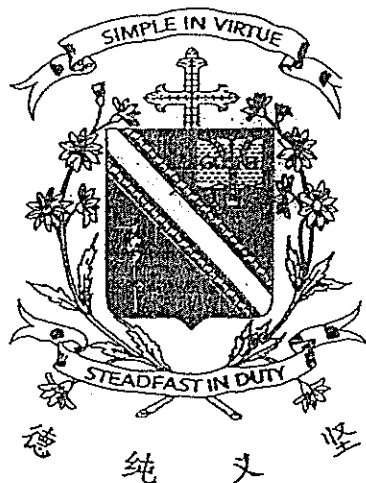


Name : _____ (.)

Class : Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 6
Semestral Assessment 1 – 2014
SCIENCE
BOOKLET A
15 May 2014

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

30 questions
60 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This paper consists of 25 printed pages.

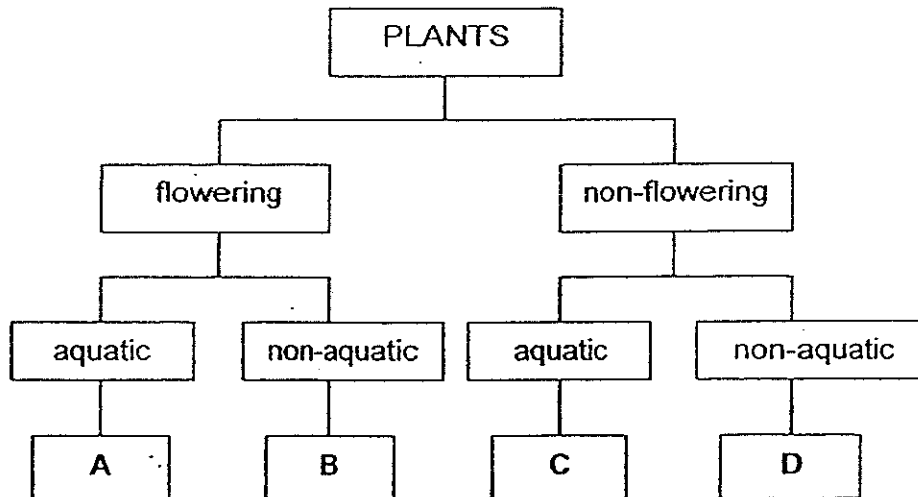
Section A : (30 x 2 MARKS)

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). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. The following table gives information on four plants, R, S, T and U, based on two characteristics. A tick (✓) shows that the plant has the given characteristic.

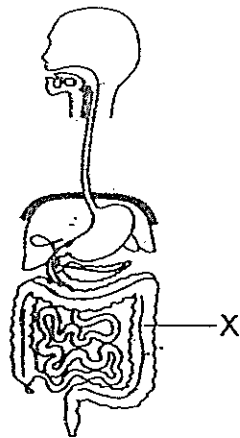
Plant \ Characteristic	R	S	T	U
Bear fruit		✓	✓	
Grow in water	✓		✓	

Based on the information above, where do plants R, S, T and U belong to in the following classification chart?



	Plant R	Plant S	Plant T	Plant U
(1)	D	B	A	C
(2)	C	A	B	D
(3)	A	D	C	B
(4)	C	B	A	D

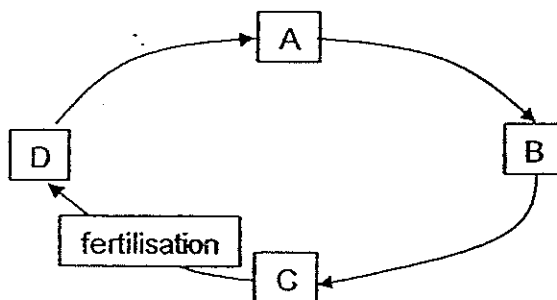
2. The diagram below shows a human digestive system.



Which one of the following best describes the function of organ X of the human digestive system?

- (1) It digests the food.
- (2) It passes the digested food into the blood.
- (3) It churns and mixes food with the digestive juice.
- (4) It takes away the water from the undigested food.

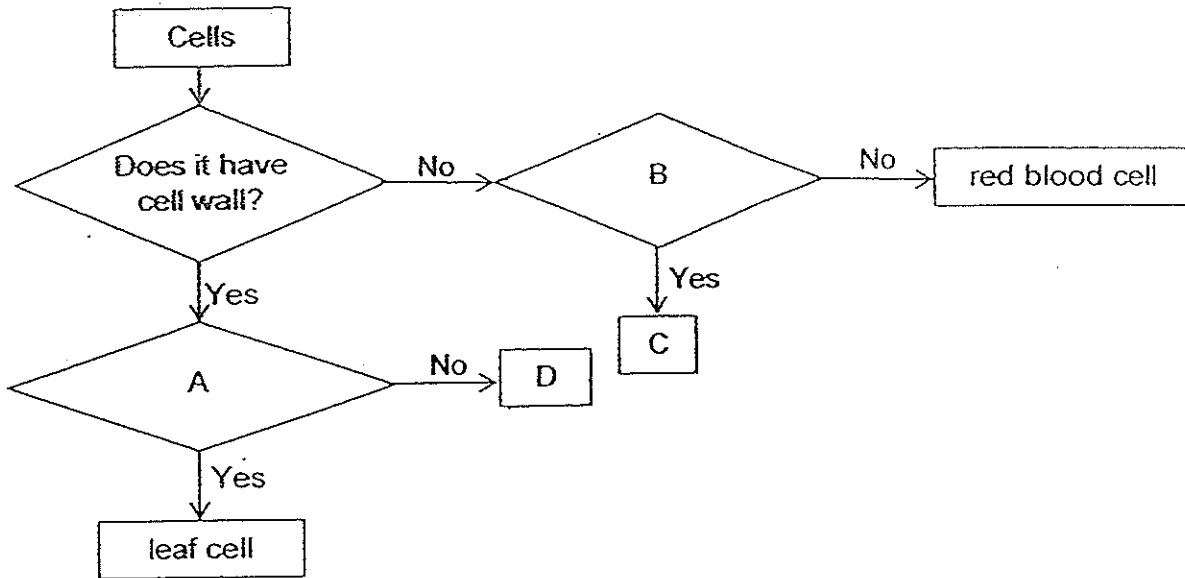
3. The diagram below shows the life cycle of a mosquito and the point at which fertilisation occurs.



At which stage, A, B, C or D, of its life cycle is the mosquito the most difficult to kill?

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

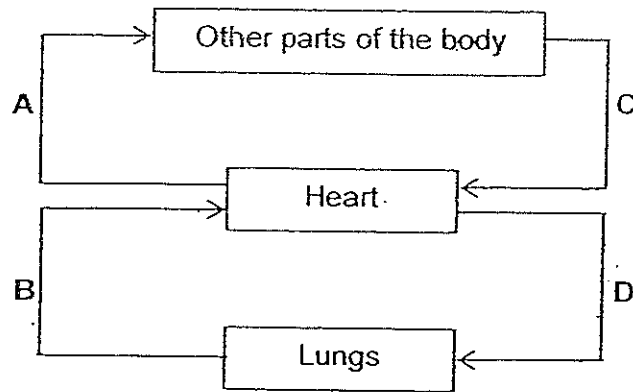
4. Study the flowchart below carefully.



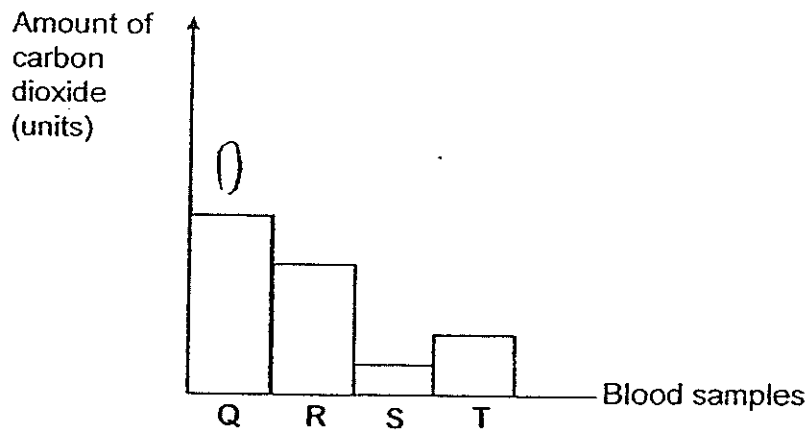
Which one of the following best represents A, B, C and D?

	A	B	C	D
(1)	Does it have cell membrane?	Does it have chloroplast?	Onion cell	Cheek cell
(2)	Does it have chloroplast?	Does it have nucleus?	Cheek cell	Root cell
(3)	Does it have nucleus?	Does it have cell membrane?	Onion cell	Cheek cell
(4)	Does it have chloroplast?	Does it have cell membrane?	Cheek cell	Root cell

5. A, B, C and D represent the blood vessels in the human body.



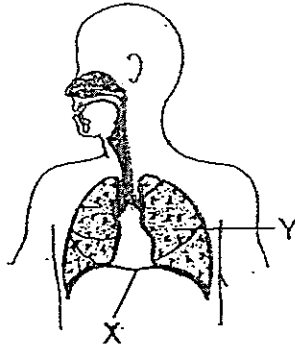
Four blood samples, Q, R, S and T, were taken from blood vessels A, B, C and D in the body. The graph below shows the amount of carbon dioxide in each of the blood samples.



Which one of the following best identifies the blood vessels from which the blood samples are taken from?

	Q	R	S	T
(1)	D	A	B	C
(2)	B	A	D	C
(3)	D	C	B	A
(4)	C	D	A	B

6. The diagram below shows Harry's respiratory system.

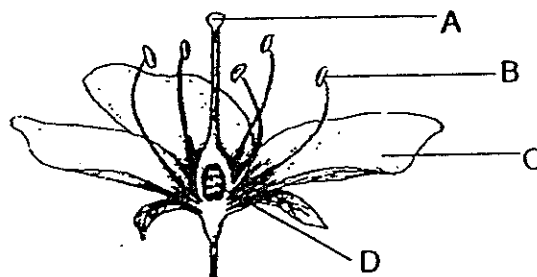


Which one of the following best describes what happens to parts, X and Y, when Harry exhales?

	X	Y
(1)	Moves downwards	Expands
(2)	Moves upwards	Expands
(3)	Moves downwards	Contracts
(4)	Moves upwards	Contracts

7. Adele wanted to find out if flower H shown below would develop into a fruit if some parts of it were removed. She removed two parts of flower H before dusting some pollen grains on it.

After several days, she discovered that a fruit had started to develop.

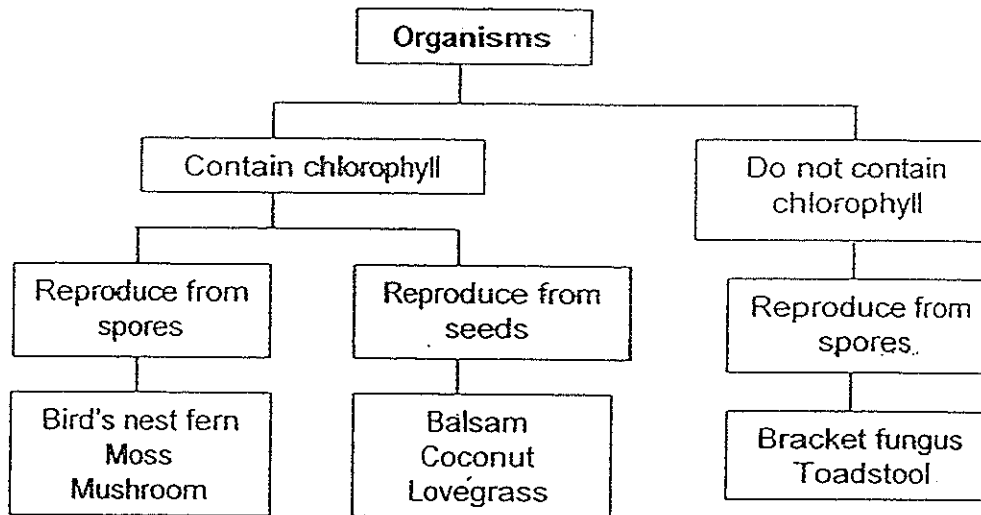


Flower H

Which two parts of flower H had been removed?

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

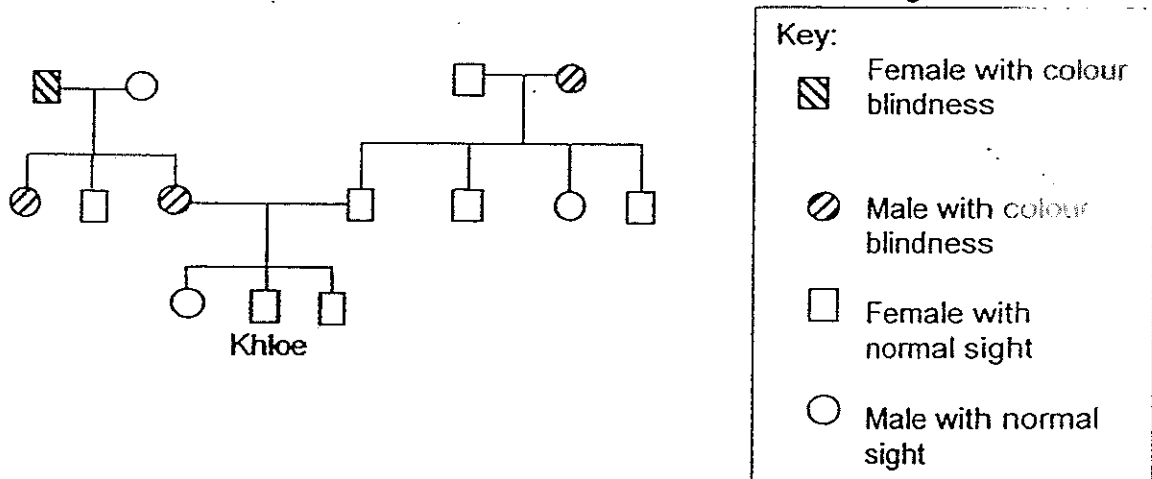
8. Study the classification chart below carefully:



Which one of the above organisms has been incorrectly classified?

- (1) Moss
- (2) Mushroom
- (3) Toadstool
- (4) Lovegrass

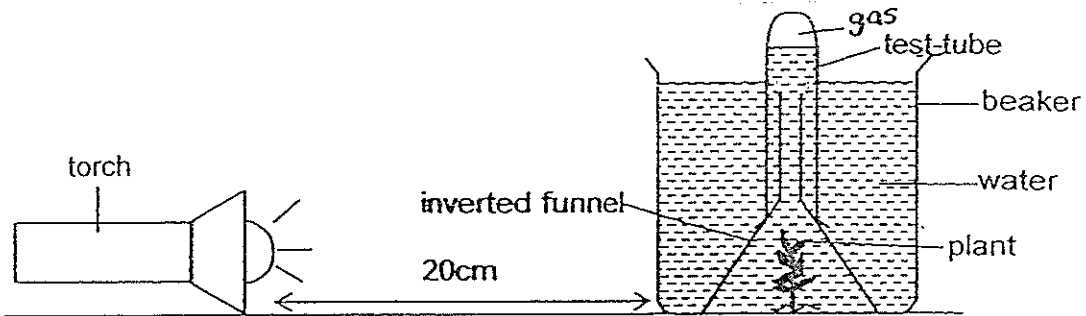
9. The diagram below shows Khloe's family tree. The family tree shows the members who inherited colour blindness and those who have normal sight.



Based on the above family tree, which one of the following statements is true?

- (1) Khloe's parents are colour blind.
- (2) Khloe and her brother have normal sight.
- (3) Khloe's father has a sister who is colour blind.
- (4) Khloe's paternal and maternal grandmothers have normal sight.

10. Jane set up the following experiment in a dark room.

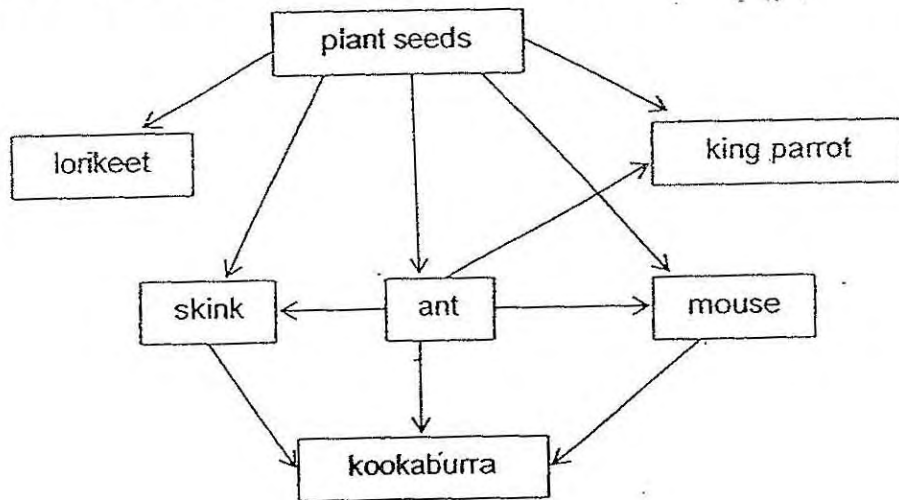


She placed a torch at a distance of 20cm from the beaker. After one hour, she observed that 5cm³ of gas had collected in the test-tube. She repeated the experiment by placing the torch at different distances from the beaker and recorded the results in a table.

Which one of the following best represents the result recorded by Jane?

	Distance from lamp (cm)	Gas collected	Volume of gas
(1)	5	Oxygen	less than 5cm ³
(2)	10	Carbon dioxide	more than 5cm ³
(3)	25	Carbon dioxide	less than 5cm ³
(4)	30	Oxygen	less than 5cm ³

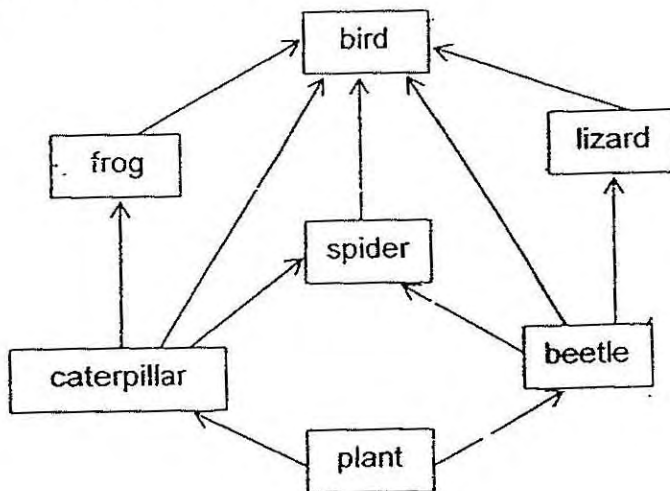
11. The diagram below shows a food web among some organisms in a garden.



Based on the above food web, which two animals are not in direct competition with each other for the same food?

- (1) ant and skink
- (2) king parrot and skink
- (3) kookaburra and skink
- (4) kookaburra and lorikeet

12. The diagram below shows a food web.

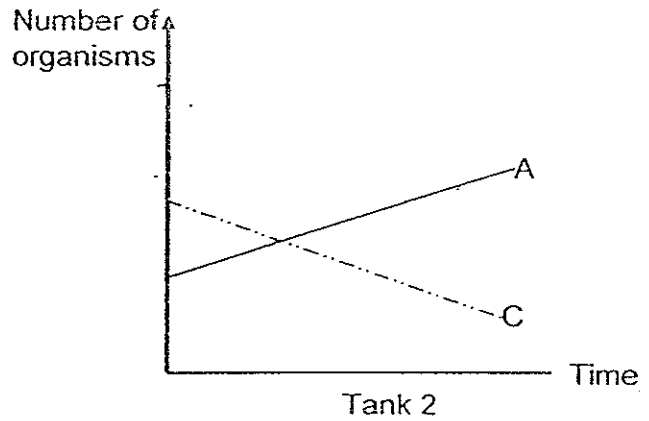
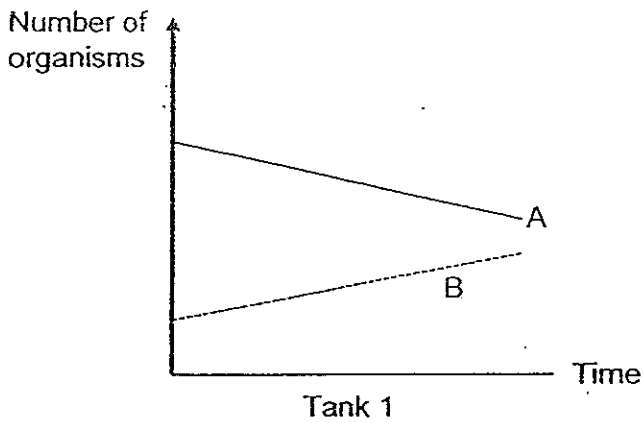


If a disease kills all the birds in the above food web, which one of the following animal populations is most likely to decrease in number?

- (1) frog
- (2) lizard
- (3) beetle
- (4) spider

13. Liz placed three different types of organisms A, B and C into two tanks and monitored their populations over a period of two weeks. She placed organism A and B in tank 1 and organism A and C into tank 2.

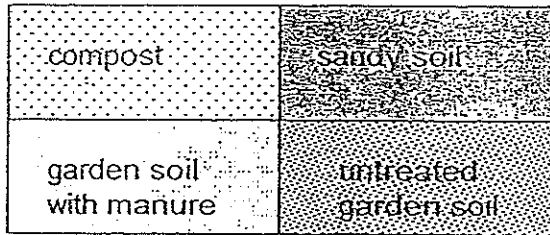
She counted and recorded the population of the three organisms every day and plotted two graphs as shown below.



Based on the graphs above, which one of the following food chains best shows the relationships among organisms A, B and C?

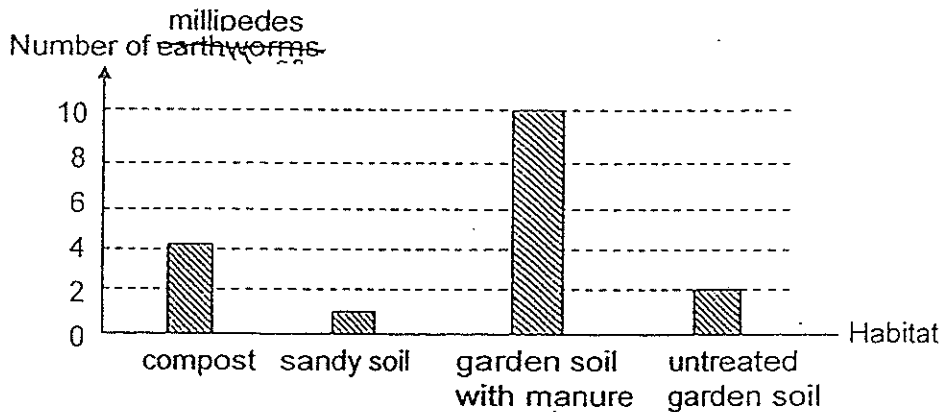
- (1) $C \rightarrow A \rightarrow B$
- (2) $A \rightarrow B \rightarrow C$
- (3) $B \rightarrow A \rightarrow C$
- (4) $C \rightarrow B \rightarrow A$

14. Wayne carried out an investigation to find out the preferred habitats of millipedes. He created four adjoining habitats as shown in the diagram below and placed five millipedes in each habitat.



The millipedes were free to move between the habitats. After four weeks, he counted the number of millipedes found in each habitat and noticed that some millipedes were missing.

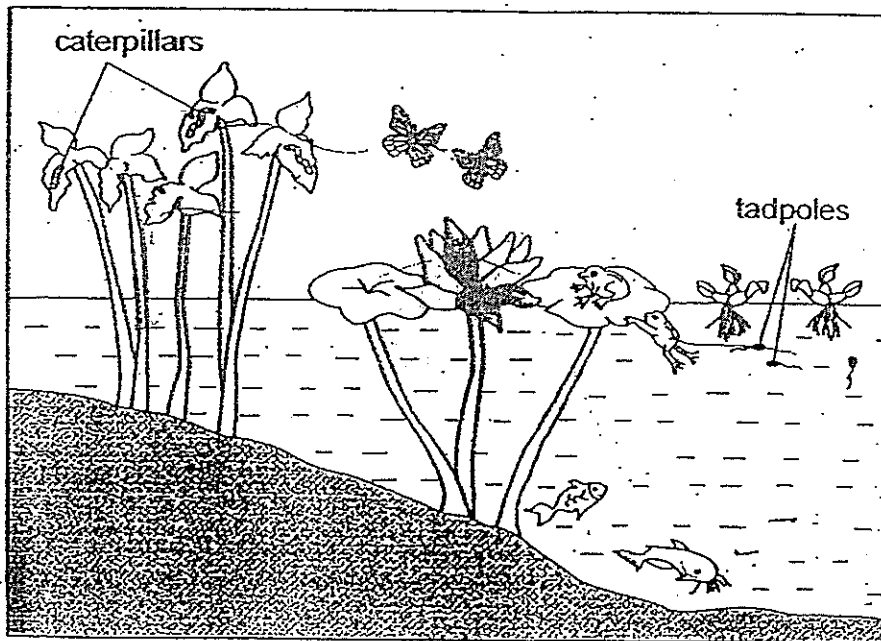
The graph below shows the results of his investigation.



Based on the results of his experiment, which one of the following conclusions can Wayne make?

- (1) Millipedes prefer to live in dark and damp habitats
- (2) The untreated garden soil is harmful to the millipedes.
- (3) Millipedes prefer garden soil with manure to the other habitats.
- (4) The missing millipedes' preferred habitat is not provided in the experiment.

15. The picture below shows a pond community.



How many populations are there in this community?

- (1) 4
- (2) 5
- (3) 7
- (4) 8

16. The table below shows the boiling point and freezing point of some substances.

Substance	Boiling point ($^{\circ}\text{C}$)	Freezing point ($^{\circ}\text{C}$)
P	55	-2
Q	62	-10
R	75	-15
S	90	-30

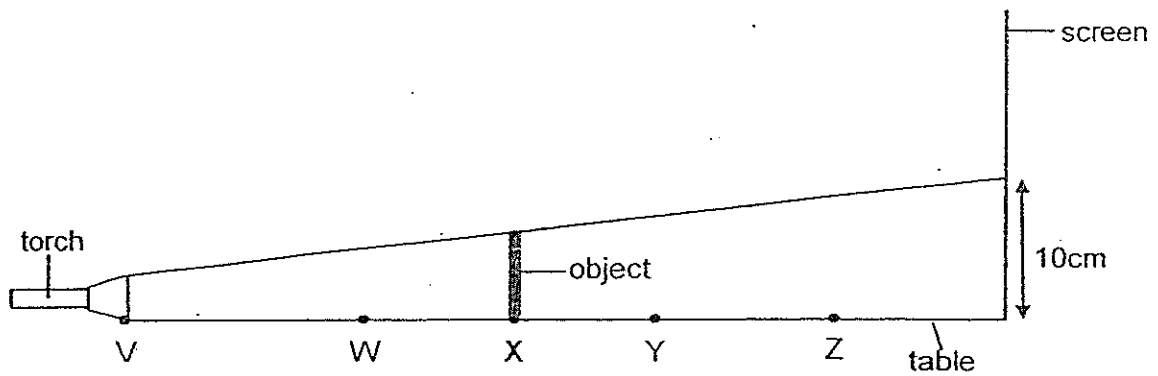
Based on the table above, which of the following statements are true about the substances?

- A Substance P is in the solid state at -1°C .
- B Substance S is in the liquid state at 85°C .
- C All the four substances are in the liquid state at 27°C .
- D Substances Q and R are in the gaseous state at 63°C .

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

17. Jane wanted to find out the effect of the positions of a light source and an object on the length of the shadow cast by the object.

She marked V, W, X, Y and Z on a table before a screen. An object was placed between the torch and the screen as shown below.

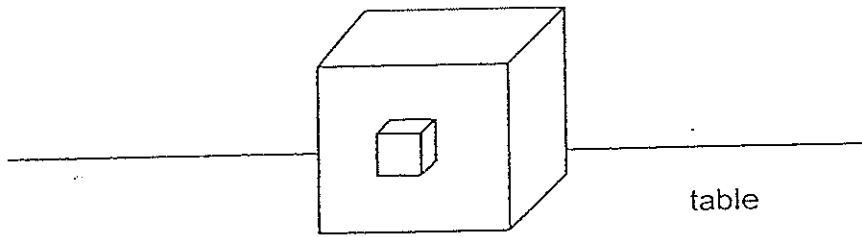


When Jane switched on the torch, she observed a shadow of 10cm was cast on the screen. She then placed the torch and the object at different positions and recorded her observations.

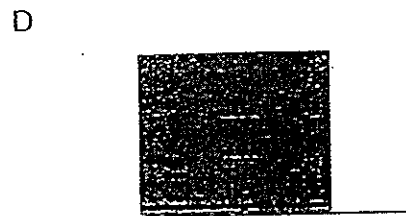
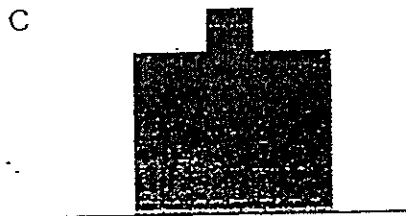
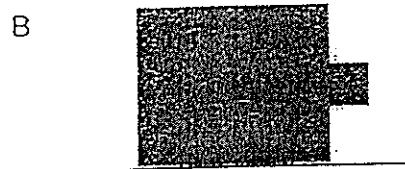
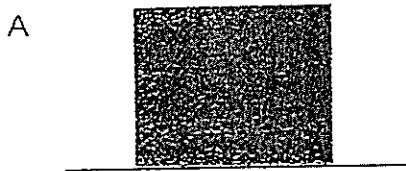
Which one of the following sets of data is most likely to be the one recorded by Jane?

	Position of torch	Position of object	Length of shadow (cm)
(1)	W	X	6
(2)	W	Y	7
(3)	X	Z	12
(4)	V	Z	10

18. Two cubes of different sizes are attached together and fixed to a table in a room as shown in the diagram below.



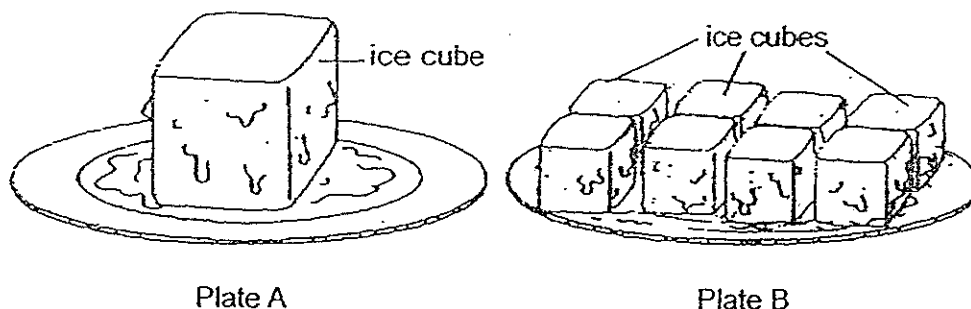
A torch was then shone on the two cubes from different positions and shadows were observed on the walls of the room.



Which of the above shadows could be observed on the walls?

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

19. Mr Lim used the same amount of water to make two plates of ice, A and B, as shown below before leaving them on the table in the Science Laboratory.



He had made the ice cube on plate A from a mould measuring 2cm by 2cm by 2cm and the eight ice cubes on plate B from a mould measuring 1cm by 1cm by 1cm.

He then asked his students to predict which plate of ice cube(s) would take a longer time to melt completely.

His students gave the following predictions and explanations.

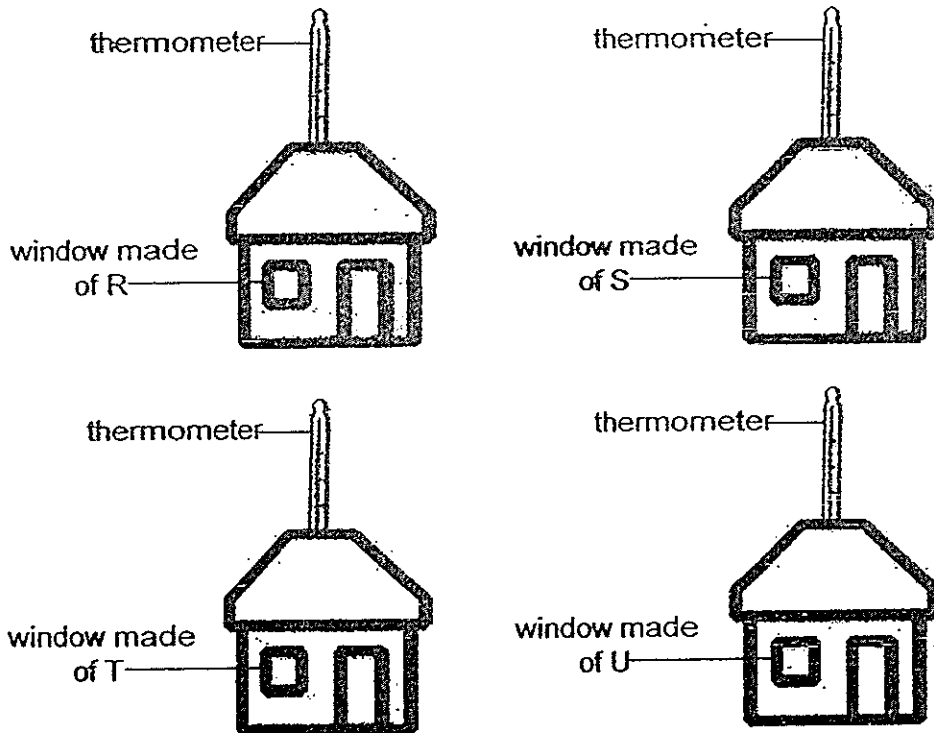
Student	Prediction	Explanation
Rachel	B	There are more ice cubes on plate B so they will take a longer time to melt completely.
Natasha	B	The ice cubes on plate B have a smaller volume so they will gain less heat and take a longer time to melt completely.
Ying Hooi	A	The surface areas of the ice cube on plate A that are exposed to the surrounding is smaller so it will take a longer time for the ice cube to gain heat to melt completely.
Chloe	A	The total volume of the ice cube on plate A is greater so it will take a longer time to gain heat to melt completely.

Which one of his above students' predictions and explanations is most likely to be correct?

- (1) Chloe
- (2) Rachel
- (3) Natasha
- (4) Ying Hooi

20. Poh Poh carried out an experiment to find out how windows made of different types of materials, R, S, T and U, could affect the temperature inside a house.

She built four similar model houses, each with windows made of different materials as shown below, and left them at the same place in the garden. She then measured the temperature of the air inside each house model over a period of time in a day and recorded the results in the table below.

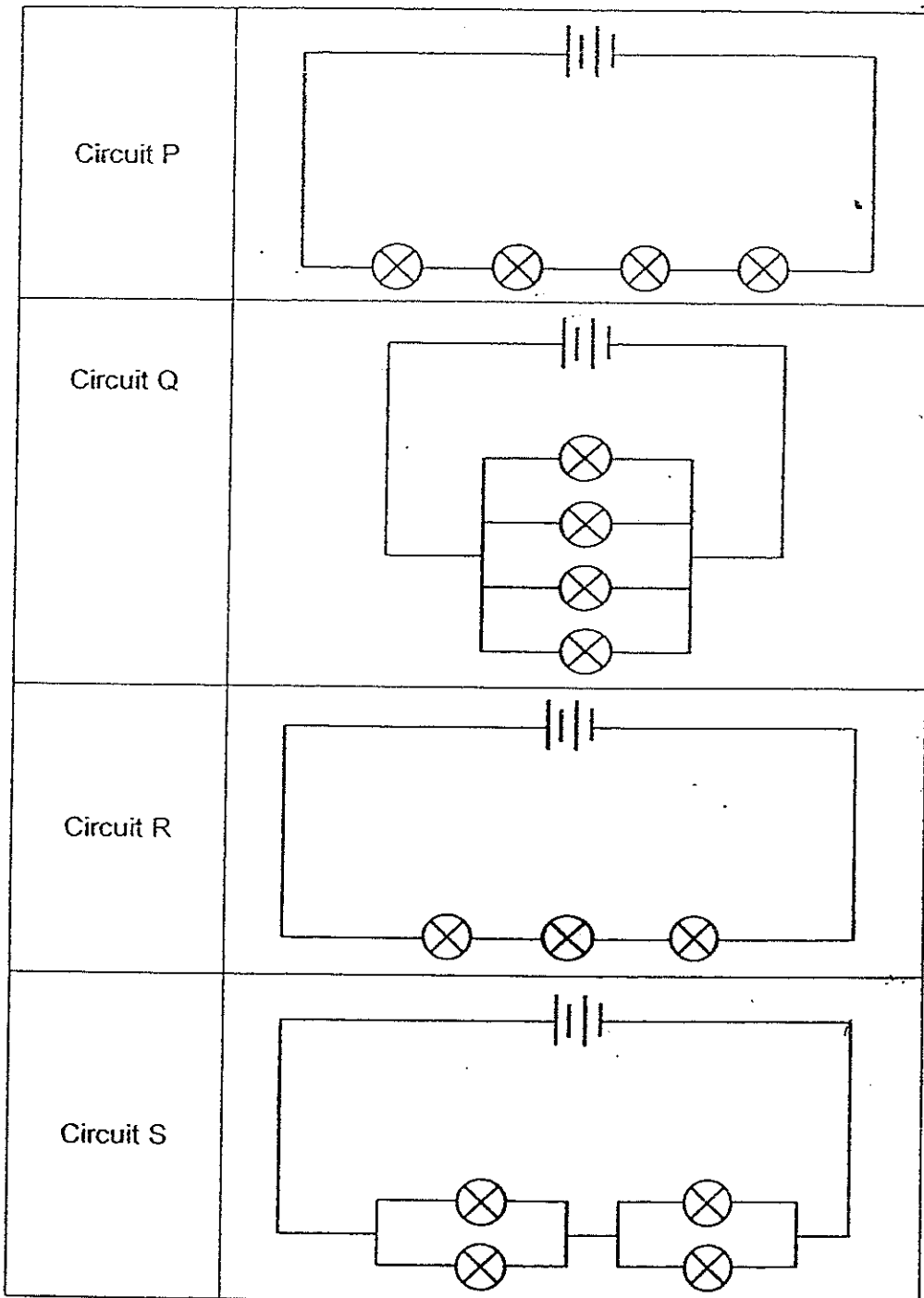


Material used for the windows	Temperature of the air inside the house at the following time of the day (°C)		
	8.00 a.m.	12 p.m.	4 p.m.
R	22	31	23
S	23	26	23
T	22	29	23
U	23	32	24

Which one of the following materials would be most suitable for making the windows of a house in a cold country?

- (1) R
- (2) S
- (3) T
- (4) U

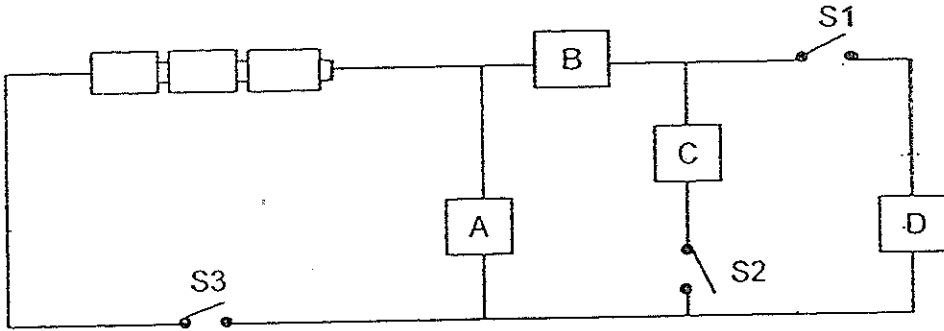
21. Study the electrical circuits, P, Q, R and S, below.



Arrange the circuits in order of the brightness of the bulbs, from the least bright to the brightest. [Ignore resistance in the wires.]

- (1) P, S, R, Q
- (2) P, R, S, Q
- (3) Q, S, R, P
- (4) Q, R, S, P

22. Wen Xiong constructed an electrical circuit as shown below.



A wooden toothpick, a bulb, a metal ruler and a rubber band were placed at various points A, B, C and D in the above circuit.

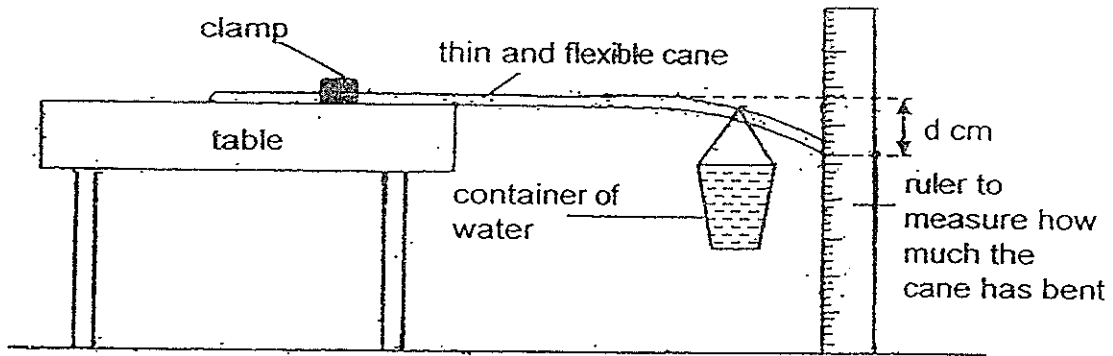
Wen Xiong closed some switches and recorded his observations in the table below.

Closed switches	Did the bulb light up?
S2 and S3	Yes
S1 and S3	No

Based on Wen Xiong's observations in the table above, which one of the following correctly identifies the objects placed at points A, B, C and D?

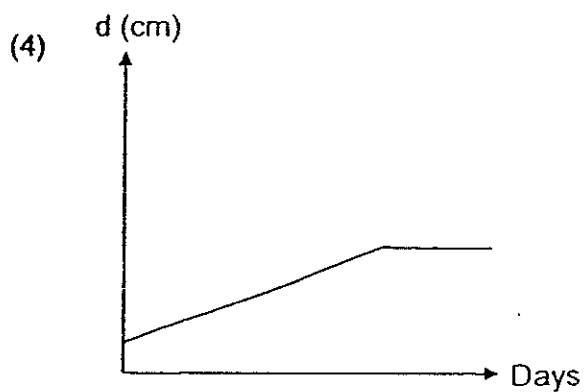
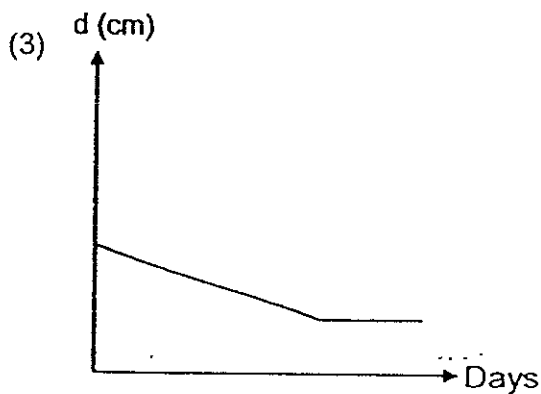
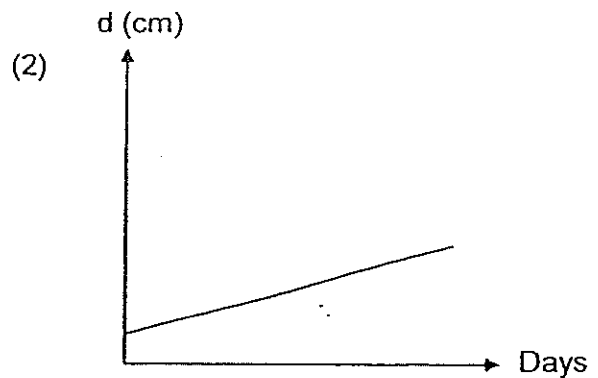
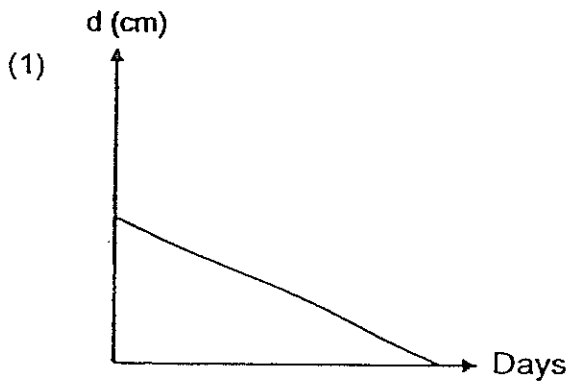
	A	B	C	D
(1)	metal ruler	bulb	wooden toothpick	rubber band
(2)	wooden toothpick	bulb	rubber band	metal ruler
(3)	wooden toothpick	rubber band	bulb	metal ruler
(4)	rubber band	metal ruler	bulb	wooden toothpick

23. Abu set up an experiment with the following apparatus next to an open window in the classroom.

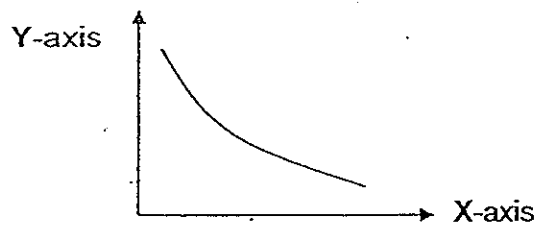


He started the experiment with 400ml of water in a small container and as the water in the container evaporated, he measured and recorded the distance between the table top and the end of the cane, d cm, over a week.

Which one of the following graphs best represents the changes in the value of d cm over a week?



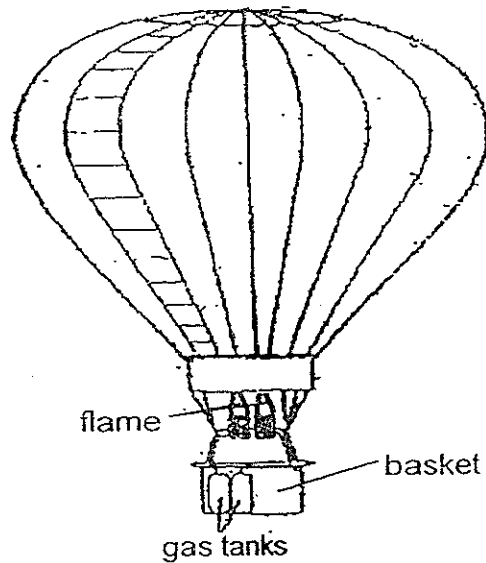
24. Hannah put three identical towels containing the same amount of water in the balcony to dry. Each towel was folded such that the exposed surface areas of the towels were different. After 4 hours, each towel was weighed. Hannah then recorded her results and plotted them on a graph.



Which one of the following pairs of labels is most suitable for the X and Y axes of the graph?

	X-axis	Y-axis
(1)	Time taken	Mass of towels
(2)	Exposed surface area of towels	Time taken
(3)	Time taken	Exposed surface area of towels
(4)	Exposed surface area of towels	Weight of towels

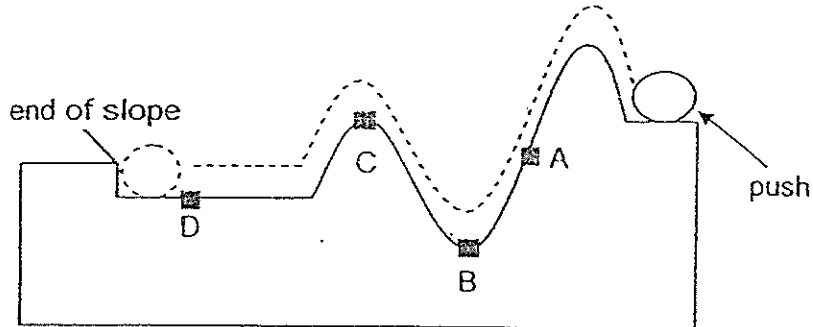
25. The hot air balloon shown in the diagram below started to float up from the ground when a flame was created just beneath the balloon.



Which one of the following best represents the energy conversion that resulted in the hot air balloon floating into the sky when the fuel was burnt?

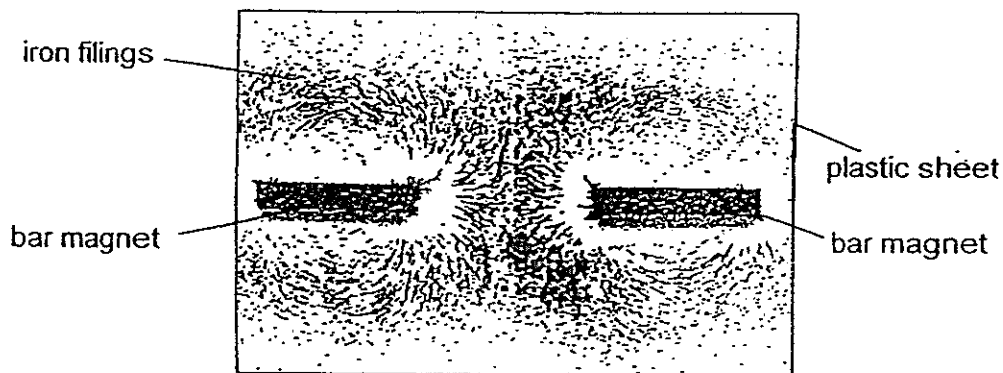
- (1) heat energy (flame) → kinetic energy (air) → kinetic energy (balloon)
- (2) heat energy (fuel) → kinetic energy (balloon) → potential energy (balloon)
- (3) potential energy (fuel) → heat energy (flame) → kinetic energy (air)
- sound energy (balloon) → kinetic energy (balloon)
- (4) potential energy (fuel) → heat energy (flame) → kinetic energy (air)
- kinetic + potential energy (balloon)

26. Joshua pushed a ball in the direction shown and it rolled towards the end of the slope.



At which point on the slope will the ball have the greatest amount of kinetic energy?

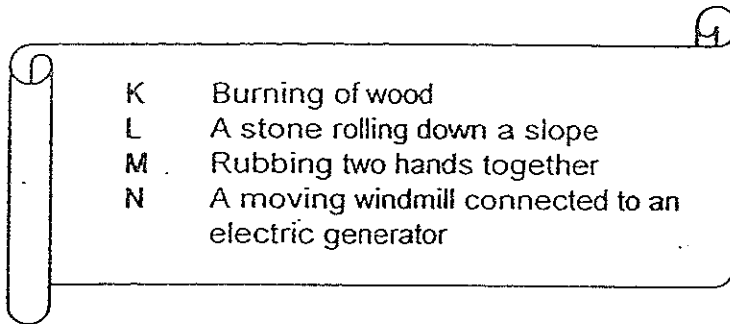
- (1) A
 - (2) B
 - (3) C
 - (4) D
27. Jaden and Grace placed two bar magnets on a table. Next, they placed a thick sheet of plastic over the two magnets before Grace sprinkled some iron filings over the plastic sheet. The diagram below shows what Jaden and Grace observed.



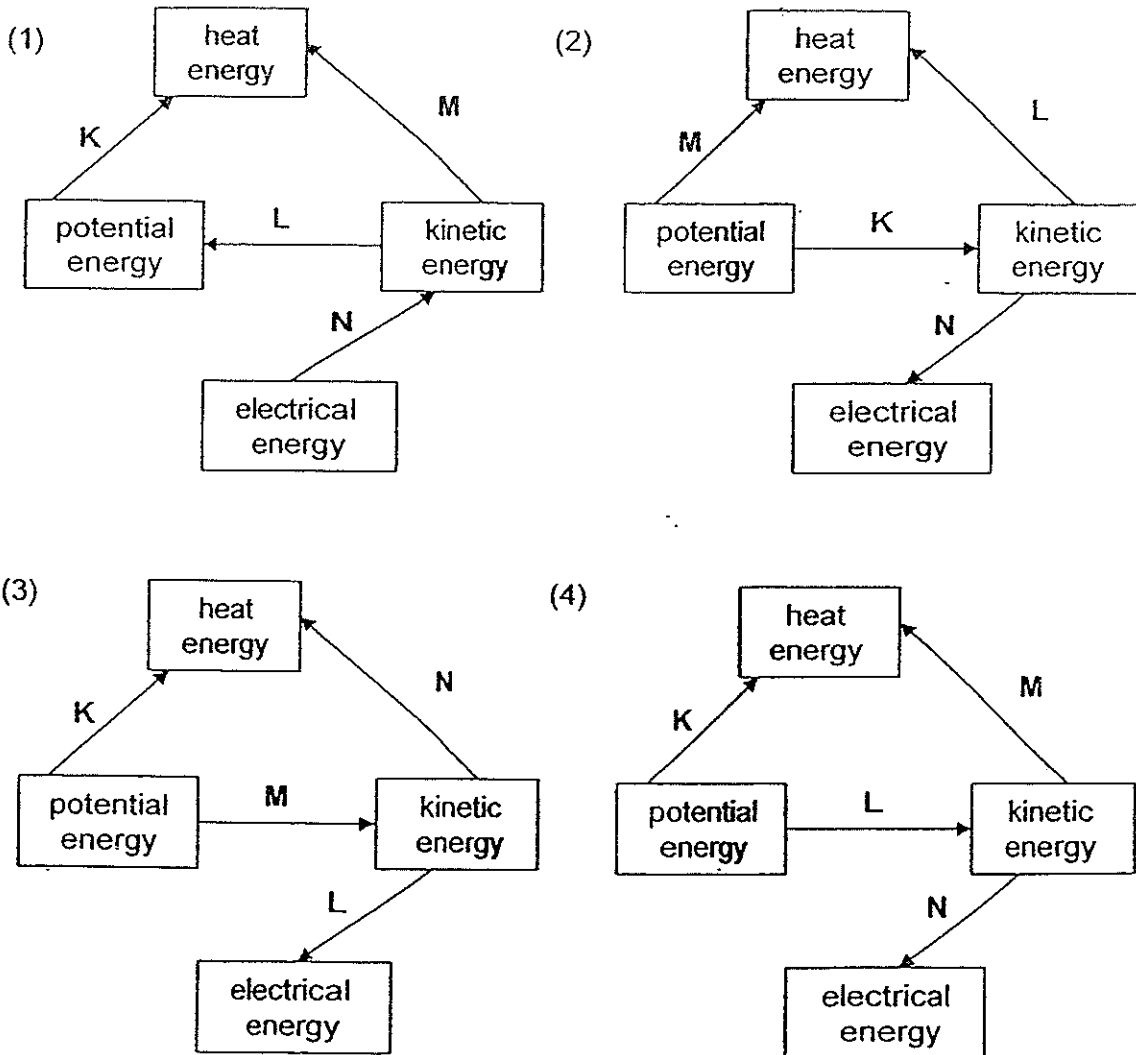
Based on their observation in the above diagram, which one of the following conclusions can they draw?

- (1) The magnets are repelling each other.
- (2) One magnet is stronger than the other.
- (3) The magnets are attracting each other.
- (4) There are no iron filings attracted to the magnets.

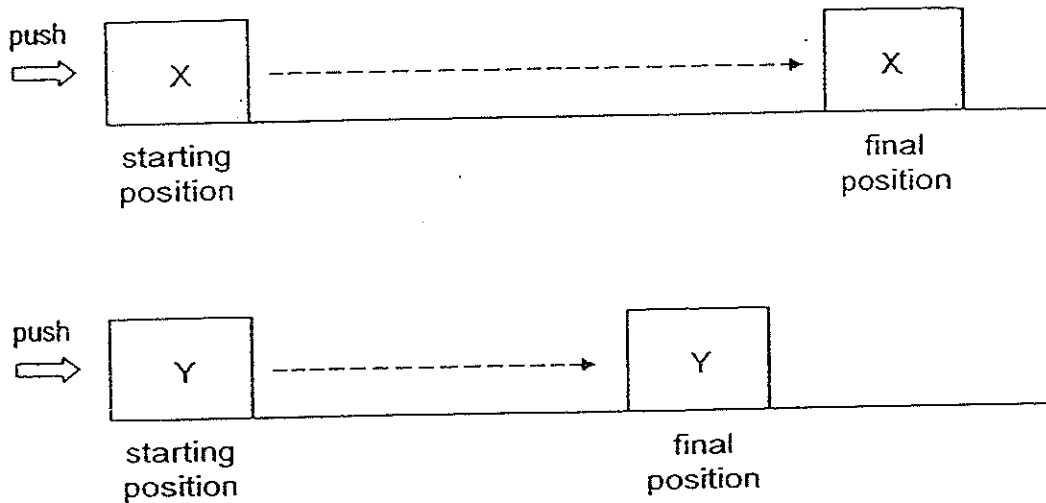
28. The list below shows some processes K, L, M and N.



Which one of the following diagrams best represents the main energy changes involved in the processes above?



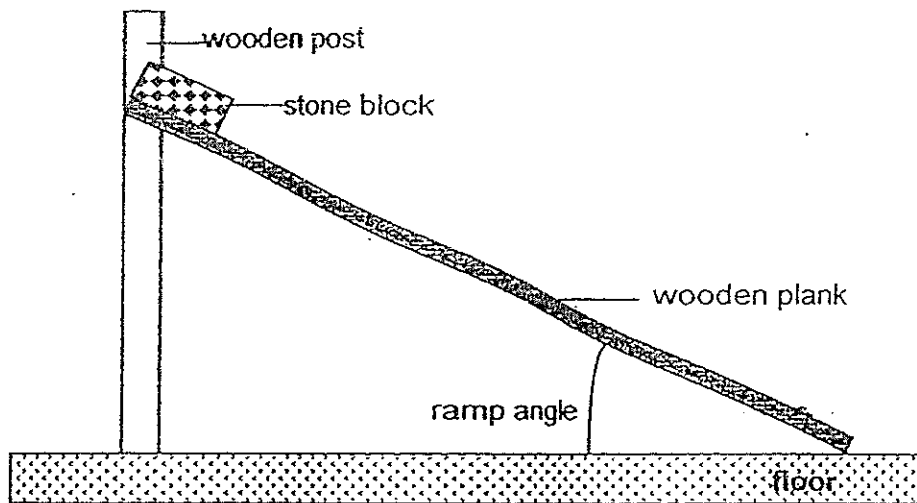
29. Two objects, X and Y, of the same size were pushed with an equal amount of force along the same surface. The starting and final positions of the blocks are shown in the diagram below.



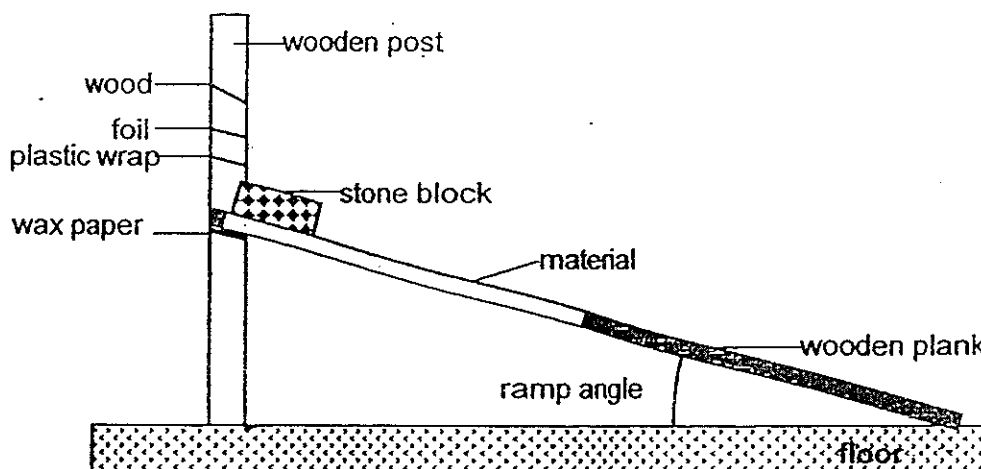
Which one of the following statements best explains the above observation?

- (1) Y has a greater volume than X.
- (2) X may have a smaller mass than Y.
- (3) The surface that X is travelling on is smoother.
- (4) The amount of gravitational force acting on Y is less than that acting on X.

30. Martin conducted an experiment to investigate the amount of frictional force between a stone block and different surfaces. He placed one end of a wooden plank on the floor as shown in the diagram below. He then placed a stone block on the other end of the wooden plank and lifted the wooden plank till the stone block starts to slide down.



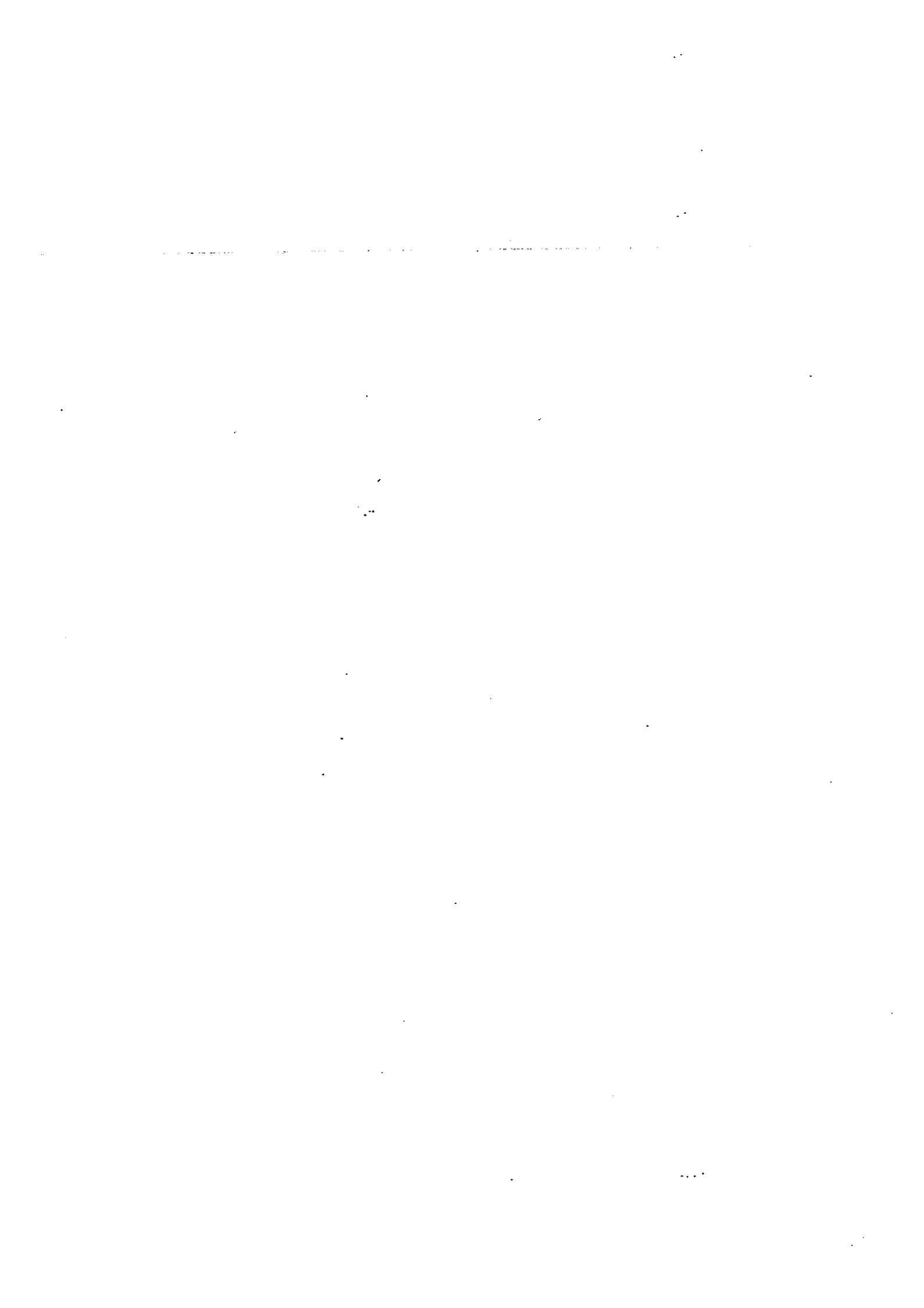
He repeated his experiment by wrapping different materials, one at a time, around the plank as shown in the diagram below. For each material, he marked on the wooden post the ramp angle where the stone block began to move.



Based on observation of the above experimental results, which one of the following conclusions can Martin make?

- (1) There is least friction between the stone block and the wax paper.
- (2) The stone block move more quickly over foil than over plastic wrap.
- (3) The longer the plank, the greater the friction between the plank and the object moving on it.
- (4) The frictional force between the plank and the object moving on it increases when the ramp angle increases.

-End of Section A-



Name : _____ ()

Class : Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 6
Semestral Assessment 1 – 2014
SCIENCE
BOOKLET B
15 May 2014

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

14 questions
40 marks

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

Booklet A	60
Booklet B	40
Total	100

This paper consists of 15 printed pages.

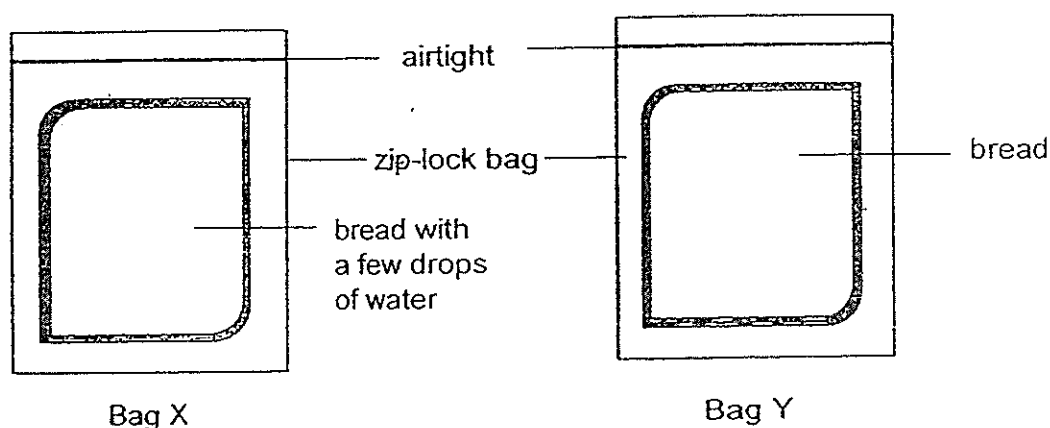
Parent's Signature/Date

SECTION B (40 MARKS)

Answer the following questions in the spaces provided.

The number of marks available is shown in the brackets [] at the end of each question or part-question.

31. Mason left two similar pieces of bread in two zip-lock bags and labelled them X and Y. A few drops of water were added to the bread in bag X only. He then sealed both bags to make them airtight as shown in the diagram below.



Both bags were left in a room for three days and he recorded his observations in the table below.

Bread	Observation
X	Turns mouldy on day 2
Y	Turns slightly mouldy on day 3

- (a) How did sealing the bags to make them airtight help ensure a fair test? [1]

- (b) Mason toasted a third piece of bread and cooled it before putting it in another zip-lock bag. Do you expect to see mould growing on the bread on day 3? Give a reason for your answer. [1]



32. John did a study of two rotting log communities, A and B, of different sizes found in a field. He recorded the populations of the different organisms found in the two communities as shown in the tables below.

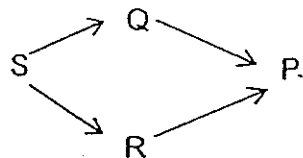
Community A	
Type of organism	Population (%)
P	5
Q	25
R	30
S	40
Total	100

Community B	
Type of organism	Population (%)
P	10
Q	25
R	25
S	35
Others	5
Total	100

- (a) Based only on the information given above, put a tick (✓) in the boxes to indicate if each of the following statements is "True", "False" or "Not possible to tell" [2]

	Statement	True	False	Not possible to tell
(i)	Community A and B have an equal number of organisms Q.			
(ii)	There are more populations of organisms found in B than in A.			
(iii)	P's population is the smallest in both communities.			
(iv)	The population of R in A is 3 times that of the population of P in B.			

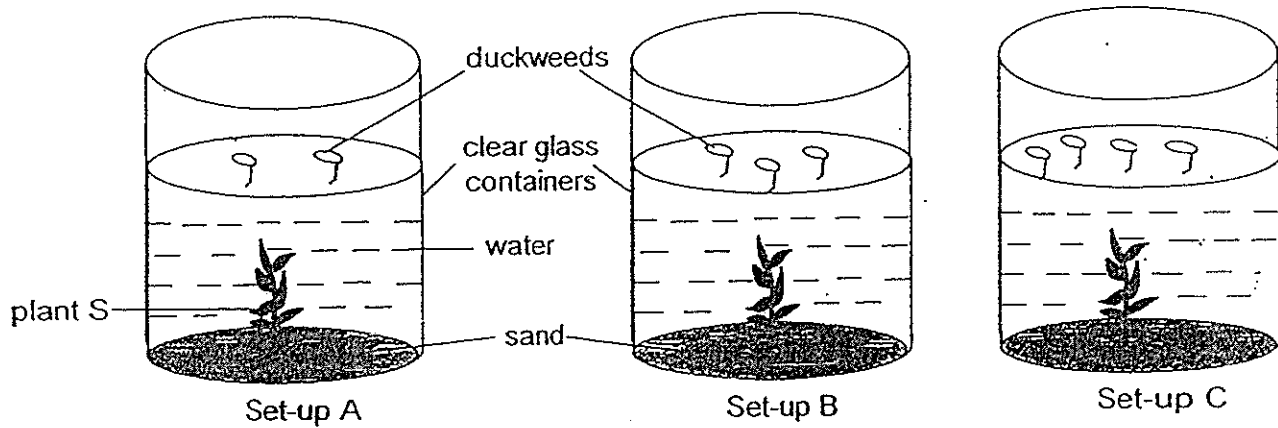
- (b) The food relationships among the organisms in community A is shown in the food web below.



When John introduced organism T into the community, he observed a sharp decrease in population P and R. In the above food web, draw arrows to show the food relationship between T and the other organisms in the community. [1]

33. Salmah hypothesised that floating plants affect the survival of submerged plants. She then carried out the following experiment to investigate this.

She placed 3 similar submerged plants, S, into 3 clear glass containers, A, B and C, containing the same amount of water. She then placed different number of duckweeds in each container as shown below before leaving the set-ups near the window in the Science laboratory. She went to the Science laboratory every day, for a week, to make her observation.

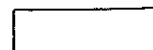


- (a) What do you think Salmah was observing in her experiment? [1]

- (b) Based on her observation, Salmah concluded that the number of floating plants have no effect on the survival of submerged plants. Her teacher told her that she had made a wrong conclusion as her set-ups do not allow her to test out her hypothesis. Suggest two reasons for her teacher saying so. [2]

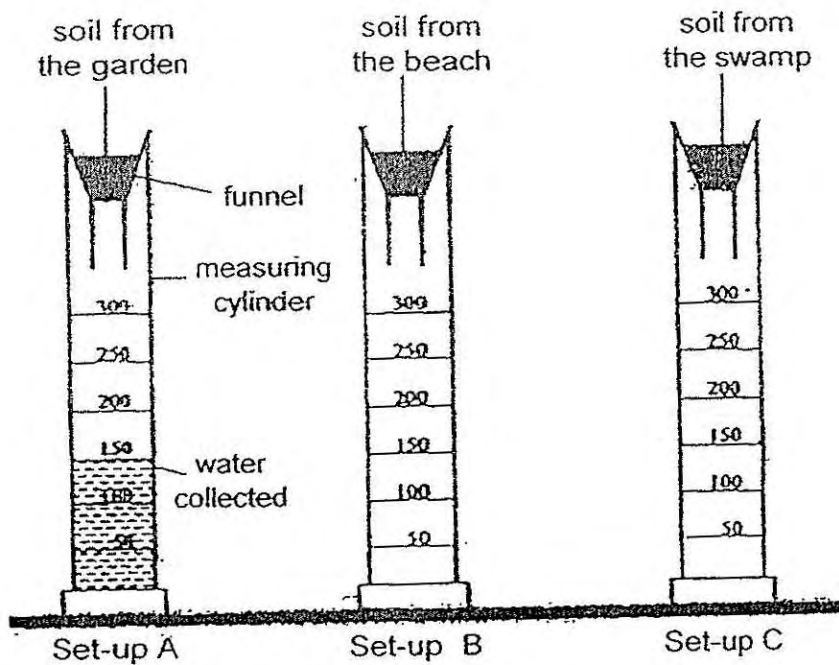
(i) _____

(ii) _____



34. Jenny collected some soil samples from the garden, beach and swamp. She set up an experiment as shown below to find out which type of soil allows the most amount of water to pass through.

She poured 220ml of water into set-up A which contains soil from the garden. She measured the volume of water collected in the measuring cylinder after 5 minutes. She then repeated the experiment with soil samples from the beach and the swamp.

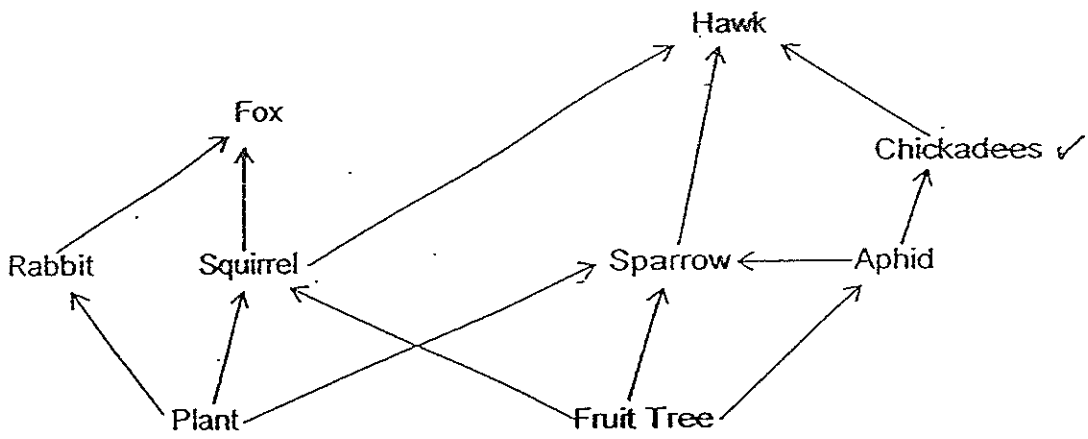


- (a) The volume of water collected in set-up A was approximately 150ml. Put a tick (\checkmark) in the boxes to indicate the estimated volume of water collected for set-ups B and C. [1]

Set-up	Less than 150ml	Equal to 150ml	More than 150ml
B			
C			

- (b) Why do you think Jenny waited for 5 minutes before measuring the amount of water in the measuring cylinders? [1]

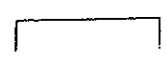
35. The food web below shows the food relationship among some organisms in a forest.



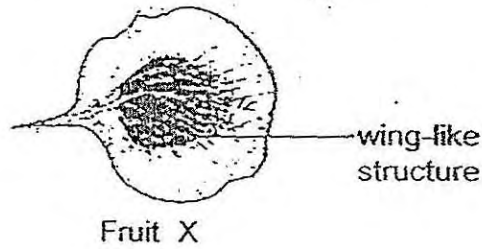
(a) Based on the above food web, which organism(s) is/are both a predator and a prey? [½]

(b) Based on the above food web, write down one food chain that has four organisms. [½]

(c) Some ladybirds were introduced into the habitat. How would the chickadees population be affected? Explain your answer. [2]



36. Vanessa dropped a fruit X from a certain height and recorded the time it took to land on the ground.



She then took two similar fruits, Y and Z, and cut the wing-like structures off as shown below. She repeated the experiment with the fruits Y and Z.



She recorded her readings in the table below.

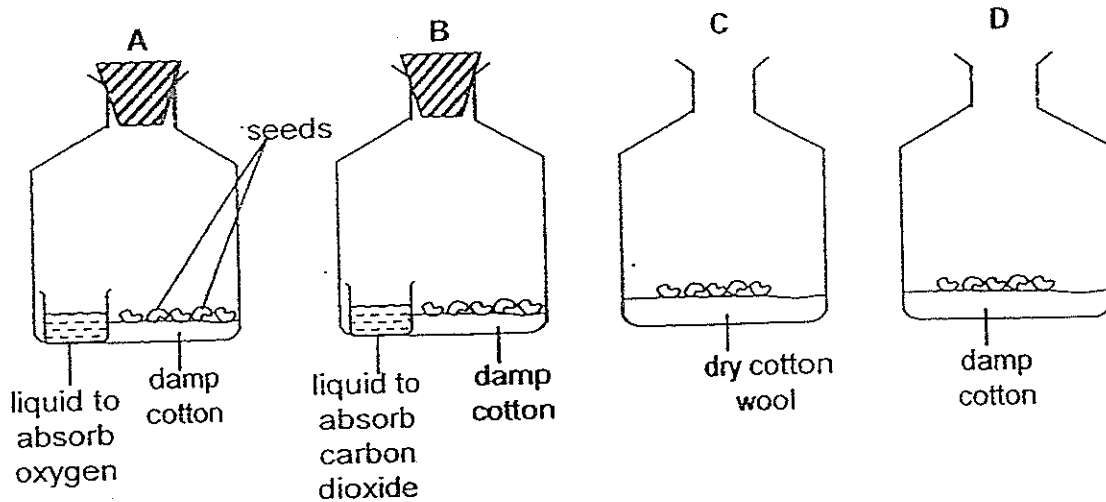
Results	Time taken for the fruit to land (sec)			
	1 st Try	2 nd Try	3 rd Try	Average
A	3.6	3.4	3.5	3.5
B	5.2	5.4	5.3	5.3
C	1.9	1.7	1.8	1.7

- (a) Which set of the above results, A, B or C, best represents that recorded by Vanessa for fruit X? Explain your answer. [1]

- (b) Why did Vanessa repeat her experiment for each fruit three times? [1]



37. Kendal placed some seeds in four identical bottles as shown in set-ups A, B, C and D below. The set-ups were then left in a room at a temperature of 5°C.



- (a) In which set-ups would the seeds most likely germinate? [1]

- (b) Give a reason for your answer in (a). [1]

38. A new species of plant was discovered by a group of botanist. They are trying to find out its method of pollination and seed dispersal. They analyzed the flowers and the fruits and made the following observations of the flowers and fruits:

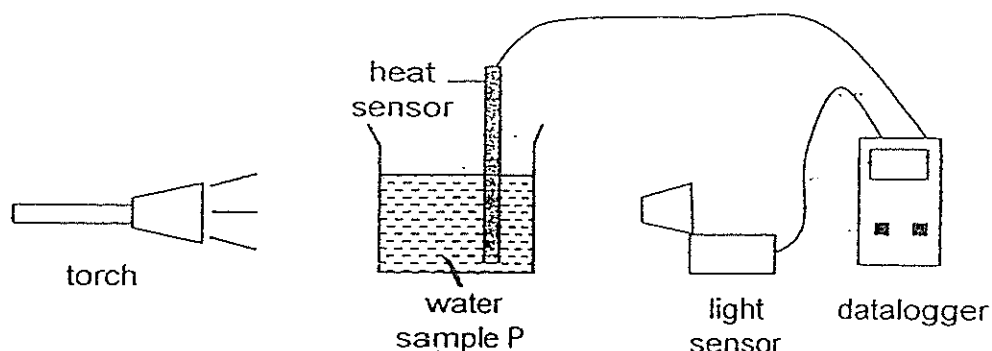
- The fruits are juicy and sweet.
- There are many small and hard seeds in each fruit.
- The flowers are small, colourful and grow in bunches.
- The flowers have short filaments and sticky pollen grains.

- (a) Based on the information given above, how do you think the seeds are dispersed? [1]

- (b) How do the characteristics of the fruits/seeds enable the seeds to be dispersed by the method mentioned in (a)? [1]



39. Sheon carried out an experiment in a dimly-lit room. She filled a beaker with 100ml of water from pond P and placed it in front of a torch. She switched on the torch for 5 minutes and measured the amount of light that passed through the water and the temperature of the water, using the light and heat sensors connected to a datalogger as shown below. She then repeated her experiment using the same amount of water from ponds Q and R, one water sample at a time.



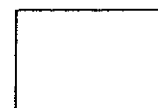
The readings were recorded in the table below.

Water sample from pond	Amount of light recorded (Lux)	Temperature of water (°C)
P	162	34
Q	5	42
R	288	23

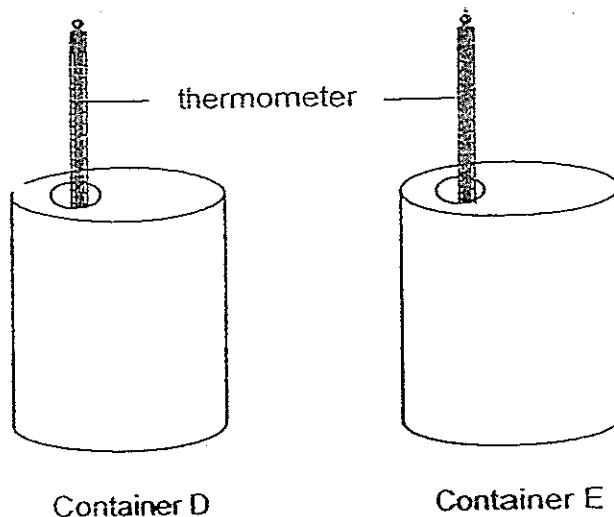
- (a) Based on the results in the table above, what is the relationship between the clarity and temperature of the water? [1]

- (b) If Sheon drops a coin into three beakers containing pond water P, Q and R respectively, in which beaker, P, Q or R, will she be able to see the coin most clearly? Explain your answer using the results in the table above. [2]

- (c) State one other variable Sheon has to keep constant to ensure a fair test. [1]



40. Ken has two containers, D and E, each made of a different material as shown below. He filled them with the same amount of water measuring 3°C at the same time.



When he touched the containers, container D felt colder to his hands than container E. He then left the two containers in a room. The temperature of the room was 29°C . He measured and recorded the temperature of the water in the two containers at every 4-minute interval.

The table below shows the changes in the temperature of the water in Container E over a period of 20 minutes.

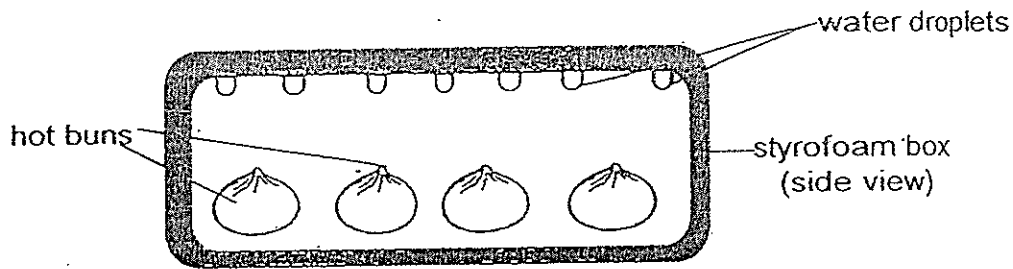
Time (min)	0	4	8	12	16	20
Water temperature ($^{\circ}\text{C}$)	3	7	12	16	18	21

- (a) Do you think the temperature of the water in container D will be **less than, equal to or more than** 21°C at the 20th minute? Explain your answer. [2]

- (b) Using the above information from the experiment, which container, D or E, will be more suitable to be used as a flask for keeping hot coffee warm for as long as possible? Explain your answer. [2]

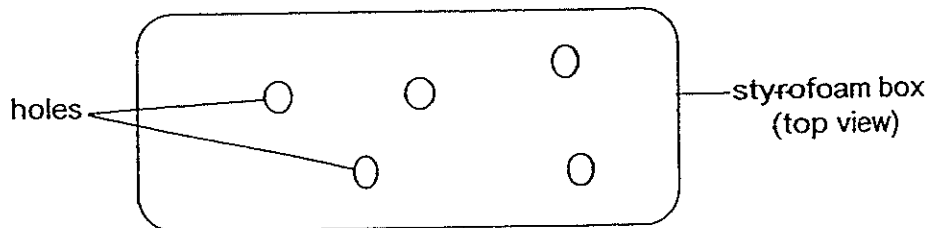


41. Clarise bought some hot plain buns from a hawker who placed them in an enclosed styrofoam box. When she reached home, she opened the styrofoam box and found that there were water droplets on the inner surface of the lid as shown in the diagram below and her buns were moist.

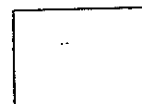


- (a) Explain clearly how the water droplets were formed on the inner surface of the lid. [2]

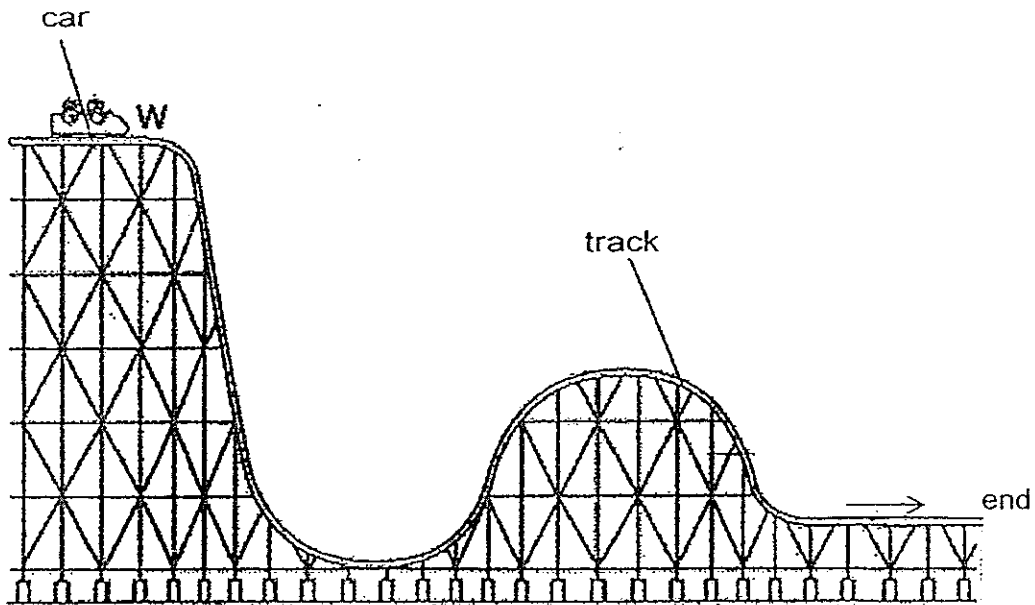
The next day, Clarise bought similar buns from another hawker. The hawker placed the hot buns into a similar styrofoam box after poking some holes on the lid as shown in the diagram below.



- (b) Explain why the hawker poked holes on the lid of the styrofoam box? [1]



42. The diagram below shows a roller coaster, that works mainly on the principle of energy conversion, at an amusement park. At the start of the ride, the car is usually pulled to point W along the track before it is being released. The car then starts to travel along the track before it finally slows down to a stop at the end of the ride.

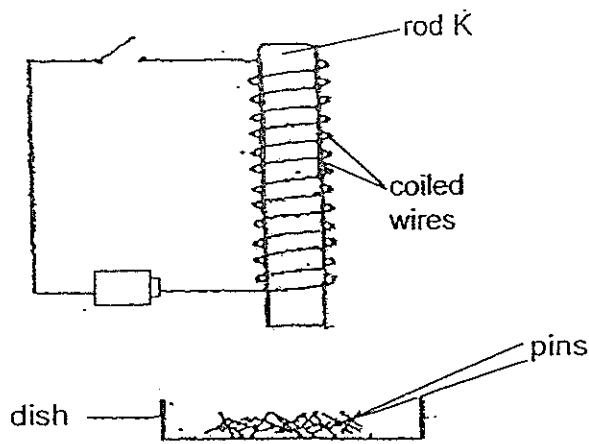


- (a) Based on observation of the above diagram, explain why the car needs to be pulled to point W at the start of the ride. [2]

- (b) Explain why the car is able to slow down to a stop at the end of the ride, without the application of brakes.



43. James had four rods made of different materials, K, L, M and N. He placed rod K through some coiled wires in a circuit as shown in the diagram below. When he closed the switch, he recorded the number of pins attracted by rod K. Some pins dropped from rod K when James opened the switch and he recorded the number of pins remaining on rod K after 5 minutes.



He then repeated his experiment using rods L, M and N, one at a time, and recorded his results in the table below.

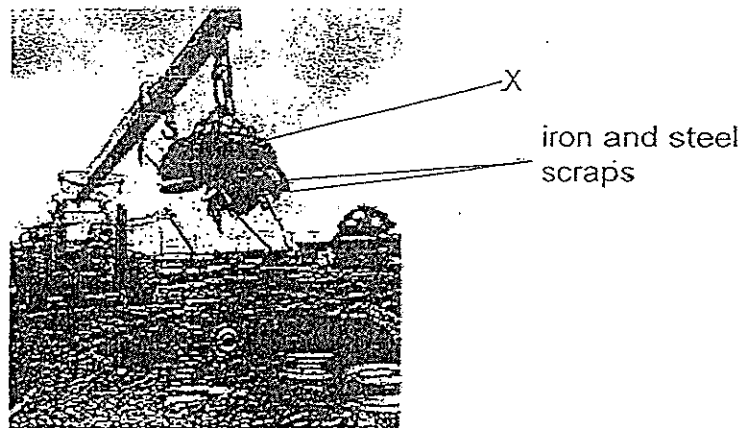
Rod	Number of pins attracted to the rod when the switch was	
	closed	opened
K	34	6
L	0	0
M	45	4
N	53	45

(a) Based on the result in the table above, which rod lost its magnetism most easily after the switch was opened? Give a reason for your answer. [1]

(b) Suggest a reason for the experimental results recorded by James for rod L. [1]



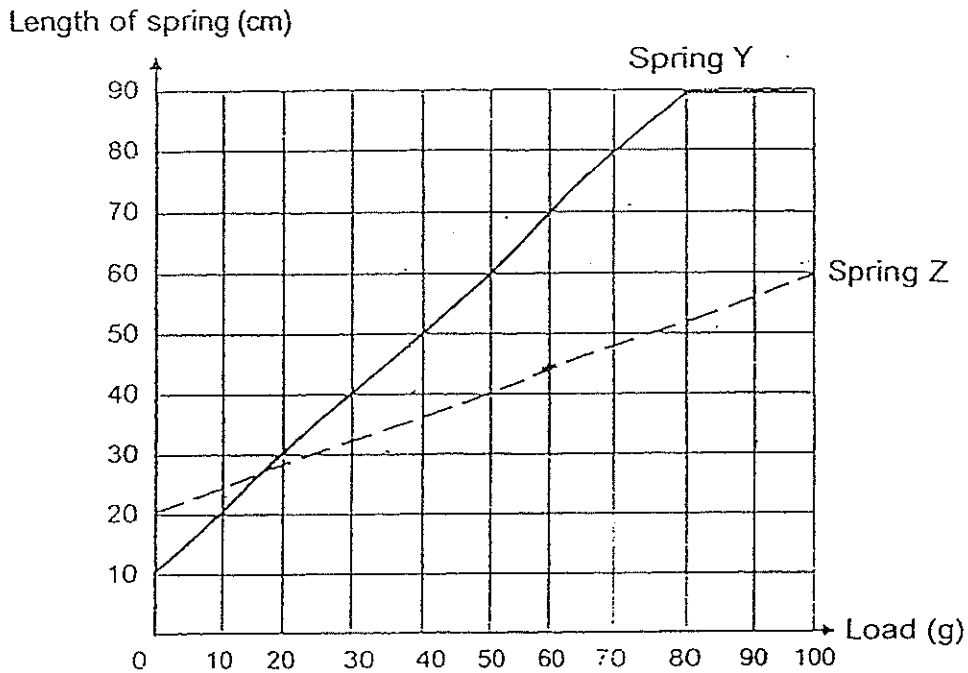
The diagram below shows a junkyard where the crane has an electric generator connected to a wire coil in part X. When the power is on, X is used to lift iron and steel scraps, and to separate them from non-magnetic scraps. When the scraps are positioned where they want it, they turn off the switch that supplies electrical current to X and the scraps drop.



- (c) Based on James' experimental results, which material, K, M or N, is the least suitable to be used for part X shown above? Explain your answer. [2]

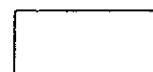


44. Arul carried out an experiment with 2 springs, Y and Z. She hung various loads on the 2 springs and measured their corresponding lengths accordingly. She then recorded the results and plotted the graph as shown below.



- (a) When a load of 60g is hung on the springs, what is the extension for springs Y and Z? [1]
- (i) Spring Y: _____
- (ii) Spring Z: _____
- (b) Based on your answers in (a), which spring is more elastic? Explain. [1]
- _____
- (b) Why do you think spring Y behaves as shown in the graph above when loads greater than 80g were hung on it? [1]
- _____

****End of paper****





EXAM PAPER 2014

LEVEL : PRIMARY 6
SCHOOL : ST. NICHOLAS
SUBJECT : SCIENCE
TERM : SA1

Q1	4	Q7	3	Q13	1	Q19	4	Q25	4
Q2	4	Q8	2	Q14	3	Q20	2	Q26	2
Q3	3	Q9	2	Q15	2	Q21	2	Q27	1
Q4	2	Q10	4	Q16	3	Q22	4	Q28	4
Q5	3	Q11	4	Q17	2	Q23	3	Q29	2
Q6	4	Q12	3	Q18	1	Q24	4	Q30	1

Q31	(a)	To prevent moisture in the surrounding from entering the bags.
	(b)	No. The toasted piece of bread would not have any water that is necessary for mould to grow.
Q32	(a)	(i) False (ii) True (iii) False (iv) Not possible to tell
	(b)	<pre> graph LR S --> Q S --> R Q --> P R --> P P --> T R --> T </pre>
Q33	(a)	Which plant is still alive at the end of the experiment.
	(b)	(i) As the sides of her containers were clear, sunlight could still enter the set-up. (ii) The duckweeds are too few to block off sunlight for the plants.
Q34	(a)	Set-up B – more than 150ml Set-up C – less than 150ml
	(b)	To ensure that water had sufficient time to flow through the soil.
Q35	(a)	Chickadee, sparrow
	(b)	Fruit tree → Aphid → Sparrow → Hawk
	(c)	The chickadee population will decrease. There will be competition for food between the chickadees and the ladybirds. There will be more predators for the aphids. Thus, the aphid population will decrease. In turn, there will be less prey for the chickadees so the chickadee population will decrease.
Q36	(a)	B. Fruits X has the largest wing-like structure so it can stay afloat in the air the longest.
	(b)	To ensure the reliability of the results.
Q37	(a)	None
	(b)	There is no warmth for the seed to germinate.
Q38	(a)	By animals
	(b)	The animals will be attracted to eat the juicy and sweet fruits and pass out the undigested seeds in their waste.
Q39	(a)	The greater the clarity of water, the lesser the temperature of the water.
	(b)	Beaker R. Beaker R allows the most amount of light to pass through showing that water is

Q40	(a)	Container D will be less than 21°C. Container D will be less than 21°C showing that container D is a better heat conductor so it will conduct heat from the surrounding to the water faster.
	(b)	Container E. Container E feels warmer to his hands showing that container E is a poorer heat conductor so it will conduct heat from the surrounding slower.
Q41	(a)	Warm water vapour from the buns came into contact with the cooler inner surface of the lid, lost heat and condensed as water droplets on the inner surface of the lid.
	(b)	The warm water will escape, allowing lesser/no condensation to take place.
Q42	(a)	W is the highest point so the car will have the most gravitational potential energy to be converted to the most kinetic energy for the car to reach the end of the ride.
	(b)	The kinetic energy of the car is converted into sound and heat energy, thus it is able to slow down to a stop at the end of the ride.
Q43	(a)	Rod M. It dropped the most pins when the switch was opened.
	(b)	Rod L is not a magnetic object so it cannot be magnetised.
	(c)	Material N. The least number of pins dropped from N when the switch is opened showing that N loses its magnetism the least easily so most of the magnetic objects will not drop from it when used for X.
Q44	(a)	(i) 60cm (ii) 25cm
	(b)	Spring Y. Spring Y extended more than spring Z when a 60g load was placed in them.
	(c)	Spring Y exceeded its tensile strength and could not be stretched further.