METHODIST GIRLS' SCHOOL

Founded in 1887

MID-YEAR EXAMINATION 2017
PRIMARY 6
SCIENCE

BOOKLET A1

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

INSTRUCTIONS TO CANDIDATES

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

Name: _____ ( )

Class: Primary 6._____

Date : 9 May 2017

This booklet consists of 12 printed pages including this page.

Downloaded from SingaKids.com

Downloaded from SingaKids.com

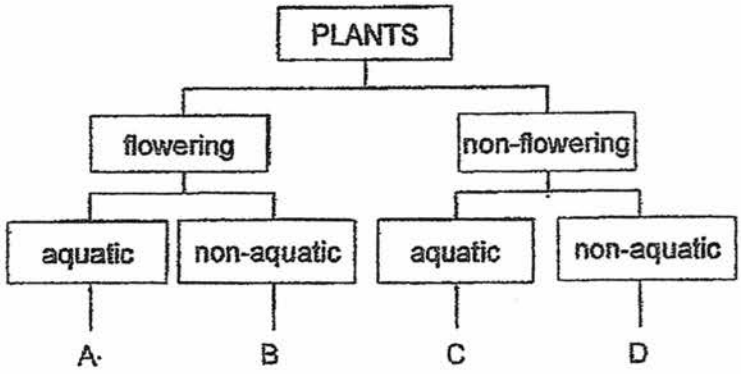
For each question from 1 to 14, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS). [28 marks]

---

1 The following table gives information on four plants, P, Q, R and S, based on two characteristics. A tick (√) shows that the plant has the characteristic.

	Plants			
Characteristic	**P**	**Q**	**R**	**S**
Bears fruit	√	√		
Grows on land	√		√	

From the information above, where do plants Q and R belong in the following classification table?



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

(Go on to the next page)

Downloaded from SingaKids.com

2 The table below shows the differences between the toad and the cockroach. Which one of the following comparisons is correct?

	Toad	Cockroach
(1)	Young looks like its parent	Young does not look like its parent
(2)	Young is not cared for by parent	Young is cared for by parent
(3)	Has 3 stages in its life cycle	Has 2 stages in its life cycle
(4)	Lays many eggs in water	Lays many eggs on land

3 The diagram below shows Fruit P.



Fruit P is compared to the coconut in terms of its dispersal. Which of the following actions would be most appropriate to find out whether Fruit P is scattered in the same way as the coconut?

A Weigh Fruit P.

B Place Fruit P in water.

C Open Fruit P to see if it contains water.

D Examine Fruit P to determine if it has a fibrous husk.

(1) A and D only

(2) B and D only

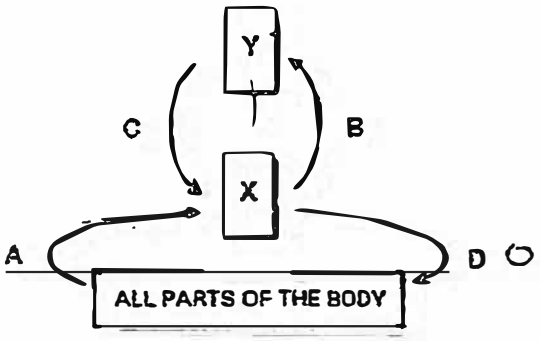
(3) A, B and C only

(4) B, C and D only

(Go on to the next page)

Downloaded from SingaKids.com

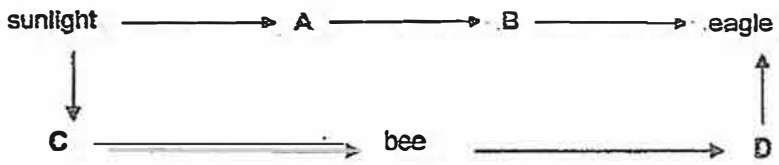
4 The diagram below shows arrows A, B, C and D which represent the movement of blood. Boxes X and Y represent two organs.



What do the arrows A and C represent and what organs are represented by X and Y?

	A	C	X	Y
(1)	rich in oxygen	rich in carbon dioxide	heart	lungs
(2)	rich in oxygen	rich in oxygen	lungs	heart
(3)	rich in carbon dioxide	rich in oxygen	heart	lungs
(4)	rich in carbon dioxide	rich in carbon dioxide	lungs	heart

5 Study the food web given below.



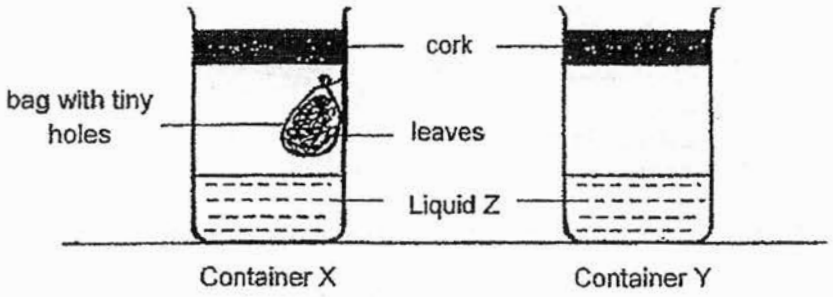
Which one of the following groups of organisms would complete the food web correctly?

	A	B	C	D
(1)	rice	mouse	ixora	frog
(2)	corn	grasshopper	fern	sparrow
(3)	carrot	rabbit	rose	owl
(4)	mango	snake	lily	lizard

(Go on to the next page)

Downloaded from SingaKids.com

6 Gopal set up an experiment using two containers, X and Y, filled with the same amount of liquid Z. Liquid Z is red and it turns yellow when the amount of carbon dioxide increases. She placed some leaves in a bag with many tiny holes and then hung it in container X. After a few weeks, liquid Z in container X turned yellow but liquid Z in container Y remained red.



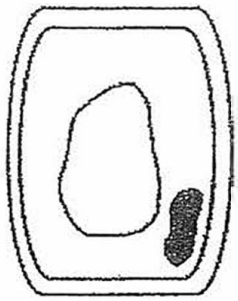
What had happened to cause liquid Z in container X to turn yellow?

(1) The leaves made food.
(2) Evaporation took place.
(3) Decomposition took place.
(4) Carbon dioxide entered the container.

(Go on to the next page)

Downloaded from SingaKids.com

7 A group of four children looked under the microscope and saw the cell shown below. They made a statement based on their observations.



Name of child	Statements
Martha	This is an animal cell because it has a regular shape.
Babu	This is an animal cell because it has no chloroplast.
Zainal	This is a plant cell because it has a cell wall.
Steven	This is a cell of an underground stem which has no chloroplast because it does not make its own food.

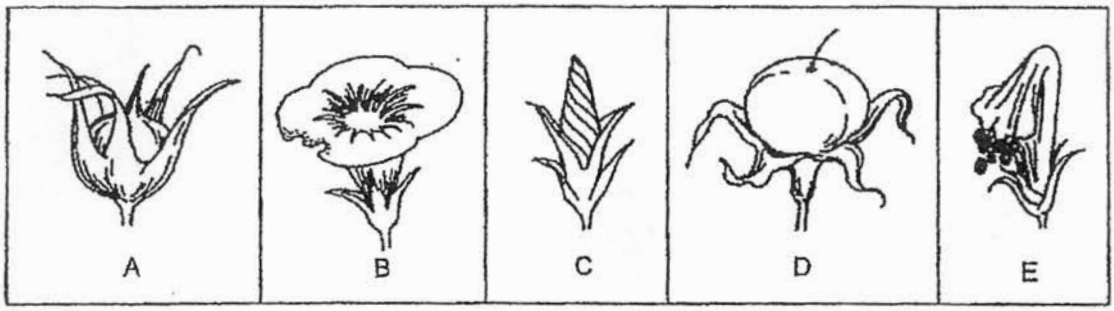
Whose statement(s) about the cell is/are correct?

(1) Babu only
(2) Steven only
(3) Babu and Martha only
(4) Zainal and Steven only

(Go on to the next page)

Downloaded from SingaKids.com

8 The diagrams below show the different stages of a flower developing into a fruit, but they are not in the correct order.



Which one of the following shows the correct order of development?

(1) B → C → E → A → D

(2) B → A → D → C → E

(3) C → A → D → E → B

(4) C → B → E → A → D

9 Which of the following statements are true about the human digestive system?

A Food is not digested in the gullet.

B Digestion is completed in the stomach.

C Digestive juice is not present in the mouth.

D Food undigested in the stomach may be digested in the small intestine.

E Water is absorbed from the undigested food by the body in the large intestine.

(1) A and B only

(2) C and E only

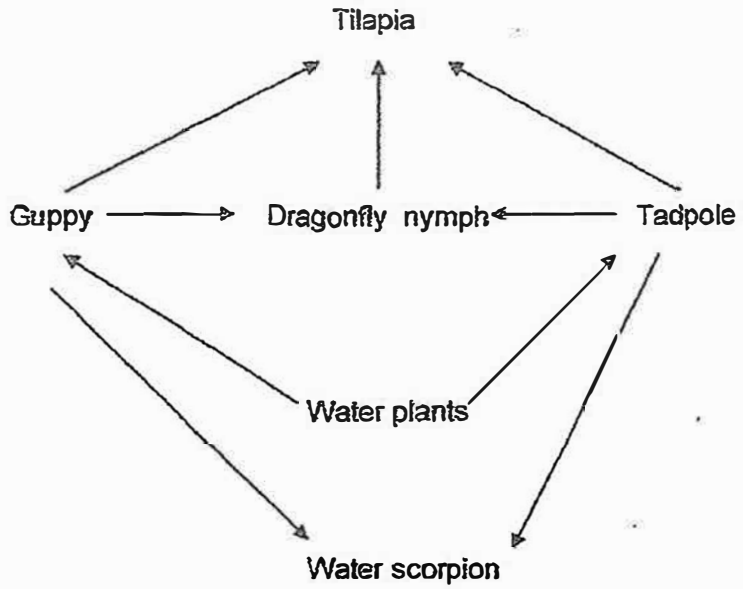
(3) A, D and E only

(4) B, C and D only

(Go on to the next page)

Downloaded from SingaKids.com

10 The food web below shows the food relationship in a pond.



Which of the following is/are most likely the result if all the dragonfly nymphs become dragonflies?

A The tadpoles will have one predator left.

B The tilapia will feed on more tadpoles and guppies.

C The community will be left with four types of predators.

D Water scorpions will feed on more tadpoles than guppies.

(1) B only

(2) B and C only

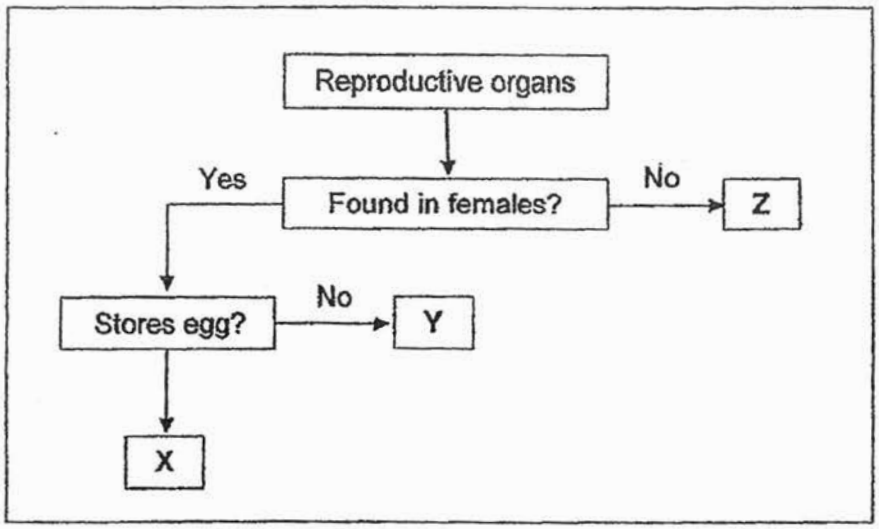
(3) A and C only

(4) A, B and D only

(Go on to the next page)

Downloaded from SingaKids.com

11 Study the flow chart below.



Which one of the following best identifies X, Y and Z of the human reproductive system in the flow chart?

	X	Y	Z
(1)	Ovule	Ovary	Testis
(2)	Ovary	Womb	Testis
(3)	Testis	Womb	Ovary
(4)	Womb	Ovary	Testis

(Go on to the next page)

Downloaded from SingaKids.com

12 The table below provides a description of some physical factors in four different habitats.

Physical factor	Habitat			
	A	B	C	D
Intensity of light (lux)	High	High	Low	Low
Amount of moisture	Low	High	High	Low
Average temperature (°C)	17	31	22	24

Organisms R and S were observed to have the following characteristics:

Organism R	Organism S
Thrives in a damp environment	Thrives in a dry environment
Prefers to stay in a dark environment	Prefers to stay in a bright environment
Most active when the surrounding temperature ranges from 16 - 24 °C	Most active when the surrounding temperature ranges from 16 - 24 °C

In which habitats would the greatest number of Organisms R and S be found?

	Habitat where most R are found	Habitat where most S are found
(1)	A	C
(2)	D	B
(3)	C	A
(4)	C	B

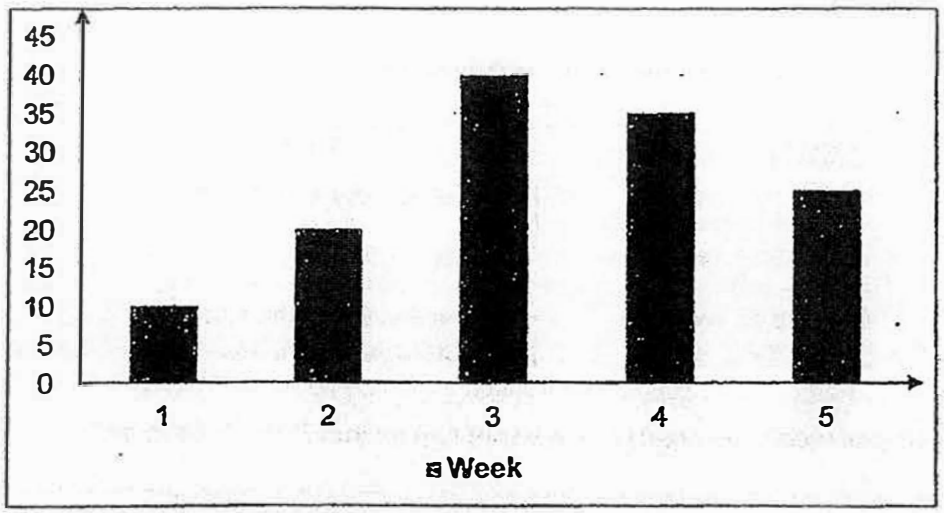
(Go on to the next page)

Downloaded from SingaKids.com

13 The food relationships among the organisms in a field community is shown below.

crop ⟶ grasshopper ⟶ bird

In the bar graph below, the population of grasshoppers in the field community was monitored over five weeks.



Which of the following statements best explain the changes in the population of grasshoppers?

A More crops were grown in the first two weeks.

B The population of birds decreased after the 3rd week.

C There was an outbreak of bird disease in the first two weeks.

D Less crops were harvested in the field from the 4th week onwards.

(1) A and B only

(2) C and D only

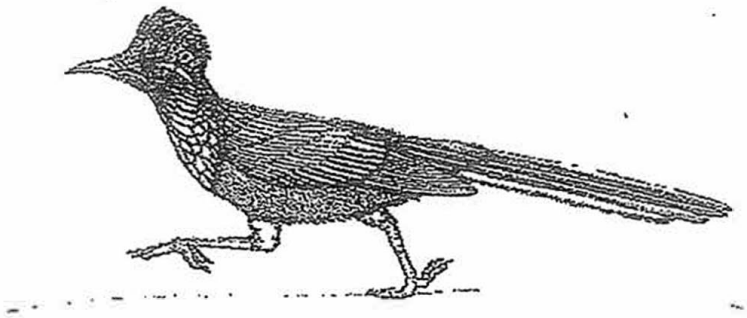
(3) A and C only

(4) A, B and D only

(Go on to the next page)

Downloaded from SingaKids.com

14 The picture below shows Animal G. Animal G lives in the desert and it is commonly spotted racing across the desert floor.



Which one of the following statements correctly explains how this behavior helps Animal G to withstand the heat from the hot sand in a desert habitat?

(1) By running at a great speed, Animal G creates wind resulting in less heat being felt by its feet.

(2) As Animal G runs quickly, its feet leave the hot sand fast enough for the heat to be gained and lost quickly.

(3) The moving air cools down the heat between Animal G's feet and the hot sand as it runs quickly across the hot desert floor.

(4) The surface area of contact between Animal G's feet and the hot sand is increased as it alternates its feet when it runs quickly across the desert floor.

End of Booklet A1

Downloaded from SingaKids.com

MID-YEAR EXAMINATION 2017
PRIMARY 6
SCIENCE

BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 6. _____

Date : 9 May 2017

This booklet consists of 13 printed pages including this page.

Downloaded from SingaKids.com

For each question from 15 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS). [28 marks]

---

15 Wei Xin set up the following experiment as shown in Diagram 1 below. Two bar magnets were suspended with a string and the poles of the magnet were not known to him. In diagram 2, another magnet, P, was placed in between the bar magnets and the positions of the magnets changed as shown in Diagram 2.

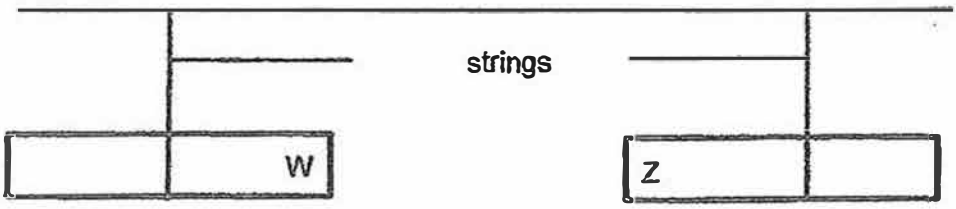


Diagram 1

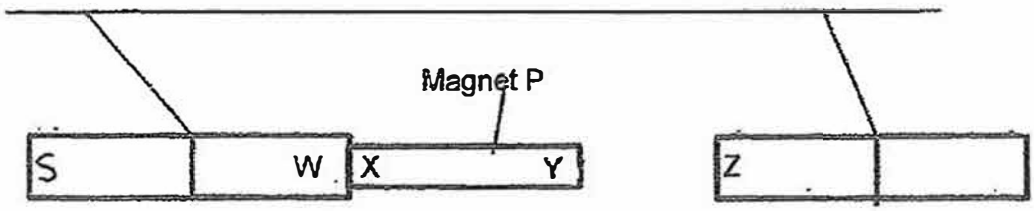


Diagram 2

Wei Xin listed some possible combinations of the poles of the bar magnets as shown in the table below.

	W	X	Y	Z
A	North	South	South	South
B	North	South	North	North
C	South	North	South	South
D	South	North	North	North

Which of the following combinations are possible poles for the bar magnets?

(1) A and B

(2) A and C

(3) B and C

(4) B and D

(Go on to the next page)

Downloaded from SingaKids.com

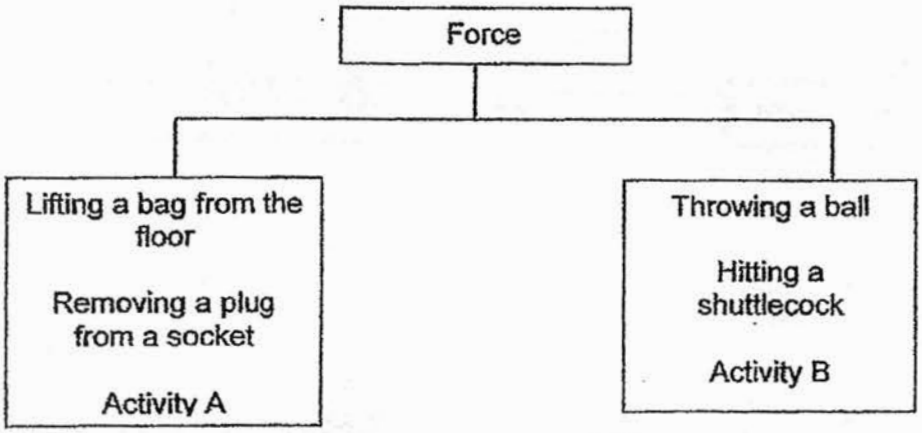
16 Study the characteristics of the four objects given in the table below.

Properties/ Objects	Flexible	Electrical Conductor	Magnetic	Allow light to pass through
A	No	Yes	Yes	No
B	Yes	No	No	No
C	No	No	No	No
D	No	No	No	Yes

Which of the following could objects A, B, C and D be made of?

	A	B	C	D
(1)	steel	rubber	wood	glass
(2)	iron	cotton	glass	copper
(3)	copper	wood	steel	glass
(4)	aluminum	glass	cotton	steel

17 Study the classification chart below.



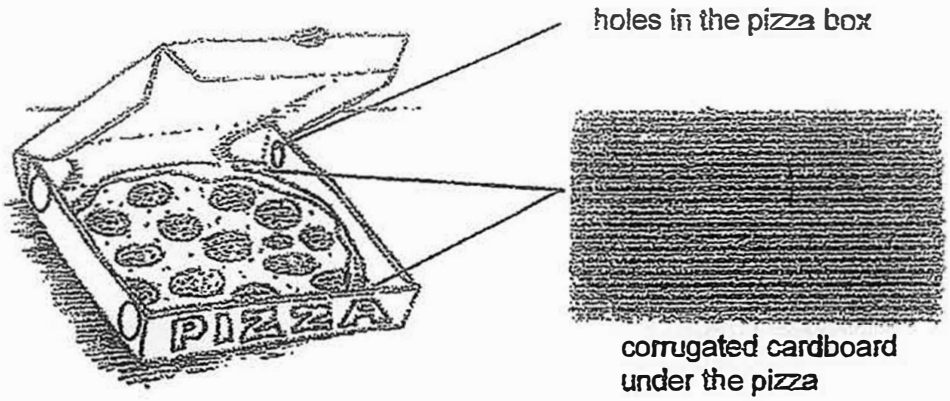
Which one of the following best represents activities A and B?

	Activity A	Activity B
(1)	Playing the piano	Pressing a door bell
(2)	Wringing a towel	Opening a drawer
(3)	Closing a drawer	Magnets repelling each other
(4)	Magnets attracting each other	Hammering a nail

(Go on to the next page)

Downloaded from SingaKids.com

18 The diagram below shows a pizza box with some common features.



Which of the following statements best explain the features found in the pizza box?

A The holes in the pizza box prevents the pizza from becoming soggy by allowing water vapour to escape.

B The holes in the pizza box keeps the pizza warm by allowing air, which is a poor conductor of heat to enter the box.

C The corrugated cardboard under the pizza increases friction between the pizza and the box to absorb the moisture.

D The corrugated cardboard under the pizza reduces area of contact between the pizza and the box, slowing down heat loss.

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

(Go on to the next page)

Downloaded from SingaKids.com

19 The table below shows the energy conversion when four different devices are used.

Devices	Energy conversion
W	Chemical potential energy → Kinetic energy → Kinetic energy + Sound energy
X	Electrical energy → Light energy + Sound energy + Heat energy
Y	Chemical potential energy → Electrical energy → Light energy + Heat energy + Sound energy
Z	Electrical energy → Heat energy + Kinetic energy + Sound energy

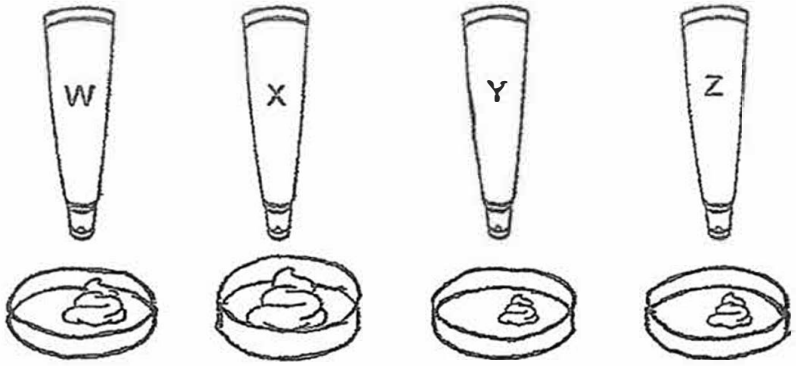
Which one of the following options correctly matches the energy conversions above?

	W	X	Y	Z
(1)	Piano	Television	Handphone	Hairdryer
(2)	Oven	Radio	Iron	Washing machine
(3)	Washing machine	Electronic keyboard	Handphone	Hairdryer
(4)	Piano	Oven	Hairdryer	Television

(Go on to the next page)

Downloaded from SingaKids.com

20 In an experiment, Miss Chua squeezed four identical tubes of paint, W, X, Y and Z from the same height above four dishes as shown below. The original amount of paint in each tube was the same. After one squeeze, she measured the mass of the paint on the four dishes. The following shows the results of her experiment.



Tube	Mass of paint on petri dish after one squeeze (g)
W	20
X	30
Y	12
Z	15

Which of the following statement(s) correctly explains her observation?

A Most force was applied on Tube X.

B More gravity acted in Tube Z than in Tube Y.

C Tube Y has the least amount of gravitational potential energy at first.

D There was more paint which was squeezed from Tube Z than Tube W.

(1) A only

(2) B and C only

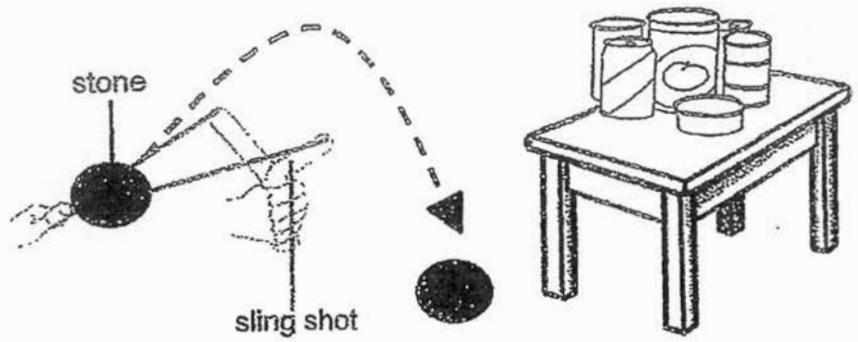
(3) A and D only

(4) A, B and D only

(Go on to the next page)

Downloaded from SingaKids.com

21 In the diagram below, Muthu used a sling shot to hit some cans on the table.



When Muthu pulled the elastic band and released the stone, the stone flew forward and dropped to the ground before it could hit the cans.

Which of the following statements correctly explain his observation?

A The stone fell to the ground as gravitational force is acting on it.

B Elastic potential energy is converted to heat and sound energy only.

C Friction between the stone and the elastic band prevented the stone from reaching the can.

D The energy in the stone has been converted to other forms of energy before it reached the cans.

(1) C only

(2) B and C only

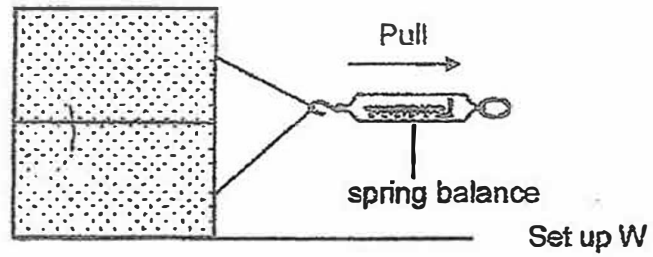
(3) A and D only

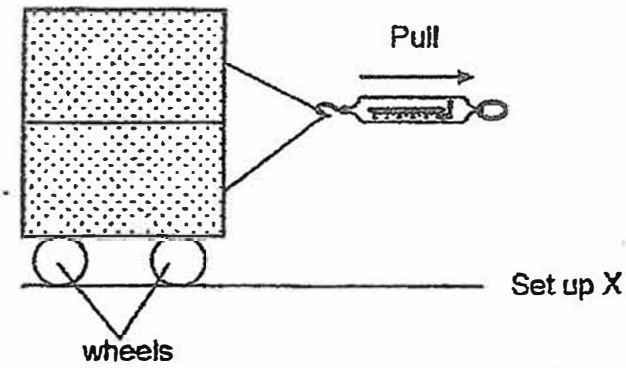
(4) A, B and D only

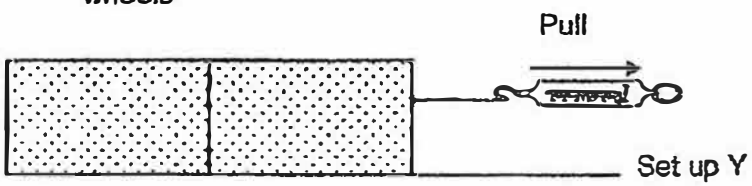
(Go on to the next page)

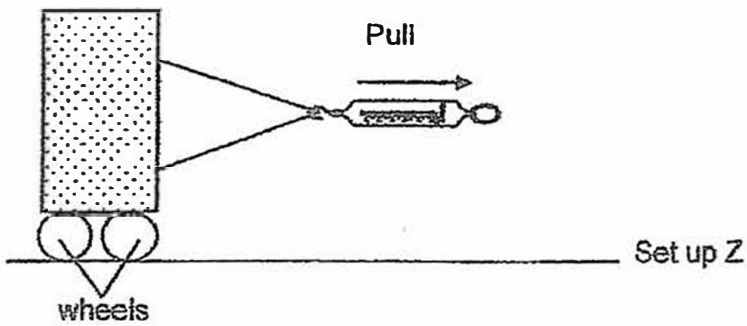
Downloaded from SingaKids.com

22 Linda prepared the following set-ups to investigate the amount of force needed to pull some wooden blocks across the same table surface. The pieces of wood are glued together for all the set-ups. The readings from the spring balance were then recorded.









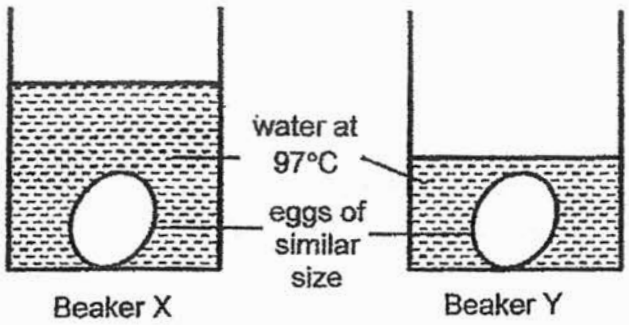
Which two set-ups would most likely show similar reading in the spring balance?

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

(Go on to the next page)

Downloaded from SingaKids.com

23 Two eggs which were similar in size were each placed in Beaker X and Beaker Y. The temperature of water in both set-ups is 97°C.



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

A The water in Beaker X loses heat faster than the water in Beaker Y

B Heat from the hot water in Beaker X and Y is transferred to the eggs.

C The egg in Beaker X will be cooked slower than the one in Beaker Y

D Both the water in Beaker X and Y contains the same amount of heat.

(1) B only

(2) B and D only

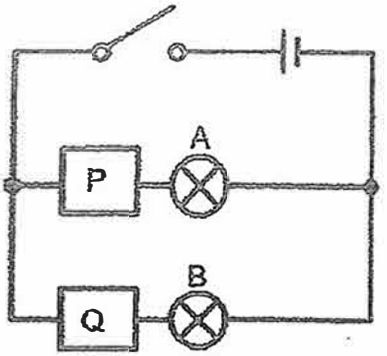
(3) A, B and C only

(4) A, C and D only

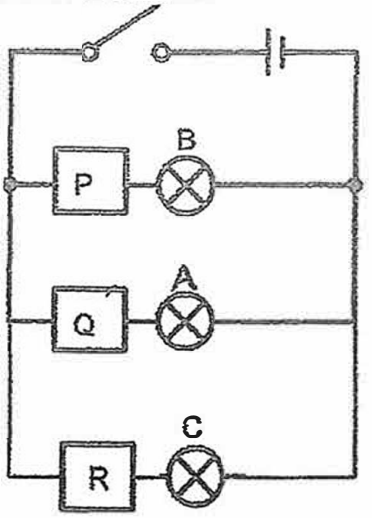
(Go on to the next page)

Downloaded from SingaKids.com

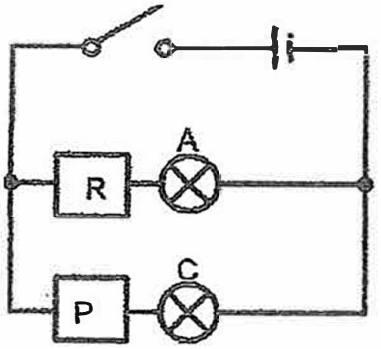
24 Huat Seng set up the following circuits as shown below.



Circuit 1



Circuit 2



Circuit 3

He closed the switches and recorded his observations in the table below.

Circuit	Bulb that lights up
1	A only
2	None
3	None

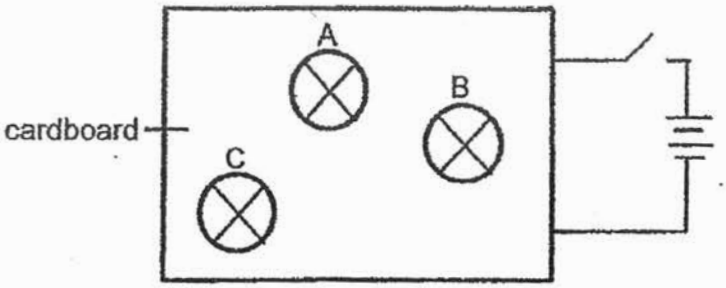
Based on the results, which one of the following is correct?

	Electrical Conductor(s)	Electrical Insulator(s)	Faulty Bulb(s)
(1)	P	Q and R	B and C
(2)	Q	R	B and C
(3)	P and Q	P	A
(4)	Q and R	P	B and C

(Go on to the next page)

Downloaded from SingaKids.com

25. Rafik set up a circuit with three identical bulbs, A, B and C, and two batteries. He covered the wires connecting the bulbs with a cardboard as shown in the diagram below.

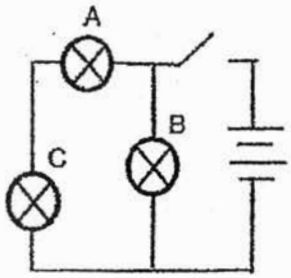


Rafik removed the bulbs, A, B and C, one at a time while keeping the rest of the circuit intact. Before connecting each bulb back into the circuit, he observed the other two bulbs and recorded his observations in the table below.

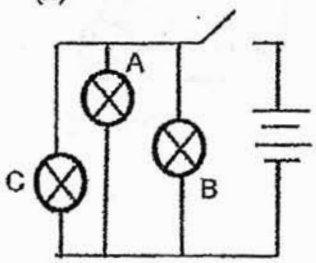
Bulb removed	Observations
A	B and C stay lit
B	C went off while A stay lit
C	B went off while A stay lit

Which one of the following circuits shows how the three bulbs were connected?

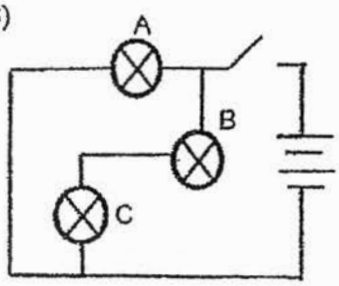
(1)



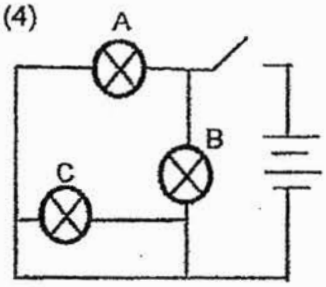
(2)



(3)



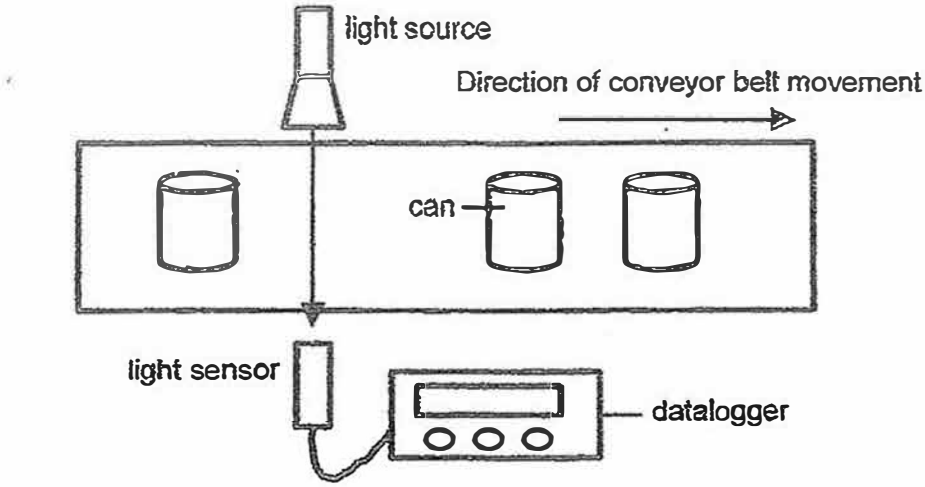
(4)

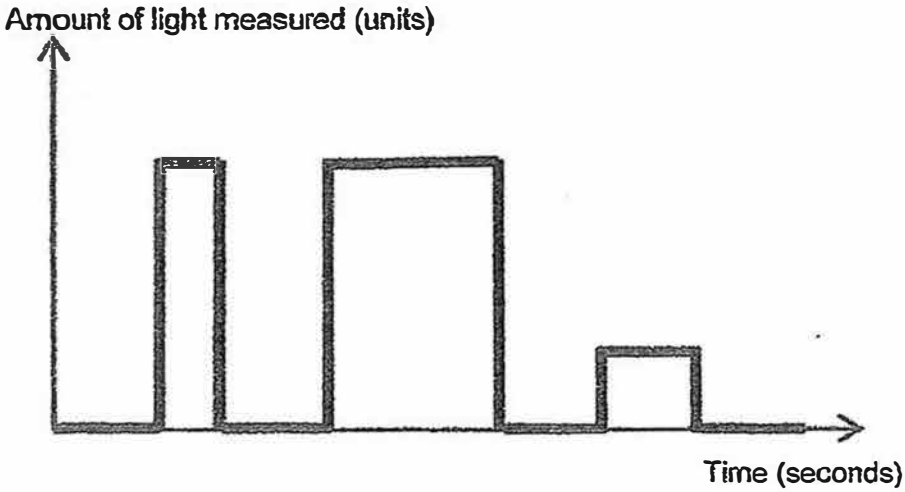


(Go on to the next page)

Downloaded from SingaKids.com

26. The following graph shows the readings from a light sensor when some cans on a conveyor belt pass through a light source.





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

A Three cans passed through the sensor.

B The cans are not spaced at equal distance on the conveyor belt.

C All the cans blocked the light for the same amount of time.

D Beside the cans, there was another object which blocked some light on the conveyor belt.

(1) C only

(2) A and B only

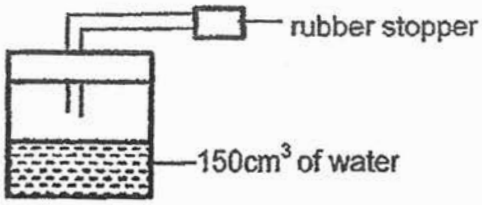
(3) C and D only

(4) B, C and D only

(Go on to the next page)

Downloaded from SingaKids.com

27. A container was filled with 150 cm^3 water and some air as shown below.

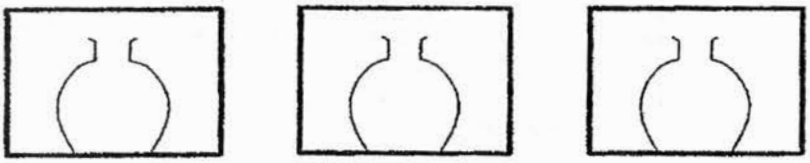


A cube was then added to the container and 20 cm^3 more air was pumped in.

Which one of the following options is correct after the above contents are added?

	Total mass	Total volume	Volume of air	Volume of water
(1)	Increases	Increases	Increases	Increases
(2)	Increases	Remains the same	Decreases	Remains the same
(3)	Remains the same	Increases	Increases	Decreases
(4)	Decreases	Remains the same	Decreases	Remains the same

28. Xiao Lin set up the following experiment as shown below. Three identical empty glass bottles were left in three different rooms at different temperatures. The glass bottles were not sealed or capped.



After 5 hours, Xiao Lin removed the bottles from the rooms and placed them in in another room at room temperature. She observed that only the bottle at Room X had water droplets on them.

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

A Room X is the coldest room.

B Room Y and Z are colder than Room X.

C The temperature in Room Y and Z must be the same.

D All three bottles lost a different amount of heat at room temperature.

(1) A only

(2) A and B only

(3) C and D only

(4) B, C and D only

End of Booklet A2

Downloaded from SingaKids.com

MID-YEAR EXAMINATION 2017
PRIMARY 6
SCIENCE

BOOKLET B1

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____( )

Class: Primary 6._____

Date : 9 May 2017

Booklet A1 & A2	56
Booklet B1	22
Booklet B2	22
Total	100
Parent's Signature	

This booklet consists of 10 printed pages including this page.

Downloaded from SingaKids.com

For questions 29 to 34, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question. [22 marks]

29 The diagram below shows two plants, P and Q. Both plants have weak stems but they have adapted to their environment and both are growing well.

Plant P



Plant Q



(a) What is the structural adaptation of each plant? [1]

Adaptation of Plant P: _____

Adaptation of Plant Q: _____

(b) Suggest a common reason why these adaptations allow both plants to grow well. Explain your answer clearly. [1]

_____

_____

Stomata, tiny openings on leaves of land plants, are usually concentrated on one side of leaves. Oil was spread on the underside of leaves of Plant P and upper side of leaves of Plant Q. After a week, one plant wilted.

(c) Which plant, P or Q, has wilted? Give a reason why the plant wilted. [1]

_____

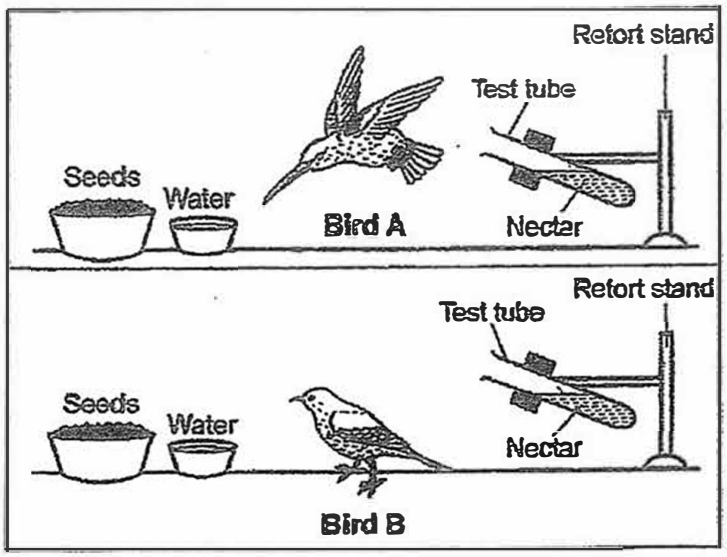
_____

3

(Go on to the next page)

Downloaded from SingaKids.com

30 Bird A and Bird B were kept separately in two cages as shown below.



200g of seeds and 40ml of nectar were placed in each cage at the start of the experiment. After two days, the amount of seeds and nectar were recorded in the table as shown below.

	Cage with Bird A	Cage with Bird B
Mass of seeds at the start of experiment (g)	200	200
Mass of seeds at the end of experiment (g)	200	50
Volume of nectar at the start of experiment (ml)	40	40
Volume of nectar at the end of experiment (ml)	20	40

(a) What can be concluded about the diet of Bird A from the above readings? [1]

_____

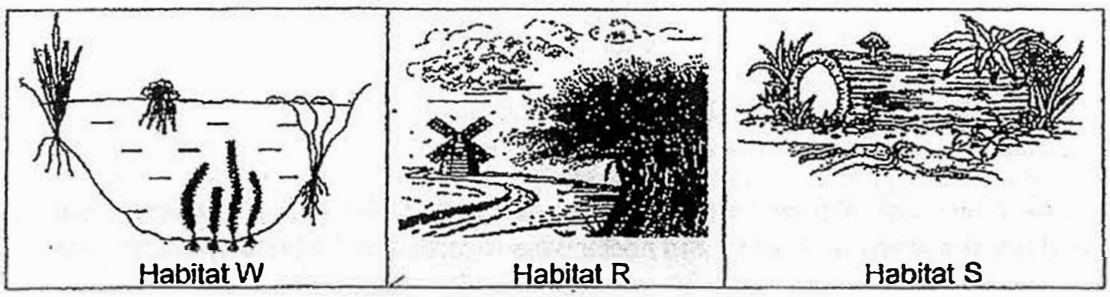
1

(Go on to the next page)

Downloaded from SingaKids.com

(b) Explain how Bird A is adapted to its natural habitat for the diet mentioned in (a). [2]

(c) The picture below shows three different habitats, W, R and S. Which ~~one~~ of the three habitats is best suited for Bird B in order for it to find sufficient food for its survival? Give a reason for your answer. [1]



Habitat: _____

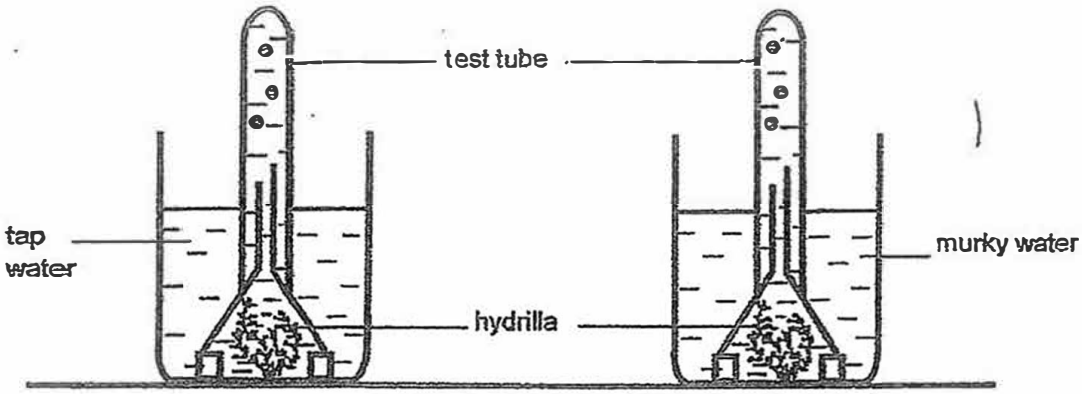
Reason: _____

3

(Go on to the next page)

Downloaded from SingaKids.com

31 Sammy set up an experiment to find out how murky water affects the rate of photosynthesis in a hydrilla plant. Two similar hydrilla plants were placed in similar beakers with the same amount of water. The set-ups were then placed in direct sunlight.



Set-up A **Set-up B**

Sammy hypothesizes that the rate of photosynthesis is higher for the hydrilla plant in tap water.

(a) Why did Sammy make his hypothesis as stated? Explain your answer clearly. [1]

(b) What data should Sammy collect in order to support his hypothesis? [1]

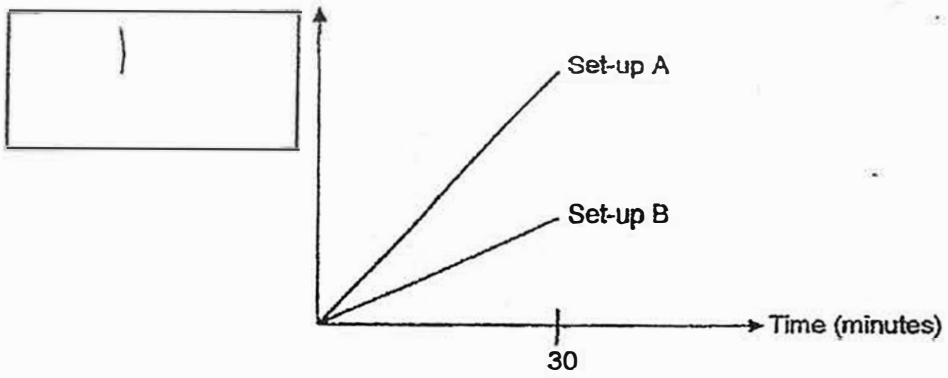
(c) Sammy's teacher asked him to repeat his experiment a few times. Why did his teacher make this suggestion? [1]

3

(Go on to the next page)

Downloaded from SingaKids.com

(d) The graph below shows the measured variable for Set-up A and Set-up B over 30 minutes. Label the vertical axis of the graph by writing in the given box below. [1]

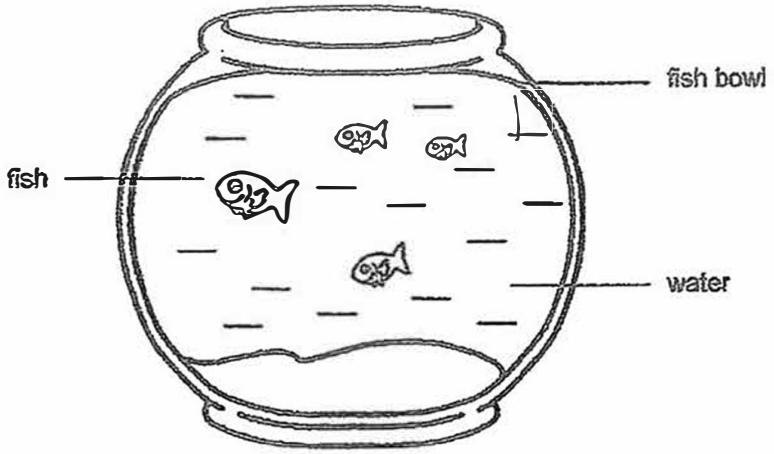


1

(Go on to the next page)

Downloaded from SingaKids.com

32 A little boy kept some fish in his fish bowl as shown in the picture below.



After a few days of observation, he realized that the fish were always swimming around the surface of the water. He told his friends that the fish wanted light, so they swam near the surface.

(a) Do you agree with the little boy? Explain your answer. [1]

_____

_____

_____

(b) What changes can he do to the environment that the fish are in so that they would not always swim near the surface of the water? Give two suggestions and explain why. [2]

Suggestion 1: _____

_____

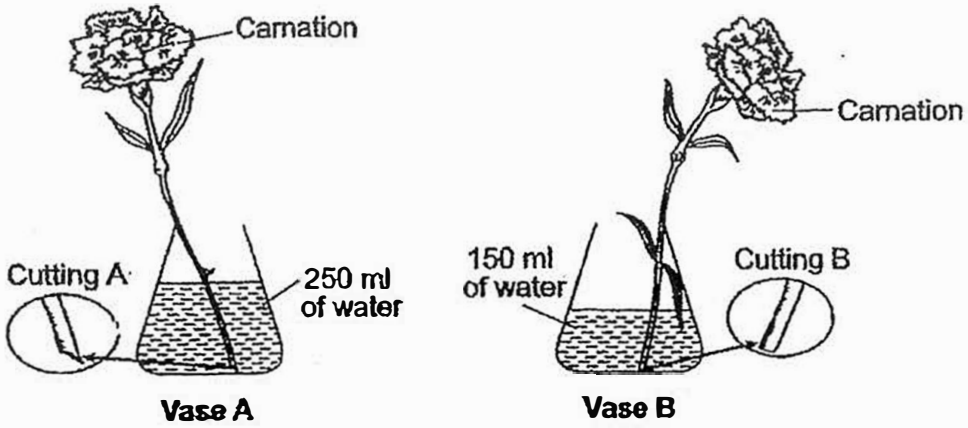
Suggestion 2: _____

_____

3

Downloaded from SingaKids.com

33 Bitna wanted to find out if the different ways of cutting the stalks of carnation flowers would affect the amount of water taken in by them. She filled two similar vases, A and B, with water and placed a stalk of white carnation in each vase. Next, she placed both vases in the same location. The two different ways each stalk was cut are shown below.



(a) How would she determine which stalk of carnation had taken in more water? [1]

_____

_____

(b) Her teacher told her that the experiment is not a fair one. Based on the set-up as shown above, suggest two changes that she should make to ensure a fair test. [2]

Suggestion 1: _____

_____

Suggestion 2: _____

_____

3

(Go on to the next page)

Downloaded from SingaKids.com

(c) How did Cutting A and Cutting B affect the amount of water taken in by each stalk of carnation? Explain your answer clearly.

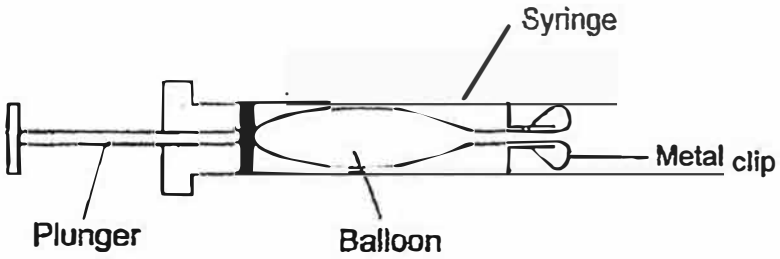
(d) A florist has an order of 100 carnations for a wedding. The bride wanted blue and pink colours on each carnation. What could the florist do to meet the requirements of her order besides spraying the flowers with blue and pink paint? [1]

2

(Go on to the next page)

Downloaded from SingaKids.com

34 Latifah made a simple model to resemble the human respiratory system. She used a large syringe, balloon and a metal clip as materials for her model. Her model was assembled as shown below.



(a) Which objects in the model represent the following body parts? [1]

(i) Lungs: _____

(ii) Ribcage: _____

(b) Latifah pulled the plunger backwards away from the balloon. What will happen to the balloon? Explain your answer clearly. [1]

_____

_____

(c) Latifah told her teacher that only three human body systems are working together when a person is sleeping. Do you agree with her? Explain your answer. [1]

_____

_____

3

End of Booklet B1

Downloaded from SingaKids.com

MID-YEAR EXAMINATION 2017
PRIMARY 6
SCIENCE

BOOKLET B2

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 6._____

Date : 9 May 2017

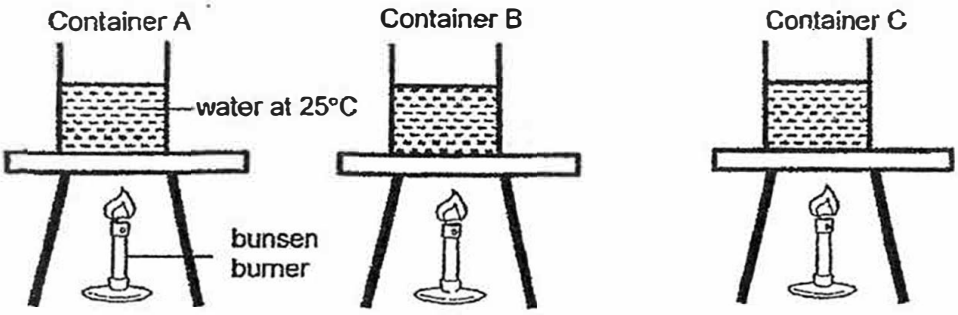
Booklet B2	22

This booklet consists of 11 printed pages including this page.

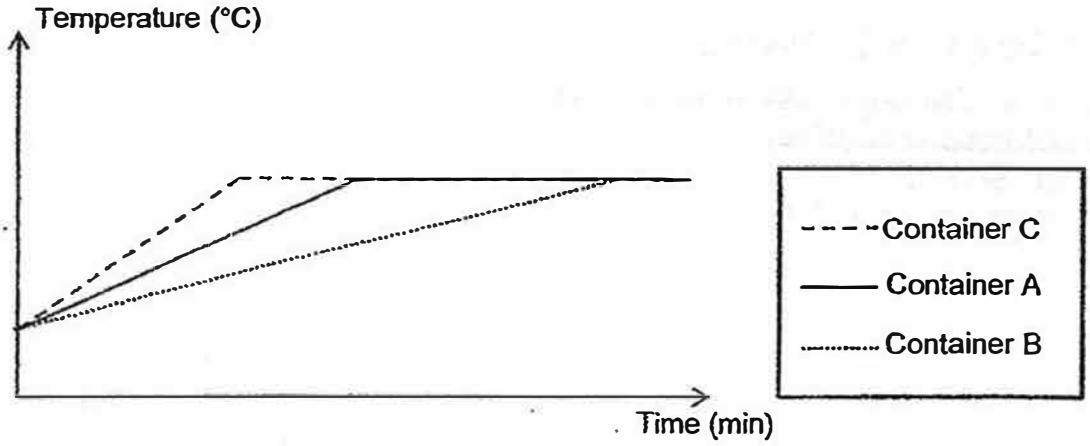
Downloaded from SingaKids.com

For questions 35 to 41, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question. [22 marks]

35. In the diagram below, Valerie heated three containers, A, B and C which were made of different materials. Each container contained an equal amount of water at 25°C. The containers were supplied with the same amount of heat.



She measured the amount of time taken for the water to boil in the table and plotted a a graph as shown below.



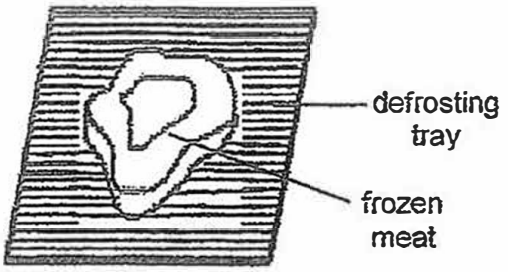
(a) Based on Valerie's results, which container, A, B or C is the poorest conductor of heat? Explain your answer. [1]

1

(Go on to the next page)

Downloaded from SingaKids.com

The following diagram shows a defrosting tray which is found in the kitchen. It is used to thaw frozen meat quickly.



(b) From the results of the experiment, which material, A, B or C is the most suitable material to make the defrosting tray to thaw frozen meat quickly? Give a reason for your answer. [1]

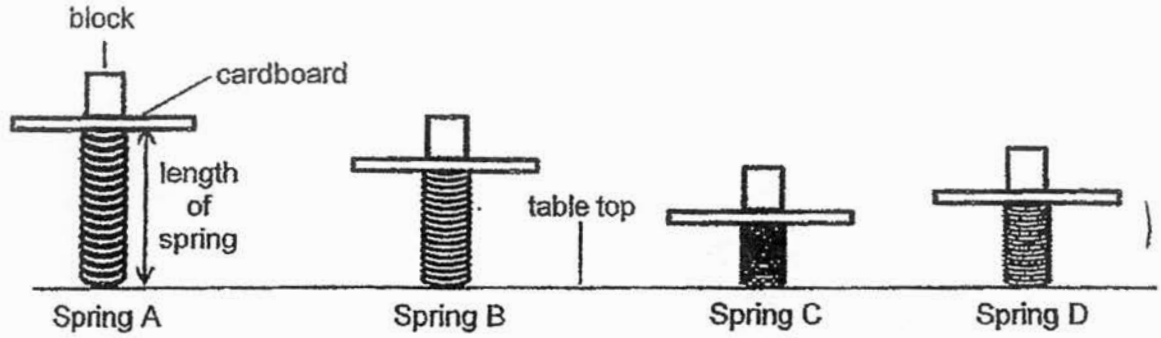
(c) When Valerie cut the frozen meat into smaller pieces, she realised that the amount of time to thaw it was shorter. Explain her observation. [1]

2

(Go on to the next page)

Downloaded from SingaKids.com

36 In an investigation, Keith placed identical blocks on four different springs, A, B, C and D. The original length of all the springs was 10 cm.



After placing the blocks on the springs, he measured the length of spring and recorded his results in the table below.

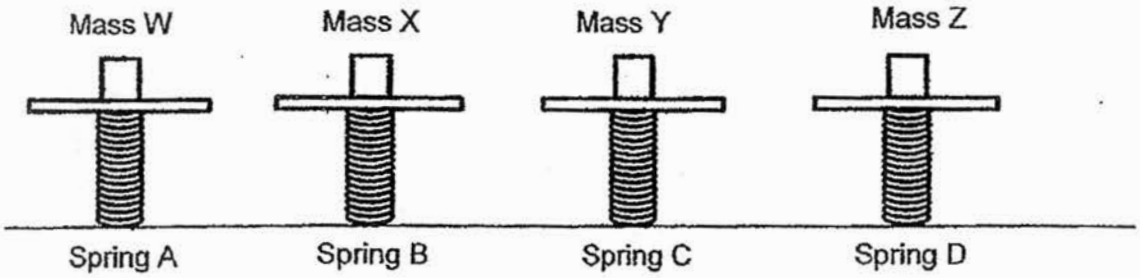
Spring	Length of spring (cm)
A	8.5
B	7
C	5
D	6

(a) Based on the results, give a reason why the lengths of the springs are different when the same block is placed on them. [1]

_____

_____

(b) In another experiment, Keith placed different masses, W, X, Y and Z on the four springs, A, B, C and D respectively such that the length of each spring is the **same**.



(i) Arrange the masses, W, X, Y and Z from the **heaviest to the lightest.** [1]



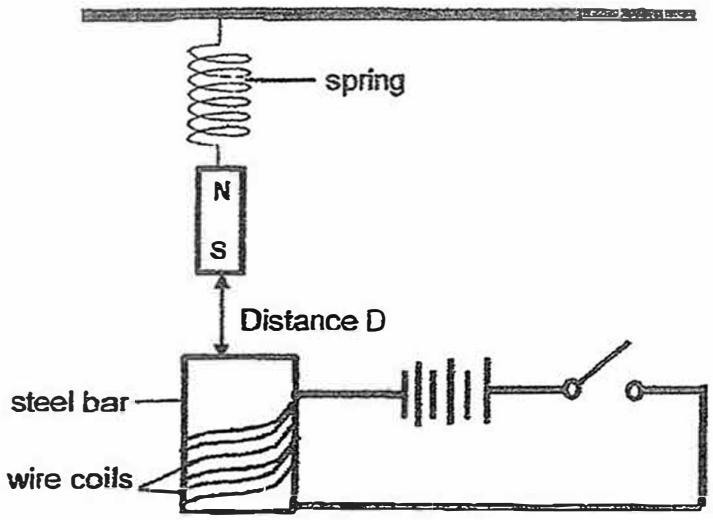
2

(Go on to the next page)

Downloaded from SingaKids.com

(ii) Explain why Mass Y is the lightest. [1]

Study the set-up below.



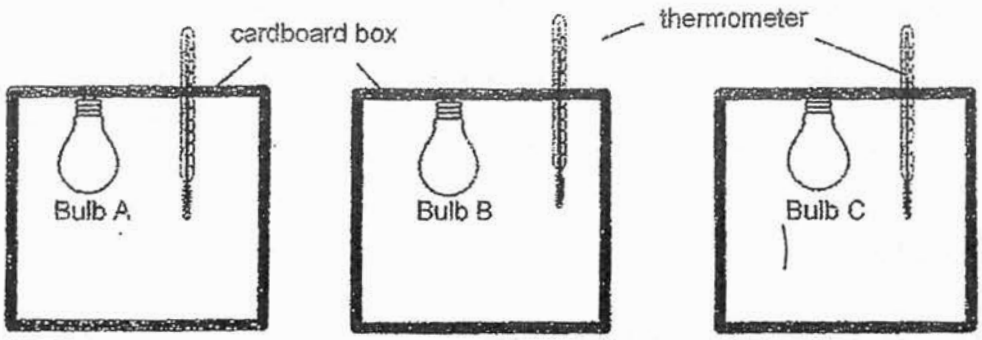
(c) When the switch was closed, it was found that distance D increased. Explain this observation clearly. [2]

3

(Go on to the next page)

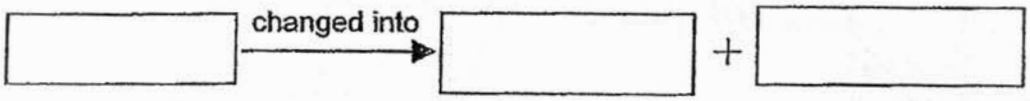
Downloaded from SingaKids.com

37. Mr Lai conducted an experiment with three different light bulbs, A, B and C as shown below. The temperature of the air was measured over a period of 20 minutes.

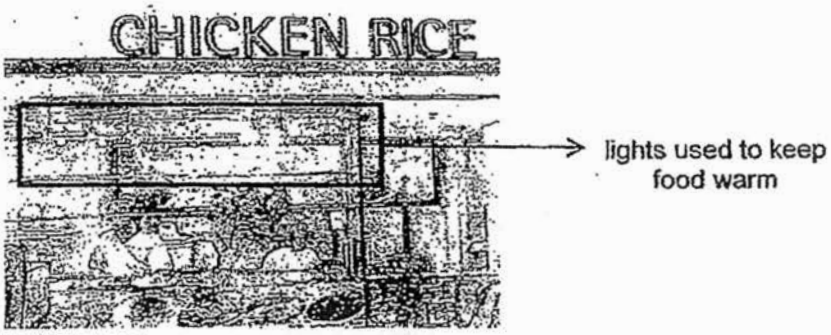


Time/min	Temperature of air/ °C		
	Set-up A	Set-up B	Set-up C
0	25	25	25
5	28	27	27.5
10	30	30	30
15	31	31	33
20	32	33	36

(a) Fill in the boxes to show the energy conversion in the bulb. [1]



It was observed that light bulbs were sometimes placed strategically near the food to keep them warm in air- conditioned food courts.



(b) Based on the above results, which light bulb, A, B or C should Mr Lai use for his chicken rice stall? Give a reason for your answer. [1]

_____

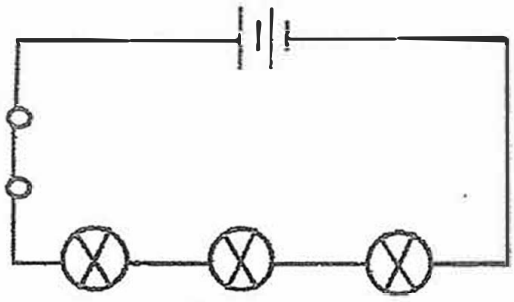
_____

2

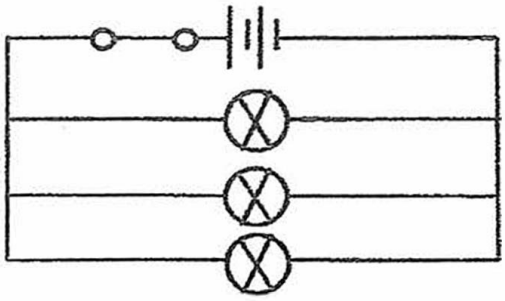
(Go on to the next page)

Downloaded from SingaKids.com

The diagrams below shows two possible circuit arrangements to keep the roast chickens warm in Mr Lai's stall.



Circuit X



Circuit Y

(c) What is one advantage of choosing Circuit Y for Mr Lai's chicken rice stall? [1]

_____

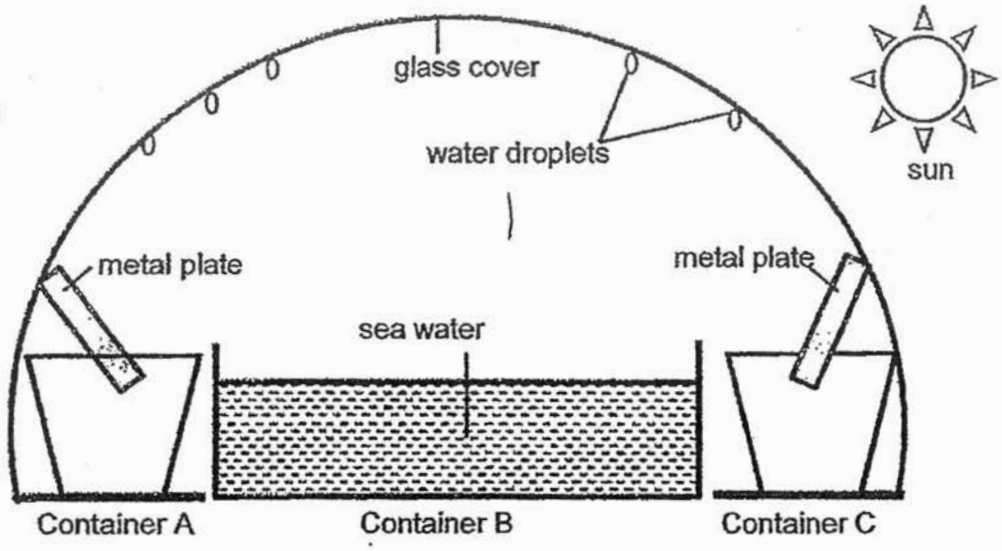
_____

1

(Go on to the next page)

Downloaded from SingaKids.com

38. Mr Soh constructed a model below to obtain clean water from sea water. The model uses solar energy to heat up the sea water.



(a) Explain the processes in which clean water is obtained from the sea water. [1]

Mr Soh's son claimed that more clean water will be collected at a faster rate if he changed Container B to a smaller one as shown below.



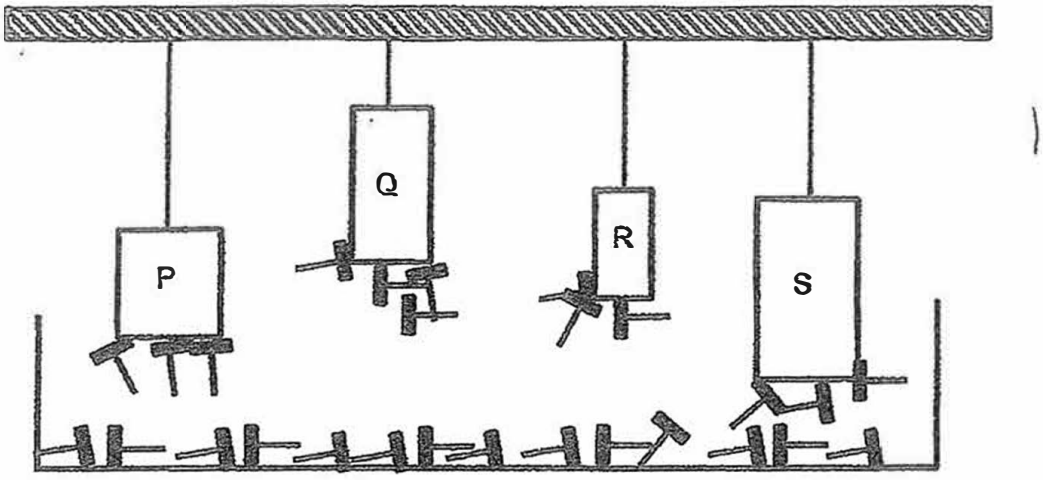
(b) Do you agree with his son? Give a reason for your answer. [2]

3

(Go on to the next page)

Downloaded from SingaKids.com

39. Jennifer wanted to compare the magnetic force of four magnets, P, Q, R and S. She set up the experiment below and recorded the number of pins that were attracted by each magnet in the table below.



(a) Her teacher explained that her experiment was not a fair one. How should Jennifer change her set-up? [1]

Based on her teacher's recommendation in (a), Jennifer repeated her experiment. All the other variables were kept the same.

Magnet	Number of pins attracted
P	12
Q	10
R	8
S	5

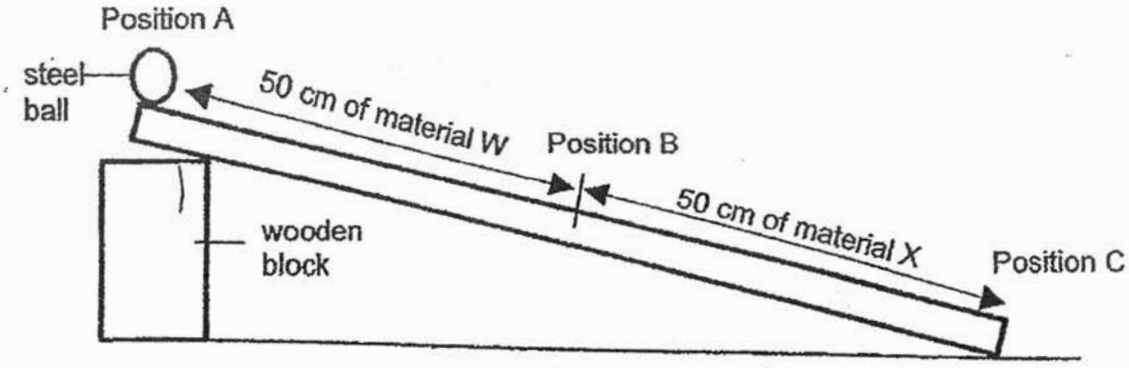
(b) From the above data, what could Jennifer conclude about the size of the magnet and its magnetic strength? [1]

2

(Go on to the next page)

Downloaded from SingaKids.com

40. In the diagram below, a steel ball was released at Position A of the ramp. The surface of the ramp was made of two different materials, W and X, each with a length of 50 cm.



The time taken to roll down the ramp from A to B and B to C was recorded in the table below.

Position	Time taken/seconds			
	1st try	2nd try	3rd try	Average
A to B	4.5	5.2	4.3	4.7
B to C	3.4	4.1	3.9	3.8

(a) What are the forces acting on the steel ball as it rolls from Position A to C? [1]

_____

(b) Based on the results above, which material, W or X, is the most suitable to make the flooring of a bowling alley? Explain your answer. [1]

_____

_____

(c) **Using the same steel ball and ramp**, suggest two changes to the set- up to make the steel ball roll down faster. [2]

Suggestion 1:

_____

Suggestion 2:

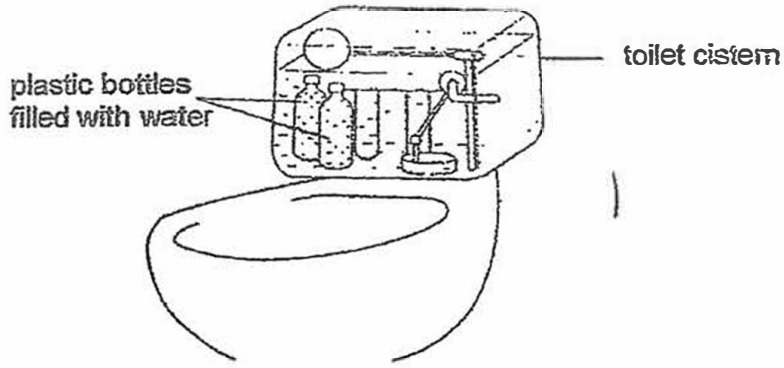
_____

4

(Go on to the next page)

Downloaded from SingaKids.com

41 In the diagram below, Mrs Tan placed two plastic bottles in a toilet cistern. The plastic bottles were filled with water and capped tightly.



(a) Explain how Mrs Tan can save water by using these plastic bottles in the toilet cistern.

[1]

(b) If these plastic bottles filled with water were to be replaced by empty ones with caps, would Mrs Tan still be able to save water? Give a reason for your answer. [1]

- /2

End of Booklet B2

Downloaded from SingaKids.com

Downloaded from SingaKids.com

EXAM PAPER 2017
LEVEL : PRIMARY 6
SCHOOL : MGS
SUBJECT : SCIENCE
TERM : SA1

Booklet A

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

Booklet B

Q29 (a) Plant P: Climbs on a pole
Plant Q: Spreads itself on the ground
(b) To get more sunlight
(c) Plant P. Most stomata are found on the underside of leaves. When covered with oil, gaseous exchange cannot take place.

Q30 (a) Bird A feeds on nectar but not seeds.
(b) Bird A has a long and thin beak that can be inserted into the flowers to draw out nectar when it hovers near the petals.
(c) Habitat : R
Reason: Bird B has a small pointed beak which is adapted to feed mostly on seeds. It will find seeds in farm lands.

Q31 (a) The murky water allows little light to pass through and so the rate of photosynthesis decreases whilst tap water allows light to pass through and so the rate of photosynthesis increases.
(b) Sammy can count the number of gas bubbles released from the plant.
(c) To ensure the consistency of results.
(d) Vertical axis – Amount of oxygen

Q32 (a) No. There is not enough dissolved oxygen for the fish so they swim near the surface of the water to get oxygen.
(b) Suggestion 1 – Put a water plant. The water plant takes in carbon dioxide and gives out oxygen.
Suggestion 2 – Add in an air pump. The air pump will increase the supply of air in the water.

Q33 (a) The greater the difference in water level in the vase of water will show that the stalk of carnation had taken in more water.
(b) Suggestion 1 – The amount of water in the two vases should keep the same
Suggestion 2 – The number of leaves to be the same.
(c) The surface area of A is more than the surface area of B, allowing the carnation in vase A to take in more water.
(d) The 100 carnations can be divided into halves. One half can be put into blue-coloured water while the other half can be put into pink-coloured water.

Downloaded from SingaKids.com

Q34 (a) Lungs: Balloon
Ribcage: Syringe

(b) The balloon will inflate. This is because there is more space in the syringe for air to enter into the balloon.

(c) No. A person is alive thus all his body systems are functioning and working together to carry on life processes even as he is sleeping.

Q35 (a) Container B. Container B took the longest amount of time to reach a certain temperature.

(b) Container C. It is the best conductor of heat and it will transfer the most heat from the surrounding air to the frozen meat.

(c) When the meat is cut into pieces, there is an increase in surface area exposed to the surrounding. More heat will be gained by the frozen pieces of meat so that they will thaw faster.

Q36 (a) The four springs may be made of different materials.

(b) (i) W, X, Z, Y
(ii) When the same weight blocks are placed on the spring, spring C is the shortest. This means that it is able to be compressed the most compared to other springs. Thus, the lightest is mass Y.

(c) When the switch is closed, a closed circuit is formed and electric current is able to flow through. The steel bar becomes a temporary electromagnet and the pole nearest to the magnet is a South pole. Like poles of the magnet repel and thus distance D increased.

Q37 (a) Electrical energy → Heat , Light → Light energy

(b) Light bulb C. Within the period of 20 minutes, the increase in temperature of the air in the cardboard box was the highest in set-up C.

(c) When one light bulb fuses, the other two light bulbs will still light up.

Q38 (a) The sea water gains heat from the sun and evaporates into water vapour. The water vapour condenses into water droplets when it touches the cooler surface which is the glass cover. The water droplets drip into containers A and C.

(b) I do not agree. The surface area affects the rate of evaporation if Mr Lai changes it to a smaller container the rate of evaporation will be slower as there is less surface area.

Q39 (a) The magnets should be hung at the same height.

(b) The size of the magnet does not affect the magnetic strength.

Q40 (a) Frictional force and gravitational force

(b) Material X. The steel ball took a shorter time to roll from position B to C on material X. This shows that there is lesser friction produced between the surface of the steel ball and material X.

(c) Suggestion 1 - put lubricant
Suggestion 2 – Increase the height of the wooden block.

Q41 (a) The plastic bottles occupies space and less water is needed for flushing.

(b) No. The empty bottles will float and it is unable to be fully submerged in water to reduce the amount of water needed to fill the cistern.

Downloaded from SingaKids.com