned right and then towards the left again. In which direction is he going now ?
(1) North or South
(2) East or West
(3) North or West
(4) South or West

4. If all the vowels are removed from english alphabets, then which of the following will be seventh to the right of fifth letter from the left ?
(1) F
(2) P
(3) V
(4) W

5. If WHEEL = 10.6, how will you code BELT ?
(1) 32.2
(2) 30.5
(3) 9.75
(4) 8.25

6. If you rearrange the letters "BARBIT", you would have the name of a ?
(1) Ocean
(2) Country
(3) Animal
(4) City

7. If PORTER is written as QNSSFQ, then BRIGHT would be coded as
(1) CQJFIS
(2) CNJHIS
(3) CQJFGS
(4) CNJHIU

8. Priti scored more than Rahul. Yamuna scored as much as of Divya. Lokita scored less than Manju. Rahul scored more than Yamuna. Manju scored less than Divya. Who scored the lowest ?
(1) Manju
(2) Yamuna
(3) Lokita
(4) Rahul

**9.** Choose the alternative figure in which the figure (X) is embedded.
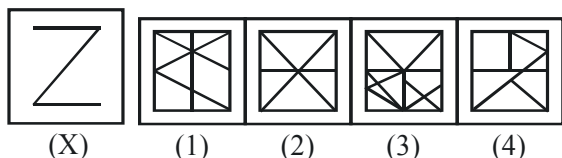
10. Which letter will come exactly in the middle of the 10th letter from your left and the 7th letter from your right, without changing any order in the english alphabet ?

(1) N   (2) P   (3) O   (4) Q

11. Which of the figures among (1), (2), (3) & (4) correctly shows the water image of the figure X?

(X)   (1)   (2)   (3)   (4)
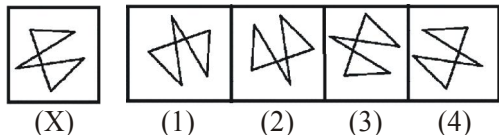
12. Choose the correct mirror image of (X) from alternative (1), (2), (3) & (4).

(X)   (1)   (2)   (3)   (4)
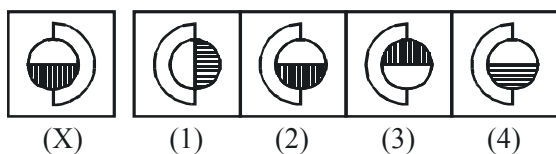
13. One number is wrong in the series. Find out the wrong number.

3, 6, 9, 22.5, 67.5, 236.25, 945

(1) 6   (2) 9   (3) 22.5   (4) 67.5

14. Choose the correct water image of figure from the given alternatives (1), (2), (3) & (4).
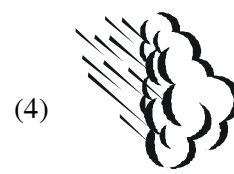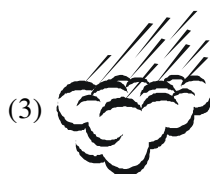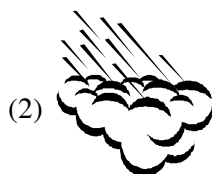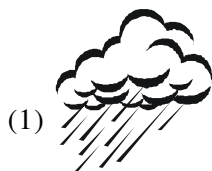
(1)   (2)   (3)   (4)

15. In the question given below contains three groups of items. You have to choose from the following four numbered diagrams, the diagram that depicts the correct relationship among the three group of items in the question.

Maize, Sugarcane, Crops

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

16. Choose the correct mirror image of figure from the given alternatives (1), (2), (3) & (4).

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

17. If '+' stands for 'division', '÷' stands for 'multiplication', '×' stands for 'subtraction' and '−' stands for 'addition', which one of the following is correct?

(1) 18 ÷ 6 × 7 + 5 − 2 = 22   (2) 18 × 6 + 7 ÷ 5 − 2 = 16

(3) 18 ÷ 6 − 7 + 5 × 2 = 20   (4) 18 + 6 ÷ 7 × 5 − 2 = 18

18. One number is missing in the series. You have to understand the pattern of the series and insert the number.
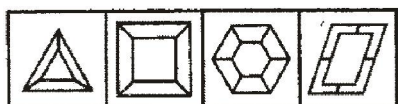
8, 4, 12, 16, 28, ?, 72

(1) 10   (2) 12

(3) 44   (4) None of these

19. Out of the four figures (1), (2), (3) & (4), three are similar in a certain way. However one figure is not like the other three. Choose the figure which is different from the rest.

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

20. If '+' means '×', '−' means '+', '×' means '÷' and '÷' means '−', then answer the following question based on this information.

6 + 7 × 3 − 8 ÷ 20 = ?

(1) −3   (2) 7
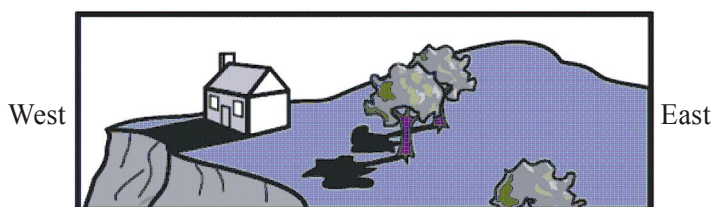
(3) 2   (4) 1

PART-II

SECTION-A : PHYSICS

This section contains **12 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

21. Wind develops as a result of differences in
(1) air temperature and humidity
(2) relative humidity
(3) condensation and evaporation rates
(4) atmospheric pressure and temperature

22. Plants look green because
(1) They absorb green light
(2) They reflect all other colors except green light
(3) They reflect green light
(4) They absorb all the light and reflect none.

23. When the shadows of the house and trees appear as shown in the picture below, the sun is most likely

(1) in full eclipse

(2) hidden behind clouds

(3) to the east of the house

(4) to the west of the house

West   East

24. Student investigated how different colours of construction paper in a solar oven affect the heating of water.

Temperature of Water (°C)

| Colour of paper	Beginning water temp.	Trial 1 increase in temp.	Trial 2 Increase in temp.	Trial 3 Increase in temp.
White	20	4	5	6
Black	20	52	59	54
Brown	20	37	36	32
Green	20	29	28	27

Which graph correctly represents the data for the brown construction paper ?
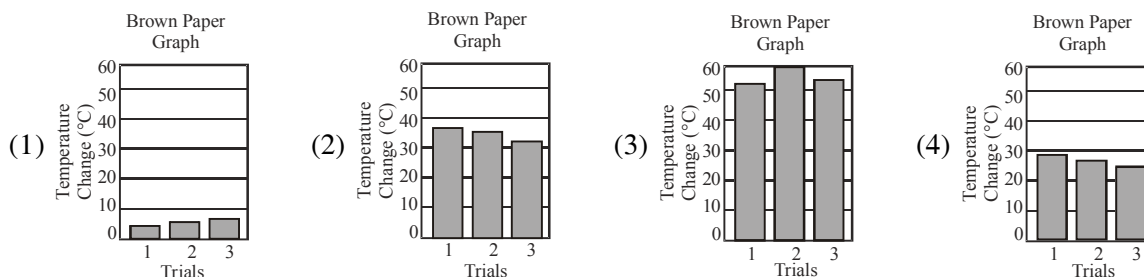
25. During an investigation a student filled two cups with the same amount of water and placed them in a 20 °C room for 30 minutes. Cup 1 was filled with water at 5 °C, Cup 2 was filled with water at 35 °C. The diagram below shows the temperature of the cups at the beginning of the investigation.
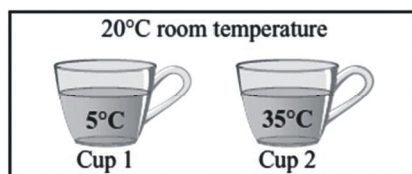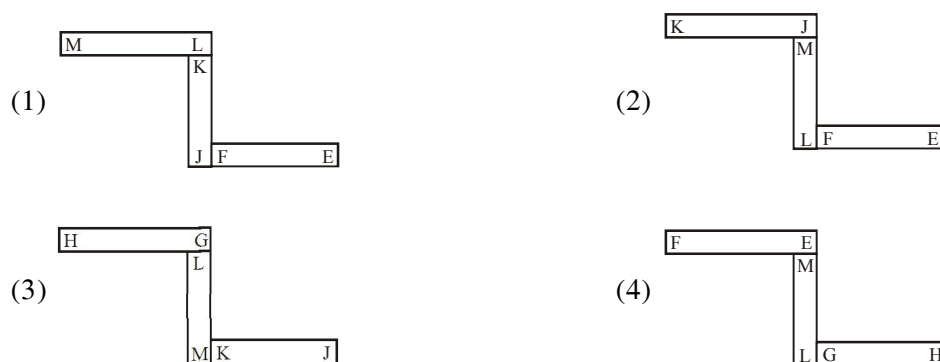

Which of the following graph shows how the temperatures of the two cups of water most likely changed over 30 minutes?
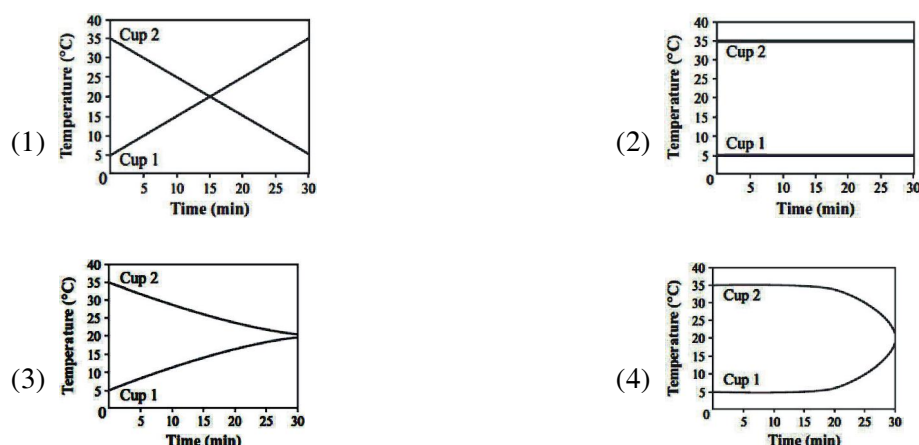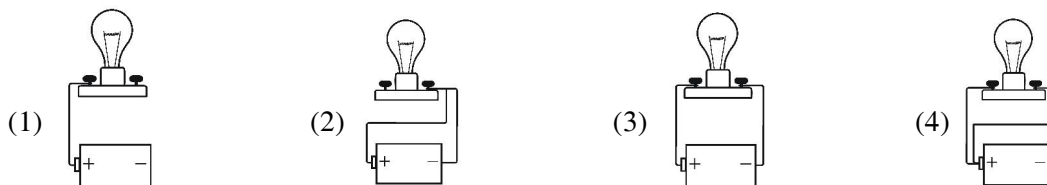

26. Below figure shows four magnet bars hung from a wooden stick. The ends of the magnet bars are labelled.
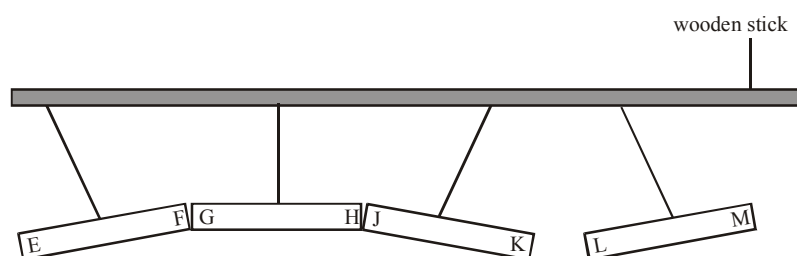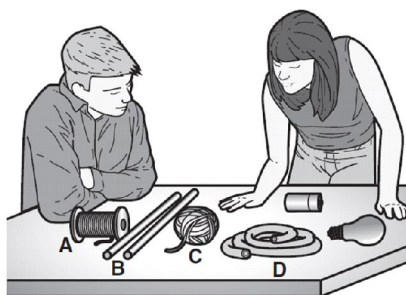

Which of the following diagrams shows a possible arrangement of three of the magnets ?

27. The pictures show a lightbulb connected to a battery. Which bulb will light?

(1)　　　　　　(2)　　　　　　(3)　　　　　　(4)

28. Students are gathering materials and building an electrical circuit. Which material will allow electricity to flow between the battery and the light bulb?

(1) copper wire　　　　(2) wooden rod　　　　(3) cotton string　　　　(4) rubber tube

29. Four items are placed at the same distance from the magnet. Which one of the objects will be the easiest for the magnet to pull?

(1) 1-gram piece of paper　　　　　　(2) 2-gram eraser
(3) 3-gram steel paper clip　　　　　　(4) 4-gram iron nail
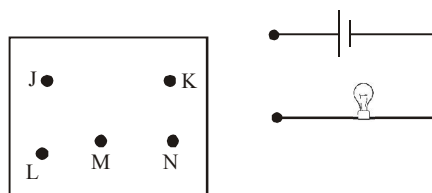
30. The diagram below shows a ball held in place by two blocks. The diameter (width) of the ball is shown between the two blocks.

(Not drawn to scale)
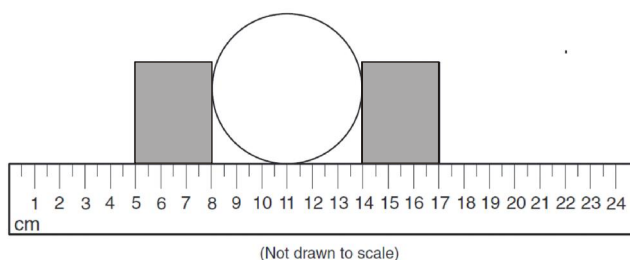
The radius of the ball is
(1) 6 cm　　　　　　(2) 3 cm　　　　　　(3) 2 cm　　　　　　(4) 12 cm

31. Daksh was given a circuit card and a circuit tester as shown below.
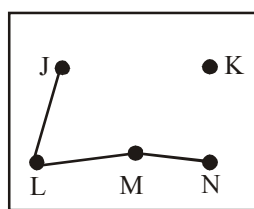

He connected the circuit tester to two points on the circuit card, one at a time. He recorded his results in the table below.

Points	Did the bulb light up ?
J and K	No
J and L	Yes
J and M	Yes
J and N	Yes
K and L	No
K and M	No
K and N	No
N and L	Yes
N and M	Yes
L and M	Yes

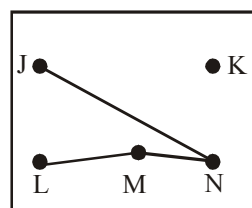Which diagram(s) below matched the observation made by Daksh ?
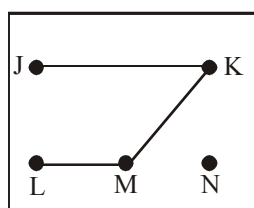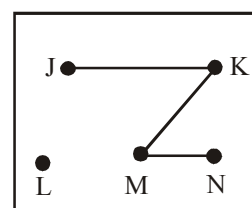

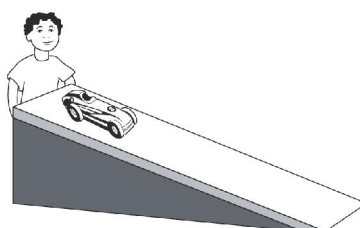Card A   Card B   Card C   Card D

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

32. Which motion is exhibited by the wheels of car as it comes down the ramp ?

(1) Rotational only   (2) Translational only

(3) Curvilinear only   (4) Rotational and translational

SECTION-B : CHEMISTRY

This section contains **11 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

33. Match the following

	Column - I		Column - II
(a)	Burning of crackers	(i)	Periodic change
(b)	Heartbeat	(ii)	Fast change
(c)	Photosynthesis	(iii)	Physical change
(d)	Freezing of water	(iv)	Chemical change

(1) a - (ii), b - (i), c - (iv), d - (iii)   (2) a - (i), b - (iii), c - (ii), d - (iv)

(3) a - (iv), b - (ii), c - (iii), d - (i)   (4) a - (iii), b - (iv), c - (i), d - (ii)

34. Silk fibre is made up of
(1) Carbohydrate   (2) Lipids
(3) Protein   (4) Fats

35. Even though a cinema hall is a place prone to fire hazards, the interiors are mostly made of wood or wood based panel. Why is this so ?
(1) Wood does not catch fire easily.   (2) Wood is opaque.
(3) Wood can absorb sound.   (4) Wood is very commonly available.

36. Which of the following species found in the aqueous solution of weak acid ?
(1) Only molecules   (2) Mostly Ions
(3) Both molecules and ions   (4) Mostly electrons

37. Four students studied reactions of zinc and sodium carbonate with dilute hydrochloric acid and dilute sodium hydroxide solutions and presented their results as follows. The ($\checkmark$) represents a gas and (x) represent absence of any reaction.

The right set of observations is that of student

(1)
	Zn	Na_2CO_3
HCl	$\checkmark$	$\checkmark$
NaOH	x	$\checkmark$

(2)
	Zn	Na_2CO_3
HCl	$\checkmark$	x
NaOH	$\checkmark$	$\checkmark$

(3)
	Zn	Na_2CO_3
HCl	x	x
NaOH	$\checkmark$	$\checkmark$

(4)
	Zn	Na_2CO_3
HCl	$\checkmark$	$\checkmark$
NaOH	$\checkmark$	x

38. Which gas is primarily responsible for Green House Effect i.e. global warming ?
(1) Nitrogen dioxide   (2) Carbon dioxide
(3) CFC (Chloro Fluoro Carbon)   (4) Sulphur dioxide

39. State whether the statements given below are True or False.
(i) Stone is transparent while glass is opaque.
(ii) Chalk dissolves in water.
(iii)Metals have lustre.
(iv)Diamond is a metal.
(1) F F T F   (2) T T T T   (3) F F F F   (4) T F T F
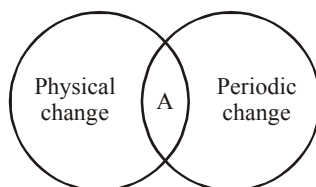
40. Which of the following will come in the empty box in the given steps of processing of fibre into wool ?

Shearing → [?] → Sorting

(1) Separating   (2) Weaving   (3) Knitting   (4) Scouring

41. Study the venn diagram and identify 'A'.

(1) Occurrence of seasons   (2) Dissolving sugar in water

(3) Solar eclipse   (4) Stretching of spring

42. Read the following statements.

(a) The plant fibres are made up of _____which is a structural material in the plant world.

(b) The process of taking out threads from the cocoon to use as silk is called as_____.

(c) The sheared hair of sheep is moved through tubes filled with soapy water to remove dust, dirt and grease. This is known as _____

(d) Mohair, spun from the fleece of the Angora _____is extremely light in weight.

Select the option which correctly fills the blanks in any two of the above statements.

(1) (a) - Protein; (c) Removal of burr   (2) (b) - Rearing ; (c) - Scouring

(3) (a) - Cellulose; (d) - Goat   (4) (b) - Reeling; (d) - Rabbit

43. Shailee did an experiment. She prepared 4 sets of solutions & tested these through indicators. Shailee arranged the following sets of solutions.
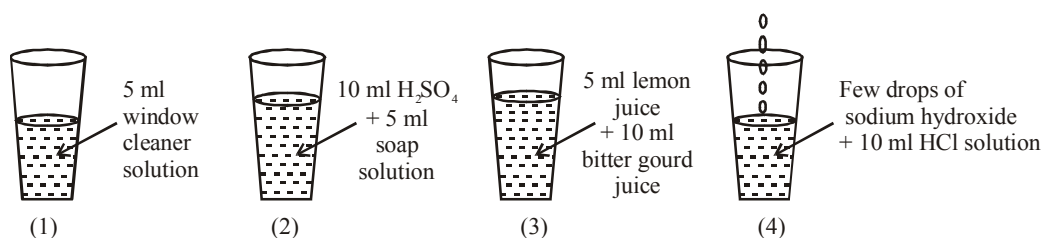
She filled in the blanks by observing the above experimental setup carefully.

(a) Methyl orange turns red in test tubes _____(i)_____and _____(ii)_____.

(b) Turmeric solution remains yellow in test tubes _____(iii)_____and _____(iv) _____.

(c) Phenolphthalein gives pink colour in test tubes _____(v)_____ and _____(vi)_____.

	(i)	(ii)	(iii)	(iv)	(v)	(vi)
(1)	1	3	2	4	1	3
(2)	1	4	2	1	3	4
(3)	1	3	1	3	2	4
(4)	2	4	2	4	1	3

SECTION-C : BIOLOGY

This section contains **12 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

44. Name the breathing organs marked in given figures.
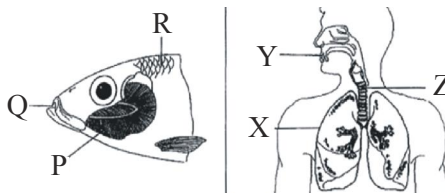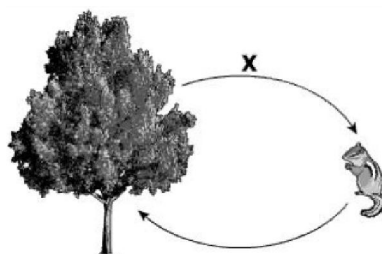

(1) P-Lungs; X-Gills   (2) R- Lungs; Z-Stomata

(3) P-Gills; X-Lungs   (4) P-Stomata; X-Gills

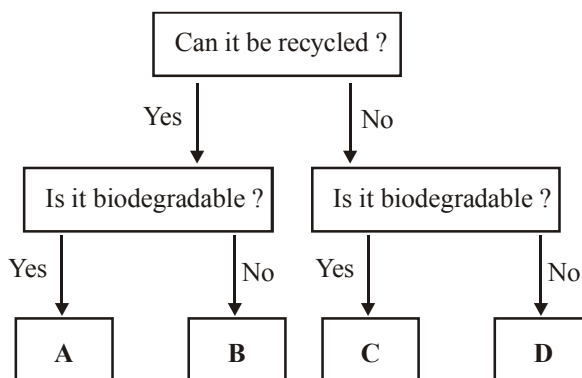**45.** Which of the following released during photosynthesis is represented by X in the illustration ?

(1) Water   (2) Oxygen   (3) Sunlight   (4) Carbon dioxide

46. Study the flow chart below.


Which of the following could A, B, C and D be ?

|	A	B	C	D
(1)	waste food	pesticides	cardboard box	glass bottle
(2)	glass bottle	waste food	pesticides	cardboard box
(3)	pesticides	cardboard box	glass bottle	waste food
(4)	cardboard box	glass bottle	waste food	radioactive waste

47. Process of preparing compost with the help of worms is known as

(1) Vermicomposting   (2) Recycling   (3) Feeding   (4) Incineration

**48.** Figure given below shows the characteristics of some plants.
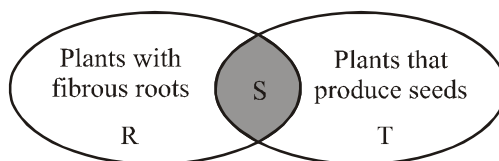
Which of the following plants is correctly represented by R, S and T ?

R	S	T
(1) Paddy	Carrot	Orchid
(2) Maize	Paddy	Papaya
(3) Coconut	Fern	Hibiscus
(4) Mango	Maize	Sugarcane

49. The cranium is made up of ___ bony plates joined together by serrated margins called sutures which is an example of _____ joint.
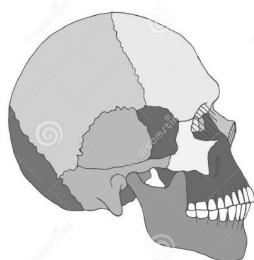

(1) 14, fibrous   (2) 22, cartilaginous

(3) 8, fibrous   (4) 12, synovial

50. Which is not correctly matched ?

(1) Bile ; emulsifier   (2) Lacteal ; absorption of fatty acid and glycerol

(3) Ptyalin ; digestion of starch   (4) Duodenum ; water absorption

51.

(a)   (b)
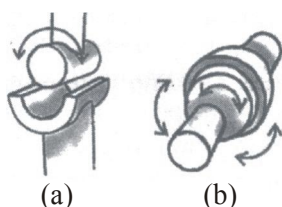
Which of the following statements is correct for the models shown in given figure?

(1) 'a' shows the functioning of hinge joint while 'b' shows the functioning of ball and socket joint.

(2) 'a' shows the functioning of hinge joint while 'b' is seen in elbow.

(3) 'a' shows the functioning of ball & socket joint while 'b' shows the functioning of gliding joint.

(4) 'a' is present in forearm while 'b' is seen in neck.

52. Identify **X** and **Y** in the given flowchart.
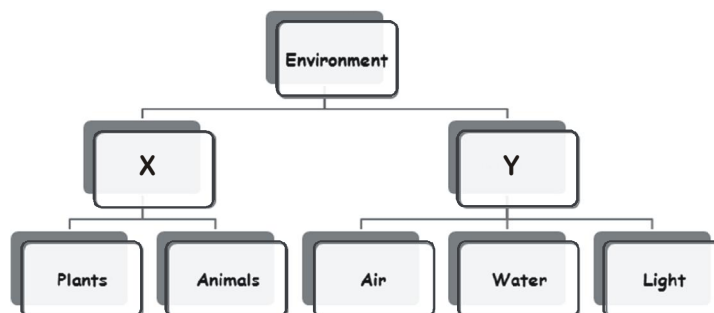
(1) **X**- abiotic factors, **Y**- biotic factors

(2) **X**- biotic factors, **Y**- abiotic factors

(3) Both are abiotic factors

(4) Both are biotic factors

53. Two different plants are given in figure. Which one of the following sentences is correct regarding them?

)B*   )C*
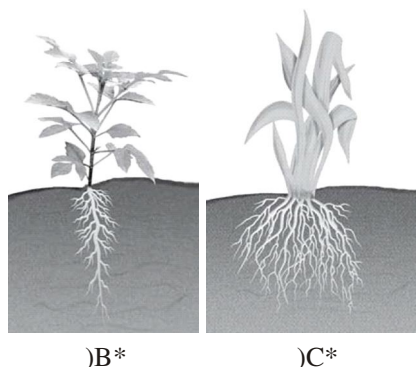
(1) Plant A has tap root system.

(2) Plant A and B both have leaves with parallel venation.

(3) Plant A and B both have leaves with reticulate venation.

(4) Plant B has leaves with reticulate venation.

54. White-footed mice having thicker fur than cactus mice is probably influenced most by the differences in the

Cactus Mouse   White-Footed Mouse
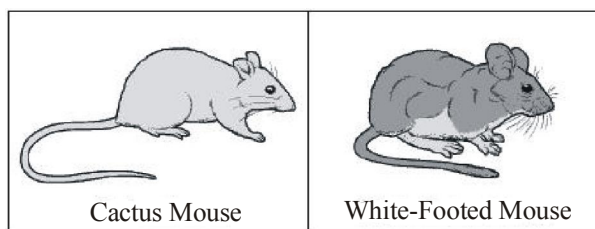
(1) food that they eat

(2) time of day they are active

(3) environmental conditions where they live

(4) amount of predators they encounter

55. One plant is grown in a greenhouse and the other is grown under a forest canopy. (i.e. under the shade of trees). What would be the effect on the rate of photosynthesis in both the conditions ?

(1) The rate of photosynthesis would be equally low in both the conditions.

(2) The rate of photosynthesis would be greater under the forest canopy.

(3) The rate of photosynthesis would be greater in the greenhouse.

(4) The greenhouse or shade of forest canopy would not influence the rate of photosynthesis because only 1% of sunlight is used in photosynthesis.

SECTION-D : MATHEMATICS

This section contains **25 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

56. How many prime numbers are there between 80 and 100
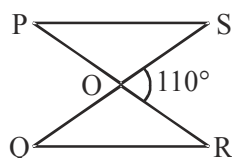
(1) 3   (2) 4   (3) 5   (4) 8

57. Find the value of x if $\dfrac{1-x}{6}+\dfrac{2x}{3}-\dfrac{1-7x}{4}= 2\dfrac{1}{6}$

(1) 0   (2) 1   (3) 2   (4) 3

58. Find three consecutive natural numbers such that the sum of the first and second is 15 more than the third

(1) 14, 15, 16   (2) 17, 18, 19   (3) 15, 16, 17   (4) 16, 17, 18

59. Number of interior angles formed in the triangles are

(1) 2   (2) 3   (3) 4   (4) 6

60. The fuel indicator in a car shows $\dfrac{1}{5}$th of the fuel tank as full. When 22 more litres of fuel are poured into the tank, the indicator rests at the three-fourth of the full mark. Then the amount of fuel in fuel tank at starting (in litres) is

(1) 30   (2) 40   (3) 36   (4) 8

61. The area of a minor segment of a circle of radius 21 cm, if the arc of the segment has a measure of 60° is (Take $\sqrt{3}=1.73$, $\pi = 22/7$)

(1) 45.27 cm²   (2) 40.27 cm²   (3) 40.8 cm²   (4) none

62. Which of the following represents a rational number between $\dfrac{2}{3}$ and $\dfrac{1}{11}$?

(1) $\dfrac{51}{132}$ (2) $\dfrac{1}{66}$ (3) $\dfrac{55}{66}$ (4) $\dfrac{131}{132}$

63. If a and b are odd natural numbers, then which of the following is even

(1) a + b   (2) a + b + 1   (3) ab   (4) ab + 2

64. Simplify : $2.\overline{17}+3.\overline{1}$ in $\dfrac{p}{q}$ form.

(1) $\dfrac{466}{90}$ (2) $\dfrac{476}{90}$ (3) $\dfrac{456}{99}$ (4) $\dfrac{476}{99}$
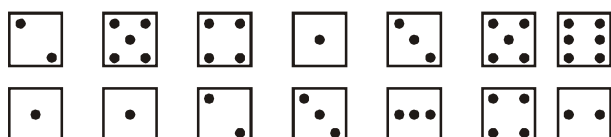
65. If $\dfrac{2^{m+n}}{2^{n-m}} = 16$ and $a = 2^{1/10}$ then $\dfrac{(a^{2m-n+p})^2}{(a^{m-2n+2p})} =$

(1) $2^{3/5}$ (2) $\sqrt[5]{8}$ (3) Both (1) & (2)   (4) 1

66. A is the smallest four digit number formed by using all the digits 0, 1, 2 & 3. B is the greatest four digit number formed by using all the digits 0, 1, 2 and 3. Then B−A equals
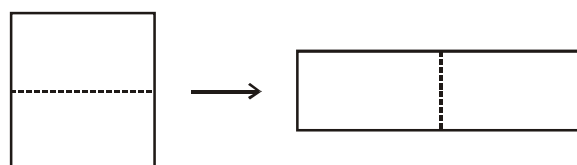
(1) 1990   (2) 2187   (3) 8999   (4) 2000

67. A dice was thrown 14 times as follows :

The mean score was

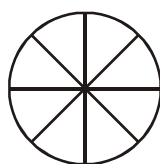(1) 2.5   (2) 2   (3) 4   (4) 3

68. A square of perimeter 48 cm is cut into 2 equal pieces to make a rectangle (see the picture).
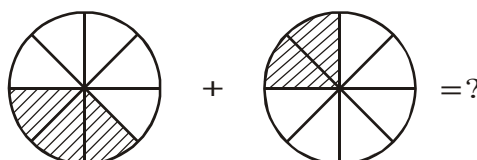

What is the perimeter of the rectangle?

(1) 24 cm   (2) 30 cm   (3) 48 cm   (4) 60 cm

69. This is a whole.

What is the value of shaded region

(1) $\dfrac{1}{3}$ (2) $\dfrac{3}{8}$ (3) $\dfrac{2}{3}$ (4) $\dfrac{5}{8}$

70. If the cost of an article is directly proportional to the square of number of articles sold. If cost of 20 articles is Rs. 2000. Then find the cost of 45 articles.

(1) Rs. 2025   (2) Rs. 10125   (3) Rs. 3025   (4) Rs. 10500

71. In the figure, ABC and CDE are congruent equilateral triangles. If the measure of the angle ACD is 80°, what is the measure of angle ABD?
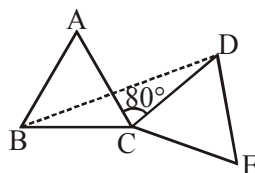
(1) 25°   (2) 30°   (3) 35°   (4) 40°

72. Which of the following statements is false?

(1) $(-1)^n = -1$, if n is an odd integer   (2) For any natural number a, $a^0 = 1$

(3) If $4 \times 8^m = 2^5$, then m = 1   (4) None of these

73. By which congruency property, the two triangles connected by following figure are congruent.
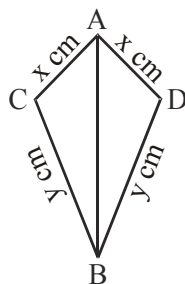
(1) SAS property   (2) SSS property   (3) RHS property   (4) ASA property

74. If an angle A + 325° forms a complete angle, find the complement of angle A.

(1) 45°   (2) 145°   (3) 55°   (4) 155°

75. The median and mode of a frequency distribution are 26 and 29 respectively. Then, the mean is

(1) 27.5   (2) 24.5   (3) 28.4   (4) 25.8

76. What least value must be given to * so that number 8 * 76246 is divislble by 11 ?

(1) 0   (2) 1   (3) 2   (4) 3

77. If the sum of ages of Raghu and Ram is 76 years and their ages are in the ratio of 9 : 10. Then the difference of their ages would be

(1) 2 years   (2) 3 years   (3) 4 years   (4) 5 years

78. A rectangle is (p + 3q + r) cm long and (p + q + 3r) cm wide. If the perimeter of a square is equal to the perimeter of the rectangle, by how much does the area of the square exceed the area of the rectangle.

(1) $2qr + q^2 + r^2$ (2) $-2qr + q^2 + r^2$ (3) $2qr - q^2 - r^2$ (4) $2qr + q^2 - r^2$

79. If the number 2345p60q is exactly divisible by 3 and 5, then the maximum value of p + q is

(1) 12   (2) 13   (3) 14   (4) 15

80. If A = 3x + 6 and B = $2x^2 + 3x + 4$, then the degree of A × B is ____

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

SPACE FOR ROUGH WORK

Answer Key

TALLENTEX 2016
ALLEN'S Talent Encouragement Exam
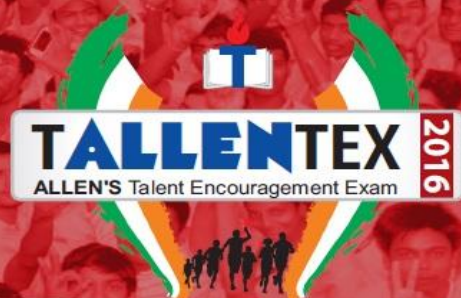
Class- 7th (VII)
Held on : 04 October 2015

Q.No.	Ans
1	1
2	2
3	1
4	2
5	3
6	3
7	1
8	3
9	2
10	3
11	3
12	2
13	1
14	2
15	3
16	1
17	4
18	3
19	4
20	3

Q.No.	Ans
21	4
22	3
23	3
24	2
25	3
26	3
27	3
28	1
29	4
30	2
31	2
32	4
33	1
34	3
35	3
36	3
37	4
38	2
39	1
40	4

Q.No.	Ans
41	1
42	3
43	4
44	3
45	2
46	4
47	1
48	2
49	3
50	4
51	1
52	2
53	1
54	3
55	3
56	1
57	2
58	4
59	4
60	4

Q.No.	Ans
61	2
62	1
63	1
64	2
65	3
66	2
67	4
68	4
69	4
70	2
71	4
72	4
73	2
74	3
75	2
76	3
77	3
78	2
79	2
80	1