

**METHODIST GIRLS' SCHOOL**  
Founded in 1887



**CONTINUAL ASSESSMENT 2012**  
**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: 1 March 2012

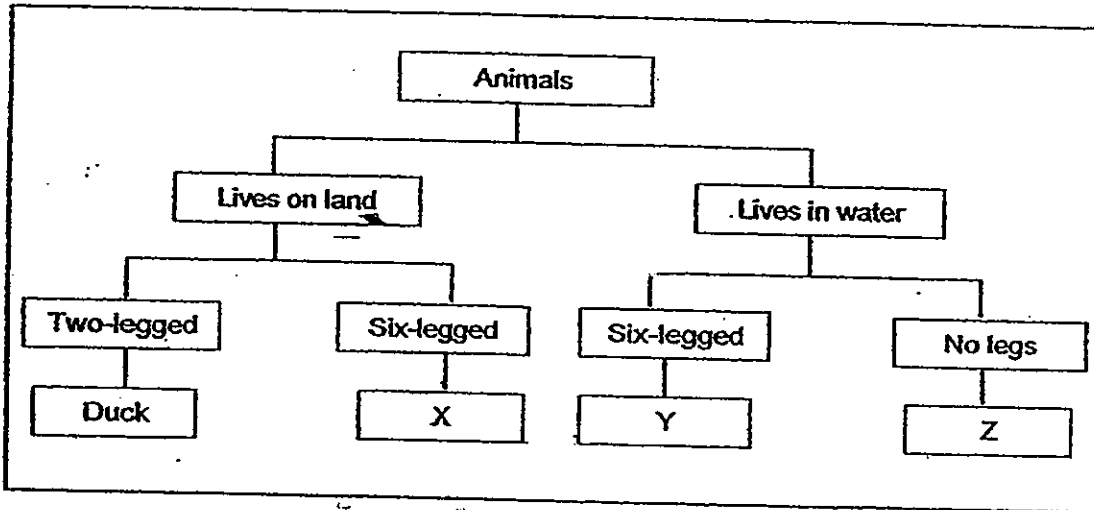
This booklet consists of 15 printed pages including this page.

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For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

1. Study the classification chart on animals as shown below.

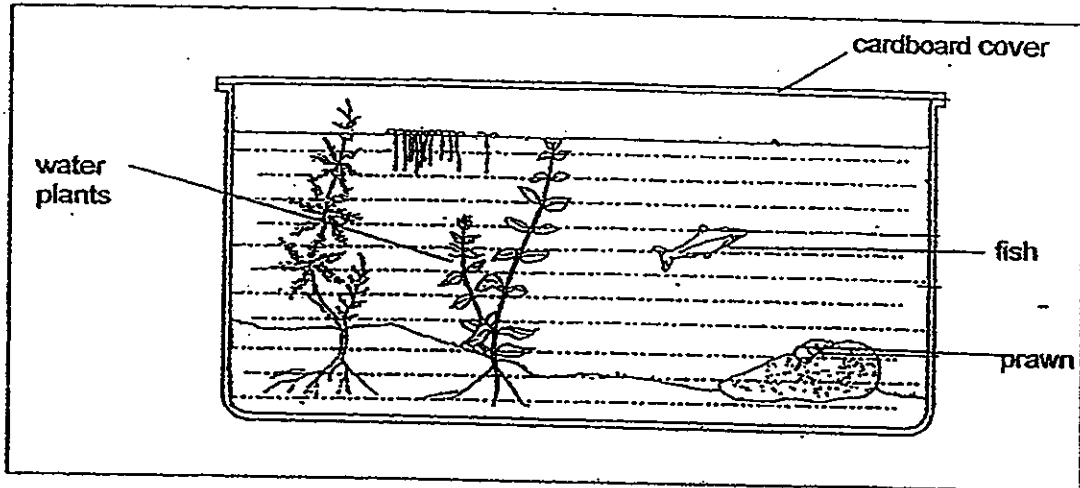


Based on the classification chart, which of the following animals would you put in X, Y and Z respectively?

	X	Y	Z
(1)	ant	squid	tilapia
(2)	butterfly	mayfly nymph	eel
(3)	grasshopper	dragonfly nymph	water scorpion
(4)	cockroach	maggot	tubiflex worm

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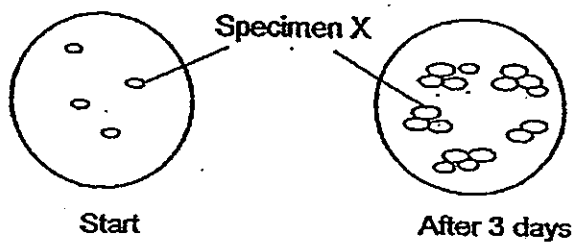
2. - Tiffany set up an aquarium as shown in the diagram below.



Besides considering food for the fish and prawn, which one of the following conditions must be present so that the organisms living in the aquarium will live for the longest period of time?

- (1) Oxygen
- (2) Warmth
- (3) Light
- (4) Carbon dioxide

3. Hui Juan was given Specimen X in a petri dish filled with water at room temperature. The diagram below shows the picture of Specimen X taken from the microscope at the start and after 3 days.



Which one of the following process (es) could have caused the changes?

- (1) Reproduction
- (2) Fertilisation
- (3) Germination and growth
- (4) Reproduction and growth

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4. Feng Lin observed the life cycles of a mosquito and a chicken. She noted the change of stages for the two animals on her calendar as shown below.

May 2011						
		1	2 Chicken Egg laid (Stage 1)	3	4	5
6	7	8	9	10	11	12
13 Mosquito Egg laid (Stage 1)	14	15	16	17 Mosquito (Stage 2)	18	19
20	21	22	23 Chicken (Stage 2)	24	25	26
27	28	29	30	31		

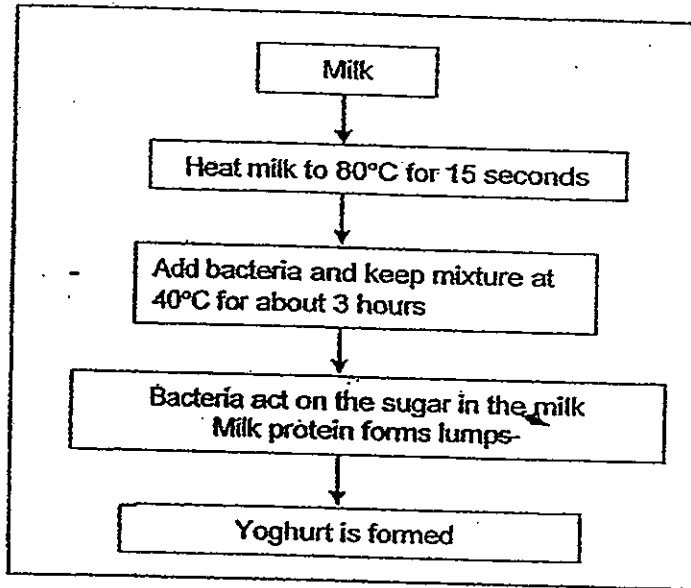
June 2011						
		1 Mosquito (Stage 3)	2	3	4	5
6	7	8 Mosquito (Stage 4)	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

On which day will Feng Lin see a pupa and a chick?

- (1) 23<sup>rd</sup> May
- (2) 31<sup>st</sup> May
- (3) 3<sup>rd</sup> June
- (4) 8<sup>th</sup> June

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5. The flowchart below shows the process of making yoghurt.

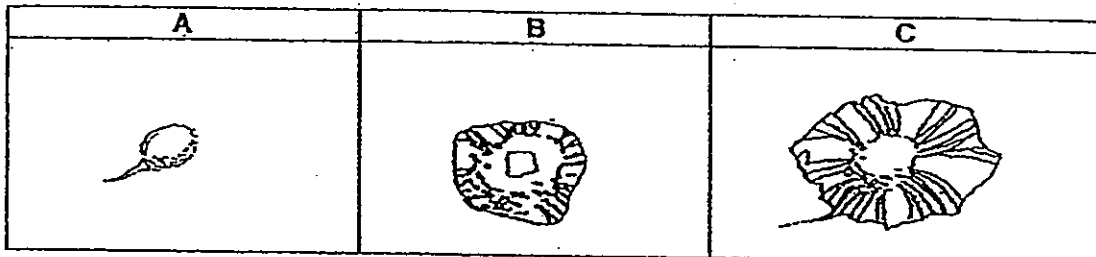


Based on the information above, which of the following statements is correct?

- (1) Bacteria become yoghurt in 3 hours.
- (2) Bacteria work well in the milk at 40°C.
- (3) Bacteria cause the milk to taste sweet.
- (4) Milk warmed at 80°C will cause lumps to form.

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6. Ahmad picked 3 seeds with wing-like structure from the same parent plant. He removed some parts of the seed as shown in the diagram below.

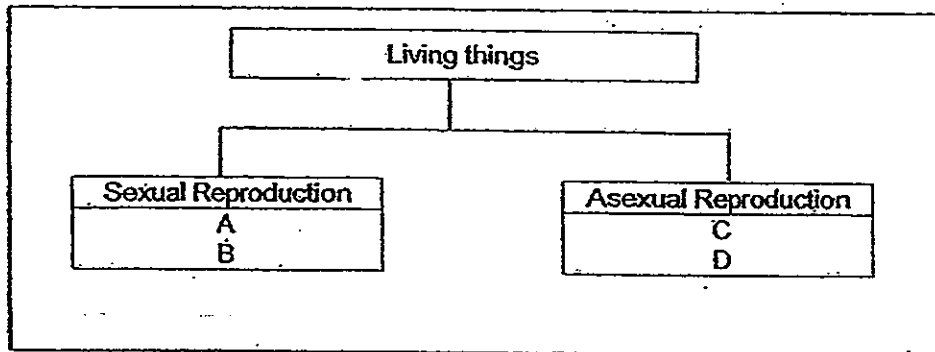


He then dropped each seed from the same height at the same time. He measured the time taken for the seed to reach the ground and presented his readings in the table below.

Which one of the following is correct?

Time taken for seed to reach the ground (sec)		
A	B	C
(1) 12	10	13
(2) 13	15	16
(3) 10	12	11
(4) 16	13	12

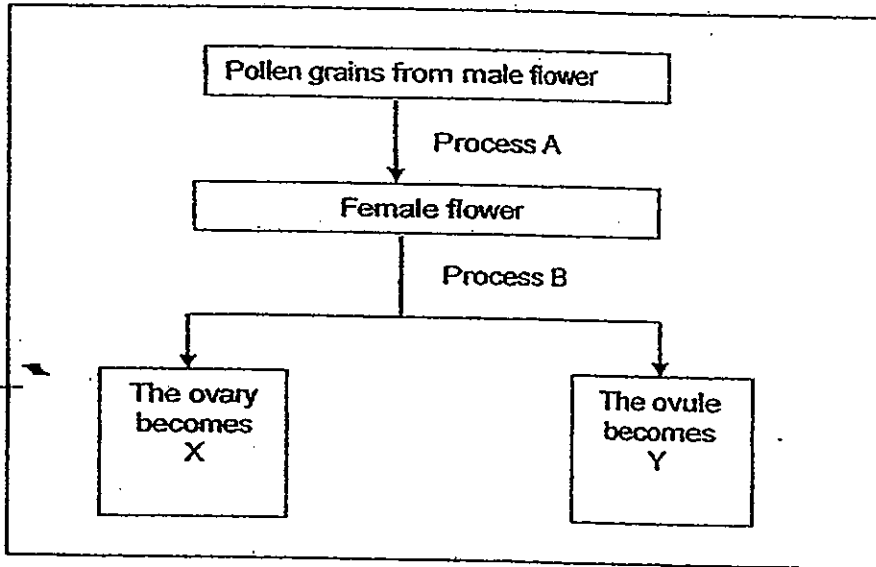
7. Study the classification chart below.  
Which one of the following gives the correct examples of A, B, C and D?



	A	B	C	D
(1)	Yeast	Crocodile	Coconut	Amoeba
(2)	Coconut	Amoeba	Yeast	Crocodile
(3)	Coconut	Crocodile	Amoeba	Yeast
(4)	Amoeba	Crocodile	Bacteria	Yeast

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Study the flow chart below.



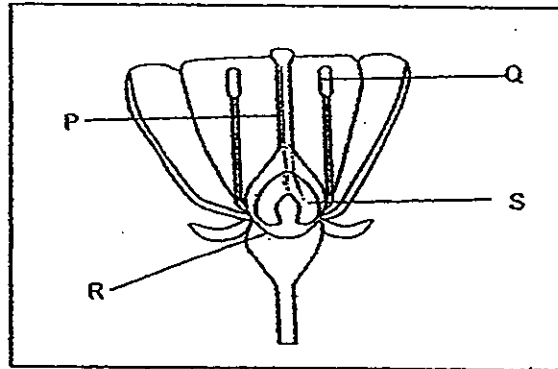
Which one of the following correctly identifies the processes A, B and the parts X, Y?

Parts of the plant		Processes	
X	Y	A	B
(1) fruit	seed	fertilisation	pollination
(2) seed	fruit	pollination	fertilisation
(3) fruit	seed	pollination	fertilisation
(4) seed	Fruit	fertilisation	pollination

(Go on to the next page)



9. The diagram below shows the cross section of a flower.



Which of the following statements below is true about the parts P, Q, R and S of the flower?

- A: Fertilisation occurs at part S
- B: Part R would enlarge and turned into a fruit
- C: Part Q attract pollinators like bird and insects
- D: Part P transports the pollen grain to part S.

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

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10. The following table shows the comparison between sexual reproduction in humans and plants.

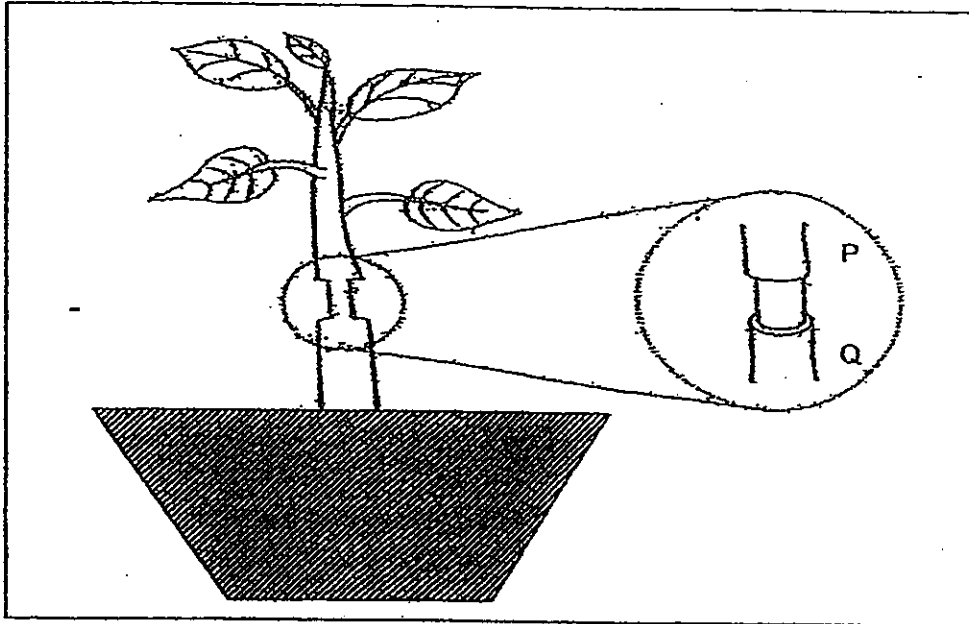
	Humans	Plants
Female reproductive cell	A	B
Male reproductive cell	Sperm	Pollen grain
After fertilization	A baby is formed	C

Which one of the following best matches the missing information in the table?

	A	B	C
(1)	Ovary	Egg	Seeds are formed
(2)	Ovum	Egg	Flowers are formed
(3)	Ovary	Ovary	Fruits are formed
(4)	Ovum	Egg	Seeds are formed

(Go on to the next page)

11. Sherman conducted an experiment by removing the outer ring of the stem between regions P and Q as shown in the following diagram from each of the 4 similar balsam plants W, X, Y and Z. He recorded his observations as shown



Plants	W	X	Y	Z
Observations made	Only region P is swollen	Only region Q is swollen	Both regions P and Q are swollen	No swollen region

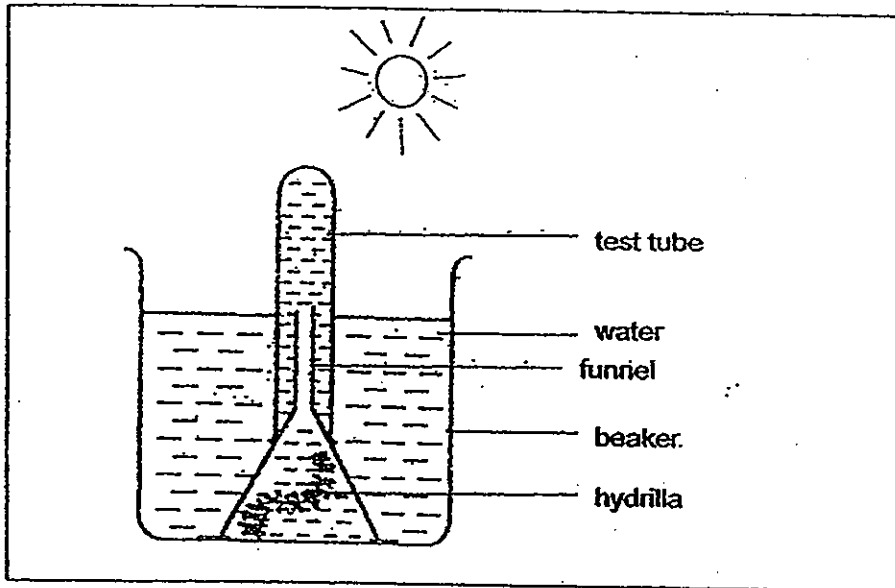
Which one of the following options is/are correct?

- A: Only the xylem tubes are removed in Plant W.  
 B: The phloem tubes are not removed in Plant X.  
 C: Both the xylem and phloem tubes are not removed in Plant Y.  
 D: The cut made at the stem was too shallow in Plant Z.

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

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12. Cindy set up the experiment as shown below.



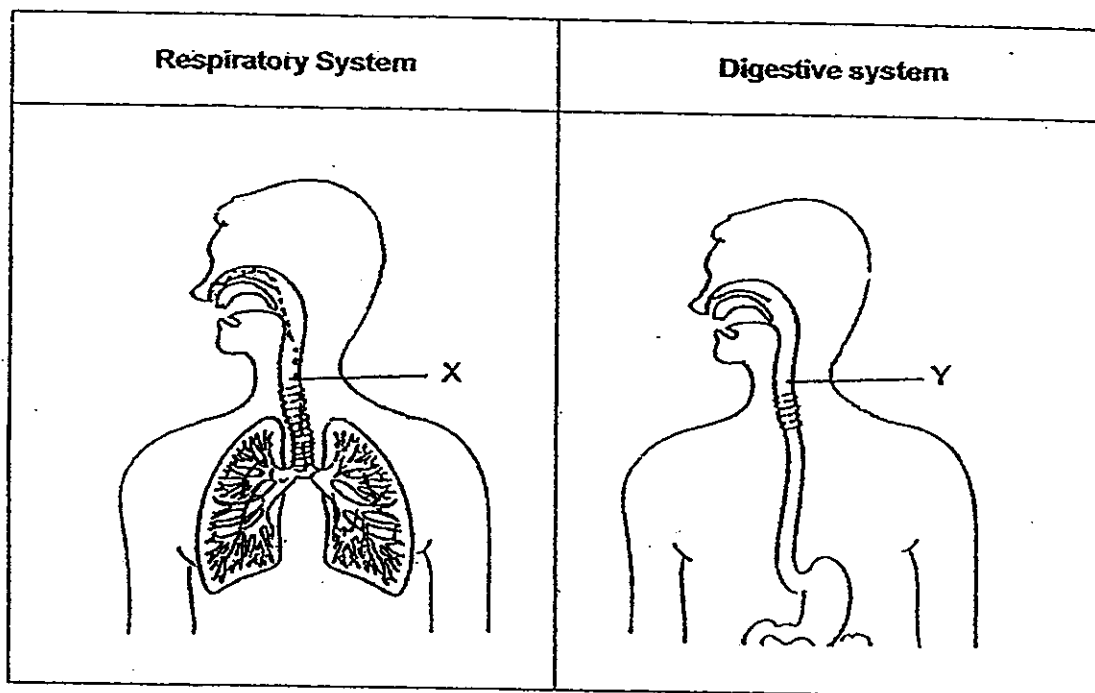
Which of the following statements are correct?

- A: Air bubbles containing oxygen will be produced.
- B: The water level in the test tube will decrease
- C: The rate of photosynthesis is constant throughout the day.
- D: The amount of oxygen produced during photosynthesis is more than the amount taken in during respiration.

- (1) A and D
- (2) B and D
- (3) A, B and D only
- (4) All of the above

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13. The diagram below shows our respiratory system and part of the digestive system. Four pupils made some statements about part X of the respiratory system and part Y of the digestive system.



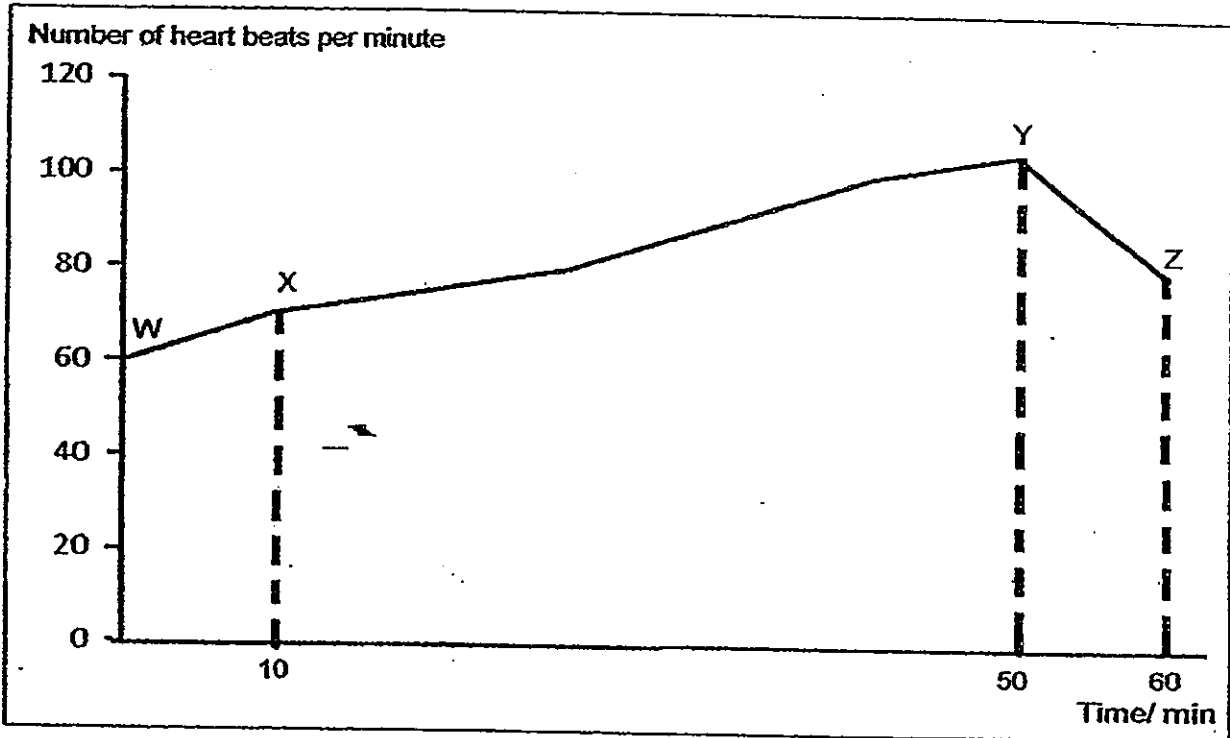
- Angel: Only air can pass through part X and not part Y.  
 Benjamin: Only food can pass through part Y and not part X.  
 Cecilia: Both food and air can pass through part X and Y.  
 Danielle: Water can pass through both part X and Y. ?

Which one of the following pupil(s) is/are correct?

- (1) Angel
- (2) Benjamin
- (3) Cecilia and Danielle
- (4) Benjamin and Danielle

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14. Daniel took part in a triathlon. The graph below shows the number of heart beats per minute over a period of an hour during the activity.



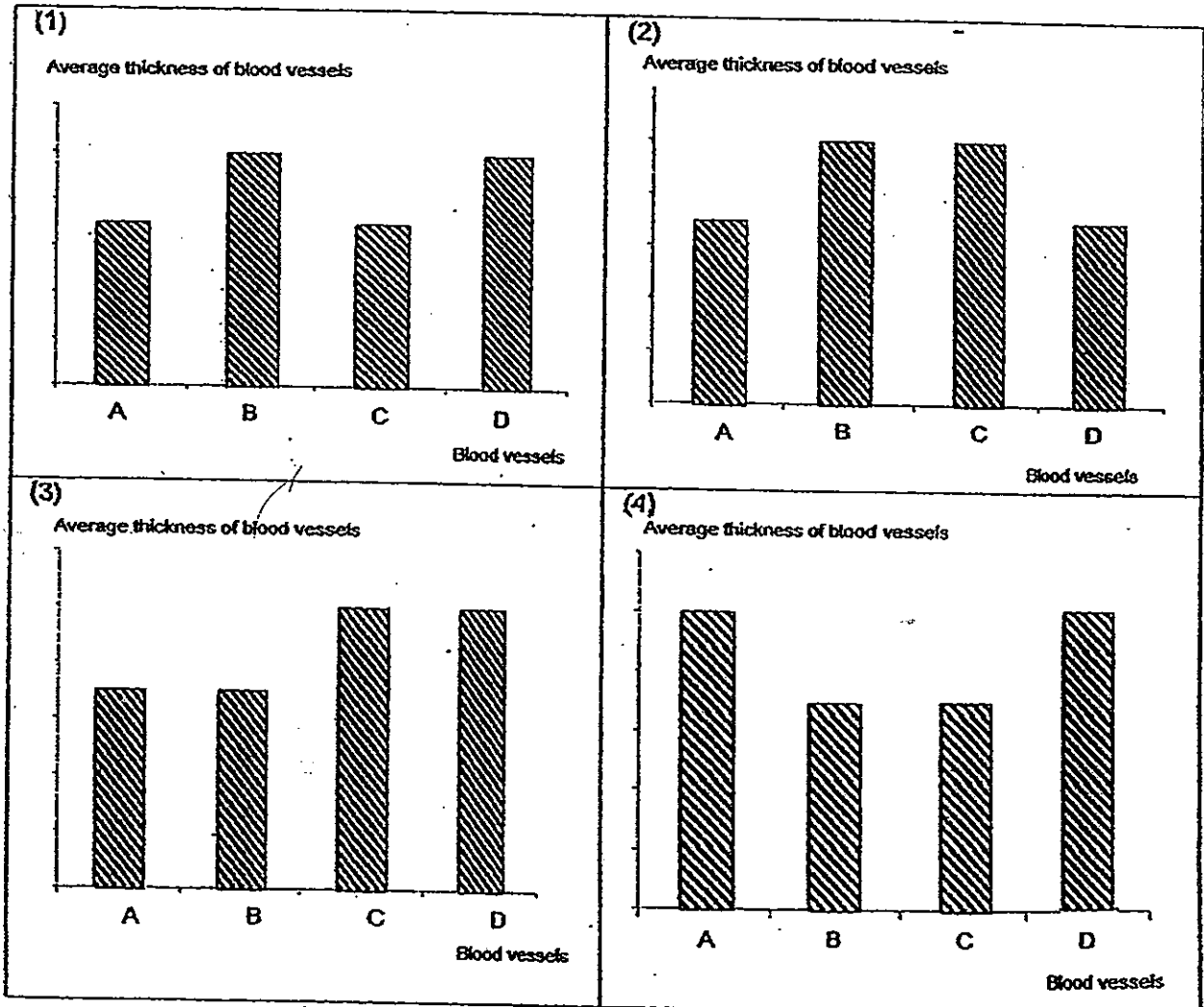
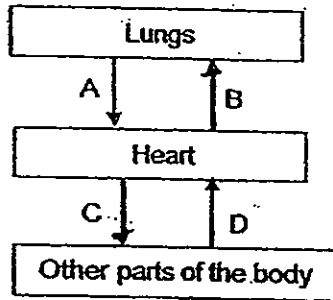
Which one of the following statement(s) correctly describe(s) what was happening during the period indicated by the line XY on the graph?

- A: Respiration occurs at a faster rate.
- B: More carbon dioxide is produced by Daniel's body
- C: Daniel's heart is pumping blood to his lungs at a faster rate.
- D: More blood is produced to supply more oxygen and nutrients to his muscles.

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

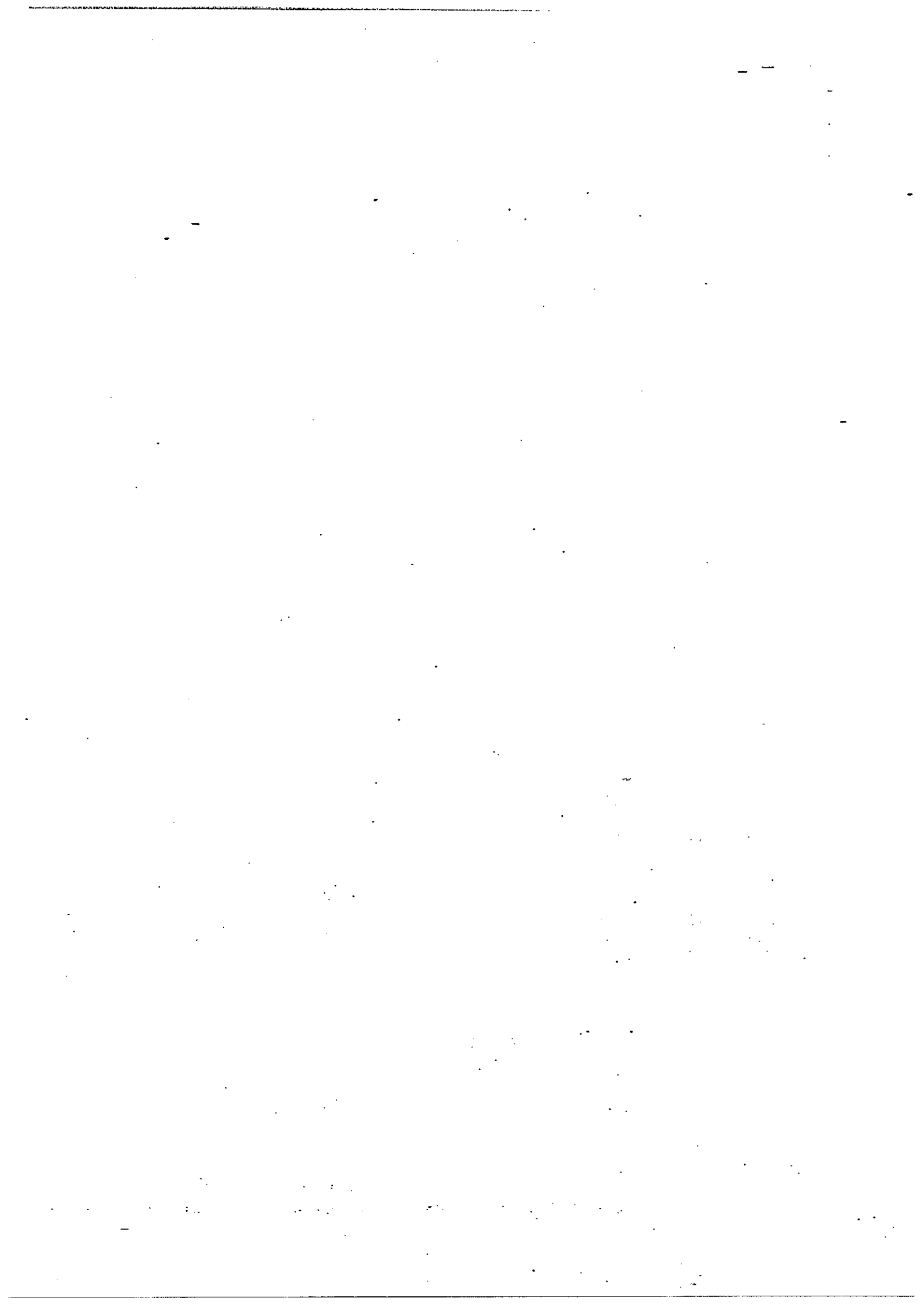
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15. The diagram below shows the human circulatory system. A, B, C and D are blood vessels. Which one of the following bar chart shows the correct thicknesses of the blood vessels?



End of Booklet A1

Go on to Booklet A2





METHODIST GIRLS' SCHOOL

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CONTINUAL ASSESSMENT 2012  
PRIMARY 6  
SCIENCE

BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

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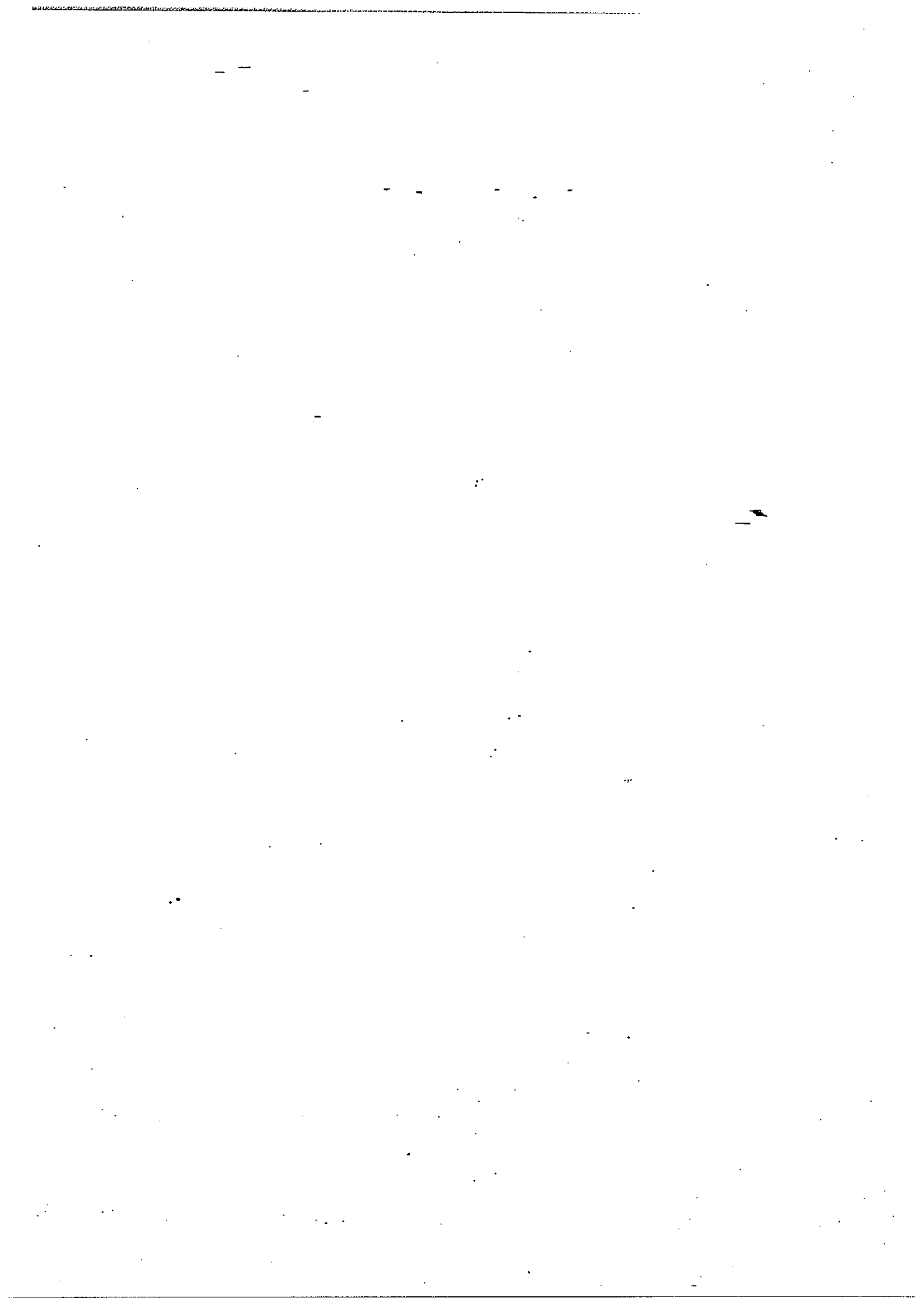
Answer all questions.

Name: \_\_\_\_\_ ( )

Class: Primary 6. \_\_\_\_\_

Date: 1 March 2012

This booklet consists of 9 printed pages including this page.

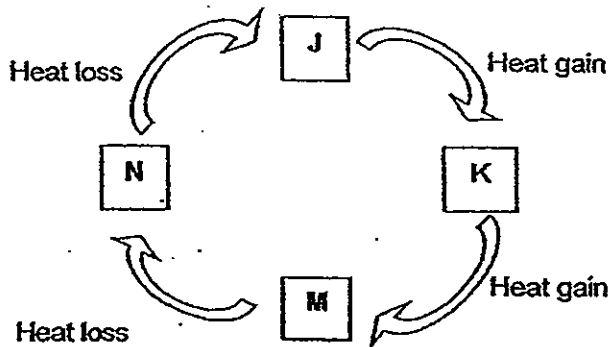


16. Singapore has been experiencing heavy rainfall throughout the year. Sam would like to make his own raincoat to bring along with him to school. The table below shows the properties of four materials to make the raincoat.

Material	A	B	C	D
Waterproof		✓		✓
Light weight	✓	✓		✓
Transparent			✓	✓
Good conductor of heat			✓	

Which materials would most likely be suitable for making the raincoat?

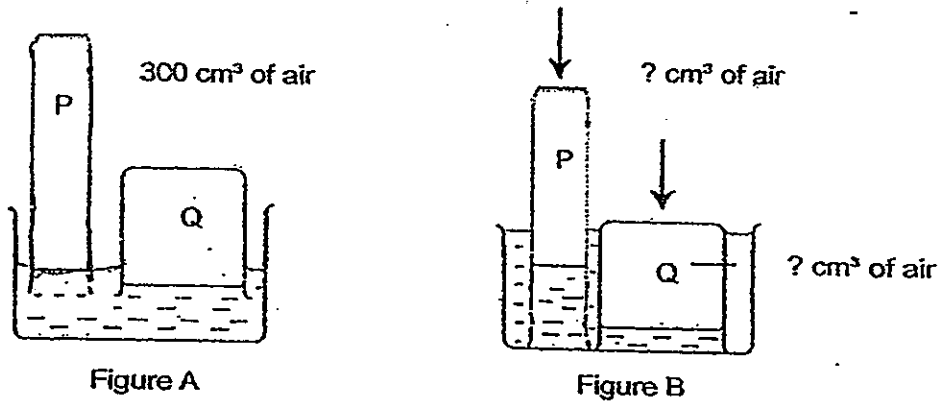
- (1) A and B only  
 (2) A and C only  
 (3) B and C only  
 (4) B and D only
17. The diagram below represents the water cycle in winter.



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

	J	K	M	N
(1)	Ice	Water	Water vapour	Water
(2)	Water vapour	Water	Ice	Water
(3)	Water	Ice	Water vapour	Ice
(4)	Water	Water vapour	Water	Ice

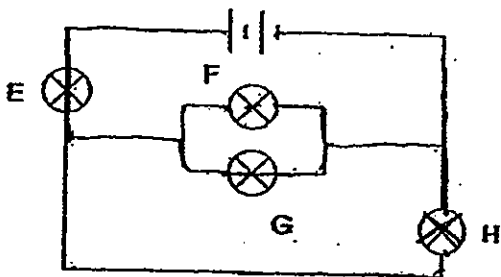
18. 300 cm<sup>3</sup> of air is trapped in 2 containers, P and Q, as shown in Figure A. Both containers are then pushed deeper into the water as shown in Figure B.



What would be the likely volume of air in both containers?

	P (cm <sup>3</sup> )	Q (cm <sup>3</sup> )
(1)	0	0
(2)	250	280
(3)	400	280
(4)	250	400

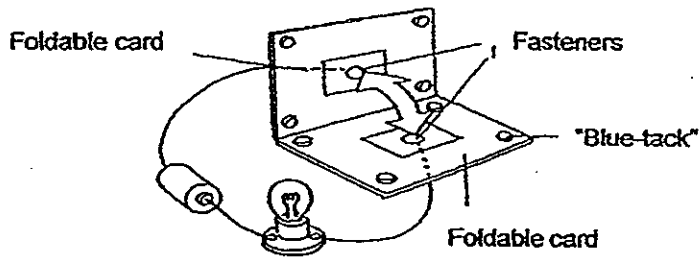
19. Study the circuit below.



Which of the bulbs will remain lit when bulb H blows?

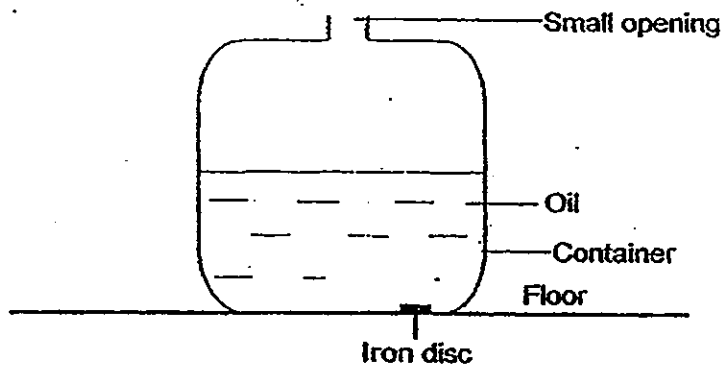
- (1) E, F and G
- (2) E and F only
- (3) F and G only
- (4) None of the above

20. The diagram below shows a model that will light up the bulb when the cards are folded together.



Which one of the following would cause the bulb to light up?

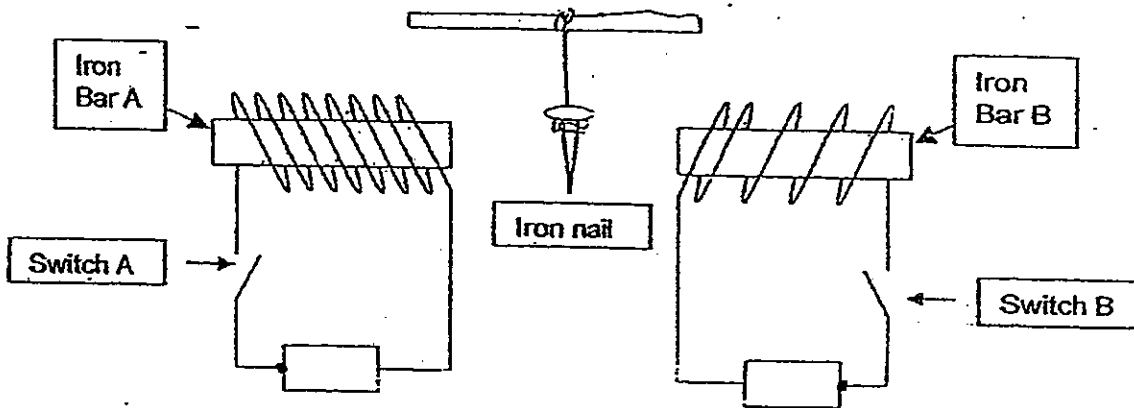
- (1) When the fasteners are made of iron.
  - (2) When the fasteners are made of glass.
  - (3) When the foldable cards are made of steel.
  - (4) When the foldable cards are made of plastic.
21. An experiment was set-up as shown below to show that a magnet can be used to remove the iron disc from the container. However, Nurul was not able to do so even though she followed the instructions closely.



Which one of the following statements is a possible explanation?

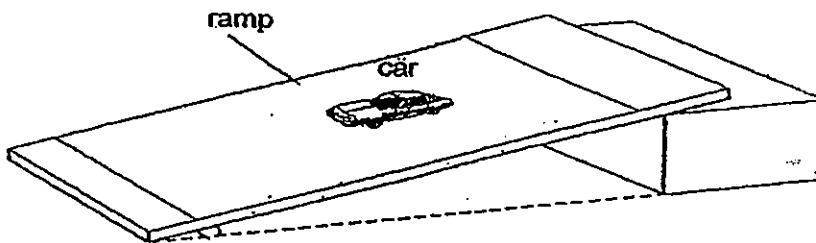
- (1) Iron disc cannot be magnetised.
- (2) The container was made of steel.
- (3) The container was made of copper.
- (4) Oil was magnetised by the magnet.

22. An iron nail is suspended freely midway between 2 similar iron bars, A and B.



What will happen to the iron nail when both switches A and B are closed?  
The iron nail \_\_\_\_\_

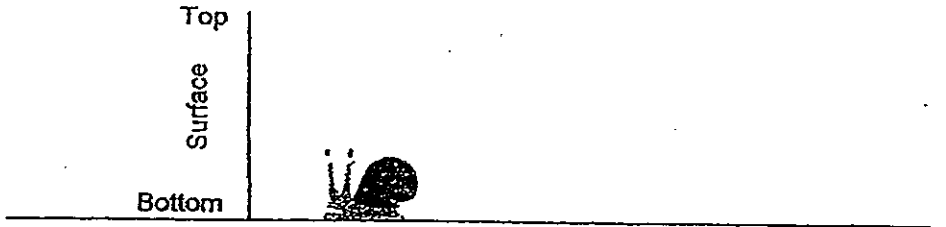
- (1) remains still
  - (2) swings towards iron bar A
  - (3) swings towards iron bar B
  - (4) keeps spinning in a circular motion
23. An experiment was carried out to see the effect of force on the car.



What was/were the force(s) acting on the car when it went down the ramp?

- (1) Frictional force only
- (2) Gravitational force only
- (3) Gravitational and frictional force
- (4) Gravitational, frictional and elastic force

24. Tommy was curious to find out the amount of time a snail will take to climb up walls of different surfaces. He set up an experiment as shown below and recorded the time taken by the snail.



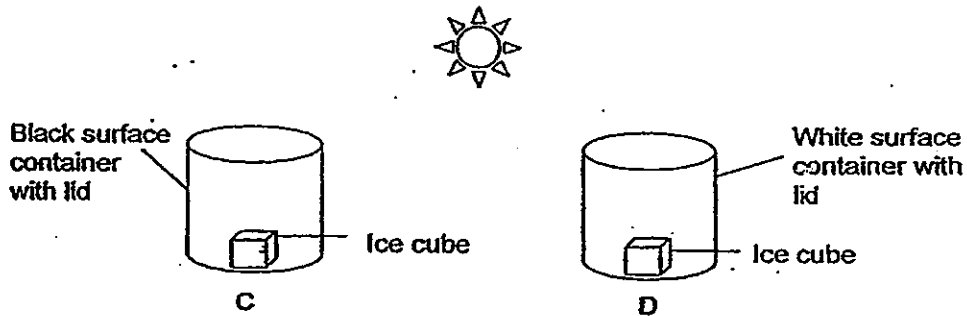
The average time taken for the snail to climb from the bottom to the top for each surface was recorded.

	1 <sup>st</sup> experiment	2 <sup>nd</sup> experiment	3 <sup>rd</sup> experiment	4 <sup>th</sup> experiment
Surface	W	Brick	Plastic sheet	X
Time (min)	7.3	6.1	4.8	3.9

Which of the following options will most likely represent surfaces W and X?

	W	X
(1)	Carpet	Glass
(2)	Glass	Carpet
(3)	Sandpaper	Glass
(4)	Sandpaper	Carpet

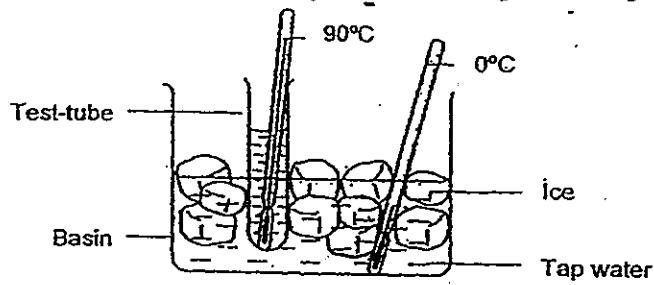
25. Two containers C and D were placed in the sun for 2 minutes as shown below.



Which one of the following could be observed?

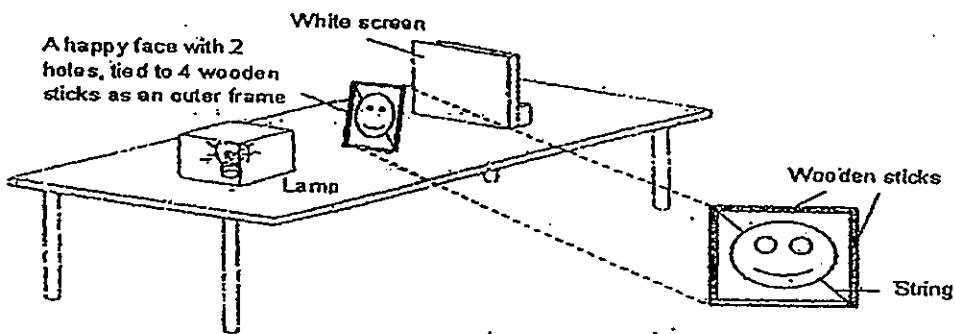
	Observation for C	Observation for D
(1)	Ice cube became smaller	Ice cube totally melted
(2)	Ice cube became smaller	Ice cube remained the same size
(3)	Ice cube remained the same size	Ice cube became smaller
(4)	Ice cube totally melted	Ice cube became smaller

26. An experiment on heat transfer is set up as shown.

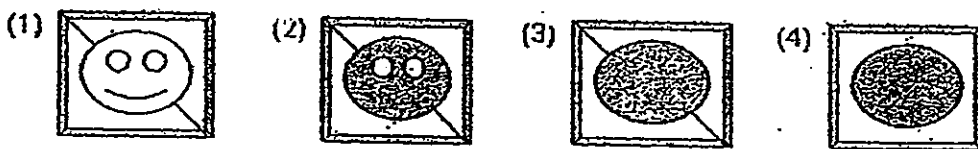


After some time, the ice cubes started to melt. What caused the ice cubes to melt?

- (1) Tap water and hot water
  - (2) Hot water and surrounding air
  - (3) Tap water and surrounding air
  - (4) Tap water, hot water and surrounding air
27. Méiyi set up the experiment below to observe the shadow formed by the object.

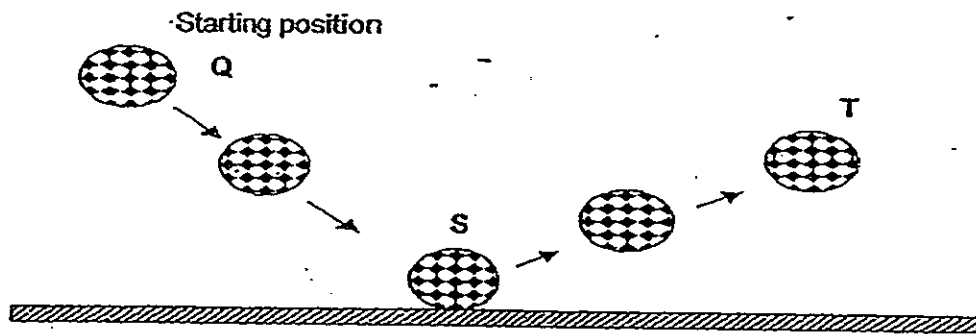


Which of the following correctly shows the shadow formed on the white screen?





28. The diagram below shows the movement of a ball when it bounces.



State the position where the ball has the least gravitational potential energy and kinetic energy.

	Least Gravitational Potential Energy	Least Kinetic Energy
(1)	Q	S
(2)	S	T
(3)	T	S
(4)	Q	T

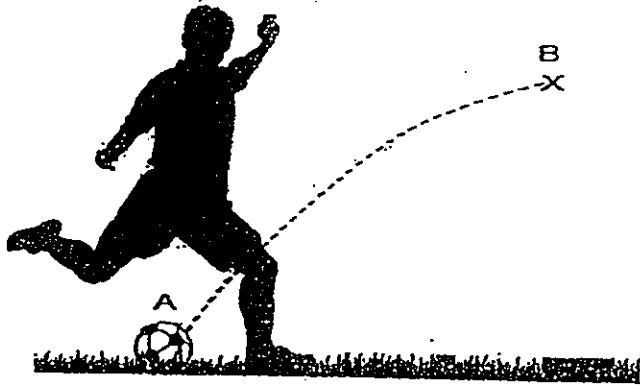
29. The following shows the energy conversions when using a product.

Solar energy  $\longrightarrow$  Electrical energy  $\longrightarrow$  Kinetic energy + Heat energy + Sound energy

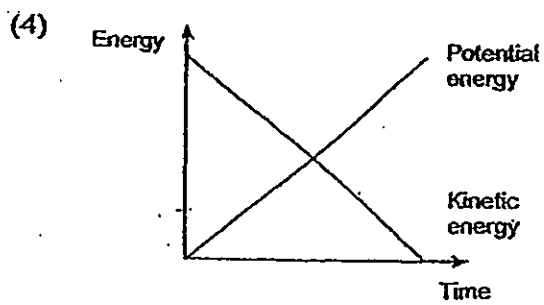
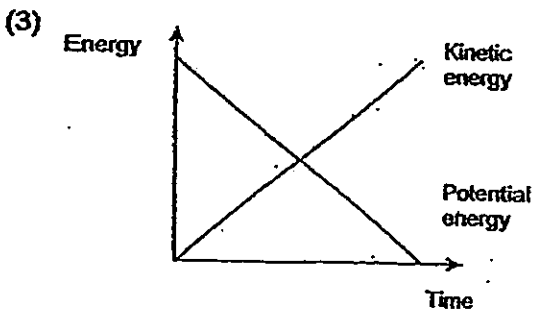
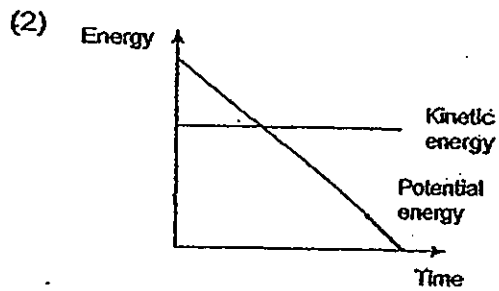
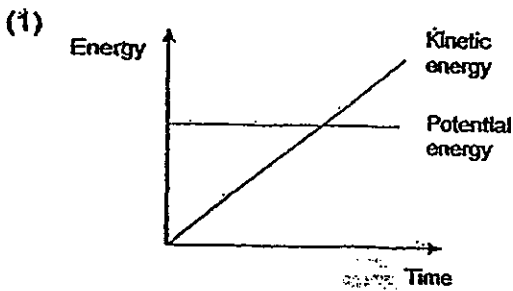
Which of the following products would bring about the energy changes shown above?

- (1) Solar charged iron
- (2) Solar charged radio
- (3) Solar charged calculator
- (4) Solar charged remote control car

30. A soccer player kicked a ball from point A to point B as shown below.



Which one of the following graphs correctly shows the energy conversions that occur between A and B?



# METHODIST GIRLS' SCHOOL

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## CONTINUAL ASSESSMENT 2012

### 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~~.

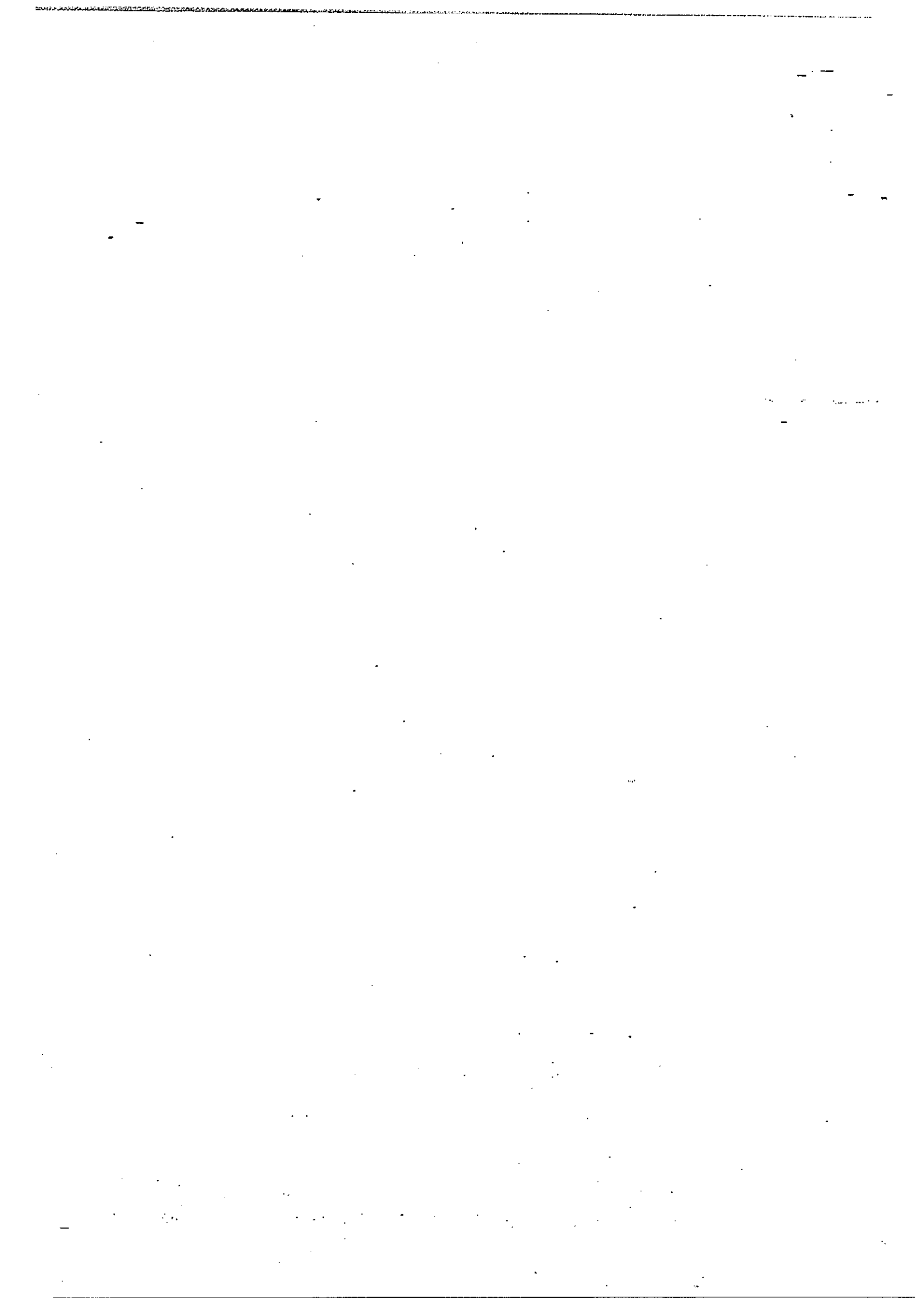
Name: \_\_\_\_\_ ( )

Class: Primary 6. \_\_\_\_\_

Date: 1 March 2012

Booklet B1	122
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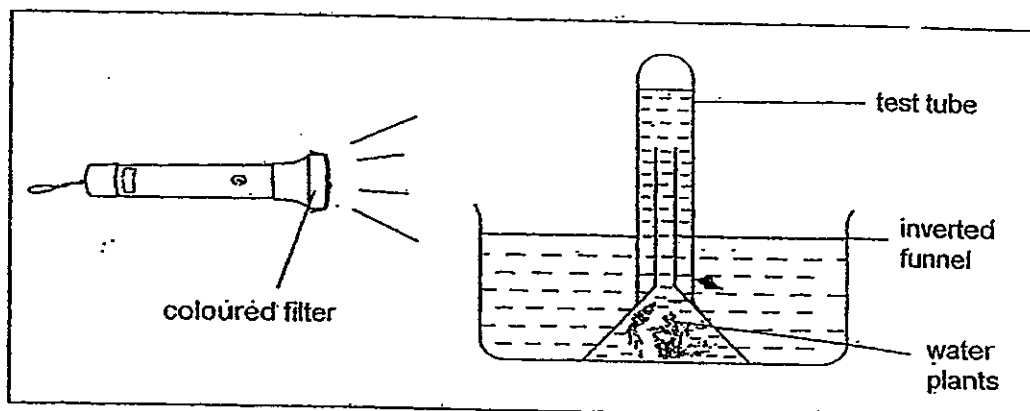


For questions 31 to 44, write your answers in the space provided.

(40 marks)

31 May sets up the experiment as shown below.

She placed a coloured filter in front of a torch light and shone the torch at the water plants for 20 minutes. She then observed the number of bubbles given out by the plant during that time and recorded the data in the table below.



Colour of filter	Number of bubbles produced
Red	20
Green	13
Yellow	25
Transparent	30

(a) Based on the above setup, what is the aim of May's experiment? (1m)

(b) After 20 minutes, it is observed that the number of bubbles produced by the water plants decreased. Explain why. (1m)

32 Danielle and Sean conducted an experiment to investigate the effect of exercise on their rates of breathing. They each recorded their rates of breathing before exercising.

After exercising vigorously for 20 minutes, they then measured their rate of breathing immediately every minute for a period of 5 minutes.

They recorded their results in the table below.

		Rate of breathing (after exercising)					
Pupil	Rate of breathing (before exercising)	Time interval					
		0 min	1 min	2 min	3 min	4 min	5 min
Danielle	11	38	35	25	20	12	11
Sean	13	45	40	30	25	20	14

a) Based on the data above, which pupil recovered faster from the vigorous exercise? Give a reason for your answer. (2m)

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b) Explain why Danielle and Sean took in more breaths after exercising vigorously. (2m)

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(c) There are many differences in the processes, photosynthesis and respiration, in plants. State 2 differences between these two processes in the box below. (2 m)

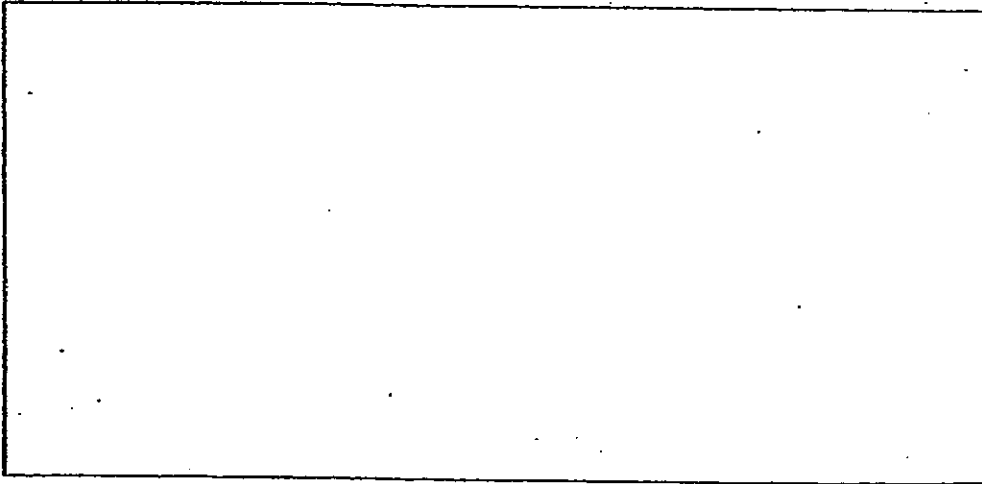
	Photosynthesis	Respiration
Difference 1:		
Difference 2:		

33. Belinda was given 3 different types of cells X, Y and Z respectively. She observed the cells under a microscope and recorded her observations in the following table.

Type of Cell	Cell wall	Cell membrane	Cytoplasm	Nucleus	Chloroplast
X	Present	Present	Present	Present	Present
Y	Absent	Present	Present	Absent	Absent
Z	Absent	Present	Present	Present	Absent

- (a) Draw and label Cell X in the following box.

(1m)



- (b) Belinda then put the same number of each type of cells into a beaker of water for a day. Which cell(s) will burst? Give a reason for your answer. (2m)

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- (c) Besides observing that the cells had burst, Belinda also observed that the number of Cells Y decreased rapidly. Why is this so? Explain your observation. (1m)

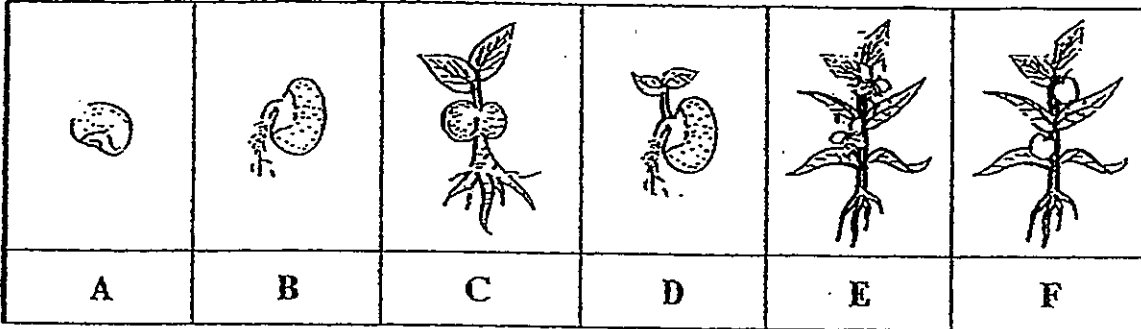
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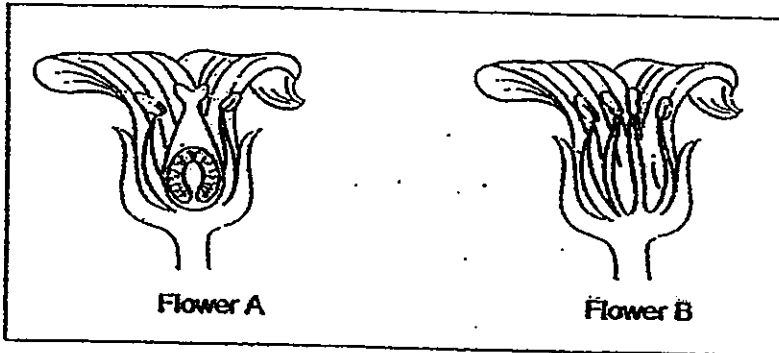
34 The following pictures show the different stages in the life cycle of a flowering plant.



(a) Arrange the stages of the above life cycle in the correct order, starting with C. (1m)

C → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_

(b) The diagram below shows the cross section of flower A and B. State whether each statement is "True", "False" or "Not possible to tell" by putting a tick (✓) in the appropriate column. (2m)



	Statement	True	False	Not possible to tell
(a)	Both flowers have male parts.			
(b)	Both flowers are pollinated by animals.			
(c)	Flower A can develop into a fruit after fertilization but Flower B cannot.			
(d)	Pollination is not required for Flower A to become a fruit.			

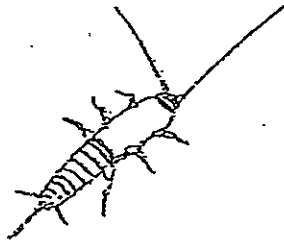
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35 The following shows two animals (not drawn to scale).



Animal X



Animal Y

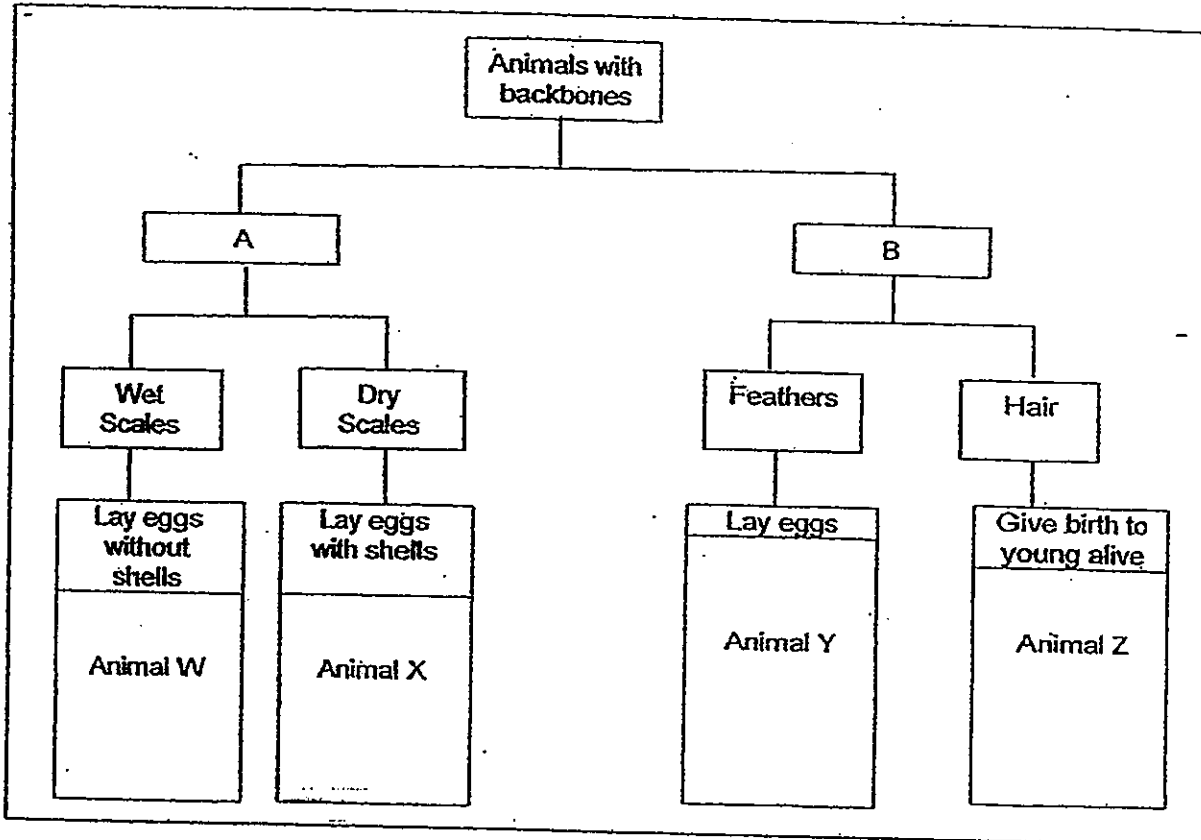
Based only on your observations, write down two ways in which they are different. (2m)

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36 Study the following classification chart.



(a) Write down suitable headings for A and B.

(1m)

A: \_\_\_\_\_

B: \_\_\_\_\_

(c) Suggest a possible animal each for Y and Z.

(1m)

Y: \_\_\_\_\_

Z: \_\_\_\_\_

(i) Can a lobster be placed in the above classification chart? Explain your answer.

(1m)

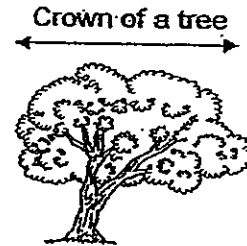
\_\_\_\_\_

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- 37 John was given 4 different types of seeds, A, B, C and D which will grow into trees at their adult stage.

He was also given a general description of each plant at adult stage which is shown in the table below.

Seed	Crown of the tree	Roots
A	Large	Long
B	Small	Short
C	Small	Short
D	Large	Long



The seeds were then planted in a plot of land as shown below.

A	B	C	D
A	B	C	D
A	B	C	D
A	B	C	D
A	B	C	D
A	B	C	D

After some time, John found that A and D appear to be healthier compared to B and C. Give two possible reasons to explain why. (2m)

Reason 1:

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Reason 2:

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METHODIST GIRLS' SCHOOL  
Founded in 1887



CONTINUAL ASSESSMENT 2012  
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: \_\_\_\_\_ ( )

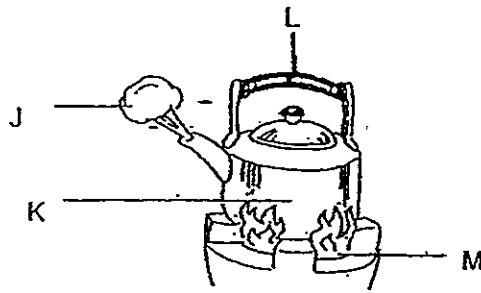
Class: Primary 6. \_\_\_\_\_

Date: 1 March 2012

Booklet A	
Booklet B1	
Booklet B2	
Total	

This booklet consists of 8 printed pages including this page.

38. Look at the diagram below:

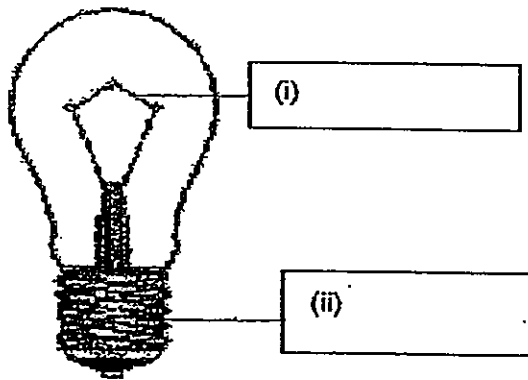


Fill in the letters 'J', 'K', 'L' and 'M' correctly in the table below.

(2 m)

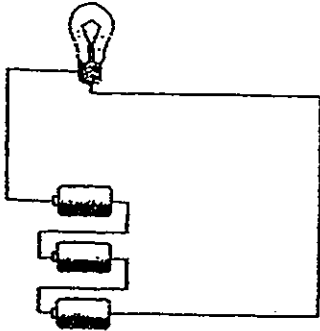
Solid	Liquid	Gas	Non-matter

39. (a) Look at the bulb below and label the parts correctly.

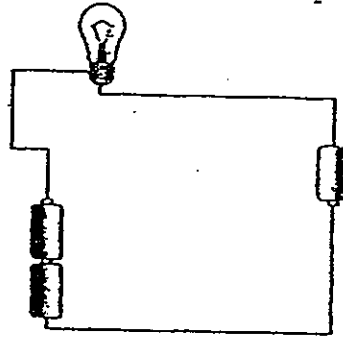


(1 m)

- (b) Two electrical circuits using similar batteries and bulbs are shown as below.



Circuit A



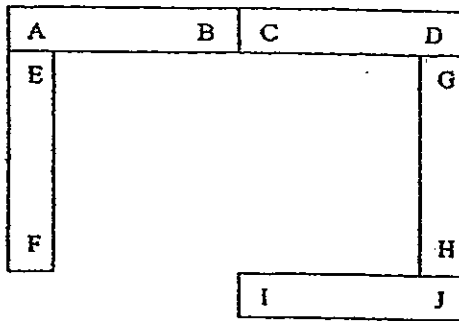
Circuit B

What would you observe about the brightness of the bulbs in the two circuits? (1 m)

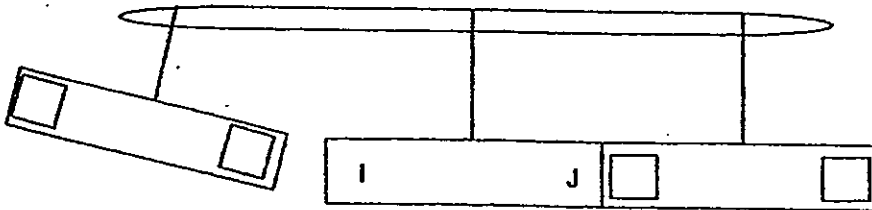
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40. Five magnets with their ends marked A to J are joined together as shown.

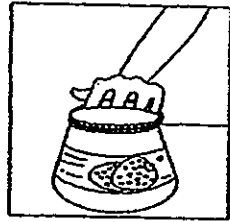


When three of the magnets are hung on a rod, one magnet was attracted to bar magnet IJ while the other repelled.



- (a) Beside bar magnet EF, fill in the boxes with the correct letters that caused the above result. (2 m)
- (b) When bar magnet IJ is replaced with bar magnet EF in the above set-up, such reaction did not happen. Give one possible reason why this is so. (1 m)
-

41. - Shufi wanted to open a bottle of jam but was unable to do so.



rubber band

- (a) She then placed a rubber band around the lid and turn the lid again. She was able to open the lid this time. Why was this so? (2 m)

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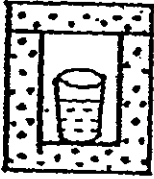
- (b) Friction brings about a lot of disadvantages. However, it is also useful in our daily life. State one advantage of friction. (1 m)

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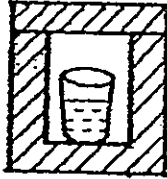
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42. A company which manufactures containers wanted to find out the most suitable material to make a container which can best retain heat. An experiment was carried out to record the temperature of water that is placed in four similar cups, but kept in 4 different containers.



Container 1



Container 2



Container 3



Container 4

After 30 minutes, the results of the experiment were recorded in the table below.

Container	Temperature of hot water after 30 min ( $^{\circ}\text{C}$ )
1	88
2	52
3	79
4	61

- (a) Which container would the company choose to meet its objective?  
Explain Your option

(2 m)

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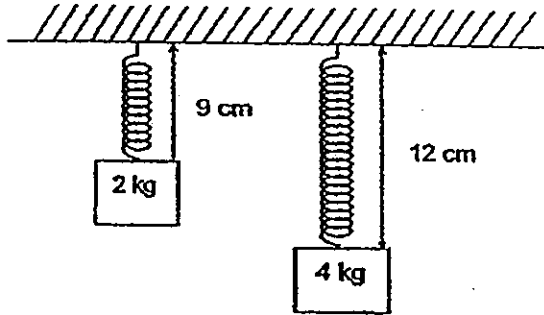
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- (b) What property should the container mentioned in (a) have? Name 1 material that has such a property.

(1 m)

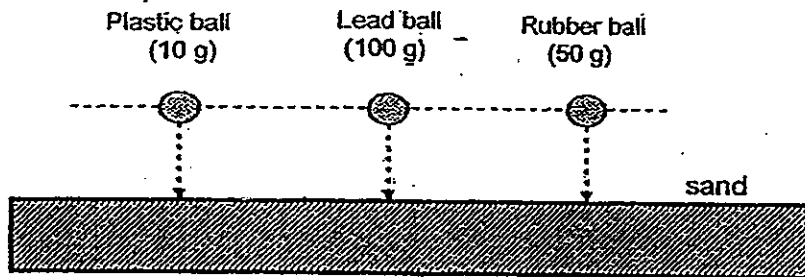
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43. An elastic spring was stretched when two masses, 2 kg and 4kg, were suspended on two identical springs as shown below.



- (a) The spring was extended by a constant length for every kilogram of mass hung on it. What would be its length when a mass of 8 kg is hung on it? (2 m)
- 
- (b) More masses were hung to the spring. After removing all the masses, it was found that the spring did not return to its original length. Why is this so? (1 m)
- 
-

44. Three balls of similar size but of different masses are raised to the same height before they are dropped.



Which ball will cause the deepest dent if a tray of sand is placed below them?  
Why?

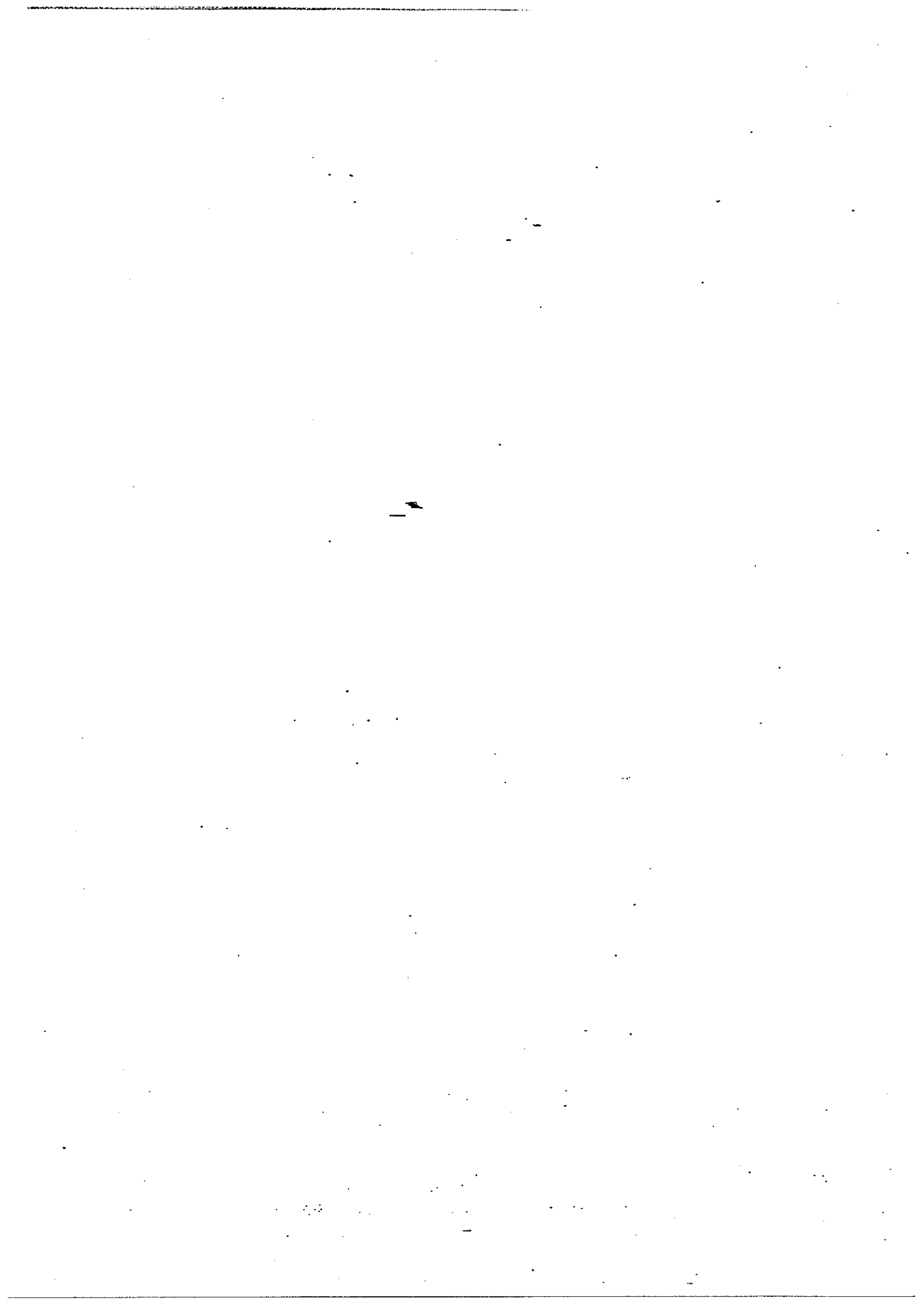
(2 m)

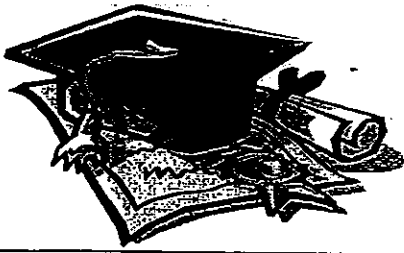
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End of Paper





# ANSWER SHEET

**EXAM PAPER 2012**

**SCHOOL : MGS**  
**SUBJECT : PRIMARY 6 SCIENCE**

**TERM : CA1**

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

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

- 31)a) To see if the colour of light affect the rate of photosynthesis.  
 b) The carbon dioxide in the water might have been running out and so the rate of photosynthesis decreases.

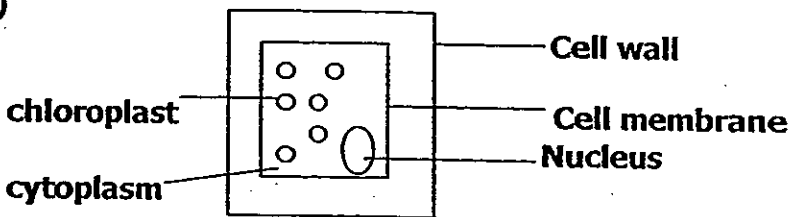
- 32)a) Danielle. At the end of 5 minutes, Danielle's breathing rate had restored to normal but Sean still not.

b) The muscle needed more oxygen to release more energy.

c) 1) Take in carbon dioxide / Take in oxygen

2) Give out oxygen / Give out carbon dioxide

33)a)



b) Cell Y and Z, the cells did not contain cell walls to maintain its shape and the water pressure on it made it burst.

c) Cell Y does not have a nucleus and therefore it could not reproduce.

34)a) C → E → F → A → B → D  
b) a) T b) Not c) T d) F

35) Animal X had 2 body part but Animal Y has 3 and Animal X has 8 legs but Animal Y has 6.

36)a) A) Live in water B) Live on Land  
c) Y: king fisher Z: Elephant  
i) No, a lobster does not have a backbone.

37) 1) A and D. Roots are longer and absorb more water.  
2) A and D. Crown is bigger and hid B and C under it, and not allowing it to have enough sunlight.

38) Solid      Liquid      Gas      Non-matter  
L, K              J                      M

39)a) i) Filament      ii) Metal casing  
b) They have equal brightness.

40)a) A B      /      H G  
b) E F has lost its magnetism/ E F is a weaker magnet.

41)a) The rubber increased the friction between the lid and the hand, thus shuli had a greater grip on the lid of the bottle.  
b) Friction helps us to walk and hold things.

42)a) Container 1, it retains the most amount of heat in the same period of time.  
b) The container must be a poor/ bad conductor of heat.

43)a) 18cm.  
b) The springs were stretched too much and it lost its elasticity.

44) Lead ball. The ball is the heaviest and thus it has the most gravitation potential energy. And so when it drops the gravitational potential energy would be changed into kinetic energy and so the lead ball created the deepest dent.