



新加坡福建会馆属下五校小六统一考试
道南 • 爱同 • 崇福 • 南侨 • 光华

SINGAPORE HOKKIEN HUAY KUAN
5-SCHOOL COMBINED PRIMARY 6 PRELIMINARY EXAMINATION
TAO NAN • AI TONG • CHONGFU • NAN CHIAU • KONG HWA

2009
科学 SCIENCE
BOOKLET A

Date: 28 August 2009

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

This booklet consists of 29 printed pages.

School : _____
Name : _____ ()
Class : _____

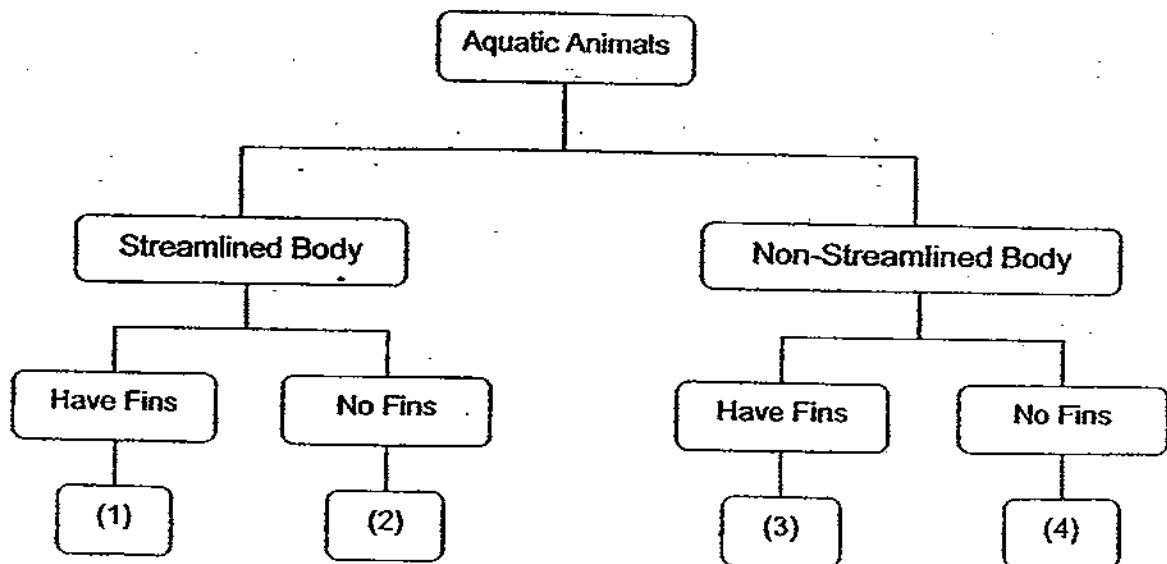
TOTAL	60
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PART 1

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

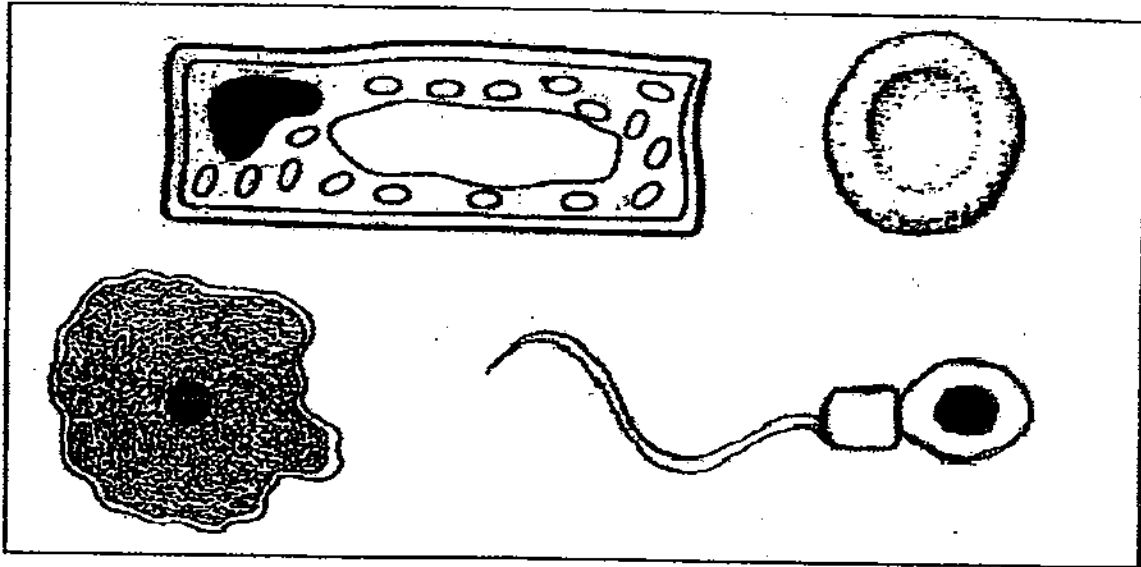
(60 marks)

1 Study the classification chart below.



Where would you classify 'seal' in the above classification chart?

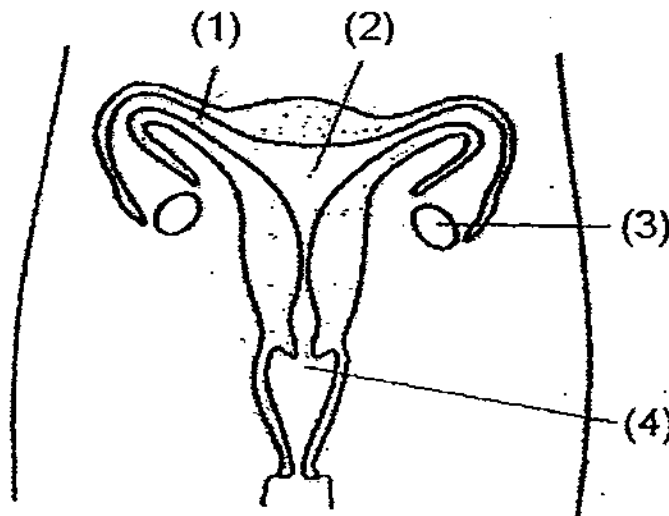
2 The picture shows four different types of cells.



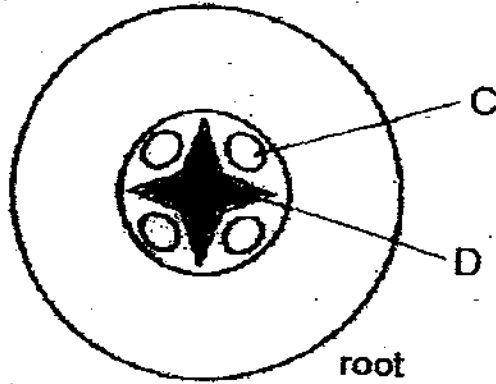
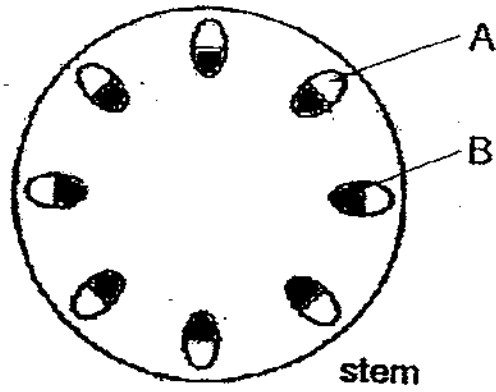
Based on the picture, which of the following statements is correct?

- (1) They have nuclei.
- (2) They have cell membranes.
- (3) They can undergo cell division.
- (4) They can move about on their own.

3 The following diagram shows a female reproductive system. In which part of the system does the foetus develop?

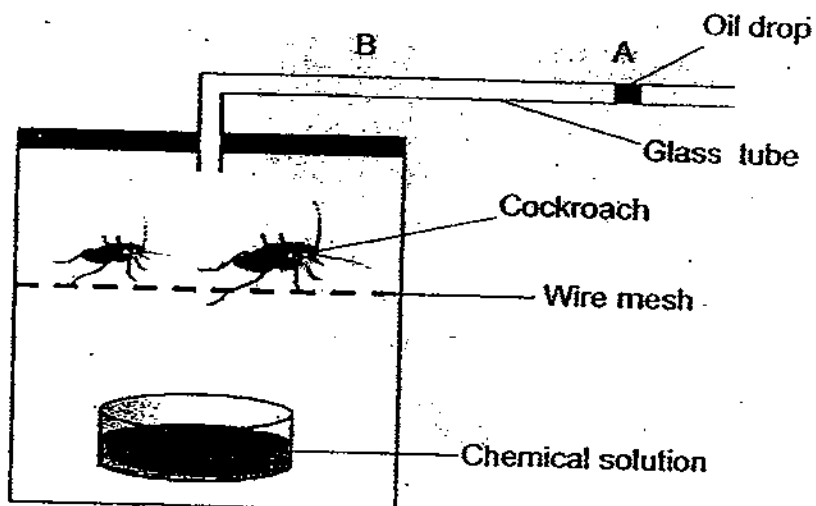


- 4 Study the diagrams which show the cross sections of a stem and a root. Which letters represent the water-carrying tubes (xylem)?



- (1) A and C only
- (2) A and D only
- (3) B and C only
- (4) B and D only

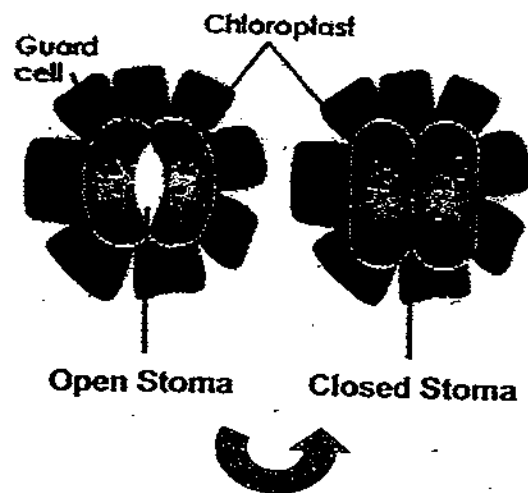
- 5 Xiao Wen set up an experiment as shown in the diagram below. An oil drop was seen initially at Point A.



After 3 hours, she observed that the oil drop had moved to Point B. What is the most likely explanation for her observation?

- (1) The chemical solution released a gas that killed the cockroaches in 20 minutes.
- (2) The cockroaches gave out water vapour during respiration, and the chemical solution evaporated.
- (3) The cockroaches and the chemical solution took in carbon dioxide and water vapour during respiration.
- (4) The chemical solution absorbed carbon dioxide and water vapour and at the same time, the cockroaches breathed in oxygen.

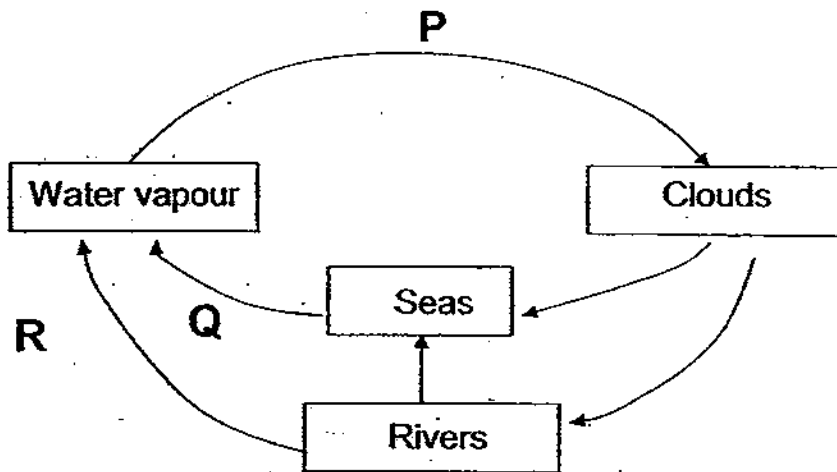
6 The diagrams below show a change in a stoma in a leaf.



What is the purpose of this change?

- (1) To prevent loss of sugar from the leaf.
- (2) To allow entry of oxygen for respiration.
- (3) To prevent loss of water vapour from the leaf.
- (4) To allow entry of carbon dioxide for photosynthesis.

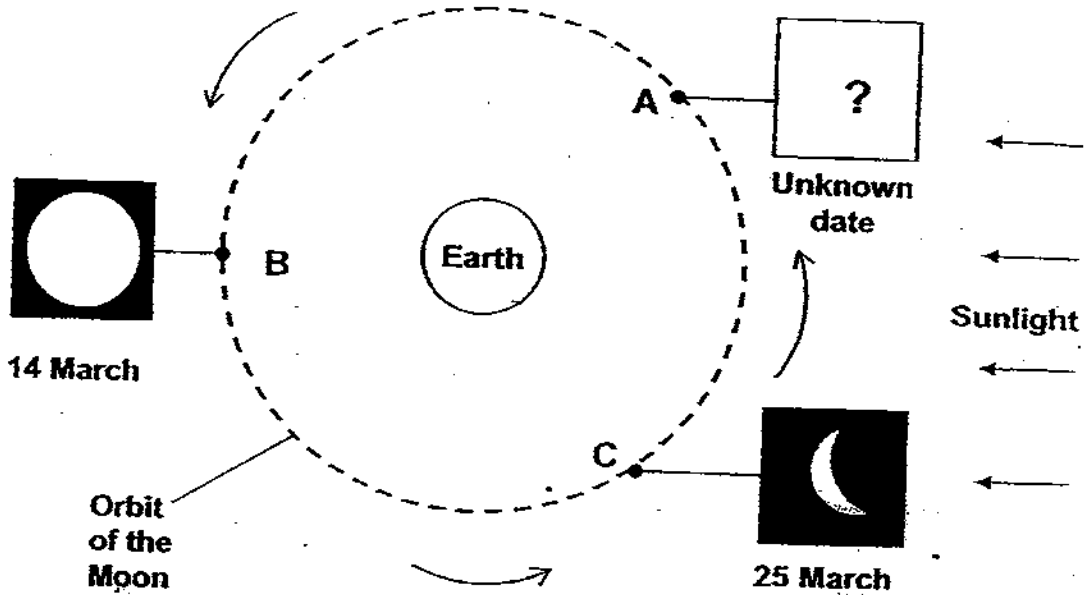
7 The diagram below shows part of the water cycle.



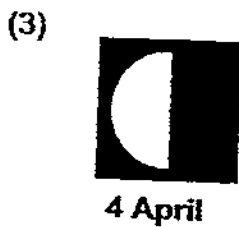
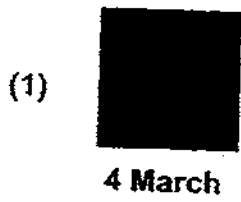
Which of the following is correct?

(1)	R	P
(2)	P	R
(3)	P	Q
(4)	Q	R

- 8 The shapes of the Moon on 14 March and 25 March are shown in the diagram below. Position A shows the position of the Moon on an unspecified date.



Which of the following shows the correct shape of the Moon at Position A?



9 A boy is riding on his pogo stick as shown below.

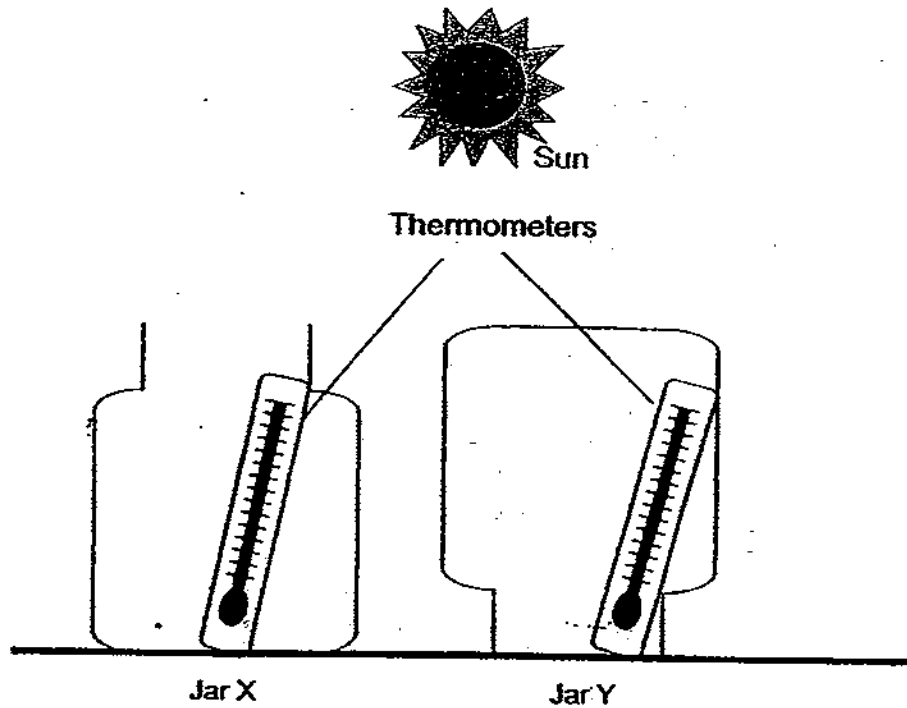


Which of the following forces enable the boy to move over a distance?

- A : Magnetic force
- B : Frictional force
- C : Gravitational force
- D : Elastic spring force

- (1) A and D only
- (2) B and C only
- (3) A, C and D only
- (4) B, C and D only

- 10 The diagram below shows two identical glass jars, X and Y. Jar X is placed upright but Jar Y is inverted.

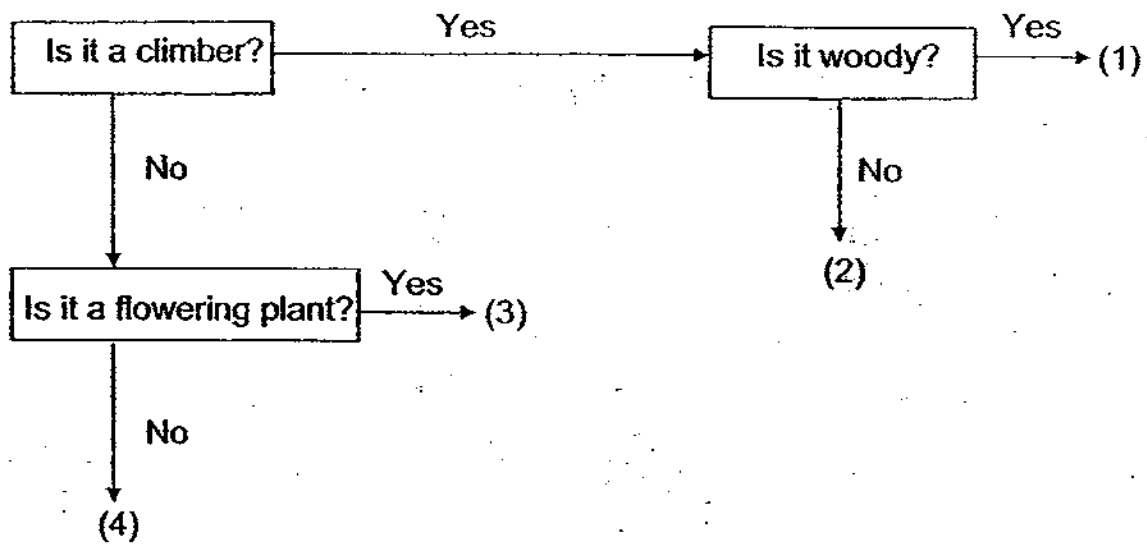


The jars are left in your school garden for an hour at noon.
At the end of the experiment, the temperature in each jar is recorded.

Which of the following sets of temperature shows the most likely final temperature of the air in Jar X and Jar Y?

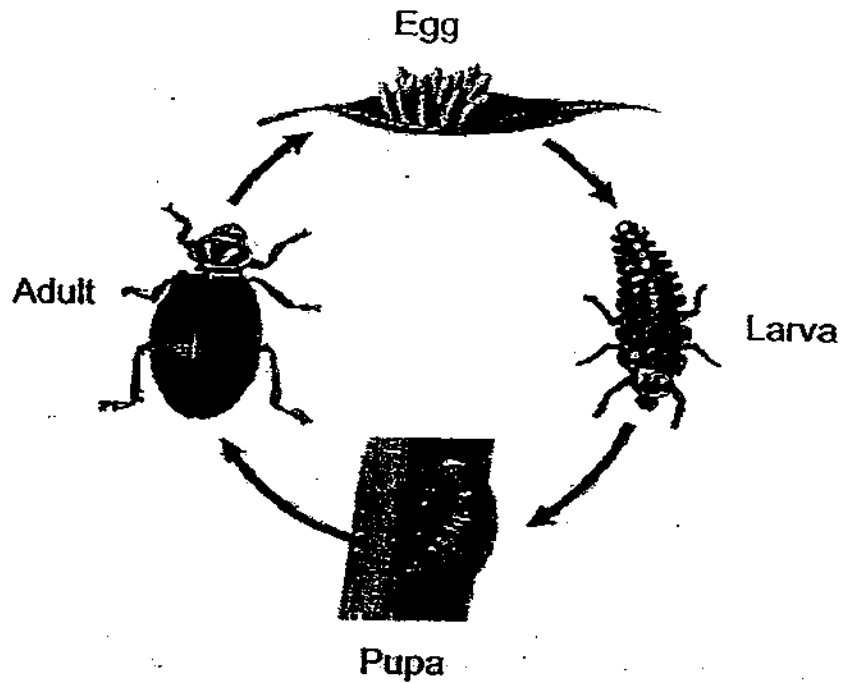
(1)	35	45
(2)	35	35
(3)	45	35
(4)	55	65

11 Study the flow chart below.



Which of the above could represent a woody climber that does not bear flowers?

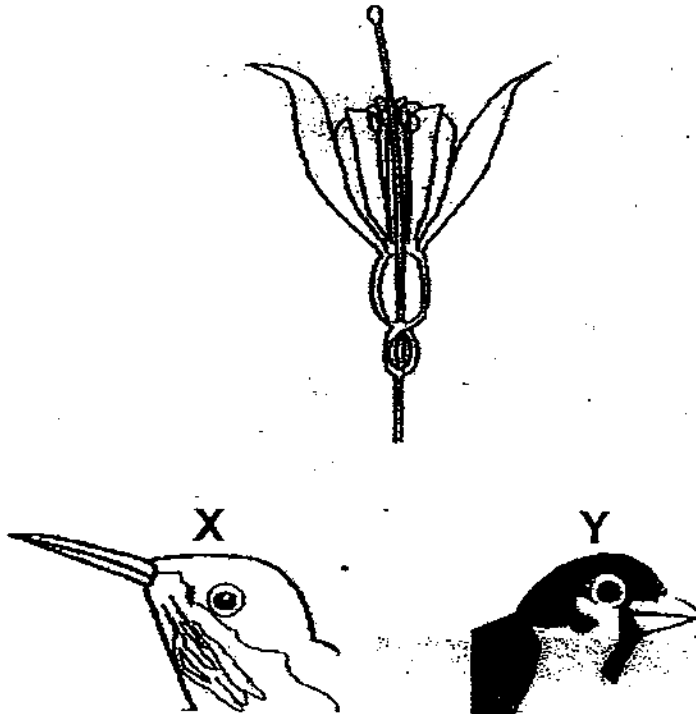
12 The diagram below shows the life cycle of an insect.



At which stages are the structural adaptations for looking for food least important?

- (1) Egg and Pupa
- (2) Egg and Larva
- (3) Larva and Pupa
- (4) Pupa and Adult

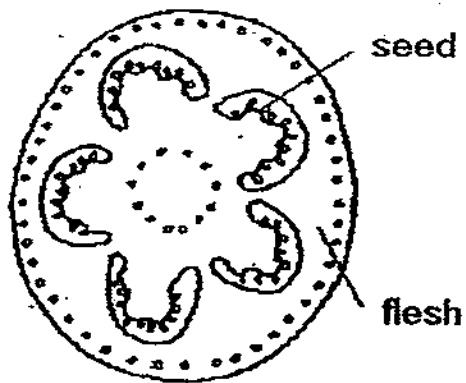
- 13 The diagrams below show a cross section of a flower and two birds, X and Y which feed on nectar.



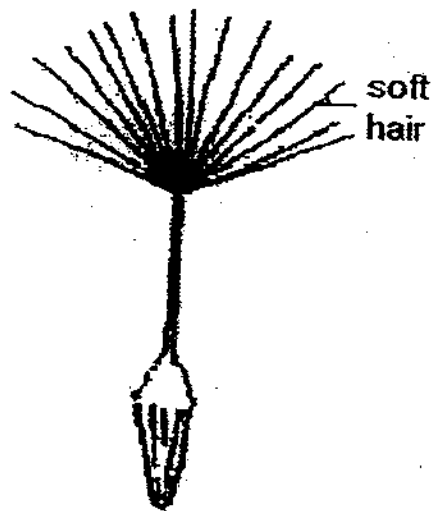
The flower is pollinated by Bird X and not Bird Y. Why is it not pollinated by Bird Y?

- (1) It has a strong sweet scent.
- (2) Its petals are brightly coloured.
- (3) Its stigma is positioned below its anthers.
- (4) Its nectar is found at the base of its petals.

14 Study the diagrams below and state how the seeds of these fruits are dispersed.



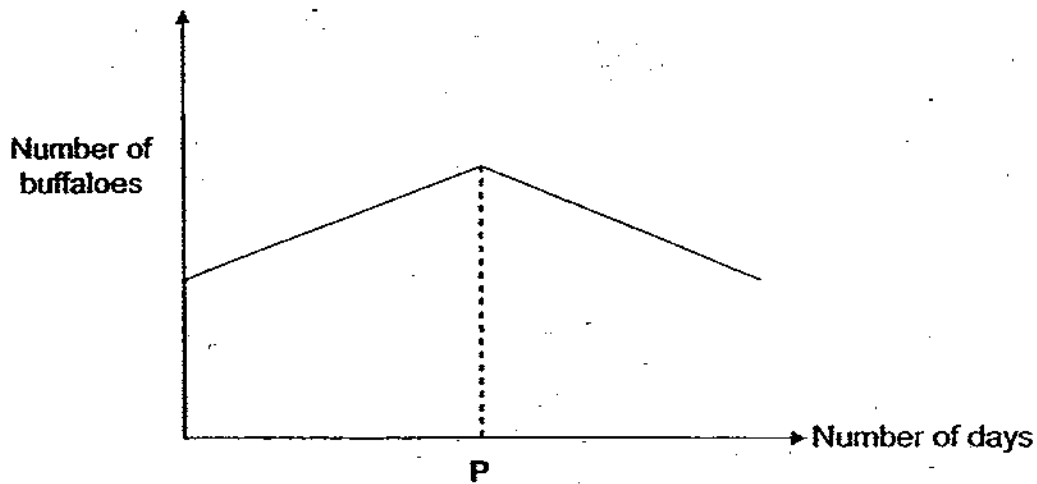
Fruit A



Fruit B

(1)	Animal	Wind
(2)	Wind	Water
(3)	Explosive Action	Animals
(4)	Water	Explosive Action

- 15 The graph below shows the change in the number of buffaloes in a grassland community over fourteen days.



Which of the following statements is/are likely explanation(s) for the change in the number of buffaloes after Day P?

- A : There was a fire.
- B : There was an abundance of food.
- C : There was a spread of disease among the buffaloes.
- D : There was an increase in the number of predators of the buffaloes.

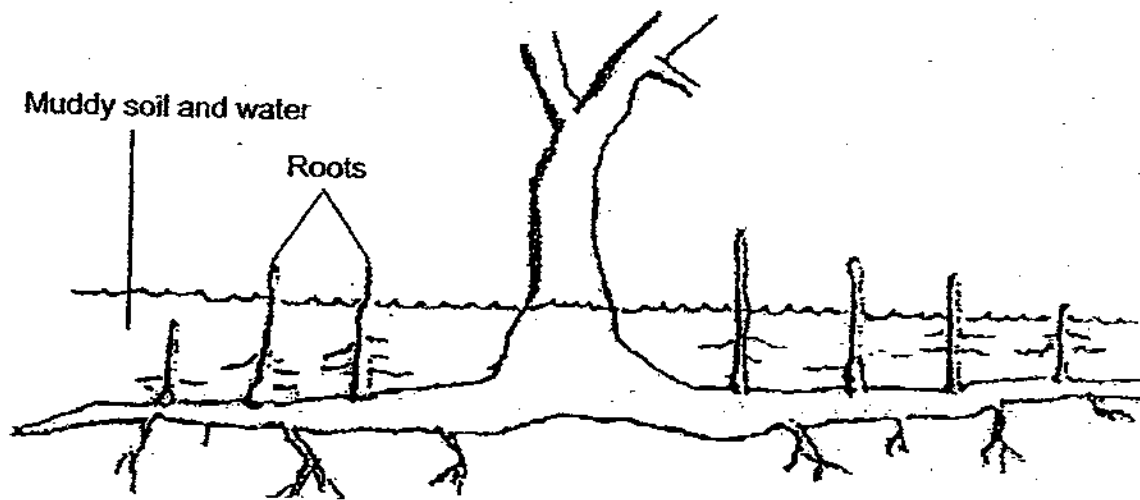
- (1) B only
- (2) C and D only
- (3) A, C and D only
- (4) A, B, C and D

- 16 The diagram below shows part of the skeletal system of the human arm. It is made up of a number of bones. How does this feature help us?



- (1) It helps in our movement.
- (2) It reduces our body weight.
- (3) It provides spaces for our organs.
- (4) It protects important organs inside our body.

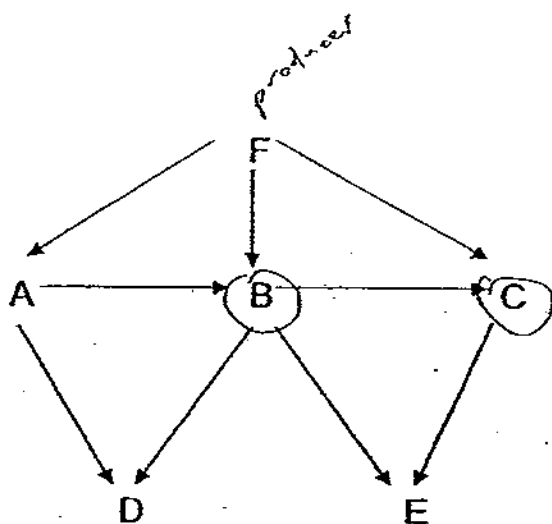
17 The diagram below shows a root system of a mangrove tree.



Why do the roots stick out from the muddy soil and the water?

- (1) They need to absorb water.
- (2) They need to take in oxygen.
- (3) They help the tree to lose excess salt.
- (4) They help anchor the tree firmly to the muddy soil.

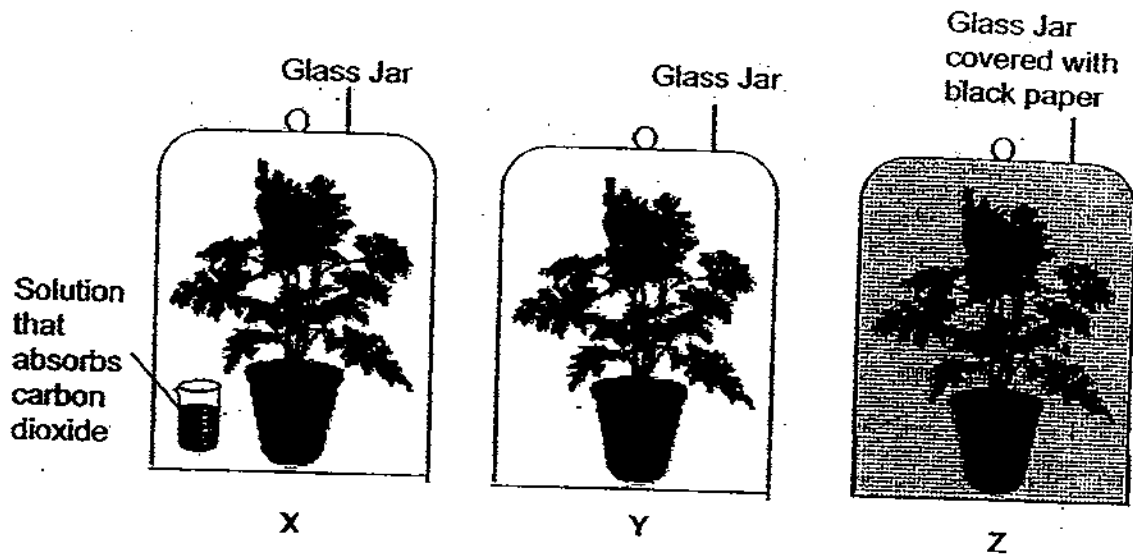
18



A, B, C, D, E and F are organisms in a food web. How many organisms are both a predator and a prey?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

- 19 Jane, Laura, Jenny and Sandy placed 3 pots of similar plants under different conditions. The plants are placed in the sun and watered daily.



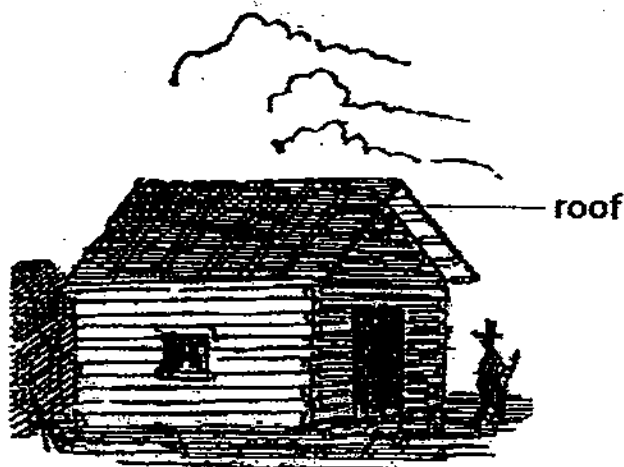
They made the following observations. Which of the statements made by the four girls is correct?

- (1) Jane : Plant X and Plant Y can make food.
- (2) Laura : Plant X and Plant Y cannot make food.
- (3) Jenny : Plant X and Plant Z can make food.
- (4) Sandy : Plant X and Plant Z cannot make food.

20 Which of the following describes breathing and respiration?

	Breathing	Respiration
(1)	uses glucose	produces oxygen
(2)	produces oxygen	uses glucose
(3)	involves gaseous exchange	releases energy
(4)	releases energy	involves gaseous exchange

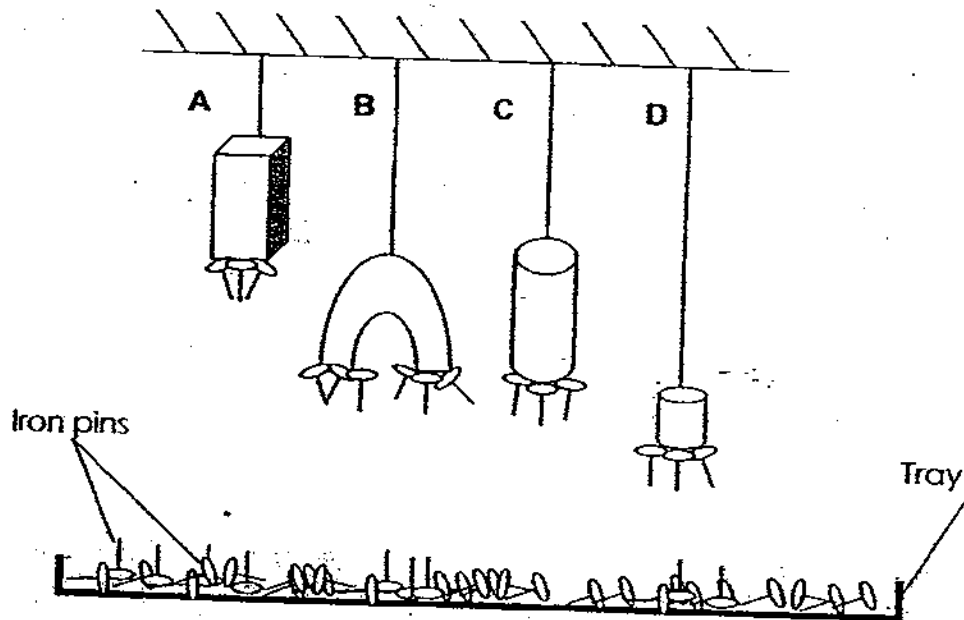
21 In a tropical country, a farmer wants to keep his house cool during hot days.



The table below gives some information about four different materials. Which material is most suitable for building the roof?

	Material 1	Material 2	Material 3	Material 4
(1)	Yes	Yes	No	Black
(2)	Yes	No	Yes	Black
(3)	Yes	Yes	Yes	Silver
(4)	No	No	Yes	Silver

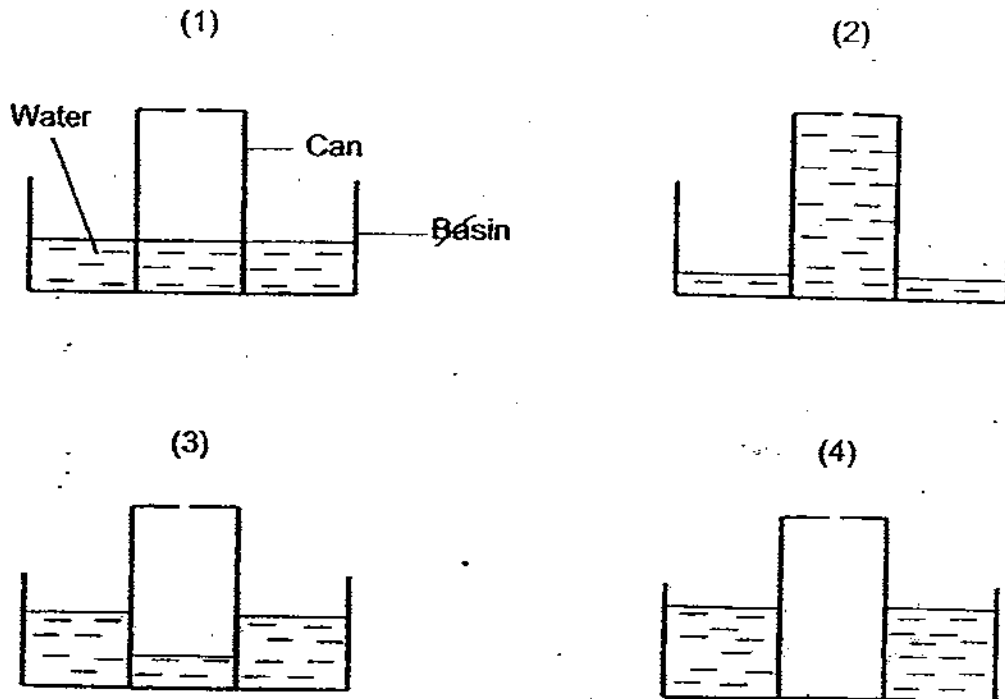
22 Mary suspended 4 magnets above a tray of pins. The result is shown below.



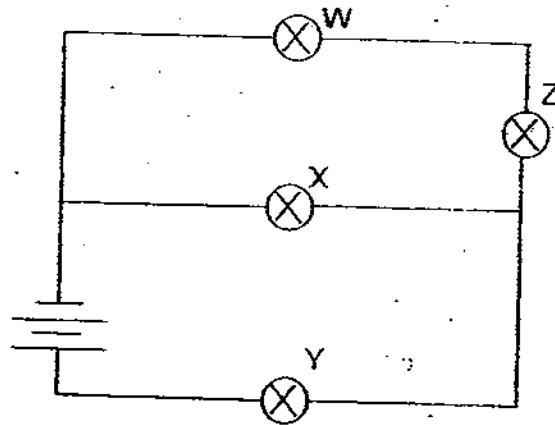
What can you conclude from the above experiment?

- (1) A is weaker than B.
- (2) A is stronger than D.
- (3) B is stronger than C.
- (4) C is weaker than D.

- 23 A hole is made at the base of a can. It is inverted and lowered vertically into a basin of water. Which diagram shows the correct water level?



24 A circuit is set up using four bulbs, W, X, Y and Z and two batteries.



Which of the following statement(s) is/are true?

- ~~A~~ : When Bulb W is fused, all the other bulbs will remain lighted.
- B : When Bulb X is fused, all the other bulbs will remain lighted.
- ~~C~~ : When Bulb Y is fused, all the other bulbs will remain lighted.
- ~~D~~ : When Bulb Z is fused, all the other bulbs will remain lighted.

- (1) A only
- (2) B only
- (3) A and D only
- (4) B and C only

- 25 Justyn placed a bar magnet near a steel paper clip as shown in Diagram A below. He moved the magnet slowly towards the paper clip until it is attracted by the magnet. He measured the distance between the magnet and the original position of the clip. This is called the 'pulling distance'.

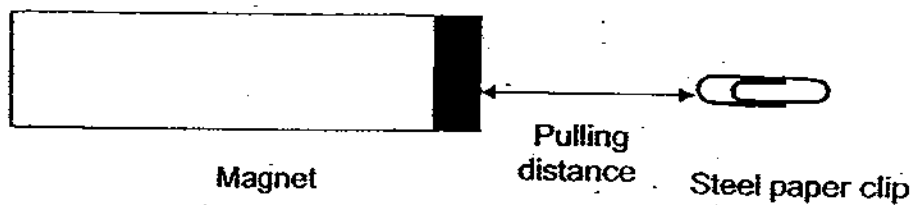


Diagram A

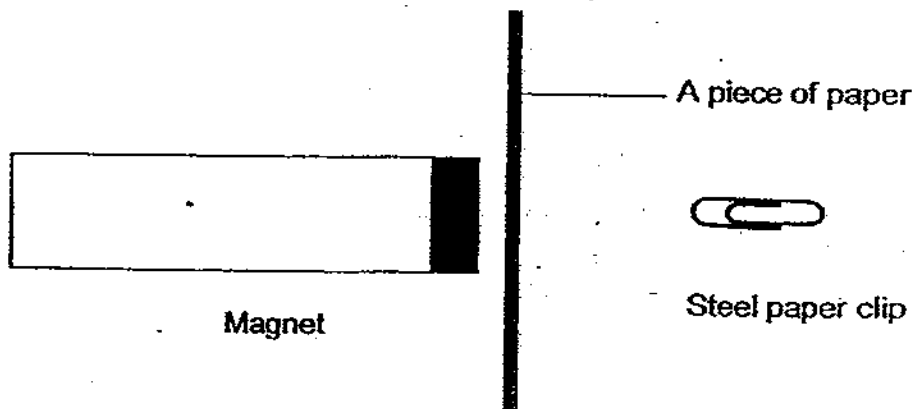


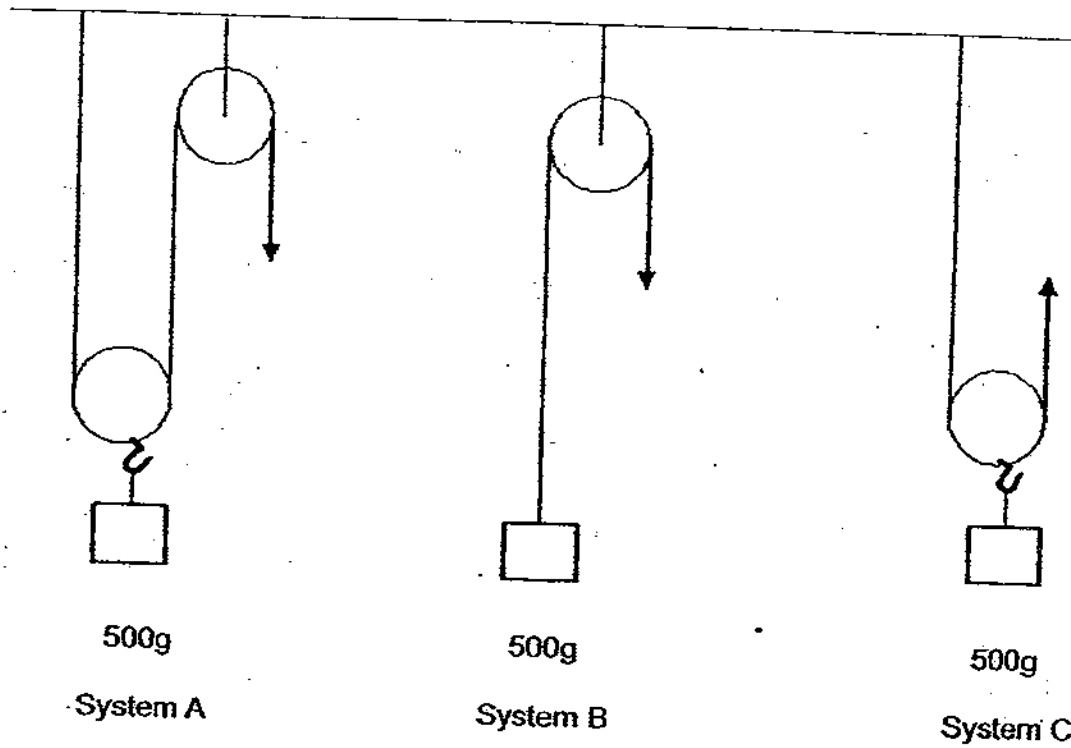
Diagram B

Using the same magnet and paper clip, he repeated the experiment, with a piece of paper between the magnet and paper clip as shown in Diagram B. Then he measured the pulling distance.

What was the aim of his experiment?

- (1) To find out how the thickness of paper affects the pulling distance.
- (2) To find out how the strength of the magnet affects the pulling distance.
- (3) To find out how the presence of the piece of paper affects the pulling distance.
- (4) To find out how the poles of the magnet affect the pulling distance.

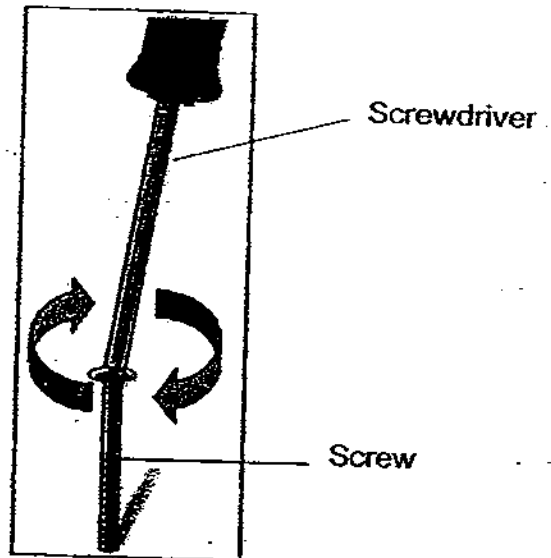
26 The diagram below shows three pulley systems, A, B and C.



If a force of 300g is applied, which of the pulley system(s) can lift the 500g load?

- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

27

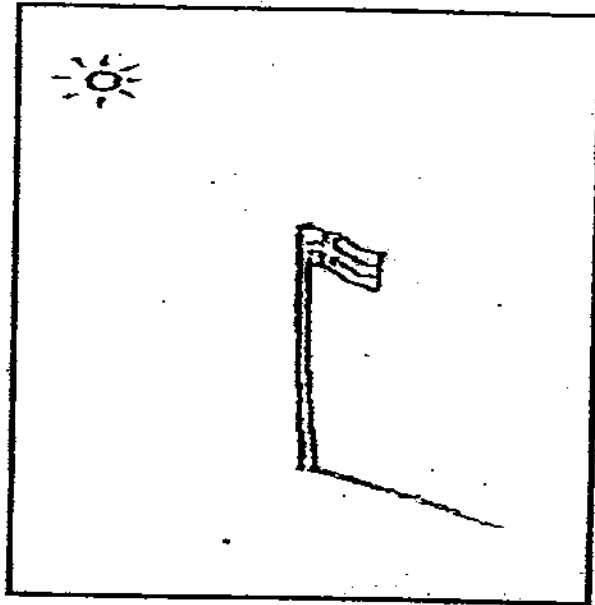


Based on the above action, which simple machines are the screw and screwdriver?

- A : lever
- B : gears
- C : inclined plane
- D : wheel and axle

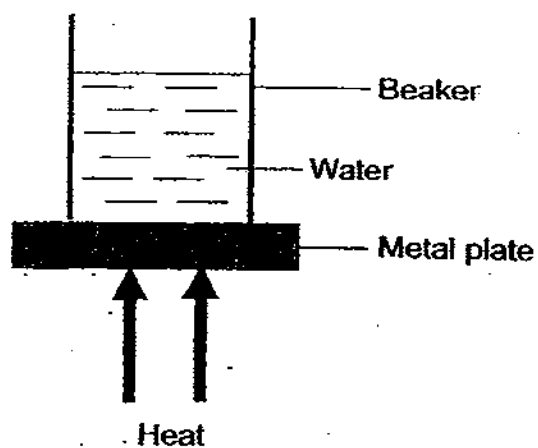
- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) B, C and D only

- 28 Siew Siew measured the shadow of a flagpole at 10.15 a.m., 12.30 p.m. and 3.45 p.m. Which of the following sets of measurement is most likely to be the one taken by her?



(1)	25 cm	125 cm	400 cm
(2)	400 cm	25 cm	125 cm
(3)	125 cm	400 cm	125 cm
(4)	125 cm	25 cm	400 cm

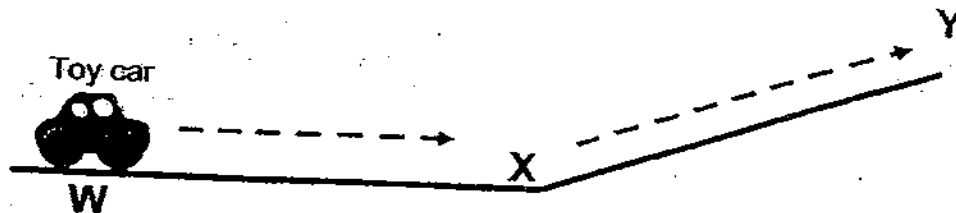
- 29 Four beakers containing the same amount of water at the same temperature are placed on hot metal plates, W, X, Y and Z. The lower surfaces of the metal plates are kept at the same temperature. The plates are all of the same size but made of different metals.



The time taken to heat the ^{water} set-up to a certain temperature are recorded in the table below. Which metal plate is the best conductor of heat?

		Time taken in min	
(1)	W	10	10
(2)	X	12	10 12
(3)	Y	15	20 15
(4)	Z	18	20

- 30 Tom pushed a toy car from W to X. He released the toy car at Point X. The toy car moved up the slope from X to Y.



Describe the changes in potential and kinetic energy from X to Y.

	POTENTIAL ENERGY	KINETIC ENERGY
(1)	increases	decreases
(2)	decreases	increases
(3)	increases	increases
(4)	decreases	decreases



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2009
科学 SCIENCE
BOOKLET B

Date: 28 August 2009

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

This booklet consists of 17 printed pages.

School : _____
Name : _____ ()
Class : _____

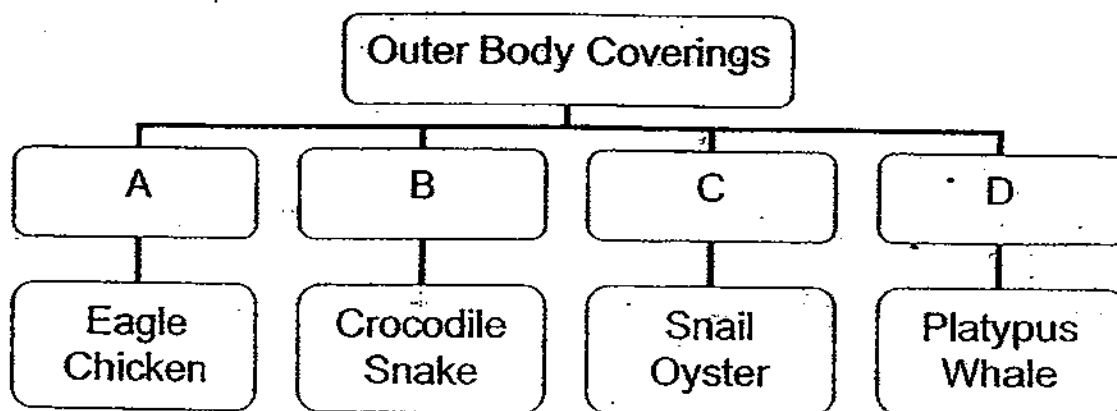
TOTAL	40
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PART II

For questions 31 to 46, write your answers in this booklet.
The number of marks available is shown in brackets [] at the end of each question or part question.

(40 marks)

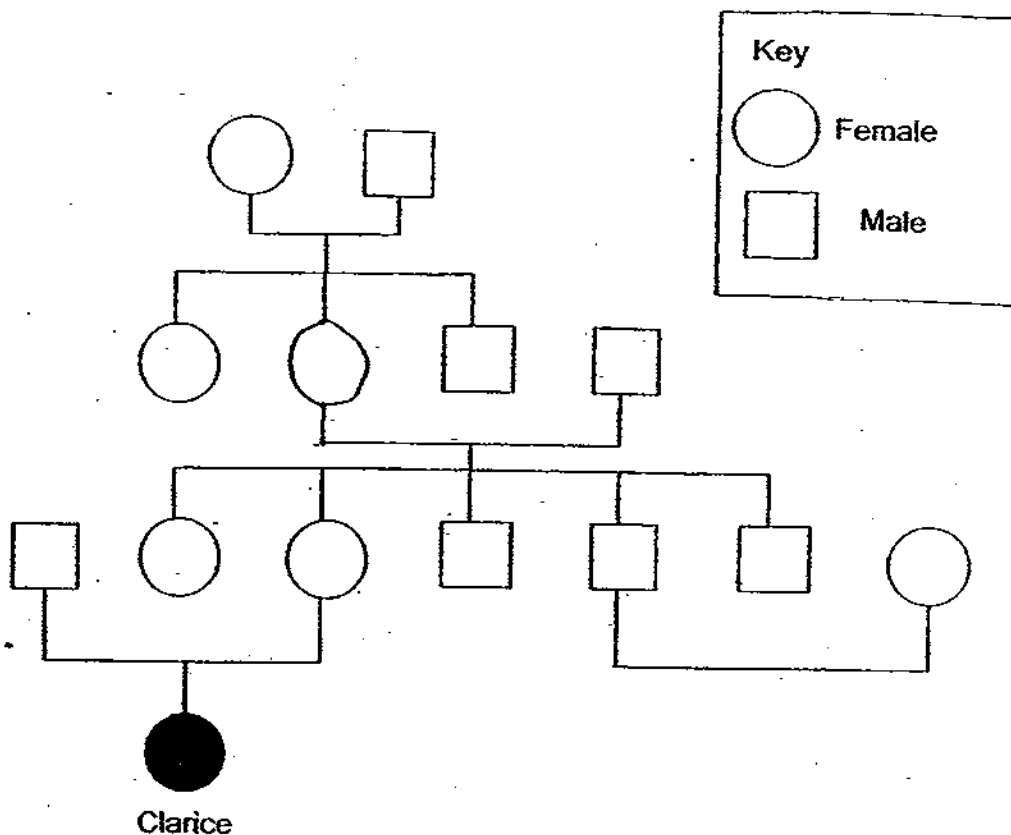
- 31 The diagram below shows how some animals are grouped according to their outer body coverings.



- (a) Under which group, A, B, C or D, would 'lizard' be classified? [1]

- (b) Based on the diagram, how is the whale and eagle different? [1]

32 The diagram below shows the family tree of Clarice's maternal family.



(a) How many uncles does Clarice have altogether? [1]

(b) Shade the symbol that represents Clarice's grandmother. [1]

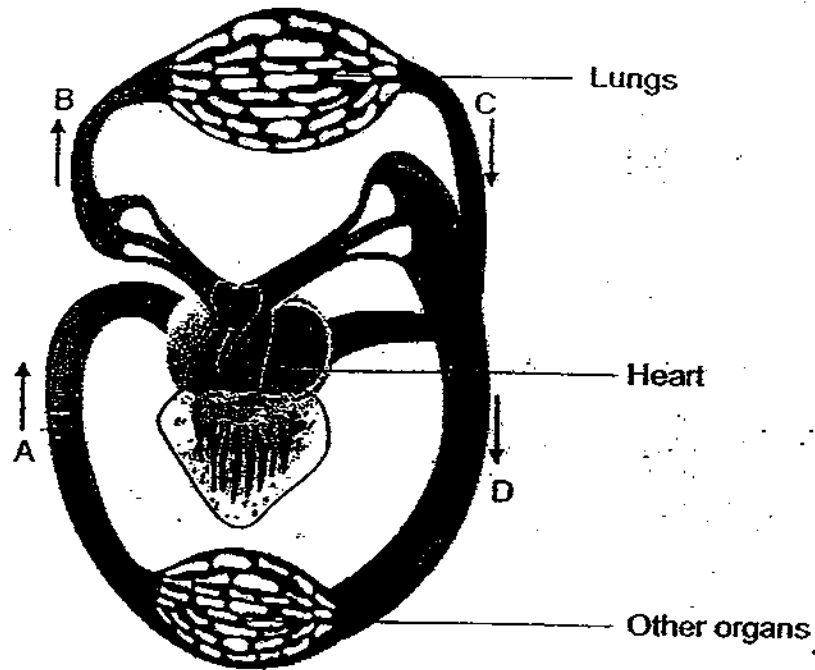
33 The picture below shows two water hyacinth plants growing in a pond.



- (a) The water hyacinths use mineral salts that are dissolved in the water to grow healthily. Where do these mineral salts come from? [1]

- (b) The water hyacinths multiply quickly. What effect would this have on the submerged water plants? [1]

34 The figure below shows how blood flows in our body.

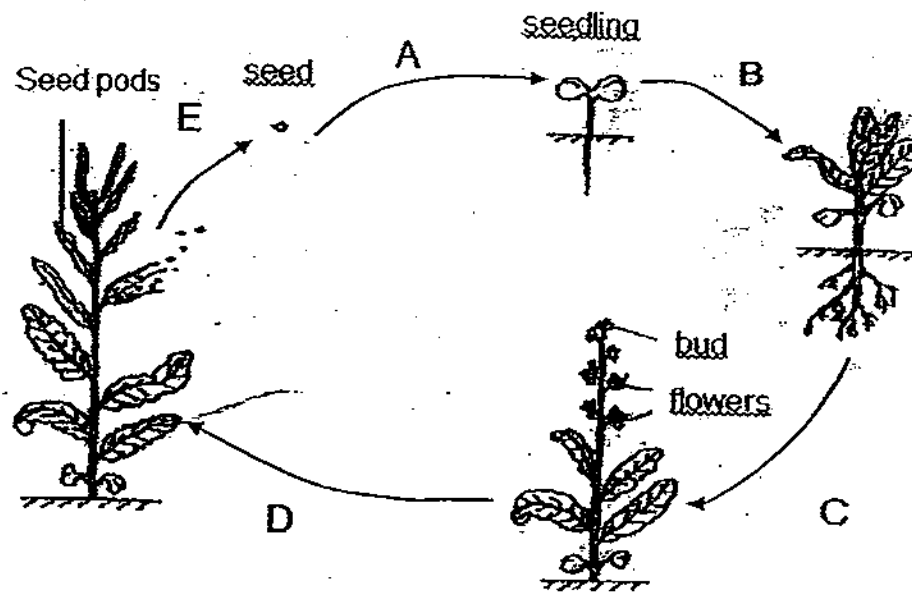


Explain the differences between the blood vessels.

(a) Blood vessel A has more carbon dioxide than Blood Vessel D. Why? [1]

(b) Blood vessel C has more oxygen than Blood Vessel B. Why? [1]

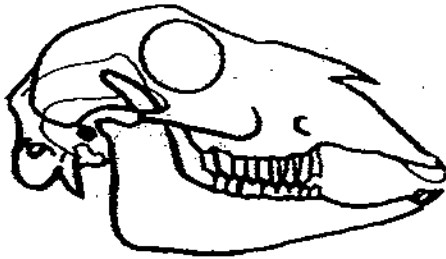
35 The diagram below shows the stages of growth of a flowering plant.



(a) At which stage, A, B, C, D or E, does fertilisation take place? [1]

(b) What are the conditions needed for A to take place? [1]

36 Study the skulls of the two animals below.



A

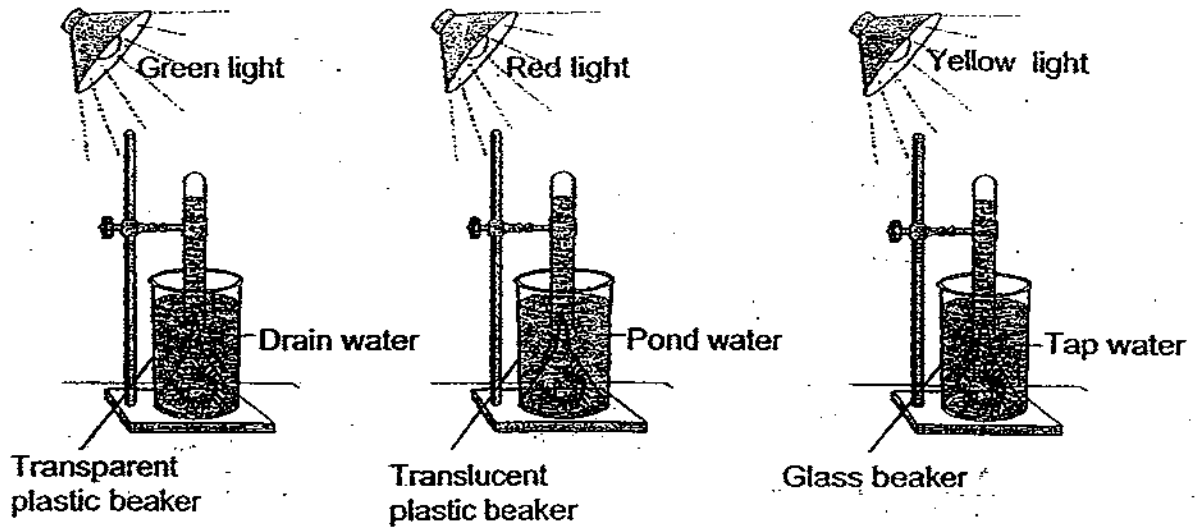


B

(a) Which animal, A or B, was most likely a meat eater? [1]

(b) Suggest a reason for your answer. [1]

37 The experiment below was carried out by Ahmad to find out if the colour of light would affect the rate of photosynthesis in plants.

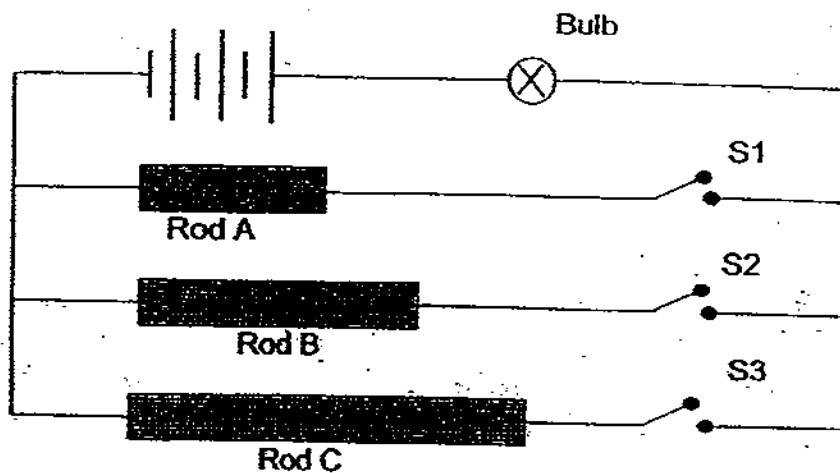


Suggest two changes Ahmad must make to his experiment for it to be a fair test. [2]

First Change:

Second Change:

- 38 Mark set up the circuit as shown in the diagram below. Rods A, B and C are made of the same material. He closed one switch but kept the other two switches open. Then, he observed the brightness of the bulb.



The results are shown in the table below.

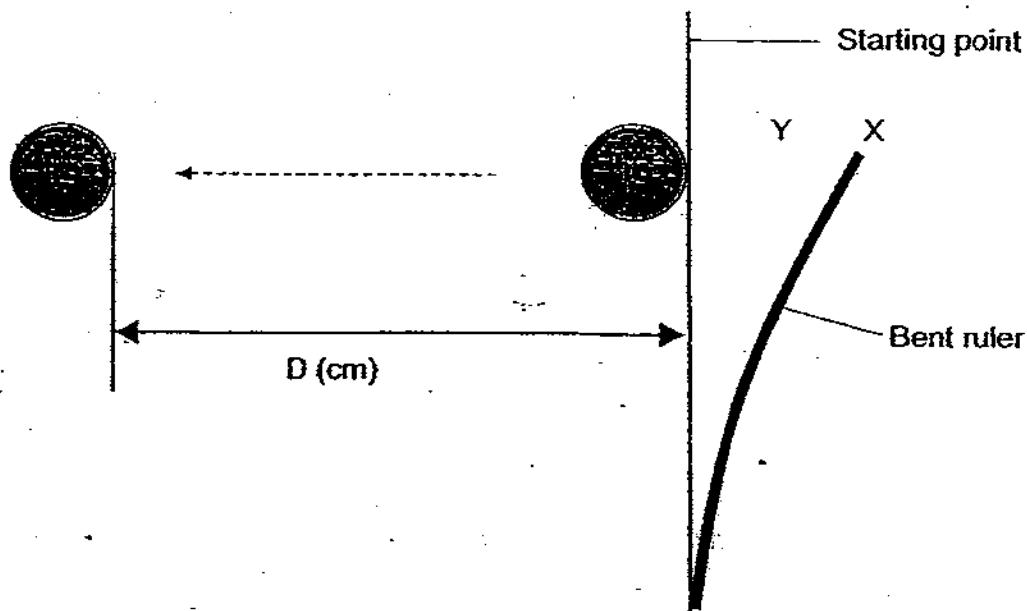
S1	S2	S3	Brightness of bulb
Closed	Open	Open	Brightest
Open	Closed	Open	Brighter
Open	Open	Closed	Bright

- (a) Based on the experiment above, state one property of the rod. [1]

- (b) What was the purpose of the experiment? [1]

- (c) What is the relationship between the length of the rod and the brightness of the bulb? [1]

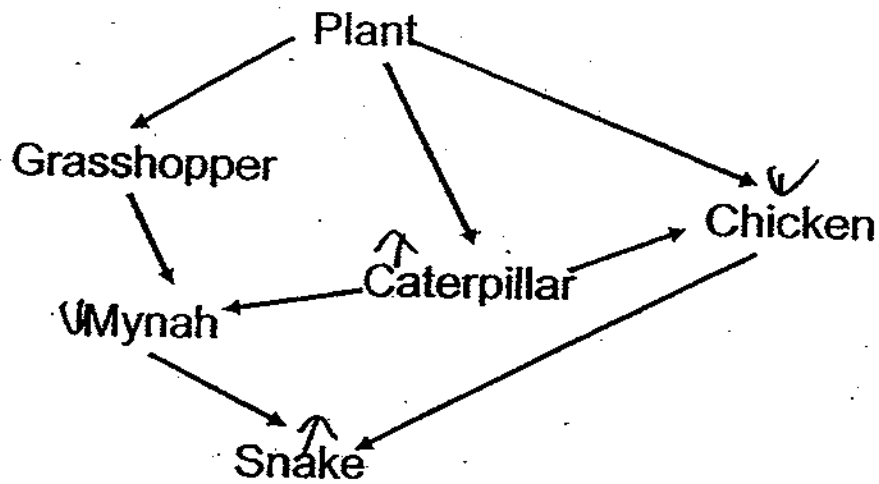
- 39 Jia Min performed an experiment to find out how the mass of a coin affects the distance travelled by the coin. Jia Min placed the coin at the starting point, then used a ruler which had been bent to Point X before flicking the ruler at the coin as shown in the diagram below. The distance travelled by the coin, D , is measured and recorded in the table below. She repeated the experiment with coins of different masses.



Mass in g	D (distance travelled in cm)		
	1 st try	2 nd try	Average
20	30	26	28
30	18	20	19
40	14	11	12.5

- (a) What is the relationship between mass of the coin and the distance travelled by the coin? [1]
-
-
- (b) Jia Min repeated the experiment using a coin of 35g and she bent the ruler to Point Y. What is the likely distance travelled by the coin? [1]
-

40 Study the food web below and answer the questions that follow.



(a) How many food chains are there in the food web?

[1]

(b) What will happen to the population size of the caterpillar when the snake population increases? Explain your answer.

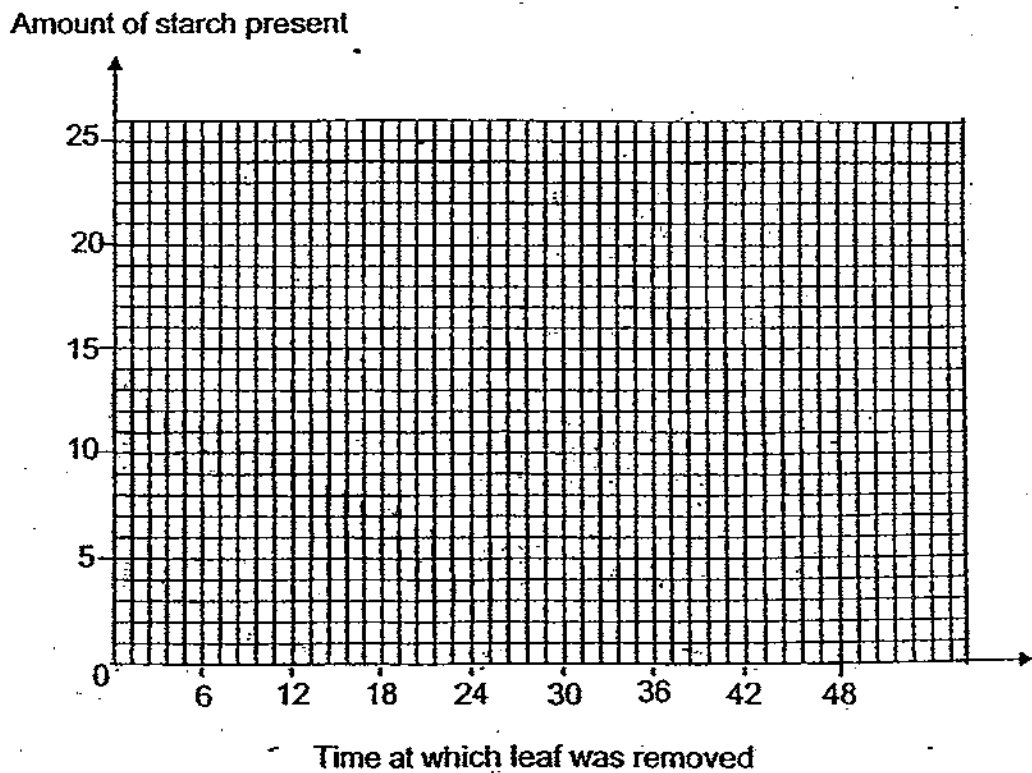
[2]

- 41 Jenny kept a pot of plant in a dark cupboard for 24 hours. She then placed the plant outdoors at 7 a.m. for the next 24 hours. Throughout the 48 hours, she plucked a leaf from that plant at regular intervals to test for starch. The results of the tests are shown in the table below.

Time at which leaf was removed	0 hour	6 th hour	12 th hour	18 th hour	24 th hour	30 th hour	36 th hour	42 nd hour	48 th hour
Amount of starch present (units)	12	10	8	6	4	23	18	12	7

- (a) Plot a line graph to show the amount of starch present in the leaves against the time at which the leaf was removed in the grid provided below.

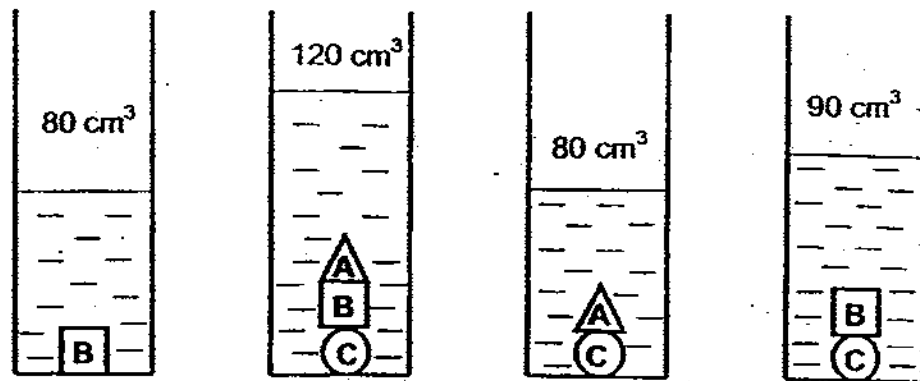
[1]



- (b) Give a reason why the amount of starch in the leaves decreased in the last 12 hours.

[1]

- 42 There are three objects, A, B and C. The water level changes when different objects are put into the container as shown in the diagrams below.

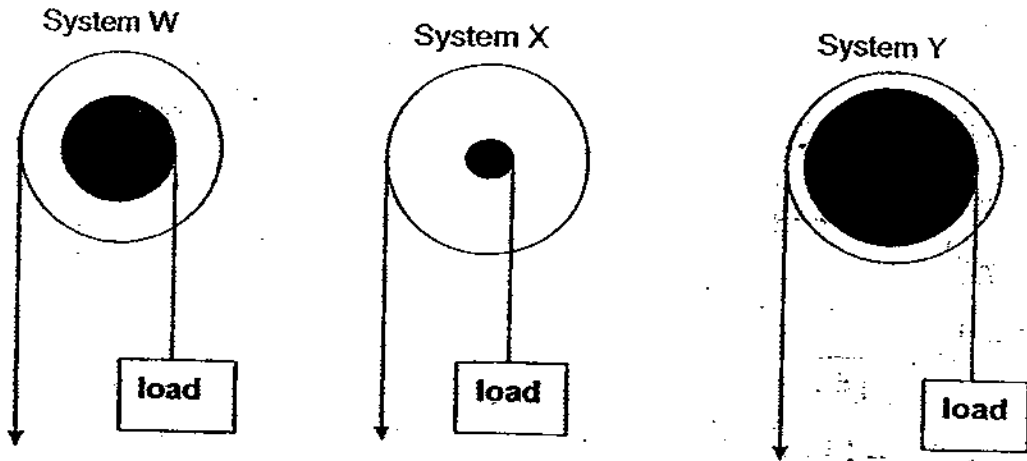


- (a) What is the volume of water in the container? [1]

- (b) Which object has the largest volume? [1]

- (c) From this experiment, what is the common property of the solids (A, B, C) and the liquid? [1]

- 43 The diagrams below show three wheel and axle systems, W, X and Y. They are used to move the same load.



- (a) An experiment was carried out to find the distance travelled by the load and effort for each of the three wheel and axle systems. Complete the table below with an appropriate wheel and axle system, W, X and Y. [1]

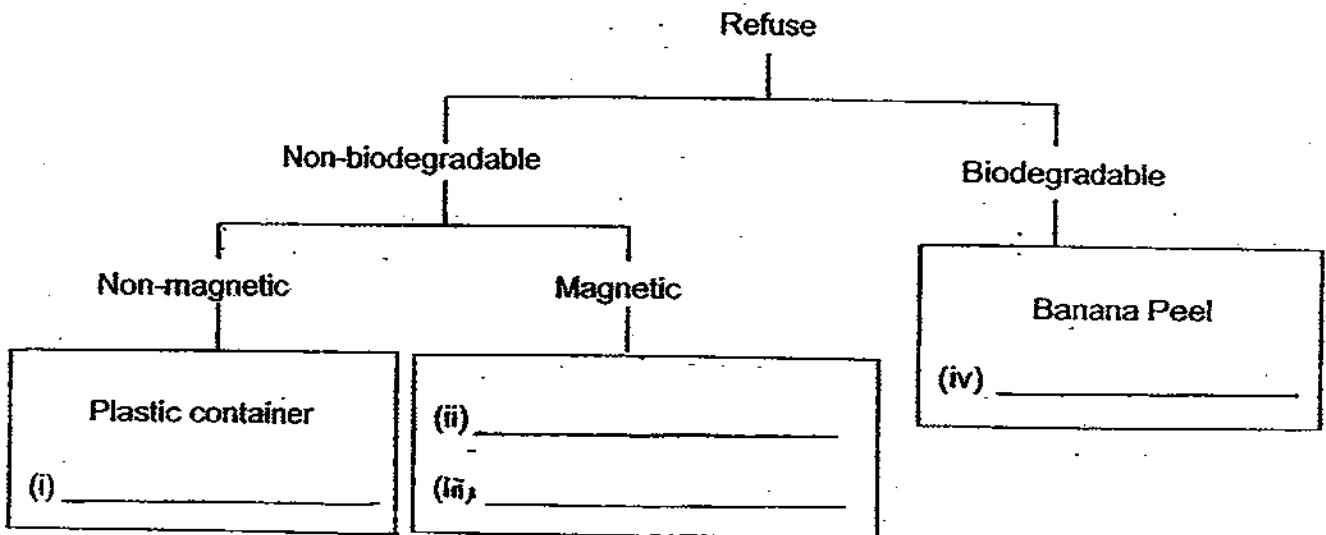
Wheel and axle	Distance moved by load in cm	Distance moved by effort in cm
	12	18
	7	8
	9	12

- (b) Arrange the three wheel and axle systems above in descending order of effort needed to move the load. [1]

- (c) For a wheel and axle simple machine, what can you do to reduce the effort needed to lift the load? [1]

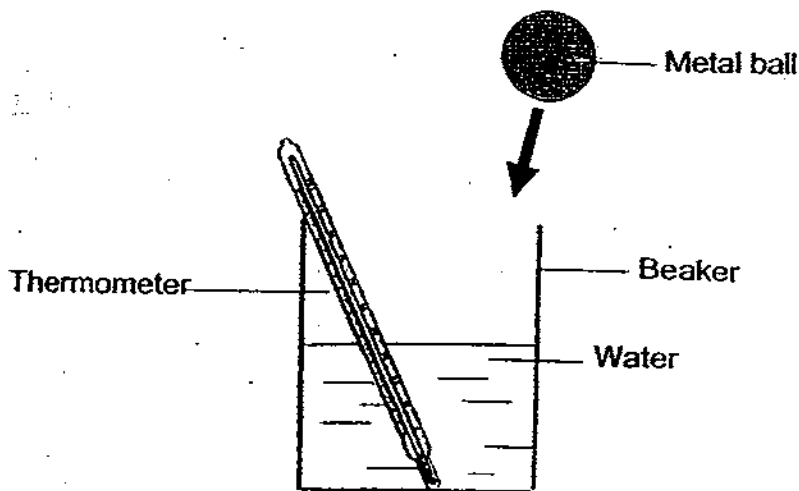
- 44 (a) The classification chart below shows how refuse can be grouped. Complete the chart with the helping words below. [2]

Helping Words			
Steel Pot	Dried Leaves	Copper Wire	Iron Pipe



- (b) In Singapore, most refuse is burnt at incineration plants while the rest are recycled. Name one advantage of burning refuse. [1]

- 45 A metal ball was taken from a freezer and put into a beaker of water with a temperature of 40°C . The room temperature was 30°C .



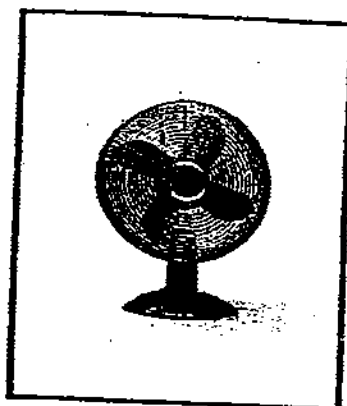
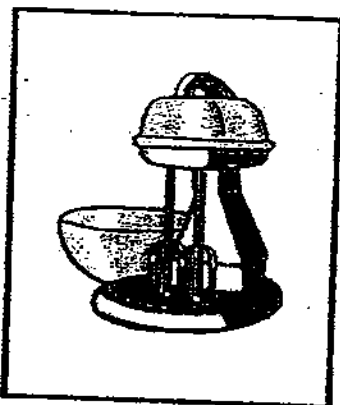
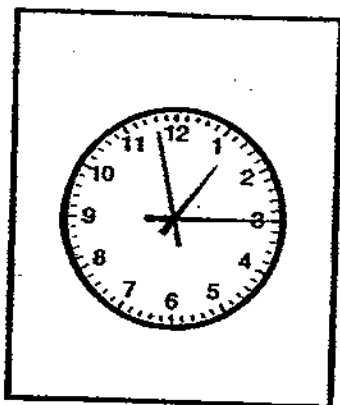
- (a) Write down an observation about the temperature of the water and another about the water level. Explain why they happened. [2]

Observation 1
Explanation 1

Observation 2
Explanation 2

- (b) What would be the temperature of the water five hours later? [1]

46 (a) Electrical appliances change electrical energy into different forms of useful energy. The pictures below show some appliances.

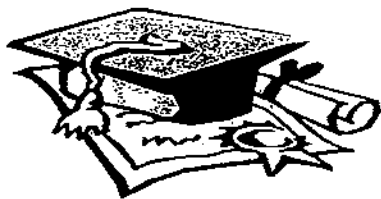


(i) Name the useful energy that is common in these appliances. [1]

(ii) Name another electrical appliance that makes use of this useful energy. [1]

(b) Write down the energy conversion in the following situations. [2]

	Situation	Energy conversion
(i)	A leaf falling from the tree.	
(ii)	A loudspeaker connected to a DVD player	



ANSWER SHEET

EXAM PAPER 2009

SCHOOL : HOKKIEN PRIMARY
SUBJECT : PRIMARY 6 SCIENCE

TERM : SA2

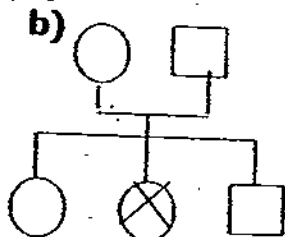
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	2	2	4	4	3	1	2	4	1	1	1	4	1	3	1	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	3	3	2	1	2	3	3	2	4	1	1

31)a) Group B.

b) Whale has hair as body covering while the eagle has feather as body coverings.

32)a) 3 uncles.



33)a) They came from organisms or aquatic animal waste in the water/pond.

b) The water hyacinths will cover the surface of the water and prevent the plant from trapping the light energy and make food and die.

34)a) Carbon dioxide is produced by other organs during respiration.

b) Oxygen has just been taken in by lungs and is carried by Blood Vessel C.

35)a)Stage D.

b)The conditions needed are air,water and warmth.

36)a)Animal B.

b)Animal B has sharp teeth so it is able to tear meat apart to feed on it.

37)First: He should use the same type of water.

Second: He should also use the same type of beaker.

38)a)It is a conductor of electricity.

b)The purpose of the experiment is to find out if the length of the rod would effect the brightness of the bulb.

c)The shortest the length of the rod, the brightness of the bulb would be brightest.

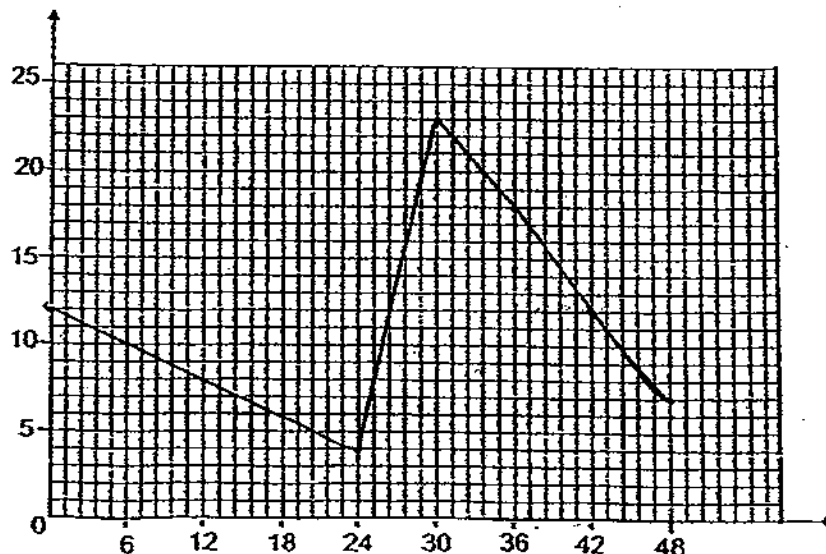
39)a)The heavier the mass of the coin, the longer the distance travelled.

b)14cm.

40)a)4 food chains.

b)The population of the caterpillars would increase. As the population of snake increases, the chicken and mynah would have more predators and therefore they would decrease. As they are the only predators for the caterpillar the population of the caterpillar would increase if they decrease.

41)a) Amount of starch present



41)b)There is no sunlight for the leaves to make food and to produce starch.

42)a)40cm³

b)Object B.

c)They both have definite volume.

43)a)X,Y,W

b)Y,W,X

c)The wheel should be longer than the axle when the effort is acted on the wheel.

44)a)i)Copper wire ii)Steel pot iii)Iron pipe

iv)Dried Leaves

b)Reduces the volume o refuse less and fill is needed or Generate electricity.

45)a)1)The temperature of the water would decrease.

1)The water had lose heat to the metal ball.

2)The water level increase.

2)Metal ball take up space.

b)30°C

46)a)i)Kinetic energy. ii)Blender.

b)i)Gravitational potential energy → kinetic energy.

ii)Electrical energy → heat + sound energy.

