METHODIST GIRLS' SCHOOL

Founded in 1887

SCIENCE PRIMARY 6
PRELIMINARY EXAMINATION
2011

BOOKLET A1

Total Time : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

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

Name: _____( )

Class: Primary 6._____

Date : 26 August 2011

This booklet consists of 10 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 (OAS).

1. Study the classification table below.

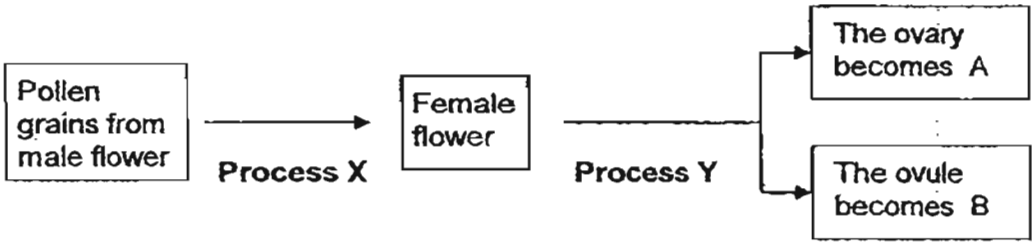
Group E	Group F
beetle	yeast
giraffe	toadstool
paramecium	morning glory

What characteristic(s) can be used to classify them into groups, E and F?

A: nutrition
B: movement
C: body form
D: method of reproduction

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

2. Study the diagram below.

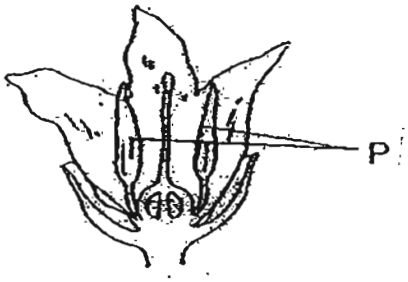


Which one of the following correctly identifies A, B, X and Y?

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

(Go on to the next page)

3. Study the diagram of the flower below.

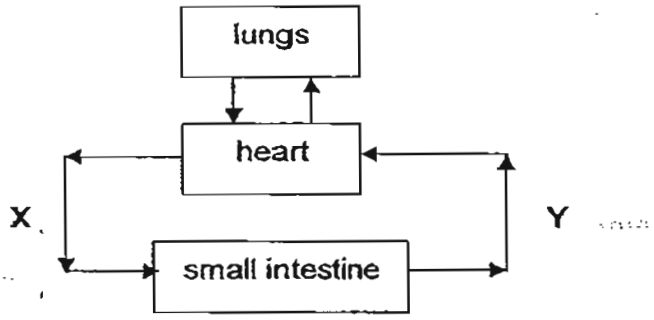


What will happen to the flower if P is cut off?

A: Fertilization will not be possible.
B: The flower cannot produce pollen grains.
C: The flower will wither and die immediately.

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

4. The diagram below shows how blood flows in certain parts of the body a few hours after a meal.



When compared with the blood in Y, the blood in X has

(1) more carbon dioxide and more digested food.
(2) more carbon dioxide and less digested food.
(3) less carbon dioxide and more digested food.
(4) less carbon dioxide and less digested food.

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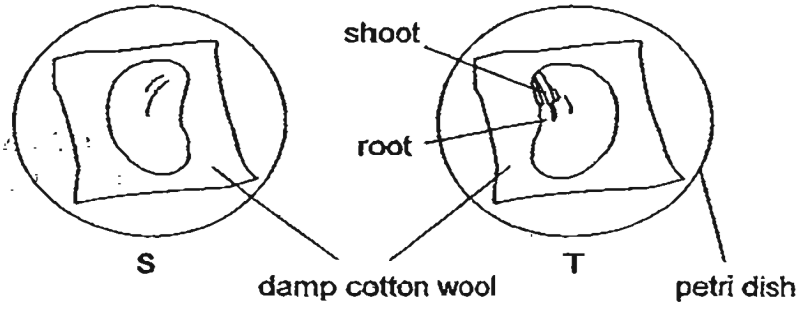
5. Joanne soaked a red bean in water and removed the seed coat. She then split the seed into two halves, S and T and placed each half on a petri dish laid with damp cotton wool as shown in the diagram below.



She placed both petri dishes at a dark corner of a room for three days. She ensured that both pieces of cotton wool were kept damp. Which one of the following would she observe on the third day of her experiment?

(1) Both parts S and T remained unchanged.
(2) Seedlings grew from both parts S and T.
(3) A seedling grew from part T but not from part S.
(4) A shoot grew from part S while a root grew from part T.

6. Study the table below.

A tick (√) indicates the presence of the part of a cell.

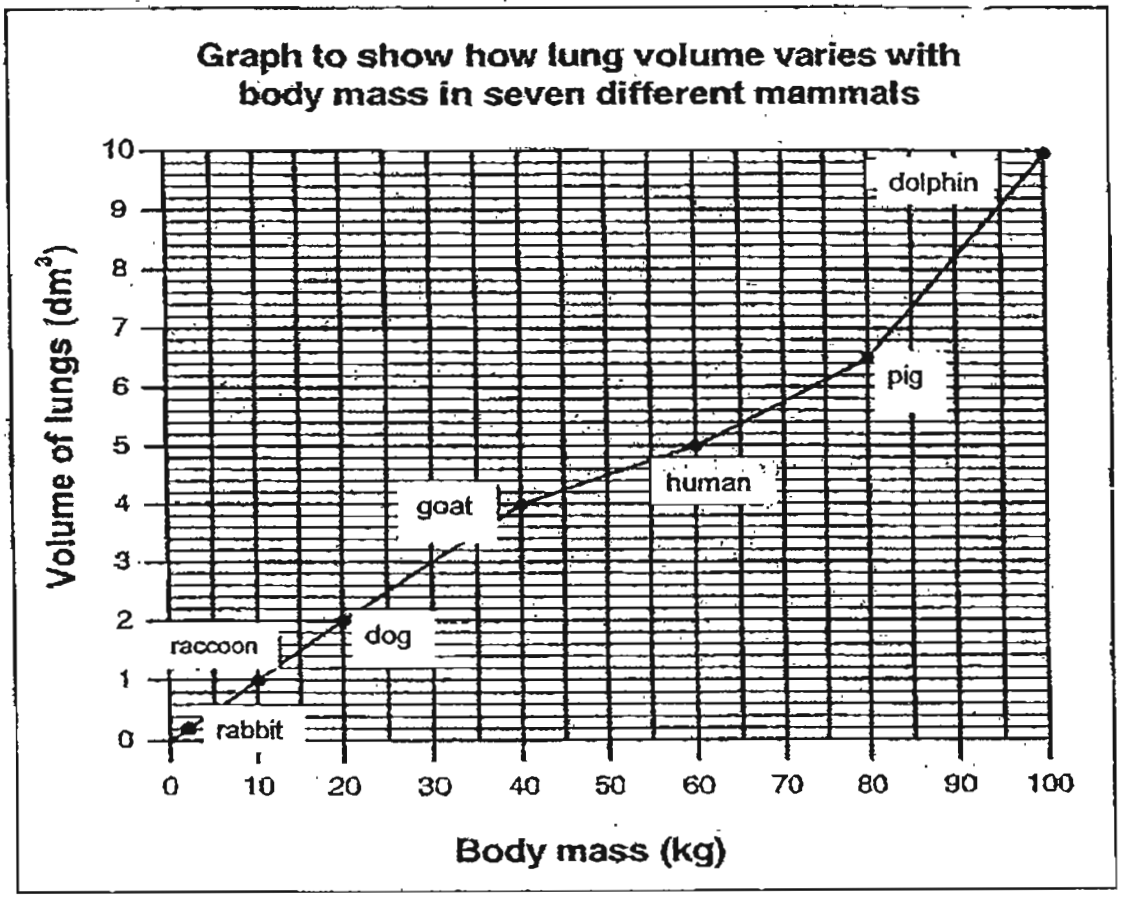
	Cell A	Cell B	Cell C
Nucleus	√	√	√
Cell wall		√	√
Chloroplast		√	

Which parts can cells A, B and C be found?

	Cell A	Cell B	Cell C
(1)	root	cheek	leaf
(2)	root	leaf	cheek
(3)	cheek	root	leaf
(4)	cheek	leaf	root

(Go on to the next page)

7. The graph below shows the volumes of the lungs of various adult mammals compared to their body masses.



Based on the graph, which one of the statements is correct?

(1) The greater the lung volume of the mammal, the smaller the size.
(2) The greater the lung volume of the mammal, the greater the body mass.
(3) The greater the body mass of the mammal, the greater the lung volume.
(4) The smaller the body mass of the mammal, the greater the lung volume.

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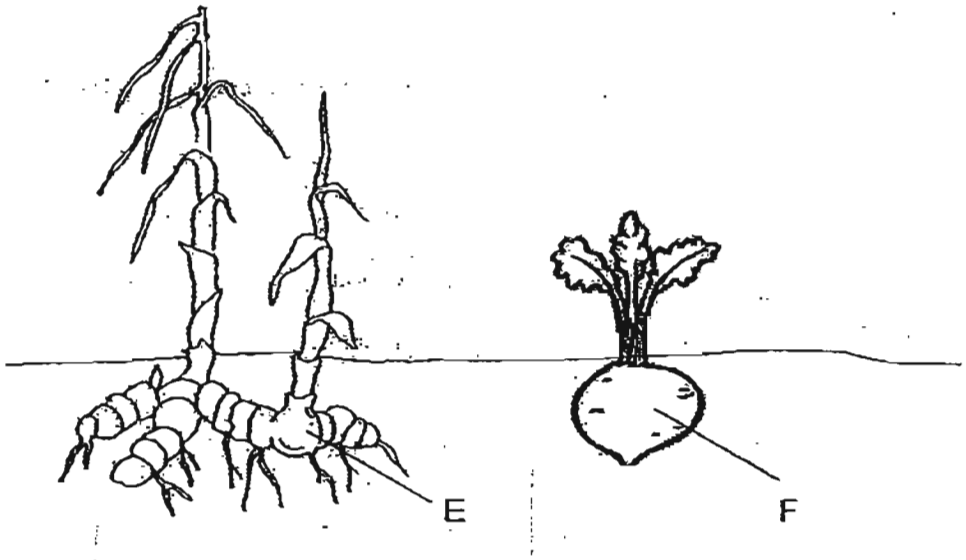
8. The diagram shows a ginger plant and a beetroot plant.

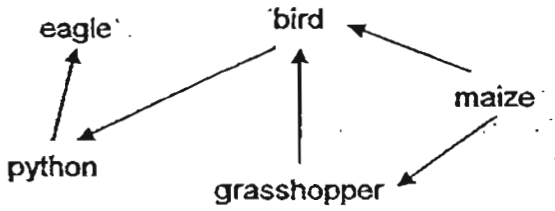


Which of the following statements correctly state the similarities between parts E and F?

A: Both parts store food.
B: Both parts are underground roots.
C: Both parts absorb water and mineral salts.
D: Both parts anchor the plants to the ground.

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

9. Study the food web below.



A decrease in the python population is likely to cause _____.

A an increase in the bird population
B a decrease in the eagle population
C an increase in the maize population
D a decrease in the grasshopper population

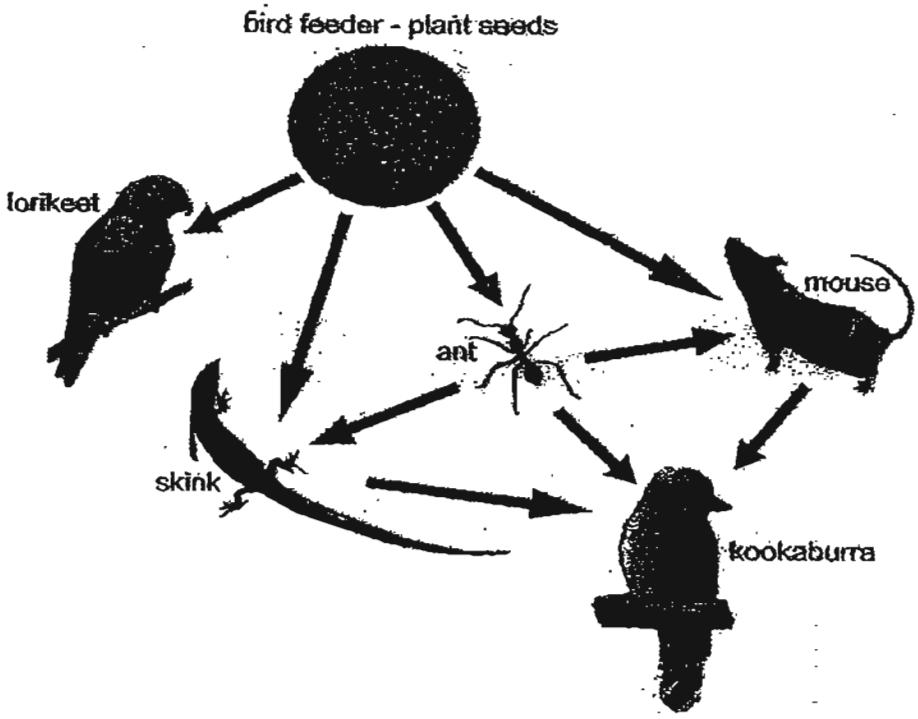
(1) A and B only
(2) C and D only
(3) A, B and D only
(4) A, B, C and D

10. A camel is well suited to live in the desert.
Which of the following statements are true about the camel?

P: Camels have humps that store a large amount of water.
Q: Camels have padded feet that protect them from the hot ground.
R: Camels have long eye lashes that prevent sand from being blown into their eyes.

(1) P and Q only
(2) P and R only
(3) Q and R only
(4) P, Q and R

11. The diagram shows a food web.



Which two animals in this food web are **not** in direct competition with each other for the same food?

(1) ant and mouse
(2) lorikeet and skink
(3) kookaburra and skink
(4) kookaburra and lorikeet

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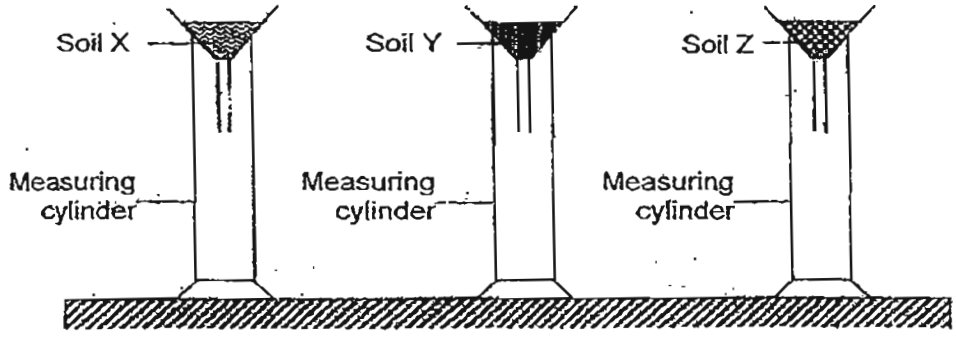
12 Kelly wanted to find out which type of soil is suitable for growing cactus, balsam and lotus. She collected 3 different types of soil X, Y and Z and placed them each in a funnel lined with filter paper.



After that, she poured 60 ml of water into each funnel and timed how long it took for the water to completely flow into the measuring cylinder. The table below shows the results of her investigations.

	Soil X	Soil Y	Soil Z
Amount of water collected	6 ml	47ml	21ml
Time taken to collect water	18 min	1 min	9 min

Based on the above table, choose the most suitable soil for each of the plants.

	cactus	**balsam**	**lotus**
(1)	Soil X	Soil Y	Soil Z
(2)	Soil Y	Soil Z	Soil X
(3)	Soil Z	Soil X	Soil Y
(4)	Soil X	Soil Z	Soil Y

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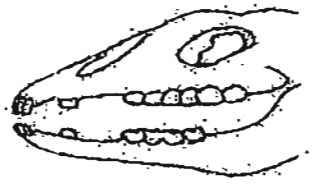
13. The diagrams below show the teeth of Animal R and Animal S.

Animal R



Animal S

Which of the following deduction(s) about Animals R and S is/ are correct?

		True	False	Not possible to tell
A	Animal S is a herbivore	√		
B	Animal R hunts in a group			√
C	Animal R eats only plants			√
D	Animal S eats only plants on land		√	

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

14. Meiling transferred a pot of rose plant to a sunny corner of her garden which was covered with grass. She watered both the rose plant and grass daily. A few days later, she found out that the grass that was covered by the pot turned yellow while the pot of rose plants grew healthily.

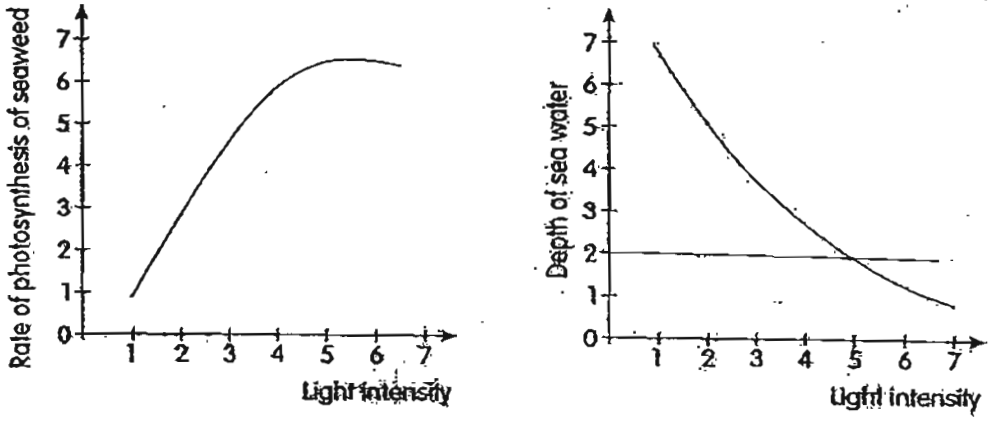
Which of the following reason(s) is/ are correct?

A: The grass could not photosynthesize so it turned yellow.
B: The grass did not receive enough water as the rose plant competed with it for water.
C: The grass had turned yellow as the mineral salts were all absorbed by the rose plants.

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

(Go on to the next page)

15. The 2 graphs below show the relationship between the rate of photosynthesis of sea weed and the depth of sea water.



Which one of the statements is true based on the graphs above?

(1) The rate of photosynthesis does not depend on the depth of sea water.
(2) As we go deeper into the sea, the more likely we are to find seaweed.
(3) The greater the light intensity, the higher the rate of photosynthesis.
(4) The highest rate of photosynthesis of seaweed is at 2 m.

16. The table below shows the freezing point and boiling point for 4 different substances, A, B, C and D.

Substance	Freezing point (°C)	Boiling point (°C)
A	16	114
B	-8	36
C	41	180
D	-103	-36

Which one of the following represents correctly the states of each of the substances A, B, C and D respectively at the temperature of 29°C?

	States of substances at 29°C			
	A	B	C	D
(1)	Liquid	Liquid	Solid	Liquid
(2)	Solid	Gas	Liquid	Gas
(3)	Gas	Solid	Liquid	Solid
(4)	Liquid	Liquid	Solid	Gas

(Go on to the next page)

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BOOKLET A2

Total Time : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

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Name: _____( )

Class: Primary 6_____

Date : 26 August 2011

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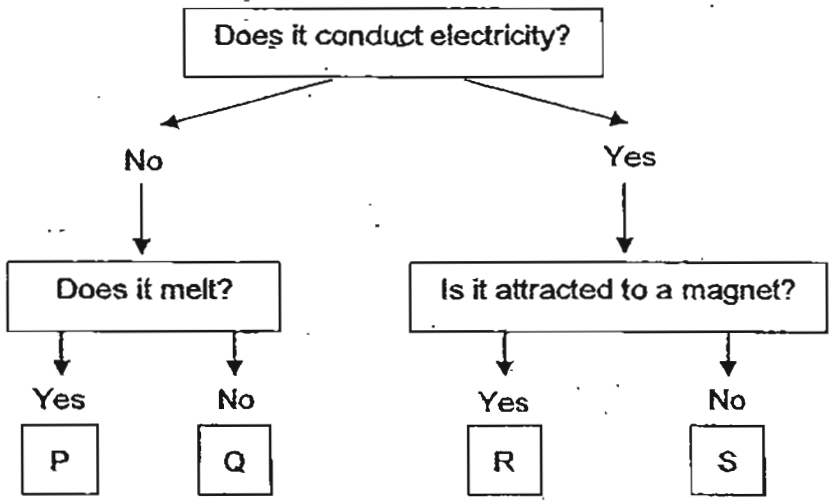
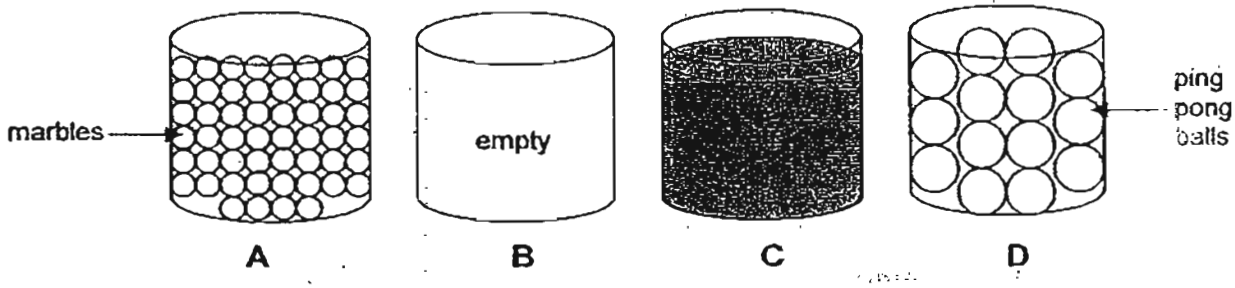
17. Study the flowchart below.



Which one of the following correctly represents P, Q, R and S?

	P	Q	R	S
(1)	cotton	paper	iron	paper
(2)	paper	cotton	copper	wood
(3)	wood	wax	aluminum	steel
(4)	wax	wood	steel	aluminum

18. Four identical containers holding different types of matter are shown below.



A jug of water is poured into each container at the same time. The water is poured in at the same rate.

Arrange the containers in order, starting with the one that will overflow first.

overflow first ⟶ overflow last

(1) B, D, A, C

(2) A, C, D, B

(3) C, B, A, D

(4) C, A, D, B

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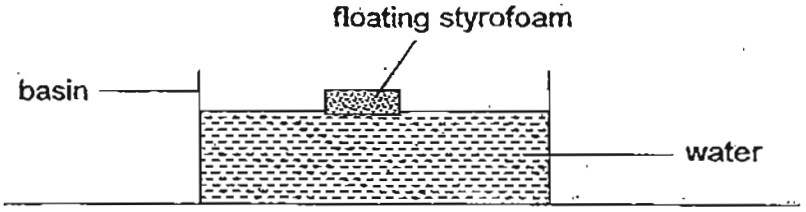
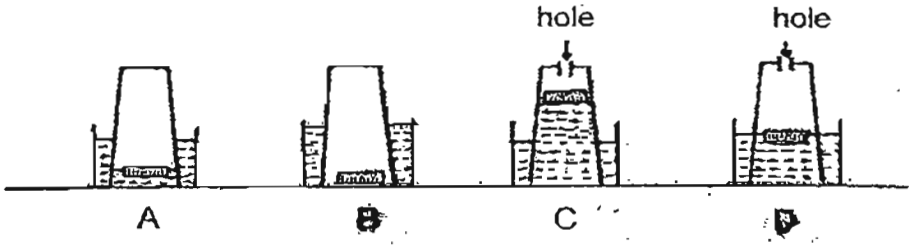
19. The diagram below shows a piece of styrofoam floating in a basin of water. The diagram is not drawn to scale.



A plastic cup is inverted over the styrofoam and held down. Cups A and B have no holes but cups C and D have a hole each.

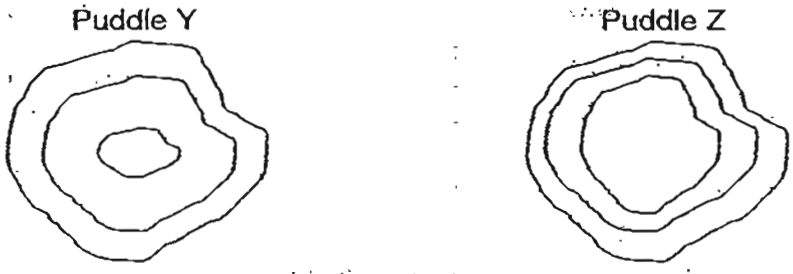


Which of the above diagrams show what could possibly happen to the styrofoam and water?

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

20. Two puddles of equal volume were created on the floor at the same time from two different liquids. Mary drew a white chalk line around the perimeter of each puddle every hour as the liquid evaporated.

The diagram shows her observations for 3 hours.



Which one of the following is the best conclusion she can draw based on her observations?

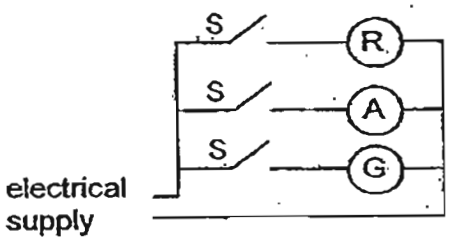
(1) The size of the puddle affects the rate of evaporation.
(2) The liquid from puddle Y and puddle Z evaporated at the same rate.
(3) The greater the surface area of the puddle, the faster the rate of evaporation.
(4) The liquid from puddle Y evaporated at a faster rate than the liquid from puddle Z.

(Go on to the next page)

21. The electrical circuit of the traffic lights are designed in such a way that only one light is lighted up at any one time.

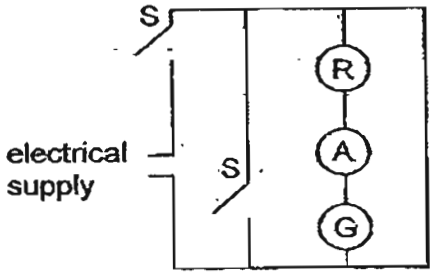
Study the circuit diagrams below with the help of the key provided. Which one of the circuits is most likely used for traffic lights?

(1)

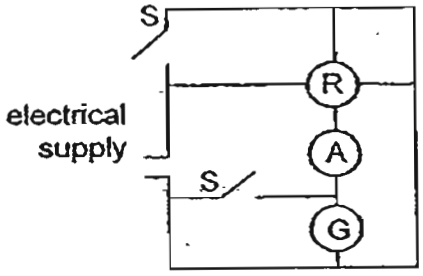


Key	
R: Red light	A: Amber light
G: Green light	S: Switch

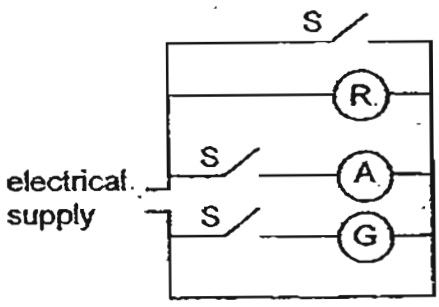
(2)



(3)



(4)



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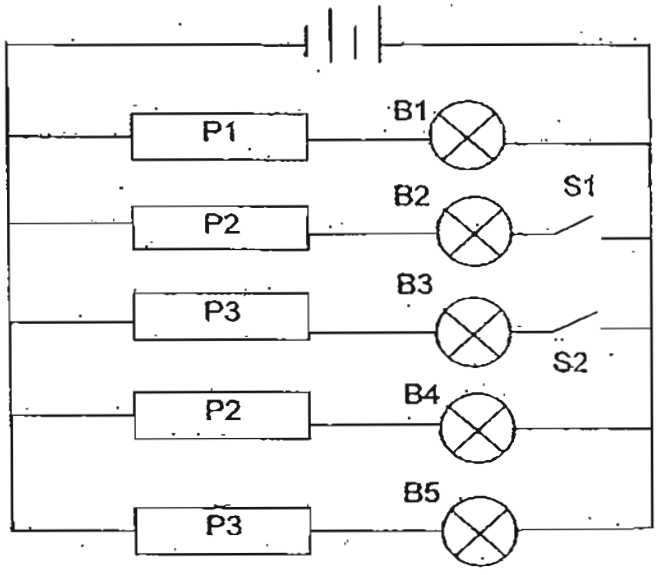
22. The diagram below shows an electric circuit. P1, P2 and P3 are different types of materials.

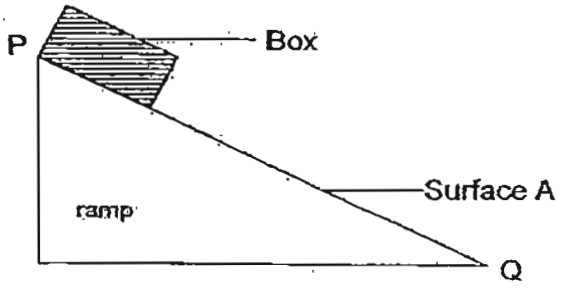


Ahmad observed that only bulbs B1 and B5 lit up in the circuit above when both S1 and S2 are opened. Which of the following statement(s) is/ are correct?

A: P1 is a conductor of electricity.
B: When only S1 is closed, B1, B2 and B5 will light up.
C: When only S2 is closed, B1, B3 and B5 will light up.

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

23. A box was released at P of a ramp with surface A. The time taken for the box to reach Q was recorded.



The experiment was repeated on another three identical ramps with different surfaces, B, C and D. The results obtained are shown in the table below.

Type of surface	Time taken from P to Q (s)
A	20
B	3
C	12
D	9

Which surface, A, B, C or D shows the **most** amount of friction between the surface of the box and the surface of the ramp?

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

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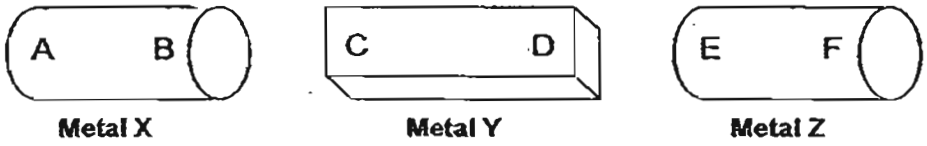
24. The diagram below shows 3 metals, Metal X, Metal Y and Metal Z.



Metal X **Metal Y** **Metal Z**

The ends of Metal X, Metal Y and Metal Z are brought close to one another to test if they repel or attract one another. The table below shows the results.

		Metal X		**Metal Y**	
		A	**B**	**C**	**D**
Metal Y	**C**	Attract	Repel		
	D	Repel	Attract		
Metal Z	**E**	Attract	Attract	Attract	Attract
	F	Attract	Attract	Attract	Attract

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

P: Only Metal X and Metal Y are magnets.
Q: Only Metal Y and Metal Z are magnets.
R: Metal Z is a magnetic material.

(1) P only
(2) Q only
(3) R only
(4) P and R only

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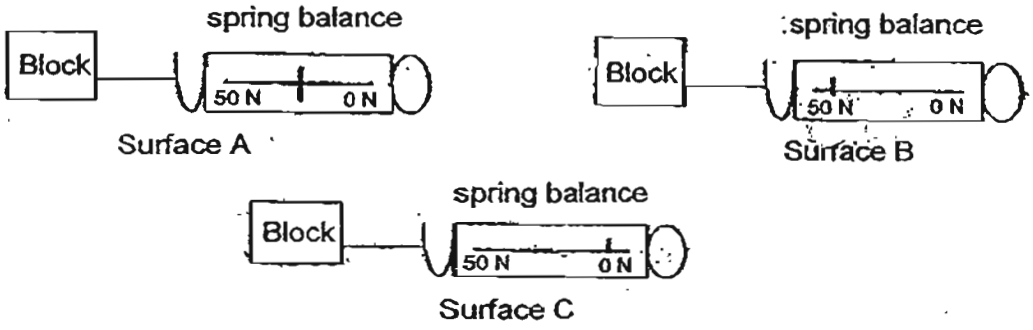
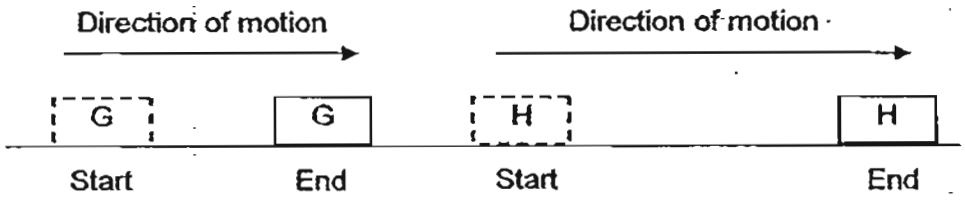
25. Daisy conducted an experiment on 3 different types of surfaces to compare the force needed to pull a block of wood over them. The diagrams below show the results.



Which one of the following surfaces best represent A, B and C respectively?

	Surface A	Surface B	Surface C
(1)	sandpaper	glass	concrete
(2)	concrete	sandpaper	glass
(3)	sandpaper	concrete	glass
(4)	concrete	glass	sandpaper

26. The diagram below shows two identical wooden blocks G and H of the same material being pushed along the same surface.



Block H was observed to travel a longer distance. Which of the following statement(s) is/are possible explanation(s) for the observation?

A: Block H was lighter than block G.
B: A greater force was used to push Block H.
C: A layer of water was spread below Block H.

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

(Go on to the next page)

27. Study the energy conversion below.

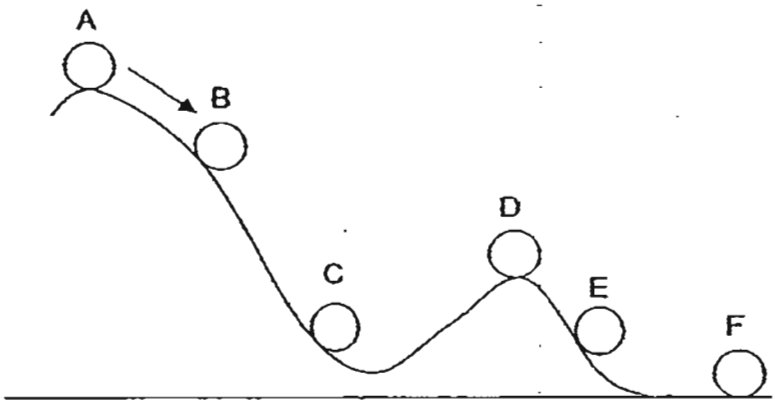
Chemical Potential Energy → Kinetic Energy → Sound + Heat Energy

Which of the following action(s) show/s the same energy conversion?

A: Clapping of hands
B: Winding up a toy car.
C: Switching on the ceiling fan.
D: Using a hammer to hit a nail

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

28. A ball was released from a slope from point A as shown below.



Which one of the following statements about energy of the ball is correct?

(1) Point A has more kinetic energy than point D.
(2) Point C has more kinetic energy than point B.
(3) Point D has more potential energy than Point B.
(4) Point F has more potential energy than Point C.

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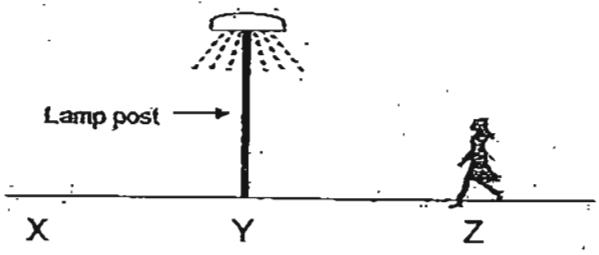
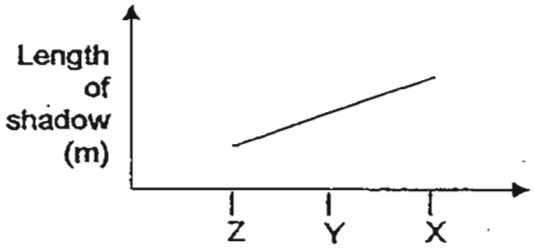
29. Mrs Lim was walking from point Z to point X passing a lamp post at Y.

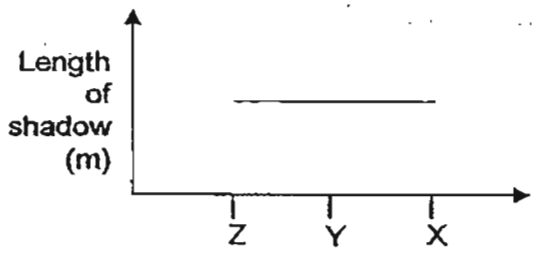


If the only light source was the lamp post, which one of the following graphs below shows how the length of her shadow changes from Z to X?

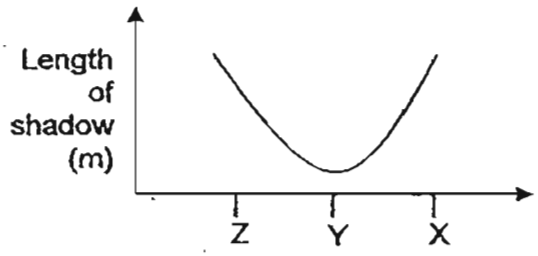
(1)



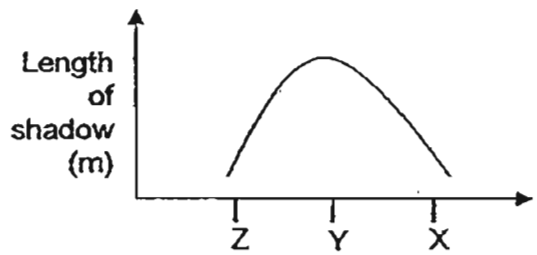
(2)



(3)



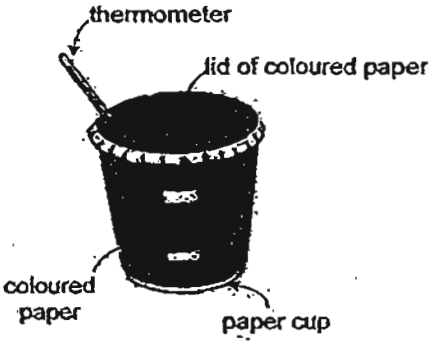
(4)

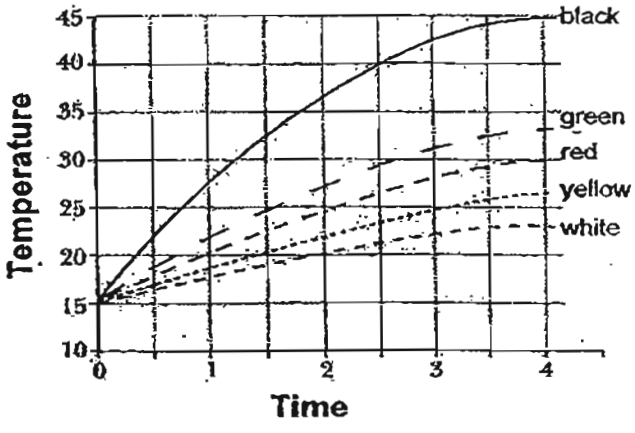


(Go on to the next page)

30. Jeremy set up an experiment to investigate the effect of the Sun's heat on paper of various colours. He wrapped five cups with paper of the same type but with different colours. The five cups were left under the Sun for a number of hours.

The graph below shows the temperature in each cup at different times.





Which of the colours below are <u>best</u> suited for the purpose shown?

	Purpose	
	PE Attire	**Solar Heater**
(1)	black	yellow
(2)	red	yellow
(3)	yellow	white
(4)	yellow	green

METHODIST GIRLS' SCHOOL

Founded in 1887

SCIENCE PRIMARY 6
PRELIMINARY EXAMINATION
2011

BOOKLET B1

Total Time : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

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

Name: _____( )

Class: Primary 6._____

Date : 26 August 2011

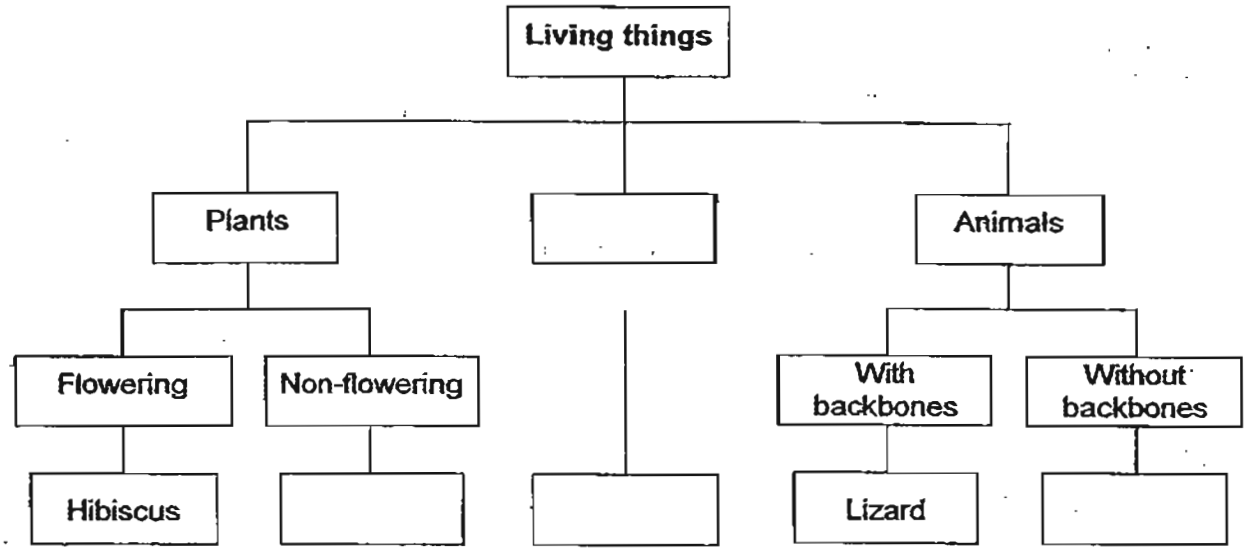
Section A	**/60**
Section B1	**/20**
Section B2	**/20**
Total	**/ 100**

This booklet consists of 8 printed pages.

Section B1 (20 marks)

For questions 31 to 37, write your answers in the spaces provided.

31. The diagram shows a classification table for living things.



(a) Write "Fungi" in the correct box in the classification table above. (1 m)

(b) State a difference about the reproduction system between animals and fungi. (1 m)

_____

_____

(c) Identify the process common to both flowering and non flowering plants. (1 m)

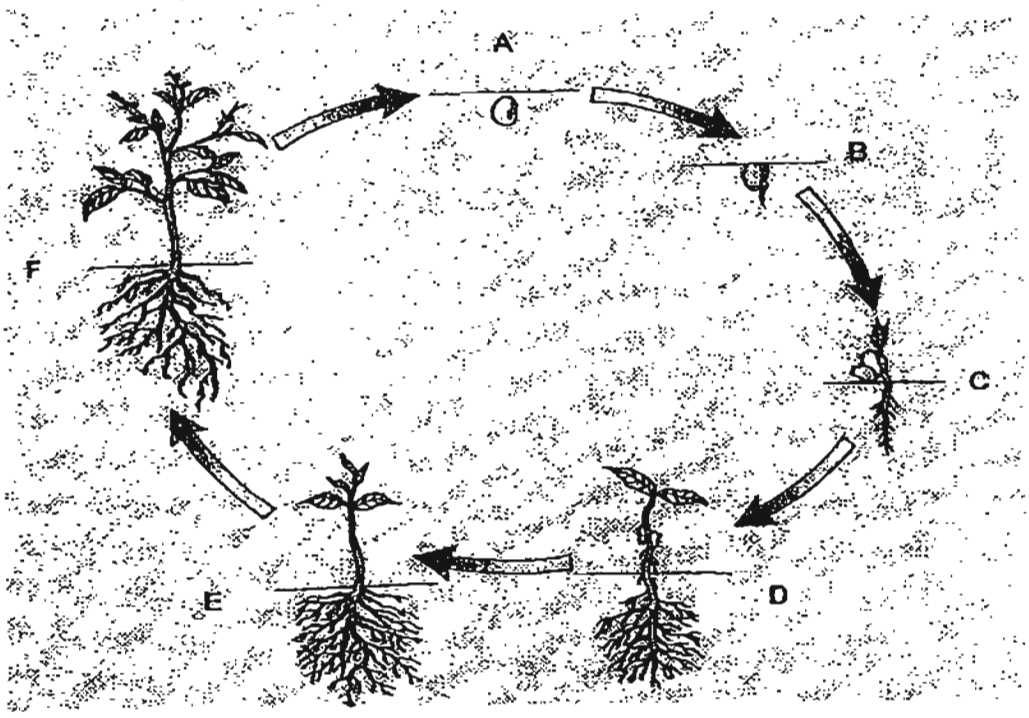
_____

_____

SCORE	3

(Go on to the next page)

32. The diagram below shows the different stages in the life cycle of a flowering plant.



(a) Which is the earliest stage when the plant is able to make its own food? How? (1 m)

_____

_____

(b) What must the adult plant do to increase its chances of having many healthy seedlings? (1 m)

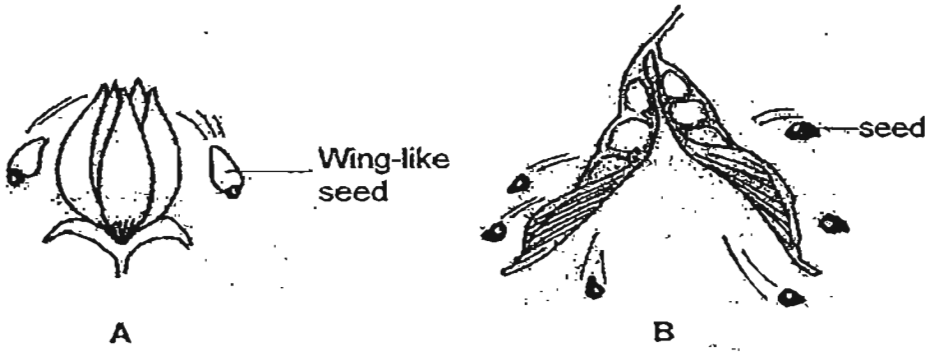
_____

_____

SCORE	/2

(Go on to the next page)

33. The diagram below shows two fruits, A and B, dispersing their seeds when the fruit wall ripens.



(a) Which plant would disperse its seed further away? (1 m)

_____

(b) Give two possible reasons for your answer in (a). (2 m)

_____

_____

_____

_____

SCORE	3

(Go on to the next page)

34. When certain types of cells are placed in pure water, water will enter the cells and the cells swell. When the same cells are placed in sugar solution, water will exit the cells, causing them to shrivel.

Mark had two beakers of liquid. He labelled them beaker A and B. One beaker contained pure water and the other contained sugar solution. Mark placed some cells into the two beakers and made the following observations.

Beaker A: Cells became larger.
Beaker B: Cells were crumpled up.

(a) Identify the liquids in Beakers A and B. (1 m)

(i) Beaker A: _____

(ii) Beaker B: _____

(b) After identifying the liquids, Mark repeated the experiment with another different set of cells. However, there was no visible change this time. The cells in both liquids retained their shape.

Identify the cell. Explain the difference in results between the two experiments. (2 m)

_____

_____

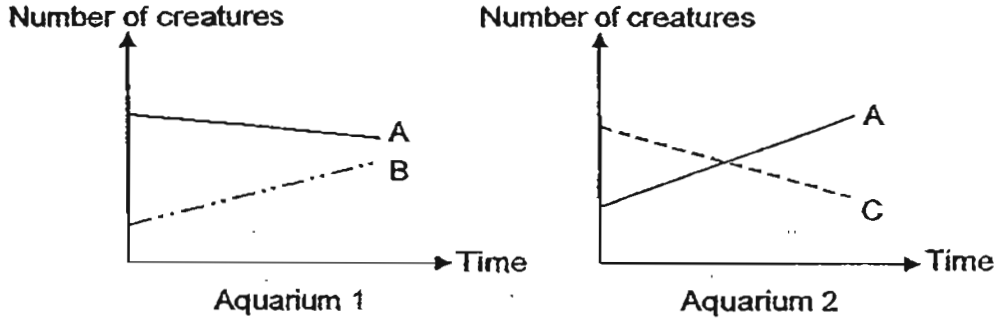
_____

SCORE	/ 3

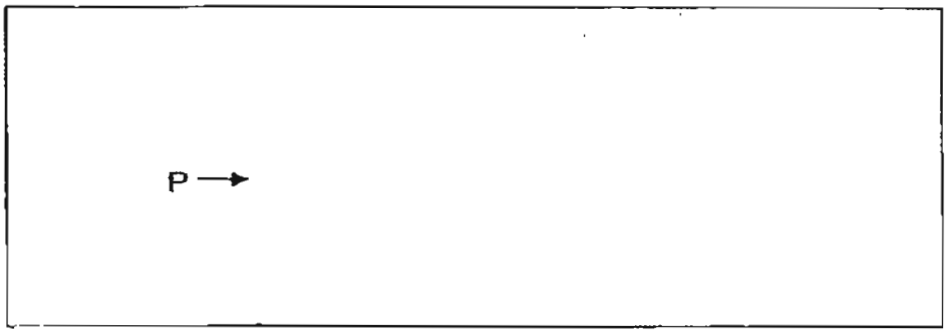
(Go on to the next page)

35. Ali had three different types of creatures, A, B and C. He put them into two aquariums which contained some plants, P.

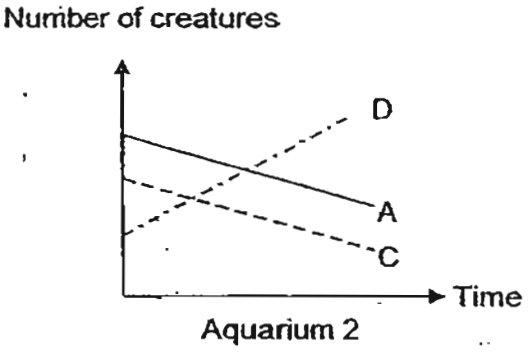
He counted the number of creatures in the two aquariums every three days for a month and recorded his results as shown in the graphs below. He did not see any dead creature in the two aquariums.



(a) Draw a food chain in the box below to link these three creatures. (1 m)



Ali decides to introduce another creature, D, into Aquarium 2. He recorded the number of creatures every three days for a month and recorded his results as shown in the graphs below. He did not observe any dead creatures in the aquarium.



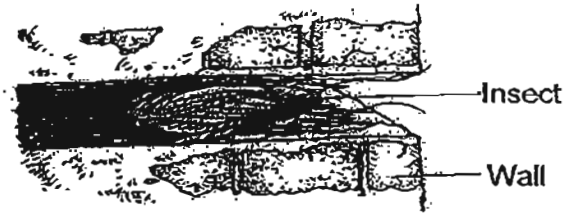
(b) Which creature is both a predator and a prey? (1 m)

_____

SCORE 2

(c) Draw a food web below to link the four creatures, A, B, C and D. (1 m)

36. The diagram below shows an insect in a gap in the wall.



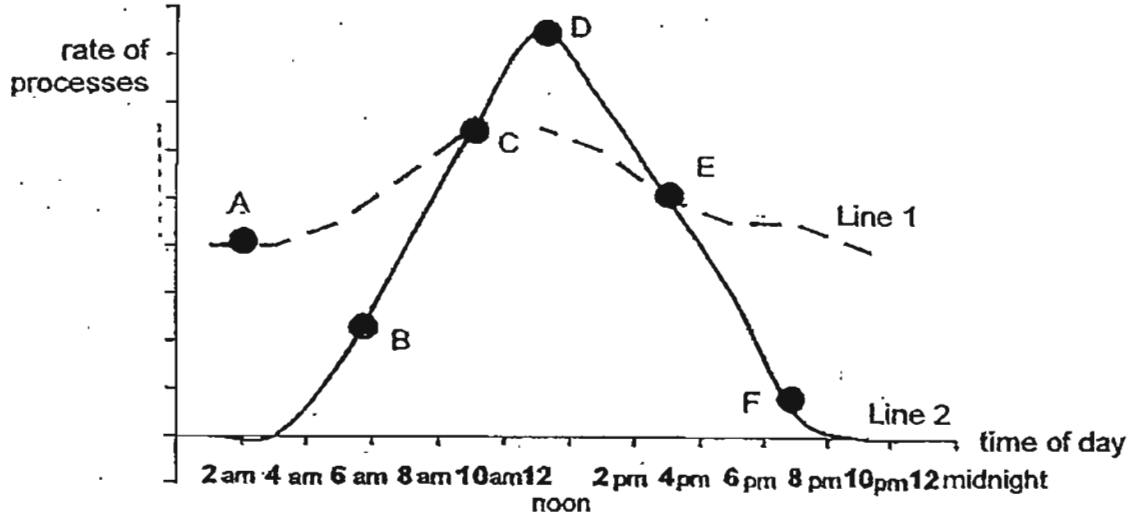
(a) What structural adaptation does the insect have to get into the gap based on the diagram above? (1 m)

(b) Explain how this adaptation is important to the survival of this insect. (1 m)

SCORE 3

(Go on to the next page)

37 Joshua left a potted plant at one corner of his garden. He then measured the rates of two processes of the plant over a 1-day period. The graph below records his observations.



(ai) Identify the process the plant is undergoing as represented by Line 2.

$(\frac{1}{2}$ m)

(aii) Joshua also discovered that there is no movement of oxygen and carbon dioxide through the stomata, even though they are open at certain times of the day.

Identify 2 points (A, B, C, D, E or F) in the graph which most likely support his discovery. Explain your answer. $(1\frac{1}{2}$ m)

SCORE 2

(Go on to the next page)

The next day, Joshua placed a caged rat next to the plant in the garden. He provided both the plant and the rat with water only.

(bi) What would happen to the plant and the rat after a week? (1 m)

_____

_____

(bii) Explain your answer in (bi). (1 m)

_____

_____

End of Booklet B1

SCORE	/2

METHODIST GIRLS' SCHOOL

Founded in 1887

SCIENCE PRIMARY 6
PRELIMINARY EXAMINATION
2011

BOOKLET B2

Total Time : 1 hour 45 minutes.

INSTRUCTIONS TO CANDIDATES

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

Name: _____( )

Class: Primary 6._____

Date : 26 August 2011

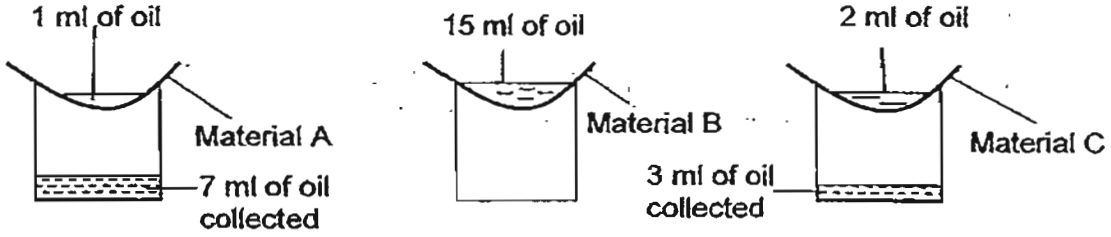
_____
20

This booklet consists of 6 printed pages.

Section B2 (20 marks)

For questions 38 to 44, write your answers in the spaces provided.

38. Jenny wanted to find out which material absorbs the most oil. She placed three sheets of different materials, A, B and C with the same thickness over the mouths of 3 identical containers as shown in the diagram below. She then poured 15 ml of oil onto each material. The results are shown as follows.



(a) If Jenny wants to choose one of the 3 materials for making kitchen paper, which material should she choose? Give a reason for your answer. (1m)

_____

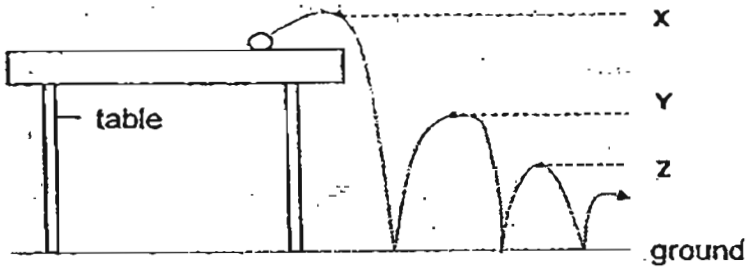
_____

(b) Did Jenny carry out a fair experiment? Explain your answer. (1m)

_____

_____

39. Jaime bounced a tennis ball off a table. It bounced to a lower height each time it hits the ground as shown in the diagram below.



Why do you think the tennis ball did not bounce back to the same height it was dropped from? Explain your answer. (2 m)

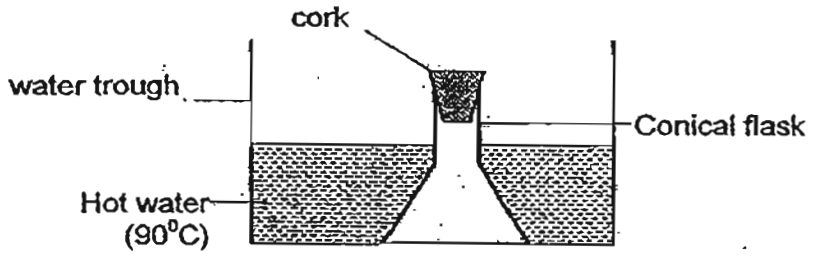
_____

_____

SCORE	4

(Go on to the next page)

40. David set up the following experiment.



After some time, David observed that the cork popped out of the conical flask. He repeated the experiment with conical flasks of different volumes and noted the time taken for the cork to pop out. The result of his experiment is shown in the table below.

Volume of conical flask (cm^3)	Time taken for the cork to pop out (seconds)
150	13
200	16
250	18

(a) What caused the cork to pop out? (1 m)

_____

_____

(b) What is the relationship between the volume of the conical flask and the time taken for the cork to pop out based on the table above? (1 m)

_____

_____

(c) If the volume of the conical flask cannot be changed, what can be done to the set up to make the cork pop out in shorter time? (1 m)

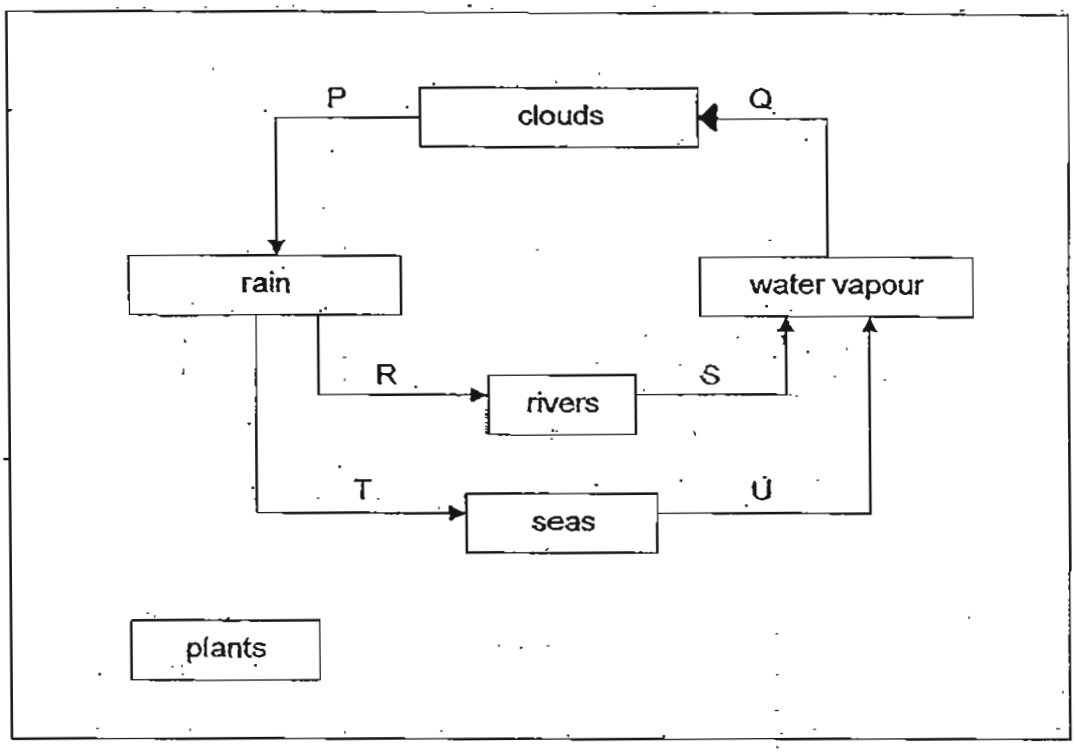
_____

_____

SCORE	3

(Go on to the next page)

41. Study the water cycle below.



(a) Draw <u>two</u> arrows in the diagram above to show how plants can be part of this water cycle. (1 m)

(b) Which of the process(es) above represented by letters P, Q, R, S or T involve(s) no change in state? (1 m)

_____

(c) Which of the process(es) above represented by letters P, Q, R, S or T involve(s) a change from a gaseous to liquid state? (1 m)

_____

(d) How does the greenhouse effect help in the water cycle process? (1 m)

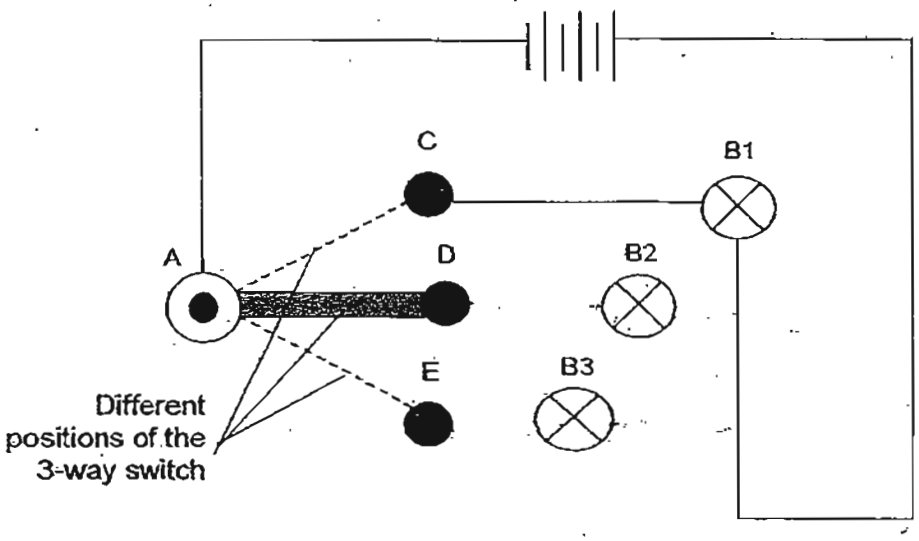
_____

_____

SCORE	/ 4

(Go on to the next page)

42. The diagram below shows an open circuit. The 3-way switch is made up of 4 pins A, C D and E. A clip is connected to Pin A and it can be moved to touch pins C, D and E:



(a) Draw **4 wires** in the diagram above to show how the 3-way switch can be connected to the bulbs so that we can move the clip to light up any one of the 3 bulbs. (2 m)

(b) What is an advantage of using a 3-way switch system? (1 m)

_____

_____

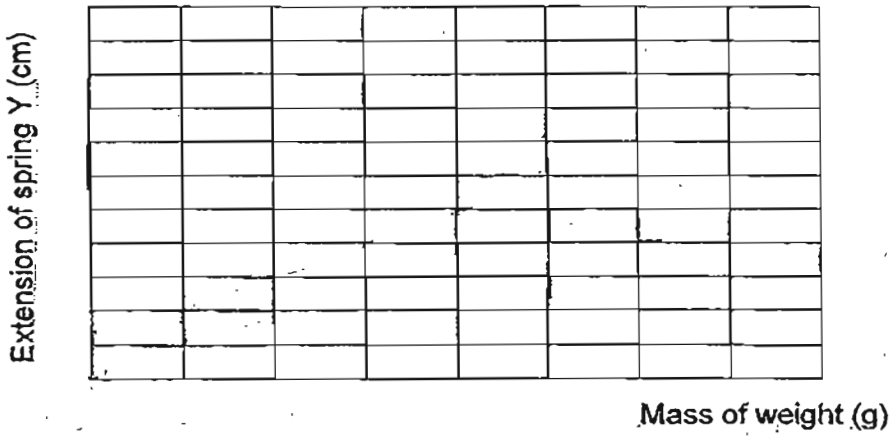
SCORE 3

(Go on to the next page)

43. Weights were hung progressively to two springs, Y and Z and their lengths were recorded in the table below.

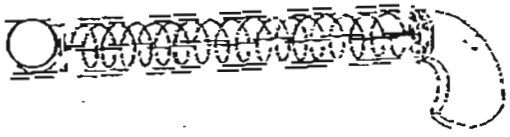
Mass of weight (g)	Length of spring Y (cm)	Length of spring Z (cm)
0	5	4
5	6	6
10	7	8
15	8	10
20	9	12
25	11	14

(a) Plot a line graph to show the **extension** of the spring Y. (1 m)



(b) From the graph, explain why the extension of spring Y becomes greater when the 25g weight is hung on the spring. (1m)

Isaac has a pop gun that works using a spring as shown below. When the handle is pulled back and released, the ball will pop out of the gun.

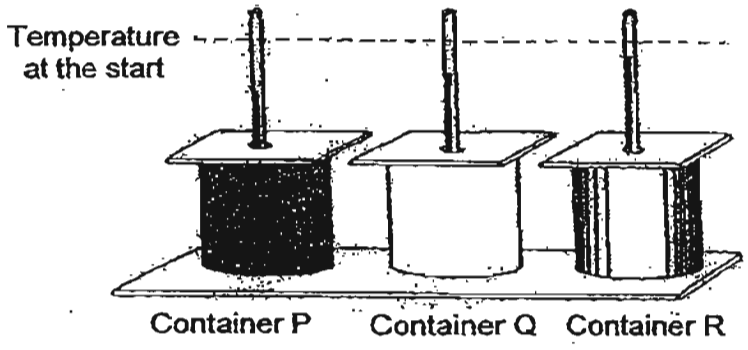


(c) ~~(b)~~ Which spring, Y or Z, do you think should Isaac use in his gun in order to shoot a further distance? Explain your choice. (1m)

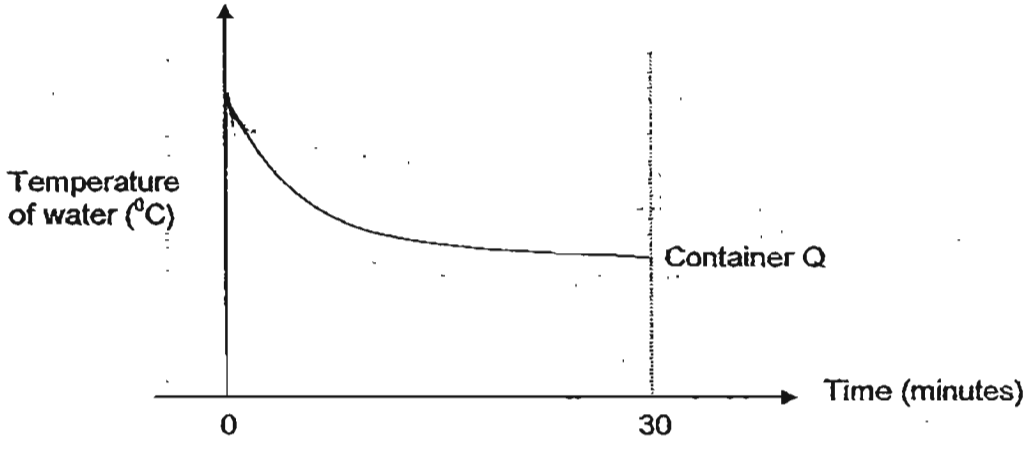
SCORE 3

(Go on to the next page)

44. Johnny poured hot water of the same temperature into 3 containers, P, Q and R, made of different materials as shown in the diagram below. He then recorded the temperature in each of the containers at 2 minute intervals for a period of 30 minutes.



(a) The temperature change in container Q was recorded in the graph below. Complete the graphs for **Container P** and R below. **Label** your graphs. (1 m)



(b) Based on the graph, if Johnny wants to keep his food in a container warm for as long as possible, which container should he use? Explain your answer. (2 m)

_____

_____

_____

End of Booklet B2

SCORE	3

Answer Ke

EXAM PAPER 2011

SCHOOL : MGS
SUBJECT : PRIMARY 6 SCIENCE

TERM : PRELIMINARY

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

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

31)a)Fungi
b)Fungi reproduces by asexual reproduction but animals reproduces by sexual reproduction.
c)Photosynthesis.

32)a)Stage C. Its leaves have already grown, thus the plant can photosynthesize and make its own food.
b)It has to ensure its seeds are dispersed far away from other plants, to avoid overcrowding.

33)a)A.
b)A has a wing-like structure seed, thus enabling the wind to carry it far away but B's seeds are dispersed by the force of explosion and its seeds are round and hard. A's seeds have a larger exposed surface area than B's seeds, as A has a larger exposed surface area, it can "surf" on the wind for a longer time to be carried further than B's seeds.

34)a)i)pure water ii)sugar solution
b)It is a plant cell. A plant cell has a cell wall and a cell wall is to retain the plant cell's shape, thus not allowing the cell to change its shape whether it is put in pure water or sugar solution.

35)a)P→C→A→B
b)A
c)P→C→A→B
D

36)a)Its body is small and narrow.
b)It helps the insect to hide from its predators easily so as to not be eaten by them.

37)a)i)Photosynthesis.
ii)C,E. The plant used the carbon dioxide given out by itself for photosynthesis and the oxygen produced by photosynthesis for respiration.
b)i)The plant survived but the rat died.
ii)The rat had no food as he only gave it water but the plant could make food for its elf and had water.

38)a)C. It absorbed the most oil and let the least amount of oil to pass through, the purpose of the kitchen towel.
b)She carried out a fair experiment. Only one variable was changed which is the materials used as the "filter".

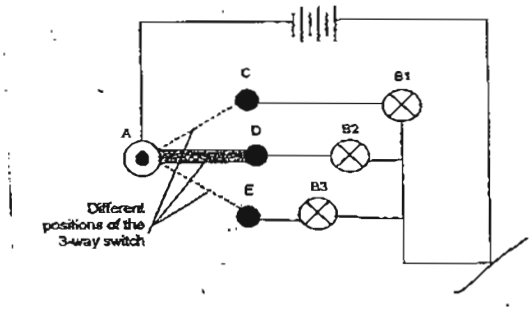
39)The gravitational potential energy the ball possessed on the table was converted to kinetic energy. When it bounced, some of the energy was lost as sound and heat energy, so not all the energy will convert back to gravitational potential energy when the ball bounced up.

40)a)Air expands when it is heated. When the flask was put in the hot water, this caused the air inside the flask to be heated, causing it to expand and push the cork out.
b)As the volume of conical flask increased, the time for the cork to pop out also increased.
c)He could pour more water of 90℃ into the water trough.

41)a)rain water vapour

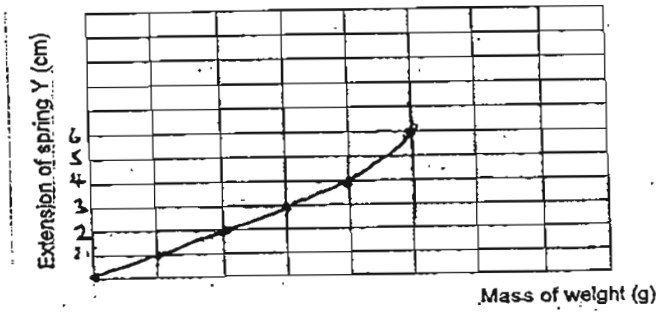
b)P,R,T
c)Q
d)It warms the earth, causing more water vapour to evaporate from the rivers and seas, thus there would be more clouds and rain.

42)a)



42)b)Bulbs can be controlled at 3 different locations.

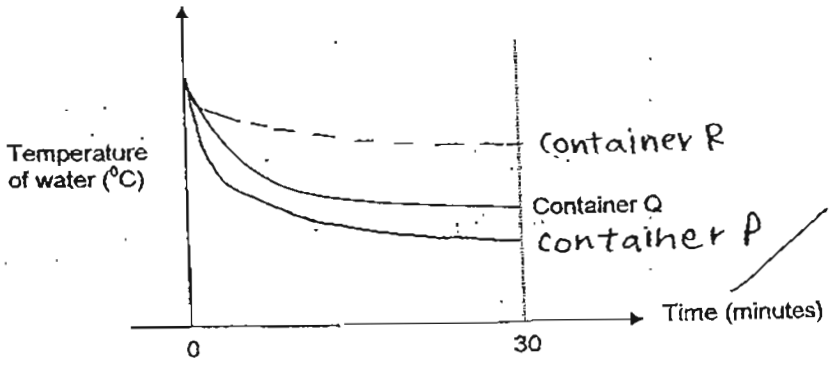
43)a)



b)The spring had probably reached its elastic limit.

c)Z. Z extends longer than Y when stretched thus it will allow him to shoot a further distance.

44)a)



b)R. It is a poor conductor of heat and lost heat to the surrounding air the slowest compared to container P and Q.