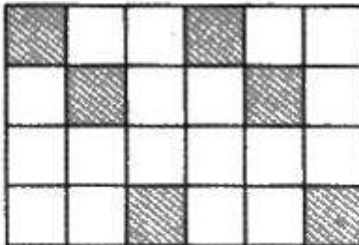


# National Level Science Talent Search Examination - 2014

**Class : IV**

**Mathematics**

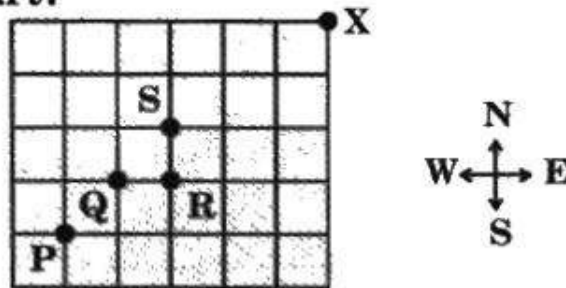
- 1 Observe the given figure.



How many more squares should be shaded so that  $\frac{3}{4}$  of the figure is shaded?

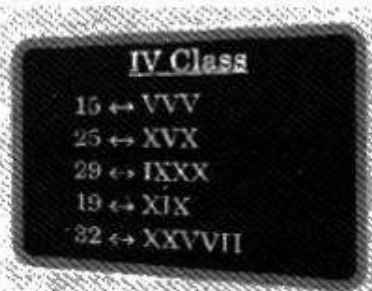
- (A) 18      (B) 12      (C) 24      (D) 6

- 2 In the grid, I took 2 steps east, 2 steps north, 1 step east and 1 step north and reached X. At which point did I start?



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

- 3 Five Roman numerals are written on the black board as shown.



Identify the correct match.

- (A) 15 ↔ VVV      (B) 19 ↔ XIX  
(C) 32 ↔ XXVVI      (D) 25 ↔ XVX

4

Study the following statements.

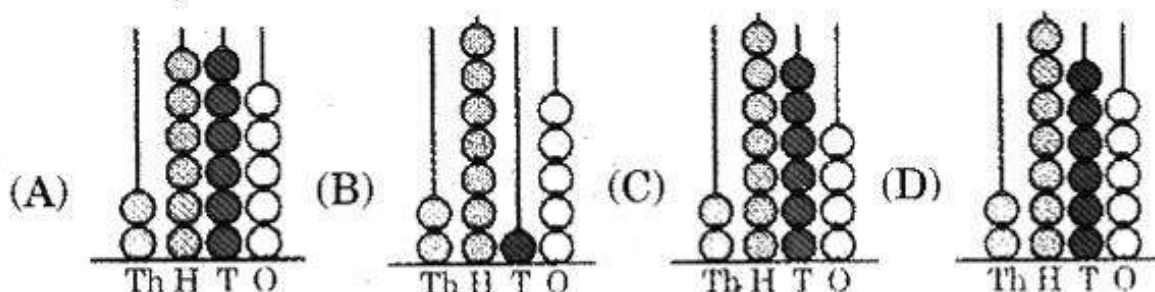
- $\frac{2}{3}$  of wire P is 80 cm long.
- $\frac{2}{5}$  of wire Q is 46 cm long.

By how much is wire P longer than wire Q?

- (A) 120 cm (B) 10 cm (C) 5 cm (D) 115 cm

5

Which abacus correctly represents 2765?



6

The table shows the volume of some types of canned drinks.

Drink	Volume
W	1 l 480 ml
X	1 l 250 ml
Y	1 l 420 ml
Z	1 l 500 ml

Which two types of drinks have a total volume of 2.75 l?

- (A) W and X (B) X and Y  
(C) X and Z (D) Y and Z

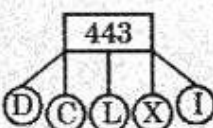
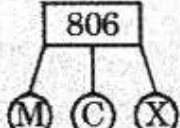
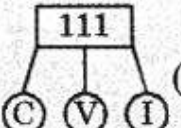
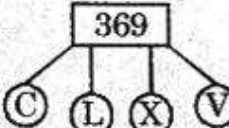
7

From which of the following numbers must 4409 be subtracted so that the difference is 72352?

- (A) 67943 (B) 67941 (C) 68943 (D) 76761

8

Which of the following are the correct Roman numerals used to write the equivalents of the given numbers?

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

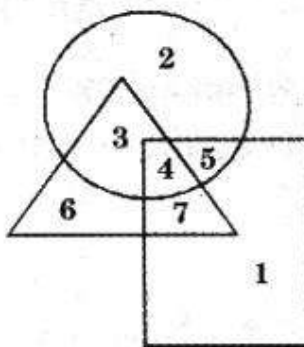
9

How many 8's are there in the product of 24 and 479?

- (A)  $479 \times 8$  (B) 1619 (C)  $24 \times 6$  (D) 1437

10

In the figure given, a rectangle, a triangle and a circle overlap, and the different regions formed are numbered 1 to 7. For example, region 1 is in the rectangle, but not in the circle or the triangle.

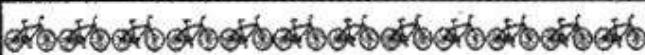







How many regions are there in exactly two shapes?

- (A) 2 (B) 3 (C) 4 (D) 5

11

The given pictograph shows the number of bicycles sold from a shop over 5 weeks.

Week	Sale of bicycles
1	
2	
3	
4	
5	
Each  represents 100 bicycles.	

Between which two weeks is the increase in sale of bicycles the maximum?

- (A) Week 4, Week 5 (B) Week 1, Week 2  
(C) Week 2, Week 3 (D) Week 3, Week 4

12

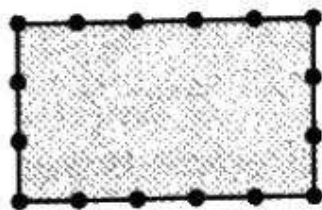
A 5-digit number is made up of different odd digits.

What is the smallest possible number?

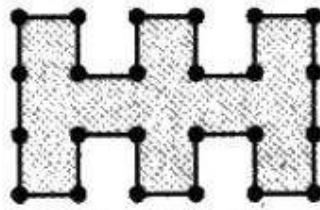
- (A) 97513 (B) 13579 (C) 95713 (D) 15397

13

If the length of rope needed to make border X is 16 m, find the length of rope needed for border Y.



Border X



Border Y

- (A) 16 m (B) 20 m  
(C) 22 m (D) 24 m

14

The difference between two numbers is 4937. If the greater number is 30451, what is the smaller number?

- (A) 35388 (B) 35514  
(C) 25514 (D) 26514

15

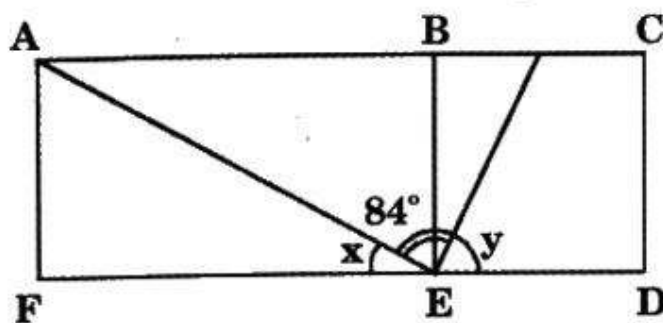
If  $7009 \text{ g} = X \text{ kg } Y \text{ g}$ , find the respective values of X and Y.

- (A) 7; 90 (B) 7; 900 (C) 70; 9 (D) 7; 9

16

The figure given is made up of a square and a rectangle.

Find the value of  $\angle y$  if  $\angle x$  is  $\frac{1}{5}$  of  $\angle y$ .



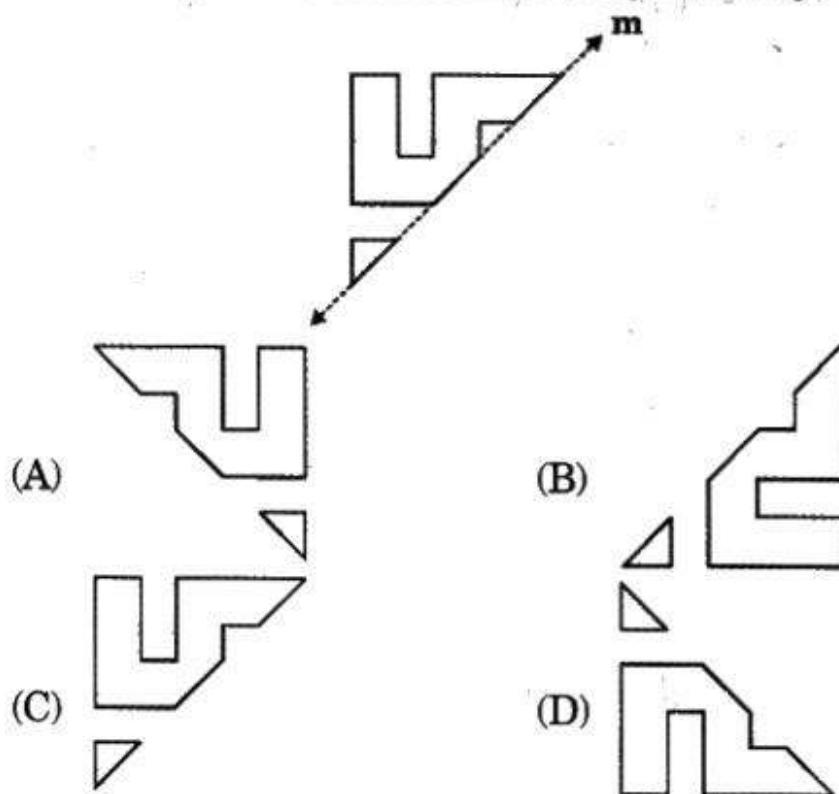
- (A)  $96^\circ$  (B)  $80^\circ$  (C)  $60^\circ$  (D)  $63^\circ$

17

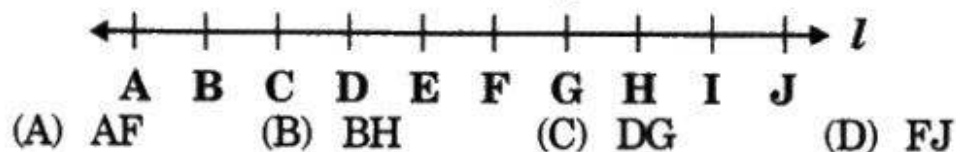
Which of the following is correct about the smallest 5-digit number formed using the digits 5, 0, 3, 1 and 7 only once?

- (A) 0 is in thousands place. (B) 5 is in hundreds place.  
(C) 3 is in tens place. (D) 7 is in tens place.

- 18 Find the symmetrical part of the given figure with the dotted line as the line of symmetry.

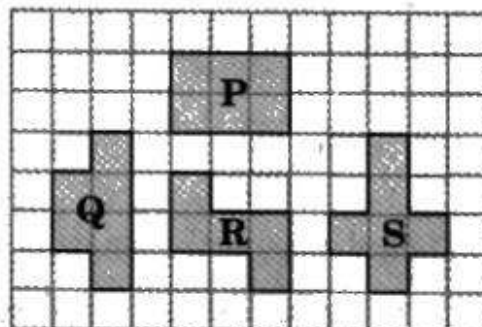


- 19 Each part on the number line drawn is of 1 cm. What is the sum  $AC + DE + GJ$  equal to?



- 20 96 children participated in a science fair.  $\frac{5}{8}$  of them were boys. How many girls participated in the fair?
- (A) 30 (B) 12 (C) 36 (D) 60

- 21 The figures given are drawn on a grid of equal squares.



- Which figure has a different area than the others?
- (A) Figure P (B) Figure Q (C) Figure R (D) Figure S



22

What is the product of the fifth multiple of 9 and the seventh multiple of 5?

- (A) 3517 (B) 1755 (C) 1575 (D) 6035

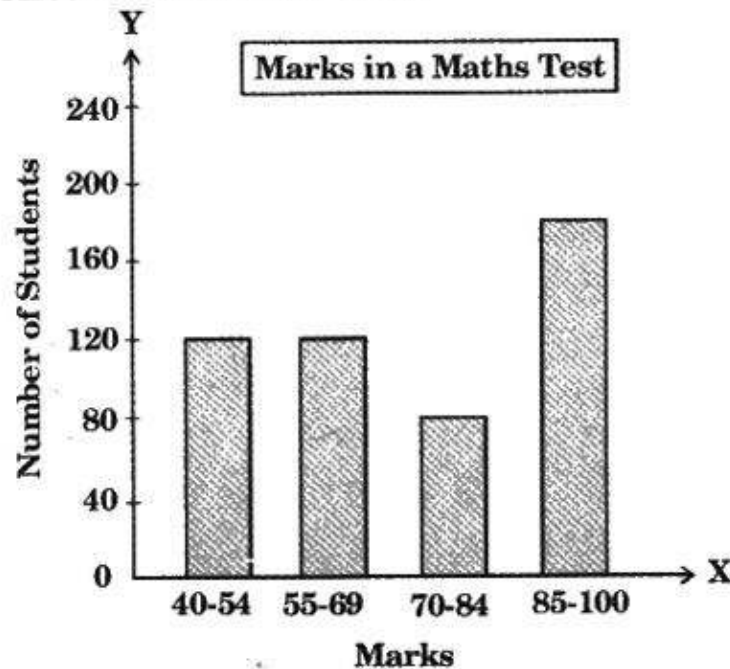
23

What is the Roman numeral for the greatest three digit number?

- (A) IXIXIX (B) CMIXIX (C) CMXCIX (D) CMIIC

24

The bar graph shows the marks obtained by some students in a maths test.



What fraction of students scored less than 70 marks?

- (A)  $\frac{3}{4}$  (B)  $\frac{2}{3}$  (C)  $\frac{12}{25}$  (D)  $\frac{6}{25}$

25

There are 8956 bags in a shop. The number of black bags is twice the number of pink bags. The remaining 3010 bags are orange. How many black bags are there in the shop when their number is rounded to the nearest hundred?

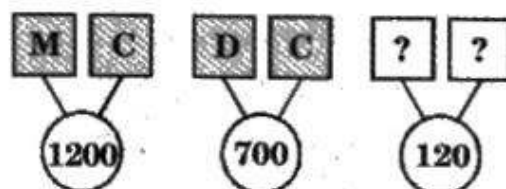
- (A) 3964 (B) 3900 (C) 3960 (D) 4000

26

A watch costs twice as much as a dress. A bag costs thrice as much as the watch. The total cost of the 3 items is ₹ 720. How much more does the bag cost than the dress?

- (A) ₹ 480 (B) ₹ 200 (C) ₹ 400 (D) ₹ 240

27 Observe the pattern of numbers given.



Which Roman numerals replace the '?' in the boxes?

- (A) C, M (B) C, X (C) D, C (D) D, L

28 Observe the given graph.



On Saturdays, the school functions from 8 a.m. to 12 noon. For how long can the students play on a Saturday?

- (A) 60 minutes (B) 15 minutes  
(C) 30 minutes (D) 20 minutes

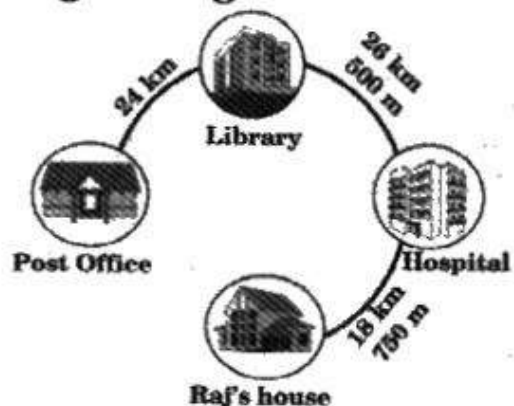
29 How many ones are there in the sum of prime numbers between 10 and 30?

- (A) 60 (B) 121 (C) 112 (D) 2

30 Find the greatest 5-digit odd number formed using the digits 3, 9, 4, 8 and 5.

- (A) 98543 (B) 84359 (C) 58439 (D) 89543

31 Observe the given figure.



Raj visits his relative at the hospital, collects a book from the library and posts a letter at the post office where he works. If he returns home in the same route, how much distance does he travel?

- (A) 50 km 500 m (B) 68 km 750 m  
(C) 69 km 250 m (D) 138 km 500 m

32

The same number is missing from each box in the sum given.

$$\begin{array}{r}
 8 \boxed{?} 6 1 \\
 6 8 2 9 \\
 + \quad \boxed{?} 3 6 \\
 \hline
 1 5 7 2 6
 \end{array}$$

Identify the missing number.

- (A) 2      (B) 5      (C) 4      (D) 8

33

Anu took 4 weeks 5 days to complete some part of a project. She took another 3 weeks to complete the rest of the project. How many days did she take to finish the whole project?

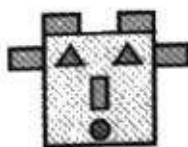
- (A) 33      (B) 54      (C) 68      (D) 49

34

Which of the following figures have exactly the same number of circles and rectangles?



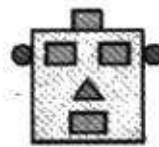
P



Q



R



S

- (A) P and R  
(C) Q and S

- (B) P only  
(D) R and S

35

What is the difference of the place values of 4 in the product of the first three common multiples of 3 and 9?

- (A) 3699      (B) 3996      (C) 4734      (D) 4374

36

Rohan had martial arts class for 100 days. How many weeks and days did he have the class?

- (A) 14 weeks 2 days      (B) 7 weeks 2 days  
(C) 23 weeks 3 days      (D) 17 weeks 6 days

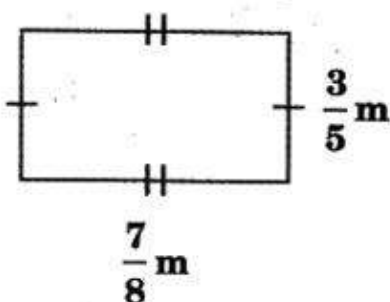
37

What is the product of face values of 2 and 8 in 542891?

- (A) 2000      (B) 10  
(C) 2      (D) 16



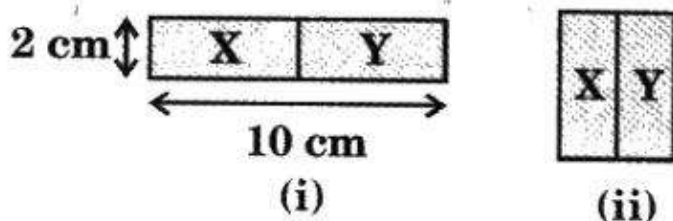
- 38 Ranjit bent a wire as shown in the figure.



What is the length of the wire Ranjit had?

- (A)  $1\frac{19}{40}$  m (B)  $1\frac{19}{20}$  m (C)  $2\frac{19}{20}$  m (D)  $\frac{59}{40}$  m

- 39 Figures (i) and (ii) show two identical rectangles X and Y which are arranged differently.



What is the difference in their perimeters?

- (A) 2 cm (B) 6 cm (C) 4 cm (D) 8 cm

- 40 Identify the correct combination from the following.

- (A) {DC, 200} (B) {CXV, 512}  
(C) {CV, 105} (D) {CLVI, 256}

- 41 How many fifths are there in the sum of  $\frac{3}{5}$  and  $\frac{7}{10}$ ?

- (A)  $\frac{13}{2}$  (B) 13  
(C) 10 (D)  $\frac{13}{10}$

- 42 A bag of flour weighing 13 kg 920 g is divided equally into 4 packets. What is the weight of each packet?

- (A) 4.38 kg (B) 3.48 kg  
(C) 3.46 kg (D) 4.038 kg

43

Observe the letters given.

A P S E R W

Which of the following is correct?

	Symmetrical Letters	Non-symmetrical Letters
(A)	A, P, W	S, E, R
(B)	P, W, R	S, A, E
(C)	W, S, R	P, E, A
(D)	A, E, W	P, S, R

44

Observe the number pattern given.

121, 12321, 1234321, 123454321, ...

Which of the following is the 5<sup>th</sup> number in the pattern?

- (A) 123454321 (B) 1234656432  
(C) 12345654321 (D) 12344321

45

Study the given equation.

$$0 * 21 = 0$$

Which signs can replace the \* to make the equation true?

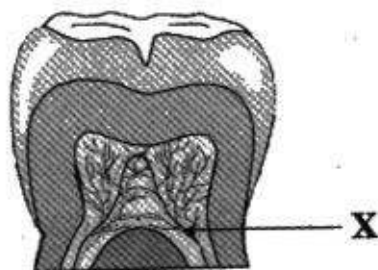
- (A) + or - (B)  $\times$  or + (C)  $\times$  or  $\div$  (D)  $\div$  or +

Class : IV

General Science

46

Identify the part labelled as X in the given figure.



- (A) Enamel (B) Dentine (C) Pulp (D) Crown

47

**The main source of heat and light for the earth is**

- (A) the sea. (B) the moon.  
(C) an asteroid. (D) the sun.

48

**Which of the following animals reproduces by laying eggs?**

I - Crocodile	II - Whale
III - Turtle	IV - Bat

- (A) Only I and III (B) Only II and III  
(C) Only II and IV (D) Only I and IV

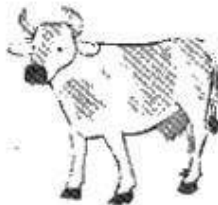
49

**How do plants breathe?**

- (A) Through veins (B) Through veinlets  
(C) Through stomata (D) Through midrib

50

**The given animals are similar as they all are**



- (A) wild animals. (B) domestic animals.  
(C) aquatic animals. (D) arboreal animals.

51

**Which of the following food components is called body building food?**

- (A) Carbohydrates (B) Proteins  
(C) Fats (D) Vitamins and minerals

52

**Read the given information.**

**It is the third planet.**

**It supports life and has air and water.**

**Identify the planet.**

- (A) Mercury (B) Earth (C) Mars (D) Venus

53

**Venus fly trap is an example of**

- (A) desert plant. (B) floating plant.  
(C) insectivorous plant. (D) under water plant.

54 Which of these is **NOT** used to generate electricity?

- (A) The sun (B) Soil (C) Wind (D) Water

55 Which fluid does your heart pump?

- (A) Water (B) Bile (C) Blood (D) Enzymes

56 The table shows information about two animals X and Y.

Animal	Number of legs				Method of Reproduction	
	0	2	4	6	Lays eggs	Gives birth to young
X		✓			✓	
Y			✓			✓

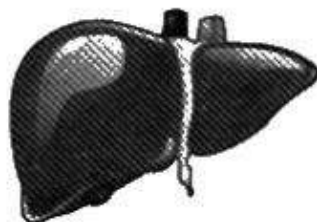
What outer coverings are animals X and Y most likely to have?

	Animal X	Animal Y
(A)	Feathers	Shell
(B)	Feathers	Hair
(C)	Scales	Shell
(D)	Hair	Scales

57 Which part of the plant anchors it to the ground and absorbs water and mineral salts from the soil?

- (A) Root (B) Stem (C) Leaf (D) Fruit

58 The organ given is a part of the



- (A) nervous system. (B) skeletal system.  
(C) digestive system. (D) circulatory system.

59 Which component of food helps in the easy movement of undigested food from the body?

- (A) Protein (B) Fat (C) Fibre (D) Vitamin

**60** The picture shows the foot of an animal.



Based on the picture, in what ways do you think this animal can move?

- (A) Crawl (B) Crawl and fly  
(C) Walk and swim (D) Slither

**61** The given substances are similar as they are all

Water, Milk, Mango juice

- (A) solids. (B) liquids.  
(C) gases. (D) Both (A) and (C)

**62** Why does a zebra blend into its surroundings with its black and white stripes?

- I. To frighten away its enemies.  
II. To hunt its prey without being spotted easily.  
III. To prevent being spotted by its predators.

- (A) Only I (B) Only II (C) Only III (D) Only I and II

**63** Which of these processes is responsible for the formation of water vapour?

- (A) Condensation (B) Evaporation  
(C) Sedimentation (D) Decantation

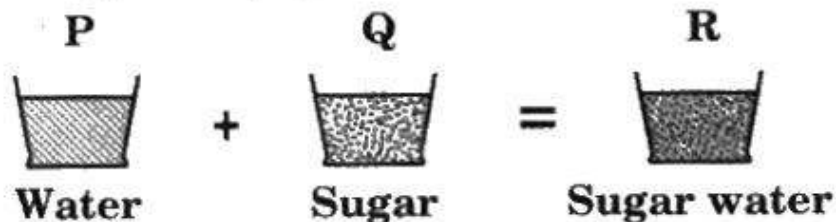
**64** Why do polar bears have a thick coat of fur?

- (A) To keep them warm.  
(B) To help them swim faster.  
(C) To help them stay afloat on water.  
(D) To help them run faster.



65

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



	P	Q	R
(A)	Solute	Solvent	Solution
(B)	Solvent	Solute	Solution
(C)	Solution	Solute	Solvent
(D)	Solute	Solution	Solvent

66

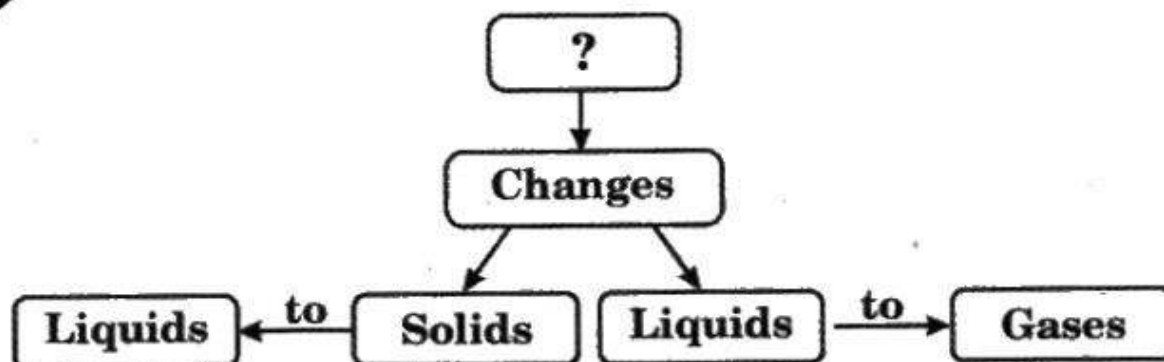
Which of the following sentences is/are true about dolphins and fishes?

- I. Both of them have the same breathing organs.  
 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) Only I and III

67

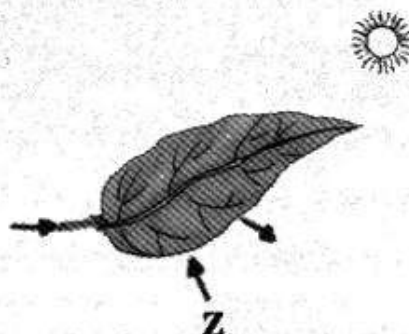
Which of these best completes this concept map?



- (A) Magnetism                              (B) Heat  
 (C) Sound                                      (D) Freezing

68

The given diagram shows photosynthesis taking place in a leaf.

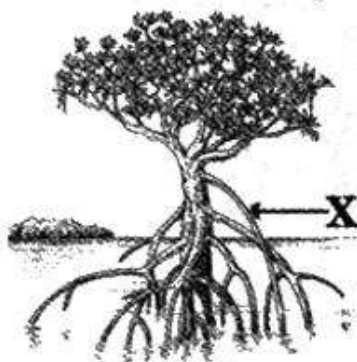


What does Z represent?

- (A) Starch
- (B) Sugar
- (C) Water vapour
- (D) Carbon dioxide

69

What are X in the figure given?



- (A) Sucking roots
- (B) Parasitic roots
- (C) Clinging roots
- (D) Breathing roots

70

Which of the following is used to test the presence of starch in a leaf?

- (A) Sulphuric acid
- (B) Copper sulphate solution
- (C) Sodium hydroxide
- (D) Iodine solution

71

Who am I?

I can't make my own food and grow on dead plants and animals.

- (A) Nepenthes
- (B) Cactus
- (C) Moulds
- (D) Sundew

72

Which parts of the plant when removed completely will not affect the growth of plant?

(i) Roots (ii) Stem (iii) Leaves (iv) Flowers (v) Fruits

- (A) Only (iii) and (v)
- (B) Only (ii) and (iii)
- (C) Only (iv) and (v)
- (D) Only (i), (ii) and (iii)

73

**How do plants with weak stems grow?**

- (i) They creep on the ground.
- (ii) They use other plants for support.
- (iii) They use walls and fences for support.
- (iv) They do not grow and die out.

**Which of the above statements are correct?**

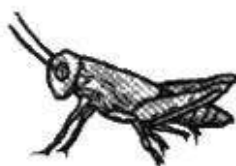
- (A) Only (iii) and (iv)
- (B) Only (i) and (ii)
- (C) Only (i) and (iii)
- (D) Only (i), (ii) and (iii)

74

**Study the given diagrams.**



**Cockroach  
nymph**



**Grasshopper  
nymph**

**How are these two animals similar?**

- (i) Both of them go through three stages of life cycles.
- (ii) Both resemble their adults.
- (iii) The eggs of both animals hatch on ground.
- (iv) Both of them cannot fly while they are in the larval stage.

- (A) Only (ii)
- (B) Only (i) and (ii)
- (C) Only (i), (iii) and (iv)
- (D) All of these

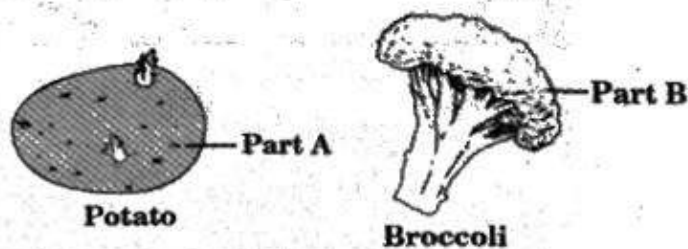
75

**Chlorophyll is a green pigment found in leaves. It is important to the green plants because it**

- (A) helps the plant in reproduction.
- (B) traps nitrogen in the soil.
- (C) absorbs sunlight.
- (D) absorbs water and mineral salts.

76

The given plant parts are edible.



Which part of the plant does each of them come from?

	Part A	Part B
(A)	Stem	Leaves
(B)	Stem	Flowers
(C)	Root	Leaves
(D)	Root	Flowers

77

Observe the following groups of plants.

X	Y
Water lily and lotus	Hydrilla and tapegrass

The plants are grouped according to

- (A) the way they obtain food.
- (B) the type of habitat they live in.
- (C) the position they are located in the pond.
- (D) their capacity to move freely.

78

The white sticky liquid part of an egg is called

- (A) yolk. (B) albumen. (C) shell. (D) embryo.

79

Which of the following vitamins is prepared in our body with the help of sunlight?

- (A) Vitamin E (B) Vitamin C (C) Vitamin K (D) Vitamin D

80

Which of these have young ones that look like a fish?

- (A) Butterfly (B) Cockroach (C) Grasshopper (D) Frog

81

Complete the given statement.

Starch  $\xrightarrow{\text{Saliva}}$  ?

- (A) Fat (B) Vitamin (C) Sugar (D) Salt

82

**Which of these statements is true?**

- (A) All animals feed their babies with their own milk.
- (B) The egg of a bird contains food for the developing embryo.
- (C) A butterfly goes through three stages of its life cycle.
- (D) A female frog lays only one egg at a time.

83

**Which animal is an arboreal?**

- (A) Rabbit
- (B) Penguin
- (C) Squirrel
- (D) Whale

84

**Which of the following kinds of teeth functions similar to the object given in the figure?**



- (A) Incisors
- (B) Canines
- (C) Molars
- (D) Both (A) and (B)

85

**Which of these organs secretes digestive juice?**

- (A) Kidney
- (B) Heart
- (C) Stomach
- (D) Lungs

86

**Electrical appliances and switches should only be tested with**

- (A) wet hands.
- (B) a tester.
- (C) a knife.
- (D) a screw.

87

**Which kind of teeth are sharp and pointed?**

- (A) Molars
- (B) Premolars
- (C) Canines
- (D) Incisors

88

**Which of these foods give you most of the carbohydrates that provide your body with energy?**

- (A) Banana, Orange, Fish
- (B) Fish, Meat, Potatoes
- (C) Corn, Rice, Potatoes
- (D) Cake, Pea, Sprouts

89

**Which of these microbes cause malaria?**

- (A) Bacteria
- (B) Protozoa
- (C) Virus
- (D) Fungi

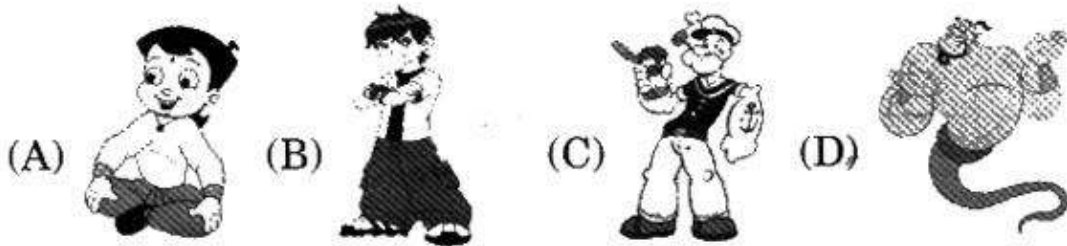
90

**How does the food travel in the human digestive system before it is absorbed?**

- (A) Mouth → Stomach → Oesophagus
- (B) Oesophagus → Stomach → Small intestine
- (C) Stomach → Oesophagus → Mouth → Small intestine
- (D) Mouth → Oesophagus → Stomach → Small intestine



- 91 **What is the official currency of Kenya?**  
(A) Shilling (B) Dinar (C) Yen (D) Swiss Franc
- 92 **Which of the following is the capital of Malaysia?**  
(A) Madrid (B) Ottawa  
(C) Kuala Lumpur (D) Tripo
- 93 **Which of the following Indian cities is known as "City of Pearls"?**  
(A) Chennai (B) Mysore (C) Hyderabad (D) Delhi
- 94 **Which of the following represents a group of crows?**  
(A) Murder (B) Gang (C) Fin (D) Parliament
- 95 **Which cartoon character gets strength by eating ladoos?**



- 96 **In which country would the 2014 FIFA world cup be held?**  
(A) India (B) London (C) Brazil (D) Germany
- 97 **What do we call a person who controls a football match?**  
(A) A referee (B) An umpire  
(C) A spectator (D) A goalkeeper
- 98 **Who gave music to the song "Sare jahan se achcha"?**  
(A) Pandit Ravi Shankar (B) Ali Akbar Khan  
(C) Bhimsen Joshi (D) Naushad Ali
- 99 **What do you call a person who works with flowers?**  
(A) Flowerist (B) Bouqueist  
(C) Florist (D) Flower man
- 100 **How many legs does a butterfly have?**  
(A) Six (B) Four (C) Eight (D) Ten