新加坡福建会馆属下五校小六统一考试

道南 • 爱同 • 崇福 • 南侨 • 光华

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

2014

科学 SCIENCE

BOOKLET A

Date : 26 August 2014
Total Time for Booklets A and B : 1 h 45 min

INSTRUCTIONS TO CANDIDATES

- ✓ Write your school's name, name, register number and class.
- ✓ Do not open this booklet until you are told to do so
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

This booklet consist of 28 pages, excluding the cover page.

School : _____

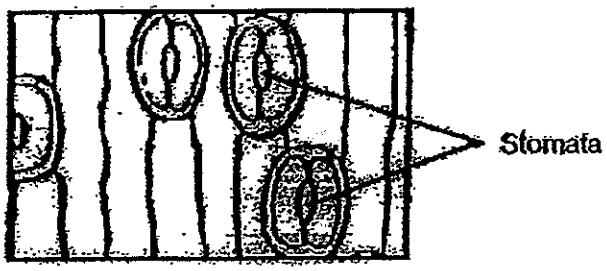
Name : _____ ( )

Class : _____

TOTAL	/ 60

Section A (30 x 2 marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1,2,3 or 4) and shade it in the OAS provided.

1. Stomata are tiny openings found mostly on the underside of a leaf. These openings allow for gaseous exchange and the movement of water vapour. It has been observed that the size of stomata of a plant changes throughout the day as shown in the table below.



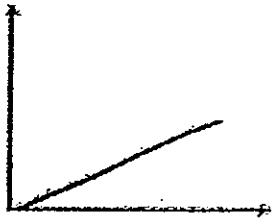
Time	Average size of stomata (units)
5 a.m.	1
11 a.m.	5
3 p.m.	5
8 p.m.	1

Which of the following most probably explains the reason for the change in stomata size?

1) The size of stomata increases to allow for more water to enter the plant for photosynthesis.
2) The size of stomata increases to allow for more carbon dioxide to enter the plant for photosynthesis.
3) The size of stomata decreases to allow for less carbon dioxide to enter for respiration.
4) The size of stomata decreases to allow for more oxygen to enter the plant for respiration.

2. Robert practised for his run and his heart rate was measured and plotted. Which of the following graphs best shows his heart rate right after he had stopped jogging and was resting?

1) Heart rate

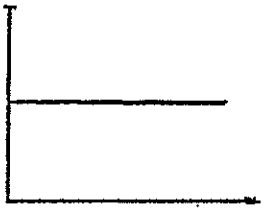


Time (min)

2) Heart rate

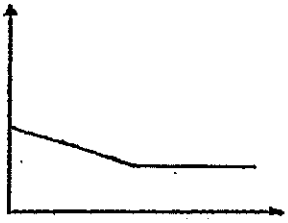
Time (min)

3) Heart rate



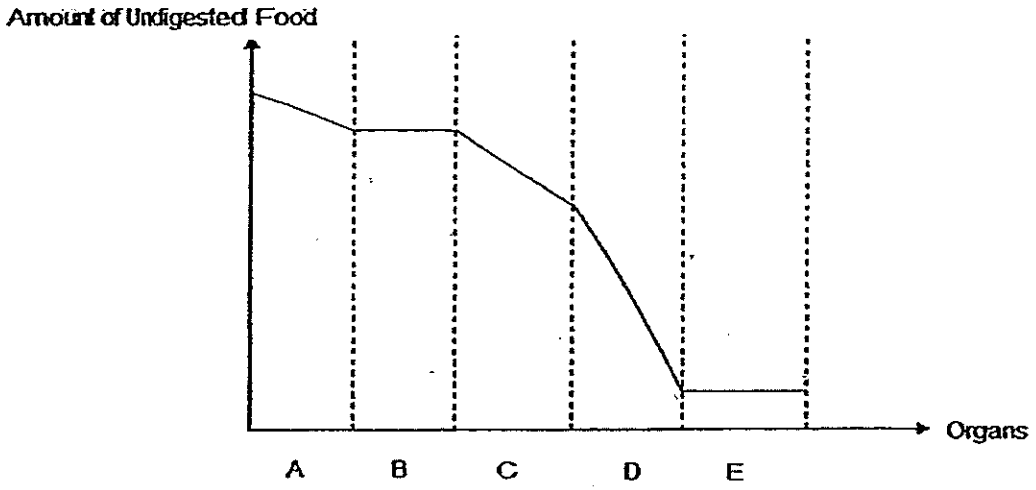
Time (min)

4) Heart rate



Time (min)

3. The graph below shows the amount of undigested food as it passes through the different organs in the human digestive system.

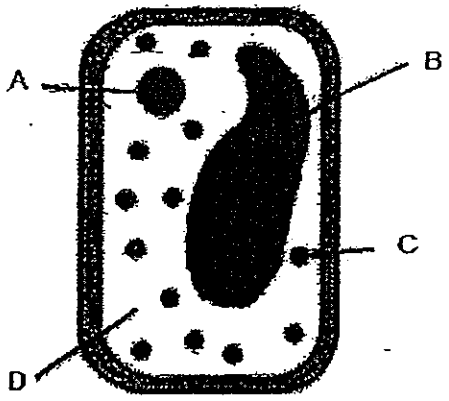


Which of the following sets of organs best represents A, C and D?

	A	C	D
1)	Small Intestine	Stomach	Mouth
2)	Mouth	Stomach	Small Intestine
3)	Gullet	Mouth	Stomach
4)	Mouth	Gullet	Small Intestine

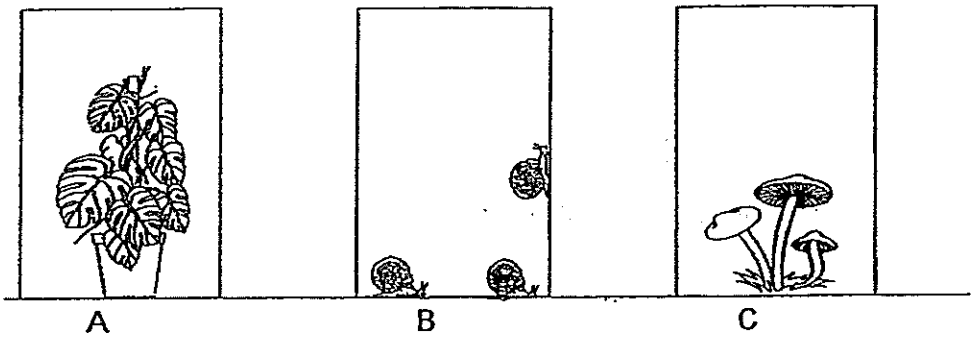
4. Biotechnology has allowed scientists to create pest-resistant plants by changing the genetic information contained in the plant cell. Joe's crops are always eaten by pests. He wants to make his crops pest-resistant but he does not want to use any pesticide.

Which part of the cell, A, B, C or D, could a scientist make changes to in order to make Joe's plants pest-resistant?



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

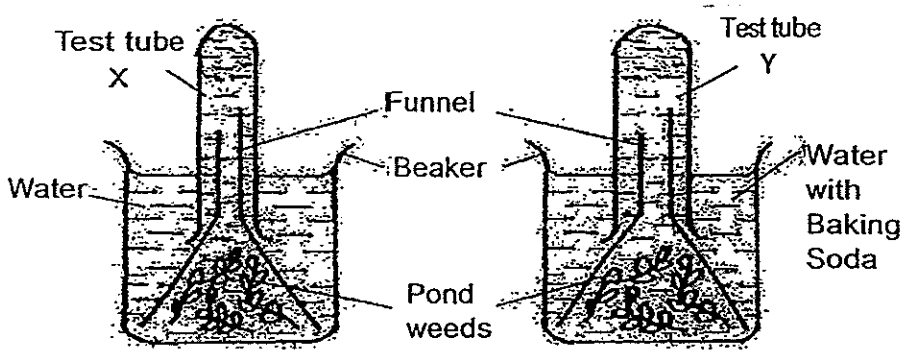
5. The diagram below shows three glass tanks, A, B and C, each containing different organisms and with the same amount of carbon dioxide initially. The three glass tanks were sealed and placed under the sun for 5 hours.



In which of the tank(s) would there be an increase in the amount of carbon dioxide after 5 hours?

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

6. Kenji read on the internet that when baking soda is added to water, the amount of carbon dioxide increases. He prepared 2 set ups as shown in the diagram below. He then placed both set ups near a window.



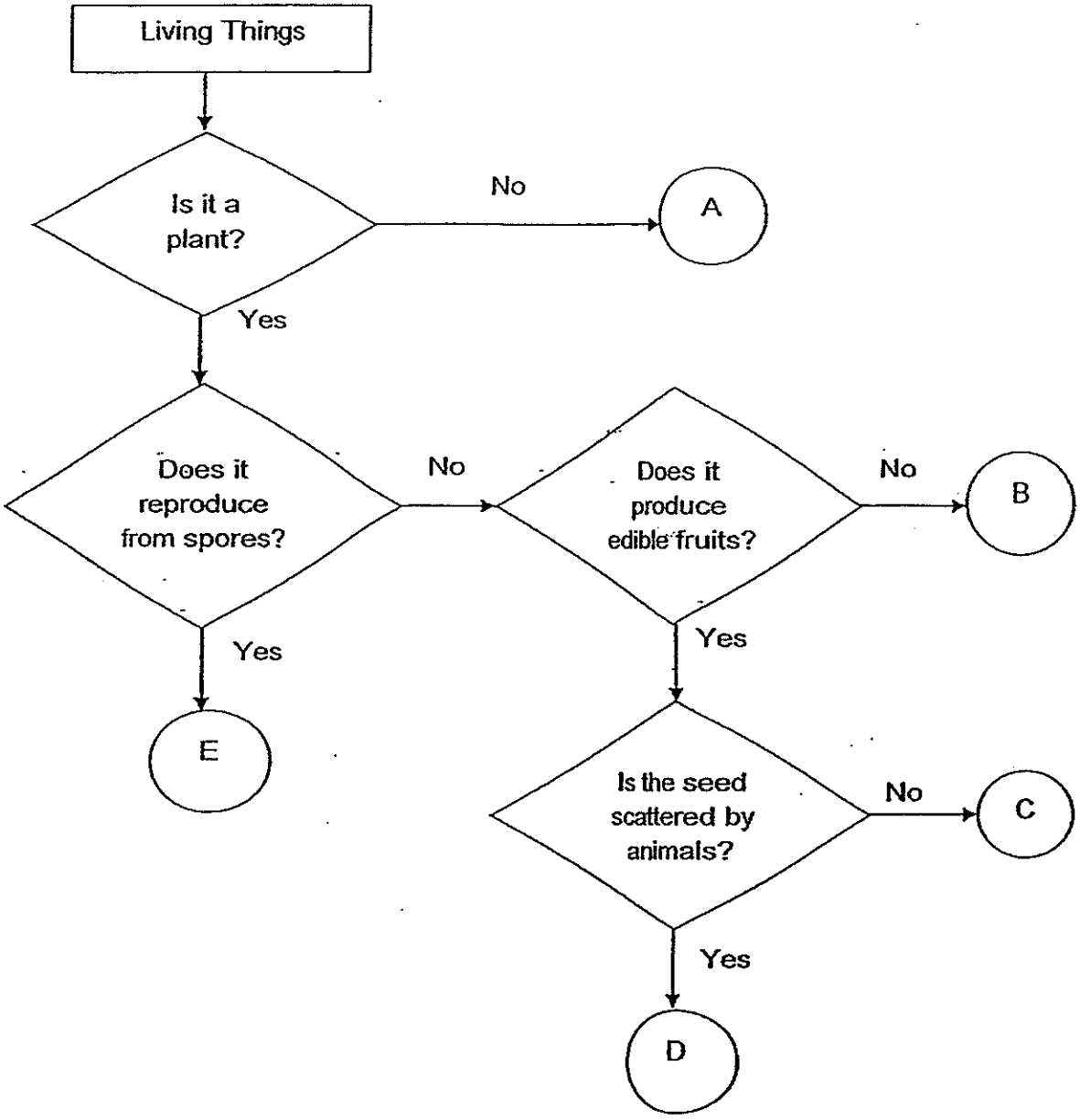
Below are possible observations over a period of 1 hour.

A. More bubbles in test tube X than Y.
B. More bubbles in test tube Y than X.
C. Water level in test tube X drops more than Y.
D. Water level in test tube Y drops more than X.

Which of the above observations would Kenji observe?

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

7. Study the following flow chart.



Based on the flow chart, which one of the following statements is correct?

1) A is a non-flowering plant and E is a fungi.
2) B is a flowering plant that has edible fruit.
3) C has inedible fruit and the seeds are dispersed by wind.
4) D reproduces from seeds and the seeds are scattered by animals.

8. Some fruits or seeds are dispersed by water. Jenny carried out an experiment to find out whether the type of water would affect how well fruits could float. She planned and carried out an investigation as shown in the table below.

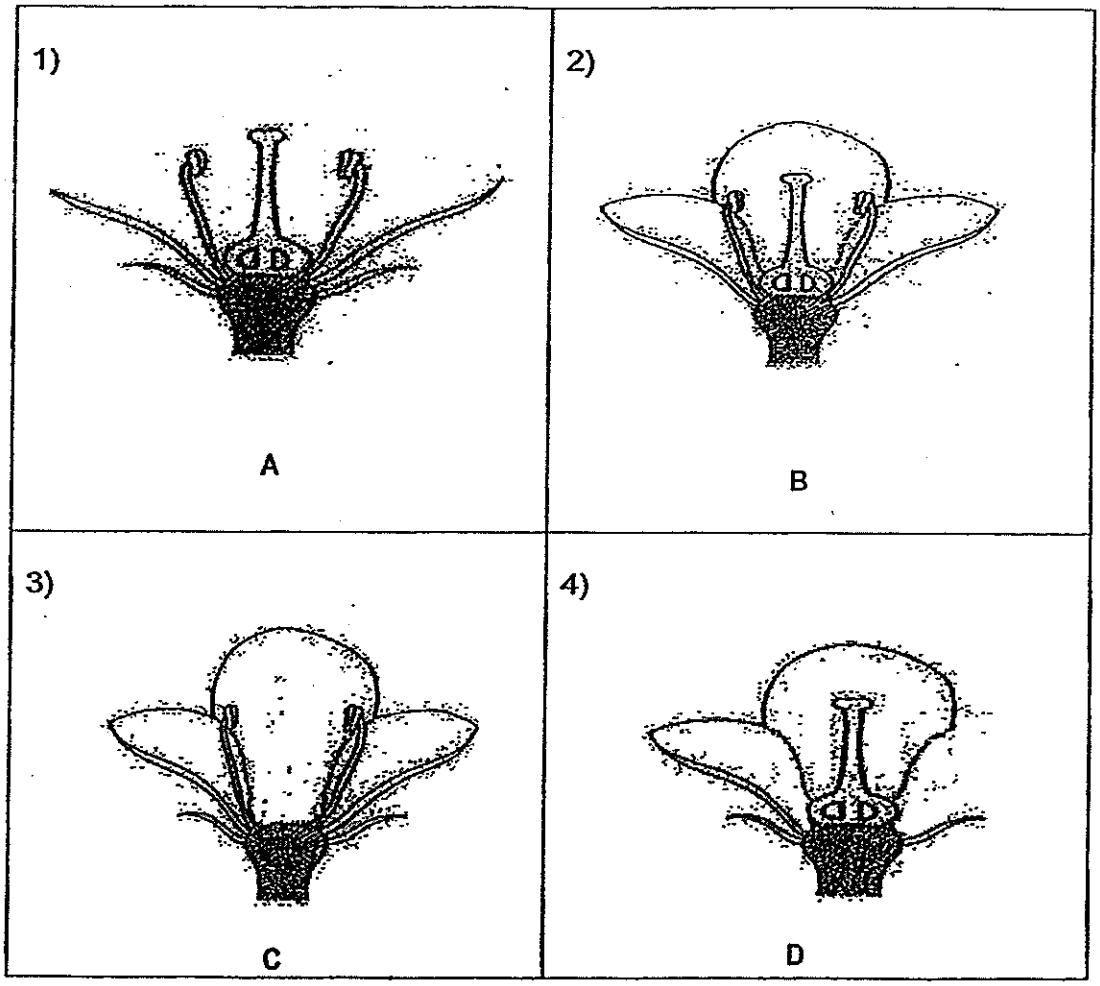
Step 1	Collected a lotus fruit and a mangrove fruit
Step 2	Filled a pail with 6 litres of tap water
Step 3	Filled another identical pail with 6 litres of salt water
Step 4	Placed the lotus fruit in the pail with tap water and the mangrove fruit in the pail with salt water

Jenny recorded her observation and presented her findings to her teacher who said that she had made a mistake in her investigation. What mistake did Jenny make?

1) She used two types of fruit.
2) She used two types of water.
3) She used the same type of pail.
4) She used the same amount of water.

9. The following flowers, A, B, C and D, have been fertilized. However, while trimming the bushes, the gardener accidentally trimmed off different parts of the flowers as shown in the diagram below.

Which one of the following flowers is **least** likely to develop into a fruit?



10. Manfred collected 5 identical rubber fruits, A, B, C, D and E. He put the rubber fruits under different temperatures to find out if temperature affects the time taken for the rubber fruit to split. The results were recorded in the table below.

Temperature (°C)	Time taken
19	A does not split
25	B splits after 1 day
31	C splits after 3 hours
36	D splits after 2 hours
41	E splits after 30 minutes

What can Manfred conclude from the results above?

1) The higher the temperature, the shorter the time taken for the rubber fruit to split.
2) The lower the temperature, the further the seeds are scattered from the parent plant.
3) The shorter the time taken for the rubber fruit to split, the higher the temperature.
4) The shorter the time taken for the rubber fruit to split, the further the seeds are scattered from the parent plant.

11. There are many activities which cause global warming and in turn, global warming has many negative impacts on the environment.

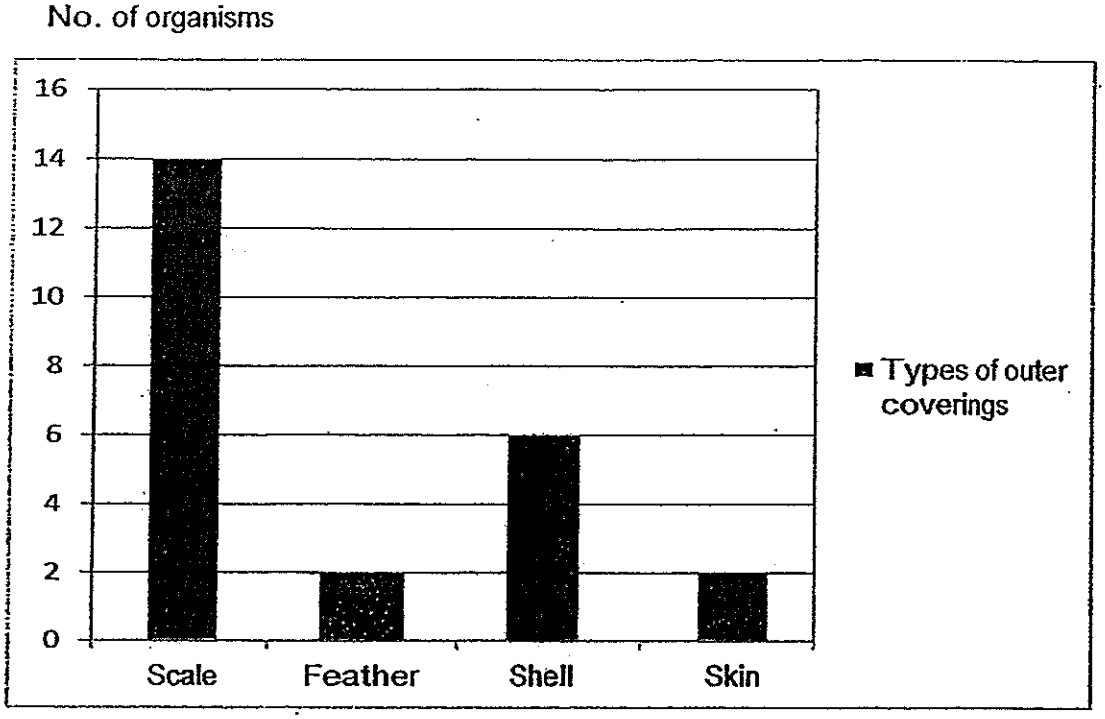
The statements below are examples of activities or negative impacts related to global warming.

A. Burning of fossil fuels
B. Melting of ice caps
C. Cutting down large number of trees
D. Long periods of dry season

Classify the statements with the correct headings.

	Activities	**Negative Impacts**
1)	A and B	C and D
2)	A and C	B and D
3)	B, C and D	A
4)	B and D	A and C

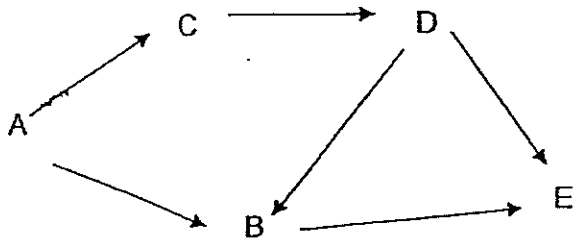
12. Mary observed the animals at a pond and plotted her observations in the graph below.



Which of the following statements is definitely true?

1) There are 4 populations of animals living in the pond.
2) All the organisms in the graph form a population.
3) They are found at different depths of the pond.
4) There are 24 organisms living in this pond community.

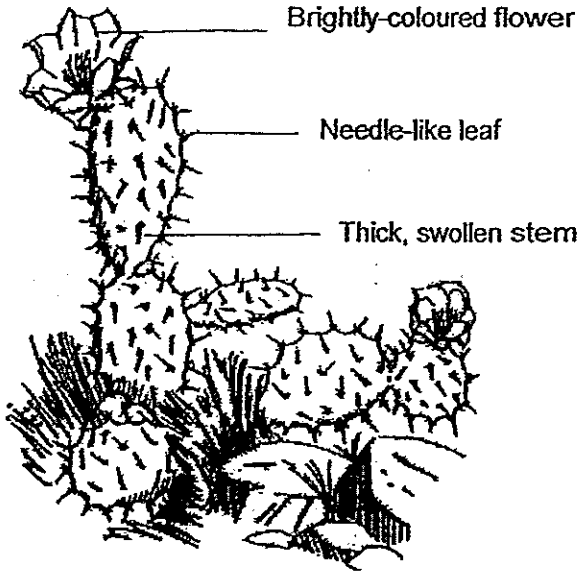
13. The food web below shows the relationship among 5 organisms, A, B, C, D and E.



Which of the following shows the correct classification of the organisms?

	Producer	Plant-Eater	Animal-Eater	Plant-and-Animal Eater
1)	D	C	A	B and E
2)	E	B and D	A	C
3)	A	C	D and E	B
4)	A	B and C	D	E

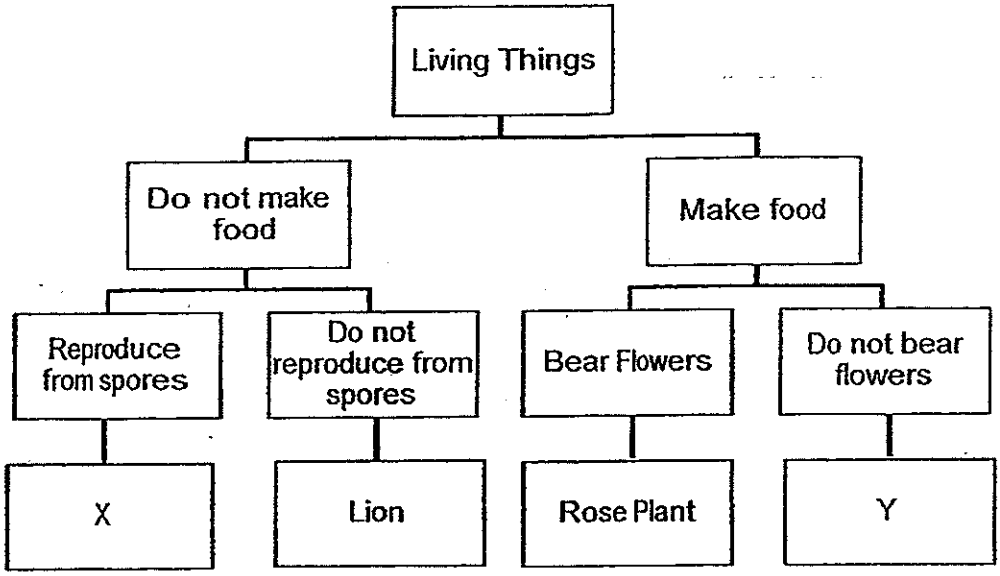
14. The diagram below shows a desert plant.



Which one of the following adaptations does **not** match its purpose?

	Adaptation	Purpose
1)	Needle-like leaves	To reduce the rate of water loss from the leaves
2)	Thick, swollen stems	To store water
3)	Leaves growing in different directions	To absorb more light energy for photosynthesis
4)	Brightly-coloured flowers	To attract insects for pollination

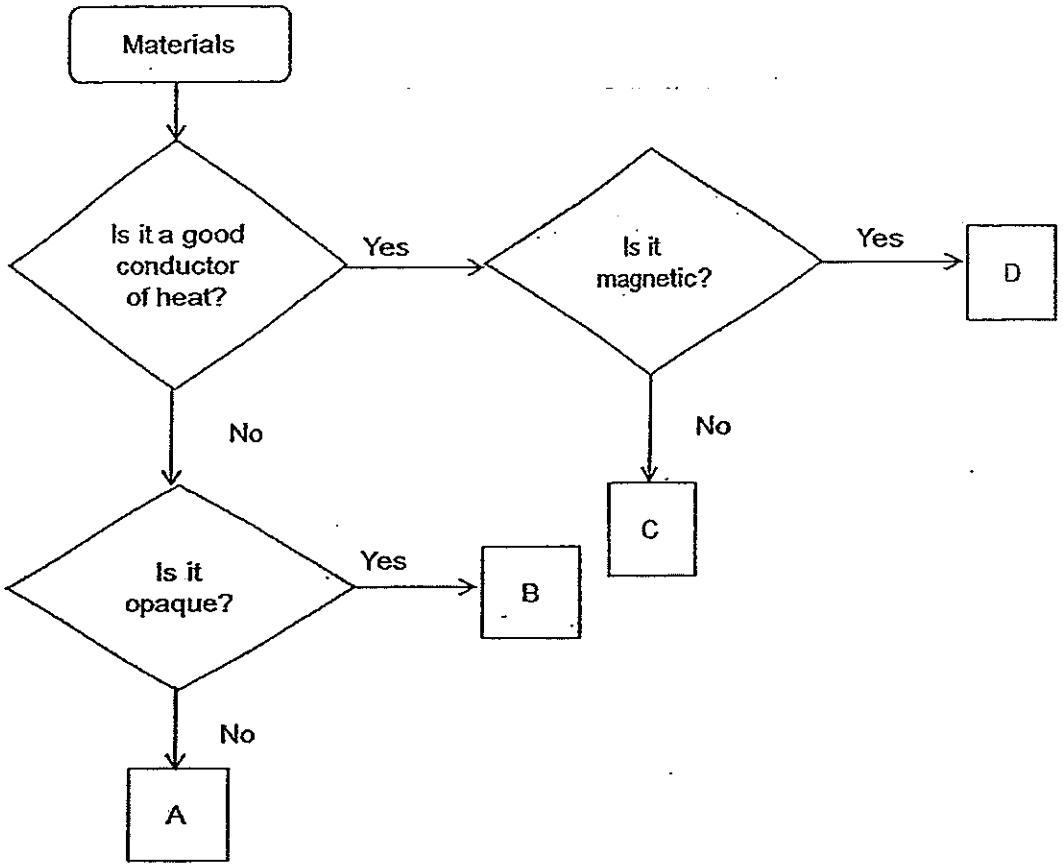
15. Study the classification chart shown below.



Which of the following best represent X and Y?

	X	Y
1)	Bacteria	Moss
2)	Mushroom	Ladder Fern
3)	Balsam	Bracket Fungus
4)	Bird's Nest Fern	Mango Plant

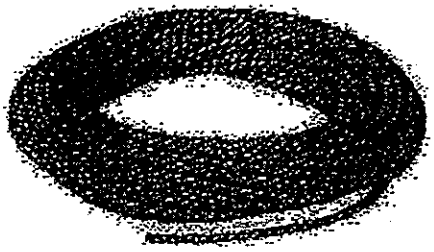
16. The flowchart below shows the characteristics of four materials, A, B, C and D.



Which of the following materials best represent A, B, C, and D respectively?

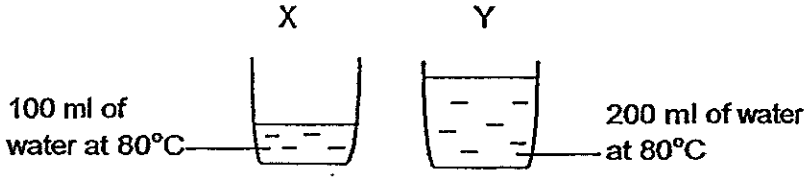
	A	B	C	D
1)	Clear Plastic	Frosted Glass	Iron	Aluminium
2)	Wood	Ceramic	Iron	Copper
3)	Clay	Cardboard	Copper	Steel
4)	Frosted Glass	Leather	Aluminium	Steel

17. Hui Lin is able to roll up 10 metres of rope shown below because the material used is _____.



1) hard
2) strong
3) light
4) flexible

18. During Science class, the teacher showed the pupils two identical beakers, X and Y, containing different amounts of water and got them to comment on the set ups.



Below are some of the comments the pupils made.

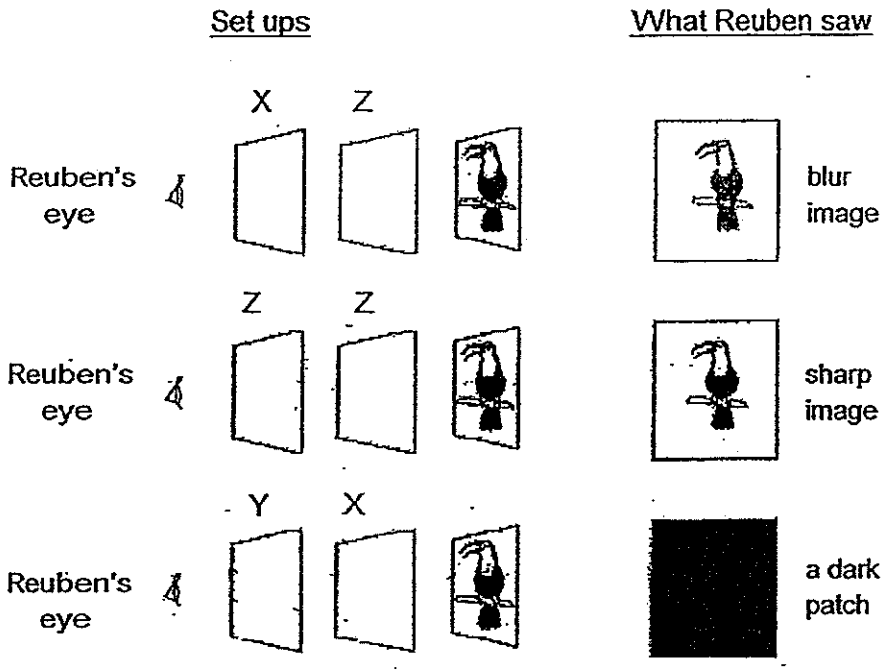
Annie : The water in both beakers has the same temperature.
Benjy : The water in both beakers has the same amount of heat energy.
Cathy : The water in Y has more heat energy than X.

Who had made the correct comments?

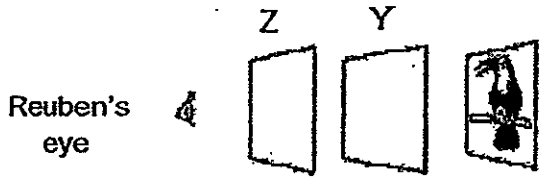
1) Benjy only
2) Cathy only
3) Annie and Benjy only
4) Annie and Cathy only

19. Reuben was given a ~~glass sheet~~ picture and 3 different materials, X, Y and Z. He placed 2 of the materials in front of the picture and looked through it. The image he saw is shown on the right.

The diagrams below show his set ups and observations.



Predict what Reuben would see in the set up below.



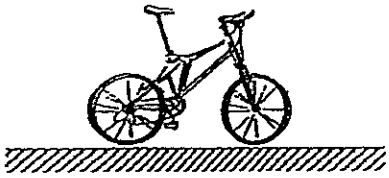
1) Blur image 

2) White patch 

3) Sharp image 

4) Dark patch 

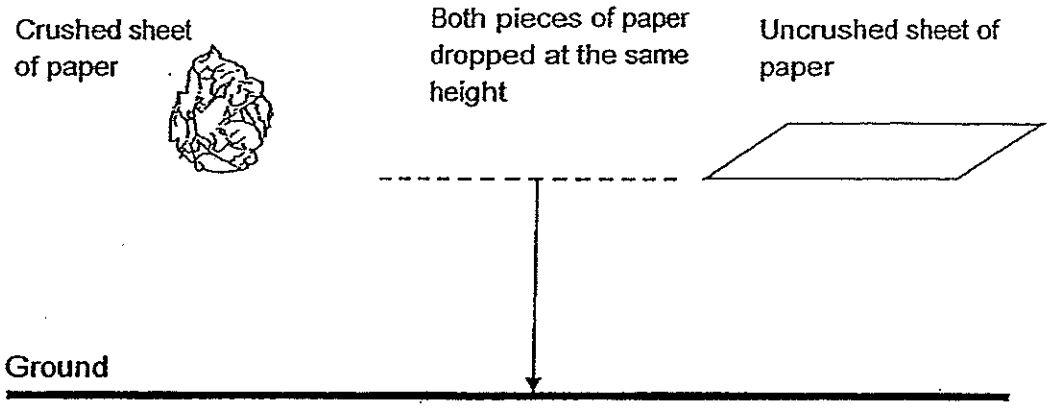
20. The diagrams below show four objects, A, B, C and D.

A.  A bicycle on the ground	B.  A hot air balloon moving upwards
C.  A plane flying in the air	D.  An apple falling down

On which object(s) is/are the force of gravity acting?

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

21. Aziz conducted an experiment by taking two similar pieces of paper and then dropping them from the same height. He conducted both experiments one after the other as shown in the diagram below. He then recorded his results in the table shown below.



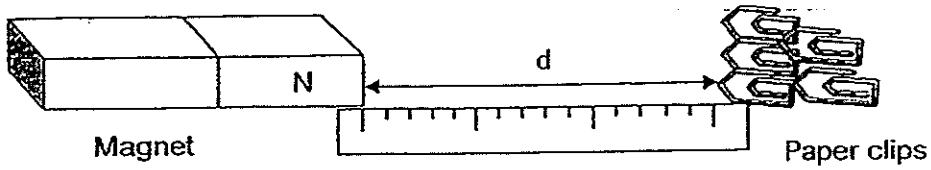
Paper type	Time taken to fall to the ground (s)			
	1st try	2nd try	3rd try	Average
Crushed sheet	4.9	4.8	5.0	4.9
Uncrushed sheet	7.1	6.9	7.0	7.0

Aziz noted that the crushed piece of paper landed faster on the ground than the uncrushed piece of paper.

Which of the following best explains why the crushed piece of paper took a shorter time to fall towards the ground?

1) It has a greater mass.
2) It experiences more gravitational force.
3) It experiences less upward force acting on it.
4) It has more gravitational potential energy.

22. Zhi Ning placed 4 magnets, W, X, Y and Z at various distances from some paper clips as shown in the diagram below.



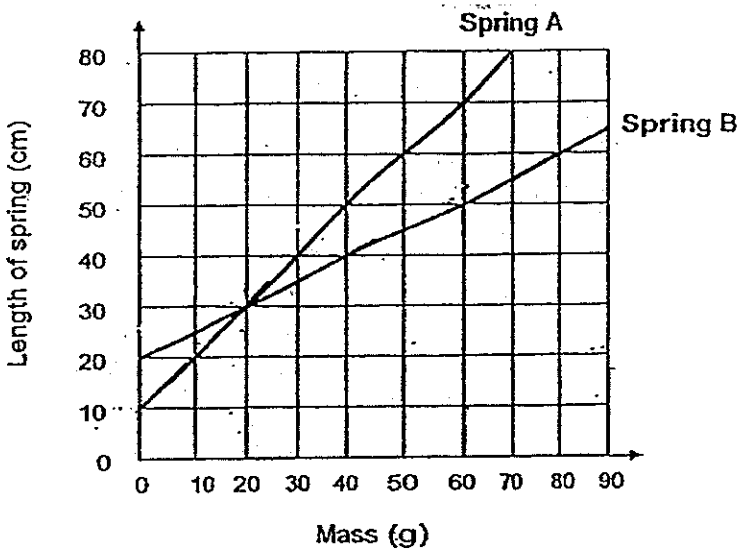
Then she recorded the number of paper clips each magnet attracted when placed at a distance, d, from the paper clips in the table below.

Magnet	d (cm)	Number of paper clips attracted by the magnet
W	4	5
X	6	7
Y	6	5
Z	8	7

Which of the following shows the correct order of the magnetic strength of the magnets from the weakest to the strongest?

	Weakest ←			→ Strongest
1)	W	X	Y	Z
2)	W	Y	X	Z
3)	W	Y	Z	X
4)	Y	W	X	Z

23. A group of students carried out an experiment to find out how different masses hung affects the length of the two springs, A and B. They recorded the results and plotted the graph as shown below.

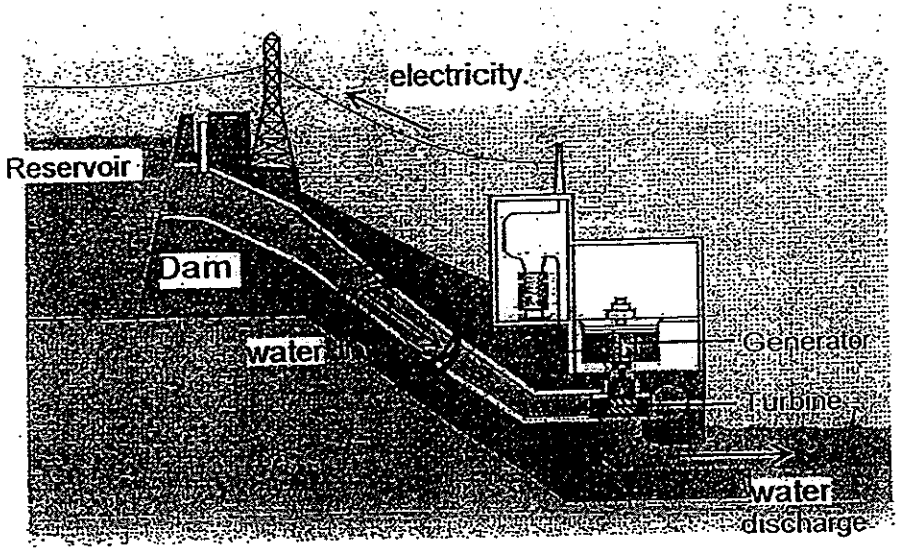


Based on the graphs above, which of the following statement(s) is/are true?

A. Spring A is more elastic than B.
B. Spring A is longer than B when no mass was hung on them.
C. Spring A extends the same length as B when a 20g mass was hung on each of the spring.

1) A only
2) C only
3) B and C only
4) A,B and C

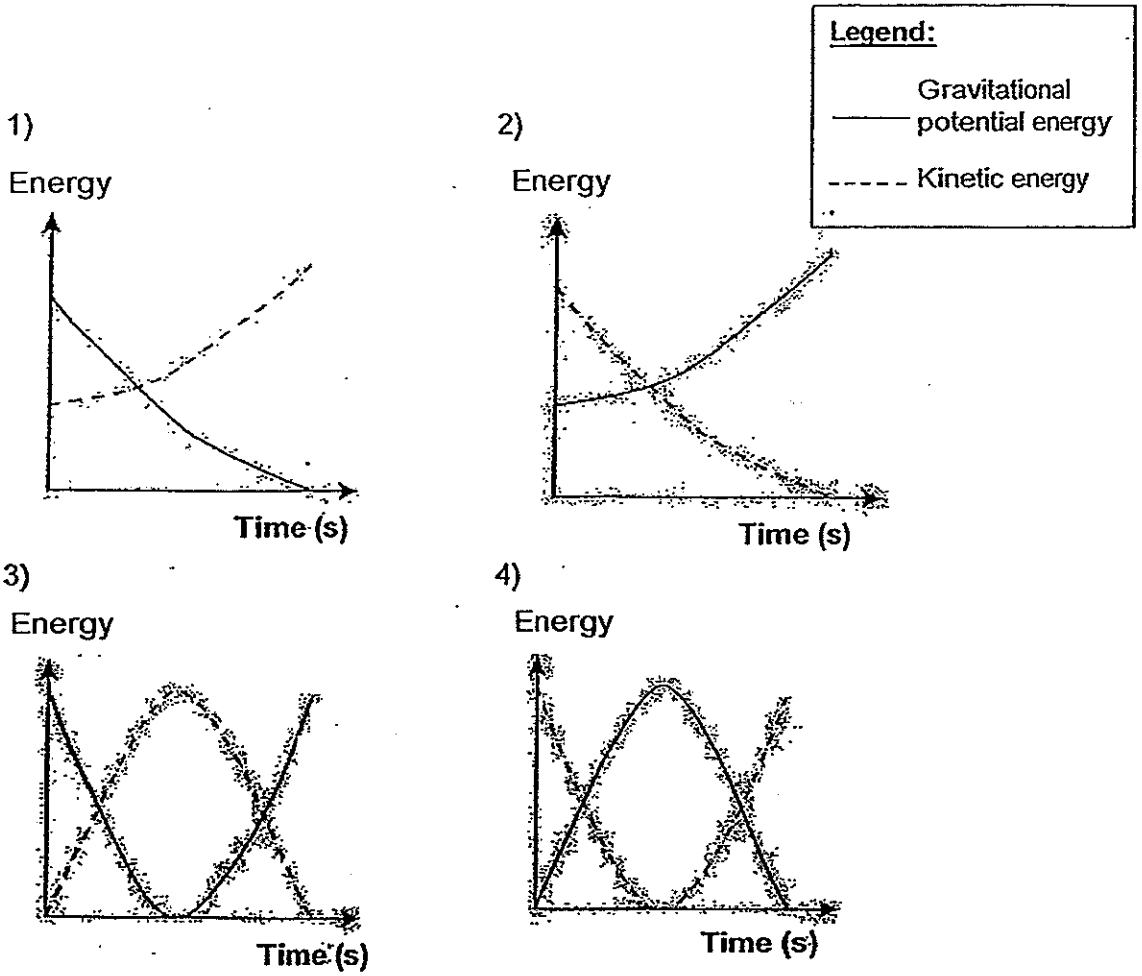
24. A hydroelectric power station makes use of water stored behind a dam to turn turbines to generate electricity.



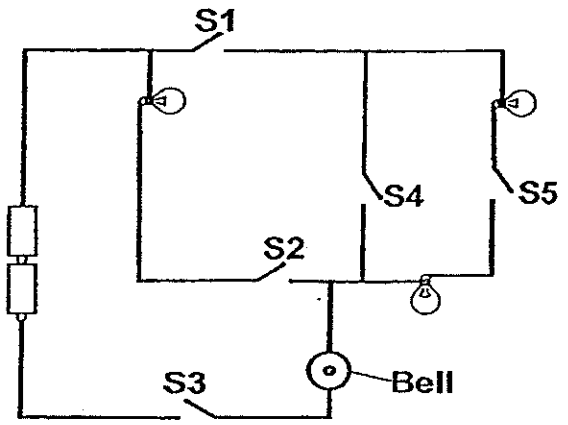
Which of the following shows the correct energy conversion taking place in a hydroelectric power station?

1) Kinetic energy → Chemical potential energy → Electrical energy
2) Chemical potential energy → Kinetic energy → Electrical energy
3) Gravitational potential energy → Kinetic energy → Electrical energy
4) Kinetic energy → Gravitational potential energy → Electrical energy

25. Sharon dropped a basketball from a height of one metre. The basketball bounced up and she caught it. Which one of the following graphs best represents the change in gravitational potential energy and kinetic energy of the basketball?



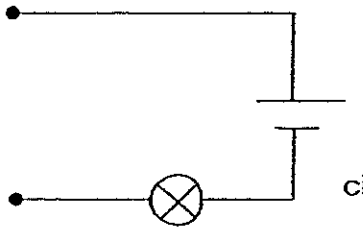
26. Study the circuit diagram below.



Which of the following will result in the bell ringing and two bulbs lighting up only?

	S1	S2	S3	S4	S5
1)	Closed	Closed	Closed	Open	Closed
2)	Closed	Open	Closed	Open	Closed
3)	Closed	Open	Open	Closed	Open
4)	Open	Closed	Closed	Open	Open

27. Four metal clips A, B, C and D were fixed on a circuit card with some wires connected to some of the metal clips. The circuit card was then tested with a circuit tester as shown below.

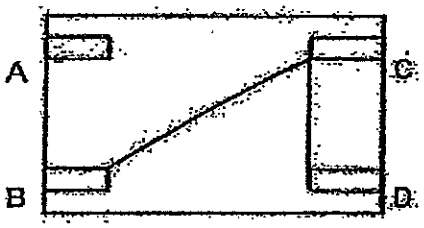


The table below shows the results of testing the circuit card with a circuit tester.

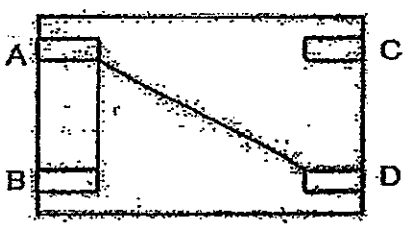
Metal clips tested	Results of circuit tester
A and B	bulb lights up
A and C	bulb lights up
B and C	bulb lights up
B and D	bulb does not light up
C and D	bulb does not light up

Which one of the following is the correct circuit card that will give the results shown above?

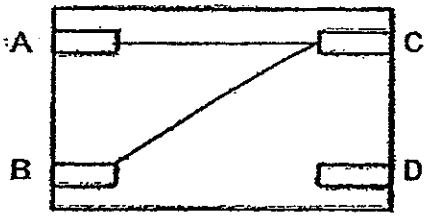
1)



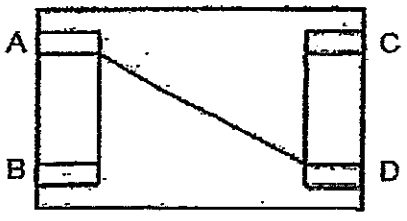
2)



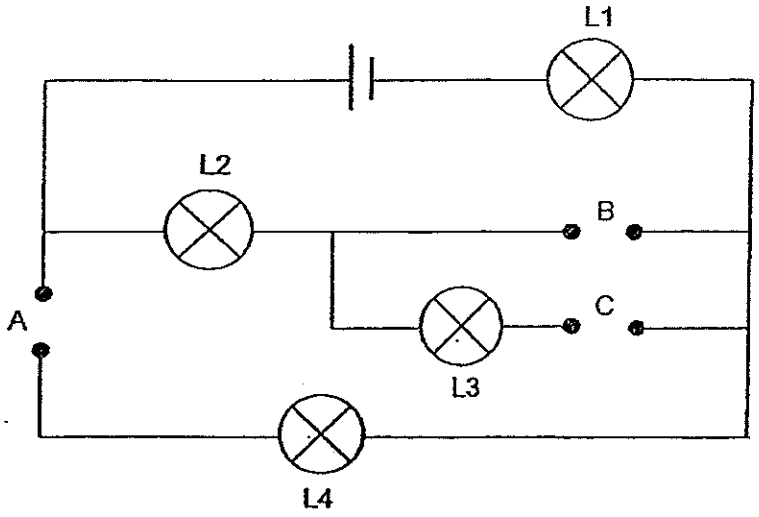
3)



4)



28. David had three rods, X, Y and Z, made of different materials. He placed them at various positions, A, B and C, in the circuit shown below.



The results of the experiment are shown in the table below. A tick (√) was placed in the table below when any of the bulbs, L1, L2, L3 and L4, lit up.

Positions where rods were placed			Bulbs			
A	B	C	L1	L2	L3	L4
Rod X	Rod Y	Rod Z	√	√	√	√
Rod Y	Rod Z	Rod X	√	√	√	

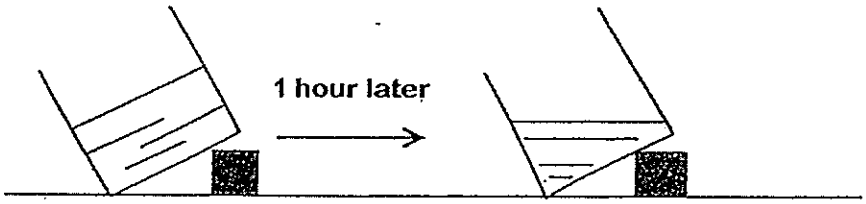
Based on the above results, which one of the following materials are conductors of electricity?

1) Z only
2) X and Y only
3) X and Z only
4) X, Y and Z

29. Substance A has a melting point of 185 °C and a boiling point of 340 °C. Which of the following shows the correct states of substance A at different temperatures?

	15 °C	150 °C	260 °C	350 °C
1)	Solid	Liquid	Gas	Gas
2)	Solid	Solid	Liquid	Gas
3)	Solid	Solid	Solid	Liquid
4)	Solid	Liquid	Liquid	Liquid

30. A beaker of substance X was tilted at an angle as shown the diagram below. The beaker was left in the open for 1 hour. The diagram below shows what happened to substance X after an hour.



Which of the following correctly identifies what has happened to the substance in the beaker?

	Process	Heat Transfer
1)	Freezing	Heat Gain
2)	Freezing	Heat Loss
3)	Melting	Heat Gain
4)	Melting	Heat Loss

— End of Booklet A —

新加坡福建会馆属下五校小六统一考试

道南 • 爱同 • 崇福 • 南侨 • 光华

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

2014

科学 SCIENCE

BOOKLET B

Date : 26 August 2014
Total Time for Booklets A and B : 1 h 45 min

INSTRUCTIONS TO CANDIDATES

- ✓ Write your school's name, name, register number and class.
- ✓ Do not open this booklet until you are told to do so
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

This booklet consist of 16 pages, excluding the cover page.

School : _____

Name : _____ ( )

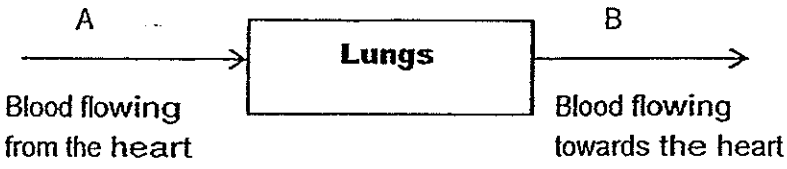
Class : _____

TOTAL	/ 40

Section B [40 marks]

Write your answers to Questions 31 to 44 in the spaces provided.

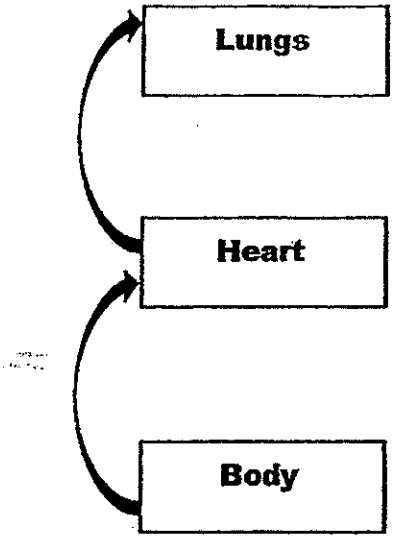
Q31. The diagram below represents part of the human circulatory system.



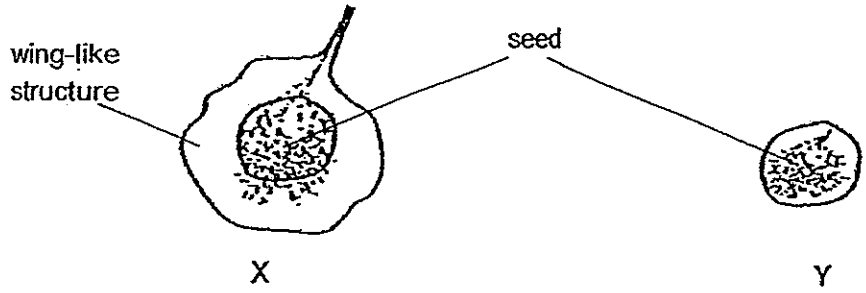
a) In the boxes below, write 'high' or 'low' to compare the amount of oxygen at points A and B of the blood vessel. [1m]

A	B

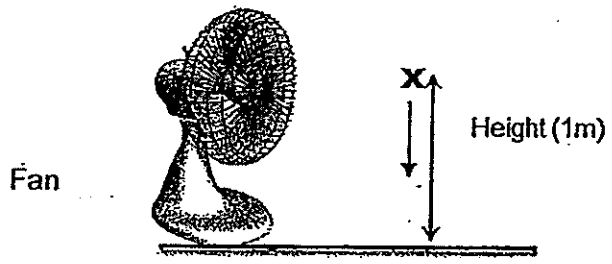
b) Draw two more arrows in the diagram below to show how blood travels in the human circulatory system. Two arrows have been drawn for you. [1m]



Q32. Thomas obtained two Angsana fruits, X and Y, from the same tree. He cut away the wing-like structure of Y as shown in the diagram below.



He dropped fruit X from a height of 1m in front of a fan and recorded the distance travelled. Next he repeated the same procedure for fruit Y.



a) What was the aim of his experiment? [1m]

_____

_____

b) He then recorded the distance travelled by X and Y in the table below.

Fruit	Distance travelled
X	3.2 m
Y	1.8 m

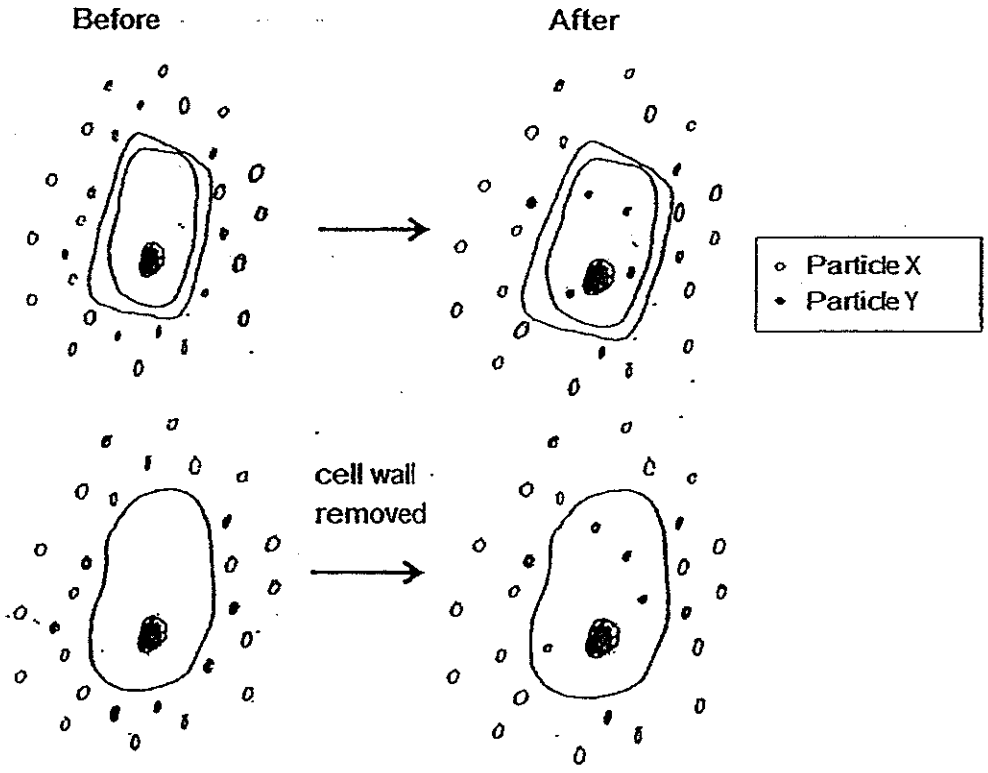
Based on the results above, why would fruits that are similar to fruit Y more likely to face overcrowding? [1m]

_____

_____

Q33. Mary carried out an experiment as shown below. She soaked a plant cell in a solution containing particles X and Y for 5 minutes. She then removed the cell wall of an identical plant cell and repeated the experiment.

The diagram below shows the plant cell before and after the experiment.



a) Which part of the cell allows particles Y to enter the cell? [1m]

_____

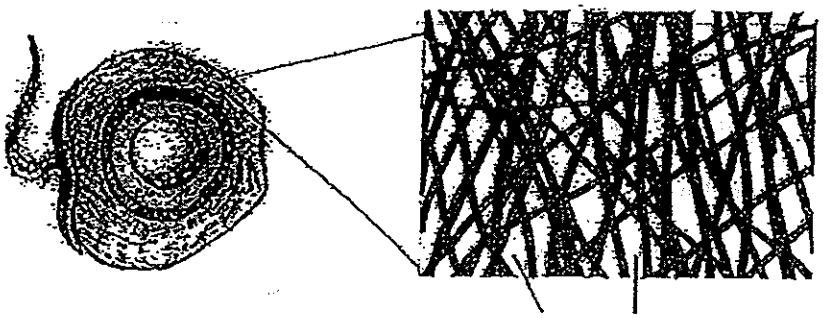
b) Mary accidentally poured in too much water into her container that has both animal and plant cells. She observed under the microscope that the animal cells have all burst while the plant cells were noticeably swollen.

Considering the different structures that the animal cell has from the plant cell, explain Mary's observation clearly. [2m]

_____

_____

Q34. The diagram below shows a cross-section of a coconut fruit.



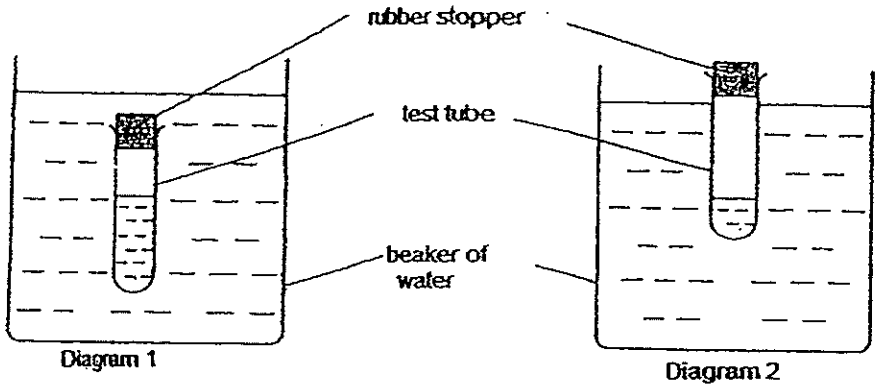
Many spaces in between the fibre of the coconut husk

a) Based on the diagram above, explain how the fibrous husk of the coconut fruit helps it to float on water. [1m]

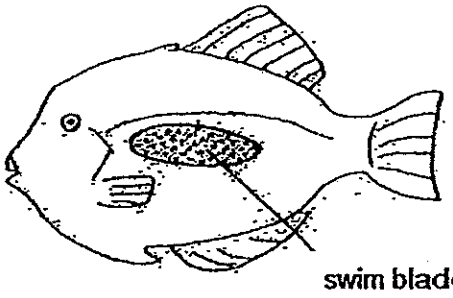
_____

_____

b) Sandra filled a test tube with some water. She placed the test tube in a beaker of water. The test tube floated as shown below in Diagram 1. When she removed some water and placed it in the beaker of water, the test tube moved upwards as shown in diagram 2.



Fish have swim bladders which is an internal organ to help them control their depth in water by the amount of air stored inside it.



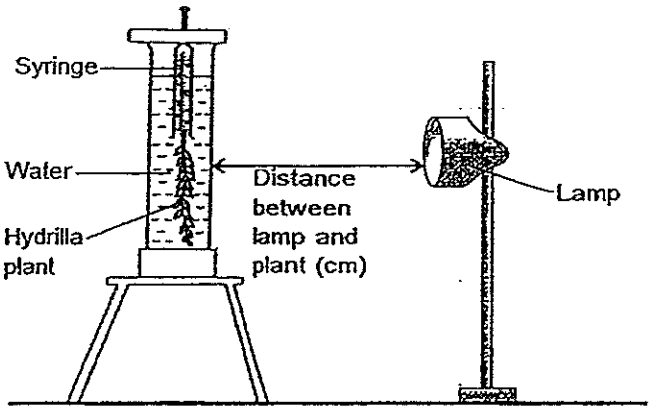
Based on Sandra's experiment, should the amount of air in the swim bladder increase, decrease or remain the same if the fish would like to rise up the water?

[1m]

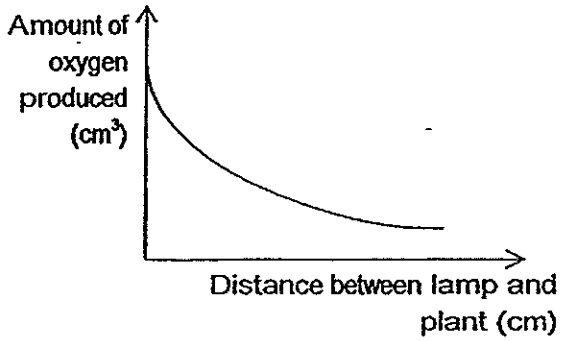
_____

_____

Q35. Jason conducted an experiment in a dark room using the set up below. He put a desk lamp at different distances from a hydrilla plant placed in a narrow jar.



The amount of oxygen produced was measured and the result is shown in the graph below.



a) Why was the experiment carried out in the dark room? [1m]

_____

_____

b) Based on the results, what is the effect of moving the lamp further away from the lamp and the plants on the :

i. amount of oxygen produced [1m]

_____

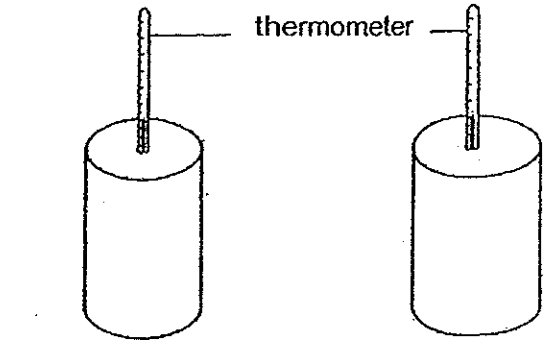
_____

ii. rate of photosynthesis [1m]

_____

_____

Q36. Melissa conducted an experiment using two identical air-tight containers, A and B, as shown below. Container A was placed in the open field while container B was placed in the cupboard. At first, both thermometers showed the same reading.



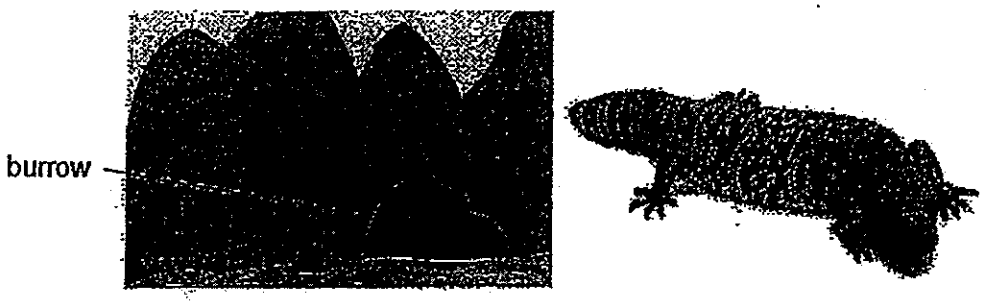
a) After a few hours, she observed that the temperature in container A was higher than that in container B. What can Melissa conclude from her experiment?

[1m]

_____

_____

b) The diagram below shows Lizard X that lives in the hot desert.



Give a possible reason why Lizard X prefers to stay in burrows during the day.

[1m]

_____

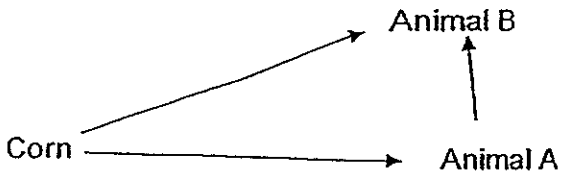
_____

c) Lizard X is a predator which feeds on a variety of food, including dead animals. Explain how this helps to increase their chances of survival. [1m]

_____

_____

Q37. The food web below shows the food relationship among three organisms in the field.



The farmers believed that animal B is eating away their corn plants. As a result, they began killing animal B, hoping that the number of corn plants would increase. However, the number of corn plants dropped instead of increasing.

a) Why did the number of corn plants dropped instead of increasing? Explain your answer. [1m]

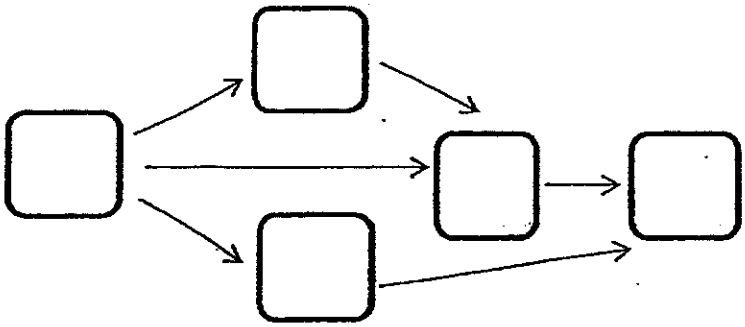
_____

_____

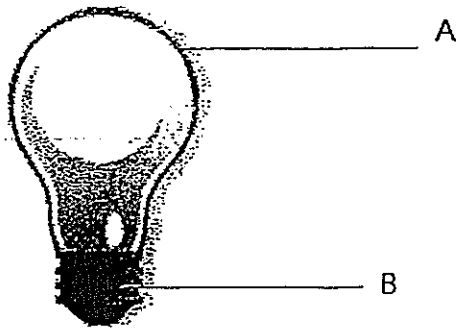
The statements below show the food relationship among 5 organisms, V, W, X, Y and Z.

V, X, and Y feed on W.
X and Y are eaten by Z.
W traps energy from the sun to make food.

b) Based on the statements above, complete the food web below to show the relationship among the organisms, V, W, X, Y and Z. [2m]



Q38. The diagram below shows a bulb.



a) Name the materials used to make parts A and B indicated in the diagram above. [1m]

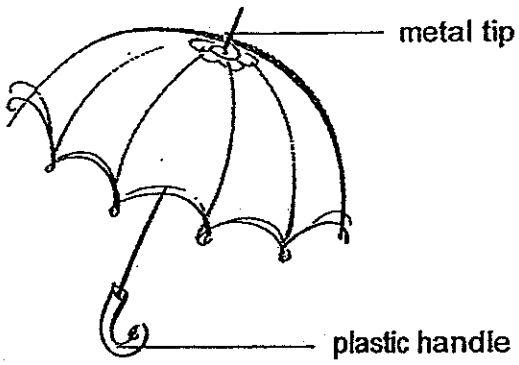
A: _____ B: _____

b) What property must part A have in order for it to light up the room? [1m]

_____

_____

c) Susan bought an umbrella with a metal tip and plastic handle.

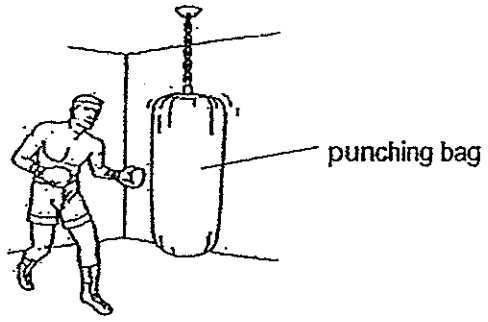


How does a plastic handle keep Susan safe if there is lightning? [1m]

_____

_____

Q39. A punching bag is a sturdy bag designed to be repeatedly punched.



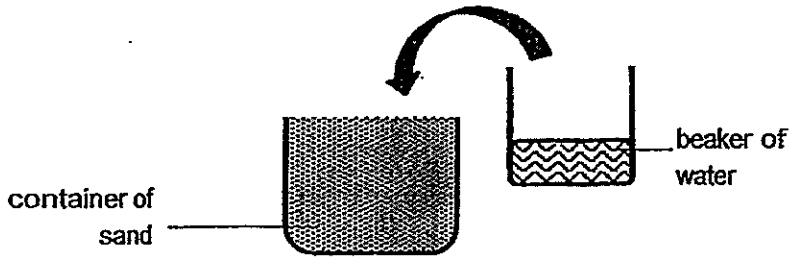
a) The table below shows the properties of three materials, X, Y and Z.

Property	Material X	Material Y	Material Z
Strong	✓		✓
Hard		✓	
Flexible	✓	✓	
Ability to float			✓

Which material, X, Y or Z, is the most suitable for making the punching bag?

_____ [1m]

b) A container is filled to the brim with sand as shown below. However, some water can be poured into the container without overflowing.



Why is water able to be added to the container of sand although it is filled to the brim? [1m]

_____

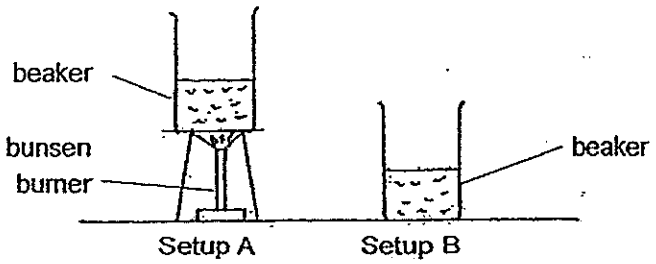
_____

c) A punching bag is usually filled with sand so that the shape can change slightly to absorb the impact of the punches. Explain why the sand bag is able to change its shape slightly although it is filled with sand which is a solid. [1m]

_____

_____

Q40. Jack set up an experiment as shown in the diagram below using identical beakers and the same amount of water. He started the experiment at room temperature and carried out the experiment at the same location.



He measured the time taken to completely dry up the water in the beakers and recorded his results in the table below.

Set Up	Time Taken
A	15 minutes
B	5 days

a) Identify the main process that occurred in : [1m]

i). Set up A : _____

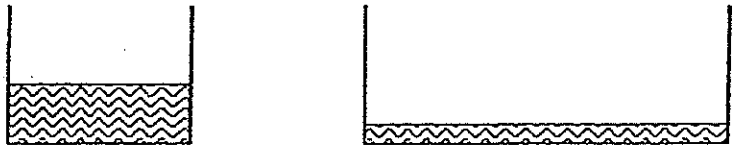
ii) Set up B : _____

b) Explain clearly why the water in set up A took a shorter time to completely dry up as compared to set up B. [1m]

_____

_____

c) The diagram below shows two containers, X and Y. Equal amount of water was poured into each container. The containers were left near the window.



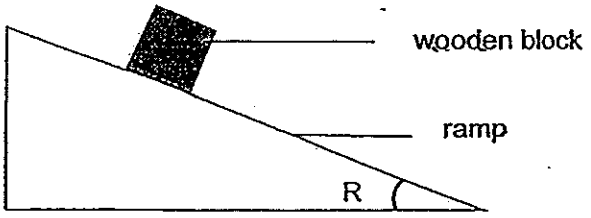
X Y

Which container of water, X or Y, would take a shorter time to completely dry up? Explain your answer. [1m]

_____

_____

Q41. Sundram placed a wooden block on a plastic ramp as shown below.



He observed that the wooden block did not slide down the ramp when angle R was 10°. Subsequently, he increased the steepness of the ramp by increasing angle R gradually until the block started to slide. He recorded angle R when this happened. Sundram repeated the experiment using ramps made of two other materials. His results are shown below.

Type of material	Angle R (degrees)
plastic	20
wood	30
rubber	40

a) In the diagram above, draw an arrow and label it "gravity" to show the direction gravity is acting on the wooden block. Draw another arrow to show the direction friction is acting on the block and label it "friction". [2m]

b) Why was angle R greater for the wooden surface as compared to the plastic surface? [1m]

_____

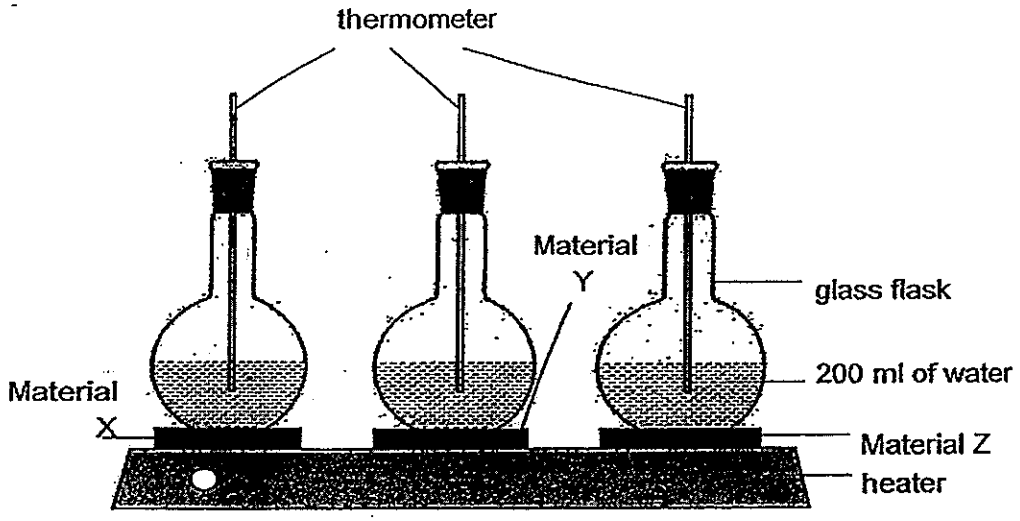
_____

c) Which material, rubber. wood or plastic, is most suitable for making a bathroom mat? Explain your answer. [1m]

_____

_____

Q42. Siti heated 200 ml of water, initially at room temperature, in identical flasks on materials X, Y and Z on the heater. The three materials were of the same size. She turned on the heater and recorded the time taken for the water in the flasks to start boiling as shown in the table below.

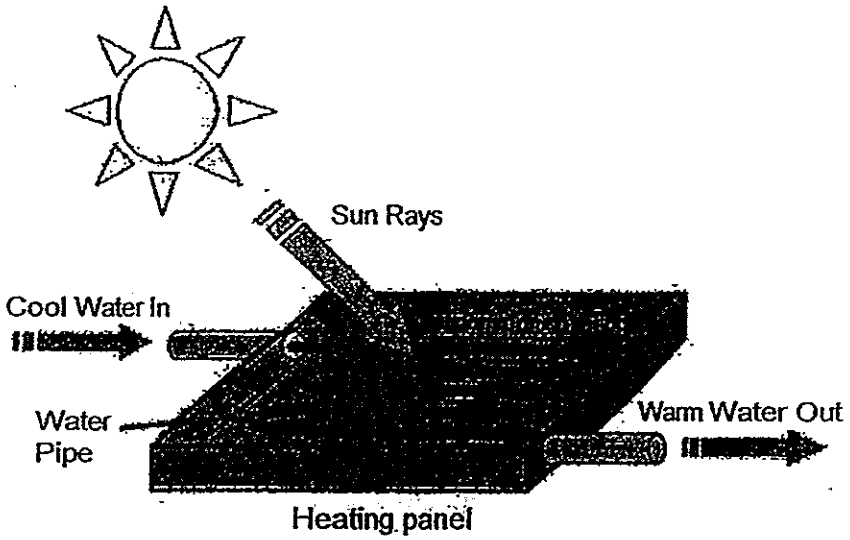


a) Explain why using the same amount of water in all three set ups ensure that her experiment was a fair one? [1m]

_____

_____

b) The diagram below shows the heating panel and the time taken for the water in the flasks shown in part (a) to start boiling.



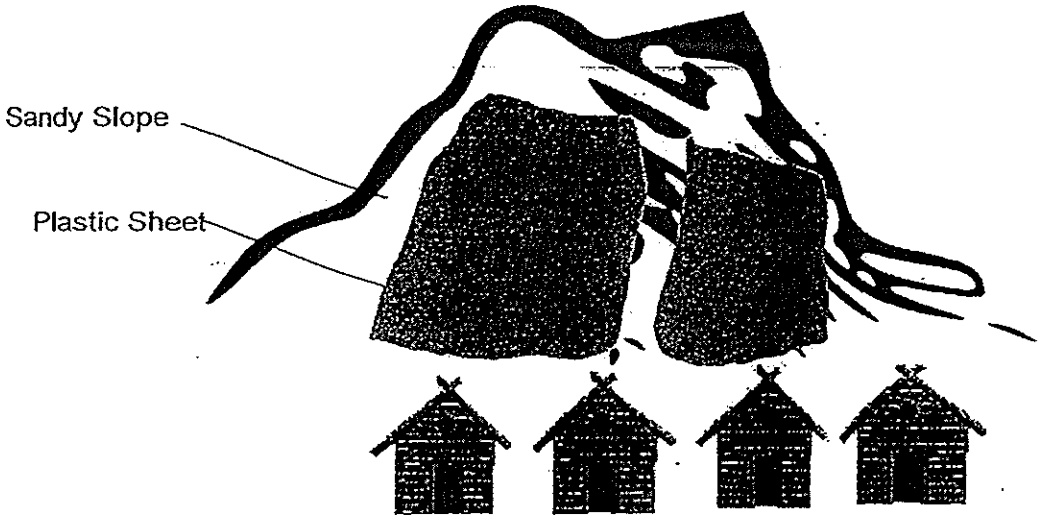
Material	Time taken for the water to start boiling (min)
X	3
Y	11
Z	6

Based on the results above, which material should be used to make the water pipe in the heating panel? Explain your answer clearly. [2m]

_____

_____

Q43. The diagram below shows a village of people living just at the bottom of the sandy slope. Large plastic sheets are placed by the villagers over the exposed sandy slopes as shown in the diagram below.



a) What could be a possible reason for placing the plastic sheets? [1m]

_____

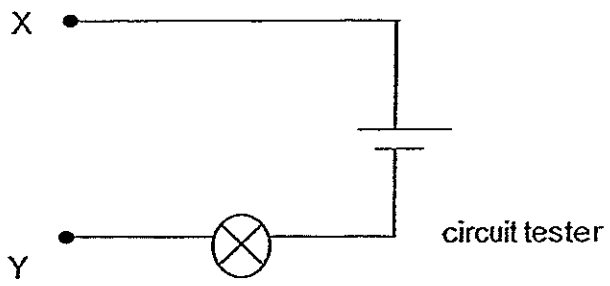
_____

b) Other than placing coverings over the sandy slopes, suggest one other method that could serve the same function as the plastic sheet. Explain how your suggestion works. [2m]

_____

_____

Q44. A circuit-tester was set up as shown in the diagram below.



An experiment was conducted using wires of different thickness to join points X and Y. The brightness of the bulb was measured using a data logger. The results were recorded in the table below.

Thickness of wire	Brightness of the bulb
1 mm	9 units
3 mm	11 units
5 mm	15 units

a) According to the results, what is the relationship between the thickness of the wire and the brightness of the bulb? [1m]

_____

_____

b) Predict the likely brightness of the bulb if a 4 mm thick wire is used. [1m]

_____

c) State the energy conversion that is taking place when the circuit is closed.

[1m]

End of Booklet B

ANSWER SHEET

EXAM PAPER 2014
SCHOOL : HOKKIEN
PRIMARY : P6
SUBJECT : SCIENCE
TERM : SA2

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

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

31)a)A : low B : high

b)Lung

Heart

Body

32)a)To find out if the presence of wing-like structure affects the distance travelled by the seed.

b)The distance travelled by the fruits is shorter. The plants would be found near the parent plant.

33)a)The cell membrane.

b)The plant cell has a cell wall to prevent the cell from absorbing too much water and hence bursting.

34)a)Trap air in the spaces of the fibrous husk. As air is less dense than water, it causes the husk to float on water.

b)The amount of air in the swim bladder should increase.

35)a)To ensure that no other light except the light from the lamp will be absorbed by the plant.

b)i)The amount of oxygen produced will decrease.

ii)The rate of photosynthesis will decrease.

36)a)The air in the container left in the open is warmer than the air in the container left in the cupboard.

b)A lizard is cold-blooded. The burrow is cooler so that lizard will gain less heat.

c)Lizard X has more food to eat and will not starve so easily, thus increasing their chances of survival.

37)a)Animal A also ate corn plants and Animal B was its predator, so by killing Animal B, there would be more Animal A that would eat more corn plats so the number of corn plants dropped.

b)

	V		
W		Y	Z
	X		

38)a)A: Glass B: Metal

b)It must be transparent.

c)Plastic is on insulator of electricity. It prevents Susan from getting electrocuted.

39)a)Material X.

b)Water fills in the spaces in between the sand particles.

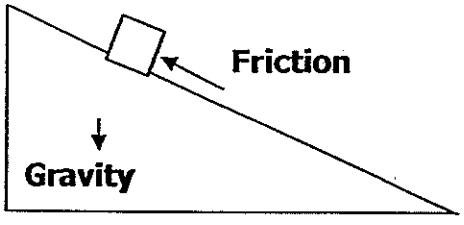
c)Sand can move to occupy the air spaces.

40)a)i)Boiling ii)Evaporation

b)The water in set-up A was heated up by the bunsen burner and it had more heat so the rate of evaporation of water was higher.

c)Container Y. The water in Y had a larger exposed surface area than the water in X so the rate of evaporation of water in T was higher. Thus Y would take a shorter time to completely dry up.

41)a)



41)b)There was more friction between the wooden block and the wooden surface than the wooden block and the plastic surface.

c)Rubber. There was most friction between the wooden block and the rubber surface, so by using rubber to make a bathroom mat, it will prevent the person from slipping when the floor is wet.

42)a)To ensure that any changes to the time taken for the water to start boiling is only due to the type of material on the heater.

b)Material X. It took the shortest time for the water to start boiling, hence X must be the best conductor of heat.

43)a)To prevent soil erosion.

b)Plant trees on the slope. The roots of the trees will cling onto the sand and prevent them from being washed away by rain easily.

44)a)As the thickness of the wire increases, the brightness of the bulb increases.

b)13 units.

c)Chemical Potential Energy→Electrical Energy→Light Energy