



RED SWASTIKA SCHOOL

RED SWASTIKA SCHOOL

2012 CONTINUAL ASSESSMENT 1 SCIENCE PRIMARY 6

Name : _____ ()

Class : Primary 6/ _____

Date : 27 February 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 23
 - 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.

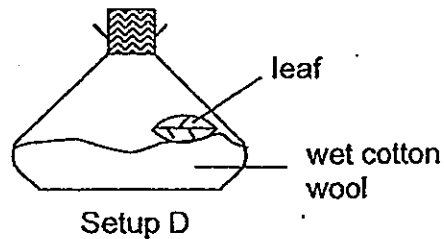
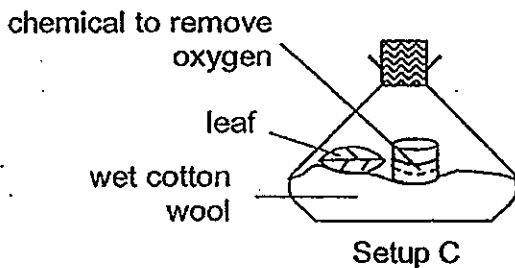
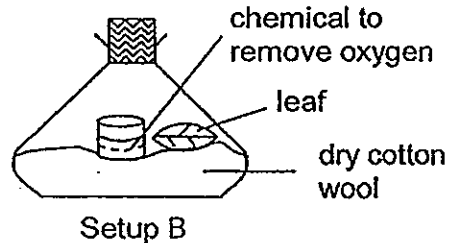
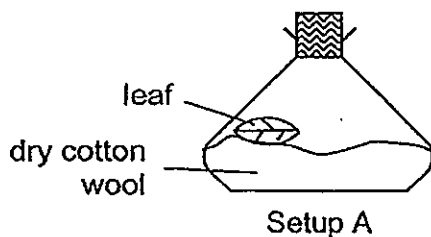
1. The following table shows some characteristics of animals A, B, C and D.

Animal	Gives birth to young alive	Body covered with hair	Swims in water
A	Yes	Yes	No
B	No	Yes	Yes
C	Yes	No	No
D	No	No	Yes

Which of the above animals best represent a rabbit and a platypus?

	Rabbit	Platypus
(1)	A	B
(2)	B	C
(3)	C	A
(4)	C	D

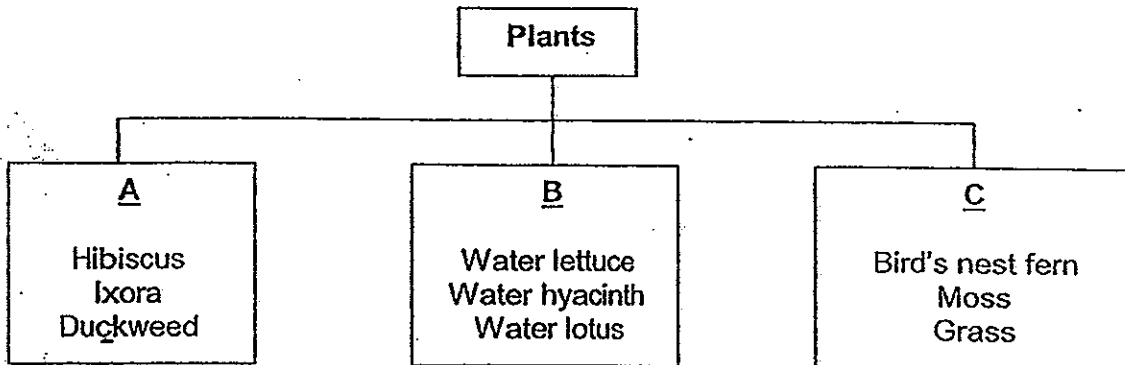
2. Edward picked up four similar leaves from the garden in his garden and put them into four identical jars as shown below.



What is the aim of his experiment?

- (1) To find out if the leaf needs water to survive.
- (2) To find out if the leaf needs oxygen to decompose.
- (3) To find out if the leaf needs water and oxygen to survive.
- (4) To find out if the leaf needs water and oxygen to decompose.

3. Look at the classification below.



Which of the following are grouped wrongly?

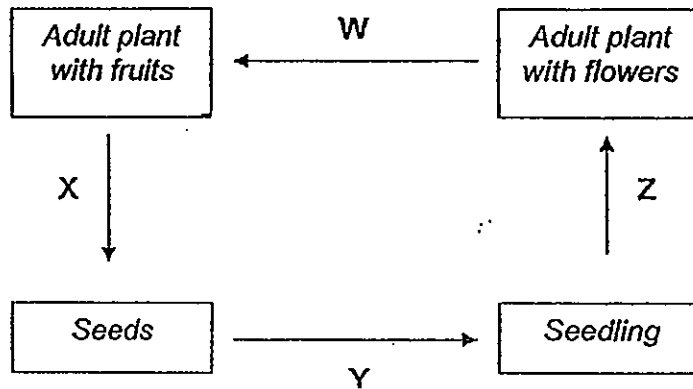
- (1) Water hyacinth and moss
- (2) Duckweed and grass
- (3) Water lettuce and grass
- (4) Water lettuce and moss

4 Compare the life cycles of a grasshopper and a butterfly. Which one of the following is correct?

	Similarity	Difference
(1)	Their young resemble the adult.	They have different number of stages in their life cycles.
(2)	They have three stages in their life cycles.	The nymph resembles the adult grasshopper but the caterpillar does not resemble the adult butterfly.
(3)	They have four stages in their life cycles.	The nymph can fly but the caterpillar cannot fly.
(4)	Both lay eggs.	The grasshopper has three stages in its life cycle while the butterfly has four stages in its life cycle.

5. The diagram below shows the life cycle of a flowering plant.

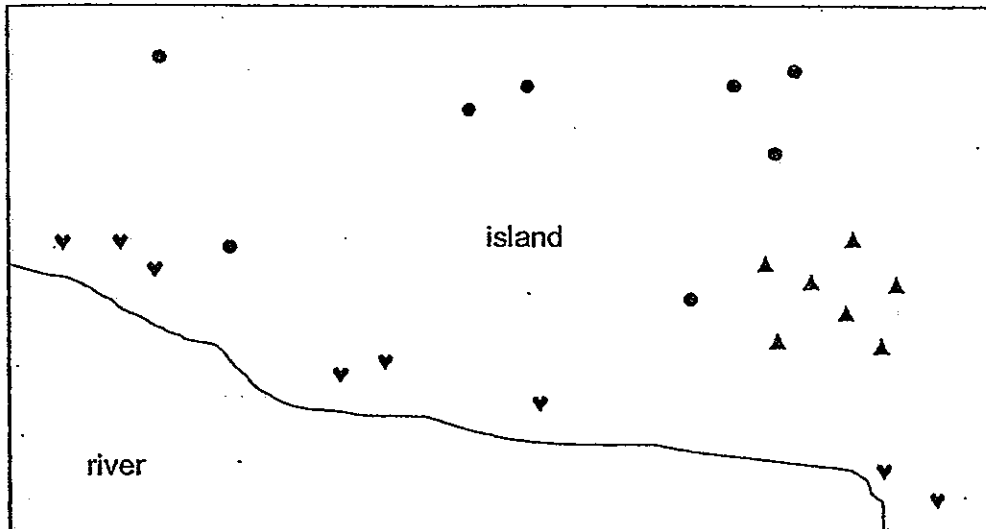
W, X, Y and Z represent the processes that take place at the respective stages in the life cycle. More than one process can take place at each stage.



Which of the following represents the processes correctly?

	Germination	Fertilisation	Pollination	Dispersal
(1)	W	X	Y	Z
(2)	Y	W	X	X
(3)	Y	W	W	X
(4)	Y	W	W	Z

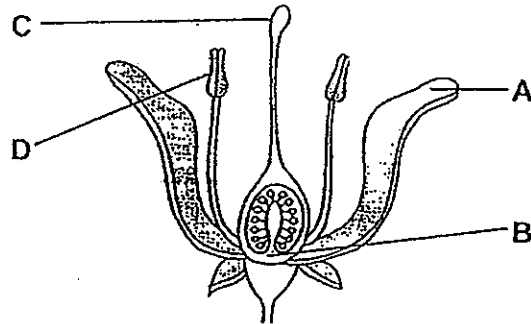
6. The diagram below shows part of an island where three types of plants (♥, ●, ▲) are growing.



What are the likely characteristics of the fruits or seeds of each type of plant which can help them in their dispersal?

	♥	●	▲
(1)	Has a water-proof outer covering	Has thorns	Is juicy and sweet
(2)	Has wing-like structure	Is fleshy and edible	Splits open when dry
(3)	Has a fibrous husk	Is hairy and light	Splits open when dry
(4)	Splits open when dry	Has wing-like structure	Has hook-like structure

7. The following diagram shows the different parts of a flower.

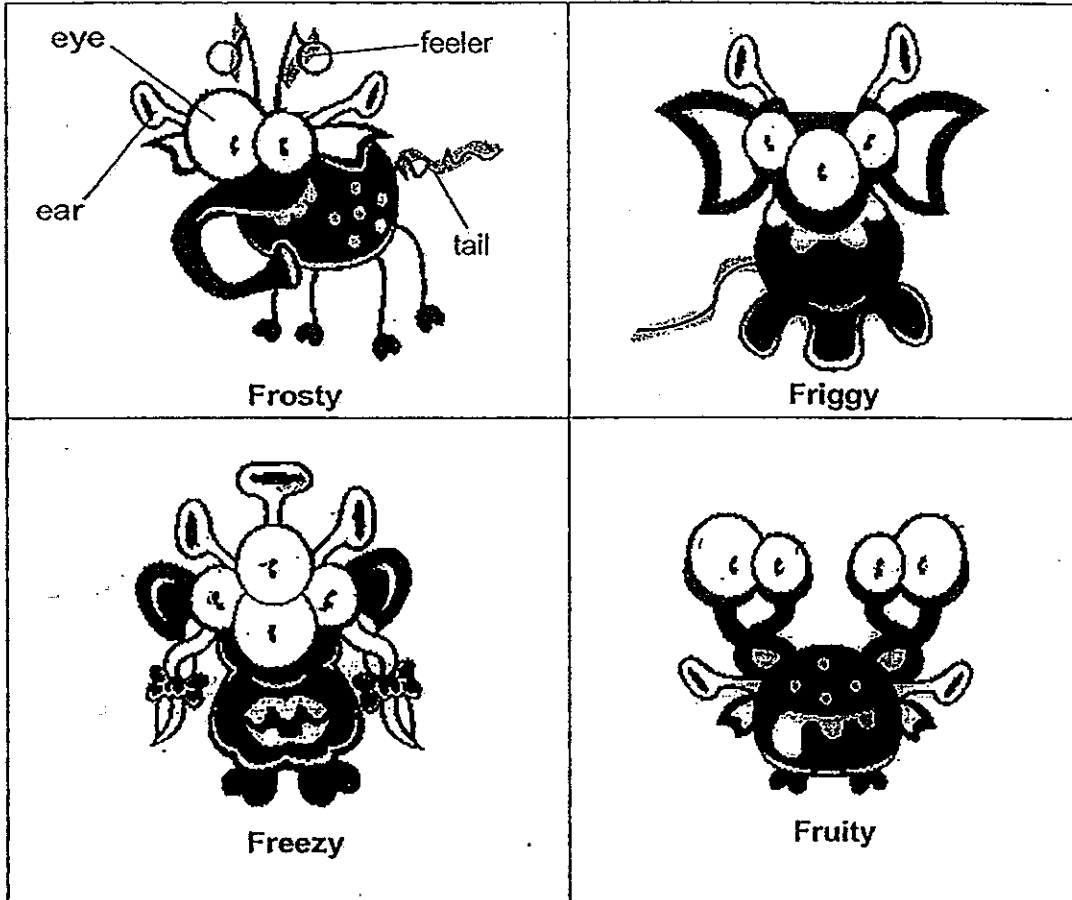


Flowers W, X, Y and Z share similar parts as shown in the diagram above. Certain parts were removed from each flower. Which of the following flowers are still able to develop into a fruit if the flower has just been pollinated?

Flower	Parts removed
W	A and B
X	A and C
Y	A and D
Z	B and D

- (1) Y only
- (2) Y and Z only
- (3) X and Z only
- (4) W, Y and Z only

8. The pictures below show 4 different aliens with different physical traits.



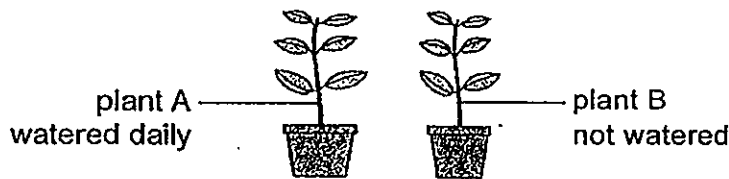
Based on the pictures above, which of the following pairs could be the parents of the offspring with 4 clustered eyes, 3 trumpet ears, 2 feelers and a tail ?

- (1) Freezy and Friggy only
- (2) Freezy and Frosty only
- (3) Fruity and Friggy only
- (4) Fruity and Frosty only

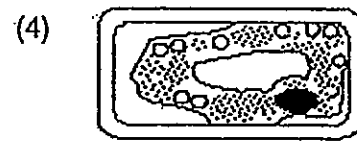
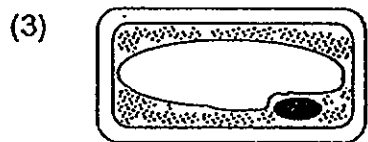
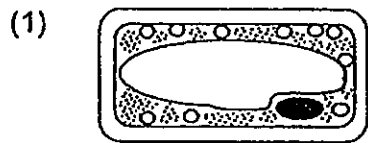
9. Normally, we breathe through our nose. Sometimes, we breathe through our mouth when we have blocked nose. What is the main reason for breathing through our nose instead of our mouth ?

- (1) The nose can help to warm up the air we breathe in.
- (2) If we breathe through our mouth, we will get choked.
- (3) The fine hair and mucus layer in our nose can trap tiny dust particles.
- (4) If we breathe through our mouth, a lot of water vapour will go into our lungs.

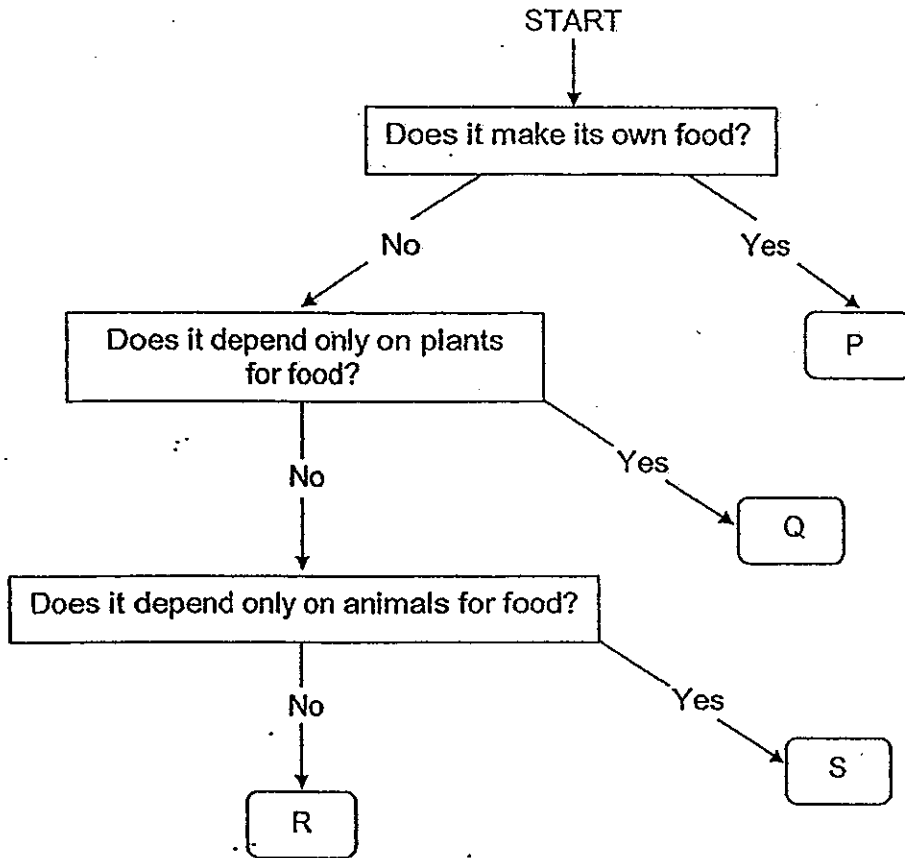
10. Martha has two similar pots of plants, A and B. She placed both pots of plants in her room as shown below.



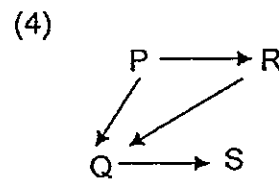
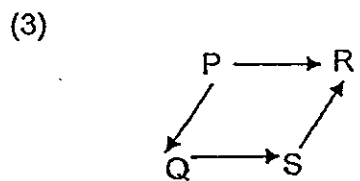
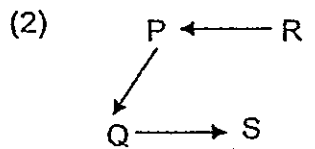
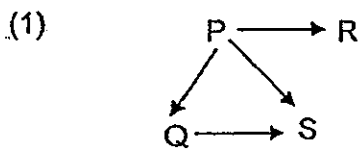
After a week, Martha took one leaf from each plant and observed it under a microscope. Which one of the following cells would most likely be found in the leaf taken from plant B ?



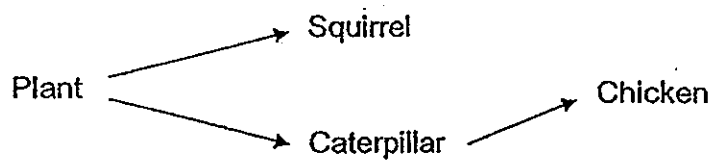
11. Study the flow chart below.



Based on the information given above, which one of the following is the correct food web?



12. The diagram below shows a food web of some organisms living in a community.

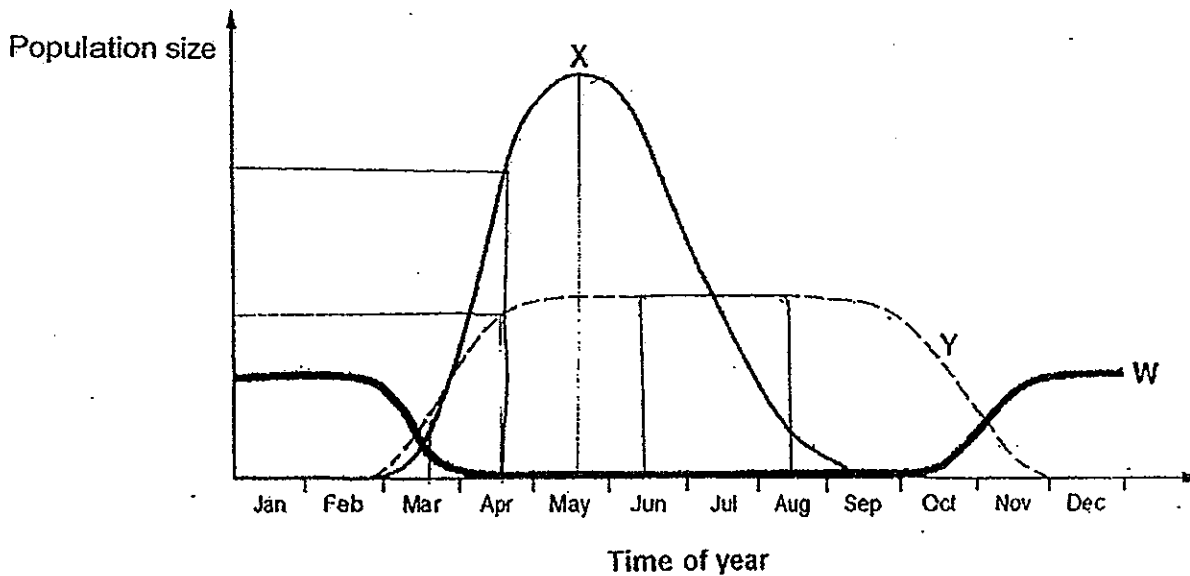


Some snakes are introduced into the community. How does the introduction of snakes affect the organisms in the community?

- A: The number of chickens decreases.
- B: The number of caterpillars increases.
- C: The number of caterpillars decreases.
- D: The number of squirrels remains the same.

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

13. The graph below shows the population sizes of three organisms, W, X and Y, on an island throughout the year.



Which of the following statements are true based on the graph?

- A: The number of organism Y is the least at the beginning of April.
- B: The number of organism X increases the most from March to May.
- C: The population size of organism Y remains almost the same from June to August.
- D: Some time in the middle of March, the number of organism X is the same as the number of organism W.

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

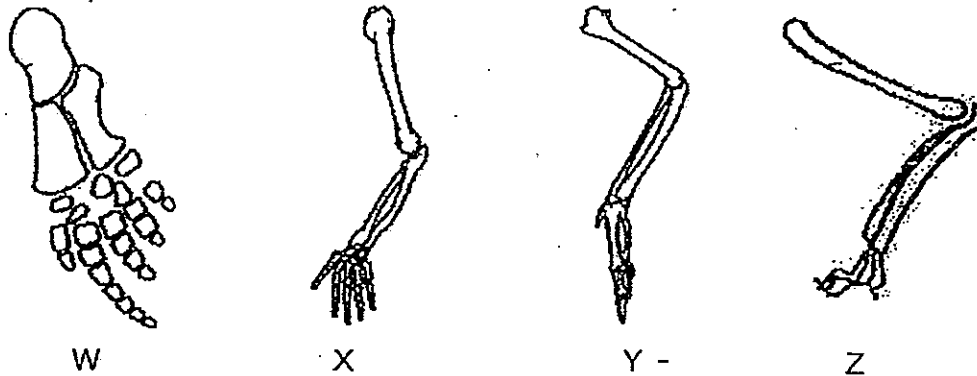
14. The incubation temperature of crocodile eggs determines the gender of the hatchlings. The table below shows the percentage of female and male crocodiles that hatch from the eggs when the eggs are incubated at different temperatures.

Temperature (°C)	% Eggs hatching as females	% Eggs hatching as males
26	95	5
28	65	35
30	35	65
32	5	95
34	0	100
36	15	85
38	35	65

Between which two temperatures are 50% of the eggs likely to hatch as males?

- (1) Between 24°C and 26°C
- (2) Between 28°C and 30°C
- (3) Between 30°C and 32°C
- (4) Between 34°C and 36°C

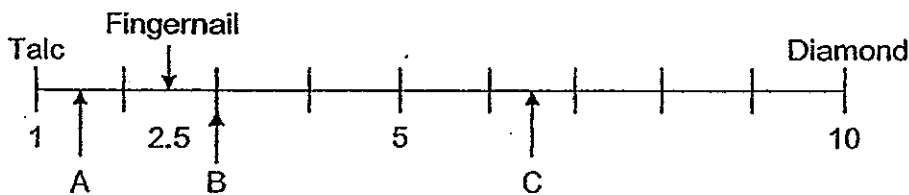
15. The drawings below show the bones of the front limbs of four animals, W, X, Y and Z.



Which of the front limbs shown above is best adapted for swimming in water?

- (1) W
- (2) X
- (3) Y
- (4) Z

16. The Mohs scale of hardness consists of 10 minerals of known hardness which are numerically ordered from the softest (1) to the hardest (10). Talc is the softest while diamond is the hardest mineral on this scale.



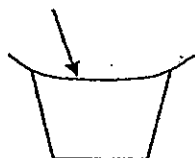
Based on the scale, your fingernail has a hardness of 2.5. If you can scratch the surface of an unknown material using your fingernail, you will immediately know that its hardness is less than 2.5.

Using the above information, where would you place 'pencil lead' and 'glass' on the scale?

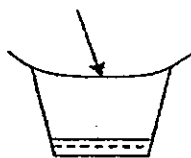
	Pencil lead	Glass
(1)	A	C
(2)	A	B
(3)	B	C
(4)	C	B

17. Ester conducted an experiment using three identical beakers and three different types of material X, Y and Z. She covered the mouth of each beaker with one type of material and poured 65 ml of water onto the material. The diagram below shows what happened after she had poured the water.

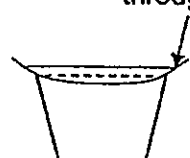
All the water is absorbed into Material X



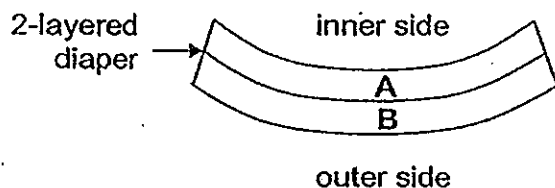
Some water passed through material Y into the beaker



All the water remained on top of material Z and no water passed through it



Ester wanted to make a diaper which has two layers, A and B, as shown below:



She wanted the diaper to absorb a baby's urine as much as possible and remain dry on the outside. From the results above, which of the materials, X, Y and Z, are suitable for making layers A and B?

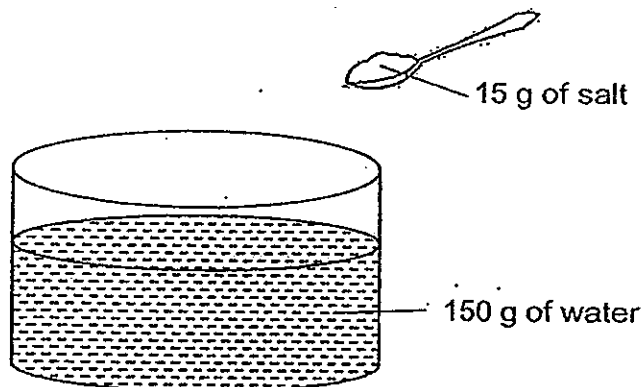
	Layer A	Layer B
(1)	X	Y
(2)	Y	X
(3)	Z	Y
(4)	X	Z

18. The table below shows the state of four substances, W, X, Y and Z at different temperatures

Substances	State of substance at		
	35°C	55°C	75°C
W	liquid	liquid	liquid
X	solid	solid	liquid
Y	solid	liquid	liquid
Z	solid	solid	solid

Which of the following statements best describes the substances above?

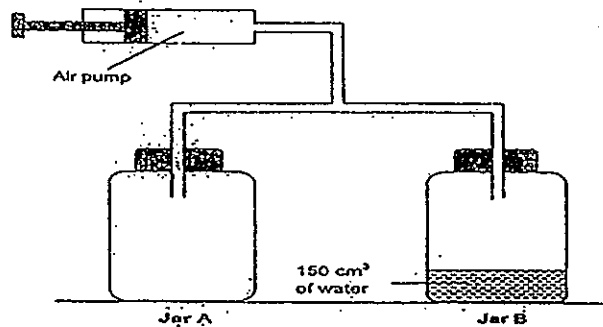
- (1) Substance W has the highest melting point.
 - (2) The boiling point of substance X is 65°C.
 - (3) The freezing point of substance Y is below 55°C.
 - (4) Substance Z has the lowest melting point.
19. A beaker contained 150g of water. 15g of salt was dissolved in the beaker of water.



The salt solution was left on the table uncovered. After three days, it was found that only 120 g of the solution was left in the beaker. How much water and dissolved salt was in the mixture after 3 days?

- (1) 15 g of salt only
- (2) 120 g of water only
- (3) 105 g of water and 15 g of dissolved salt
- (4) 110 g of water and 10 g of dissolved salt

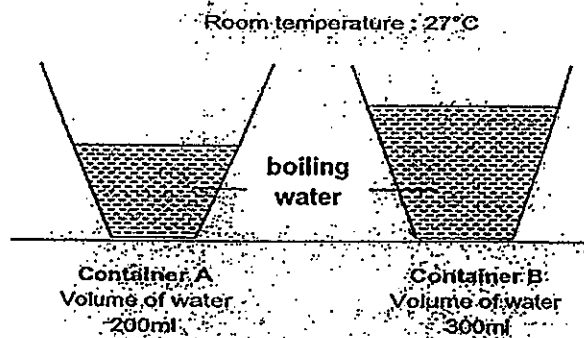
20. The diagram below shows an air pump connected to two glass jars, A and B. The capacity of each glass jar is 500 cm^3 . Jar B contains 150 cm^3 of water. When the piston is pushed completely in, 50 cm^3 of air is forced into the two jars.



What is the final volume of air in jar A and jar B when the piston is pushed in twice?

	Glass Jar A	Glass Jar B
(1)	50 cm^3	50 cm^3
(2)	500 cm^3	350 cm^3
(3)	525 cm^3	375 cm^3
(4)	600 cm^3	400 cm^3

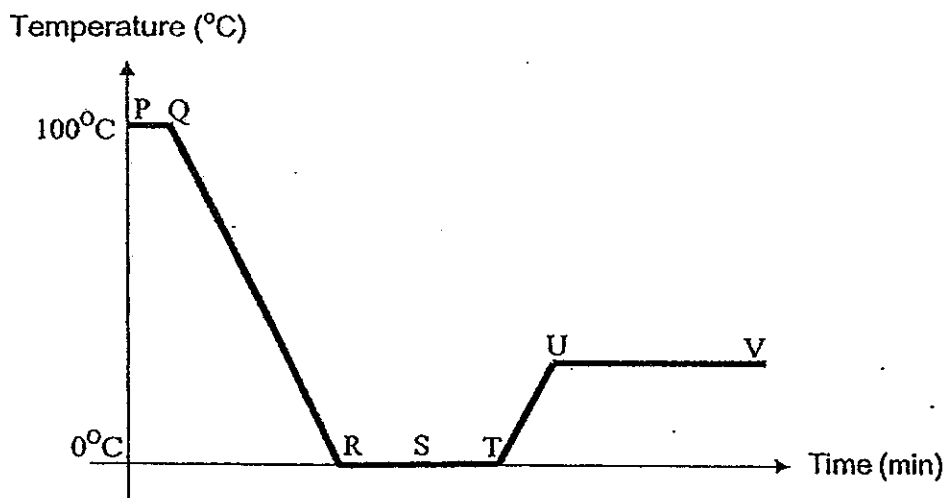
- 21 Sean poured some boiling water into two identical containers, A and B. He placed the two containers in the room as shown below.



Which one of the following statements best describes the above?

- (1) Water in container A has more heat than container B.
- (2) Water in container B has more heat than container A.
- (3) Water in container A and B have the same amount of heat.
- (4) Water in container A and B gains heat from the surroundings.

22. Jia Wen placed a beaker of water that has just boiled in the freezer. Once the water has frozen completely, she removed the beaker at point S and left it on the table. She measured the temperature of the contents in the beaker at every 5 minute intervals from the start of her experiment and plotted the graph as shown below.

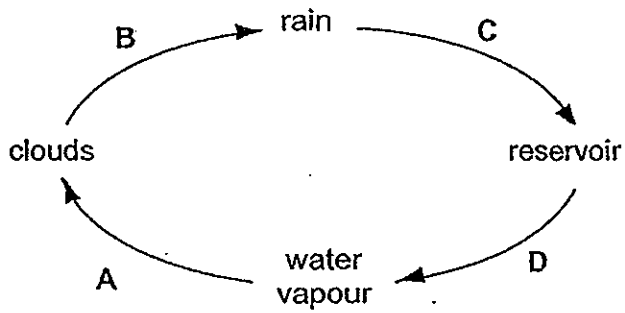


During the experiment, the contents in the beaker underwent some heat changes. Which one of the following statements about the heat change is matched correctly?

	Section of graph	Overall heat change in the water
A:	PQ	Heat gained
B:	QR	Heat lost
C:	ST	Heat gained
D:	TU	Heat lost
E:	UV	Heat gained

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

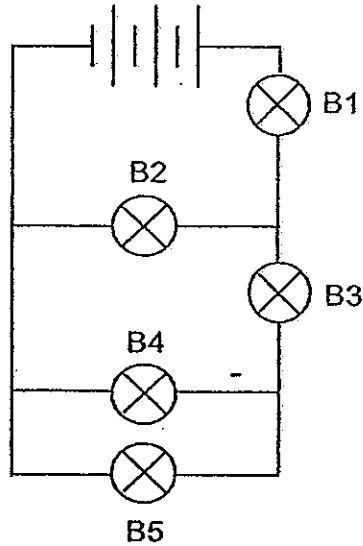
23. The diagram below shows the water cycle.



Which letters, A, B, C or D, correctly represent the different processes and the heat change involved in the water cycle?

	Condensation	Evaporation	Heat gain	Heat loss
(1)	A	D	D	A
(2)	B	D	D	B
(3)	C	A	A	C
(4)	D	A	A	D

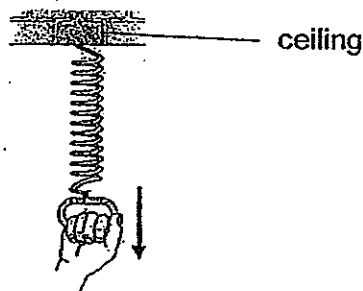
24. Study the circuit below.



If bulb B3 is fused, which of the other bulbs will still light up?

- (1) B2 only
- (2) B1 and B2 only
- (3) B2 and B4 only
- (4) B4 and B5 only

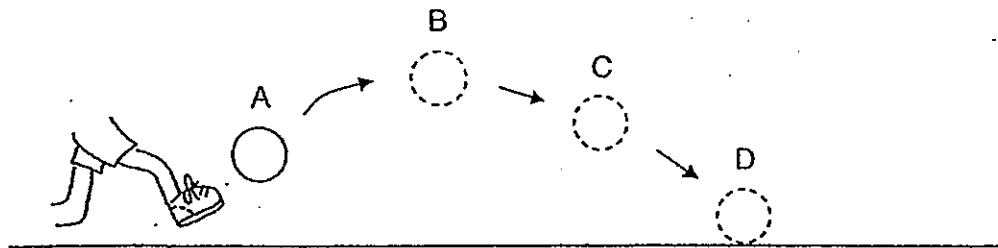
25. Nathan pulls a spring that is attached to a ceiling as shown below.



What can Nathan feel as he pulls the spring down?

- (1) The force from the air pulling his hand up.
- (2) The force from the air pushing his hand down.
- (3) The force from the spring pulling his hand up.
- (4) The force from the spring pushing his hand down.

26. Johnny kicked a ball and the ball moved in the direction as shown by the arrows below.



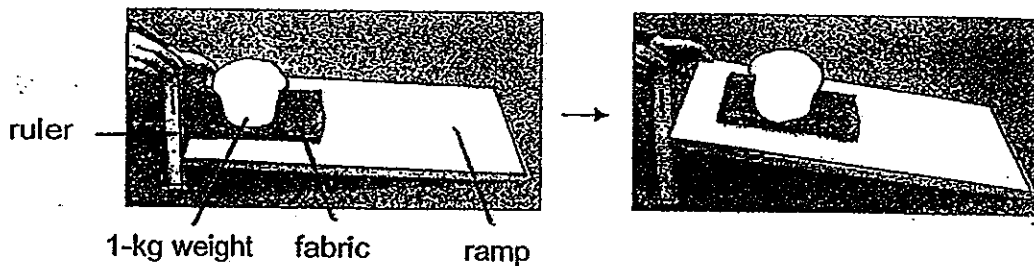
Which of the following statements about the gravitational force acting on the ball is/are correct?

- A: There is no gravitational force acting on the ball at position D.
- B: Gravitational force acting on the ball causes the ball to move downwards.
- C: The gravitational force acting on the ball is the greatest at position B.
- D: As the ball moved through the air, the gravitational force acting on the ball remains the same.

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

27. Alex carried out an experiment to find out which type of fabric is suitable for making a floor mat that does not slip easily when a person stands on it.

He used 4 pieces of different fabrics, A, B, C and D, of the same size and thickness, a ramp, a 1-kg weight and a ruler. For each fabric, he slowly lifted one end of the ramp until the fabric started to slide. He measured the height of the ramp when the fabric started to slide.



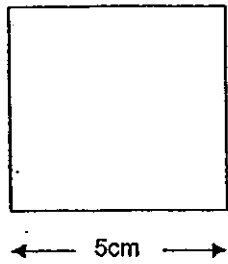
He tabulated the results as shown below.

Fabric	Height of ramp when fabric started to slide (cm)
A	18
B	16
C	10
D	13

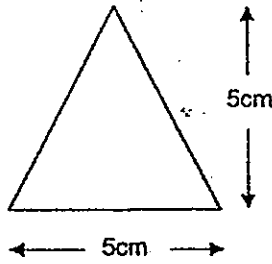
Arrange the fabrics in order starting from the least slippery to the most slippery.

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

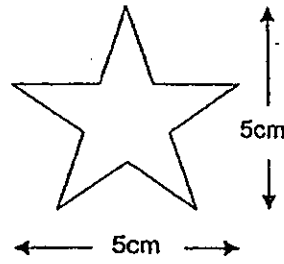
28. The diagram below shows three shapes, a square, a triangle and a star made from different materials.



Clear glass

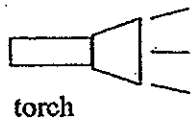


Wood

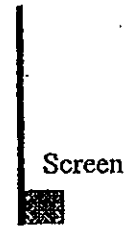
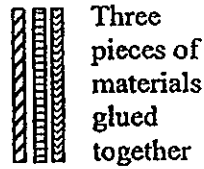


Aluminium foil

The three pieces of materials are glued one against another. They are then placed between a torch and a screen as shown below.



torch



Screen

Which one of the following shadows is possible?



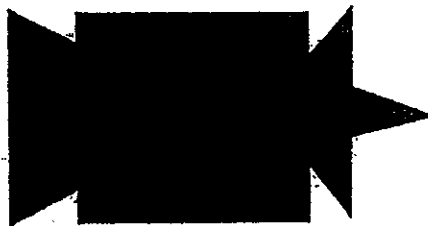
(1)



(2)

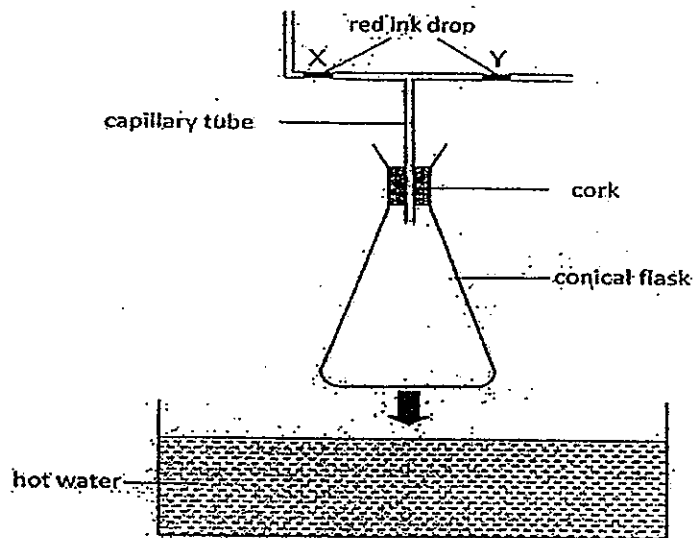


(3)



(4)

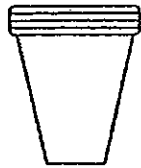
29 Thomas set up the experiment as shown below.



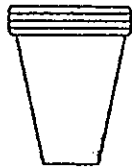
When the flask was immersed into a basin of hot water, which one of the following could be observed?

- (1) Ink X moved to the right of the capillary tube while ink Y moved to the left of the capillary tube immediately.
- (2) Ink X moved to the left of the capillary tube while ink Y moved to the right of the capillary tube immediately.
- (3) Ink X remained in the same position while ink Y moved a little to the left before moving to the right of the capillary tube.
- (4) Both ink drops X and Y moved towards each other a little initially before moving away from each other in opposite direction.

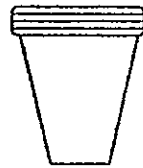
- 30 Joe poured 200ml of boiling water into four identical cups, W, X, Y and Z which are made of different materials. Then he covered them.



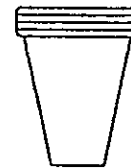
Cup W



Cup X



Cup Y



Cup Z

After five minutes, he measured the temperature of the water in each cup and recorded the results in a table as shown below.

Cup	W	X	Y	Z
Temperature	78°C	76°C	79°C	82°C

Based on the results shown in the table, rearrange the cups from the best conductor of heat to the poorest conductor of heat.

- (1) W, X, Y, Z
- (2) X, W, Y, Z
- (3) Y, Z, W, X
- (4) Z, Y, W, X



RED SWASTIKA SCHOOL

RED SWASTIKA SCHOOL

2012 CONTINUAL ASSESSMENT 1 SCIENCE PRIMARY 6

Name : _____ ()

Class : Primary 6/ _____

Date : 27 February 2012

BOOKLET B

14 Questions
40 Marks

In this booklet, you should have the following:

- Page 24 to Page 42
- Questions 31 to 44

MARKS

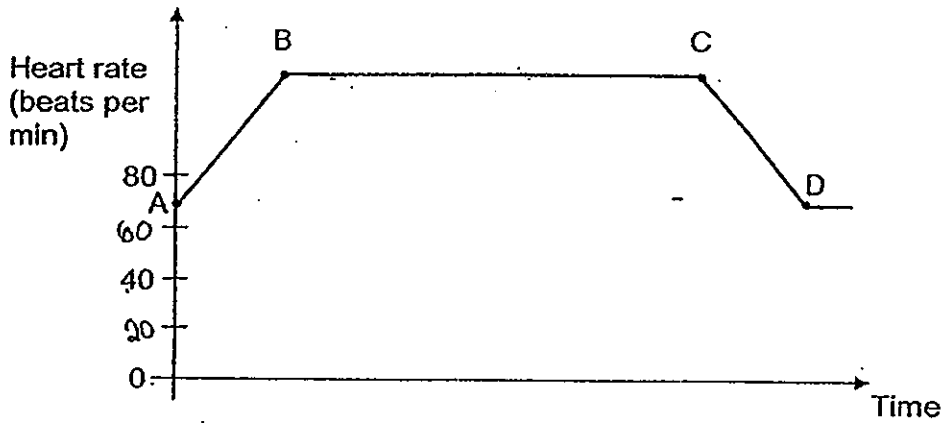
	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : _____

Section B

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

31. The graph below shows Linda's heart rate before, during and after a skipping activity.

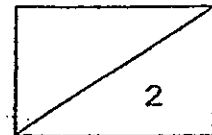


(a) Which two points on the graph most likely show the start and end of Linda's skipping activity? (1m)

Start: _____ End: _____

(b) What is Linda's normal average heart rate when she is not exercising? (1m)

_____ beats per minute



32 Study the following fruits below.



Papaya

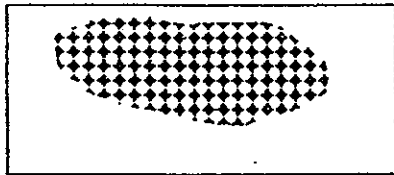


Avocado

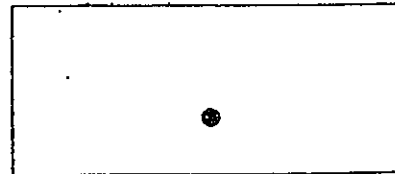
(a) Based on the picture, what can you conclude about the number of ovules in a papaya flower and an avocado flower? (½m)

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

All the seeds of the papaya were planted in a plot of land, Q. The avocado seed was planted in another plot of land, R as shown below. The two plots of land are of the same size and contain similar types of moist soil.

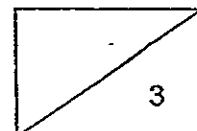


Plot Q

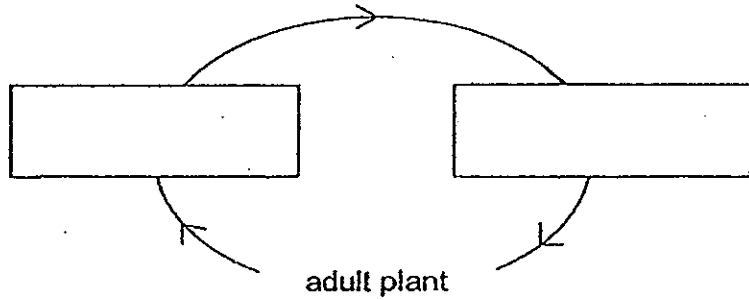


Plot R

(c) In which plot of land, Q or R, would you predict that overcrowding of plants would occur? Give a reason for your answer. (1½ m)



33. (a) Fill in the missing stages in the life cycle of a chilli plant (1m)

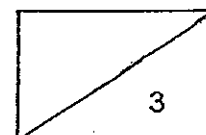


(b) Classify the following animals into two groups based on the stages of life cycles they have. Give a suitable heading for each group (1m)

mosquito	guppy	cockroach	frog
----------	-------	-----------	------

Group A : _____	Group B : _____

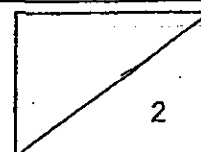
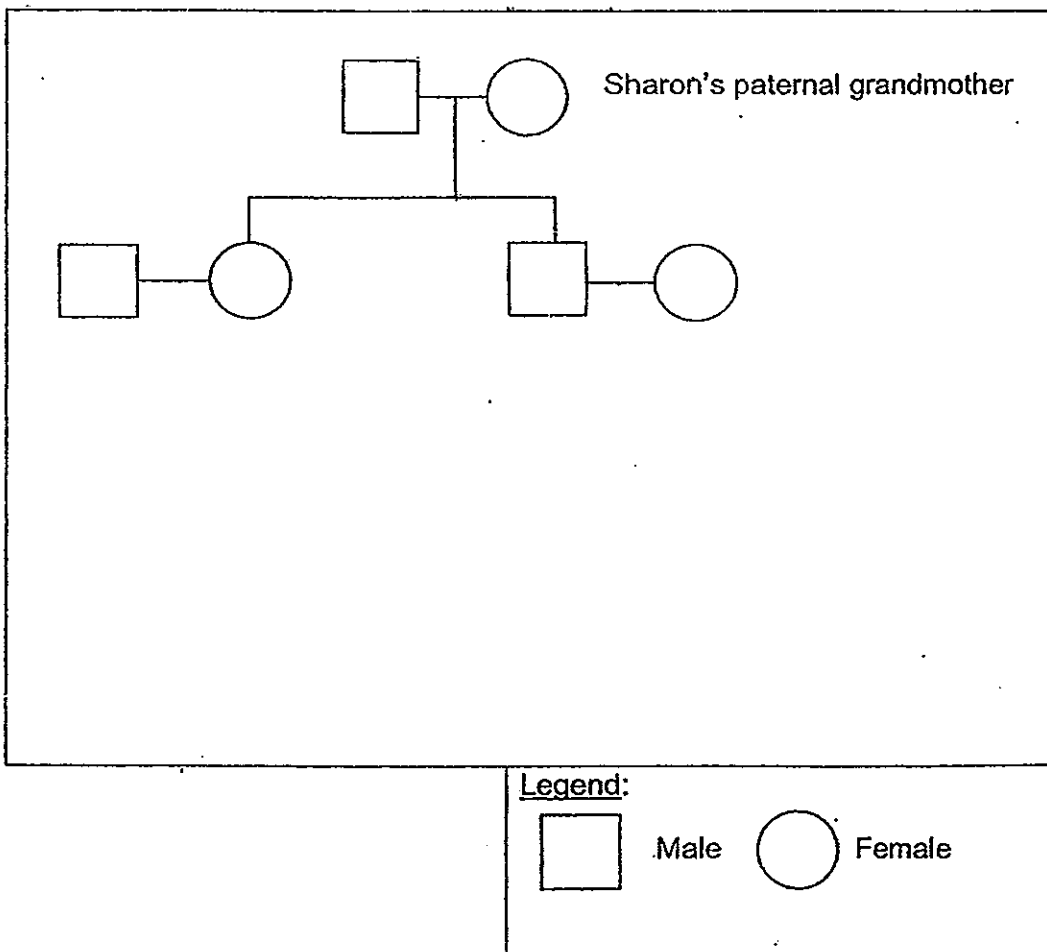
(c) In the adult stage, the butterfly can be useful to flowering plants. Describe how this is so. (1m)



34 Read the description about Sharon and her family below.

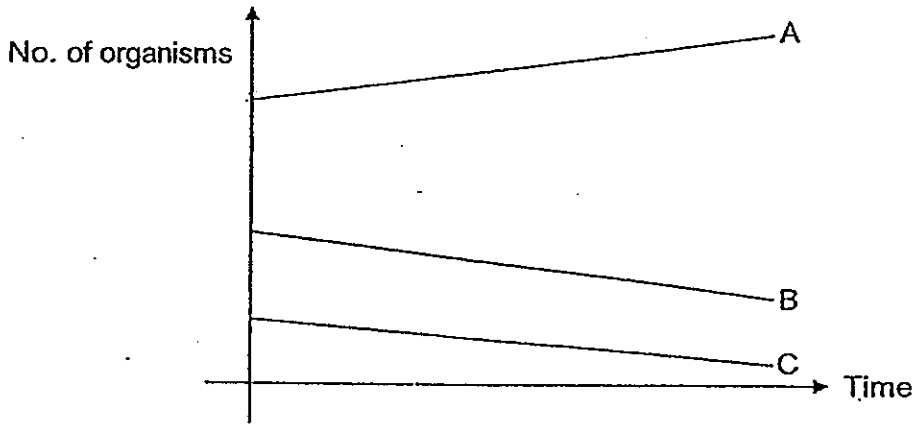
Sharon's paternal grandmother has three children and one of them is a male.
Sharon has an aunt who is not married.
Sharon is the only daughter in her family.
Sharon has a younger brother.
Sharon has only one cousin who is a girl.

Complete Sharon's family tree using the information above. Draw and label the symbol for Sharon, her aunt, her younger brother and her cousin. (2m)



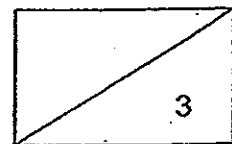
35. A group of scientists released a population of organism X into a habitat. Before the introduction of organism X, only three populations of organisms, A, B and C, existed in the habitat and they depend on each other for food. Only one of the populations is a food producer. The number of organisms, A, B and C were almost constant until the introduction of organism X.

The graph below shows how the three populations of organisms, A, B and C, were affected after organism X was introduced into the habitat.

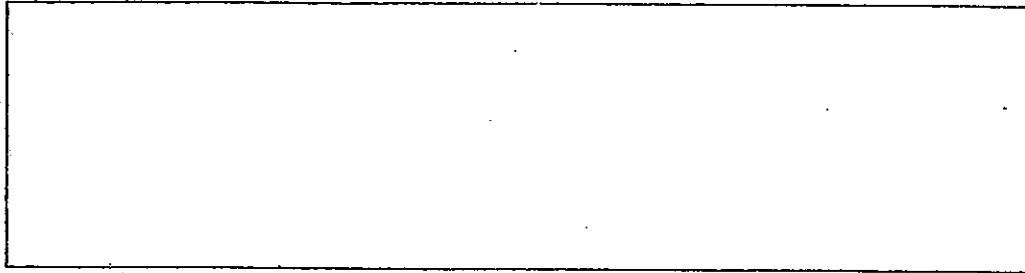


(a) Which one of the populations, A, B or C, is most likely the food producer? Explain your answer. (2m)

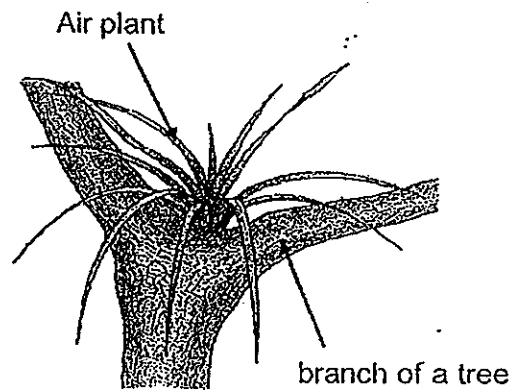
(b) Based on the graph, give a reason why the population of organism B decreased after the introduction of organism X. (1m)



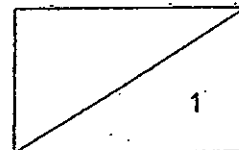
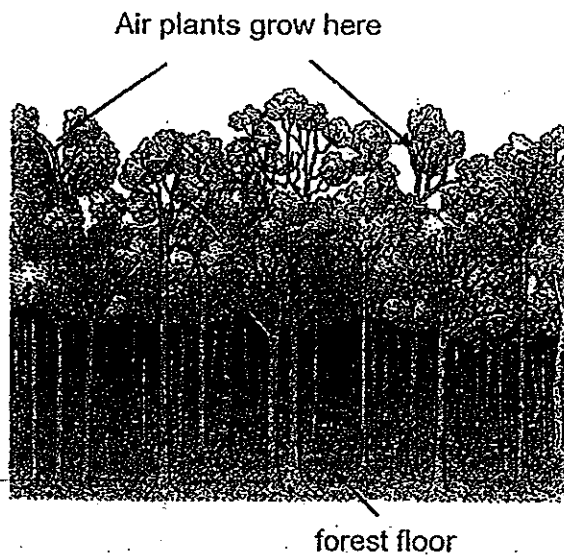
(c) Draw a possible food web in the box below to show the food relationship of the four organisms, A, B, C and X. (1m)



36. The picture below shows an air plant growing on the branch of a tree.



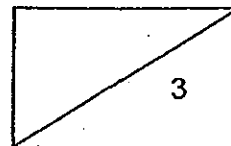
The air plant does not need soil to grow, but uses its short roots to attach to another plant which is its host plant. Air plants are commonly found on the high branches of trees in the forest.



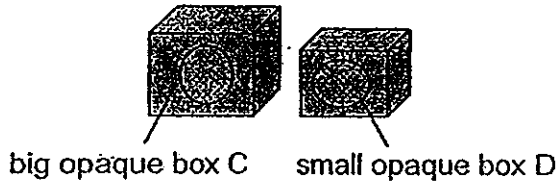
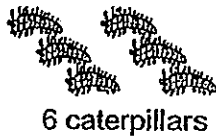
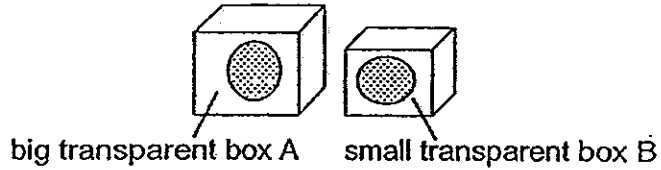
(a) With reference to the structure of the air plant, give a reason why it does not grow well on the forest floor. (1m)

(b) What benefit does the air plant gain from its host plant? (1m)

(c) Other than rainwater, where does the air plant get water from? (1m)



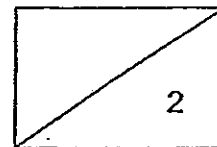
37(a) Siti wants to carry out an investigation to find out if the amount of time a caterpillar takes to develop into a butterfly is affected by the amount of light it is exposed to. She is given ten similar leaves, six similar caterpillars and four boxes. The boxes are of two different sizes. Two of the boxes are transparent and the other two are opaque. Each box has tiny holes on one of its sides as shown below.



(i) Help Siti choose the correct materials for her investigation by writing the correct information in the table below. (1m)

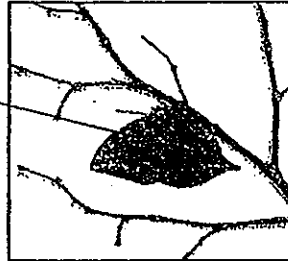
	Set-up 1	Set-up 2
No. of caterpillars		
No. of leaves		
Type of box		
Size of box		

(ii) What is a possible hypothesis for Siti's investigation? (1m)



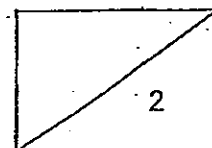
(b) The picture below shows a Dead Leaf butterfly resting on the branch of a tree. When its wings are closed, it resembles a dry leaf with dark veins.

Dead Leaf butterfly

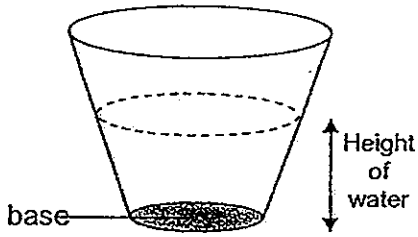


(i) By resembling a dry leaf with dark veins, what is this type of adaptation known as? (1m)

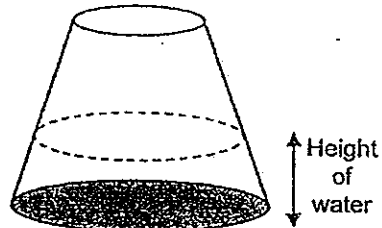
(ii) How does this adaptation help it to survive in the forest? (1m)



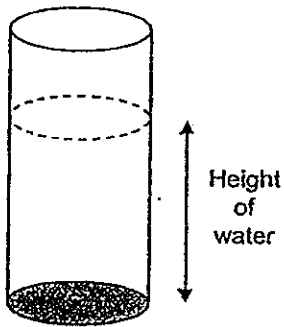
38 Mrs Tan poured 300 cm^3 of water into each of the four uncovered containers which were made of the same material. The containers were left in the open.



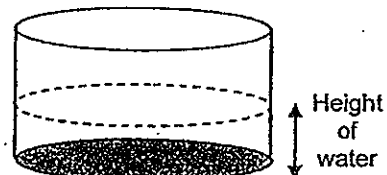
Container A



Container B



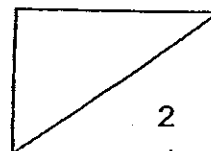
Container C



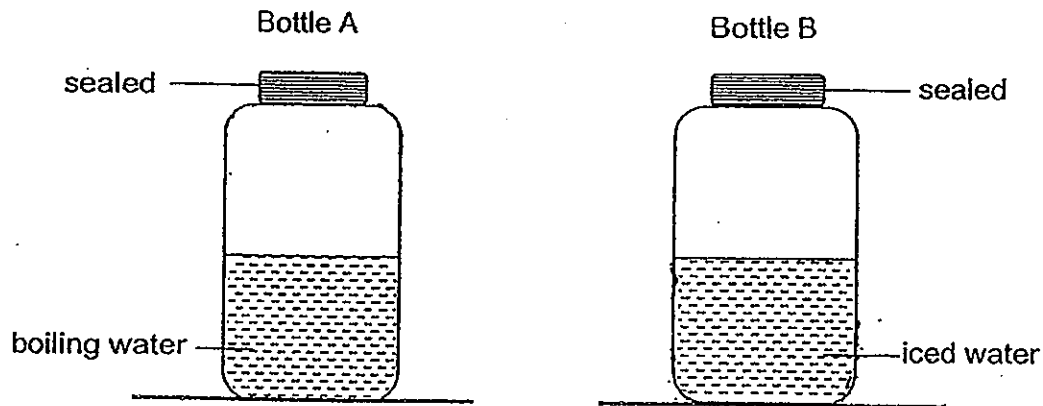
Container D

- (a) Which one of the containers would have the least amount of water left after a few hours? Explain your answer. (1m)

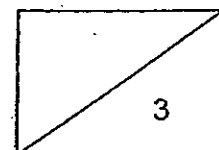
- (b) Mrs Tan kept the amount of water at the start of the experiment constant at 300 cm^3 . How did this make the experiment a fair test? (1m)



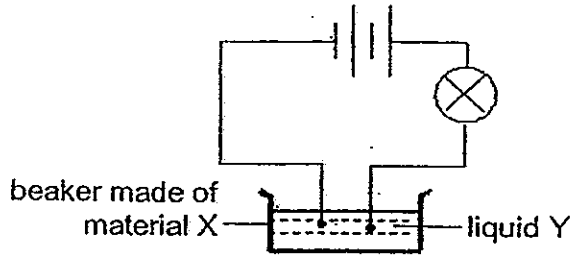
- 39 Brian conducted an experiment using two similar glass bottles, A and B, as shown in the diagram below. He poured boiling water into bottle A and iced water into bottle B. He sealed both bottles and left them on the table for a few minutes. Water droplets were found on the bottles.



- (a) In the diagram above, draw the water droplets to show where they could be found on the bottles. (1m)
- (b) Based on your answer in (a), give a reason why the water droplets appear on the areas you have indicated for bottle A. (2m)

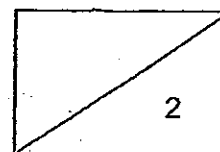


40. The diagram below shows an electrical circuit with both ends of the wire dipped into a beaker of liquid Y. The bulb lights up.

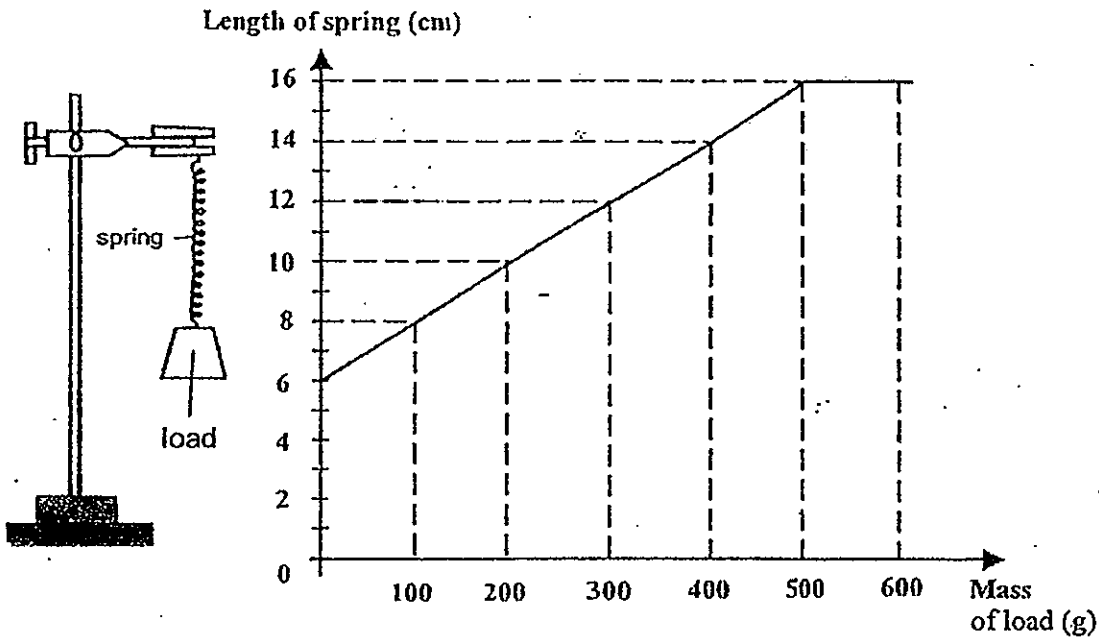


State whether material X and liquid Y must be conductors of electricity. Give a reason for each of your answers. (2m)

		Must it be a conductor of electricity? (Yes/ No)	Reason
(a)	Material X	<hr/>	<hr/> <hr/> <hr/>
(b)	Liquid Y	<hr/>	<hr/> <hr/> <hr/>



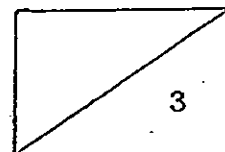
41. The graph below shows the relationship between the length of a spring and the mass of the load hung on it.



(a) What is the extension of the spring when a 300g load was hung on it? (1m)

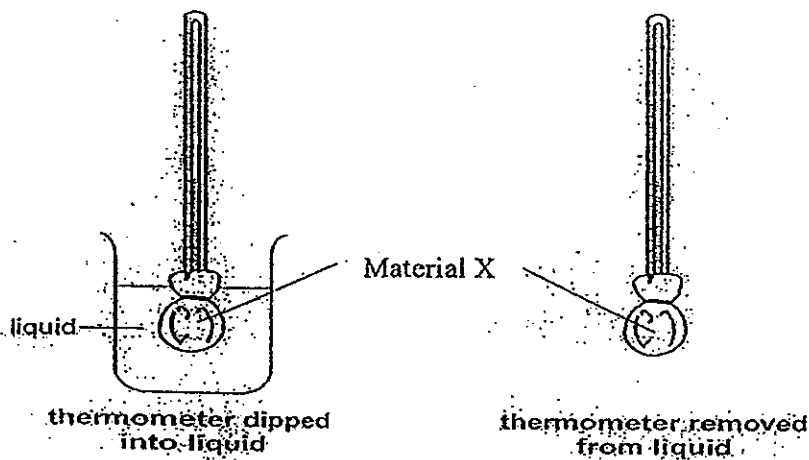
(b) What would be the length of the spring if you were to hang a 700g load on it? Why? (1m)

(c) Based on the graph, what is the relationship between the mass of the load and the length of the spring? (1m)



42 A group of pupils carried out an experiment with ~~four~~^{three} different liquids, A, B and C.

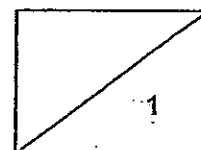
They wrapped material X around the bulbs of ~~four~~^{three} thermometers and secured it with rubber bands as shown in the diagram below. Each thermometer was then dipped into a different liquid and removed immediately.



The pupils recorded the reading on each thermometer every two minutes. Their results are shown in the table below.

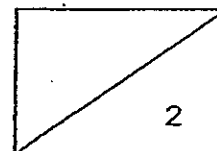
Time in minutes	Reading on the thermometer ($^{\circ}\text{C}$)		
	Liquid A	Liquid B	Liquid C
0	30	30	30
2	20	18	28
4	11	6	27
6	9	1	27
8	11	3	27
10	13	5	27
12	15	7	27

(a) Which one of the liquids, A, B or C, evaporated most rapidly? (1m)



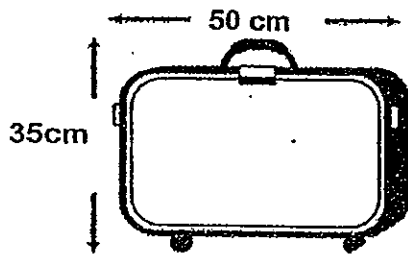
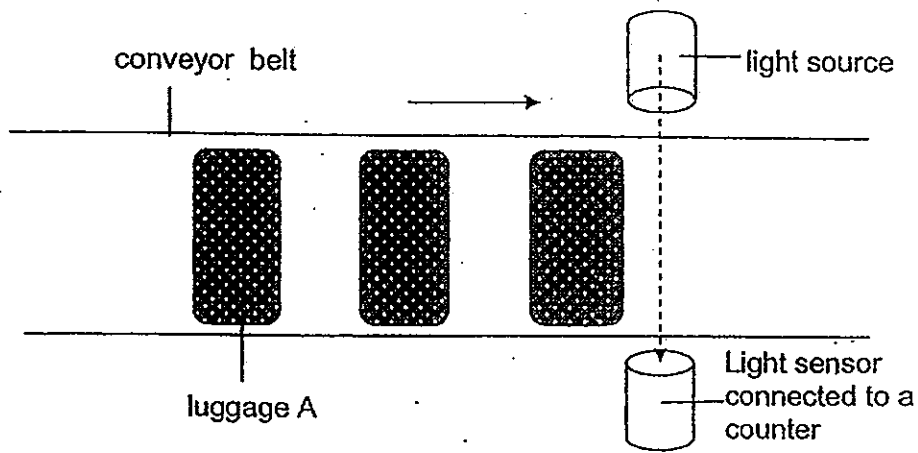
- (b) Describe the pattern observed on the temperature of liquid A and liquid B from the 8th minute onwards. (1m)

- (c) The pupils carried out another experiment with liquid A. This time they did not wrap the thermometer in material X. They just dipped the glass bulb into liquid A and remove immediately. Suggest how their second set of readings would be different. (1m)

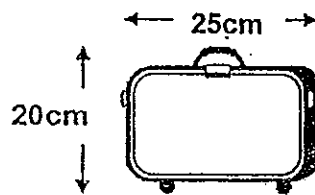


43 Mr Lim's factory uses a light sensor to help him count the number of luggage A on a conveyor belt as shown below.

Top view of conveyor belt

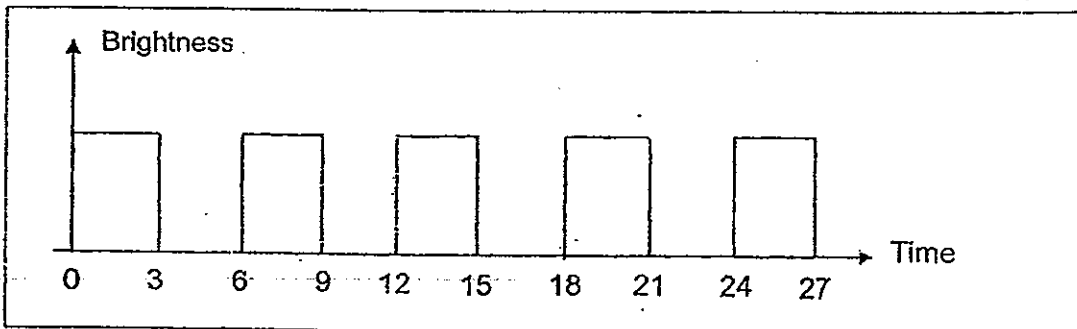


Dimensions of luggage A



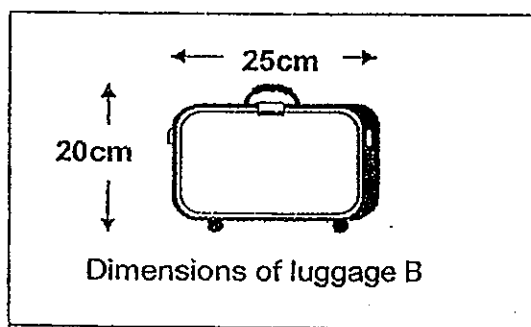
Dimensions of luggage B

The conveyor belt moves at a constant speed. When the luggage is between the light source and the sensor, it blocks out the light reaching the sensor. The data is recorded in the graph shown below.



- (a) Based on the graph, how many luggage A passed the sensor in 27 seconds? (1m)

- (b) The light source and the sensor are placed 30 cm above the belt. If Mr Lim replaces luggage A with luggage B, state whether the light sensor can continue to count the number of bags. Give a reason for your answer. (1m)

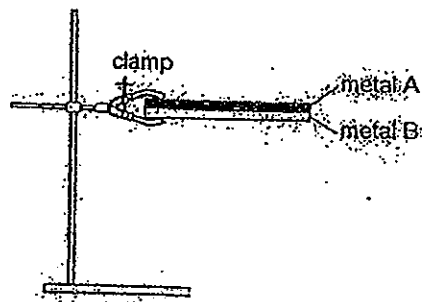


- (c) Without changing the speed of the conveyor belt, suggest a way for the light sensor to detect more than 8 luggage in the same time period of 27 seconds. (1m)

- 44 Ali heated four different metal strips, W; X, Y and Z, one metre long each. He measured the increase in length of each of the metal strip when the temperature has increased by 10°C and recorded his findings in the table below.

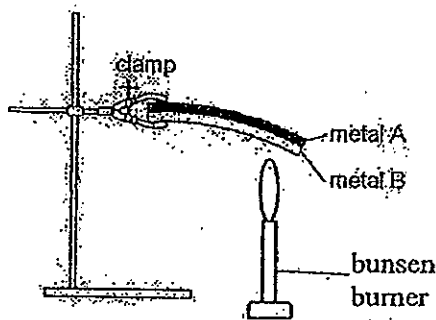
Metal strips	Increase in length (mm)
W	0.12
X	0.12
Y	0.25
Z	0.19

A bimetallic strip is made of two strips of metal fixed together. The two metals expand by different amounts when heated. This causes the strip to bend as shown below.



bimetallic strip before heating.

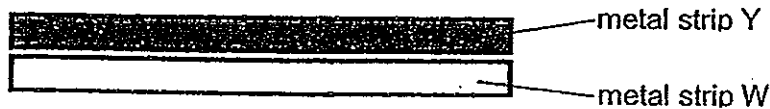
Diagram 1



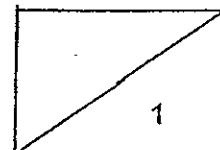
bimetallic strip during heating

Diagram 2

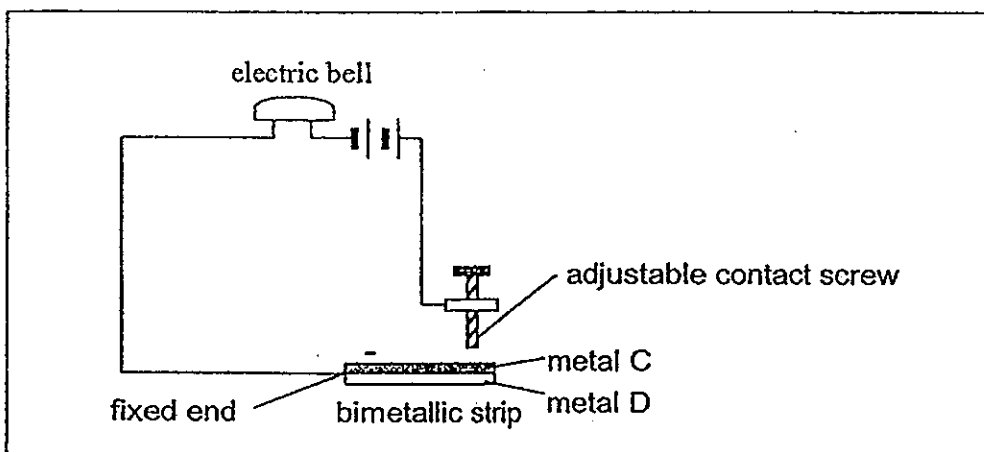
- (a) Ali made a bimetallic strip using metal strip Y and W as shown:



If he heats his bimetallic strip, explain if he is able to get the same results as shown in Diagram 2. (1m)



- (b) Ali used another bimetallic strip to make a simple fire alarm circuit as shown below.



He explained that when the temperature rises, the bimetallic strip bends towards the adjustable contact screw. The bimetallic strip should be made from the pair of metals which will make the strip bend the most.

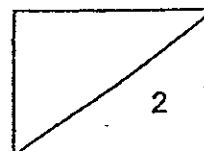
- (i) Based on the information above, which metal, W, X, Y or Z should Ali use for his bimetallic strip if he wants his fire alarm circuit to work effectively. (1m)

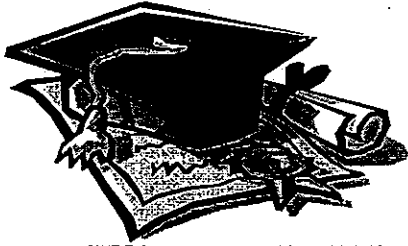
Bimetallic strip	Choice of metal
Metal C	
Metal D	

- (ii) Describe one change that Ali can make to the set-up so that the fire alarm is able to set-off at a lower temperature. (1m)

END OF PAPER

Please check your answer.





ANSWER SHEET

EXAM PAPER 2012

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

TERM : CA1

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

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

31)a)A, C b)70

32)a)A papaya flower has many ovules while an avocado flower has only seed.

b)The papaya flower has many seeds while avocado flower has only one seed. Since ovules develop into fruits, the papaya fruit has many seeds which develop from many ovules.

c)Plot Q. There are more seeds in Plot Q than Plot R. Overcrowding occurs when there is a lot of seeds growing in the plot. Thus, Plot Q will occur overcrowding of plants.

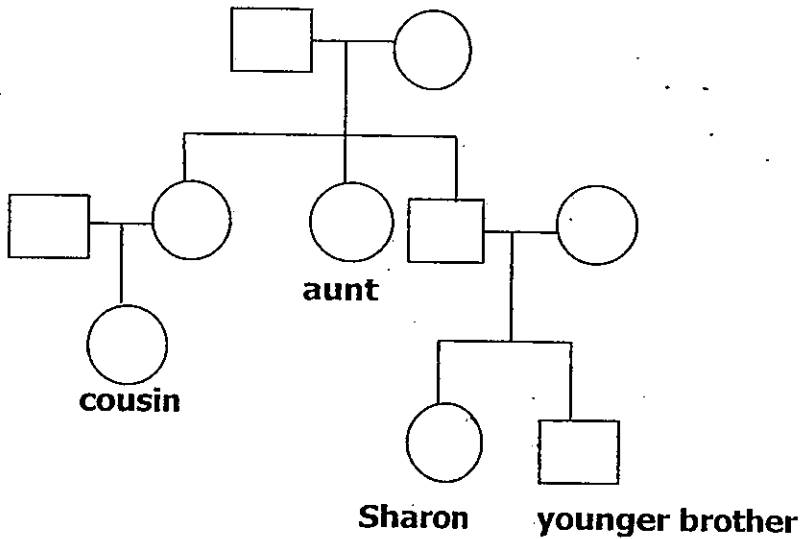
33)a)seed , young plant

**b)A: 4 stages of life cycle
:Mosquito**

**B: 3 stages of life cycle
: Guppy
: Cockroach
: Frog**

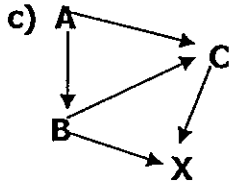
c)The butterfly helps to pollinate pollen grains enabling ovules of the flower to be fertilized. This helps in the reproduction of flowering plants.

34)



35)a) Population A. There must be more producers than consumers to sustain/balance the community, maintain the number of consumers.

b) Organism X feed on organism B and at first, before introduction of organism X, the population of organism B is already decreased. Thus, the population of organism B decreased after introduction of X.



36)a) It is short/small/not tall, therefore, it will not be able to get enough sunlight, need to compete for sunlight with taller trees, taller plants will block the sunlight.

b) The air plant gains support from its host plant to get more sunlight.

c) The air plant gets moisture in the air/water vapour in the air/dew evaporated water.

37)a)i) Size of box : small, small

ii) The more/less the amount of light a caterpillar is exposed to the shorter/longer time to develop into a butterfly.

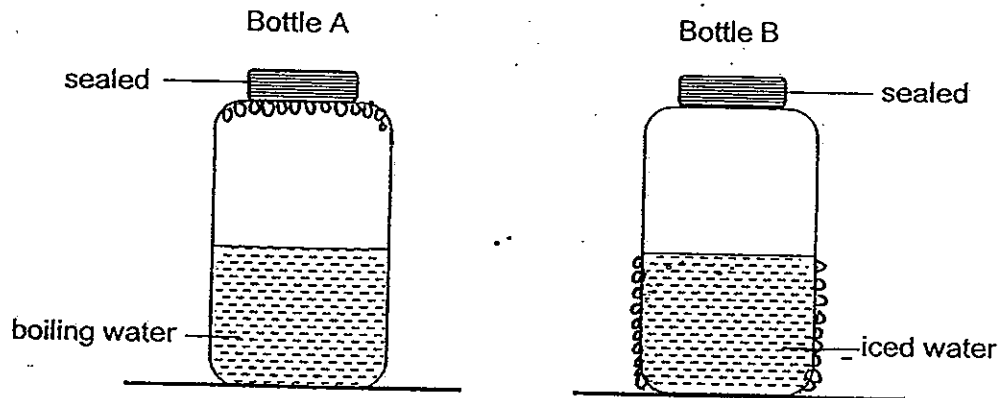
b)i) Camouflage/mimicry.

ii) It can camouflage the Dead Leaf. The predators will think it is a dry leaf and will not eat them.

38)a) Container D has the least amount of water as it has the greater surface area.

b) If there is any difference in the amount of water left at the end of the experiment is due to the exposed surface area of water which is the only variable changed.

39)a)



b) The hot water vapour from the boiling water rises up and touches the cooler inner surface of the seal, loses heat and condenses to form water droplets.

40)a) X: No.

The ends of the wire are not connected to Material X. Electricity does not need to flow through Material X to close the circuit.

b) Y: Yes.

The ends of the wire are touching the liquid Y, so the electricity must pass through as the bulb light up. Thus, Liquid Y must be a conductor of electricity.

41)a) 6cm.

b) 16cm. The spring had already reached its maximum length and amount be extended any more.

c) The greater the mass of the load, the greater the length of the spring but when a mass of more than 500g is hung on it, the length of the spring remains the same.

42)a) Liquid B.

b) Every 2 minutes increases, the temperature of liquid A and Liquid B increase by 2°C .

c) The temperature would not go as low as the original reading.

43)a) 4 luggage A passed the sensor in 27 seconds.

b) The light sensor cannot count the number of luggage B. Since luggage B is less than 30cm in height, it cannot block out the light from the light source.

c) He can reduce the distance between each luggage.

44)a) Ali would be able to achieve the same results as diagram 2. Given that the increase in length for material X/W. When heated, it will cause the bimetallic strip to expand and bend downwards.

b)i) C: X/W D: Y

ii) Ali should adjust the contact screw so that it is closer to the bimetallic strip.