Rosyth School
Preliminary Examination for 2008
SCIENCE
Primary 6

Total Marks: ____/100

Name: _____

Class: Pr _____ Register No. _____ Duration: 1 h 45 min

Date: 21 August 2008 Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B.

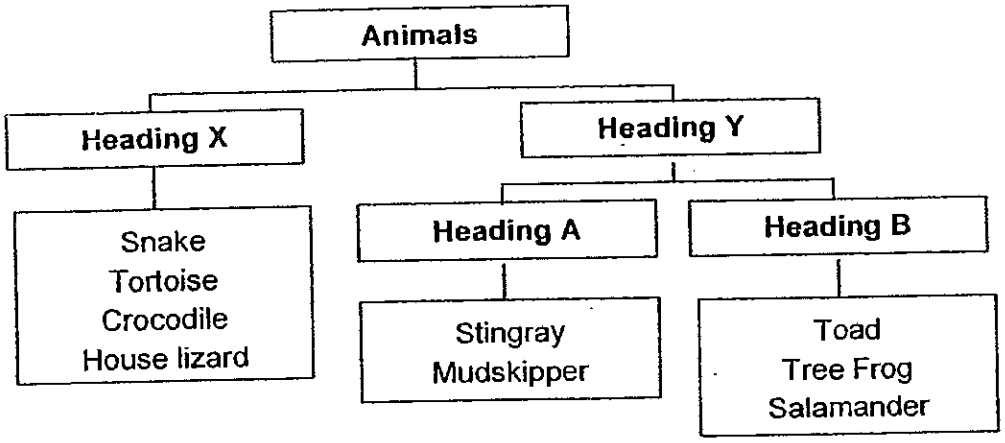
	Maximum	Marks Obtained
Booklet A	**60 marks**	
Booklet B	**40 marks**	
Total	**100 marks**	

* This booklet consists of 20 pages.

PART I (60 MARKS)

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

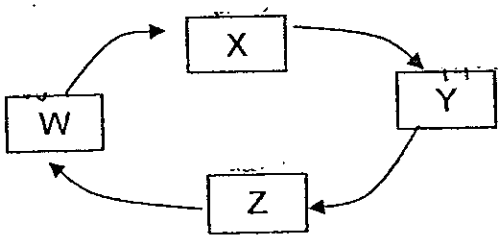
1. Some animals are grouped using the classification chart shown below.



Which of the following is the correct set of headings for Y, A and B?

	Heading Y	Heading A	Heading B
(1)	Have scales	Have fins	Have gills
(2)	Are cold-blooded	Breathe using moist skin	Live on land and in water
(3)	Do not have scales	Breathe using gills	Breathe using lungs and moist skin
(4)	Are warm-blooded	Have tails	Breathe using moist skin

2. The diagram below represents the life cycle of a butterfly.



If Z is the adult stage, at which stage(s) would the butterfly eat a lot and moult?

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

(Go on to the next page)

190

3. The table below lists the parts of a cell. The ticks (✓) in the boxes represent the parts of a cell that Cells P, Q and R have.

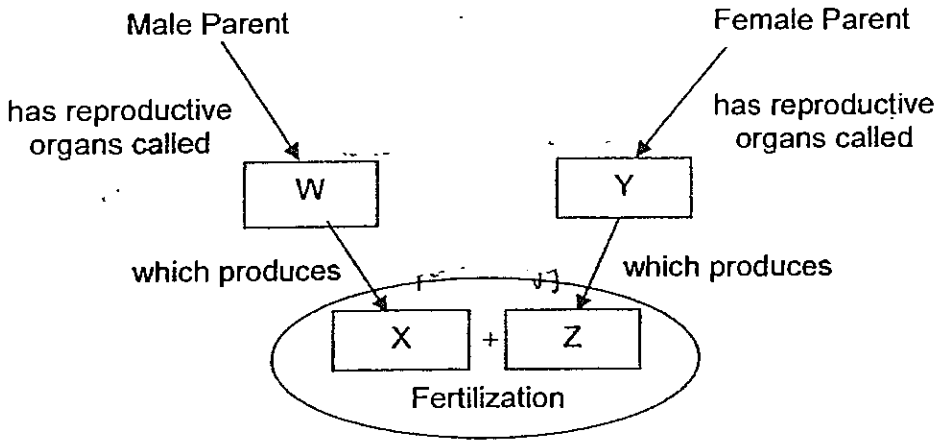
Parts of the Cell	Cell P	Cell Q	Cell R
Cytoplasm	✓	✓	✓
Cell membrane	✓	✓	✓
Cell Wall		✓	✓
Nucleus		✓	✓
Sap		✓	✓
Chloroplasts			✓

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

A P and Q are animal cells.
B R is the only cell that can carry out photosynthesis.
C Q and R can control the movement of materials in and out of itself but P cannot.

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

4. The diagram below shows how fertilization takes place between the male and female parent in animal reproduction.

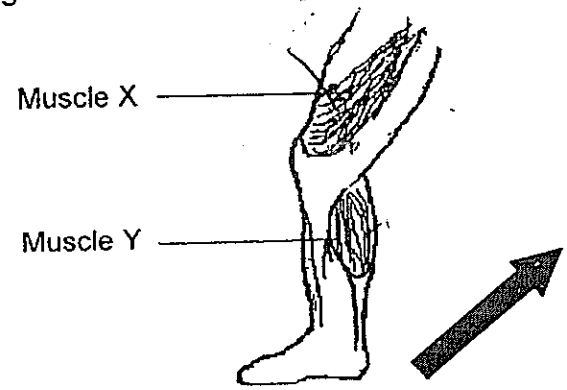


What are W, X, Y and Z?

	W	X	Y	Z
(1)	ovaries	egg	testes	sperm
(2)	penis	sperm	womb	egg
(3)	testes	sperm	ovaries	egg
(4)	womb	egg	penis	sperm

(Go on to the next page)

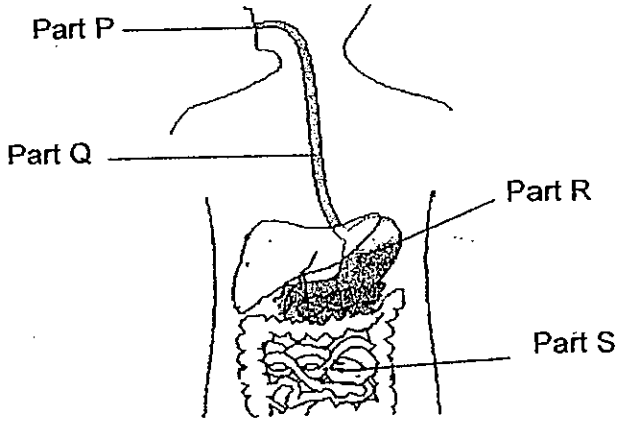
5. The diagram below shows a human leg.



In order to have a person move his lower leg in the direction indicated by the arrow in the diagram above, which of the following must happen to Muscles X and Y?

	Muscle X	Muscle Y
(1)	contract	relax
(2)	relax	contract
(3)	contract	contract
(4)	relax	relax

6. The diagram below shows part of the human digestive system.



Which of the following sets of information correctly compares the changes in the amount of digested food when it leaves Parts P, Q, R and S?

	Changes in the amount of digested food when leaving...			
	Part P	Part Q	Part R	Part S
(1)	Increases	No change	No change	Increases
(2)	No change	No change	Increases	No change
(3)	Increases	Increases	No change	Increases
(4)	Increases	No change	Increases	Increases

(Go on to the next page)

192

7. Read the following text about the public bus transportation service in New Town.

> In New Town, each time a bus leaves the bus terminal, it picks up passengers who are heading for different bus-stops within the town. As the bus heads out, it first travels along the main roads which lead to numerous narrow streets. Along the narrow streets, a number of passengers alight at the different bus-stops and new groups of passengers board the bus. Then the bus continues its journey into the other main roads until it reaches the same bus terminal. This completes the entire journey for the bus. Concurrently, another bus leaves the bus terminal.

If the human circulatory system is like the bus transportation within New town, which of the following parts of the circulatory system are best represented by the different parts of the transportation?

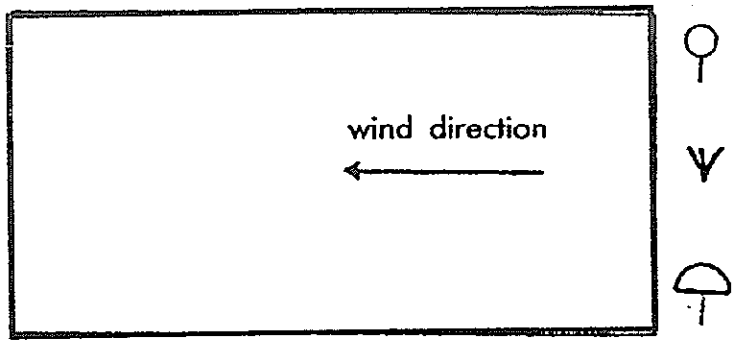
	Part of bus transportation	**Part of human circulatory system**
A	Bus terminal	Brain
B	Bus	Blood vessels
C	Passengers	Materials carried in the blood
D	Bus-stops	Organs, muscles, tissues and cells
E	Main roads	Blood
F	Narrow streets	Blood capillaries

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

193

(Go on to the next page)

8. The diagram shows a plot of land that was cleared of all plants that were growing on it. However, on the edge of this plot of land, untouched by the clearing process, were three different plants.



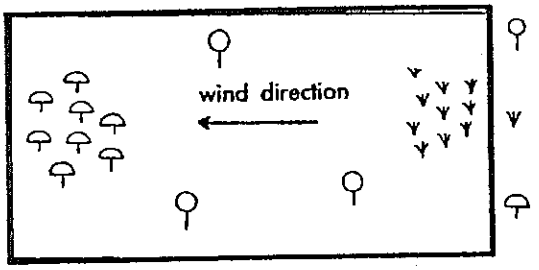
Plant A  has fleshy fruits.

Plant B  has seeds that have fine, feathery structures.

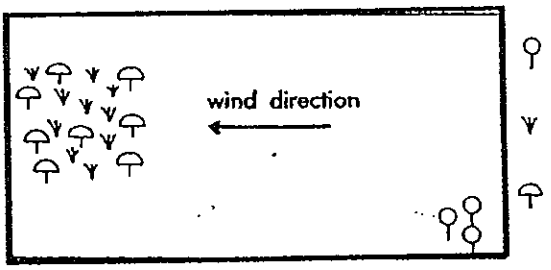
Plant C  has fruits whose fruit wall would dry up when ripe.

The plot of land and the three plants were left alone for some time. Which of the following diagram shows the most possible way the three plants would have spread across the empty plot of land after some time?

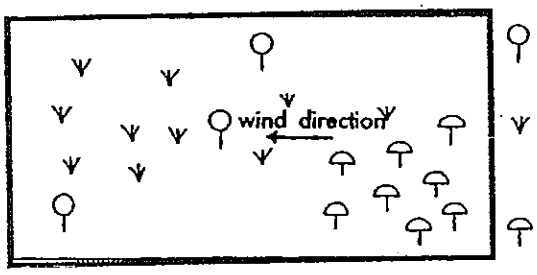
(1)



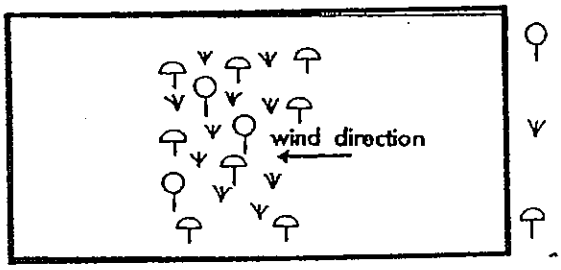
(2)



(3)



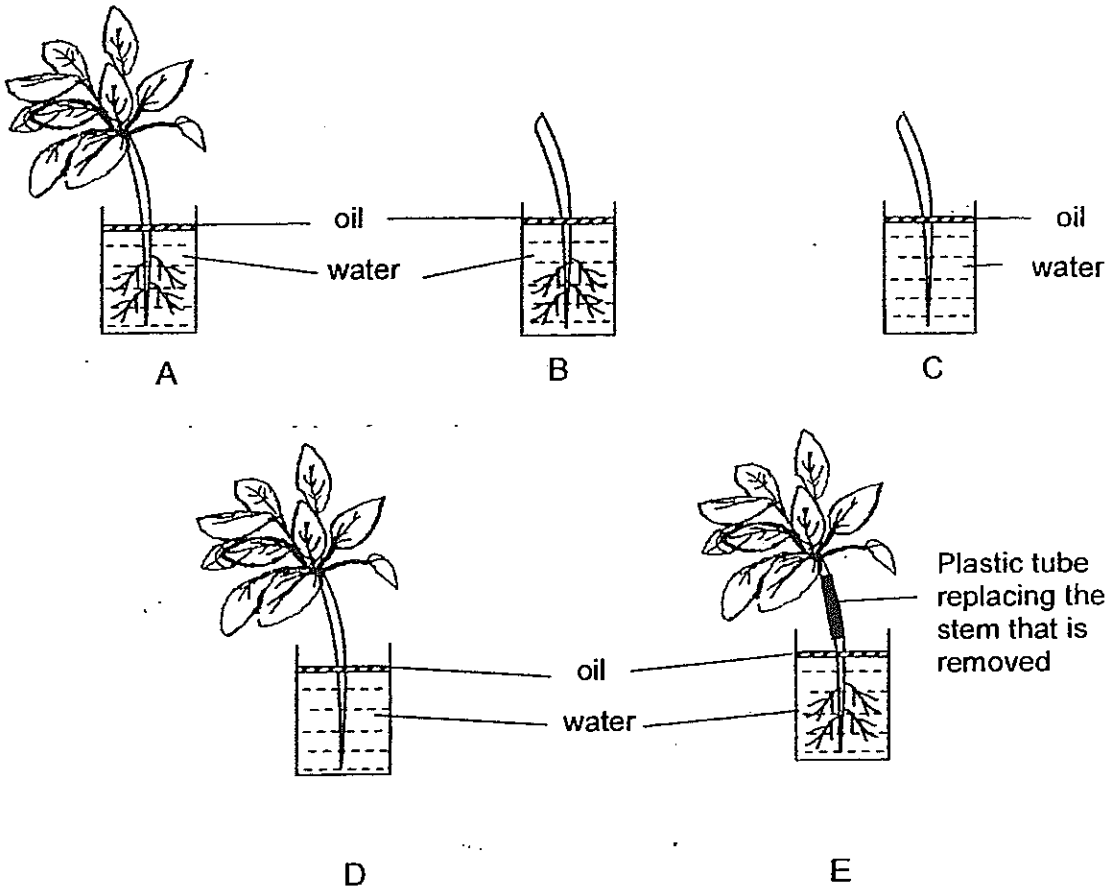
(4)



(Go on to the next page)

194

9. Tim wanted to conduct a fair test to investigate how different parts of a plant affected the rate of water loss by it. He prepared the following set-ups.



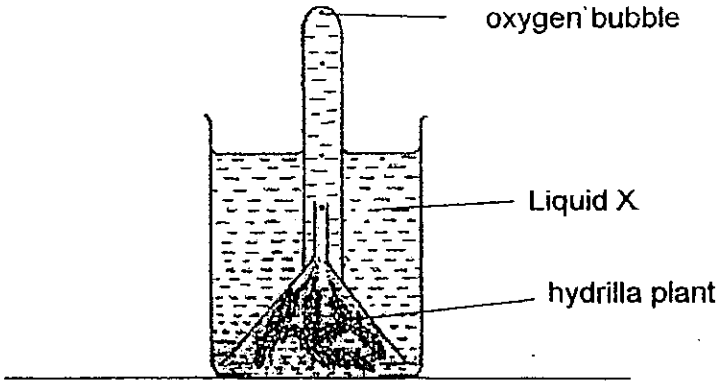
Which of the following combinations of set-ups must be used to ensure a fair test?

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

195

(Go on to the next page)

10. Minah wanted to find out how different types of liquid, X, ... affected the rate of photosynthesis of hydrilla plants. The diagram below shows the set-up with Liquid X. The experiment was repeated with Liquid Y and finally Liquid Z.



She measured the volume of oxygen collected in the test tube in each set-up at the end of the experiment. She tabulated her results as follows.

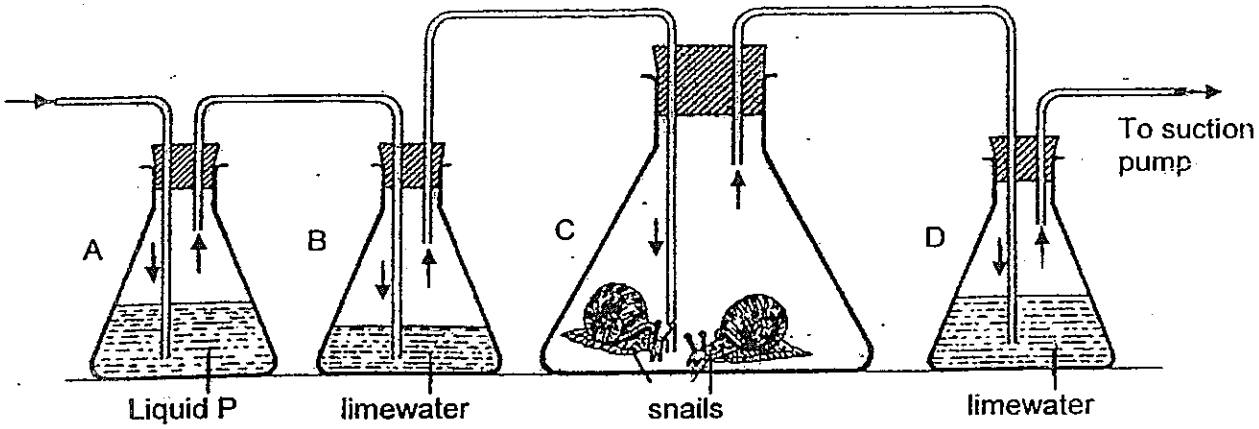
Liquid	Volume of oxygen collected (cm^3)
X	0.1
Y	1.5
Z	0.7

Based on the above results, which of the following did Karen use as Liquid X, Y and Z in her experiment?

	Liquid X	Liquid Y	Liquid Z
(1)	Black ink	Chrysanthemum tea	Murky water
(2)	Tapwater	Black ink	Chrysanthemum tea
(3)	Murky water	Tapwater	Chrysanthemum tea
(4)	Tapwater	Pondwater	Black ink

(Go on to the next page)

11. The experiment shown below was used to find out about the respiration of snails.



The following observations were made and recorded in the table.

Observations made		
Liquid P in A	**Limewater in B**	**Limewater in D**
Turned red	Remained clear	Turned chalky

Which of the following are deductions that could be made from the above observations?

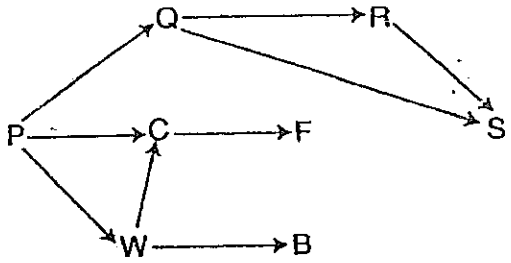
A The air in Flask C has oxygen.
B The snails gave out carbon dioxide.
C The limewater in B reacted with carbon dioxide.
D Liquid P in A reacted with carbon dioxide to turn it red.

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

197

(Go on to the next page)

12. The diagram below shows a food web.



Based on the food web shown, the organisms were classified in the table below.

Producers	Herbivores	Omnivores	Carnivores
P W	Q	R C	B F S

Which organism has been classified incorrectly?

(1) C and Q only
(2) Q and S only
(3) W and S only
(4) W and R only

13. The platypus is a very unusual mammal that is only found in Australia. It is unusual because it is one of only two mammals that lay eggs. It has a streamlined body, webbed feet and a broad tail but it also has long, front claws that can enable the animal to walk on land and burrow. It spends up to 12 hours each day diving in and out of water and uses its cheek pouches to store food while in the water.

Based on the information given above, which of the following inferences about the platypus is definitely incorrect?

A It uses gills to breathe in water.
B It feeds on living things found in the water.
C It can swim in the water and move on land.
D It lives on the branches of trees near lakes, rivers or streams.

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

198

(Go on to the next page)

14. A farmer had 4 orange trees, Tree A, B, C and D, on his fruit farm. The table below shows the characteristics of oranges that Tree A, B, C and D bear.

Tree	A	B	C	D
Characteristics of its fruits	small, sweet and dry	big, sour and dry	small, sweet and juicy	small, sour and juicy

Based on the table, which of the following pair of trees should the farmer use to carry out genetic selection to obtain the most desirable orange product?

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

15. Thomas wanted to compare the degree of air pollution at four different locations in Singapore. He obtained 4 microscopic glass slides and smeared the top surface of each glass slide with a sticky liquid. He then placed a slide at each of the 4 locations he had identified.

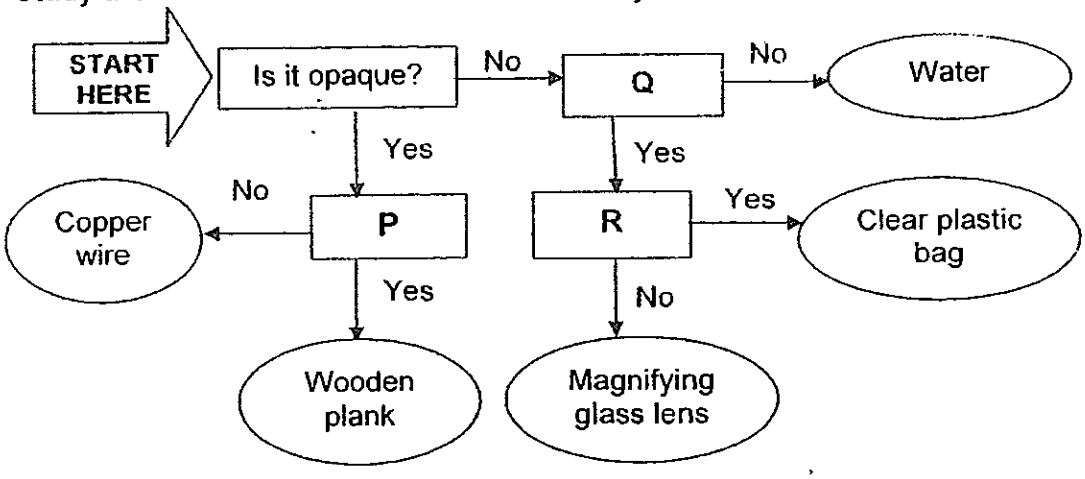
To ensure a fair test, which of the following variables must he keep the same?

A The type of sticky liquid used
B The surroundings of each location
C Duration of time the slides were left at each location
D Amount of sticky liquid smeared on each glass slide

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

199

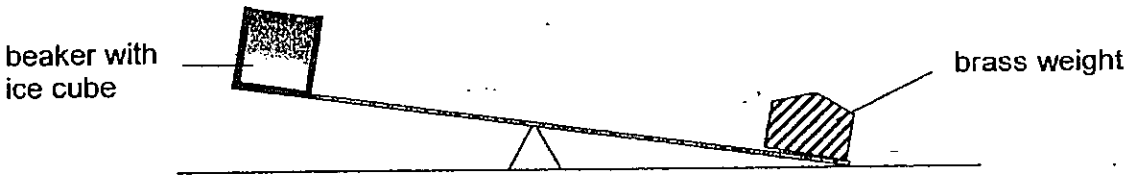
16. Study the classification chart below carefully.



Which one of the following is the most suitable set of questions about properties represented by P, Q, and R?

	P	Q	R
(1)	Is it a good conductor of heat?	Does it have a definite volume?	Is it bendable?
(2)	Is it durable?	Does it occupy space?	Is it lightweight?
(3)	Is it an electrical insulator?	Does it take the shape of its container?	Is it transparent?
(4)	Is it a heat insulator?	Does it have a definite shape?	Is it flexible?

17. A beaker fully occupied by an ice block was placed on a balance as shown below. The ice cube was left to melt completely.



It was observed that the balance tilted in the opposite direction when the ice cube had melted completely. Which of the following could have resulted in the observation made?

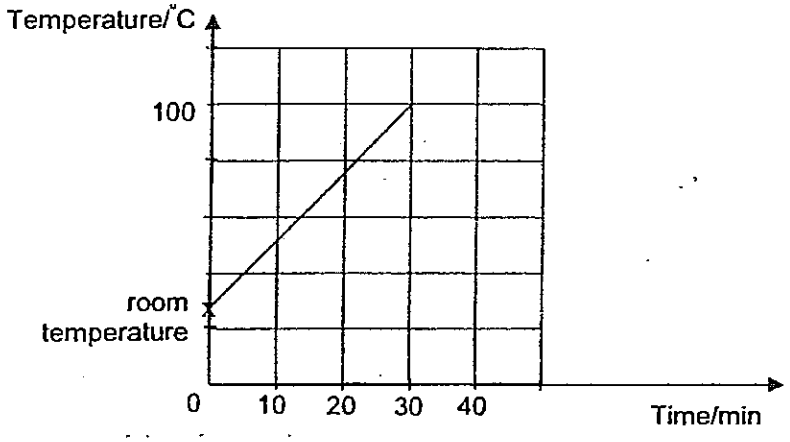
A The volume of ice cube decreased when it melted.
B The shape of the ice cube changed when it melted.
C The mass of the ice cube increased when it melted.
D The water vapour from the surrounding air condensed on the beaker.

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

(Go on to the next page)

100

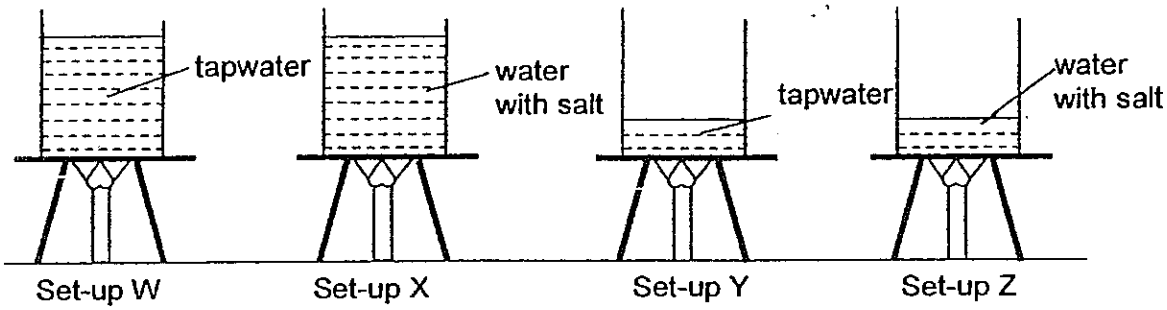
18. The graph below shows the temperature of a beaker of water as it is heated over a Bunsen burner. At the 30th minute, the beaker of water reached boiling point.



If the beaker of water continues to be heated for another 10 minutes, what would the temperature of the water be at the 40th minute?

(1) 90°C
(2) 100°C
(3) 104°C
(4) 120°C

19. Suresh conducted the experiment shown below to compare the time taken for the liquids in the 4 set-ups to reach their respective boiling points when heated.

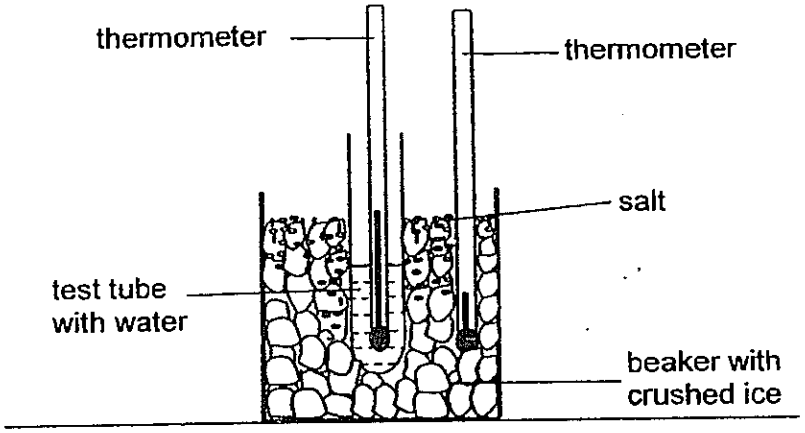


In which order (from the fastest to the slowest) would the 4 set-ups most likely reach their respective boiling points?

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

(Go on to the next page)

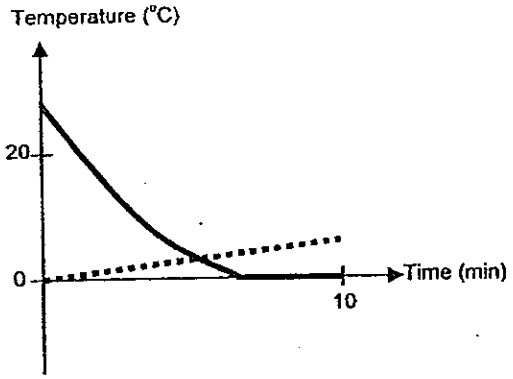
20. Sheila placed a test tube of water in the beaker filled with crushed ice as shown in the diagram below. She had a thermometer in the water and another among the crushed ice to record both temperatures. After the 1st minute, she sprinkled a large amount of salt onto the crushed ice. She continued to record the temperature of the water and crushed ice with salt for the next 9 minutes.



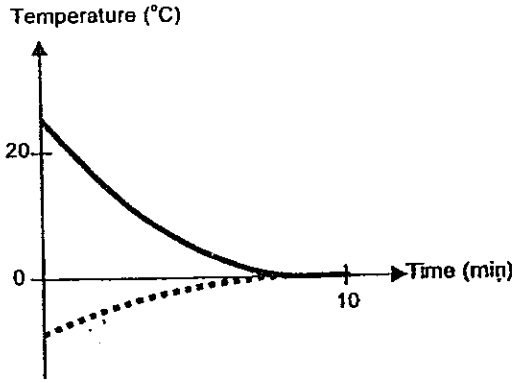
Which one of the following graphs is the best in representing the results obtained during Sheila's experiment?

Legend:
——: Temperature of water
.....: Temperature of crushed ice

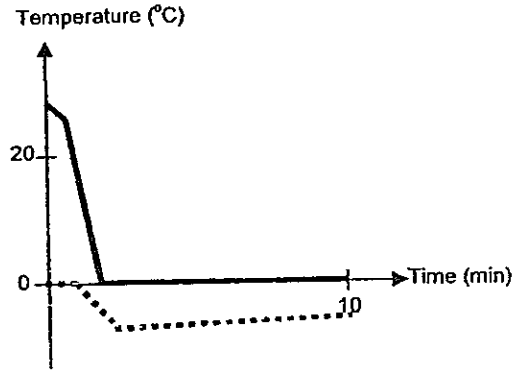
(1)



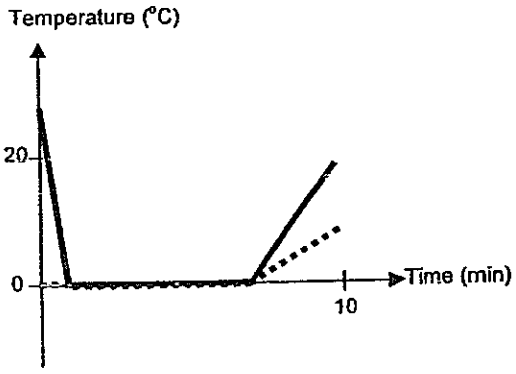
(2)



(3)



(4)



(Go on to the next page)

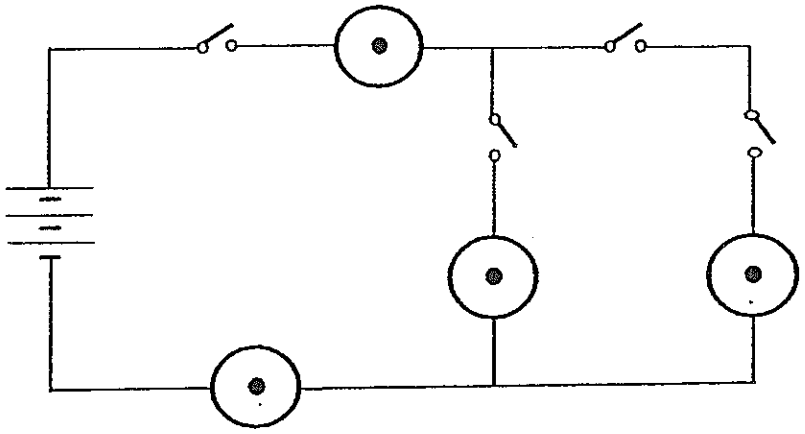
21. The table below shows the freezing point and boiling point of substances X and Y.

Substance	Freezing point (°C)	Boiling point (°C)
X	10	50
Y	-5	145

At which temperature is Substance X, a gas and Substance Y, a liquid?

(1) 5 °C
(2) 45°C
(3) 80 °C
(4) 150 °C

22. The circuit below is made up of 3 batteries, 4 switches and 4 bells.



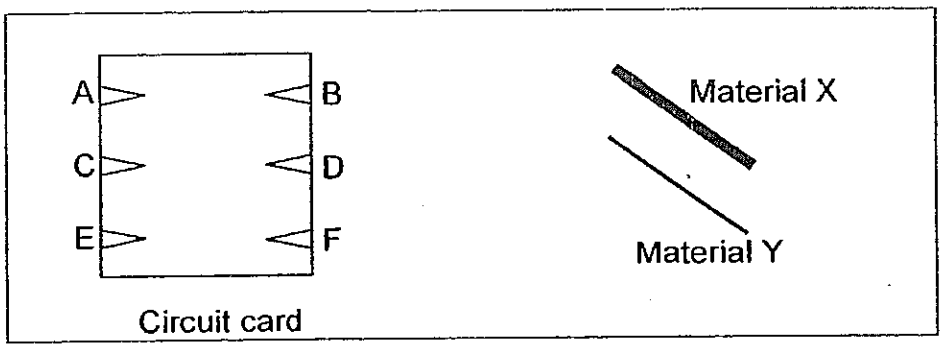
What is the minimum number of switches that have to be closed in order to ring 3 bells?

(1) 1
(2) 2
(3) 3
(4) 4

203

(Go on to the next page)

23. The diagram below shows a circuit card with ... paper clips, A to F. The paper clips were connected with Material X and Y. Material X is an electrical conductor while Material Y is an electrical insulator.

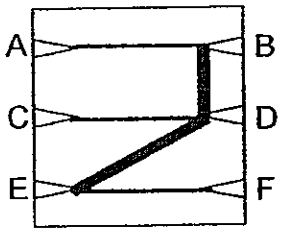


A circuit tester was used to connect the paper clips on the circuit card and the following observations were made.

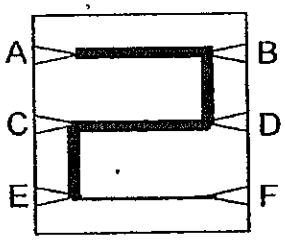
Paper clips connected	Does the bulb light up?
A and B	Yes
B and C	Yes
C and D	Yes
D and E	No
E and F	Yes

Which of the following best shows how the paper clips on the circuit card were connected?

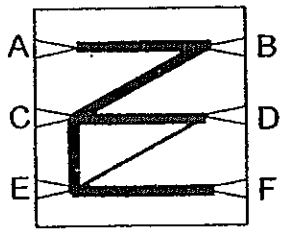
(1)



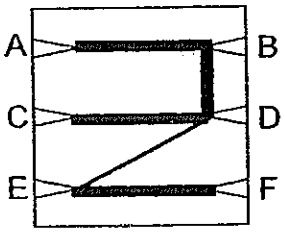
(2)



(3)

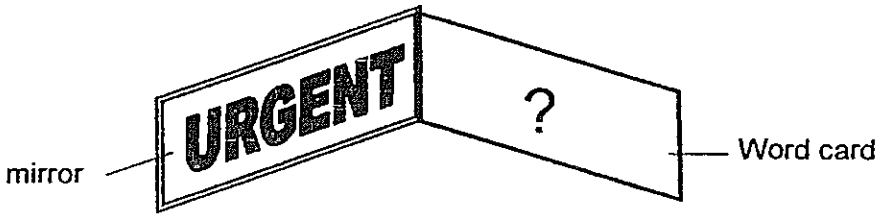


(4)



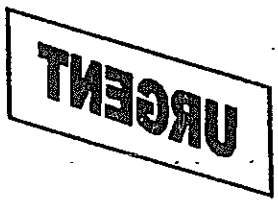
(Go on to the next page)

24. The diagram below shows the image that is seen on a mirror when it is placed near a word card.



Which of the following correctly shows how the actual word appears on the word card?

(1)

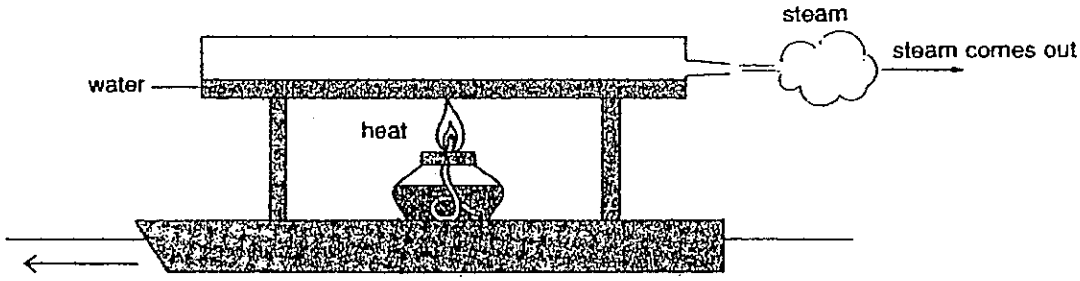


(2)

(3)

(4)

25. The diagram below is a simplified model of how a steamship works.



boat moves in the direction of the arrow

Based on the diagram, which of the following correctly describes the energy conversion in a steamship?

(1) Heat energy + Light energy → Kinetic energy
(2) Kinetic energy → Heat energy → Kinetic energy
(3) Chemical energy → Heat energy → Kinetic energy
(4) Chemical energy → Light energy → Kinetic energy

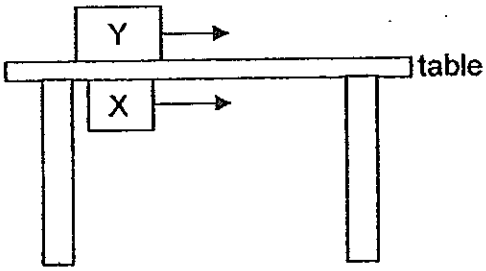
205

(Go on to the next page)

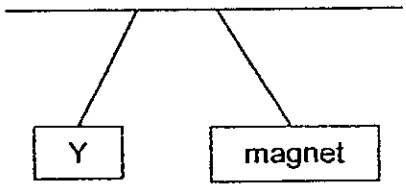
26. The diagrams below show two set-ups ... ject Y.

In Set-up P, Object Y was first placed on the table top. Object X was then placed under the table. When Object Y was pushed across the table top, object X was pulled along with Object Y, moving in the same direction as Object Y.

Set-up Q shows what happened when Object Y was hung freely on a string and placed close to a freely suspended magnet.



Set-up P



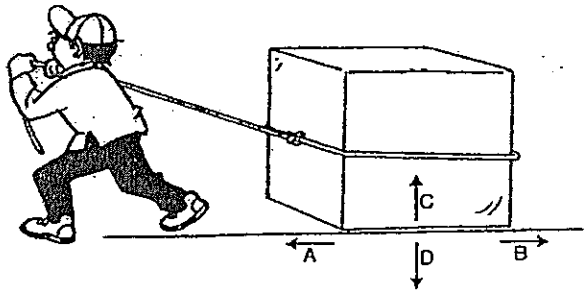
Set-up Q

Based on the set-ups above, which of the following statements is/are definitely true?

A Object X is a magnet.
B Object Y is a magnet.
C Object X and Y are made of magnetic materials.
D The table top is made of a non-magnetic material.

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

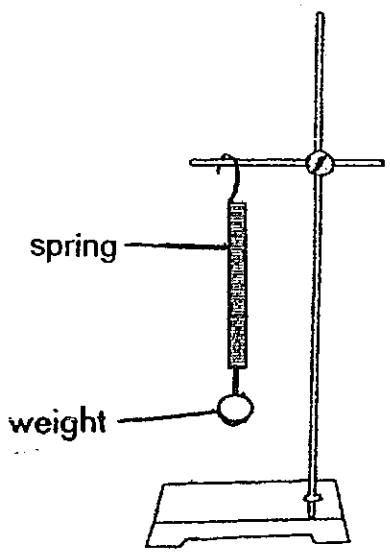
27. A metal box was tied with a rope and pulled across the floor as shown in the diagram below.



Which of the arrows (A, B, C or D) represent the direction that frictional force and gravitational force act on the box?

	Frictional Force	Gravitational Force
(1)	A	D
(2)	B	C
(3)	B	D
(4)	C	A

28. The diagram below shows a weight being hung from a spring whose original length was 5cm.



The table below shows the extension of the spring when different weights were hung from it.

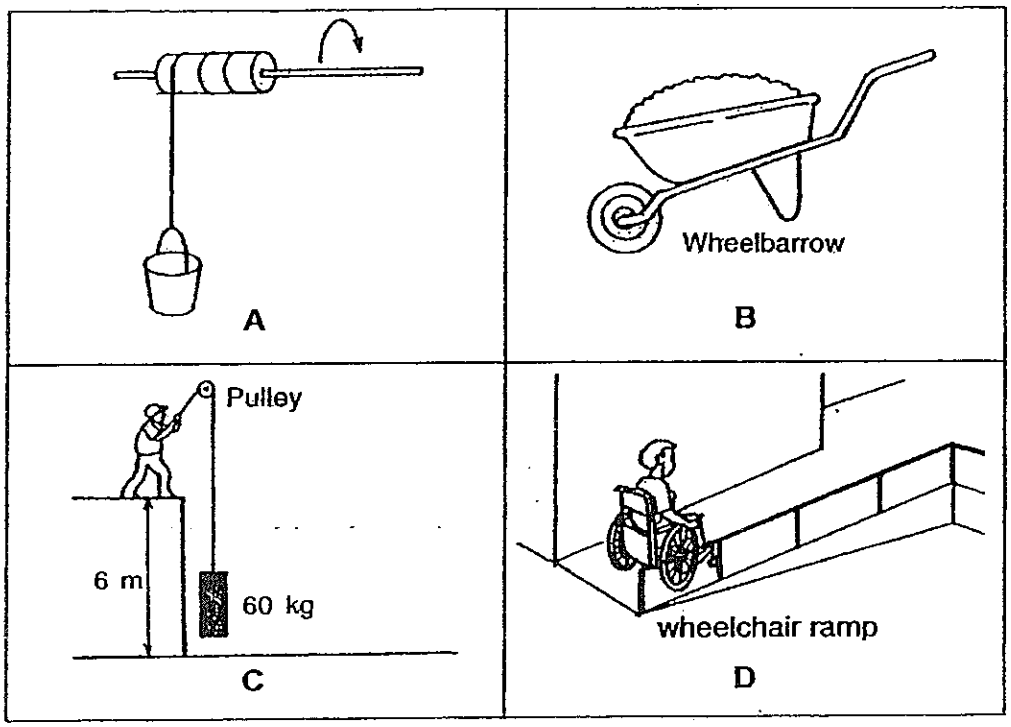
Weight/N	Extension of the spring/ cm
100	2
200	4
250	5
350	7

What would the weight of a book be if the length of the spring was 7cm when the book was hung on it?

(1) 100N
(2) 250N
(3) 350N
(4) 450N

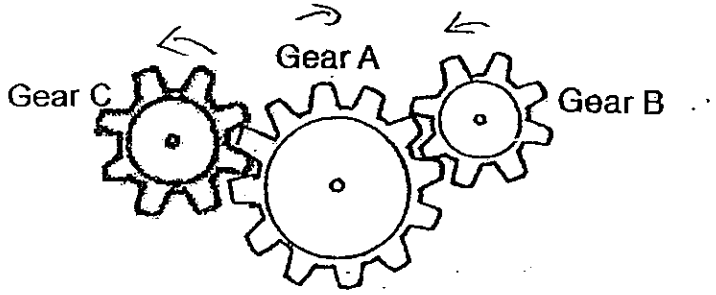
(Go on to the next page)

29. In which of the following situations is effort required to lift the load reduced?



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

30. The diagram below shows three gears interlocked with each other.



Which of the following statements is false?
(1) A turns at a slower speed than C.
(2) When B turns 1 round, C turns 1 round.
(3) When A turns 2 rounds, B turns 4 rounds.
(4) When A turns clockwise, B and C turns anticlockwise.

Rosyth School
Preliminary Examination for 2008
SCIENCE
Primary 6

Total Marks: /40

Name: _____

Class: Pr _____ Register No. _____ Duration: 1 h 45 min

Date: 21 August 2008 Parent's Signature: _____

Booklet B

Instructions to Pupils:

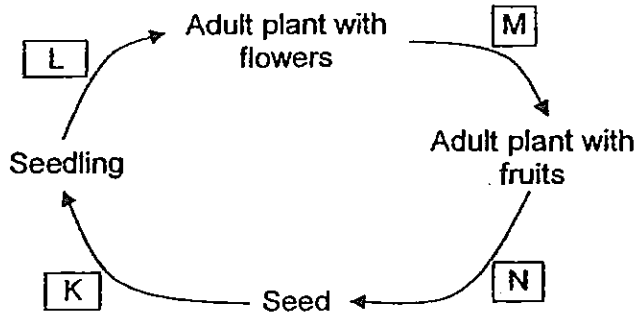
1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

* This booklet consists of 16 pages.

PART II (40 MARKS)

For questions 31 to 46, write your answers in this booklet.

31. The diagram below shows the life cycle of a flowering plant.



Letters K, L, M and N represent important processes that happen at different stages of the life cycle. Match the processes mentioned below to the correct alphabet. Each letter can be used more than once. [2]

	Processes	Alphabet (K, L, M or N)
(a)	Pollination of flowers	
(b)	Splitting of fruit with explosive action	
(c)	Germination	
(d)	Fertilisation	

32. Cells can divide either by binary fission or budding. The diagrams below show the two methods of cell division.

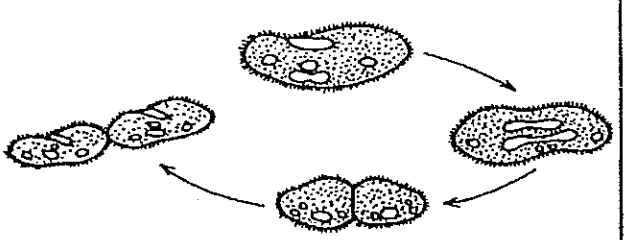


Diagram (i)

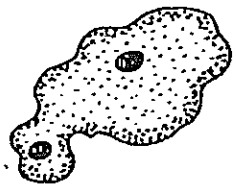


Diagram (ii)

(a) Identify the method of cell division for each diagram. [1]

Diagram (i) _____

Diagram (ii)_____

(b) Give two reasons why cell division is important in human beings. [1]

Reason 1 : _____

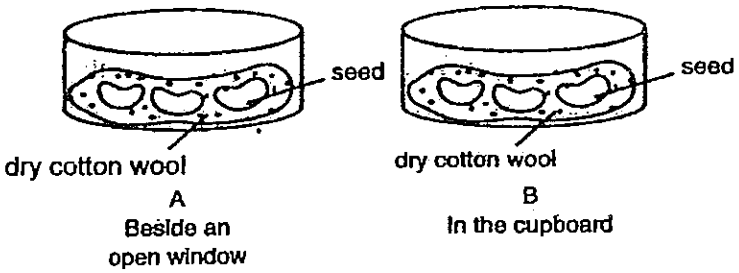
_____

Reason 2 :_____

_____

212

33. James wanted to observe seeds grow into seedlings. As shown in the diagram below, he set up two petri dishes, placing three seeds in each petri dish on dry cotton wool.



He placed petri dish A beside an open window and petri dish B in the cupboard.

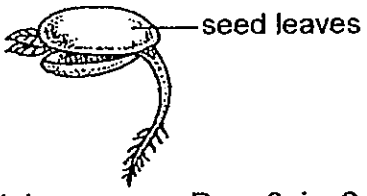
(a) Would the seeds in the petri dishes germinate? Explain your answer. [1]

_____

_____

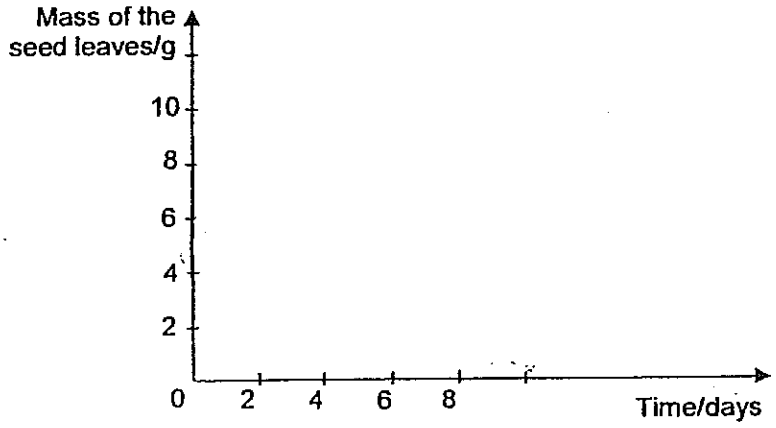
_____

(b) The diagram below shows a seedling.

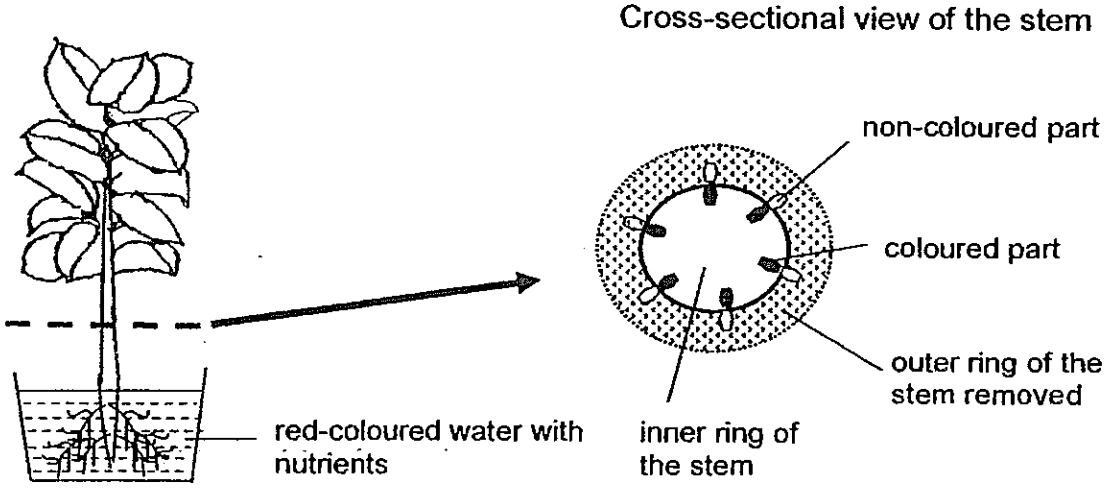


The initial mass of the seed leaves on Day 0 is 6 g. As the seedling develops into a young plant, the mass of the seed leaves changes.

On the axes below, draw a line to show how the mass of the seed leaves might change over a period of 8 days. [1]



34. The diagram on the left shows a healthy plant placed in a basin of red-coloured water with nutrients for its growth. The outer ring of the stem of the plant was removed and the cross-sectional view of the stem is shown in the diagram on the right below.



a(i) What would happen to the colour of the leaves after a few days? [1]

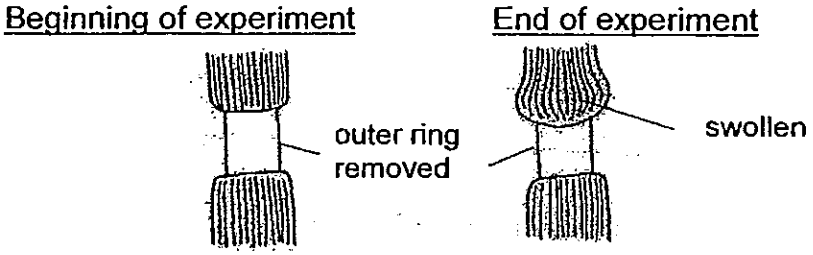
_____

(ii) Give a reason for your answer in a(i). [1]

_____

_____

(b) The diagrams below show the stem of the above plant at the beginning and end of the experiment.

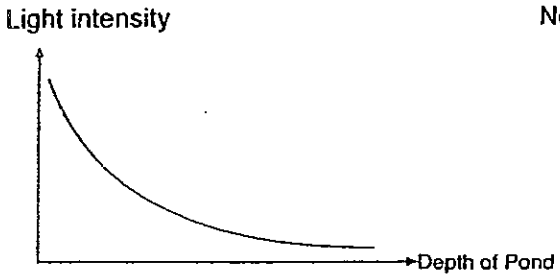


Explain why the part just above the cut stem was swollen at the end of the experiment. [1]

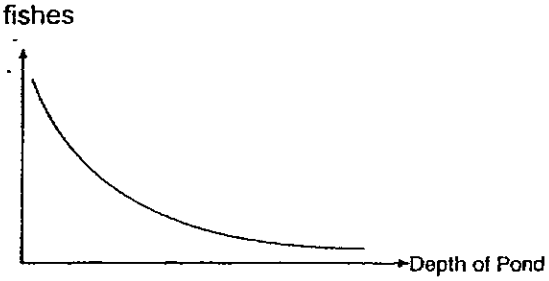
_____

_____

35. The two graphs shown below provide information about the same pond.



Graph A



Graph B

Graph A shows how light intensity changes with changes in the depth of the pond while graph B shows how the number of fishes found changes with the depth of the pond.

(a) Based on the graphs above, what is a possible relationship between the light intensity in the pond and the number of fishes found. [1]

_____

_____

(b) Give a possible reason for the relationship described in (a). [2]

_____

_____

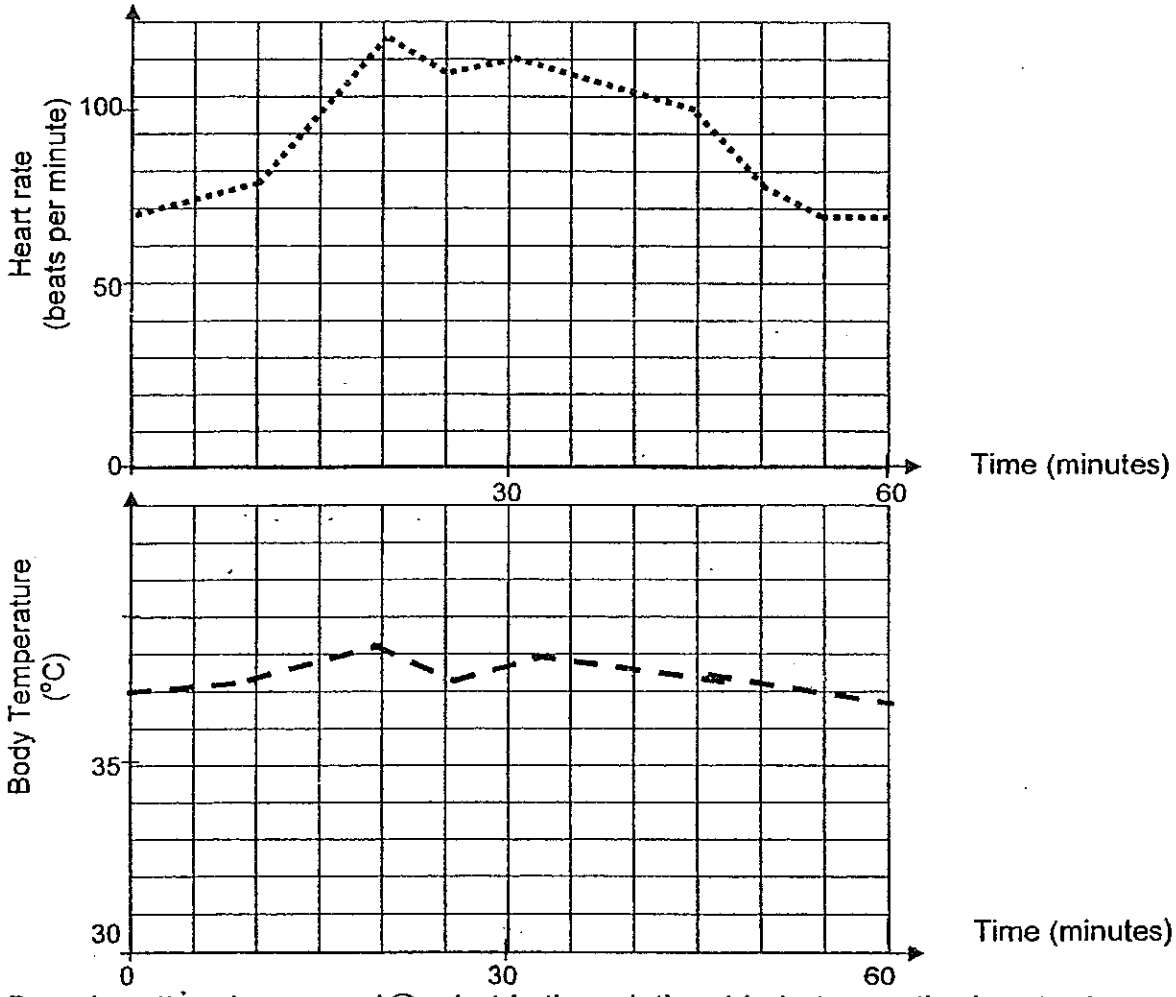
_____

_____

(Go on to the next page)

215

36. The 2 graphs below were obtained during an experiment conducted to find out the relationship between heart rate and body temperature of a person over a period of 60 minutes.



a(i) Based on the above graphs what is the relationship between the heart rate and body temperature of the person? [1]

(ii) Explain why such a relationship occurs as stated in a(i). [1]

(b) What process helped the person keep his body temperature between the ~~36°C~~ 36.5°C and 37.5°C throughout the experiment? [1]

37. Three students wanted to find out if the brand of pesticide used on an aphid infested plant would affect the number of aphids killed. They selected three similar plants and released 100 aphids onto each plant.

The table below shows the amount of pesticide sprayed by each student every day on the plant assigned to them and the number of aphids left after 5 days.

Name of student	Plant	Pesticide Brand	Amount of pesticide sprayed every day / ml	Number of aphids left after 5 days
Mike	X	Kill Them	5	60
James	Y	Aphid Buster	10	75
Ken	Z	Super Pesticide	15	40

The students concluded that Super Pesticide was the most effective pesticide to get rid of aphids, but their teacher said that their experiment was unfair.

(a) What should the students do to make the experiment a fair one? [1]

_____

_____

(b) Give one reason why pesticides are not favoured in controlling the aphid population and suggest one method that could replace the use of pesticides. [2]

Reason : _____

_____

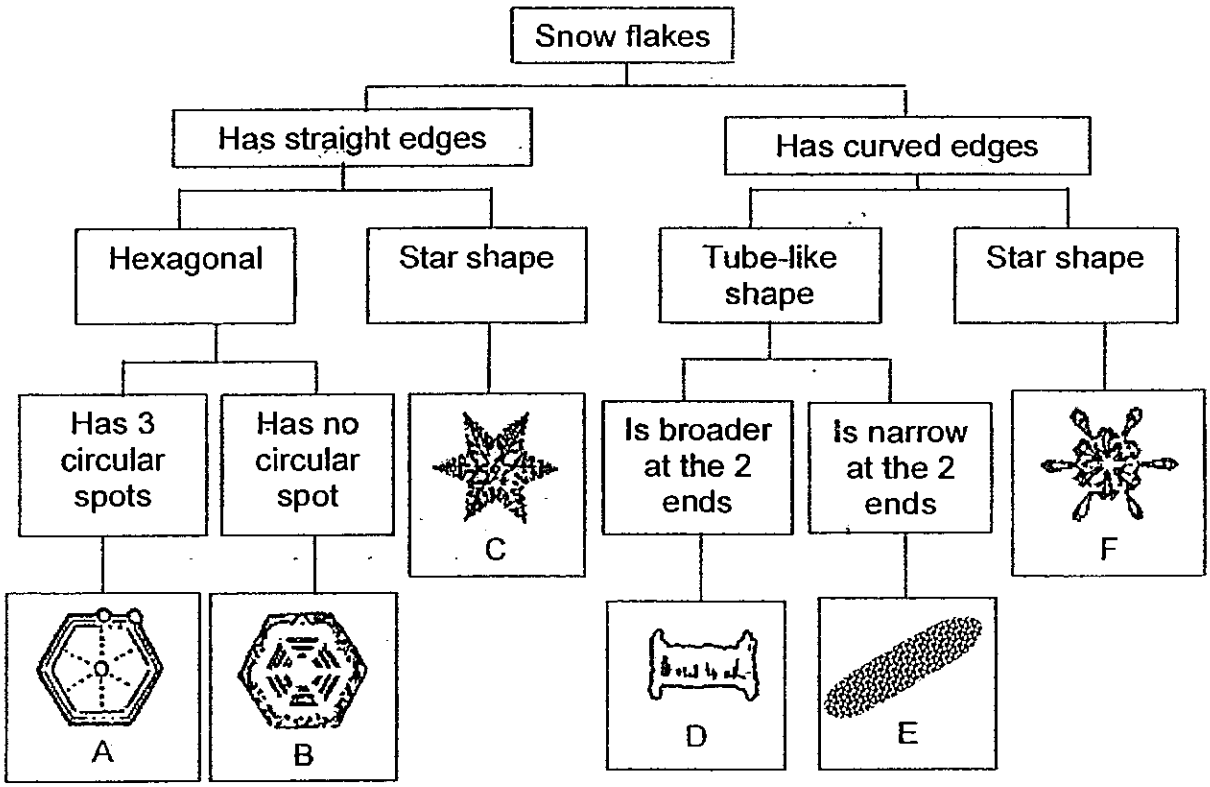
Method : _____

_____

(Go on to the next page)

217

38. Salim classified the different types of snow flakes, A to F in the chart below.



(a) Based on Salim's chart, list a similarity and a difference between B and F. [1]mark

(i) Similarity : _____

_____

(ii) Difference : _____

_____

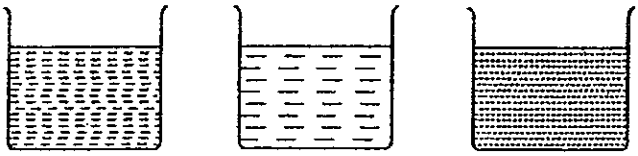
(b) Another snow flake G, [redacted] was found. Based on the chart, which of the above types of snow flake is it most similar to? In what ways are they similar? [1]

_____

_____

218

39. The diagram below shows three similar beakers, each containing the same volume of a different liquid.



Liquid P Liquid Q Liquid R

The beakers were placed side by side in the open where it is sunny and windy. After a few hours, the volume of liquid remaining in each beaker was measured with a measuring cylinder.

(a) What is the aim of the experiment? [1]

_____

_____

(b) The table below shows the volume of liquid left in each beaker.

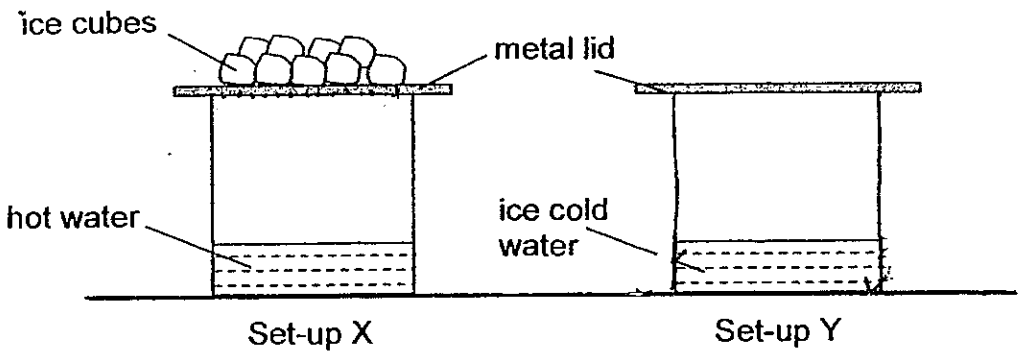
Liquid P	Liquid Q	Liquid R
10 ml	50ml	30ml

What conclusion can be made from the results of the experiment? [1]

_____

_____

40. The diagram below shows two experimental set-ups.



(a) Draw in the above diagram, the water droplets formed in both set-ups X and Y. [1]

(b) What was the purpose of placing ice cubes in Set-up X? [1]

_____

_____

(Go on to the next page)

41. The materials shown below are used to show a difference in the property of nitrogen and water.

2 syringes

$10cm^3$ of water

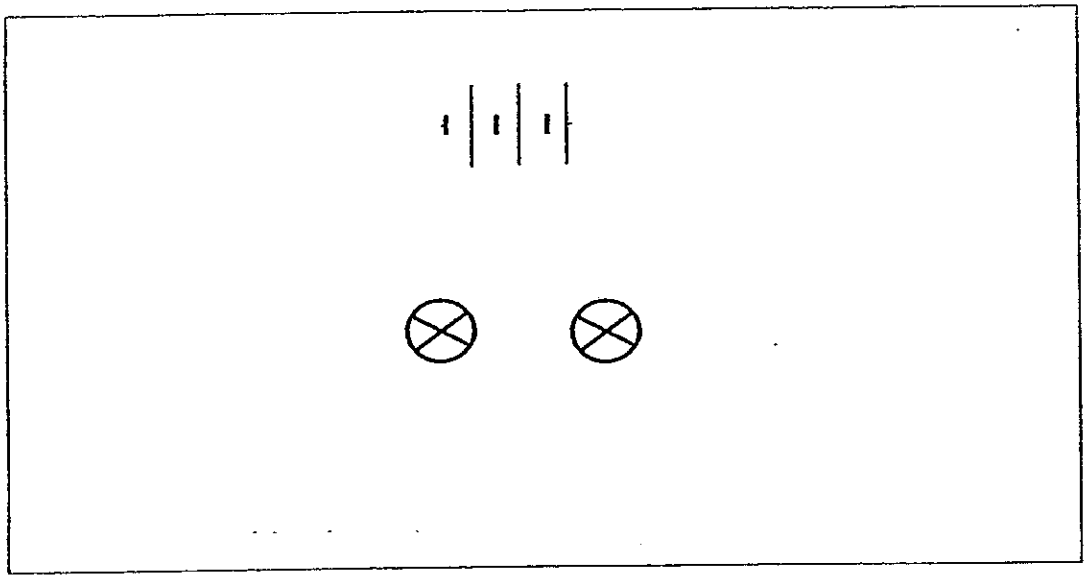
$10cm^3$ of nitrogen

2 lumps of plasticine

In the space provided, write down the steps of the experiment to show the difference. [2]

Step 1:

42a. In the space below, draw to complete the electric circuit such that both bulbs light up the brightest. [1]

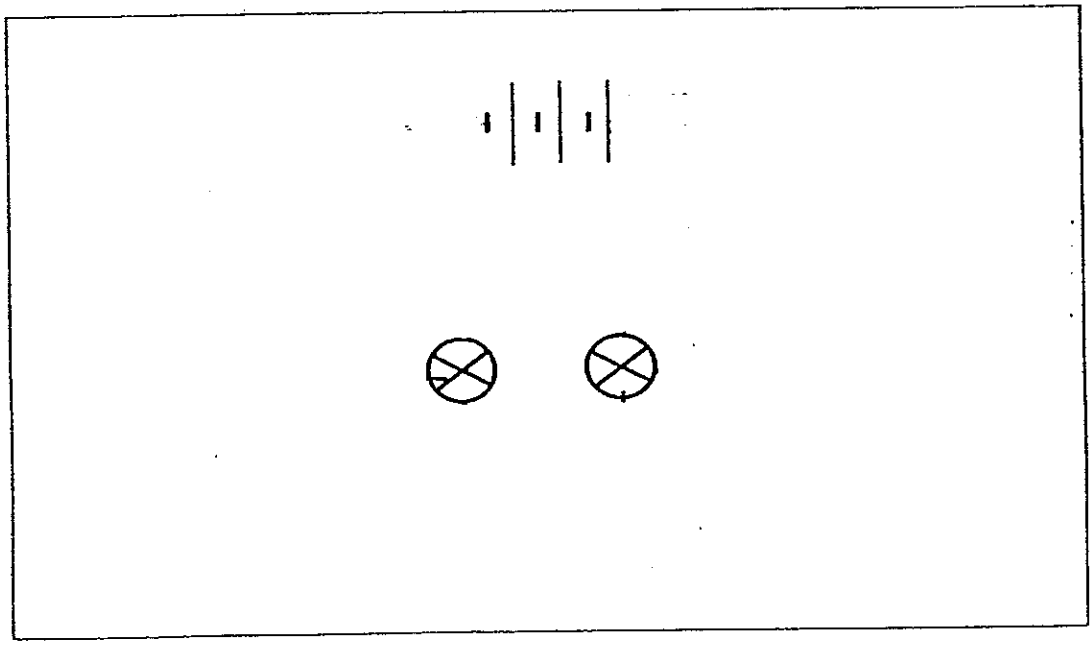


(b) What is the disadvantage of having such a circuit to connect all our electrical appliances in our homes? [1]

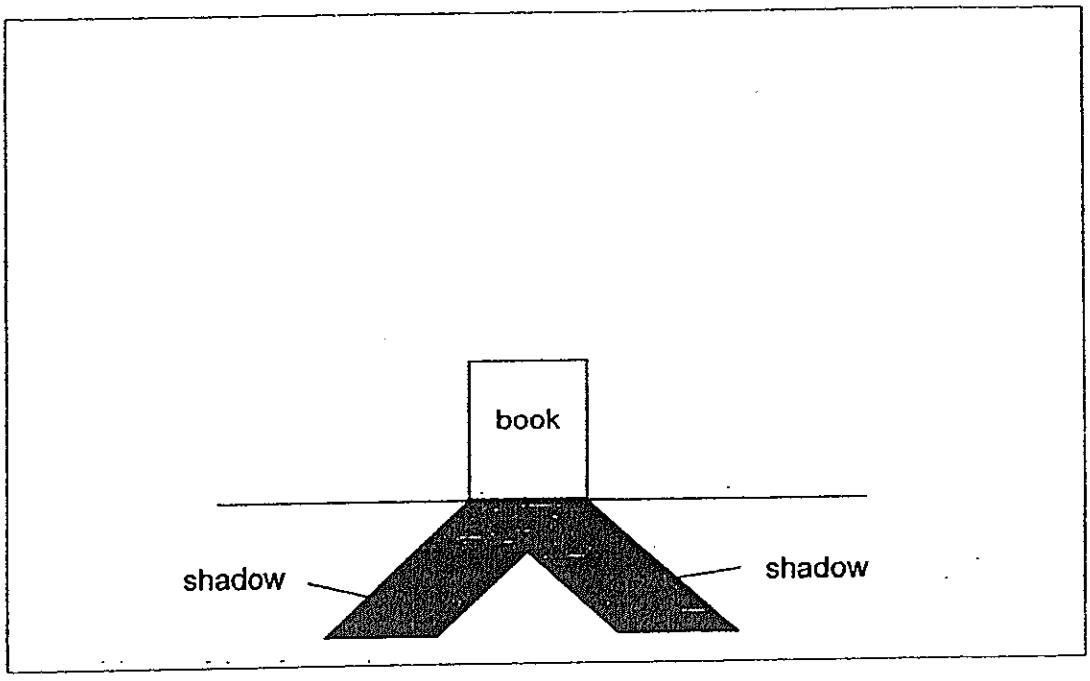
_____

_____

(c) In the space below, draw a different arrangement of the above electric circuit to indicate how the disadvantage mentioned in (b) can be overcome. [1]



43. The diagram below shows a book and two of its shadows formed on the ground.



(a) In the above diagram, use crosses (X) to mark the positions of light sources to show how the 2 shadows were formed. [1]

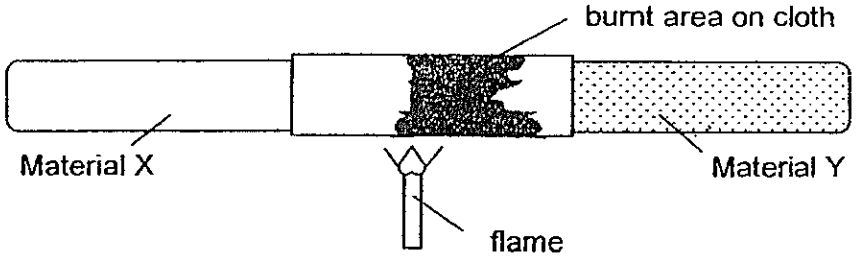
(b) Without changing any materials for the above set-up, suggest a way to form a longer shadow of the book. [1]

_____

(Go on to the next page)

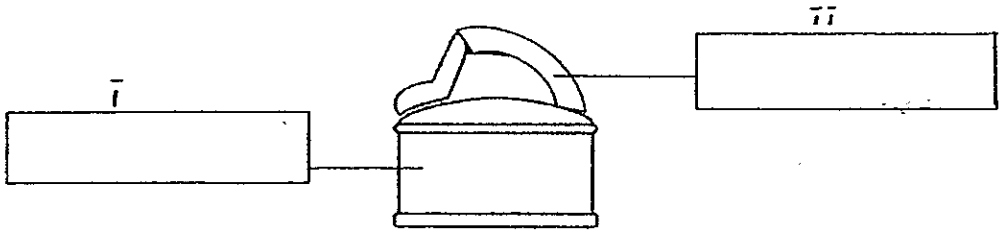
223

44. A rod made from 2 different materials, X and Y was wrapped with a piece of cloth at the centre. It was heated over a flame as shown in the diagram below.

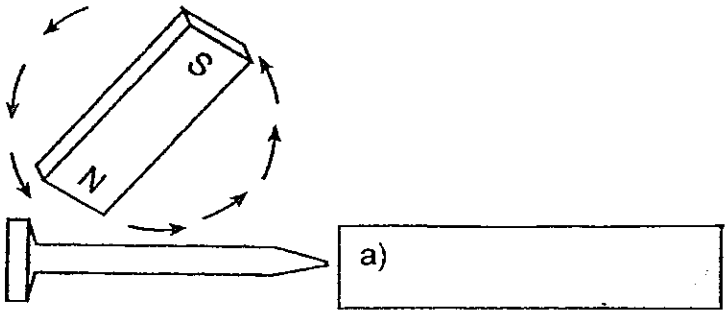


(a) After some time, it was observed that only the part of the cloth over Material Y was burnt. Give an explanation for the observation. [1]

(b) Based on the above observation, how should Materials X and Y be used to make the kettle shown below? Fill in each of the boxes provided with the correct material by writing "Material X" or "Material Y". [1]



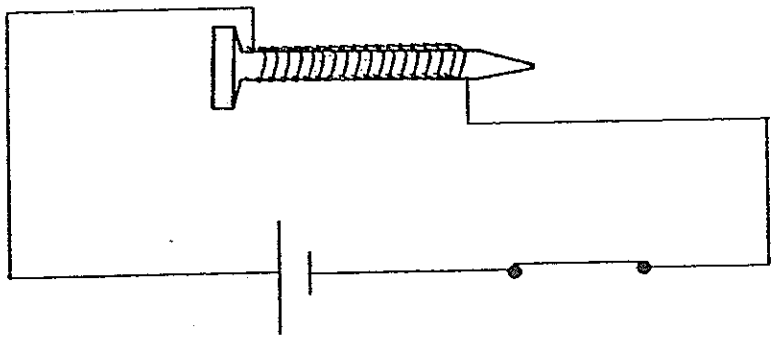
45. The diagram below shows how an iron nail can be turned into a magnet with the use of a bar magnet.



(a) What would the pole of the tip of the nail be once it has been magnetized? Indicate in the box provided in the diagram above an N for North Pole or an S for South Pole. [1]

Question 45 is continued on Page 35

(b) The diagram below shows another method that can turn the iron nail into a magnet.



Ahmad used the above setup to carry out an experiment. He dipped the tip of the magnetized iron nail into a tray of iron pins to find out how many pins it could attract. He then repeated the experiment twice and recorded the number for each trial in the table below. Then he changed a variable in the experiment and repeated all the steps again.

No. of batteries in setup	No. of iron pins attracted		
	Trial 1	Trial 2	Trial 3
1	4	6	5
2	8	7	7
3	9	10	9
4	12	12	12
5	15	14	16

(i) What was the aim of Ahmad's experiment? [1]

_____

_____

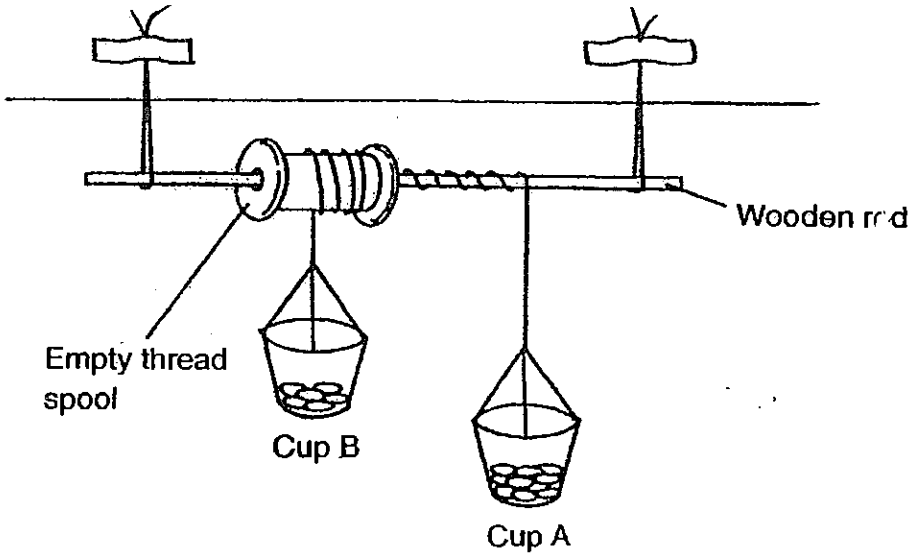
(ii) Why did Ahmad take three sets of readings for each change of the variable? [1]

_____

_____

(Go on to the next page)

46. Jeffrey set up an experiment as shown below.



(a) When weights are placed in Cup B, Cup B will move downwards. What force causes Cup B to move downwards? [1]

_____

(b) What type of simple machine does the above experiment demonstrate? [1]

_____

_____

(c) Jeffrey found that he needed six 10-gram weights in Cup B to raise ten 10-gram weights in Cup A.
Why could fewer weights be used to lift the load in Cup A? [1]

_____

_____

_____

_____

(d) Suggest one way to improve the machine such that even fewer number of 10-gram weights are needed in Cup B to raise the ten 10-gram weights in Cup A. [1]

_____

End of Paper

226

Rosyth Primary School

Primary 6 Science SA2 (2008)

Answers Key

Qn no.	Ans
1	3
2	1
3	1
4	3
5	2
6	4
7	2
8	3
9	3
10	3

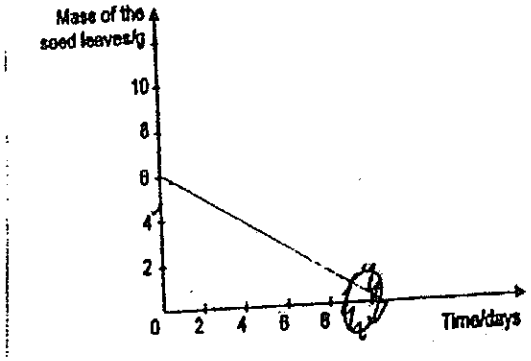
Qn no.	Ans
11	3
12	4
13	2
14	3
15	3
16	4
17	1
18	2
19	3
20	3

Qn no.	Ans
21	3
22	2
23	4
24	1
25	3
26	3
27	3
28	1
29	2
30	3

31a. M
31b. N
31c. K
31d. M

32a. i) Binary Fission
ii) Budding
32b. 1) So that our cells can multiply to take the place of the older and useless cells
2) When we grow taller or bigger in size, the cells can multiply to fill us up.

33a. No, the seeds in the petri dishes not germinate.
33b.



34a. i) The leaves would turn red after a few days.
ii) The parts which is colored, is called the xylem and it transport food and mineral salts up the stem and to all parts of the plants, thus the leaves will receive the red colored water and eventually turn red.
34b. When the outer parts of the ring of the stem were removed, the non-colored part was also removed and it is called the phloem tube which transports food from the leaves to all parts of the plant. Thus, when the tube is removed food cannot pass through and would gather, thus causing a swell.

35a. The higher the light intensity the more the number if fishes to be found in the pond.

35b. Less light means less photosynthesis can take place. Therefore there is less oxygen to release more energy.

36a. i) The higher the temperature of the person, the faster the heart rate and vice versa.

ii) The heart pumps faster to supply more food and oxygen to release more energy.

36b. perspiration

37a. They should use the pesticides on the same type of plant and should also use the same amount of pesticides on each plant every day.

37b. Reason: Pesticides can cause air pollution.
Method: We could use natural predators like ladybirds to eat them up.

38a. i) They are both snowflakes.

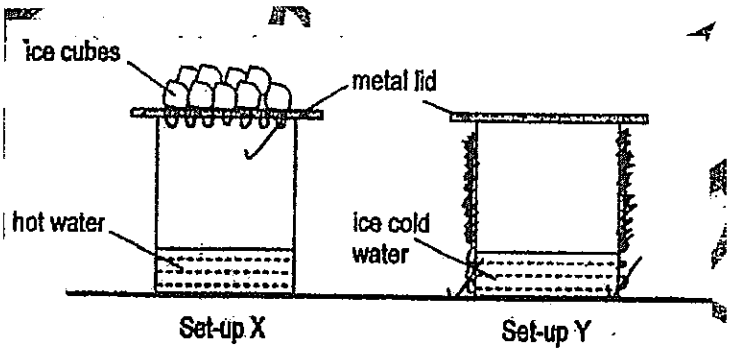
ii) F has curved edges and is star shaped while B has straight edges and is hexagonal.

38b. G is most similar to E. They are both tube-like shaped and is narrow at the two ends and have curved edges.

39a. It was to find out if the type of liquid would affect the rate of evaporation.

39b. Liquid P evaporated the faster, followed by Liquid G and lastly Liquid Q

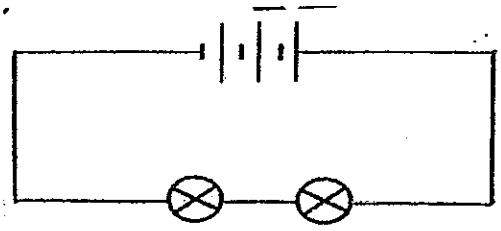
40a.



40b. It is to cool the lid for condensation to occur.

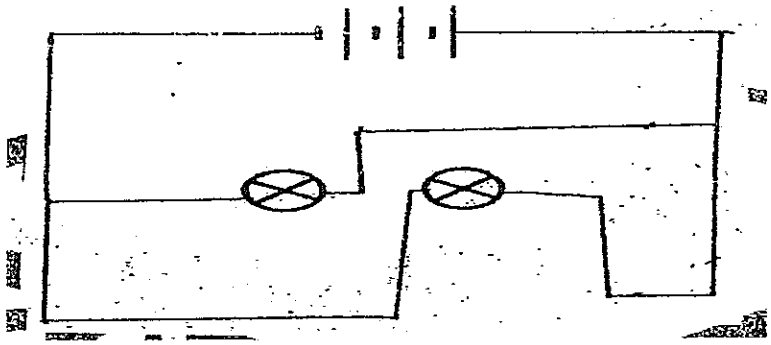
41. Step 1: Use one of the syringes to suck up all the water in the baker.
Step 2: Then use the other syringe to suck up all the nitrogen from the other beaker.
Step 3: Place the plasticize over the opening of the nitrogen filled syringe and do the same to the water filled syringe to prevent them from escaping.
Step 4: Next, push in the plungers of the syringe to see which can be compressed.
Conclusion: Nitrogen can be compressed and water cannot be compressed.

42a.

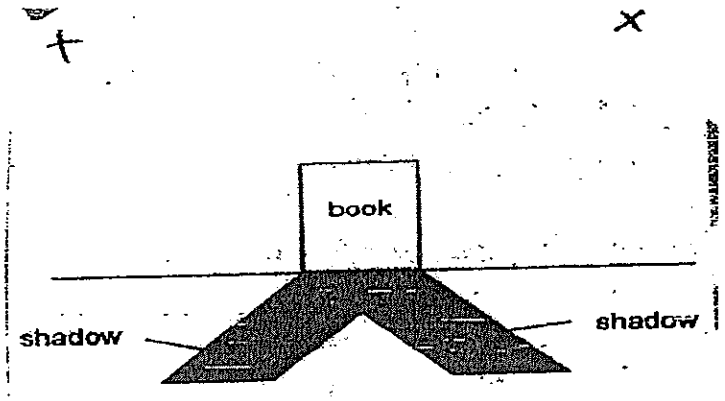


42b. The circuit is broken when one of the bulbs is faulty

42c.



43a.



43b. Move the light source nearer to from the book.

44a. Y is an insulator thus it is not a good absorber of heat.

44b. i) Material X

ii) Material Y

45a. S

45b. i) He wanted to find out if the number of batteries would affect the number of iron plus.

ii) It was to ensure a reliable result.

46a. Gravitational force.

46b. Wheel and axle.

46c. Cup B was applied by empty tread spool while cup A was rest on the attached.

46d. Increase the size of the wheel cup B is attracted to.