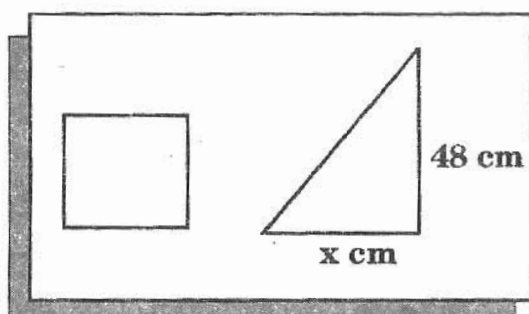


## CLASS : VI

## MATHEMATICS

- 1 The whole numbers from 1 to 1000 are written. How many of these numbers have at least two 7's appearing side-by-side?  
(A) 10 (B) 11 (C) 21 (D) 19
- 2 In the diagram, the square has a perimeter of 48 cm and the triangle has a height of 48 cm. If the square and the triangle have the same area. What is the value of  $x$ ?



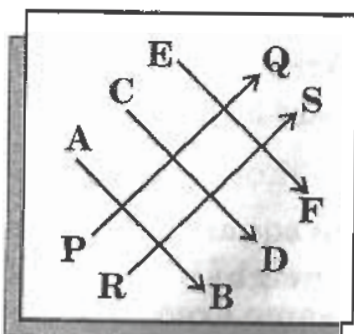
- (A) 1.5 cm (B) 12 cm (C) 6 cm (D) 3 cm
- 3 In the multiplication shown, P, Q and R are all different digits so that:

$$\begin{array}{r} P P Q \\ \times Q \\ \hline R Q 5 Q \end{array}$$

- What is the value of  $P + Q + R$ ?  
(A) 20 (B) 13 (C) 15 (D) 17
- 4 Mr. Z is a server at a restaurant. On Saturday Mr. Z gets up at 6 : 30 A.M., starts work at  $x$  A.M. and finishes at  $x$  P.M. How long does Mr. Z work on Saturday?  
(A)  $24 - 2x$  hours (B)  $12 - x$  hours  
(C)  $2x$  hours (D) 12 hours
- 5 A fraction is equivalent to  $\frac{5}{8}$ . Its denominator and numerator add up to 91. What is the difference between the denominator and numerator of this fraction?

- (A) 21 (B) 33 (C) 13 (D) 19

6



Which of the lines above is parallel to line PQ?

- (A) AB      (B) CD      (C) EF      (D) RS

7

A movie theatre has eleven rows of seats. The rows are numbered from 1 to 11. Odd numbered rows have 15 seats and even-numbered rows have 16 seats. How many seats are there in the theatre?

- (A) 176      (B) 186      (C) 165      (D) 170

8

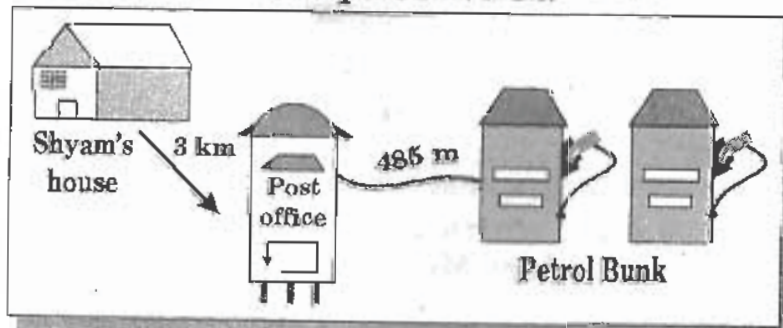
The largest number in the set below is:

{0.109, 0.2, 0.111, 0.114, 0.17, 0.19}

- (A) 0.109      (B) 0.2      (C) 0.114      (D) 0.19

9

The diagram shows a road map. Shyam drives to the post office and then to the petrol bunk.



Find the distance, in km, driven by him?

- (A) 3.485      (B) 5.15      (C) 4.885      (D) 7.85

10

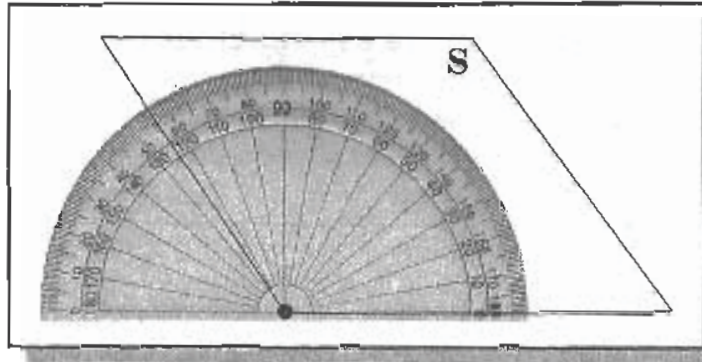
Two positive integers have a sum of 11. The greatest possible product of these two positive integers is:

- (A) 18      (B) 28      (C) 30      (D) 35

- 11 If  $P = 1000$  and  $Q = 0.01$ , which of the following calculations give the largest result?

(A)  $P + Q$       (B)  $P \times Q$       (C)  $\frac{P}{Q}$       (D)  $\frac{Q}{P}$

- 12 A parallelogram is shown below.



The measure of angle S to the nearest degree.

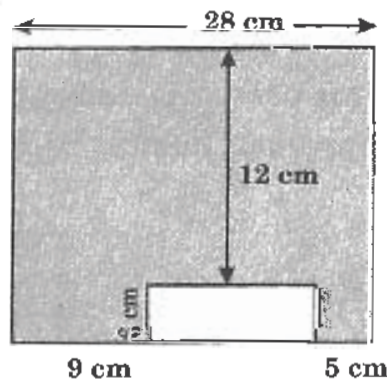
- 13 If the ratio of boys to girls in the sixth-grade is 2 : 3, which of these shows possible number of the boys and girls in the class?

(A) 20 boys, 35 girls      (B) 24 boys, 36 girls  
(C) 35 boys, 20 girls      (D) 36 boys, 24 girls

- 14 The ratio of the number of big dogs to the number of small dogs at a pet show is 3 : 17. There are 80 dogs, in total, at this pet show. How many big dogs are there?

(A) 12      (B) 20      (C) 24      (D) 6

- 15 Find the area of the shaded part in the figure below:



(A)  $336 \text{ cm}^2$       (B)  $420 \text{ cm}^2$       (C)  $504 \text{ cm}^2$       (D)  $632 \text{ cm}^2$



- 16 A number line has 40 consecutive integers marked on it. If the smallest of these integers is  $-11$ , what is the largest?  
(A) 29 (B) 28 (C) 51 (D) 50
- 17 For a science project Ramya is keeping track of the calories her father eats at breakfast. The table shows the number of calories he ate at breakfast on Monday.

<i>Breakfast Calories</i>		
<i>Food</i>	<i>Number of servings</i>	<i>Number of calories per serving</i>
Oat cereal	1	80
Skim milk	1	40
Orange juice	1	86
Banana	1	105
Flavored coffee	1	55

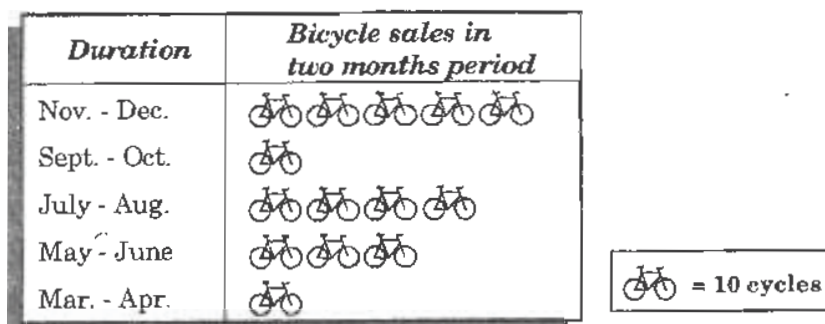
- Which is the closest to the number of calories Ramya's father ate at breakfast on Monday?  
(A) 200 cal. (B) 300 cal. (C) 400 cal. (D) 500 cal.
- 18 Each number in the sequence below has the same relationship to the number immediately before it.

24, 12, 6, 3, $1\frac{1}{2}$
------------------------------

How can the next number in the sequence be found?

- (A) By subtracting 12 from the previous number.  
(B) By adding  $1\frac{1}{2}$  to the previous number.  
(C) By multiplying the previous number by 2.  
(D) By dividing the previous number by 2.

- 19 The pictograph shows the bimonthly sale of bicycles of a store.



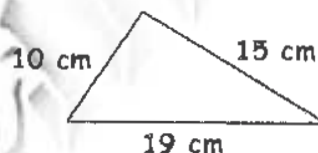
In what period were exactly 30 bicycles sold?

- (A) July-August (B) May-June  
(C) January-April (D) September-October

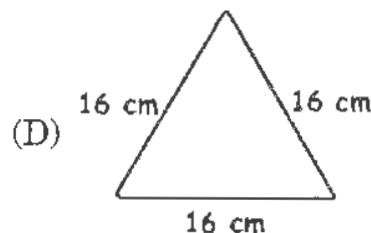
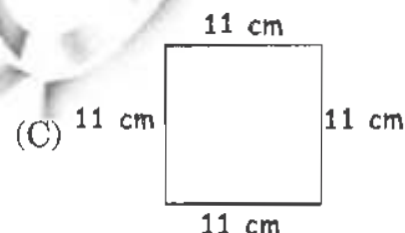
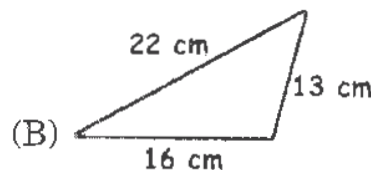
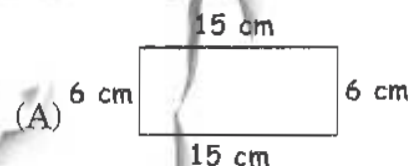
- 20 Lohith was asked to find 2 integers that have a difference of 1 and a sum of 59. He said the integers were 29 and 28. Why was Lohith's answer incorrect?

- (A) The difference between 29 and 28 is not 1.  
(B) The difference between 29 and 28 is 1.  
(C) The sum of 29 and 28 is 59.  
(D) The sum of 29 and 28 is not 59.

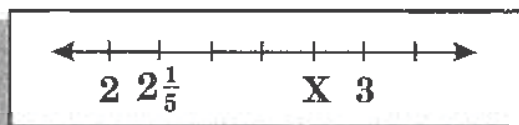
- 21 The diagram shows a triangle constructed with a piece of wire.



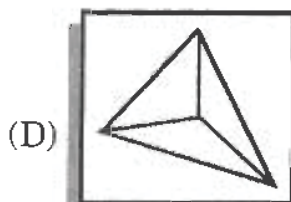
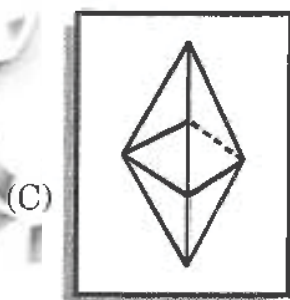
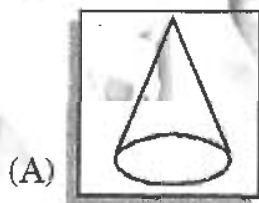
Which of the following shapes can be constructed with the same piece of wire?



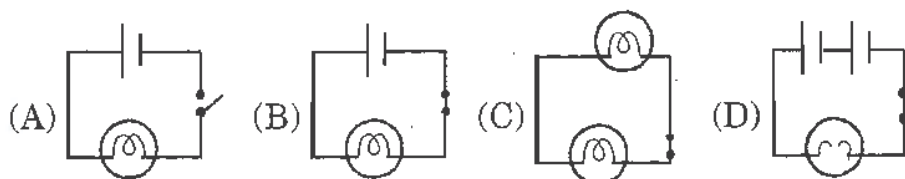
- 22 What is the mixed number represented by 'X' below shown number line?



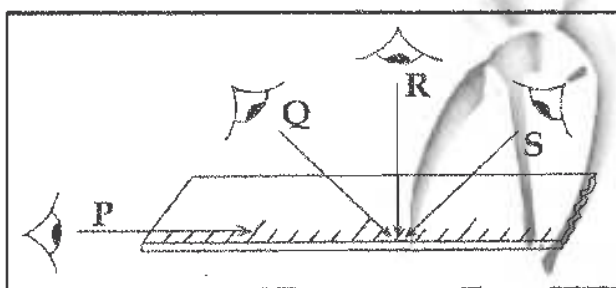
- (A)  $2\frac{4}{5}$  (B)  $2\frac{2}{5}$  (C)  $2\frac{1}{2}$  (D)  $2\frac{3}{4}$
- 23 PQRS is a straight line. PQ = 2 cm and PS = 40 cm. If PR : RS = 7 : 3, then QR in cm is:  
 (A) 12 (B) 10 (C) 26 (D) 28
- 24 A number is divided by three and multiplied by the square of a second number. The product is then divided by three. Write the algebraic term for the given statements using P as the first number and q as the second number.  
 (A)  $9pq^2$  (B)  $\frac{pq^2}{3}$  (C)  $\frac{pq^2}{9}$  (D)  $3pq^2$
- 25 Which of the following have maximum number of triangular faces?



**26** Identify the circuit diagram in which the bulb lights up.



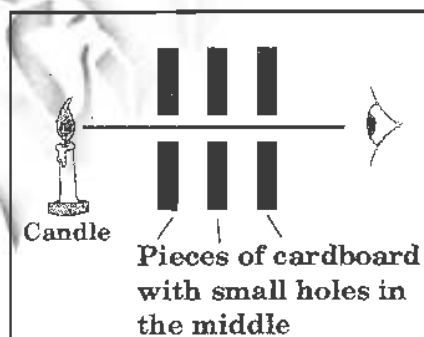
**27** Look at the diagram given below:



Which is the correct position to place the eye so that one can make the most accurate reading of the ruler?

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

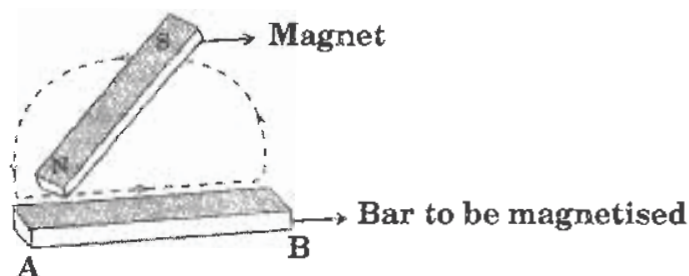
**28** Rahul observes a candle as shown in the figure below.



What inference can be made by Rahul from the given experiment?

- (A) Light rays are very thin.  
 (B) Light rays travel in straight line.  
 (C) The eye can only see a luminous body.  
 (D) A beam of light is made up of lots of light rays.

- 29 Peter made a magnet using the “stroking” method as shown below:



He started stroking the iron nail at A with a magnet and continued stroking in the direction shown. What poles does A and B represent?

	A	B
(A)	N-pole	S-pole
(B)	N-pole	N-pole
(C)	S-pole	N-pole
(D)	S-pole	S-pole

- 30 Look at the spinning of a top below:



What can be inferred about the motion of a spinning top?

- (A) The top revolves about a fixed path with respect to time.
- (B) The top exhibits a curvilinear motion under gravity.
- (C) The top rotates about a fixed axis without changing its position with respect to time.
- (D) The top moves to and fro about a fixed point.

- 31 Identify the *incorrect* statement from the following.

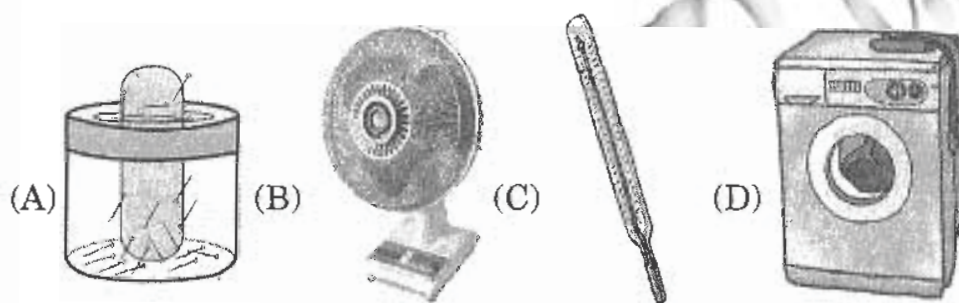
- (A) Shadows always gives us the information about the shape of the object
- (B) Images are different from shadows
- (C) A plane mirror changes the direction of light that falls on it
- (D) The moon is a non-luminous source of light



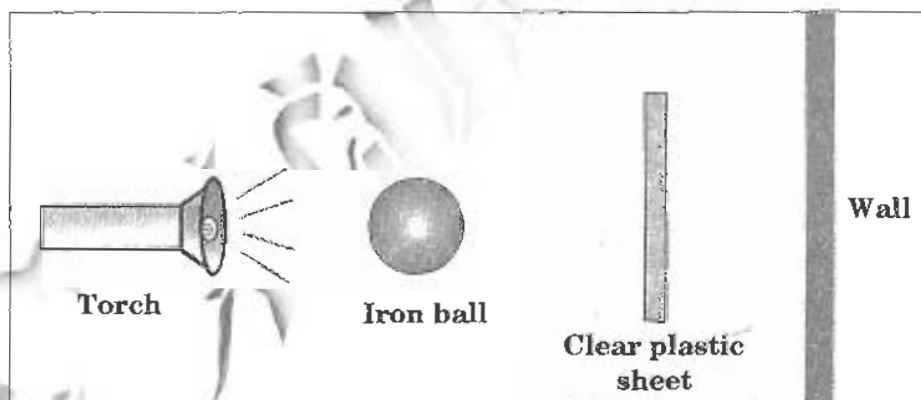
**32** Somu's teacher explained that wires used in home are usually covered with insulators like plastic or rubber. Why are wires insulated?

- (A) To prevent rusting
- (B) Ease in handling
- (C) Making the wire durable
- (D) To prevent shock and short circuit

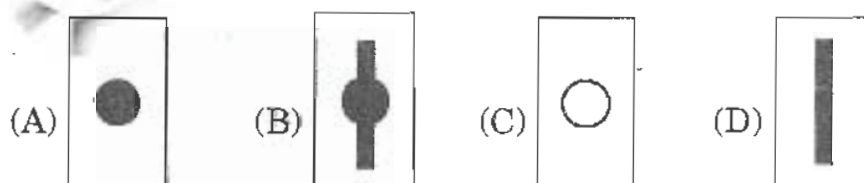
**33** Which of the following objects *does not* need magnets to work?



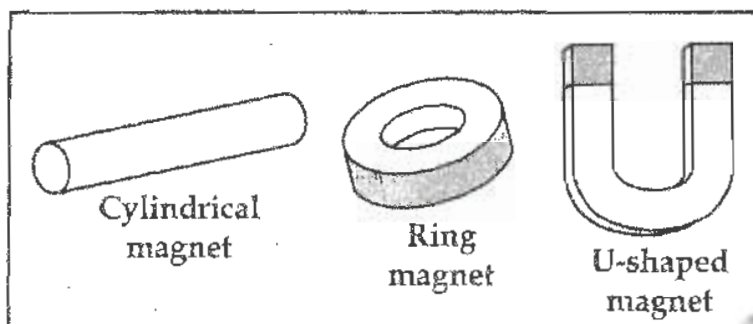
**34** Look at the arrangement of an experiment below.



When the torch is switched on, we can observe shadow on the wall painted white. Which of the following correctly shows the shadow cast on the wall?



**35** Look at the magnets given below.



**What do you infer ?**

- (A) All magnets are made of iron.
- (B) The magnets are strongest at their poles.
- (C) Like poles of magnets attract each other.
- (D) Magnets can be made in different shapes and sizes.

**36** Which of the following can be measured using a measuring tape?

- I. Length of a curved line
- II. Play grounds
- III. Thickness of a hair strand

- (A) I and II only
- (B) II and III only
- (C) III and I only
- (D) I, II and III

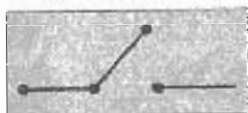
**37** When does a bulb light up?

- (A) When sufficient current flows through the filament.
- (B) On heating the filament of the bulb.
- (C) On exposing the bulb to a light source.
- (D) On replacing battery.

**38** When light source is incident on an object 'X', the shadow of the object 'X' casts on a screen. If the shadow of object 'X' is very dark, which of the following could 'X' be?

- (A) Metal plate
- (B) Glass
- (C) Tracing paper
- (D) Clear window pane

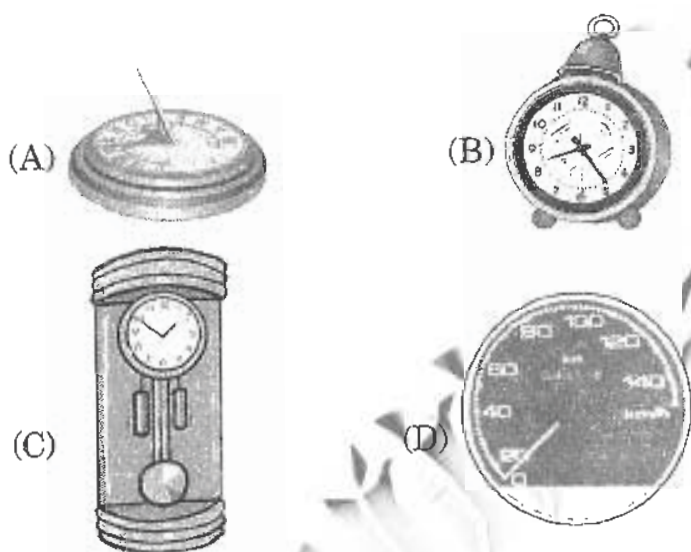
- 39 Look at the symbol of an electric component given below.



What is the main function of this component?

- (A) Save the energy. (B) Make or break a circuit  
(C) Prevent electric shocks (D) Make the bulb glow easily

- 40 Which of the following does NOT measure time?



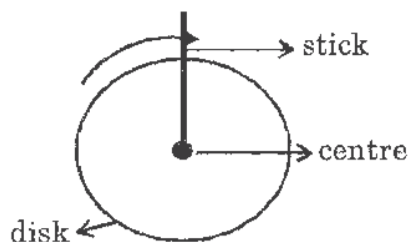
- 41 Which of the following ways *will not* make a magnet to lose its magnetism?

- (A) Heat it strongly over a flame  
(B) Drop it on the floor repeatedly  
(C) Coat it with a layer of oil  
(D) Hitting it with a hammer repeatedly

- 42 Why a non-luminous object is visible to us?

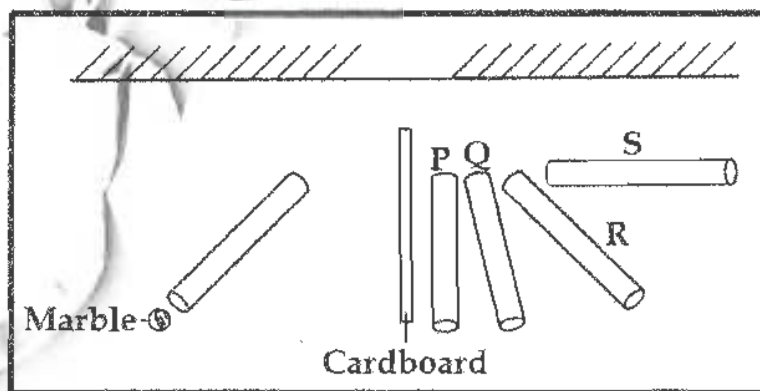
- (A) It gives off visible light  
(B) The light reflected by this object enters our eye  
(C) It cannot be caught on a screen  
(D) Light passes only in the form of rays

- 43 A circular disk with a stick moving about its axis through the centre is shown in figure below.



Identify the type of motion described by the stick.

- (A) Rotatory motion (B) Circular motion  
(C) Rectilinear motion (D) Oscillatory motion
- 44 Which of the following statements is *incorrect*?
- (A) The closed path along which electric current flows is called a circuit.  
(B) The bulb glows only when current flows through the circuit.  
(C) An electric bulb is said to be fused if there is a break in its filament.  
(D) Electrical wires are insulated with good conductors of electricity.
- 45 What fraction of a metre is 1 cm?
- (A) Tens (B) Hundreds (C) Tenth (D) Hundredth
- 46 Anu did an experiment as shown in the figure below:

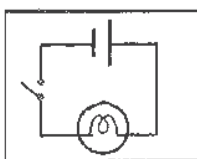


Which tube would enable Anu to see the marble?

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



- 47 A teacher draws a circuit diagram (X) as given below:



X

She explains that circuit diagram (X) uses symbols in an electric circuit? What does she mean by symbols?

- (A) Cell            (B) Battery    (C) Bulb            (D) Components

- 48 Cubit, hand span and yard are three units of measurement of length.

Identify from the following the correct order of their increasing magnitudes.

- (A) Hand span, yard, cubit    (B) Hand span, cubit, yard  
(C) Yard, cubit, hand span    (D) Cubit, yard, handspan

- 49 Which of the following are luminous sources of light?

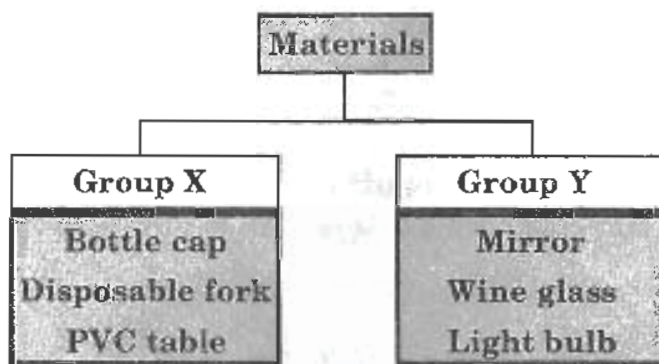
- I. Glow worm  
II. Star  
III. Metalspoon

- (A) I and II only                      (B) II and III only  
(C) III and I only                      (D) I, II and III

- 50 Which of the following is a bad conductor of electricity?

- (A) Acid                                  (B) Copper wire  
(C) Distilled water                      (D) Human body

51 Look at the classification given below.



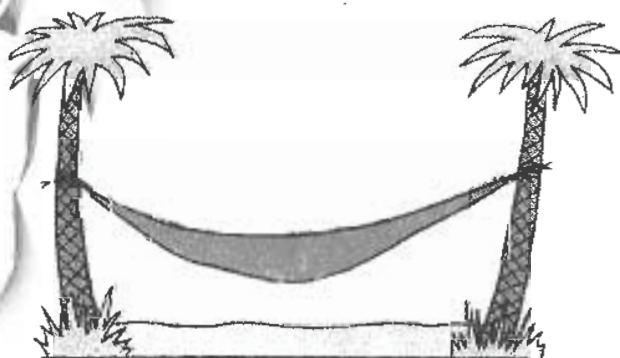
Which of the following is correct?

	Group X	Group Y
(A)	Metal	Plastic
(B)	Plastic	Metal
(C)	Wood	Metal
(D)	Plastic	Glass

52 How are grain seeds removed from their stalks?

- (A) Sieving (B) Winnowing  
(C) Threshing (D) Any of the above

53 Anoop wants to select a material to make a hammock.



Which of the properties given below should he consider?

- (A) Hard and water proof (B) Strong and flexible  
(C) Transparent and water proof (D) Opaque and insulator

**54** Identify an undesirable change from the following.

- (A) Ripening of fruits.
- (B) Occurrence of earthquakes.
- (C) Preparing starch by photosynthesis in plants.
- (D) Evaporation of sea water.

**55** Look at Sunil in the figure given below.



**He bends a rod. Which property of the rod is responsible for him to bend the rod?**

- (A) Light in weight
- (B) Hardness
- (C) Water proof
- (D) Flexibility

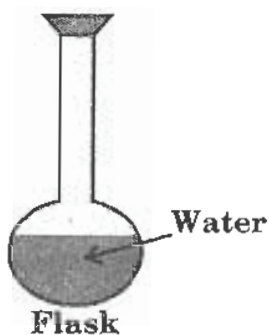
**56** Sieving can be used only when the components of the mixture have :

- (A) different sizes
- (B) different melting points
- (C) different boiling points
- (D) different specific gravities

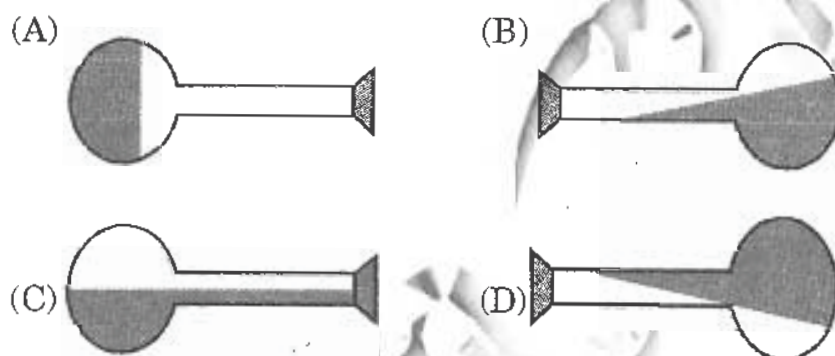
**57** A needle and a knife belong to the same group because :

- (A) they are transparent
- (B) they are hard and magnetic
- (C) they float on water
- (D) they are poor conductors of heat

- 58** A flask filled partially with water is shown below.



Which of the following figures shows the correct water level in the flask when tilted?



- 59** A few coloured glass pieces that are big in size are mixed with sugar. Which is the easiest way to separate them?

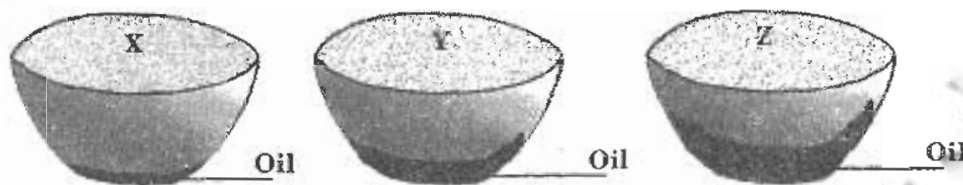
(A) Heat the mixture      (B) Add the mixture to water  
(C) Handpick the glass pieces      (D) Handpick the sugar particles

- 60** What kind of change is the making of a ring from pure gold ?

(A) Irreversible chemical change .  
(B) Irreversible physical change  
(C) Reversible chemical change  
(D) Reversible physical change



- 61** Dheeraj covered the mouths of three bowls with three sheets made of different materials X, Y and Z. He then poured a table spoon of cooking oil onto the sheet. The results are as shown in the diagram below.



Which material absorbs oil the least?

- (A) X                      (B) Y                      (C) Z                      (D) Cannot be said
- 62** In a cloud, the size of the droplets increases causing rainfall because:
- (A) they become heavier      (B) they become lighter  
(C) they convert into steam      (D) of reflection of light
- 63** What is the process we use to separate a mixture of water and sulphur?
- (A) Filtration                      (B) Sublimation  
(C) Evaporation                      (D) Distillation
- 64** Identify the chemical change from the following.
- (A) Heating of sugar.  
(B) Dissolution of sugar in water.  
(C) Crystallisation of sugar.  
(D) Powdering of sugar.
- 65** Which of the following methods of separation needs air for its separation?

- (A) Hand picking                      (B) Sieving  
(C) Winnowing                      (D) Filtration

**66 What is a homogeneous mixture?**

- (A) It is made up of only elements
- (B) It contains only compounds
- (C) It is a liquid-liquid mixture
- (D) It is that in which constituents can't be distinguished

**67 Milk curdles when lemon juice is added. What is this?**

- (A) Evaporation
- (B) Coagulation
- (C) Reversible change
- (D) Photochemical change

**68 Rohit went to a shop to buy a towel to wipe after a bath. He saw towels made up of cotton, polyester, nylon and wool. Which one of these towels will he buy as the first preference?**

- (A) Cotton
- (B) Polyester
- (C) Nylon
- (D) Wool

**69 Shilpa sprinkles water in a dirty room before sweeping. Why?**

- (A) Sprinkling water is fashionable
- (B) Sweeping of water is easier
- (C) Water coagulates the dust particles
- (D) Water repels dust particles

**70 How is air pollution on the roads reduced?**

- (A) Widening the roads
- (B) Having more traffic lights on the roads
- (C) Having less traffic lights on the roads
- (D) Reducing the number of vehicles on the road

**71** Read the information given below.

**P : Supplies materials for building cells**

**Q : Supplies a lot of energy**

**R : Supplies high dietary fibre**

Which of the following food combinations is correct according to the definitions of P, Q and R?

	P	Q	R
(A)	Fish	Lettuce	Sunflower oil
(B)	Beans	Butter	Potato
(C)	Meat	Butter	Whole grains
(D)	Potato	Fish	Butter

**72** How does the camel's hump help the camel to survive in the desert?

- (A) It helps the camel to balance its body while walking on sandy ground
- (B) It stores food which can provide the camel with energy during food shortage
- (C) It protects the camel during sandstorms
- (D) It helps the camel to get protection from the enemies

**73** Frogs are amphibians. They live both on land and in water. Which of the following adaptations enable the frogs to live both on land and in water?

- I. They have gills that help them to breathe in the water
- II. Their skin, when kept moist, can intake oxygen dissolved in water
- III. They have lungs that help them to breathe when they are on land
- IV. They can trap air bubbles in their throat

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

**74** Which of the following groups consists of a herbivore, a carnivore and an omnivore respectively?

- (A) Giraffe, House lizard, Rat    (B) Toadstool, Goat, Eagle  
(C) Mould, Bear, Snake            (D) Giraffe, Rat, Vulture

**75** Observe the two leaves given below.



They are similar because:

- (A) they have the same venation  
(B) they have the same edges  
(C) their shapes are the same  
(D) their plants have different kinds of roots.

**76** Sandy is allergic to manmade fabric, so she only wears clothes made of natural fibre. Which one of the following materials will you recommend her not to use?

- (A) Nylon    (B) Wool    (C) Cotton    (D) Silk

**77** Abhi added a few drops of a liquid on a slice of potato, upon which the area covered by the liquid turned blue black in colour. What could be the liquid?

- (A) Benedict's solution            (B) Dilute iodine solution  
(C) Tollen's reagent                (D) Concentrated nitric acid

**78** Given below are two groups of materials used to make clothing.

Cotton  
Jute  
Flax

Fur  
Leather  
Silk

On what basis these have been grouped?

- (A) Air space inside fibres    (B) Air space between fibres  
(C) Water absorption        (D) The basis of their sources

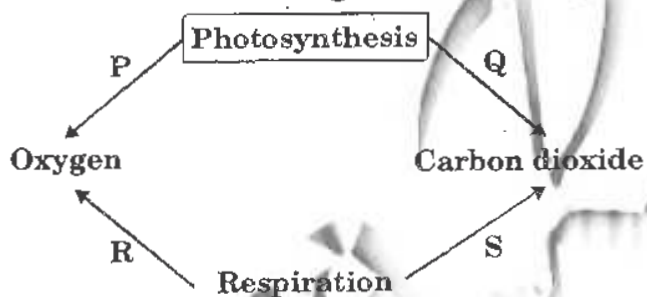


**79** Which of the following features are useful for desert plants?

- I. Water storing stems
- II. Leaf hairs
- III. Large flat leaves
- IV. Needle like leaves

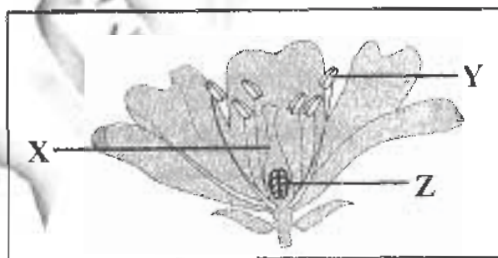
- (A) II and IV only                      (B) I and III only  
(C) I and IV only                      (D) III and IV only

**80** Study the diagram given below carefully. It shows the relationship between photosynthesis and respiration. Which arrows is/are wrong?



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

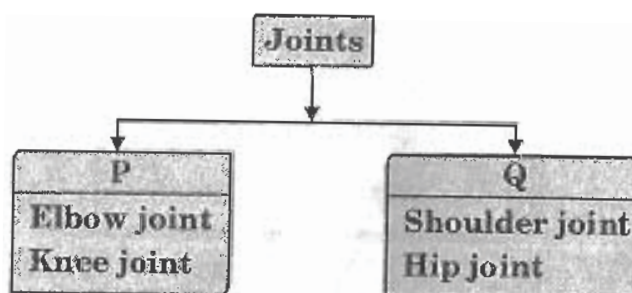
**81** Look at the diagram below carefully.



Which of the following represents X, Y and Z?

	X	Y	Z
(A)	Anther	Filament	Ovule
(B)	Style	Stigma	Ovary
(C)	Style	Anther	Ovary
(D)	Filament	Style	Ovary

**82** Study the classification chart given below.



What are P and Q?

	P	Q
(A)	Gliding joint	Pivot joint
(B)	Hinge joint	Ball and socket joint
(C)	Pivot joint	Hinge joint
(D)	Hinge joint	Gliding joint

**83** Which food items from the given choices should be included in our diet to protect us from bleeding gums?

- (A) Cheese      (B) Yeast      (C) Amla      (D) Wheat germ

**84** Identify the material 'P' from the information given below.

P
Can be recycled
Bio-degradable
Non-toxic and useful

- (A) Paper      (B) Glass bottle  
(C) Metal can      (D) Plastic bottle

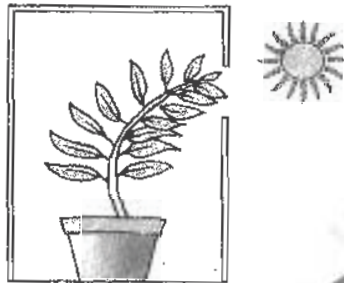
**85** Which of the following options comprises various stages in the life of an organism in proper sequence?

- (A) birth, reproduction, growth, death  
(B) growth, reproduction, birth, death  
(C) birth, reproduction, death, growth  
(D) birth, growth, reproduction, death

**86** Ginger and potato are similar because:

- (A) both are modified tap roots      (B) both are modified stems  
(C) both are modified fibrous roots      (D) both are fruits

**87** Observe the diagram given below.



Which of the following characteristics can be proved through this experiment?

- I. The shoot of the plant bends towards sunlight.  
II. The given plant requires oxygen for respiration.  
III. The given plant needs sunlight to make food.

- (A) I only      (B) I and II only  
(C) I and III only      (D) I, II and III

**88** Compressing of raw cotton in bundles is called:

- (A) baling      (B) spinning      (C) weaving      (D) rafting

**89** Which of the following joints works as the figure given below?

- (A) Ankle and knee joints  
(B) Hip and shoulder joints  
(C) Neck and wrist joints  
(D) Shoulder and knee joints

**90** Based on characteristics given in the box, identify the plant.

- I. Grow in marshy areas  
II. Breathing roots grow out of the soil

- (A) Hydrilla      (B) Mangroove      (C) Banyan      (D) Duckweed

## KEY FOR THE Q.P.-2011

D	2.	C	3.	D	4.	D	5.	A	6.	D	7.	D	8.	B
A	10.	C	11.	C	12.	B	13.	B	14.	A	15.	B	16.	B
C	18.	D	19.	B	20.	D	21.	C	22.	A	23.	C	24.	C
D	26.	B	27.	C	28.	B	29.	A	30.	C	31.	A	32.	D
C	34.	A	35.	D	36.	A	37.	A	38.	A	39.	B	40.	D
C	42.	B	43.	A	44.	D	45.	D	46.	C	47.	D	48.	B
A	50.	C	51.	D	52.	C	53.	B	54.	B	55.	D	56.	A
B	58.	C	59.	B	60.	D	61.	C	62.	A	63.	A	64.	A
C	66.	D	67.	B	68.	A	69.	C	70.	D	71.	C	72.	B
C	74.	A	75.	A	76.	A	77.	B	78.	D	79.	C	80.	D
C	82.	B	83.	C	84.	A	85.	D	86.	B	87.	A	88.	A
B	90.	B	91.	C	92.	B	93.	A	94.	B	95.	D	96.	A
C	98.	D	99.	C	100.	A								