PAPER CODE

D

TALLENTEX 2015
ALLEN'S Talent Encouragement Exam

CLASS -8th (VIII)

Duration : 2 Hrs.   **Maximun 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 risk

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. in the space provided on the top of this page.

3. 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 ball point pen.

4. Total Questions to be Attempted 80. Part-I : 20 Questions & Part-II : 60 Questions.

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 - Section (A) : Physics, Section (B) : Chemistry, Section(C) : Biology & Section (D): Mathematics.

6. Marking Scheme:

    a. If darkened bubble is RIGHT answer : 04 Marks.

    b. If darkened bubble is WRONG answer: -01 Mark (Minus One Mark).

    c. If no bubble is darkened in any question: No Mark.

7. Think wisely before darkening bubble as there is negative marking for wrong answer.

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.

A Specially Designed initiative at National Level to Encourage Young Talent
by

ALLEN™
CAREER INSTITUTE
KOTA (RAJASTHAN)

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. In the question, you are given a combination of letters followed by four alternatives (1), (2), (3) and (4). Choose the alternative which most closely resembles the water-image of the given combination.
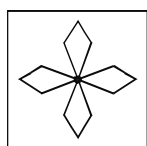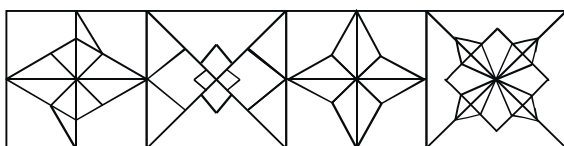
   QUARREL

   (1) ỌŊ∀ЯЯΕL   (2) ⅃ΞЯЯ∀UⱵ

   (3) ỌU∀ЯЯΕL   (4) ⅃ΞЯЯ∀UỌ

2. In the question, you are given a figure (x) followed by four figures (1), (2), (3) and (4) such that (X) is embedded in one of them. Trace out the correct alternative.


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

3. The next term in the sequence 1, 3, 6, 11, 20, 37, ?

   (1) 65   (2) 67

   (3) 70   (4) 60

4. If a certain code PERINATH is written as QFQHOBSG and POLE as QPKD, how will SYNDROME be written in that code ?

   (1) RXONQNNF   (2) TZODQNLD

   (3) TZMCSPKD   (4) TZMCSPLD

5. In the following question, there are two numbers to the left of the sign : : which are connected in some way. The same relationship is between the third number and one of the four alternatives given. Find the correct alternative.

   11 : 17 : : 19 : ?

   (1) 29   (2) 27

   (3) 23   (4) 21

6. Anshul moves towards East a distance of 5 m, then he turns to his left and walks 20 metres, then again he turns left and walks 15 meters. Now he turns 45° towards his right and goes straight to cover

   $20\sqrt{2}$ m meters. How far is he from his starting point ?

   (1) 40 m   (2) 30 m

   (3) 50 m   (4) 55 m

7. Count each 1 in the following sequence of numbers that is immediately followed by 2, if 2 is not immediately followed by 3. How many such 1's are there ?

1 2 1 3 4 5 1 2 3 5 2 1 2 6 1 4 5 1 1 2 4 1 2 3 2 1 7 5 2 1 2 5

(1) 2 (2) 4 (3) 5 (4) 7

8. In the following question consists of two sets of figures. Figures A, B, C and D constitute the Problem Set while figures 1, 2, 3 and 4 constitute the Answer Set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by choosing a suitable figure (D) from the Answer Set.

Problem Set   **Answer Set**

(A)   (B)   (C)   (D)   (1)   (2)   (3)   (4)
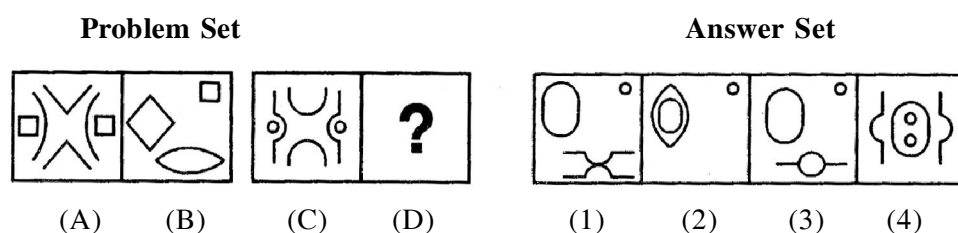
9. In a certain code STATION is denoted by URCRKMP then BRING is denoted in the same code by

(1) CSKLH (2) DSGLH

(3) KSKPH (4) None of these

10. If at 12'O clock, minute hand and hour hand are facing towards North, then in which direction the minute hand is facing at 4 : 40 ?

(1) 30° West of South (2) 60° West of South

(3) 30° East of South (4) 60° East of South

11. In the following question consists of two sets of figures. Figures A, B, C and D constitute the Problem Set while figures 1, 2, 3 and 4 constitute the Answer Set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by choosing a suitable figure (D) from the Answer Set.


(A)   (B)   (C)   (D)   (1)   (2)   (3)   (4)
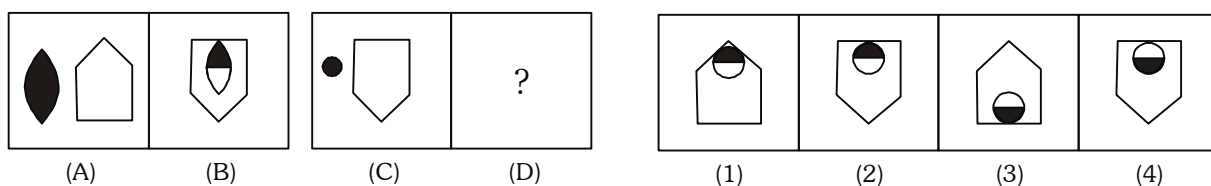
12. In the given question, a part of the figure is missing. Find out from the given options (1, 2, 3, 4) the right figure to fit in the missing figure.
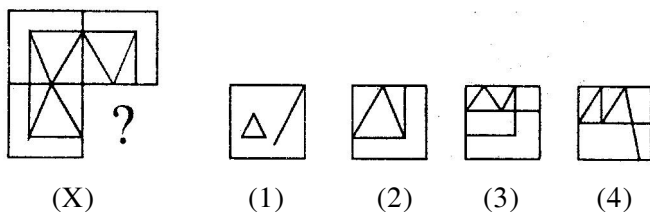

13. If 2 + 2 = 8, 3 + 5 = 24, 2 + 5 = 14, 3 + 4 = 21 then 5 + 7 is:

(1) 50   (2) 60

(3) 70   (4) 80

14. At 5'O clock, the hour hand of a wrist watch is towards North direction, find the direction of the minute hand at 7 : 17 : 30.

(1) West   (2) North – East

(3) North – West   (4) South - West

15. Find the missing term (?)

$$11\frac{1}{9}, 12\frac{1}{2}, 14\frac{2}{7}, 16\frac{2}{3}, ?$$

(1) $8\frac{1}{3}$ (2) $19\frac{1}{2}$

(3) 20   (4) $22\frac{1}{3}$

16. Which number should come in place of question mark (?)
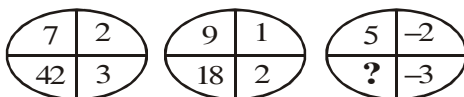
(1) 18   (2) 13   (3) 30   (4) −30

17. If each vowel of the word WEBPAGE is substituted with next letter of the English alphabetical series, and each consonant is substituted with the letter preceding it, which of the following letters will appear thrice ?

(1) G   (2) F   (3) Q   (4) V

18.

(1)   (2)   (3)   (4)
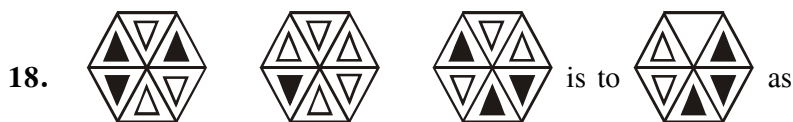
19. How many numbers amongst the numbers 9 to 54 are there which are exactly divisible by 9 but not by 3?

(1) 8   (2) 6   (3) 5   (4) Nil

20. In the question given below, use the following notations:

A"B means 'add B to A'

A'B means 'subtract B from A'.

A @ B means 'divide A by B'.

A * B means 'multiply A by B'.

Now, answer the following question.

The time taken by two running trains in crossing each other is calculated by dividing the sum of the lengths of two trains by the total speed of the two trains. If the length of the first train is L_1, the length of the second train is L_2, the speed of the first train is V_1 and the speed of the second trains is V_2, which of the following expressions would represent the time taken?

(1) $(L_1" L_2)* (V_1"V_2)$

(2) $(L_1"L_2) @ (V_1"V_2)$

(3) $[(L_1"L_2)@(V_1"V_2)]*60$

(4) $(L_1' L_2) @ (V_1'V_2)$

PART-II

SECTION-A : PHYSICS

This section contains **10 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

21. A boy is sitting in a train looking out the window at another train a few feet away. Both trains have stopped at a station. Slowly, one of the trains starts to move, but the boy cannot tell if it is his train or the other one. What can he do to tell which train is moving?

(1) Close his eyes.

(2) See if a coin falls straight down.

(3) Look at the ground outside.

(4) Look at the seat across the aisle.

**22.** The displacement-time graph of a body is shown in the figure below.
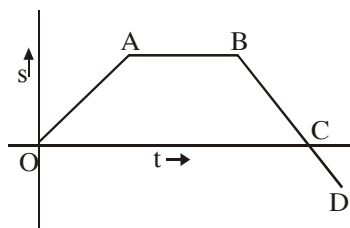
The part of the graph that represents the body at rest is

(1) OA   (2) AB   (3) BC   (4) CD

23. A 350 m long train passes over a 250 m long bridge at a speed of 54 km/h. How long will it take to cross the bridge?

(1) 40 minutes   (2) 2/3 second

(3) 2/3 hr   (4) 1/90 hr

24. The following forces act on an object: 13.5 N towards West, 21.2 N towards East, 33.0 N towards East, and 25.3 N towards West. Calculate the net force acting on the object.

(1) 15.4 N towards West   (2) 15.4 N towards East

(3) 23.6 N towards West   (4) 23.6 N towards East

25. How could you decrease the pressure exerted on the bottom of a glass of water?

(1) By pouring more water into the glass

(2) By putting the glass on a large surface area

(3) By putting the glass on a small surface area

(4) By drinking some of the water

26. In these two pictures, where is the water pressure the greatest?
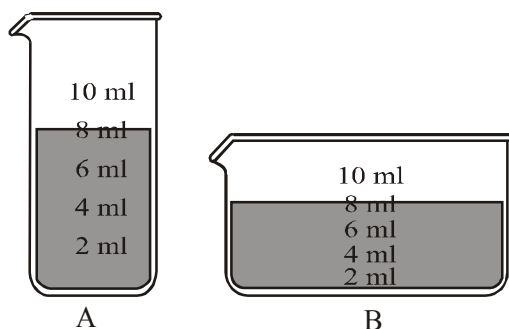
(1) The bottom of beaker A   (2) The bottom of beaker B

(3) The top of beaker A   (4) The top of beaker B

27. Two sounds of same pitch and loudness may differ in their

(1) Amplitudes of waves   (2) Frequencies of waves

(3) Shapes of waves   (4) Both 1 and 2

28. Sound waves generated by two sources A and B are shown by the graphs.
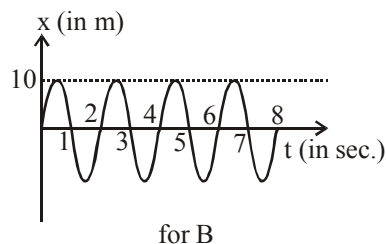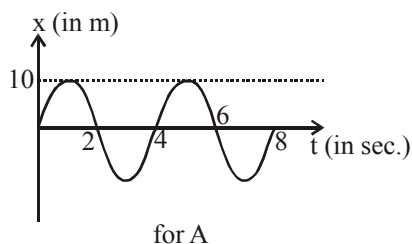
(1) Pitch of A is higher than pitch of B.

(2) Pitch of B is higher than pitch of A.

(3) Pitch of A and B is same.

(4) Information is insufficient to comment on pitch.

29. Which of these types of images is not possible with a diverging mirror?

(1) an image that is smaller than the object   (2) an upside-down image

(3) a virtual image   (4) an image

30. An incident ray of light is initially normal to the surface of a plane mirror. The mirror is rotated until the angle between the incident and reflected rays is 30°. The mirror has been rotated through an angle of

(1) 7.5°   (2) 15°   (3) 30°   (4) 45°

SECTION-B : CHEMISTRY

This section contains **10 Multiple Choice Questions.** Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.

31. Which metal is stored in kerosene oil ?

(1) Na   (2) Mg   (3) Ca   (4) None of these

32. Strong acid+Weak base $\longrightarrow$ Y+ H_2O+Heat the substance Y is

(1) Neutral salt   (2) Basic salt

(3) Acidic salt   (4) Double salt

33. Electrolysis of water is

(1) Physical change   (2) Chemical change

(3) Both 1 and 2   (4) None of these

34. To study the decreasing order of reactivity of metals an experiment is done by adding different metals to the aqueous solution of various salts.

From the data observed , the decreasing order of reactivity of metals is

Metal	$ZnSO_{4(aq)}$	$FeSO_{4(aq)}$	$CuSO_{4(aq)}$	$Al_2(SO_4)_{3(aq)}$
Zn	—	Displaced	Displaced	No reaction
Fe	No reaction	—	Displaced	No reaction
Cu	No reaction	No reaction	—	No reaction
Al	Displaced	Displaced	Displaced	—

(1) Al > Cu > Fe > Zn   (2) Al > Zn > Fe > Cu

(3) Al > Zn > Cu > Fe   (4) Al > Fe > Cu > Zn.

35. Which gas is evolved when potassium carbonate is treated with dilute HCl?

(1) Hydrogen (H_2) (2) Sulphur dioxide (SO_2)

(3) Carbon monoxide (CO)   (4) Carbon dioxide (CO_2)

36. Column (I) contains inorganic compounds and column (II) contains their uses.

        Column (I)   **Column (II)**

(i) SO_2 (a)   In cold drinks

(ii) CO_2 (b)   In glass formation

(iii) CaO   (c)   As bleaching agent in sugar industry

	(i)	(ii)	(iii)
(1)	b	a	c
(2)	a	b	c
(3)	c	a	b
(4)	c	b	a

37. In which of the following cases will the mass of the substance changes ?

(1) The freezing of water   (2) The burning of wood

(3) The glowing of an electric bulb   (4) The melting of ice

38. Two samples X and Y are tested with various indicators. The observations are listed in the following table.

Sample	Phenolphthalein	Methyl orange
X	Colourless	Red
Y	Light pink	Yellow

What are samples X and Y ?

(1) X is HCl and Y is NaOH

(2) X is NaOH and Y is HCl

(3) X is NaOH and Y is KOH

(4) X is HCl and Y is HNO_3

39. Fill in the blanks by choosing the option with correct words.

The process of rusting is _____ change. For rusting, both _____ and _____ are required. The salts present in sea water make the process of rusting _____

(1) Chemical, Air, Water, Faster

(2) Physical, Air, Water, Slower

(3) Chemical, Air, Water, Slower

(4) Physical, Air, Water, Faster

40. Study the given table carefully.

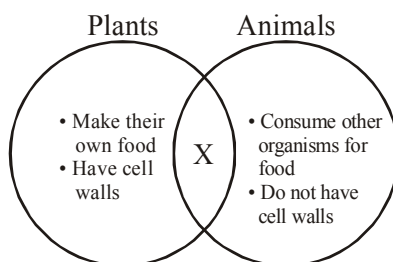|	Substances	Blue litmus solution	Phenolphthalein	Methyl orange	China rose indicator
1	Wasp's sting	Red	Colourless	Red	Red
2	Lime water	No change	Pink	Yellow	Green
3	Spinach	No change	Pink	Yellow	Green
4	Window cleaner	Red	Colourless	Red	Red
5	Curd	Red	Colourless	Red	Red

Which of them shows the incorrect change in the colour of indicators?

(1) 1 and 2   (2) 3 and 5

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

SECTION-C : BIOLOGY

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

41. Which of the following is not a vector borne disease ?

    (1) Common cold (2) Malaria (3) Dengue (4) Sleeping sickness

42. Factor not essential for photosynthesis is

    (1) O_2 (2) CO_2 (3) H_2O (4) Chlorophyll

43. Which of the following structures present in a cell is/are not bounded by a membrane ?

    (1) Nucleolus (2) Ribosomes (3) Centriole (4) All of the above

44. Antibiotics can be obtained from

    (1) Bacteria (2) Fungi (3) Protozoan (4) Both 1 and 2

45. Choose odd option from the following.

    (1) Pitcher plant (2) Sundew plant (3) Venus fly trap (4) Lichen

46. Protein coat of a virus enclosing its genetic material is known as

    (1) Vector (2) Capsid (3) Gene (4) None of the above

47. Which one of the following statement about mycoplasma is wrong ?

    (1) They cause diseases in plants. (2) They are also called PPLO.

    (3) They are always aerobic. (4) They are resistant to Penicillin.

48. Adjacent cells in a plant tissue are held together by middle lamella which is mainly made up of

    (1) Cellulose (2) Calcium & Magnesium pectate

    (3) Hemicellulose (4) Lignin & Suberin

49. Which of the following nutrient is essential for synthesis of chlorophyll in plants ?

    (1) Na (2) Ca (3) Fe (4) Mg

50. The Venn diagram given below shows plant and animal characteristics.


Plants   Animals

• Make their own food
• Have cell walls

X

• Consume other organisms for food
• Do not have cell walls

Which characteristic shared by plants and animals belongs in the space marked X ?

    (1) Locomotion (2) Multicellular (3) Photosynthetic (4) Producer

51. The main function of the oesophagus in the digestive system is

(1) Absorption   (2) Digestion   (3) Support   (4) Transport

52. Which of the following did a researcher use to obtain the picture of the bacteria shown below ?
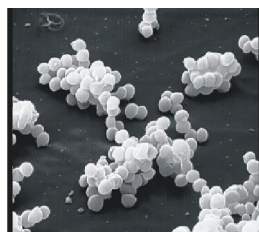
(1) Magnifying glass   (2) Calorimeter

(3) X-ray device   (4) Electron microscope

53. Which of the following digestive juice does not contain any enzyme ?

(1) Pancreatic juice   (2) Bile juice   (3) Gastric juice   (4) Intestinal juice

54. Arrange the following in the ascending order of the number of nuclei present in each of them.

Brain cell, Paramecium, RBC of mammals.

(1) Paramecium, Brain cell, RBC of mammals

(2) RBC of mammals, Brain cell, Paramecium.

(3) Brain cell, RBC of mammals, Paramecium

(4) All of these have same number of nuclei, i.e., one

55. Study the figures below.
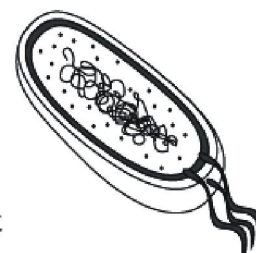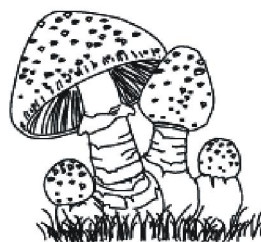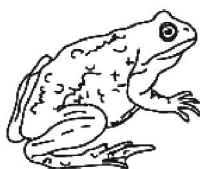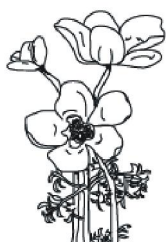
Which characteristic is shared by all of the organisms shown in the figure?

(1) Each undergoes metamorphosis as it develops.

(2) Each must have carbon dioxide to obtain energy.

(3) Each carries instructions that are coded as genes.

(4) Each absorbs nutrients and minerals from the soil.

56. During prolonged fasting, in what sequence are the following organic compounds used up by the body?

(1) First carbohydrates, next fats and lastly proteins.

(2) First fats, next carbohydrates and lastly proteins.

(3) First carbohydrates, next proteins and lastly lipids.

(4) First proteins, next lipids and lastly carbohydrates.

57. Which has been the greatest benefit of discovering the fungus Penicillium?

(1) Improving crop yields

(2) Development of an important antibiotic

(3) Better cancer treatments

(4) Production of better-tasting mushrooms

58. Which of these statements is true?
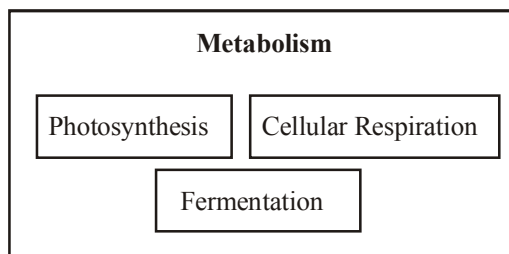
(1) Photosynthesis is part of fermentation.

(2) Metabolism is part of photosynthesis.

(3) Metabolism is part of respiration.

(4) Fermentation is part of metabolism.

59.
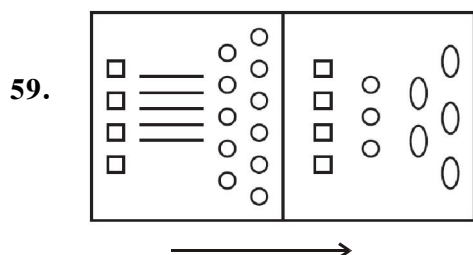
Which shape will be passively transported across the middle membrane in the diagram above?

(1) Circles   (2) Ovals

(3) Squares   (4) Rectangles

60. The diagram below shows a type of cell.

What function does this cell carry out?

(1) Coordination   (2) Digestion

(3) Excretion   (4) Reproduction

SECTION-D : MATHEMATICS

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 $4^{-x} = 16$, then x is

(1) 2　　　　　(2) −2　　　　　(3) 0　　　　　(4) 4

62. The value of $\sqrt[3]{343} \times \sqrt[3]{-64}$ is

(1) 28　　　　　(2) −28　　　　　(3) 18　　　　　(4) −18

63. The dimensions of a photograph are 30 cm× 20 cm. Find the length of the wooden frame needed to frame the photograph

(1) 600 cm　　　　　(2) 50 cm　　　　　(3) 100 cm　　　　　(4) 500 cm

64. The cube root of 27^2 is

(1) 27　　　　　(2) 9　　　　　(3) 3　　　　　(4) None

65. Square of an even number is

(1) An even number　　　　　　　　(2) An odd number

(3) Sometimes even sometimes odd　　　(4) None of these

66. By what number should $1\dfrac{2}{3}$ be divided to get $\dfrac{2}{3}$?

(1) $2\dfrac{2}{3}$　　　　　(2) $1\dfrac{2}{3}$　　　　　(3) $\dfrac{4}{9}$　　　　　(4) $2\dfrac{1}{2}$

67. In the following options, the measures of three angles are given. Which of these can form a triangle ?

(1) 45º, 61º, 73º　　　　　　　　(2) 63º, 37º, 80º

(3) 30º, 20º, 125º　　　　　　　　(4) 59º, 72º, 61º

68. How many metres of a carpet 60 cm wide will be required to cover the floor of a room which is 18 metres long and 15 metres broad?

(1) 320 m　　　　　(2) 360 m　　　　　(3) 420 m　　　　　(4) 450 m

69. The given rational numbers are $-\dfrac{2}{3}, \dfrac{7}{8}, -\dfrac{4}{5}, \dfrac{2}{9}$. The sum of the greatest and the smallest rational number is

(1) $\dfrac{47}{63}$　　　　　(2) $\dfrac{3}{40}$　　　　　(3) $-\dfrac{22}{15}$　　　　　(4) $-\dfrac{12}{27}$

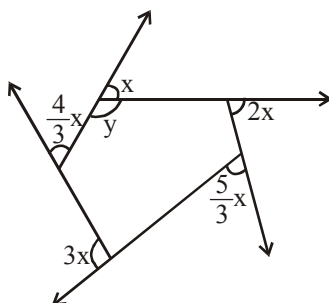**70.** Write 3^{12}, 2^{15}, 5^6 in the ascending order.

(1) 5^6, 2^{15}, 3^{12}

(2) 5^6, 3^{12}, 2^{15}

(3) 2^{15}, 5^6, 3^{12}

(4) 2^{15}, 3^{12}, 5^6

71. Find y in the following figure.

(1) 40º   (2) 120º   (3) 140º   (4) 130º

72. Which of the following is incorrect ?

(1) All squares are parallelograms.

(2) All parallelograms are squares.

(3) All rectangles are trapeziums.

(4) All rectangles are parallelograms.

73. A boat goes upstream and covers the distance between two ports in 4 hours while it covers the same distance downstream in $1\dfrac{7}{13}$ hours. If the speed of the boat is 18 km/hr in still water, then the speed of the stream is

(1) 8 km/hr

(2) 20 km/hr

(3) 9 km/hr

(4) 10 km/hr

74. If $3^x - 3^{x-1} = 18$, then the value of x^x is

(1) 3   (2) 8   (3) 27   (4) 216

75. In the given figure, the value of x° is
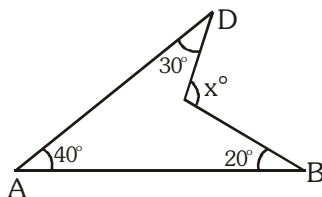
(1) 60°   (2) 80°   (3) 70°   (4) 90°

76. What is the value of the given expression?

$$\frac{2 + 2(3+7)^2 - \sqrt[3]{73-9}}{3}$$

(1) 34   (2) 64   (3) 66   (4) 132

77. Which equation represents "4 times a number k divided by the number squared equals the square root of 2"?

(1) $\dfrac{4k}{k^2} = \sqrt{2}$ (2) $\dfrac{k+4}{4^2} = \sqrt{2}$ (3) $\dfrac{4k}{\sqrt{k}} = 2^2$ (4) $\dfrac{4k}{4^2} = \sqrt{2}$

78. D, E, F are mid points of the sides BC, CA and AB respectively of ΔABC, then area of parallelogram BDEF is equal to

(1) $\dfrac{1}{2}$ ar (ΔABC)   (2) $\dfrac{1}{4}$ ar (ΔABC)

(3) $\dfrac{1}{3}$ ar (ΔABC)   (4) $\dfrac{1}{6}$ ar (ΔABC)

79. A Baseball Park is made up of 4 square baseball fields, each of which has an area of 3,600 square meters.
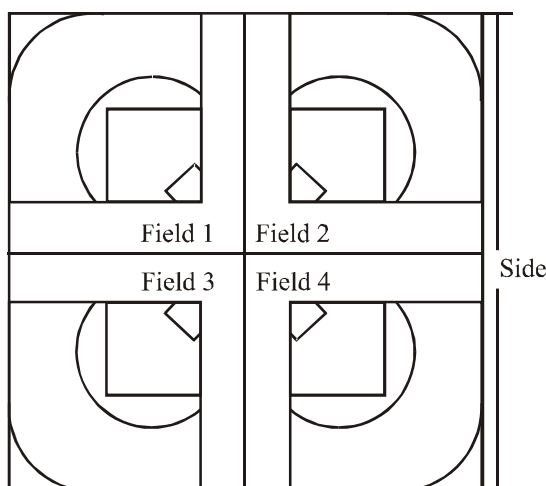
What is the length of each side of the park?

(1) 60 m   (2) 120 m   (3) 144 m   (4) 240 m

80. In 1960, the population of Mumbai was about 3.9×10^6 people. By 2000, the population had grown to about 8.2×10^6. By how much did the population increase?

(1) 43,000   (2) 430,000   (3) 4,300,000   (4) 43,000,000

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

TALLENTEX 2015
ALLEN'S Talent Encouragement Exam

ANSWER KEY : CLASS - 8th (VIII)
(Held on : 12-10-2014)

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

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