NAME : _____ ( )

CLASS : _____

METHODIST GIRLS' SCHOOL (PRIMARY)

MID-YEAR EXAMINATION (2004)

PRIMARY SIX

SCIENCE

BOOKLET A

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

SECTION A (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

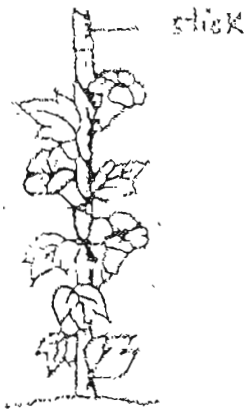
1. Four pieces of bread A, B, C and D are subjected to different conditions as shown in the table below.

Bread	Conditions	
A	No air	dry
B	air	dry
C	No air	damp
D	air	damp

On which bread will mould most likely grow?

1. A
2. B
3. C
4. D

2. You are given the picture of a plant below.

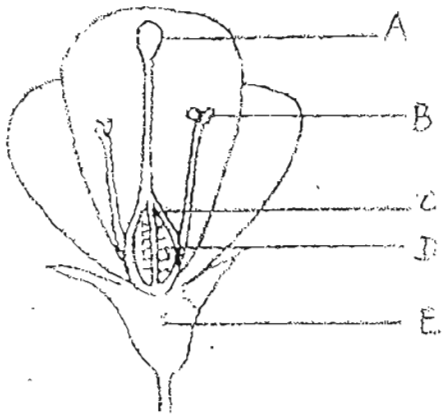


Which of the following statements are correct ?

A: It has a weak stem
B: It has a short life cycle
C: Its flowers grow singly
D: Its fruit has many seeds

1. A and B only
2. A and C only
3. A, B and C only
4. A, C and D only

Refer to the diagram below for Questions 3 and 4.



3. Which is the male part of the flower?

1. A
2. B
3. C
4. E

4. Which part of the flower will develop into fruit and seeds?

	Fruit	Seed
1.	C	D
2.	E	C
3.	D	E
4.	E	D

5. The diagram below shows an organism that reproduces by division. The following shows how the division occurs.

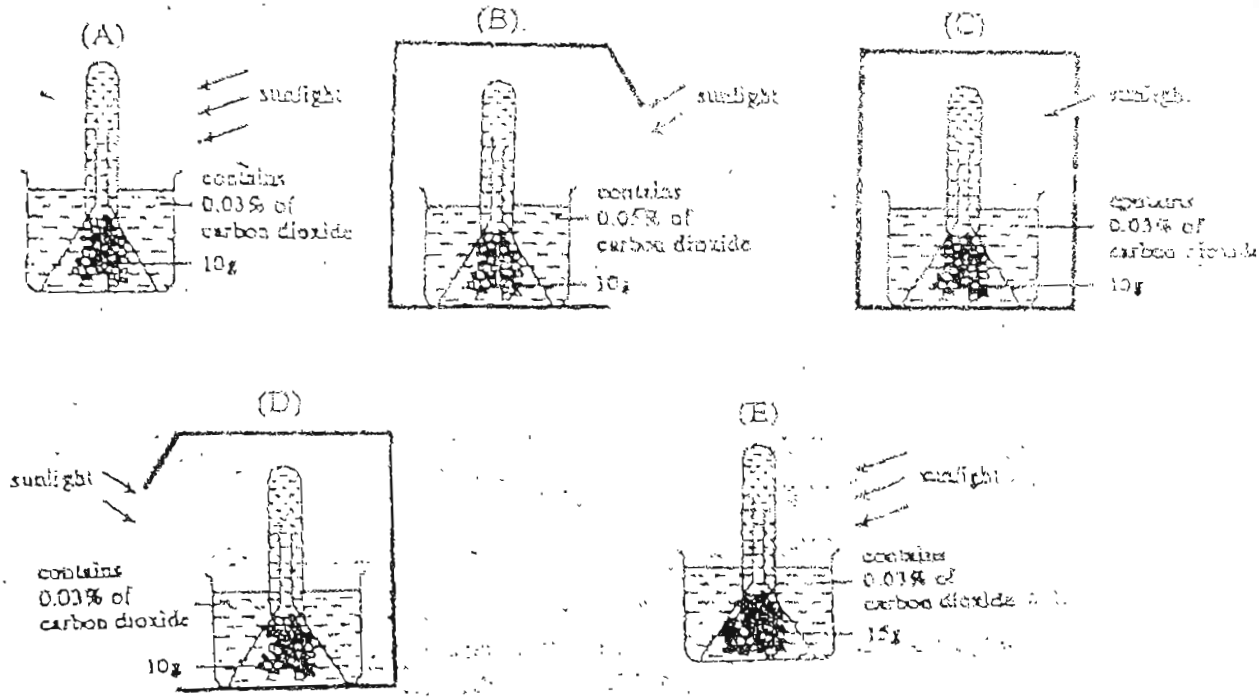
How many of such organisms are there after the fourth division if there is one in the beginning?

1. 8
2. 12
3. 16
4. 18

6. You are given a table below. Which of the following is incorrect?

	Organism	Colour of most part/s	Reproduce from
1.	Balsam	green	seeds
2.	Yeast	green	spores
3.	Mould	Non-green	spores
4.	Chillie	green	seeds

7. Sammy wants to find out the effect of light intensity on the rate of photosynthesis. Which of the experiments shown below will give him a fair comparison?



1. A and E
2. B and D
3. B, C and E
4. A, C and D

8. Three children tested some food with iodine and recorded the results in a table shown below.

Food	Observation	Does it contain starch?
Potato	Iodine turns dark blue	Yes
Rice	Iodine turns dark blue	Yes
Fish	Iodine remains the same colour	No
Carrot	Iodine remains the same colour	No
Chicken	Iodine remains the same colour	No

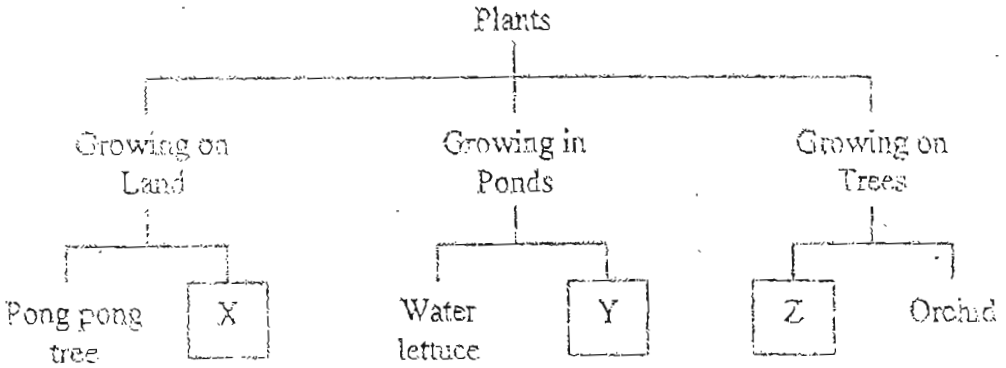
Based on the above table the children made the following statements.

Cindy: Starch is not present in the meat tested.
Sally : Starch is not found in meat but only in plants.
Jane Not all plant parts contain starch.

Who made the correct statements?

1. Cindy and Jane
2. Cindy and Sally
3. Sally and Jane
4. All the three children

9. Study the classification table below.



Which of the following set of plants can be placed in boxes X, Y and Z?

	X	Y	Z
1.	elodea	casuarina	money plant
2.	ixora	water-lily	rambutan
3.	morning glory	begonia	cactus
4.	bougainvillea	lotus	bird's nest fern

10. The following are life cycles of various organisms. Which of the life cycle is correct?

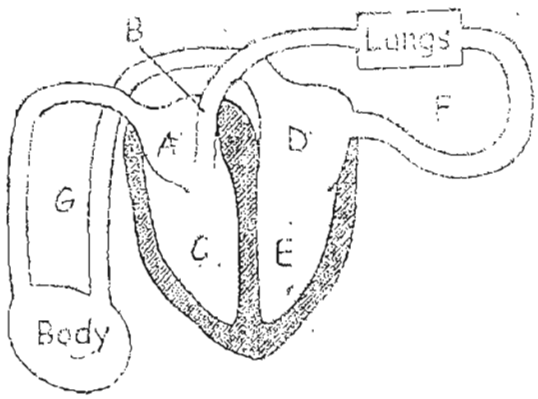
1.	Egg → pupa → wriggler → mosquito
2.	Egg → caterpillar → pupa → butterfly
3.	Egg → nymph → ant
4.	Egg → maggot → cockroach

11. Some animals produce hundreds of eggs yet they do not overpopulate the world. It is because some _____.

A: do not hatch.
B: die of disease
C: are eaten by predators
D: are collected for scientific studies

1. A and B only
2. C and D only
3. A, B and C only
4. A, B and D only

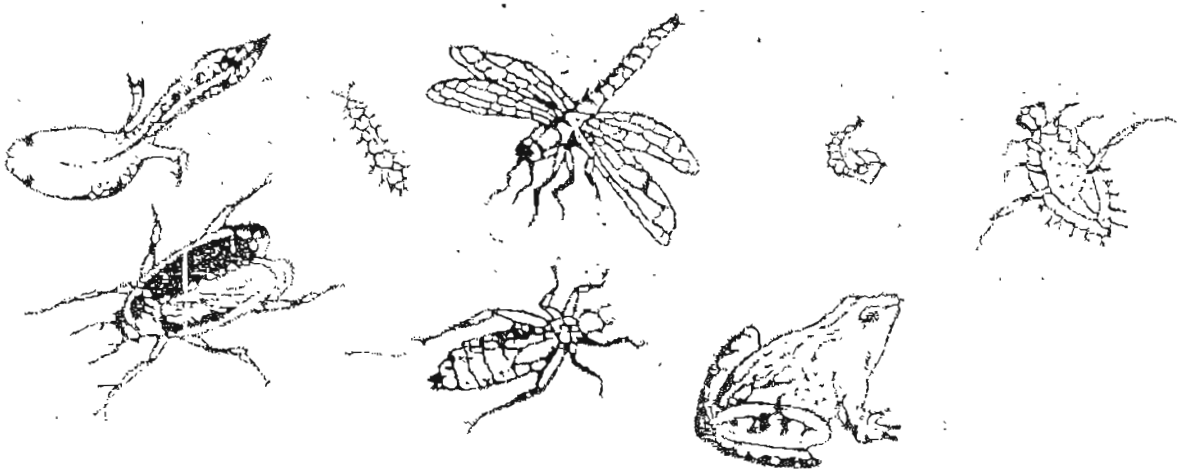
12. The diagram of the heart is given below.



What is the correct sequence of blood flow in the body?

1. A, B, C, D, E, F, G
2. A, B, C, E, F, D, G
3. A, C, B, F, D, E, G
4. C, B, D, E, F, G, A

13. A group of pupils were instructed to collect the animals found in and around the water of their school pond. Below are some of the animals they had collected.



How many populations of animals were represented by what they had collected?

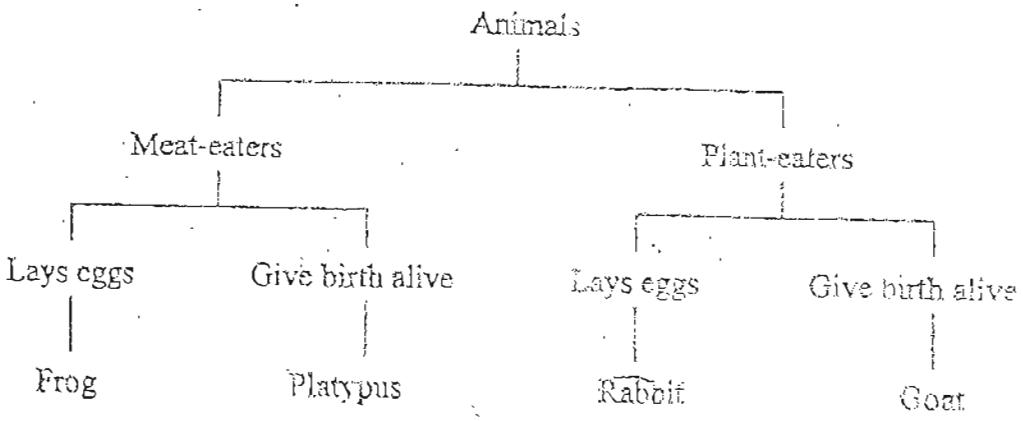
1. 5
2. 6
3. 7
4. 8

14. Which of the following are decomposers?

A: slug
B: mould
C: maggot
D: bacteria
E: mushroom

1. A, B and E only
2. B, C and D only
3. B, D and E only
4. All of the above

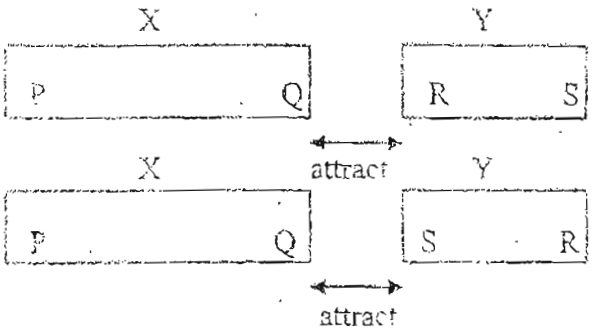
15. A classification table of animals is given below.



Which pair of animals has been **incorrectly** classified?

1. frog and goat
2. frog and rabbit
3. platypus and goat
4. platypus and rabbit

16. Two pieces of metal bars X and Y are used in the experiment as shown below.

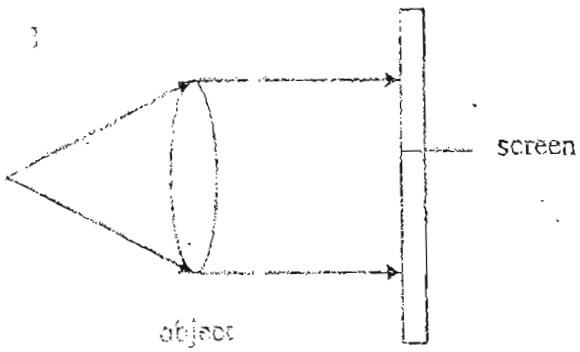


Which one of these is most likely the correct conclusion ?

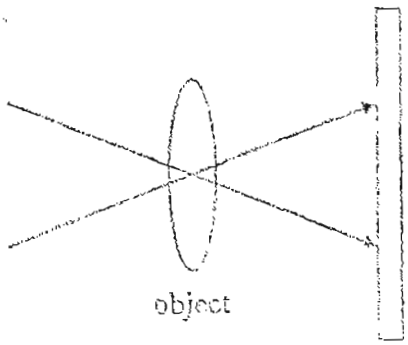
1. Both bars X and Y are magnets.
2. Bar Y is a magnet but bar X is not.
3. Both bars X and Y are non- magnets.
4. Bar X is a stronger magnet than Bar Y.

17. Given that the object in the middle is opaque, which of the diagrams below shows that light travels in a straight line ?

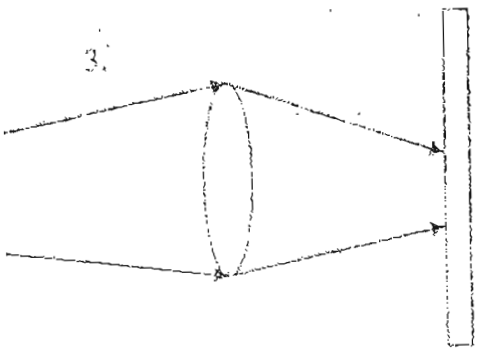
1.



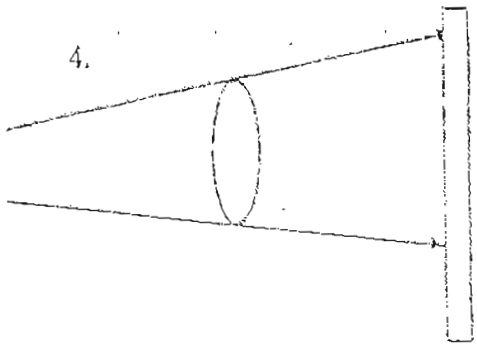
2.



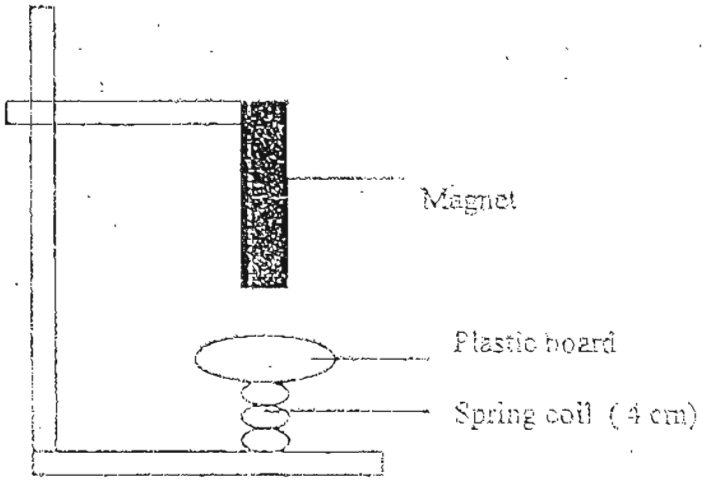
3.



4.



18. Mary set up the experiment as shown below. She tested the four objects, A , B, C and D separately by securing them on the plastic board with a sticky tape. She observed what happened to the spring coil and recorded her observations in the table below.



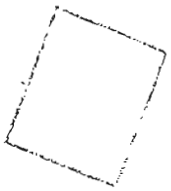
Object	Length of Spring Coil (cm)
A	6
B	7
C	3
D	4

Based on the observation above, what could objects A, B, C and D be ?

	A	B	C	D
1.	Copper bar	Magnet	Iron bar	Steel bar
2.	Steel bar	Copper bar	Magnet	Iron bar
3.	Iron bar	Steel bar	Copper bar	Magnet
4.	Steel bar	Iron bar	Magnet	Copper bar

Jim

19. Lynn took two identical sheets of paper and let them fall to the floor several times from the same height . He found that they usually take about the same time to reach the floor . He then squashed one of the sheets of paper into a very tight ball and again let it fall to the ground several times . Each time the squashed ball fell more quickly than the sheet of paper. From the results , Jim concluded that _____



Flat sheet of paper

squashed paper

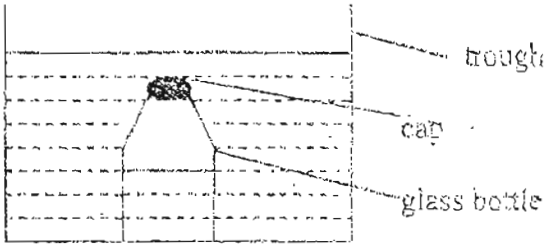
1. a greater air resistance acted on the flat sheet of paper .
2. the force of gravity acted more strongly on the ball of paper .
3. air resistance slowed the sheet of paper, but not the ball of paper.
4. the sheet of paper weighed more when it was squashed into a ball..

20. Which of the following activities need a 'push ' ?

A. Pressing a lift button
B. Stretching a rubber band
C. Pumping a deflated ball
D Opening a door

1. A and B only
2. A and C only
3. B and D only
4. A , B and C only

21. A glass bottle is half-filled with water and a cap is screwed on tightly. It is then immersed in a trough of water as shown in the diagram.

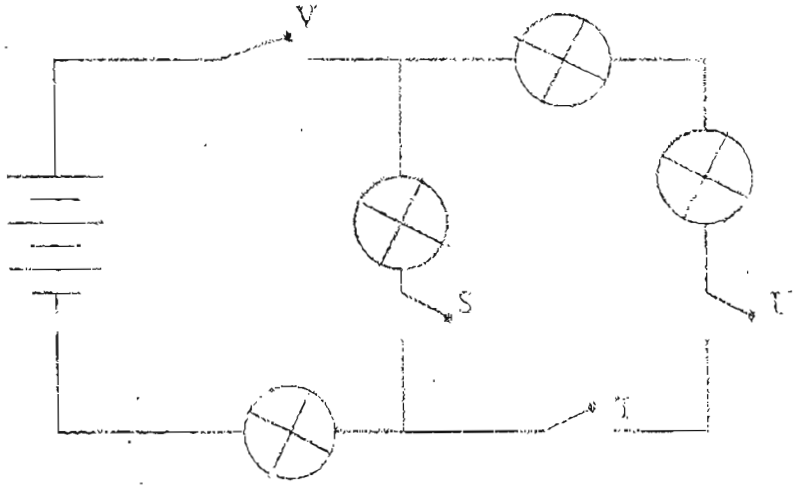


The cap is then unscrewed and removed. What will happen to the water in the trough and in the bottle ?

A. Water fills the glass bottle to the brim.
B. The level of water in the trough increases.
C. The level of water in the trough decreases.
D. The water level in the trough remains the same.

1. A and B only .
2. B and C only
3. A and C only
4. A, B and D only

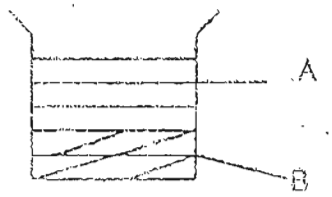
22. Study the circuit below carefully.



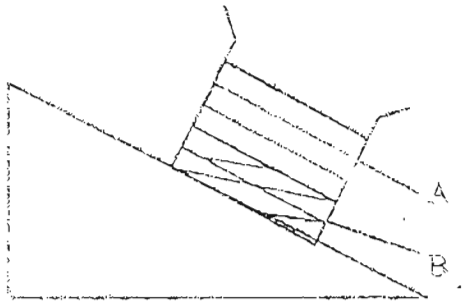
When all the switches are closed all the bulbs light up. Jane wants to leave one switch open such that a particular bulb is switched off while the other three remain lighted.
Which switch should be left open ?

1. S
2. T
3. U
4. V

23. A beaker is placed on a table as shown below. It contains 2 substances A and B, at room temperature.



The same beaker with its contents are placed on the ramp as shown below.



Which one of the substances could A and B be?

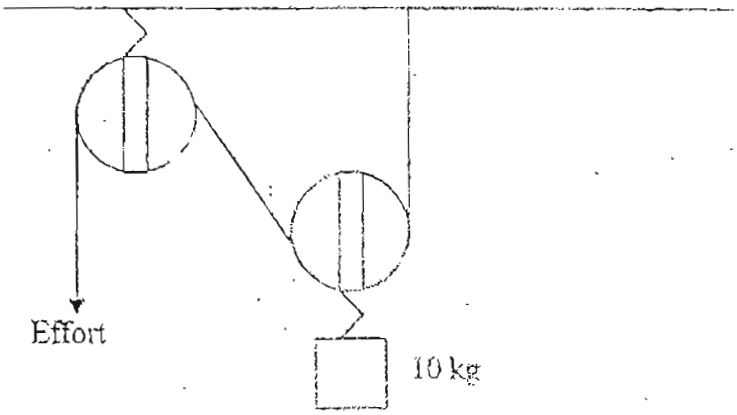
	A	B
1.	salt	water
2.	oil	honey
3.	water	ice
4.	jelly	ice

24. Which of the following can change potential energy to kinetic energy ?

A. A coil of wire
B. A compressed spring
C. A stretched rubber band

1. A and B
2. A and C
3. B and C
4. A, B and C

25. The pulley system below is used to lift a load of 10 kg.

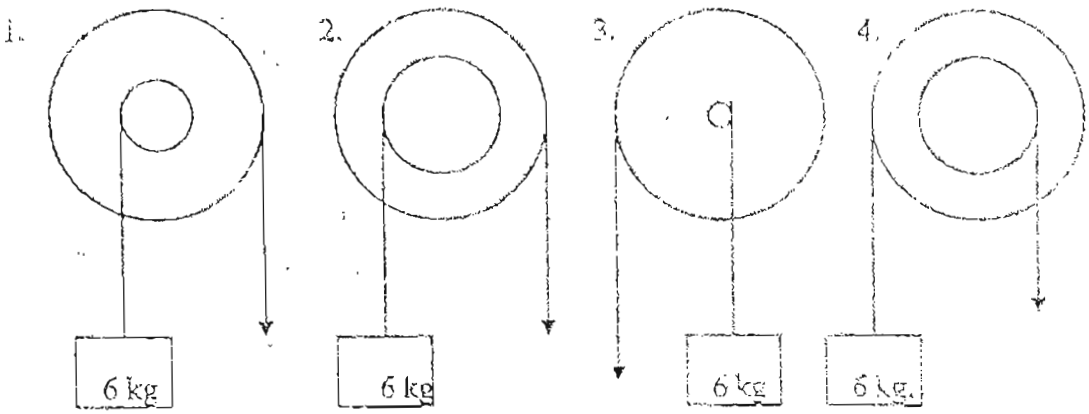


Which of the following statements about the system are correct ?

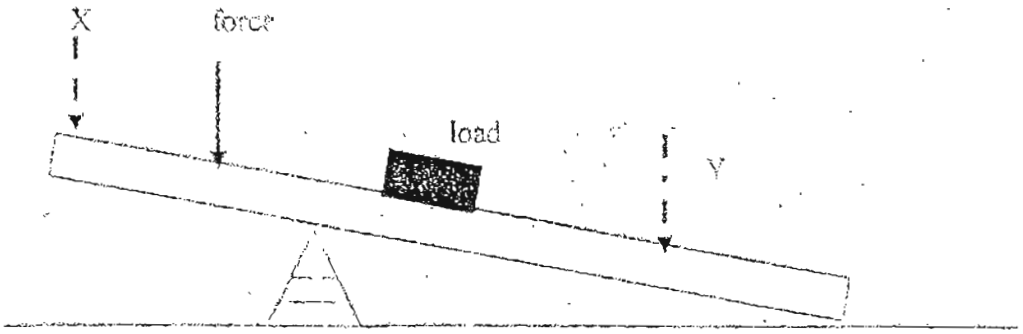
A. The effort used is more than the load.
B. The effort moves a longer distance than the load .
C. The movable pulley moves in the opposite direction to the effort.
D. The distance moved by the load is less than that moved by the effort.

1. A and B only
2. B and C only
3. A , B and C only
4. B , C and D only

26. Which one of the following requires the least effort to lift a load of 6 kg ?



27.



Look at the diagram above. Which of the following will enable you to lift the load with the least effort ?

A. Move the force to position X .
B. Move the force nearer to the load.
C. Move the load and the fulcrum nearer to position Y.
D. Move the load and the fulcrum nearer to position X

1. A and B only
2. A and C only
3. A and D only
4. B and C only

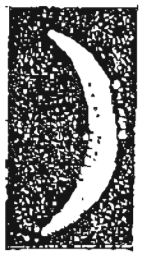
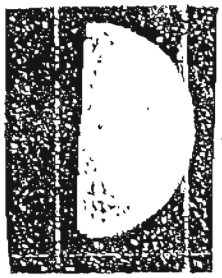
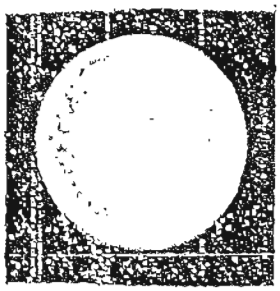
28. The diagram below shows a rubber tyre .

Why are there deep ~~threads~~ treads on the tyre ?

This is because the deep threads _____ .

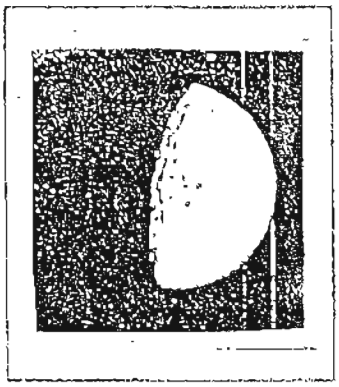
1. increase the stopping distance of the car.
2. reduce the amount of material used
3. enable the tyre to move smoothly
4. increase friction

29. Jenny looked at the moon on different nights and recorded what she saw.

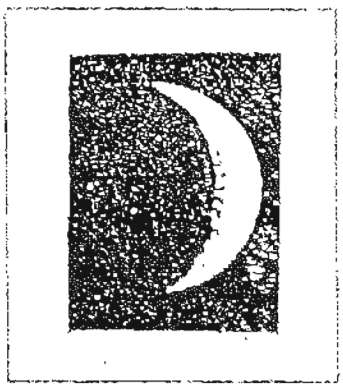
			
2 May	8 May	15 May	23 May

What was the shape of the moon on 23 May ?

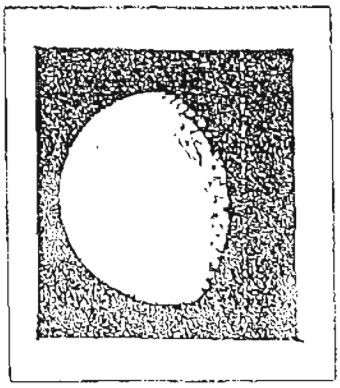
1



2.



3.



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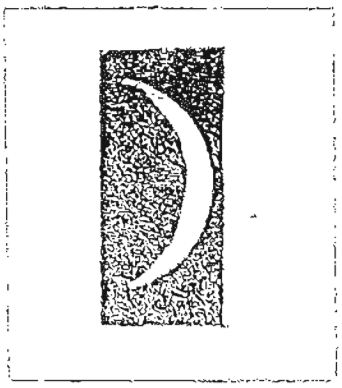
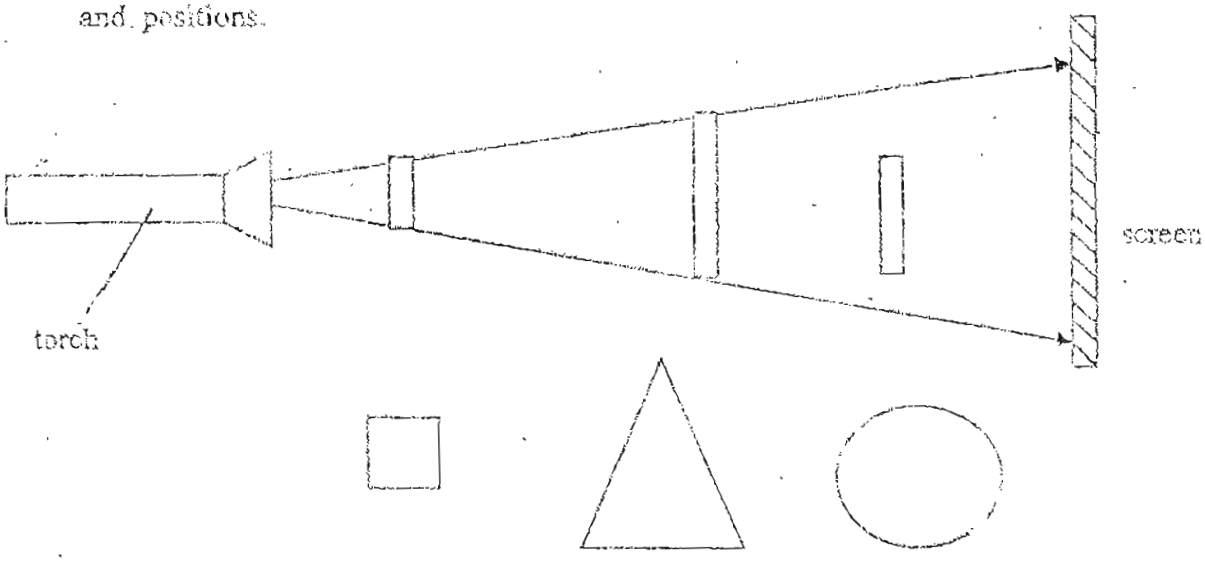


30. Three pieces of cardboard are cut into the shapes of a triangle , circle and square. They are later placed between a torch and a screen . The figures below show their sizes and positions.



Which one of the following shows the shadow on the screen ?

1.

2.

3

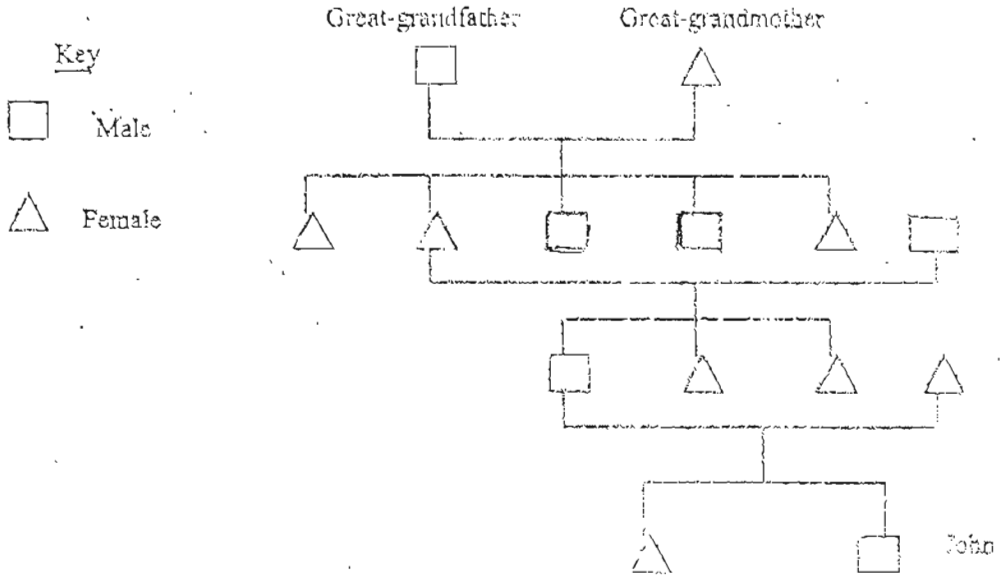
4.

SECTION B (40 marks)

Write your answers to questions 31 to 46.

31. Sunlight shines onto a leaf and enters through its outer cells. (1) _____ enters the leaf from the soil, through the roots and the stem. Air gets into the leaf through tiny holes called (2) _____. Inside the leaf cell, the (3) _____ use sunlight as energy. This energy helps to make (4) _____ by combining water with carbon dioxide found in air. Excess sugar is then turned into a substance called starch. (4m)

32. Study John's family tree and answer the following questions.

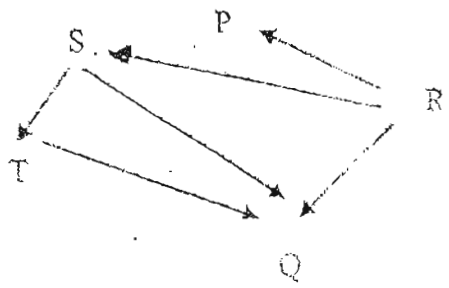


(a) How many grandchildren do John's great-grandparents have? (1m)

_____

(b) Shade the symbol that represents John's grandfather. (1m)

33. The diagram below shows the food relationships of 5 organisms (P, Q, R, S and T) found in a field community.



(a) Complete the following statements.

i) _____ is preyed on by more than one animal. (1m)

ii) _____ eats both plants and animals.

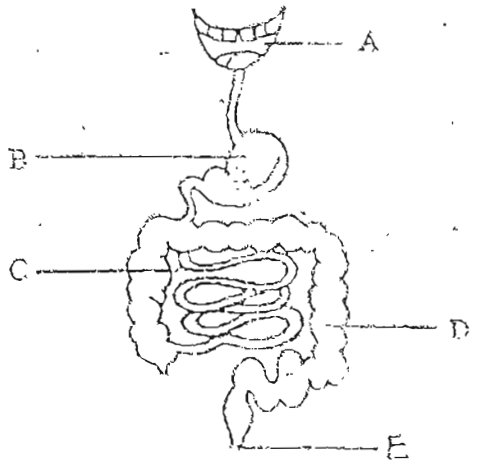
(b) Which population will increase the most when Q is removed? (1m)

_____

(c) If maize plant, caterpillar, field mouse, locust and bird are the 5 organisms in the food web above, which letter represents bird? (1m)

_____

34. The diagram below shows the human digestive system.



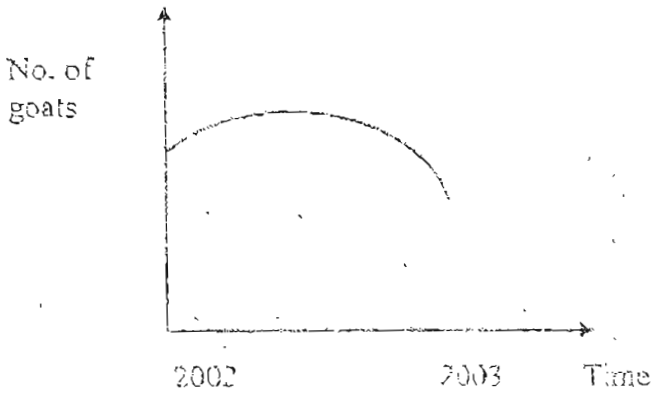
(a) In which part (A, B, C, D or E) of the body is digestion complete? (1m)

Part _____

(b) What is the digestive juice produced in Part A called? (1m)

_____

35. Freda kept a certain number of goats in a large fenced up field for a year. The goats were only allowed to graze in this enclosure. A graph showing the number of goats over time is plotted as shown below



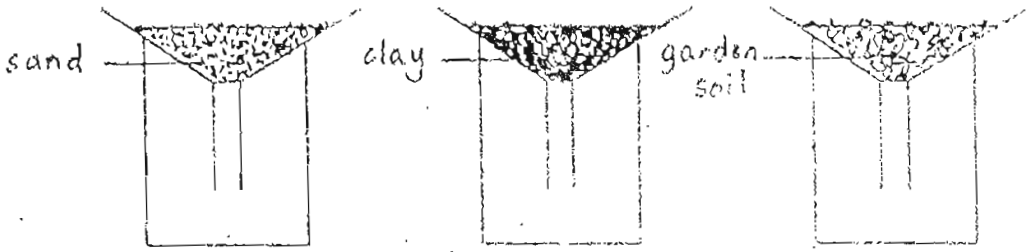
(a) From the graph, what can we say about the population of the goats from 2002 to 2003? (1m)

_____

(b) What is the most likely reason for the change in population? (1m)

_____

36. The same amount of 3 different types of soil are used in the experiment below. The same amount of water is poured into the 3 separate funnels in Beakers A, B and C.



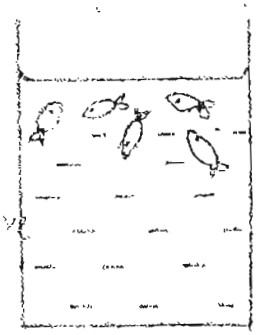
(a) Which beaker will collect the most water in one minute? (1m)

Beaker ____

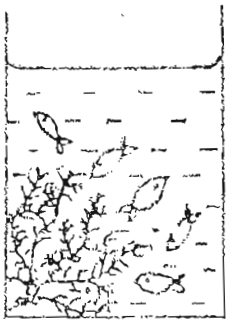
(b) Explain your answer in (a). (1m)

_____

37. The beakers below were left by an open window in the morning. Later in the afternoon, the five fishes in Beaker X were found crowding just below the surface of the water. Those in beaker Y were swimming freely.



Beaker X



Beaker Y

(a) What is a likely reason for the observation in the afternoon? (1m)

_____

_____

_____

_____

(b) During the night, the fishes in both beakers were found swimming near the surface. Why? (1m)

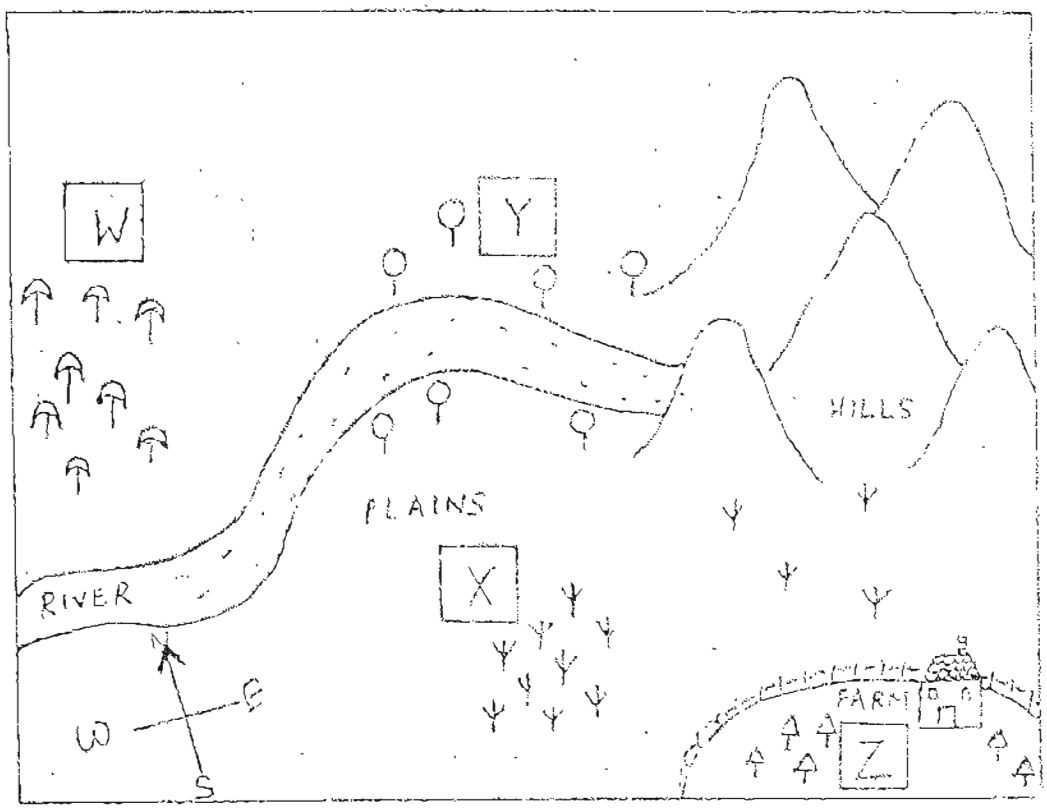
_____

_____

_____

_____

38. Four types of plants W, X, Y and Z are grown in the area marked as shown in the diagram below.



(a) The wind is blowing towards the east for half the year. Which plant is most likely dispersed by wind? (1m)

Plant _____

(b) What is the method of seed dispersal for Plant Y? (1m)

_____

(c) If Plant Z is a fruit tree, how does its seeds disperse? (1m)

_____

39. Jane set-up an experiment . She used four different materials ; newspaper , pink vanguard sheet , drawing paper, and brown paper . She mounted the four materials on four pieces of wood and exposed them to sunlight.. She recorded her observation every day.

a. What was the aim of her experiment?

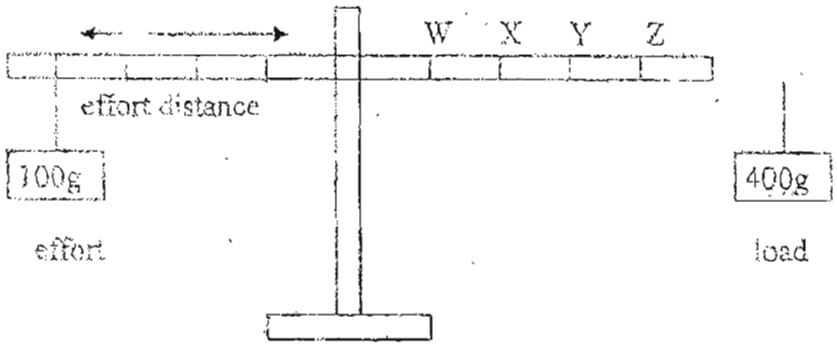
_____

b. What are the two variables that she must keep the same ?

_____

_____

40. The diagram below shows an equal arm balance . .



a. In order to make it balance where would you hang a load of 400g ?

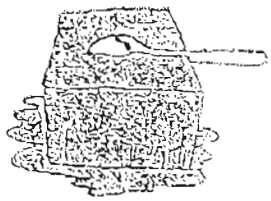
_____

(1 mark)

b. What can you conclude about the effort and the load in relation to the distance ?

_____

41.



A spoon was placed on an ice cube as shown. After five minutes , Mei Ling touched the handle of the spoon that was not in contact with the ice and found it cold.

a. Which object gained heat ?

_____

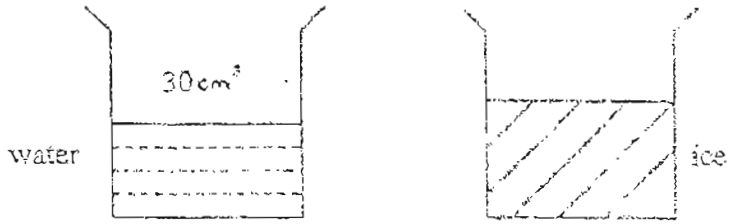
(1 mark)

b. Explain why the handle of the spoon feelscold.

_____

_____

42. Linda put 30cm^3 of water in a plastic beaker as shown in the diagram below . She then placed the beaker in the freezer . After a few hours the water had frozen into ice.



a. What changes had taken place when the water turned to ice ?

_____

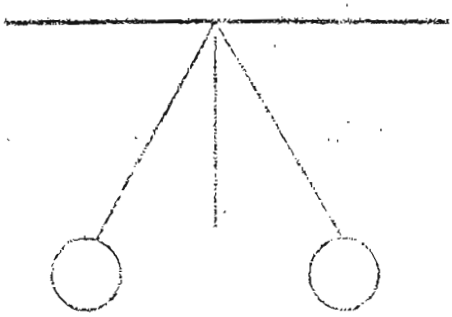
(1 mark)

b. What was the volume of the ice in Beaker B ?

_____

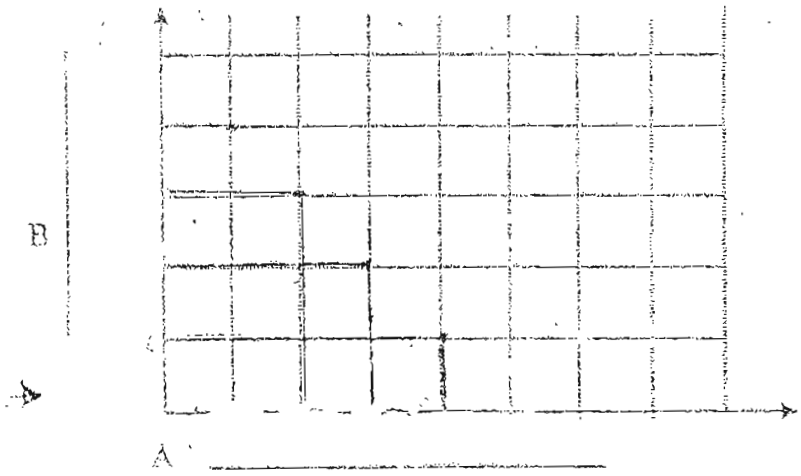
(1 mark)

43.



The number of swings a pendulum makes a minute with different lengths of string were recorded . The results are tabulated in the table as shown below.

Length of string in cm	Number of swings in a minute
10	50
20	35
30	26
40	15



a. Using the data above, plot the graph on the grid (1 mark)

b. What does axis A represent ?

_____

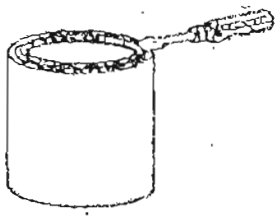
c. What does axis B represent ?

_____

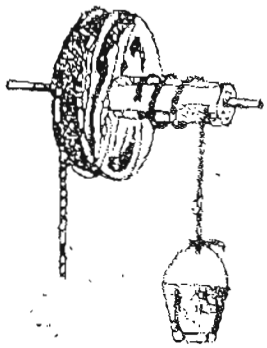
Name one variable that must be kept the same.

_____

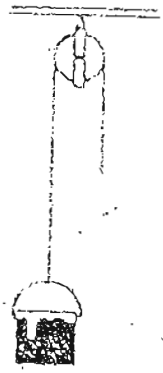
44.



System A



System B



System C

a. The above simple machines make work easier. Describe an advantage that the above machines have in common.

_____

b. Mark with an arrow to show the direction of the effort and the load for System A and System B. Label the arrows correctly.

(1 mark)

_____

c. In which system/ s is the effort less than the load?

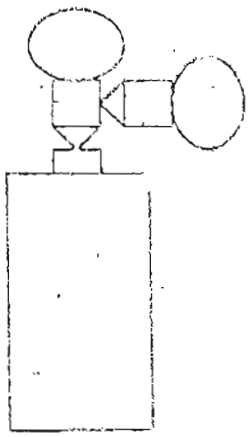
_____

(1mark)

45. Draw lines to show how you can connect wires to light both the bulbs.

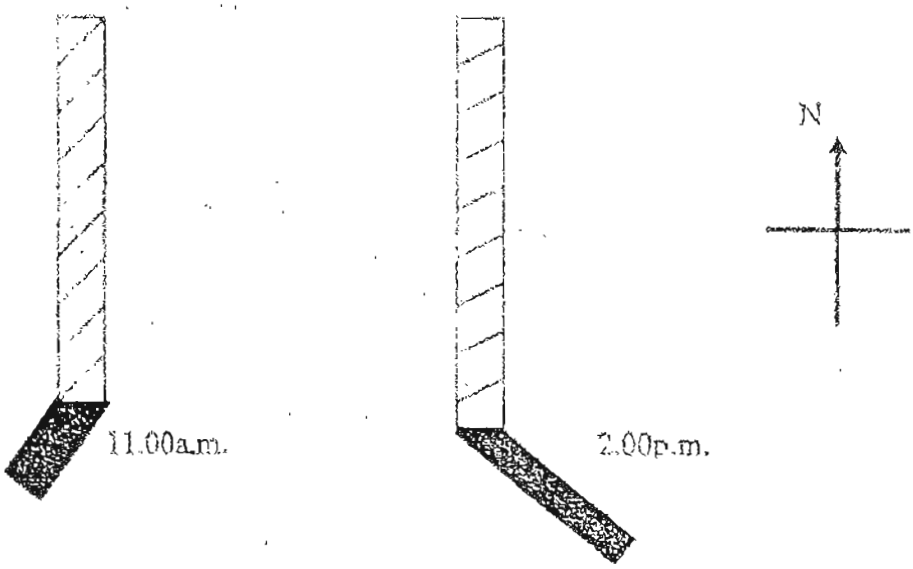
(2 marks)

a.

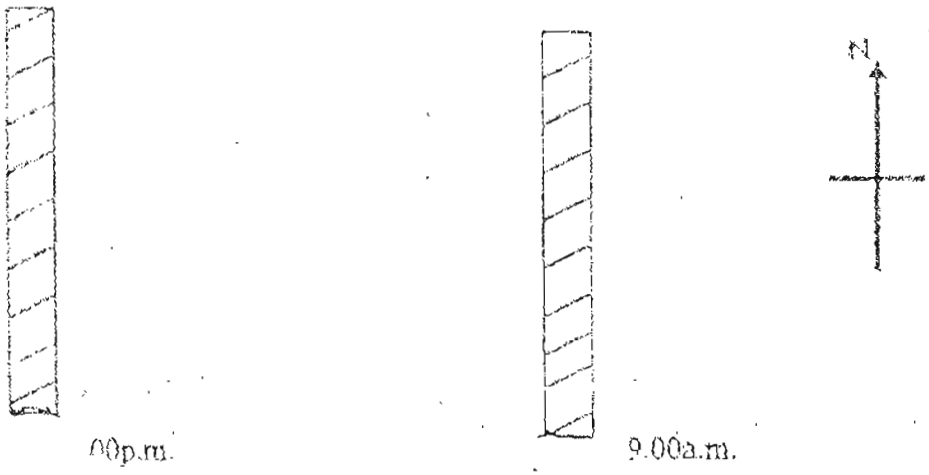


b.

46.



The drawings show the shadows that are formed by a piece of wooden pole at different times of the day.
Draw the shadow cast by the wooden pole at 4.00p.m. and 9.00a.m. (2 marks)



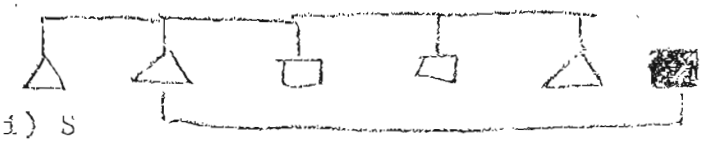
– END –

METHODIST GIRLS SCHOOL (PRIMARY)
MID YEAR EXAMINATION 2004
PRIMARY SIX
SCIENCE

CM

1) 4
2) 2
3) 2
4) 1
5) 3
6) 2
7) 4
8) 1
9) 4
10) 2
11) 3
12) 3
13) 1
14) 3
15) 4
16) 2
17) 4
18) 4
19) 3
20) 2
21) 3
22) 1
23) 4
24) 3
25) 4
26) 3
27) 2
28) 4
29) 3
30) 1
31) 1) water 2) stomata 3) chloroplast 4) sugar
32) 3 grandchildren

b)



33) a) i) S

ii) Q

b) T

c) Q

34) a) C

b) saliva

35) a) It increased and decreased after a while.

b) There were not enough food for the goats.

36) a) A

b) The soil in Beaker A is porous and allows water to pass through.

37) a) The fishes swim up to get oxygen . The plant in beaker Y went through the process of photosynthesis taking in carbon dioxide and giving out oxygen, so it gave the fish more oxygen to breathe.

b) Hydrilla does not make food at night as there is no sunlight, so no oxygen is produced. Hence, fishes in both beakers X and Y swim to the water surface for oxygen.

38) a) X

b) It is dispersed by water.

c) It is dispersed by the help of man and animals.

39) a) She wanted to find out the effect of materials exposed to sunlight.

b) The size of each material and the length of time each.

40) a) W

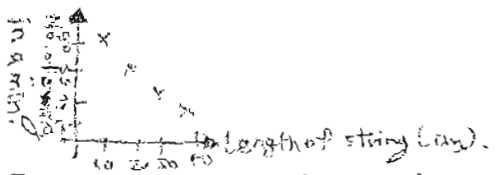
b) For the effort to be less than the load, the effort distance must be greater.

41) a) The ice cube

b) The handle of the spoon loses heat to the ice cube as heat travels from hot to cold.

42) a) The water had increased in volume.

b) 30 cm^3

43) a) 

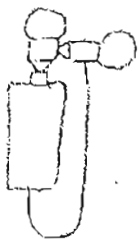
b) It represents the number of swing in a minute.

c) It presents the length of string in cm.

d) The force to push the pendulum must be the same.

44) a) They changed the direction of the force.

b) System A and B

45) a) 

b) 

46)