National Level Science Talent Search Examination - 2013
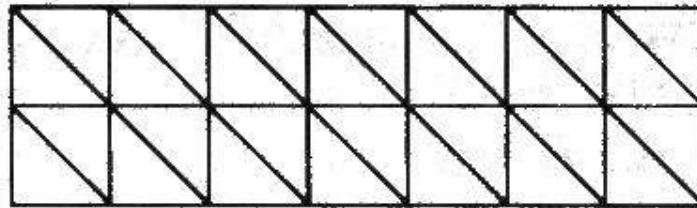
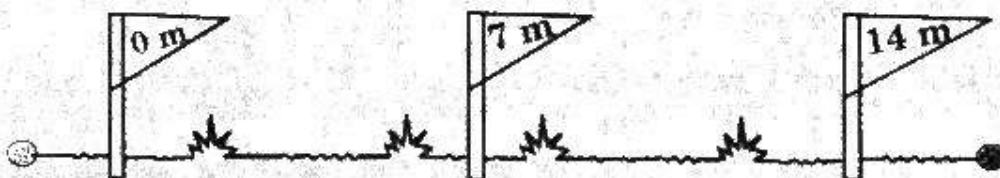**1** The given figure is made up of identical triangles. Arun coloured $\frac{4^{th}}{7}$ of the figure in pink and 5 triangles in blue. What fraction of the figure is not coloured?

(A) $\frac{1}{7}$ (B) $\frac{3}{7}$ (C) $\frac{1}{2}$ (D) $\frac{1}{4}$

2 At a marathon, flagposts were placed at equal distances. Find the distance between the second flagpost and the sixteenth flagpost.

(A) 91 m   (B) 98 m   (C) 112 m   (D) 105 m

3 Manohar works 8 hours a day and 5 days a week. He is paid ₹ 12 an hour. How much does he earn in a week?

(A) ₹ 96   (B) ₹ 672   (C) ₹ 480   (D) ₹ 156

4 The time in my digital watch just changed to 20: 11. How many minutes later will it next show a time with the digits 0, 1, 1, 2?

(A) 40 minutes   (B) 45 minutes

(C) 50 minutes   (D) 55 minutes

5 Identify the greatest 3 – digit odd number between 200 and 800 that can be formed using the digits given.

(*Note* : Each digit can be used only once.)

$$9, \quad 6, \quad 0, \quad 8, \quad 2$$

(A) 969   (B) 869   (C) 789   (D) 689

6 Manas lists every 3 – digit number whose digits add up to 8. What is the sum of the largest and the smallest numbers in his list?

(A) 707   (B) 907   (C) 1000   (D) 1001

7 How many odd numbers are there between 13 and 20?

(A) 7   (B) 5   (C) 3   (D) 1

8 How many sixes are there in the product of 18 and 479?

(A) 108   (B) 371   (C) 1437   (D) 8622

9 Identify the shape based on the description given.

2 pairs of equal sides
4 pairs of perpendicular lines

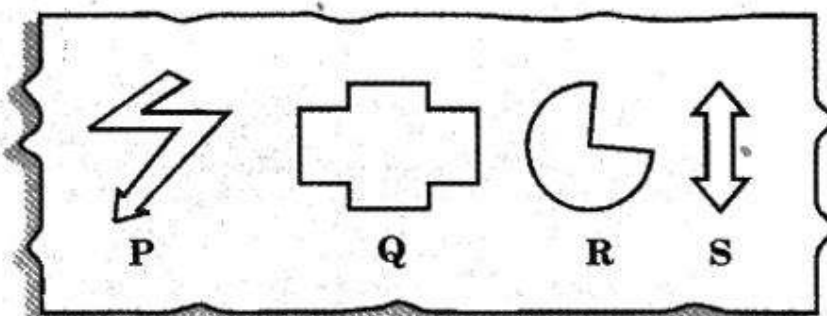(A) A square   (B) A parallelogram
(C) A triangle   (D) A rectangle

10 Identify the smallest whole number that is divisible by 10 and 12.

(A) 60   (B) 40   (C) 80   (D) 50

11 **Which of the following is not a symmetric figure?**

P   Q   R   S

(A) P   (B) Q   (C) R   (D) S

12 **Which of the given numbers is not a whole number?**

(A) $\dfrac{2013+0}{1}$ (B) $\dfrac{2013+2}{3}$

(C) $\dfrac{2013+3}{2}$ (D) $\dfrac{2013+3}{7}$

13 **Which of the following statements is true?**

(i) $\dfrac{1}{2}, \dfrac{1}{5}, \dfrac{1}{7}$ and $\dfrac{1}{10}$ are fractions arranged in ascending order.

(ii) $\dfrac{3}{9}, \dfrac{3}{7}, \dfrac{3}{10}, \dfrac{3}{8}$ are like fractions.

(iii) $\dfrac{9}{12}, \dfrac{12}{15}, \dfrac{16}{20}$ and $\dfrac{3}{4}$ are equivalent fractions.

(iv) $\dfrac{16}{18}, \dfrac{7}{8}, \dfrac{10}{12}$ and $\dfrac{3}{4}$ are fractions arranged in descending order.

(A) Only (i), (ii) and (iv)   (B) Only (ii) and (iii)

(C) Only (iv)   (D) Only (ii)

14 **6735 pencils were shared equally among 35 students. How many pencils remained unshared?**

(A) 30   (B) 15   (C) 45   (D) 20

15 What does the digit '5' in the sum 2139 + 8719 + 4163 stand for?

(A) 5   (B) 50   (C) 100   (D) 5000

16 Choose the number which is 1685 less than the product of 9 and 396.

(A) 1280   (B) 1879   (C) 3564   (D) 5249

17 Which of the following has the greatest value?

(A) $\dfrac{18}{25}$ (B) 0.357   (C) 0.864   (D) $\dfrac{13}{20}$

18 What is the capacity of a jug if water filled to its brim can be poured equally into 4 glasses each with a capacity of 405 ml?

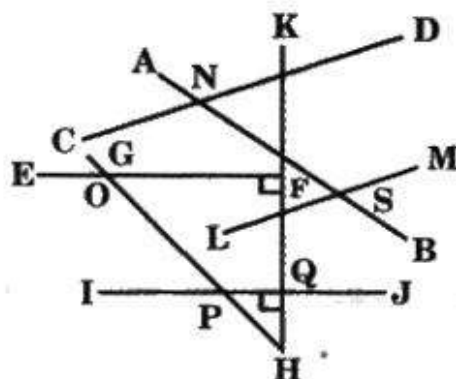(A) 1 l (B) 1 l 400 ml   (C) 1 l 620 ml   (D) 1 l 860 ml

19 400 people were present in the Sports Day. There were 132 boys and 21 girls more than the number of boys. The rest were teachers. How many girls more were there than the number of teachers?

(A) 32   (B) 38   (C) 132   (D) 170

20 Which of the pairs of lines that are not horizontal are parallel?

(A) EF and IJ   (B) AB and GH

(C) EF and LM   (D) CD and LM

21 Which of the following is the smallest four-digit number formed with four different digits?
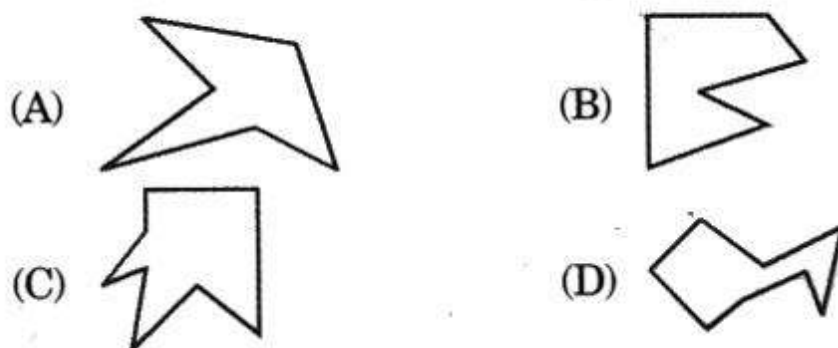
(A) 1021 (B) 12013 (C) 2012 (D) 1023

22 Mr. X bought some chocolates. He ate $\frac{1}{4}^{th}$ and his son ate $\frac{3}{8}^{th}$ of the chocolates. There were 36 chocolates left. How many chocolates did he buy?

(A) 82 (B) 64 (C) 96 (D) 72

23 David drew a 6 sided figure with no right angles. Identify the figure.

(A)

(B)

(C)

(D)

24 Identify the number that can replace the question mark.
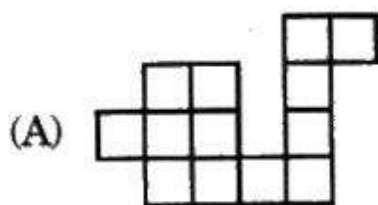
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5  4  2  8
   9  3  6
6  ?  6  4
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(A) 8 (B) 6 (C) 4 (D) 3

25 When a number is divided by 5, the quotient is 6. What is the quotient when the same number is divided by 30?
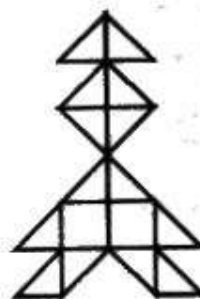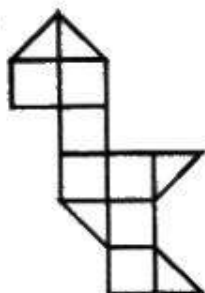
(A) 1 (B) 10 (C) 100 (D) 1000
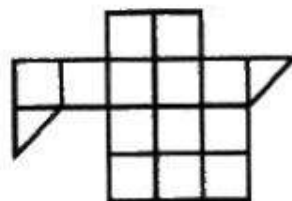
26 Which figure has the maximum area?

(A)

(B)

(C)

(D)

27 Identify the remainder when 5428 is divided by 8.

(A) 0   (B) 2   (C) 1   (D) 4

28 Tarun's mass is 75 kg. He is 22 kg heavier than his sister. Find the total mass of Tarun and his sister.

(A) 94 kg   (B) 97 kg   (C) 128 kg   (D) 112 kg

29 Arjun has a 5 digit number in his mind. The digit '3' is in the tens place and the thousands place. The digit in the ones place is thrice the digit in the tens place. The digit '7' has a value of 700 and the digit '2' stands for twenty thousand. What is the number that Arjun has in mind?
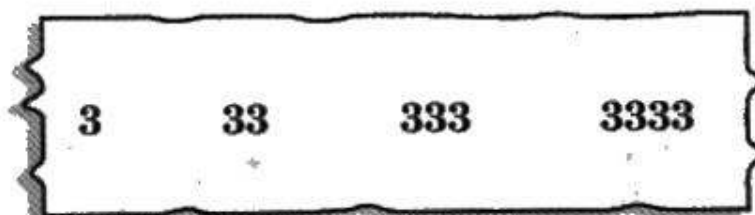
(A) 27639   (B) 23739   (C) 93276   (D) 23679

30 How many of the given numbers are prime?
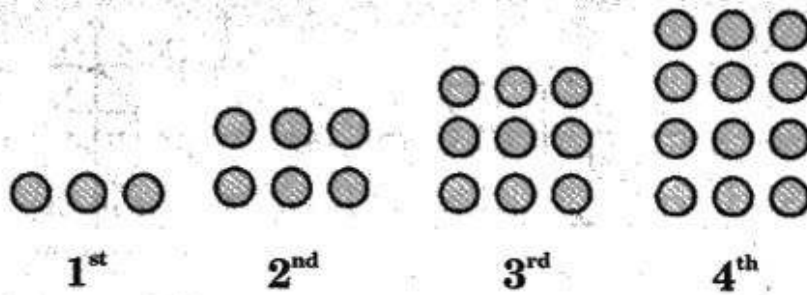
| 3 | 33 | 333 | 3333 |

(A) 0   (B) 1   (C) 2   (D) 3

31 Study the pattern given carefully.
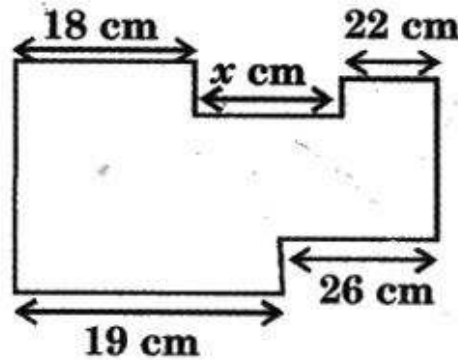

1st	2nd	3rd	4th

In which pattern will there be 36 ◯'s?

(A) 8th   (B) 10th   (C) 12th   (D) 15th

32 Find the value of x in the given figure.

18 cm   22 cm
x cm
26 cm
19 cm

(A) 8   (B) 6   (C) 3   (D) 5

33 What is the value of $\dfrac{8}{9} - \dfrac{2}{3}$?

(A) $\dfrac{6}{9}$ (B) $\dfrac{6}{3}$ (C) $\dfrac{2}{9}$ (D) $\dfrac{2}{3}$

34 John and David had the same amount of money. After John bought a box of pencils for ₹ 24, David had 3 times the amount of money left with John. How much did they have in all at first?

(A) ₹ 36   (B) ₹ 48   (C) ₹ 72   (D) ₹ 84

35 There are 90 biscuits in Box A and 210 biscuits in Box B. How many biscuits from Box B must be transferred to Box A so that there will be twice as many biscuits in Box B as in Box A?
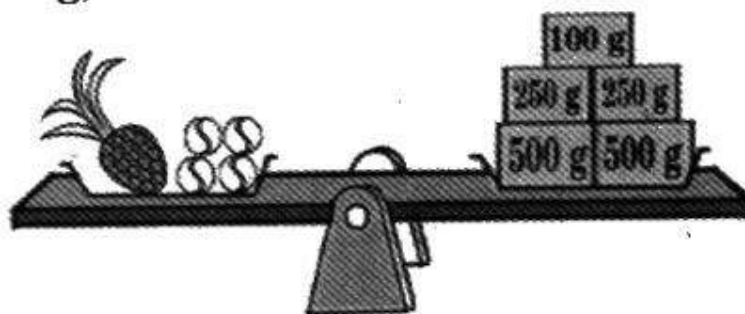
(A) 10   (B) 8   (C) 6   (D) 15

36 Which of the following is a factor of 1331?

(A) 5　　　　(B) 3　　　　(C) 7　　　　(D) 11

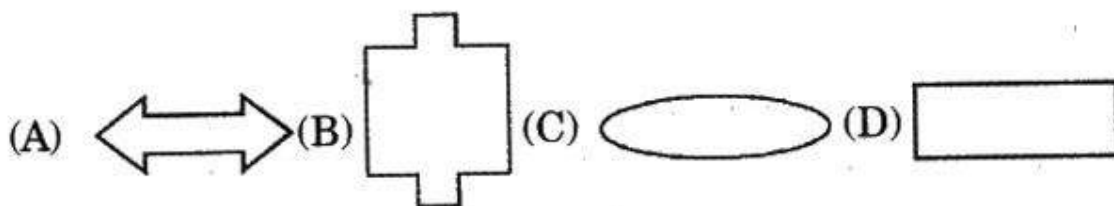**37** Arun had $\frac{7}{10}$ m of wool. He cut it into 5 equal pieces. What was the length of each piece of wool?

(A) $\frac{2}{7}$ m　　(B) $\frac{7}{50}$ m　　(C) $3\frac{1}{2}$ m　　(D) $5\frac{7}{10}$ m

38 Study the figure given carefully. If the fruit has a mass of 1300 g, then find the mass of each ball.

(A) 50 g　　(B) 75 g　　(C) 200 g　　(D) 300 g

39 Which of the following figures can be tesselated?

(A)　　(B)　　(C)　　(D)

40 What is the smallest possible number that gives 23500 when rounded off to the nearest ten?

(A) 23458　(B) 23495　　(C) 22538　　(D) 24540

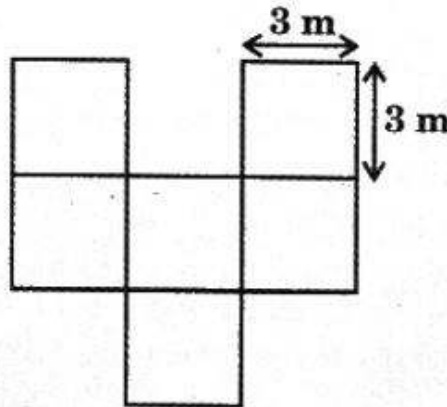**41** Multiply the difference between 1203 and 817 by 37.

(A) 14282　(B) 29026　　(C) 30229　　(D) 43694

42 $\frac{7}{12}$ of the students in a class are Hyderabadis and the rest are Punjabis. What fraction of the students in the class are Punjabis?

(A) $\frac{4}{12}$　　(B) $\frac{5}{12}$　　(C) $\frac{6}{12}$　　(D) $\frac{7}{12}$

43 Which of the following has exactly one factor other than 1 and itself?

(A) 8   (B) 13   (C) 6   (D) 25

44 Find the perimeter of the figure given.
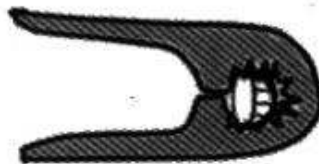

(A) 24 m   (B) 42 m   (C) 36 m   (D) 38 m

45 Find the sum of the first three common multiples of 6 and 9.

(A) 54   (B) 108   (C) 162   (D) 216

Class : IV   General Science

46 Which of the following teeth have the same function as that of the object in the given figure?
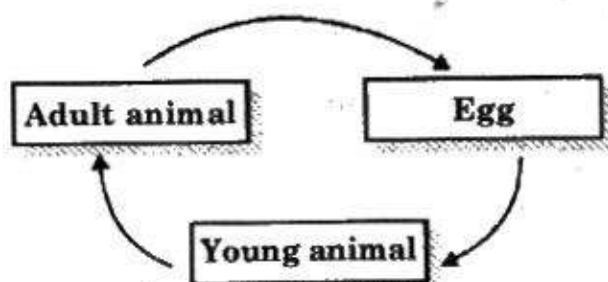

(A) Canines   (B) Incisors

(C) Premolars   (D) Molars

47 How is food preserved in refrigerators and cold storages?

(A) By keeping the food in air-tight condition.

(B) By removing the water present in the food.

(C) By keeping the food at high temperature.

(D) By keeping the food at low temperature.

48 The given figure shows the life cycle of an animal 'X'.
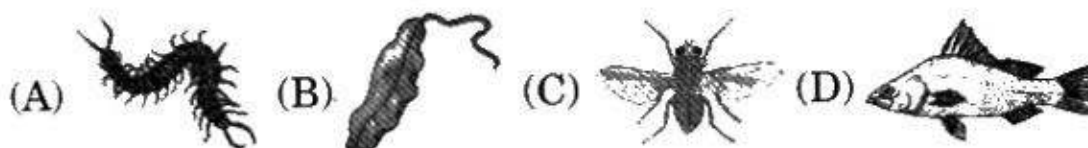

Which of the following animals has the same life cycle as that of animal 'X'?

(A) Cat   (B) Bat   (C) Turtle   (D) Horse

49 Which of the following is a type of microorganism?

(A)   (B)   (C)   (D)

50 Which of the following is NOT a part of the solar system?

(A) The earth   (B) The moon   (C) The jupiter   (D) A pole star
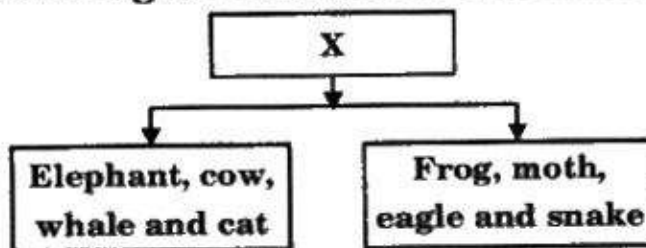
51 Study the given table.

States of matter	Properties	Example
X	Has a definite shape	Wood
Y	Has no definite shape and volume	Water vapour
Z	Has no definite shape but has definite volume	Milk

Which of the following states of matter is carbon dioxide?

(A) X   (B) Y   (C) Z   (D) All of these

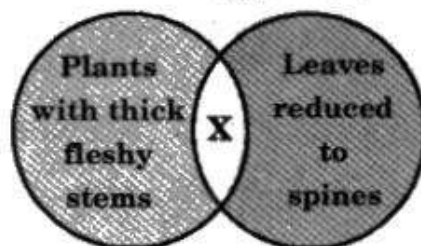**52** The given diagram shows the classification of animals.

Which of the following is 'X'?

(A) The way animals eat.   (B) The way animals move.

(C) The way animals breathe.   (D) The way animals reproduce.

53 The given figure shows the classification of plants according to their characteristics.

Which plant does 'X' represent?

(A) Pine tree   (B) Prickly pear

(C) Coconut tree   (D) Fir tree

54 How is dietary fibre useful to us?

(A) It is a protective food.

(B) It is an energy giving food.

(C) It is a body building food.

(D) It helps in removing undigested food.

55 Why does a mother bird sit on the eggs?

(A) To protect them from preying animals.

(B) To provide cooling condition.

(C) To keep them warm.

(D) To provide food to the baby birds growing inside the eggs.

56 The given figure shows things made from one of the earth's natural resources.

From which of the following things are these items made?

(A) Soil   (B) Minerals

(C) Fossil fuels   (D) Living things

57 Why is sunlight a basic need of plants?

(A) Plants need sunlight to make water.

(B) Plants need sunlight to breakdown food.

(C) Plants need sunlight to carry out photosynthesis.

(D) Plants need sunlight to carry out respiration.

58 What is the function of the hump on a camel?

(A) To protect the animal from its enemy.

(B) To store fat to be used when food and water become scarce in the desert.

(C) To provide a place to put the saddle on.

(D) To allow the sand to slide off the body of the camel.

59 Which of the following statements is/are true about dolphins and fishes?

> (i) Both dolphins and fishes respire through gills.
> (ii) Both of them are aquatic animals.
> (iii) They reproduce in different ways.

(A) Only (i)   (B) Only (ii)

(C) Only (ii) and (iii)   (D) All of the above

60 Nikky made the following notes about an animal she was studying.

> It lays eggs in a shallow pit in the sand.
> The eggs are warmed by the heat of the sun.

Which animal is described in the above notes?

(A) A frog   (B) A turtle   (C) An eagle   (D) A moth

61 The given figure shows a tooth that is decayed.
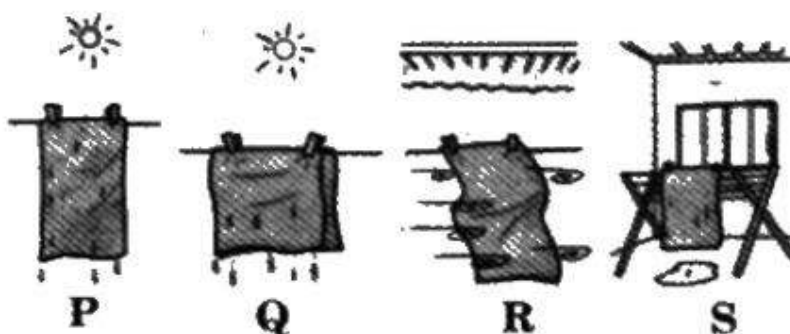

Which of these causes the decay of the tooth?

(A) Protozoa   (B) Virus

(C) Fungi   (D) Bacteria

62 Four similar bed sheets were washed and hung out in different ways to dry as shown in the figure.

P   Q   R   S

Which bed sheet will take the longest time to dry?

(A) P   (B) Q   (C) R   (D) S

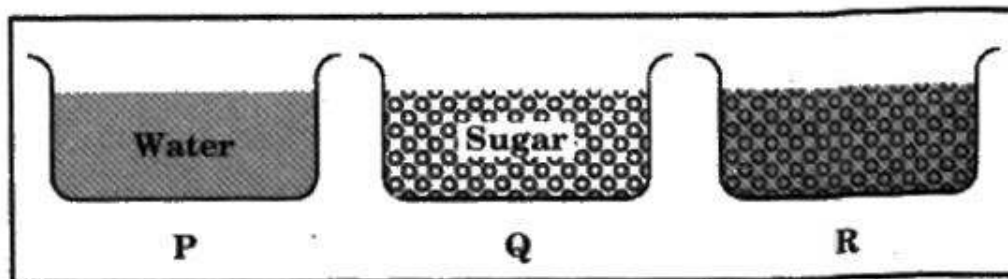**63** The given figure shows an experimental set up in a laboratory.

Which phenomenon is being investigated?

(A) Mist and fog formation   (B) Expansion of water

(C) Freezing of water   (D) Both (B) and (C)

64 Observe the given figures and identify suitable headings for P, Q and R.

(A) P – Solute, Q – Solvent, R – Solution

(B) P – Solvent, Q – Solute, R – Solution

(C) P – Solution, Q – Solute, R – Solvent

(D) P – Solute, Q – Solution, R – Solvent

65 Why does the moon look as big as the sun?

(A) The moon is nearer to the sun than the earth.

(B) The moon is nearer to the earth than the sun.

(C) The moon moves around the sun.

(D) The moon is farther than the sun from the earth.

66 Match the following food components in Column – I with their functions in Column – II.

	Column – I		Column – II
i.	Carbohydrates	p.	Body building food
ii.	Vitamins and minerals	q.	Energy giving food
iii.	Proteins	r.	Protective food

(A) i - p, ii - q, iii - r   (B) i - r, ii - q, iii - p

(C) i - q, ii - r, iii - p   (D) i - r, ii - p, iii - q

67 Which of the following forms of energy is used in the moving of the spring of a watch?
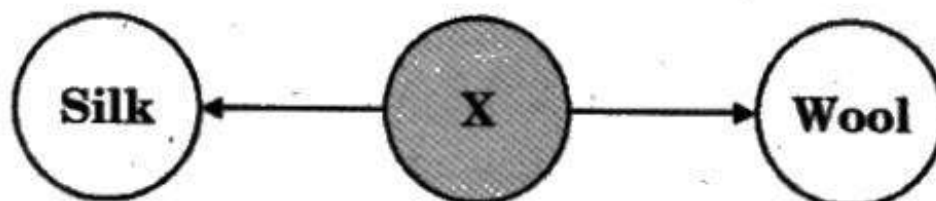
(A) Chemical energy   (B) Mechanical energy

(C) Heat energy   (D) Sound energy

68 Identify 'X' in the given figure.

(A) Animal fibre   (B) Plant fibre

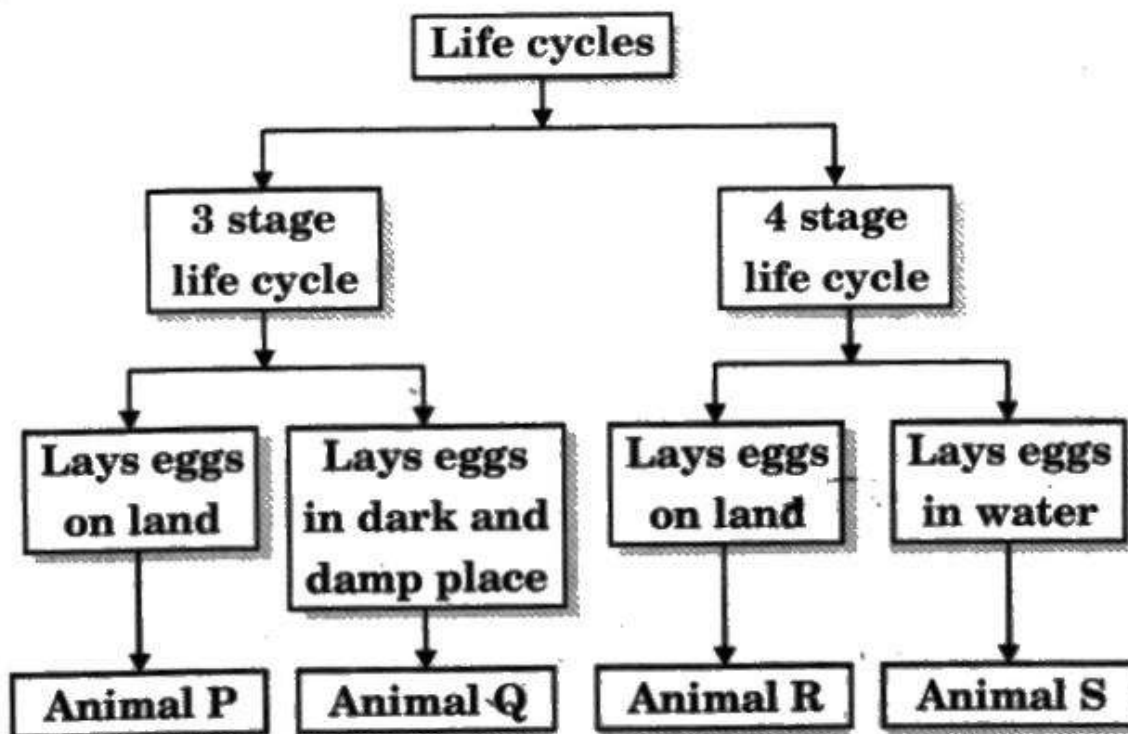(C) Chemical fibre   (D) Plastic fibre

69 Observe the table given below and identify the suitable headings of P, Q and R.

P	Q	R
Book, Table, Pencil	Milk, Oil, Tea, Juice	Water vapour, Oxygen, Carbon dioxide

(A) P – Solid, Q – Liquid, R – Gas

(B) P – Liquid, Q – Solid, R – Gas

(C) P – Gas, Q – Liquid, R – Solid

(D) P – Solid, Q – Gas, R – Liquid

70 Observe the chart given below.

Which of the following represents animals Q and S?

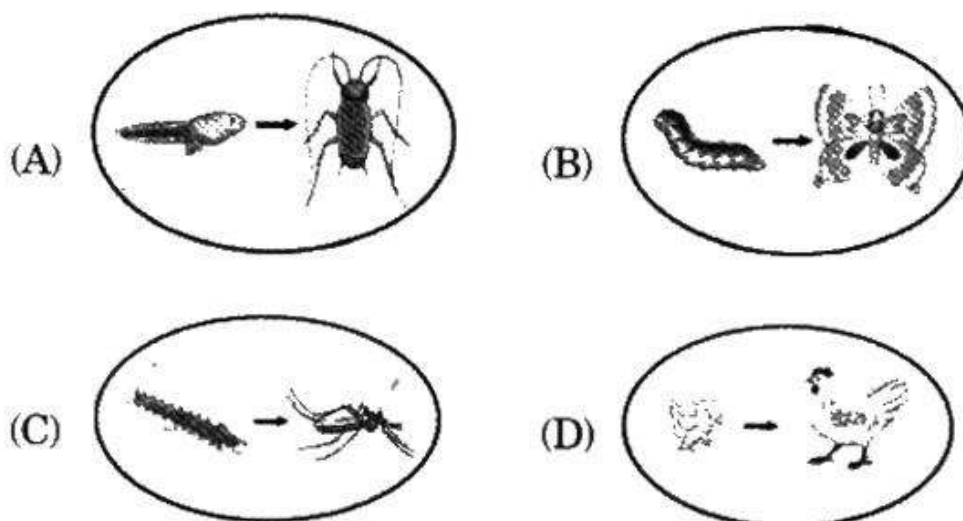|	Q	S
(A)	Fish	Cockroach
(B)	Butterfly	Grasshopper
(C)	Grasshopper	Butterfly
(D)	Cockroach	Mosquito

71 Animals move from place to place.

> (i) To escape from danger
> (ii) In search of food and water
> (iii) To look for shelter

What are the reasons for the movement of animals?

(A) Only (i) and (ii)　　　　(B) Only (ii) and (iii)

(C) Only (i) and (iii)　　　　(D) (i), (ii) and (iii)

72 Which of the following pairs of adult and its young one is INCORRECTLY matched?
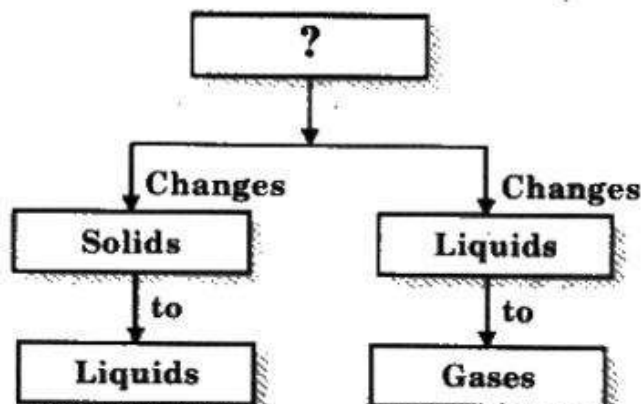
(A)

(B)

(C)

(D)

73 What is the source of energy in a solar cooker?

(A) The sun　(B) The moon　(C) The earth　(D) Water

74 Which of these words completes the given chart.

(A) Cooling　　　　　　(B) Heating

(C) Freezing　　　　　　(D) Condensation

75 Which of these forces is used to pull a catapult?

(A) Gravitational force   (B) Frictional force

(C) Elastic force   (D) Chemical force

76 The things given in the box are similar.

> Lever, Wheel and Axle,
> Inclined Plane, Pulley
> and Screw

How are they similar?

(A) Weapons   (B) Wooden things

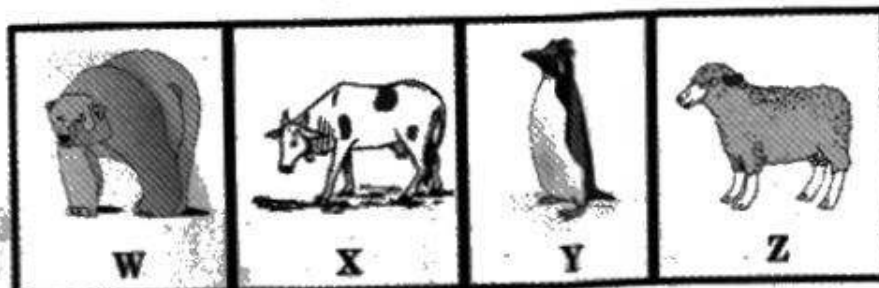(C) Non-metallic things   (D) Simple machines

77 Which of the following statements best explains how stems transport water to other parts of the plant?

(A) Through a chemical called chlorophyll.

(B) Through tiny pores called stomata.

(C) Through a system of tubes.

(D) By converting food to water.

78 Which of these animals has special characteristic features that help them to survive in cold habitats?

W   X   Y   Z

(A) Only W and X   (B) Only W, X and Z

(C) Only W and Y   (D) Only W, Y and Z

79 Which process is responsible for the formation of water vapour in the atmosphere?

(A) Condensation
(B) Evaporation
(C) Sublimation
(D) Decantation

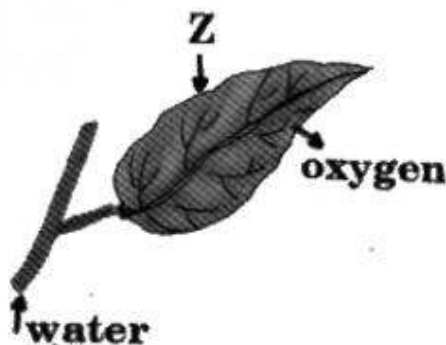**80** Identify who I am.

I cannot make my own food. I grow on dead plants and animals and absorb food from them.

(A) Maple
(B) Mushroom
(C) Croton
(D) Cactus

81 In the given diagram what does Z represent?

(A) Sugar
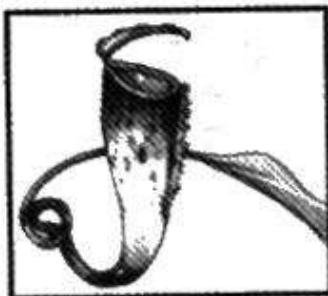(B) Carbon dioxide
(C) Nitrogen
(D) Water vapour

82 To which group do the given animals belong?

(A) Herbivores
(B) Carnivores
(C) Omnivores
(D) Producers

83 What type of a plant is given in the box?

(A) Floating plant   (B) Fixed plant
(C) Insectivorous plant   (D) Submerged plant

84 Which of these organisms help in the making of bread and wine?

(A) Bacteria   (B) Virus
(C) Yeast   (D) Protozoa

85 An object has the following characteristics.

- It is a member of the solar system.
- It gives out light and heat.
- It is at the centre of the solar system.

What is the object?

(A) The sun   (B) The earth
(C) The moon   (D) An asteroid

86 Which of these teeth are sharp and pointed?

(A) Molar   (B) Pre-molars
(C) Canines   (D) Incissors

87 Which of the following statements is NOT true about the earth?

(A) The earth is a planet.

(B) The earth moves around the sun.

(C) The earth has three natural satellites.

(D) The earth is the third planet nearest to the sun.

88 Identify the structure labelled as 'P' in the given figure.

(A) Prop roots   (B) Sucking roots

(C) Supporting roots   (D) Breathing roots

89 Study the information given in the box.

- They make our work easier.
- Some change the direction of force used.
- They increase the speed of work.

What is the information about?

(A) Force   (B) Energy

(C) Tools   (D) Friction

90 Which of the following are natural fibres?

(A) Cotton, Wool, Terylene, Teflon

(B) Silk, Jute, Polyester, Nylon

(C) Nylon, Terylene, Teflon, Polyester

(D) Cotton, Wool, Silk, Jute

91 Who sells cakes, bread and pastries?

(A) A grocer
(B) A fishmonger
(C) A confectioner
(D) A greengrocer

92 With which sport is the word 'short serve' associated?

(A) Badminton
(B) Cricket
(C) Football
(D) Chess

93 Which of the following is a book that gives the meanings of words?

(A) An atlas
(B) A dictionary
(C) A diary
(D) A thesaurus

94 Through which of the following can you send an e-mail?

(A) Calculator (B) Television (C) Radio (D) Internet

95 Which appliance is used to reheat food?

(A) Geyser
(B) Microwave oven
(C) Refrigerator
(D) Vacuum cleaner

96 Identify a leap year.

(A) 2009 (B) 2011 (C) 2013 (D) 2012

97 Which is the largest animal?

(A) An elephant
(B) A rhinoceros
(C) A blue whale
(D) A panther

98 Which vehicle has three wheels?

(A) An auto (B) A bus (C) A car (D) A bicycle

99 Which instrument does Ustad Zakir Hussain play?

(A) Guitar (B) Tabla (C) Sarod (D) Santoor

100 How many white squares are there on a chess board?

(A) 64 (B) 62 (C) 32 (D) 30