



RED SWASTIKA SCHOOL

RED SWASTIKA SCHOOL

2012 SEMESTRAL ASSESSMENT 1 SCIENCE PRIMARY 6

Name : _____ ()

Class : Primary 6/ _____

Date : 9 May 2012

BOOKLET A

Total time for Booklets A & B: 1h 45 min

Booklet A: 30 questions (60 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
 - a. Page 1 to Page 28
 - b. Questions 1 to 30

Section A

For Question 1 to 30, choose the most suitable answer and shade its number in the OAS provided.

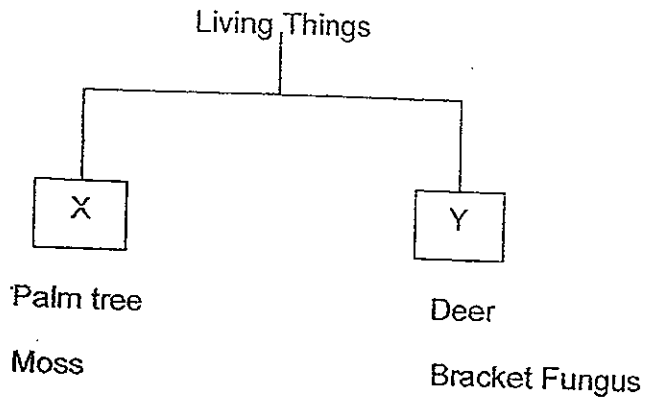
1. The classification table below shows some characteristics of animals in groups W, X, Y and Z.

Animals			
W	X	Y	Z
<ul style="list-style-type: none"> • Gives birth • Has hair • Breathes through lungs 	<ul style="list-style-type: none"> • Lays eggs • Has scales • Breathes through gills 	<ul style="list-style-type: none"> • Gives birth • Has scales • Breathes through gills 	<ul style="list-style-type: none"> • Lays eggs • Has smooth skin • Breathes through skin and lungs

Which animals could W, X, Y and Z be?

	W	X	Y	Z
(1)	rabbit	goldfish	guppy	frog
(2)	hamster	guppy	salmon	crocodile
(3)	tiger	seahorse	snake	toad
(4)	lion	salmon	goldfish	lizard

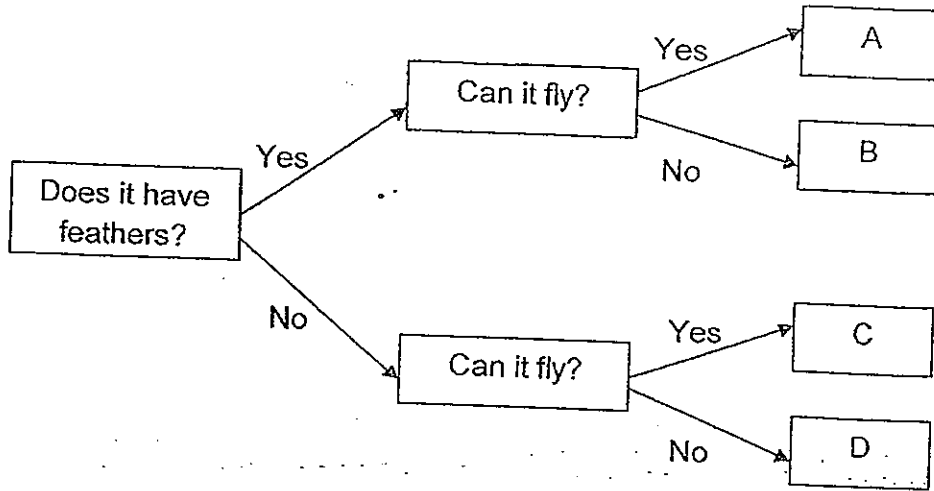
2. Study the diagram below.



Which one of the following best represents X and Y?

	X	Y
(1)	Cannot respond to change	Can respond to change
(2)	Makes their own food	Does not make their own food
(3)	Feeds on living things	Feeds on decaying matter
(4)	Reproduces from seeds	Reproduces from spores

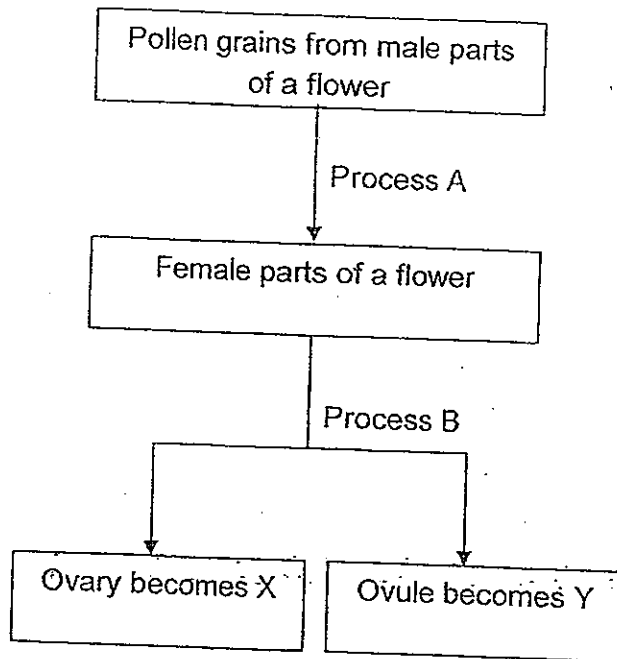
3. Study the classification chart below.



According to the chart, which of the following statements is true?

- (1) A can be an insect.
- (2) B cannot be a bird.
- (3) D cannot be a bird.
- (4) A, B, C and D all have wings.

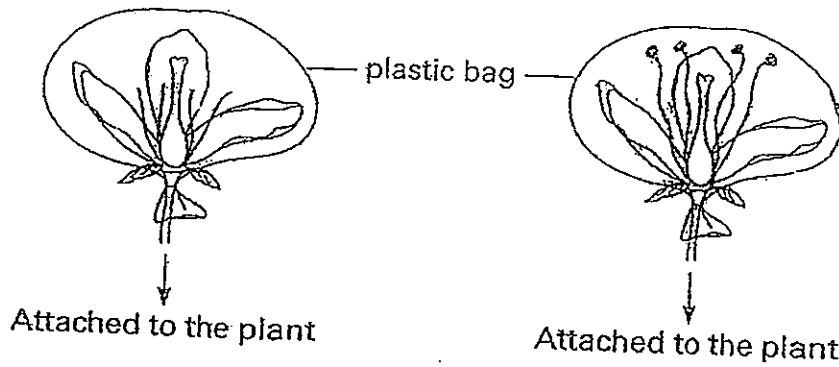
4. During a Science lesson, Mrs Chong taught her class to draw a concept map on the topic of reproduction in plants.



Which one of the following correctly identifies A, B, X and Y?

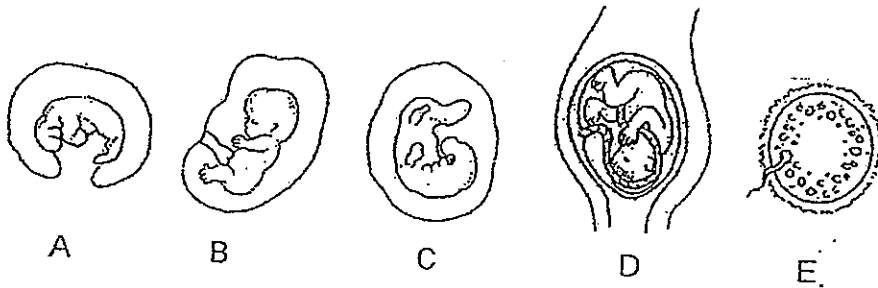
	A	B	X	Y
(1)	Pollination	Fertilisation	Fruit	Seed
(2)	Pollination	Fertilisation	Seed	Fruit
(3)	Fertilisation	Pollination	Seed	Fruit
(4)	Fertilisation	Pollination	Fruit	Seed

5. Megan conducted an experiment with two similar pots of plants. She wrapped one flower from each pot with a plastic bag. The anthers of one of the flowers were removed. The diagrams below show the two flowers.



- The aim of Megan's experiment is to find out if _____
- (1) a stigma is necessary for a flower to develop into a fruit
 - (2) an ovary is necessary for a flower to develop into a fruit
 - (3) ovules are necessary for a flower to develop into a fruit
 - (4) pollen grains are necessary for a flower to develop into a fruit

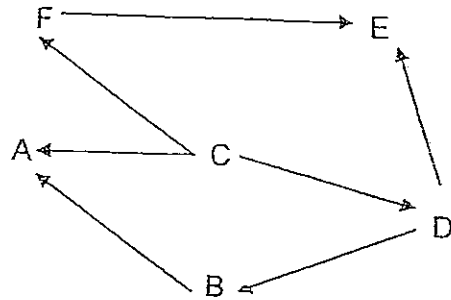
6. The diagrams below show the different stages in the development of a foetus in the human womb.



Arrange the diagrams to show the correct order of the development of the foetus.

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

7. The diagram below shows a food web. The letters A to F represent living organisms.



Which of the following below is true about the organisms in the above food web?

	Food producer	Predator only	Prey only	Prey and predator
(1)	A	F	B	D
(2)	C	E	D	B
(3)	A	F	C	E
(4)	C	E	F	A

8. The table below shows the structural adaptations of some aquatic animals to help them move in water.

	Dolphin	Fish	Penguin	Frog
Flippers	√	√	√	X
Webbed feet	√	X	√	√
Powerful tail fins	√	√	X	X

Which of the animals listed are incorrectly represented in the table above?

A : Dolphin

B : Fish

C : Penguin

D : Frog

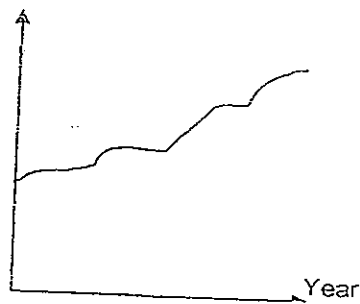
- (1) A only
(2) A and B only
(3) C and D only
(4) B, C and D only

9. Below are some activities that Man has taken part in :

- Deforestation
- Burning of fossil fuels
- Uncontrolled use of electricity
- Use of aerosol products containing CFCs

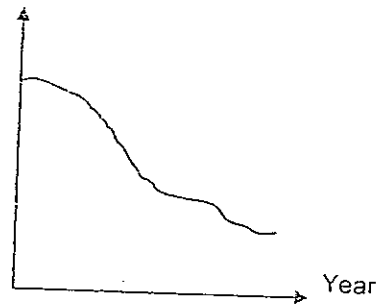
If the above mentioned activities are not reduced, which of the following graphical representations would show what would happen on Earth ?

Global Temperature



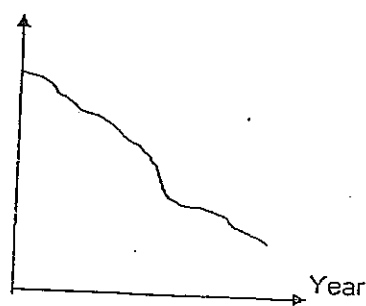
(A)

Global Temperature



(B)

Amount of oxygen in the air



(C)

Amount of oxygen in the air



(D)

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

10. A group of students was trying to find out the effect of three different types of Chemicals on the growth of duckweeds. They used four identical tanks A, B, C and D. In each tank, A, B and C, they added the same amount of water and one of the three types of chemicals. Tank D is the control set-up with only water added. All the tanks contained ten duckweeds at the beginning of the investigation. They recorded the growth of the duckweeds over four days in the table below.

Day	Number of Duckweeds			
	Tank A	Tank B	Tank C	Tank D (Control)
1	10	10	10	10
2	10	8	10	10
3	10	5	10	10
4	10	1	10	10

Based on the data, they concluded that only one chemical affects the growth of the duckweeds.

In order to reach this conclusion, they must compare the results for tanks _____

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

11. Gou Hua Placed different number of white mice of equal size and age into four enclosed containers, P, Q, R and S. All the containers were of the same size. He left the White mice in the containers of thirty minutes and measured the heart rate of each mouse throughout the experiment. None of the white mice died during the experiment.

The table below shows the average heart rate of each mouse in each container throughout the experiment. In which container, P, Q, R or S, did Gou Hua put the most number of white mice ?

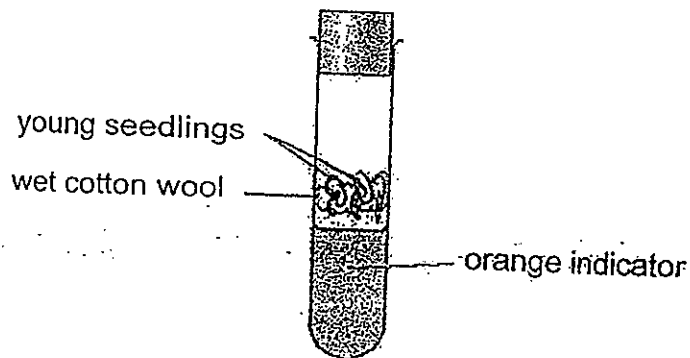
	Container	Average heart rate of each mouse throughout experiment (beats/min)
(1)	P	510
(2)	Q	750
(3)	R	670
(4)	S	480

12. Samantha found a healthy plant with red leaves in her garden. She said that the plant is not able to make food because its leaves are not green. Is Samantha correct?
- (1) Yes. The plant does not have green leaves. Hence, it will not make its own food but gets its food from the ground.
 - (2) Yes. The plant does not have green leaves. Hence, it does not have chlorophyll to absorb sunlight to make food.
 - (3) No. Even though the plant has no green leaves, it can still make food through its underground stem.
 - (4) No. The green pigment, chlorophyll, is hidden under the red pigment in the leaves. Hence, the plant can still make food.

13. The table shows how an indicator solution changes colour when the concentration of carbon dioxide in it changes.

Concentration of carbon dioxide	Change in colour
increases	orange to yellow
decreases	orange to purple

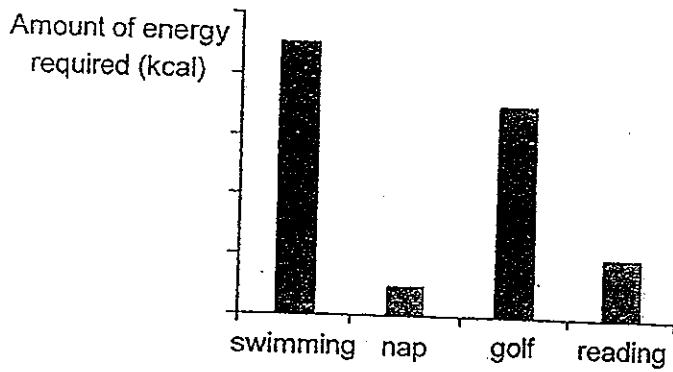
Ivan set up the experiment shown below and



What would be the change in colour shown by the indicator after one day and what was the process that caused this change ?

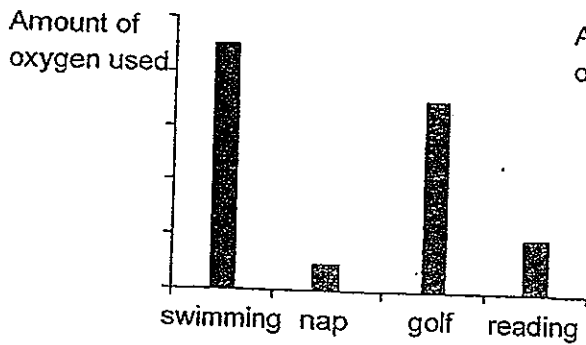
	Change in colour	Process
(1)	orange to yellow	decomposition
(2)	orange to yellow	respiration
(3)	orange to purple	photosynthesis
(4)	orange to purple	germination

14. Kilocalorie (kcal) is a unit of measurement of energy. Different activities require different amount of energy. The graph below shows the activities that Johnny does on a typical Sunday and the amount of energy required for each activity.

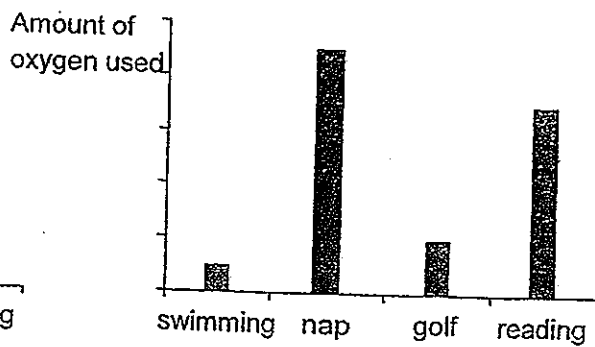


Which of the following graphs shows most correctly the amount of oxygen used up by Johnny during the different activities on Sunday?

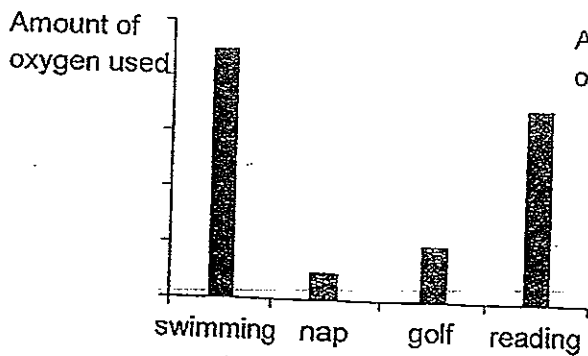
(1)



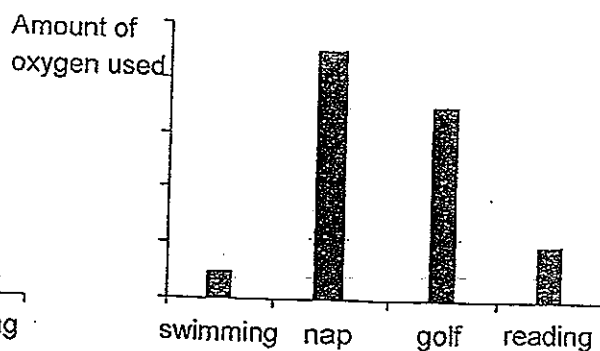
(2)



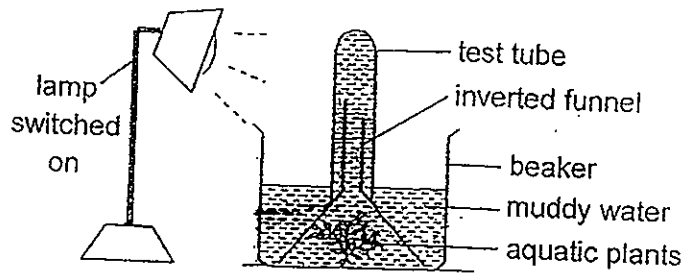
(3)



(4)

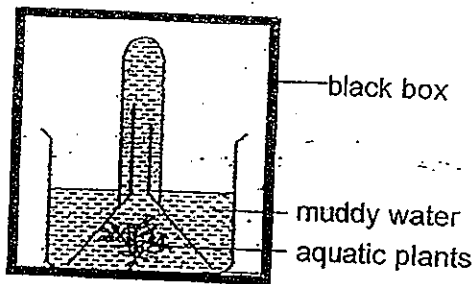


15. Eddie wanted to find out the effect of muddy water on the rate of photosynthesis in aquatic plants. He prepared a set-up as shown below

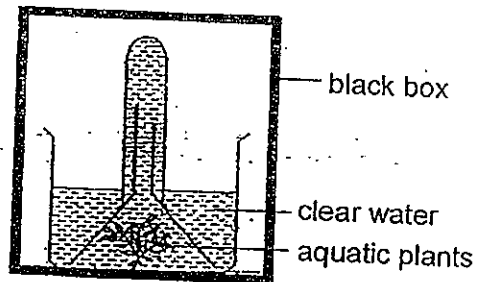


He needs one more set-up to carry out this investigation. Which of the following set-ups should he use?

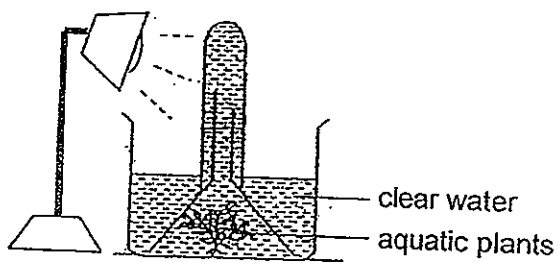
(1)



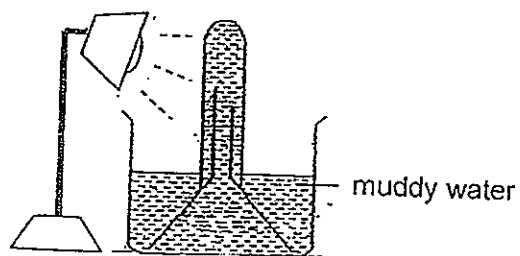
(2)



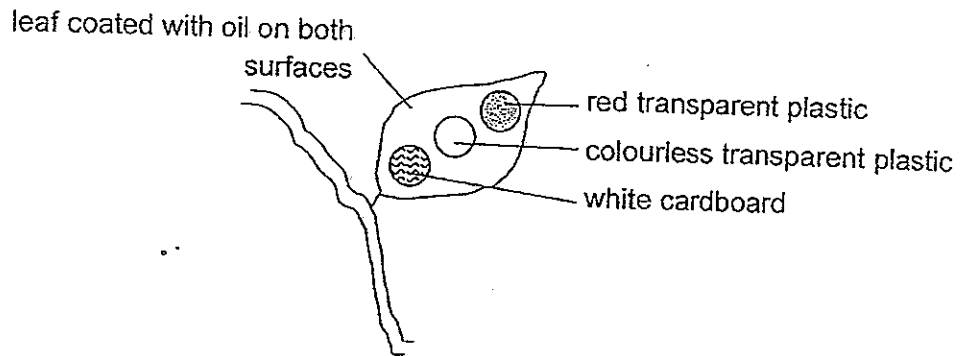
(3)



(4)



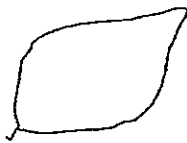
16. A plant was first left in the dark for 48 hours. Next, one of its leaves was coated with oil on both surfaces and three pieces of materials were placed over it as shown below.



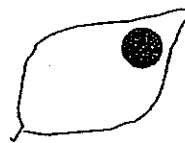
The plant was then placed in the sun for 8 hours. There after, the leaf was decolourised and tested with iodine solution.

Which of the following diagrams shows the results of the iodine test if a shaded area represents a blue-black coloration ?

(1)



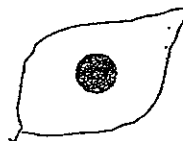
(2)



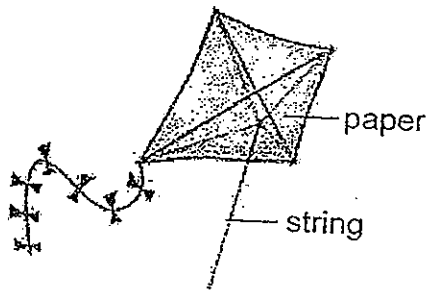
(3)



(4)

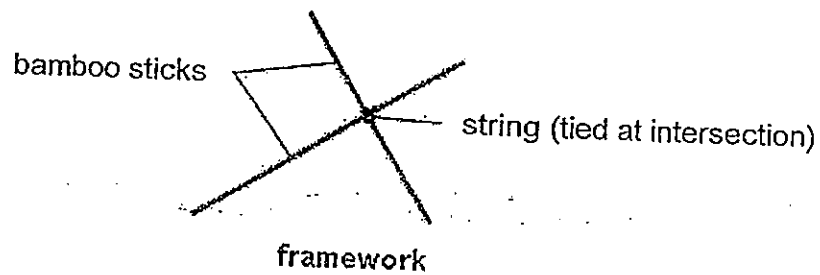


17. Amy wanted to make a kite as shown below



a kite

She used two bamboo sticks to form a framework to hold the kite.

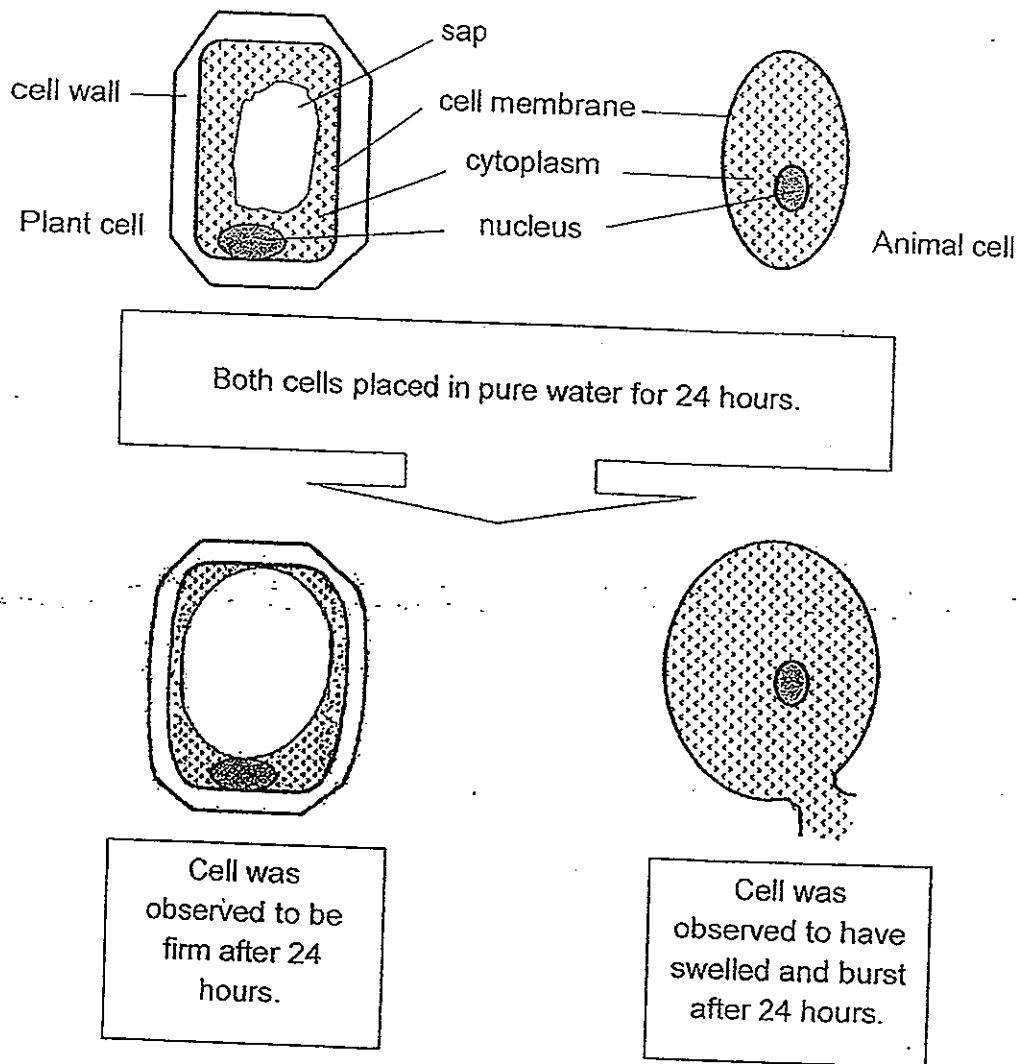


framework

Which of the following human systems serves the same function as the framework of the kite?

- (1) Circulatory system
- (2) Digestive system
- (3) Muscular system
- (4) Skeletal system

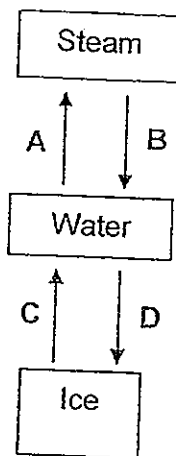
18. A plant cell and an animal cell were placed in pure water for twenty-four hours and observed under a microscope after twenty-four hours. The diagram below describes the experiment.



What can be concluded about the cells from the experiment ?

- (1) The presence of cell wall in the plant cell helps it to maintain its shape.
- (2) The cell wall of the plant cell prevents water from entering the cell.
- (3) The animal cell has a fixed shape but the plant cell does not have a fixed shape
- (4) The cell membrane of the animal cell allows water to enter the cell while the cell membrane of the plant cell does not.

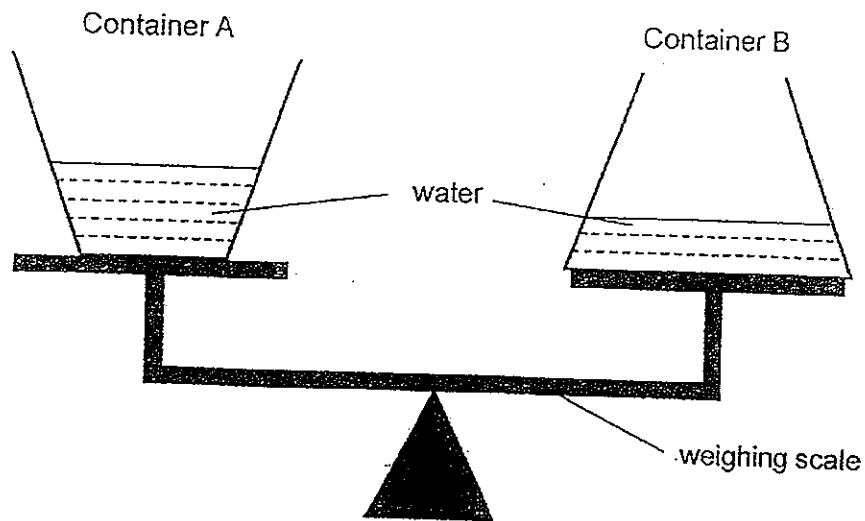
19. Study the following diagram carefully. The arrows represent the processes involved during the changes in the state of water



Which of the processes, A, B, C and D, involve heat loss?

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

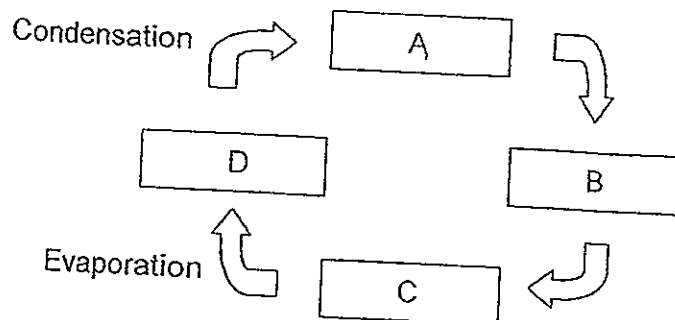
- 20 The diagram below shows two glass containers, A and B, which are left in an open field under the sun. Both of them are of the same size and mass. They also contain the same amount of water. Both containers of water balance each other on a weighing scale as shown.



They are left on the weighing scale for six hours. What will you most likely observe about the above set-up after six hours.

- (1) The two containers of water will still balance each other as the containers are of the same size and mass and they each contain the same amount of water.
- (2) The side with container B will tilt downwards as there will be less water in container A due to more evaporation of water from container A.
- (3) The side with container A will tilt downwards as there will be less water in container B due to more evaporation of water from container B.
- (4) The side with container A will tilt downwards as the water level in container A is higher than that in container B.

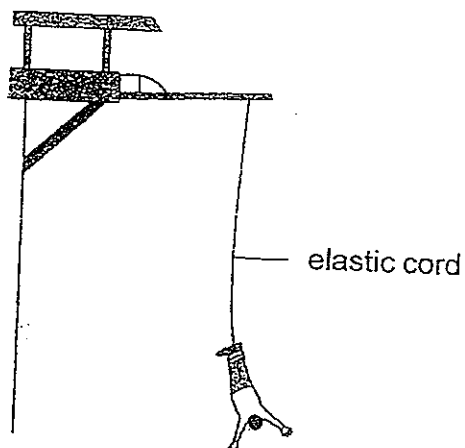
21. The diagram below shows the water Cycle



Which one of the following is best represented by the above diagram?

	A	B	C	D
(1)	Water droplets	Clouds	Water from the lake	Water droplets
(2)	Clouds	Rain	Water vapour	Water droplets
(3)	Clouds	Rain	Water from the ground	Water Vapour
(4)	Rain	Sea	Water from the ground	Clouds

22. Bungee jumping is an activity that involves jumping from a tall structure while connected to a strong elastic cord. The diagram below shows a person performing a bungee jump off a cliff.

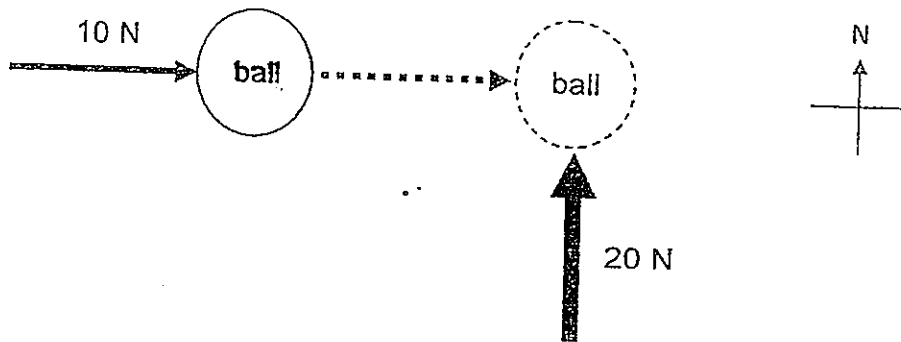


What are the forces acting on the jumper during bungee jumping ?

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

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

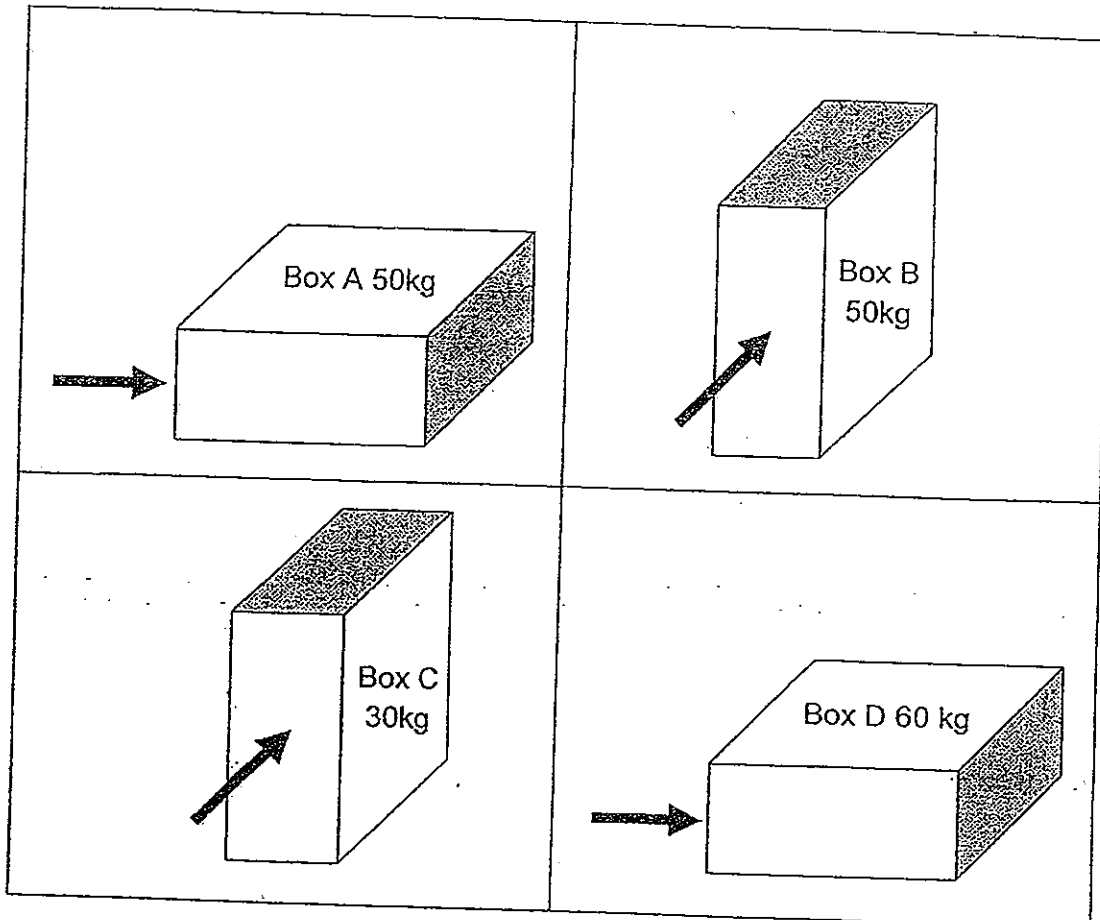
23. The unit of measurement of force is the Newton (N). A ball was pushed with a force of 10 N in the direction as shown below. While the ball was moving, another force of 20 N was applied on the ball in another direction.



What would most likely happen to the ball immediately after the second force was applied?

- (1) The ball would stop immediately.
- (2) The ball would move faster towards the north direction
- (3) The ball would slow down and continue to move in the same direction towards the east.
- (4) The ball would continue to move in the same direction towards the east with a faster speed.

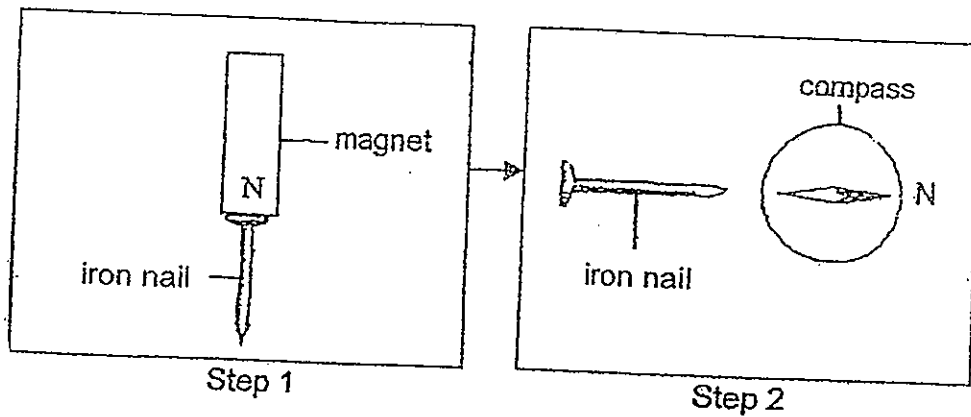
24. Four boxes made of the same material are being pushed over the same distance on the same surface in the direction as shown below.



Arrange the boxes in order from the hardest to push to the easiest to push across the surface.

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

25. Gopal carried out an experiment with a magnet, a compass and an iron nail. In Step 1, he placed an iron nail at the pole of a magnet for two days. Then, in step 2, he placed the same nail near a compass. The compass needle interacted with the nail and came to a rest in the position shown in the diagram below.



Choose the statement which best explains the result shown in Step 2.

- (1) Magnetism had passed from the magnet to the compass.
- (2) The nail and the compass needle are both magnetic materials.
- (3) The tip of the nail caused the compass needle to lie in the north-south direction.
- (4) The nail which has become a weak magnet in step 1 attracts the compass needle.

26. Mrs Tan was at a kitchen showroom choosing a material for her new kitchen cabinets. She wanted a material that can resist scratches. The salesman allowed her to do a scratch test on four different kinds of materials labelled A, B, C and D to see which was the hardest. She used four different objects to scratch on each piece of material. She recorded her observations in the table below. A tick (✓) indicates the presence of scratch marks on the material.

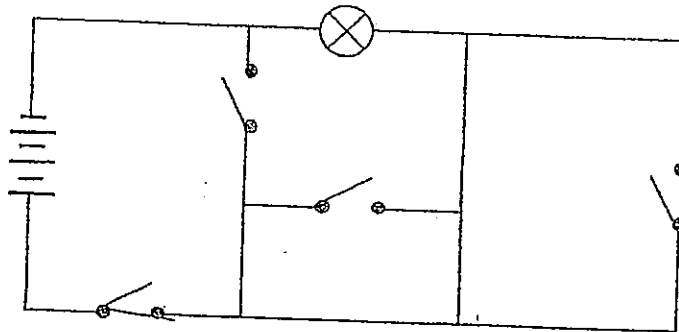
Materials

Objects	A	B	C	D
fingernail	✓			
coin	✓	✓	✓	✓
ice-cream stick	✓		✓	
plastic knife	✓			✓

Based on her results, which material do you think is the most suitable for Mrs Tan to use for the doors of her kitchen cabinets ?

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

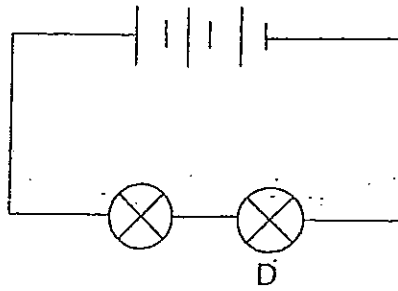
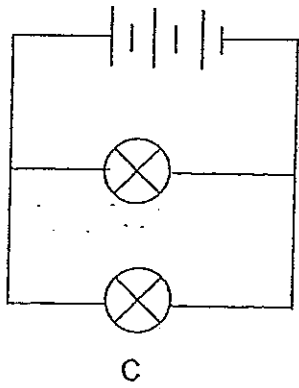
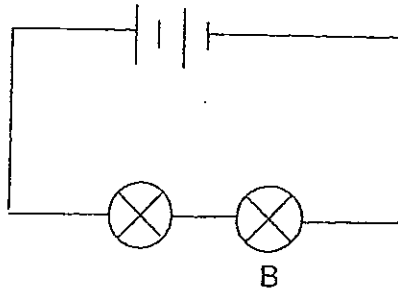
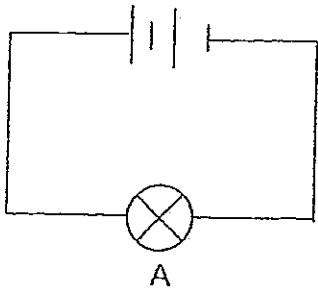
27. Study the circuit diagram below.



What is the minimum number of switch/switches that need (s) to be closed before the bulb will light up?

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

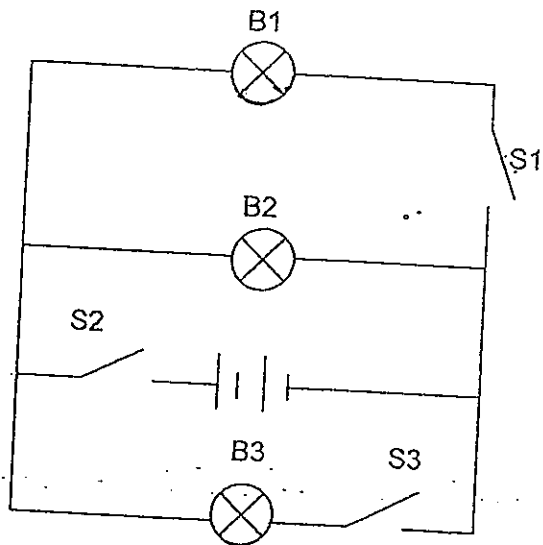
28. Study the diagrams below.



Arrange the bulbs from the dimmest to the brightest.

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

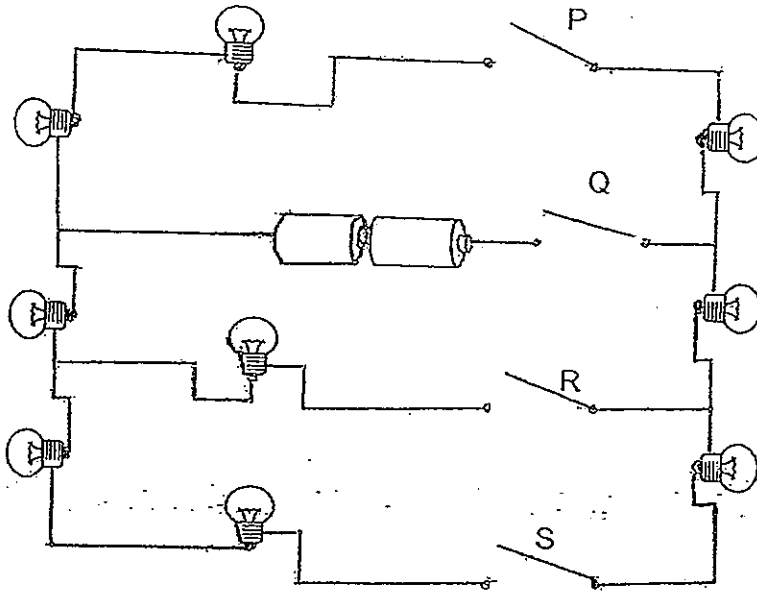
29. The circuit diagram shows how bulbs B1, B2 and B3 and switches S1, S2 and S3 are connected. All the bulbs are working properly.



Which one of the following is incorrect ?

	Switches			Do the bulbs light up?		
	S1	S2	S3	B1	B2	B3
(1)	open	open	closed	no	no	no
(2)	open	closed	open	no	yes	no
(3)	closed	closed	open	yes	no	yes
(4)	open	closed	closed	no	yes	yes

30. In the circuit shown below, which switches must you close if you want only 8 bulbs to light up ?



- (1) Close switches P and S only
- (2) Close switches P, Q and R only
- (3) Close switches P, Q and S only
- (4) Close switches P, Q, R and S

End of Booklet A





RED SWASTIKA SCHOOL

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2012 SEMESTRAL ASSESSMENT 1 SCIENCE PRIMARY 6

Name : _____ ()

Class : Primary 6/ _____

Date : 9 May 2012

BOOKLET B

14 Questions
40 Marks

In this booklet, you should have the following:

- Page 29 to Page 46
- Questions 31 to 44

MARKS

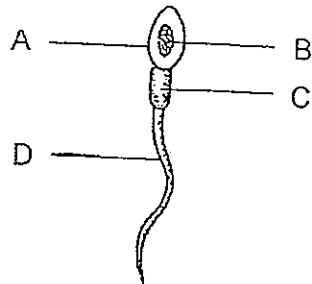
	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : _____

Section B

Read the questions carefully and write the answers in the space provided.

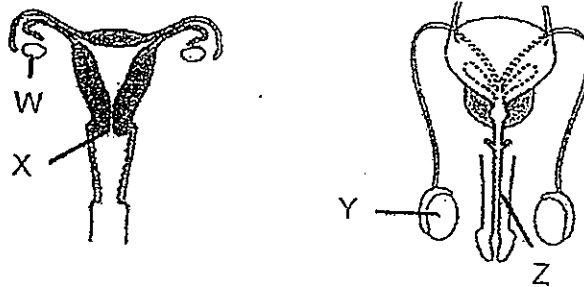
31. The diagram below shows a sperm cell.



A sperm cell

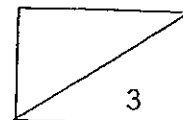
(a) Which part, A, B, C or D, of the sperm cell carries the hereditary information needed for reproduction? (1m)

The diagrams below show two human reproductive systems.



(b) In which part, W, X, Y or Z is the sperm produced? (1m)

(c) Besides being small in size, name another similarity between the sperm and the male reproductive cell of a plant that helps to increase the chance of fertilisation. (1m)

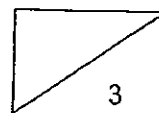


32. Megan wanted to find out which of the four colours (white, yellow, red or pink) of flower petals attracted the most number of butterflies. She made model flowers out of coloured construction paper. Some of the papers were scented but some were unscented. She put the flowers in her garden and counted the number of butterflies that visited them. The table below shows the results.

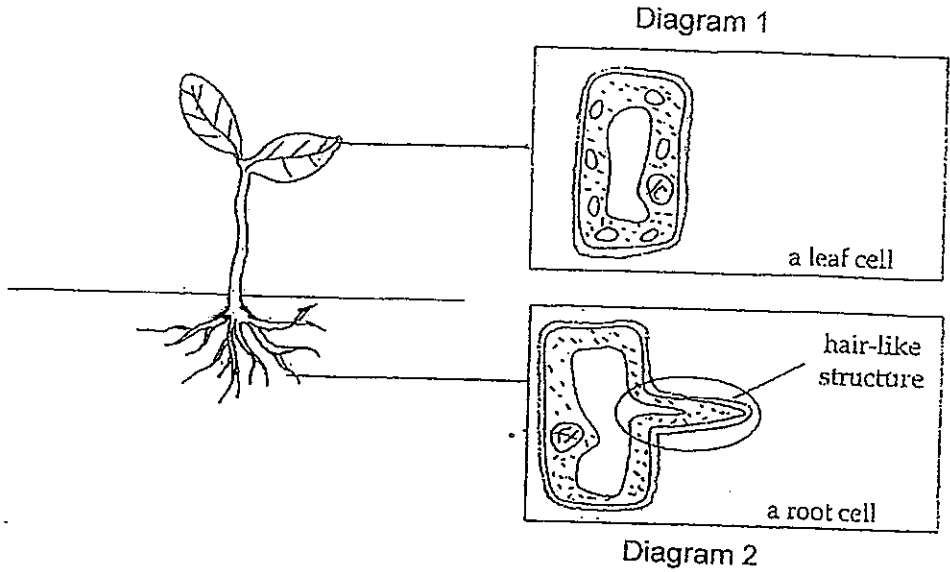
Flower	Scented/ Unscented	Colour of petals	Size of petals
A	Scented	White	Small
B	Scented	Yellow	Small
C	Unscented	Red	Big
D	Unscented	Yellow	Big
E	Scented	Red	Small
F	Unscented	White	Big
G	Unscented	Yellow	Small
H	Unscented	Pink	Big

- (a) Which four model flowers should Megan use to conduct a fair test? (1m)

- (b) Explain your answer in (a). (2m)



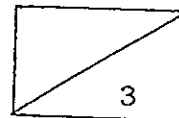
33. Study the diagrams below.



(a) How does the hair-like structure help the root cell to absorb more water? (1m)

(b) From the diagram, besides the hair-like structure, name a part of the cell which is found in the leaf cell but not the root cell. (1m)

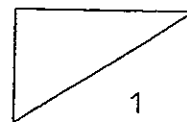
(c) Explain the importance of the part of the cell which is mentioned in (b). (1m)



34. Ailing carried out an investigation on her breathing rate before and after exercising. She measured her breathing rate for one minute at rest and immediately after exercising. She recorded her results in the table below.

Breathing rate at rest (number of inhalations in one minute)	Breathing rate immediately after exercising (number of inhalations in one minute)
30	55

Explain why the breathing rate increases after exercising. (1 m)



35. Insect X feeds on the droppings of mammals. It will roll the droppings into small balls. It will lay many eggs at one time on the balls of droppings. Insect X then buries its eggs and the balls of droppings underground. Its young develops underground and will only emerge from underground when they become adults.

(a) What type of adaptation is shown by Insect X? (1m)

(b) State one advantage for Insect X when :

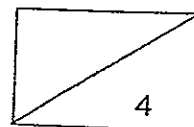
(i) it lays many eggs. (1m)

(ii) it buries its eggs and the droppings of mammals underground. (1m)

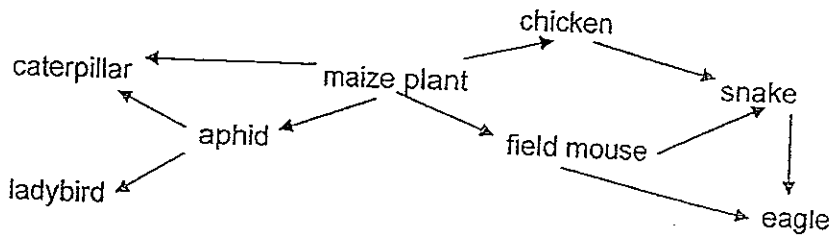
(i)

(ii)

(c) It was observed that areas where Insect X reproduces, the plants grow better. How do the droppings help the plants grow better? (1m)



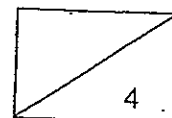
36. Study the food web below.



(a) Write down _____ derived from the food web which involves four organisms in the space below. (1m)

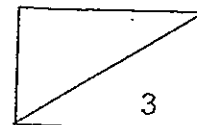
(b) What is the role of the maize plant in the food web? (1m)

(c) A disease spreads among the maize plant, destroying most of the maize plants. How will this affect the population of snakes? (2m)

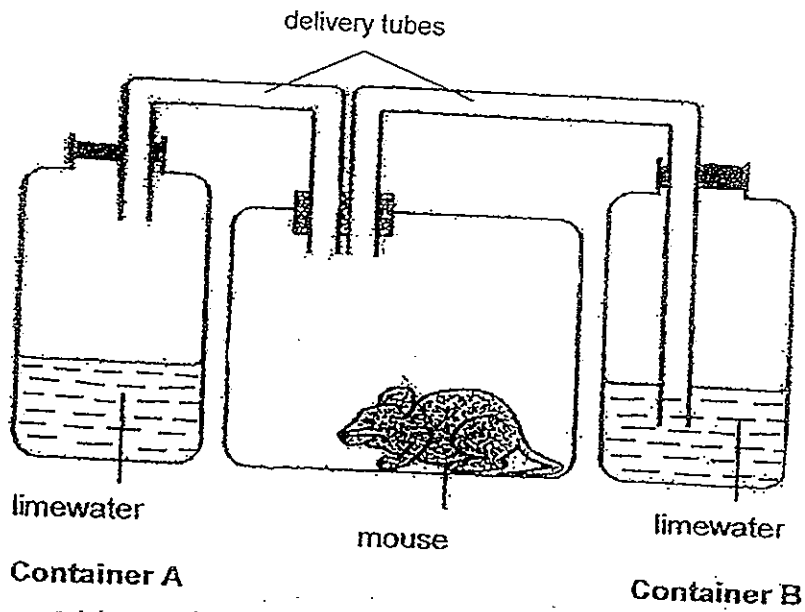


37. Raja wants to make a table to compare photosynthesis and respiration. Help him complete the table below correctly. (3m)

	PHOTOSYNTHESIS	RESPIRATION
(a) What must be present?	(i) _____ (ii) _____ chlorophyll and light	Sugar and oxygen
(b) What are the products?	(i) _____ and (ii) _____	energy, carbon dioxide and water
(c) When does it occur?	(i) _____ _____	(ii) _____ _____

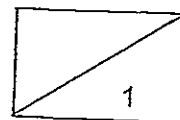


To prove that the gas which mammals breathe out is carbon dioxide, Raja conducted an experiment as shown below. Container A and container B are of the same size and both contained the same amount of limewater.

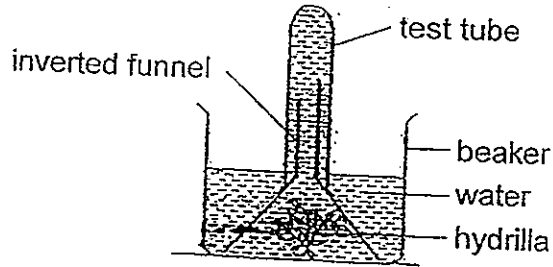


He observed that the limewater in one of the containers is more chalky than the other after one hour.

(d) In which Container, A or B, did the limewater turn more chalky? Explain your answer. (1m)



38. Shaun wanted to find out how temperature affects the rate of photosynthesis of the hydrilla plant. He used several sets of the set-up shown below.

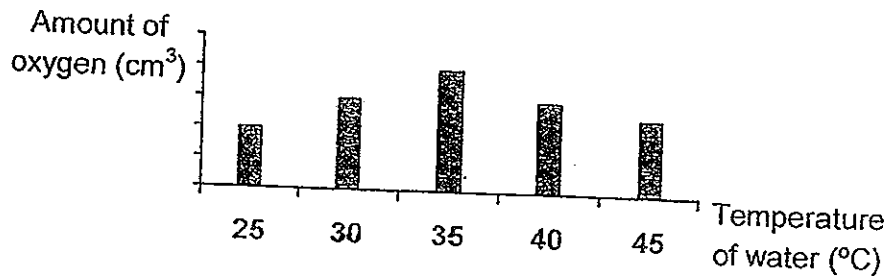


The water in each set-up was of a different temperature. He exposed each set-up to a very strong light source for one hour.

(a) What would he observe about the water level in the test tube in each set-up after one hour? (1/2m)

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

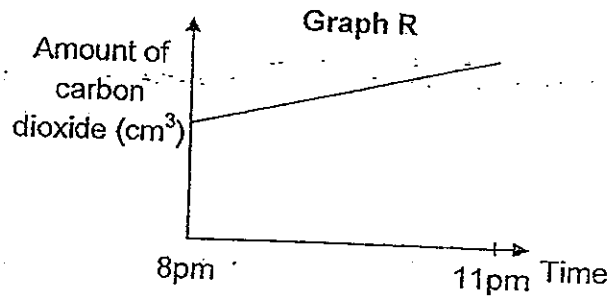
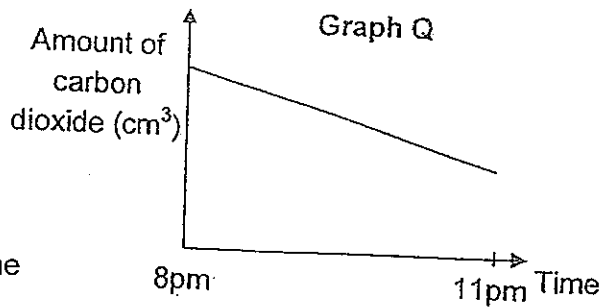
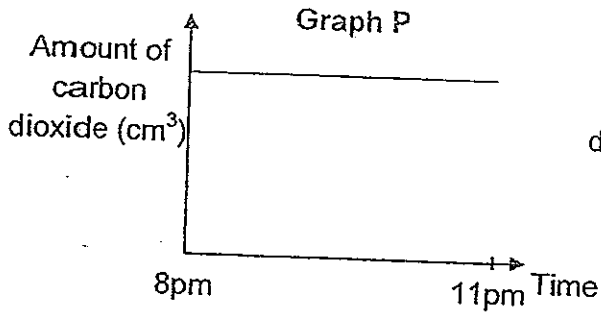
Shaun measured the amount of oxygen collected in the test tube of each set-up after one hour. At the end of the experiment, he plotted the following graph.



(c) Based on the graph, what is the effect of temperature on the rate of photosynthesis of the hydrilla plant? (1m)

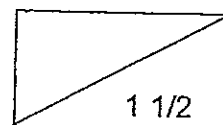
After the experiment, Shaun switched off all the lights and left the set-ups in the school Science room overnight. The water in each set-up was kept at room temperature.

(d) Study the three graphs below.

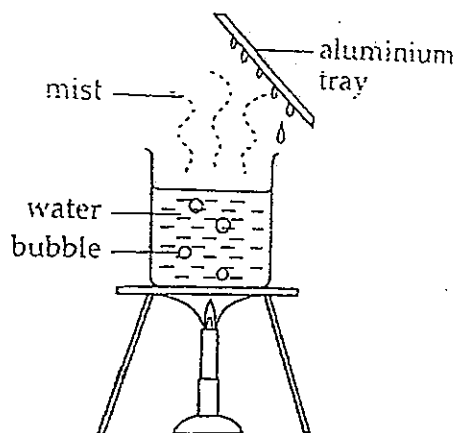


(i) Which of the graphs above shows correctly the change in the amount of carbon dioxide in the water in each set-up from 8pm to 11pm? (1/2m)

(ii) What process(es) is the hydrilla going through in each set-up from 8pm to 11pm to give rise to the graph you have mentioned in part (i)? (1m)



39. The experimental setup shown below simulates the water cycle.

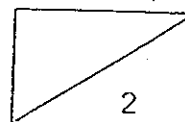


(a) Explain the importance of the source of heat in this experiment to allow water droplets to form on the aluminium tray. (1m)

Mr Bala studied the average rainfall and temperature pattern in the month of February for Town X over a few years. In January of Year 4, there was a massive volcanic eruption. The thick clouds of volcanic ash remained in the air for a long period of time. Mr Bala noticed that after the volcanic eruption, there were changes to the rainfall and temperature patterns in Town X as shown in the table.

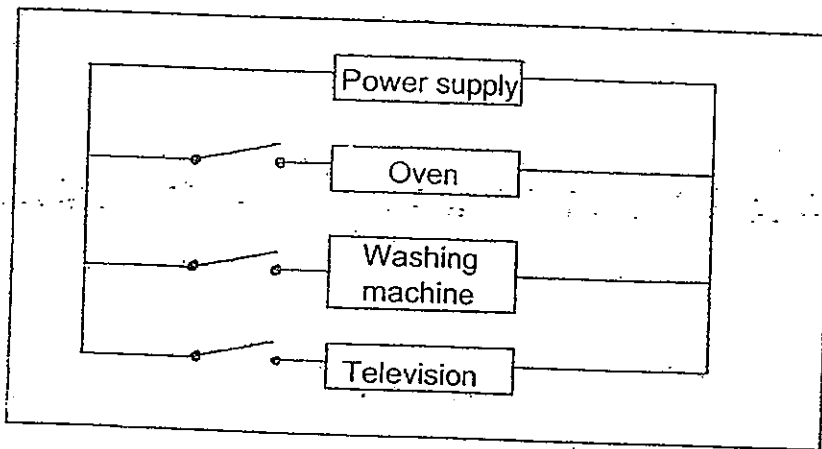
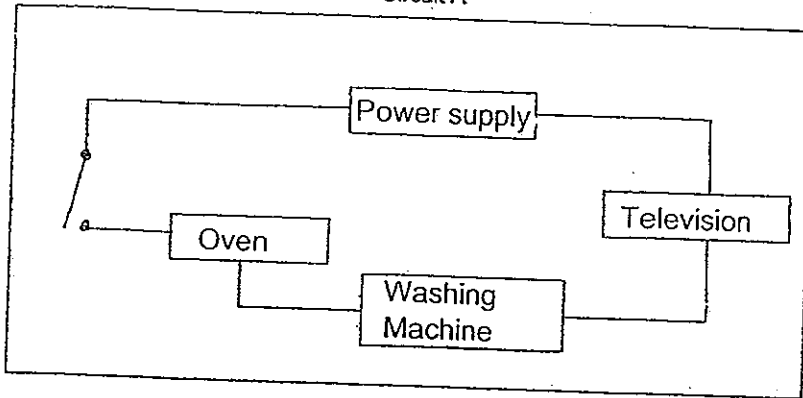
Year	1	2	3	4
Average rainfall in February	50	52	51	32
Average temperature in February	31°C	30°C	31°C	20°C

(b) Based on your knowledge of the water cycle, suggest a possible reason why the average February rainfall in Year 4 for Town X fell after the massive volcanic eruption. (1m)



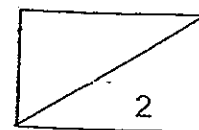
40. Study the two circuits below carefully.

Circuit A

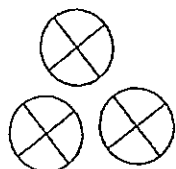


(a) Which one of the above circuits, A or B, represents the one that is most likely to be connected in the house? (1m)

(b) Give a reason for your answer in (a). (1m)



41. A group of students was given the following components :



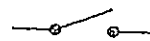
three bulbs



two batteries

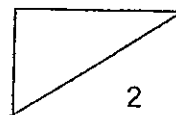
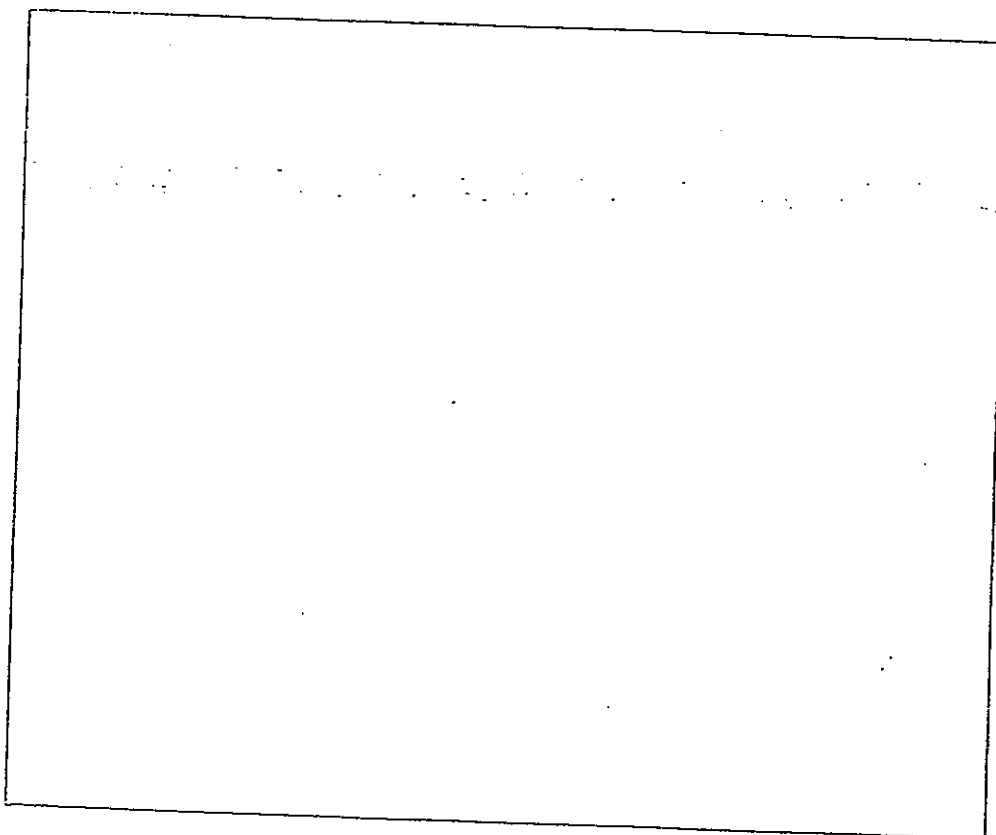


some wires

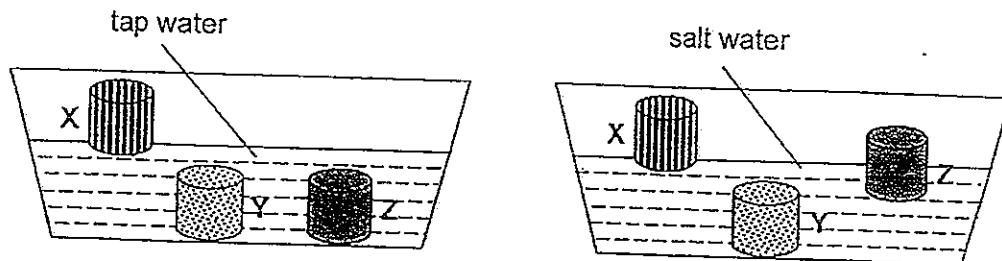


one switch

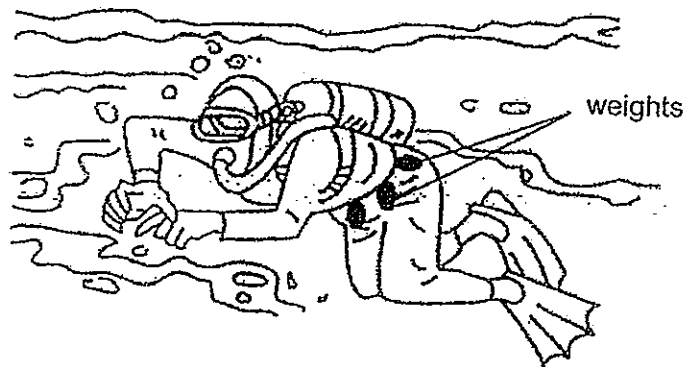
Draw a circuit diagram using the symbols in the box below to show how the three bulbs can be lighted in the brightest way. Use all the components given. (2m)



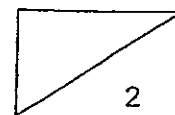
42. Joseph was given three objects of different materials, X, Y and Z. He wanted to find out if these objects float or sink in tap water and salt water. He made the following observation.



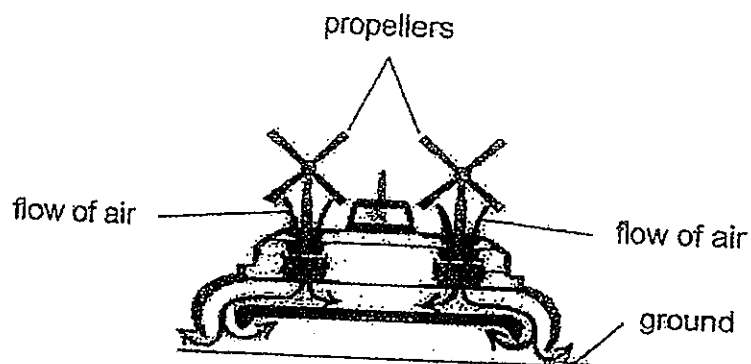
A person who practises scuba diving in the swimming pool has to put weights around his waist to keep his body under water as shown below.



- (a) If he scuba dives in the sea, which material, X, Y or Z, is most suitable for making the weights? (1m)
-
- (b) Explain your answer in (a). (1m)
-
-

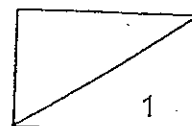
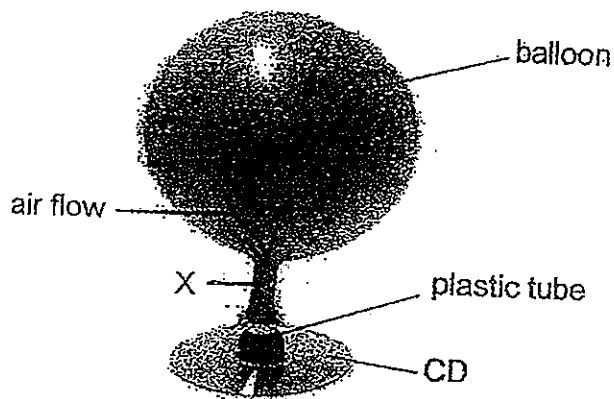


43. The diagram below shows a hovercraft which is a vehicle that glides over the ground by floating on a layer of air.



- (a) How does the layer of air beneath the hovercraft help the vehicle to glide more easily? (1m)

Gregory made his own mini hovercraft using a CD, a plastic tube and a balloon. He inflated the balloon and attached it to the plastic tube as shown below. At first, he held the balloon tightly at X. When he released his grip on the balloon, air in the balloon escaped through the plastic tube and formed a layer of air beneath the CD. This caused the CD to hover slightly above the ground.

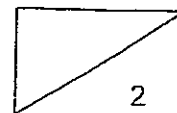


Gregory tested out the mini hovercraft with balloons of different sizes. For each size of the balloons, he did three trials. He recorded the time taken for the mini hovercraft to stop hovering. The results are shown in the table below.

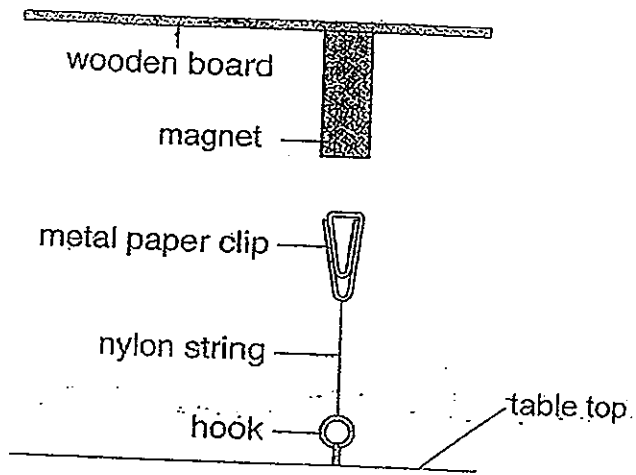
Trial	Time taken for mini hovercraft to stop hovering		
	Small Balloon	Medium Balloon	Large Balloon
1	2s	5s	9s
2	3s	5s	8s
3	2s	6s	8s
Average	2.3s	5.3s	8.3s

(b) What is the relationship between the volume of air in the balloon and the time taken for the mini hovercraft to stop hovering? (1m)

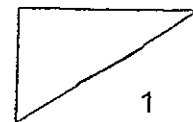
(c) What is the purpose of carrying out the same test three times for each size of the balloons? (1m)



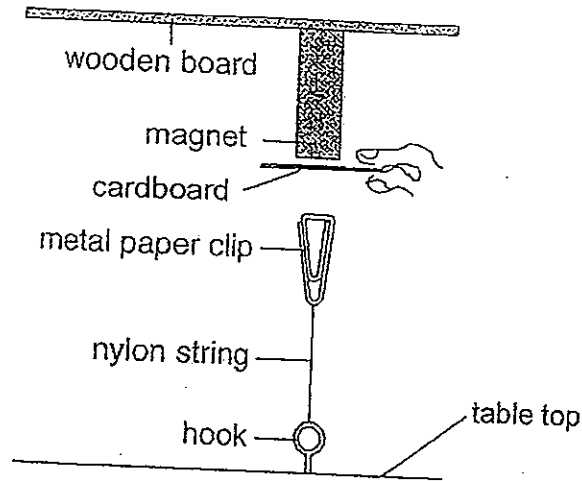
44. Damien set up an experiment as shown below.



(a) What is the force that has kept the paper clip suspended in the air? (1m)



Damien placed a piece of cardboard between the paper clip and the magnet as shown below.

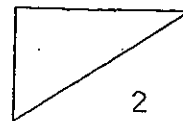


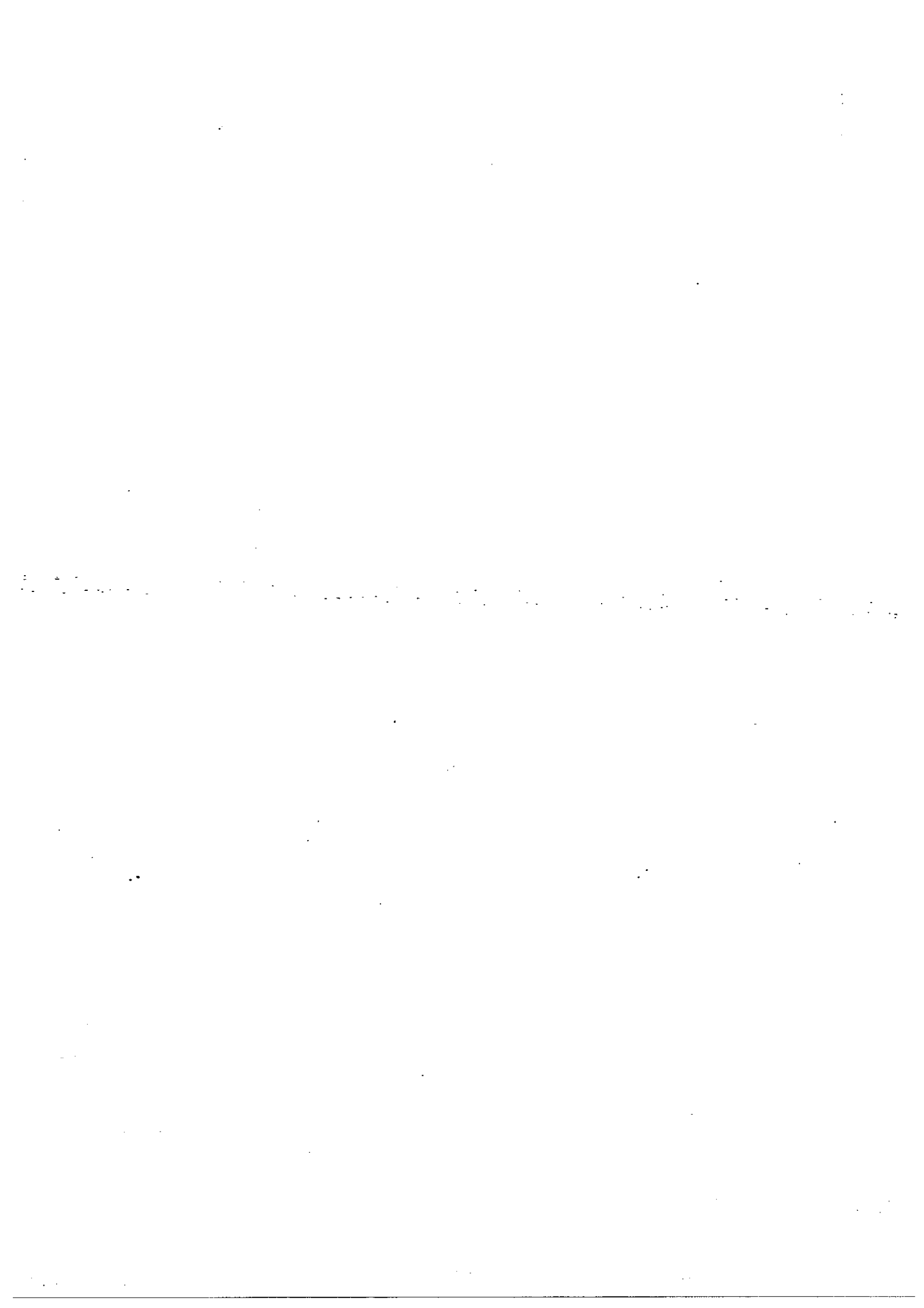
He continued to place more pieces of cardboard, one at a time, between the paper clip and the magnet and recorded his observations in the table below.

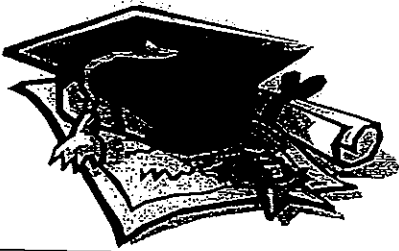
Number of pieces of cardboard	Observations
1	paper clip remained suspended
2	paper clip remained suspended
3	paper clip remained suspended
4	paper clip dropped

(b) Based on the observations above, explain clearly why Damien did not continue his experiment using 6 pieces of cardboard. (1m)

(c) Explain, in terms of forces, why the paper clip dropped when four pieces of cardboard were used? (1m)







ANSWER SHEET

EXAM PAPER 2012

**SCHOOL : RED SWASTIKA
SUBJECT : PRIMARY 6 SCIENCE**

TERM : SA1.

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

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

31)a)Part B. b)Part Y.
c)They are both produced in large amount.

32)a)C, D, F, H

b)All the variable were kept constant except the colour of petals, so that it can be confirmed that the results of the experiment is due to the only variable that was changed.

33)a)The hair-like structure helps to increase the (exposed) surface area of the cell for absorption of water.

b)The leaf cell has chloroplasts.

c)Chloroplasts contain chlorophyll which capture/tray sunlight/light for the plant to make food/photosynthesis.

34)Our body needs more energy when we exercise. In order to produce more energy the body needs more oxygen. Hence, the breathing rate will increase to take in more oxygen.

- 35) a) Behavioural adaptation.
 b) i) More of the young will be able to survive.
 ii) The young will survive as there is available source of food they can feed on.
 c) The droppings underground serve nutrients for the plant to grow well.

- 36) a) Maize plant → chicken → snake → eagle
 b) Producer.
 c) When the population of maize plant decreases, there will be lesser food for the chicken and field mouse, since the snake feeds on field mouse, its population will decrease due to less food.

- 37) a) i) Carbon dioxide ii) Water
 b) i) Oxygen ii) Sugar (glucose)
 c) i) Presence of light ii) All the time
 d) Container B. The opening of the tube is immersed in the limewater, hence, carbon dioxide produced by the mouse can dissolve easily.

- 38) a) The water level dropped.
 b) The hydrilla gave out/produced oxygen and the oxygen took the place of displaced the water in the test tube.
 c) The rate of photosynthesis increases with increase in temperature until a certain temperature (35°C) after which, the rate of evaporation decreases.
 d) i) Graph R ii) Respiration

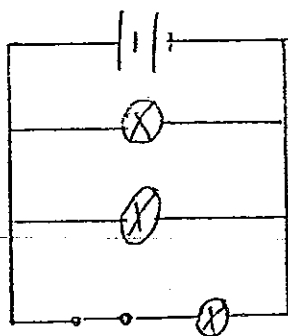
39) a) The source of heat cause water to gain heat (faster) and evaporated (faster) to form hot water vapour. When the hot water vapour touches the cooler surface of the tray, the water vapour loses heat and condenses into water droplets.

b) The clouds of volcanic ash block some of the sunlight with less heat, less water evaporated to form water vapour which condensed to form water droplets.

40) a) Circuit B.

b) In circuit B, electrical appliances are connected in parallel when one electrical appliance is faulty, electric current can still flow to other appliances to form a closed circuit.

41)



42)a)Material Y.

b)Material Y sinks in salt water. Hence, it will be able to keep the driver under water/pull the driver in the sea.

43)a)It reduces the contact between the hover craft and the ground, thus reduces friction between the two surfaces.

b)As the volume of air in the balloon increases, the time taken for the hovercraft to stop hovering increases.

c)To ensure reliable results.

44)a)Magnetic force of attraction.

b)The maximum number of pieces of cardboard the magnetism could pass through was three, the paper clip would still drop when 6 pieces of cardboard were used.

c)The gravitational force/pull acting in the paperclip was greater than the magnetic force of attraction (of the magnet.)

