



Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2014  
SCIENCE  
PRIMARY FIVE  
BOOKLET A

Name: \_\_\_\_\_ (    )

Class: Primary 5 \_\_\_\_

Date: 8 May 2014

Duration of paper: 1 h 45 min

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Parent's/Guardian's signature

**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 23 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

For each question from 1 to 30, four options are given. One of them is the correct answer.

Make your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

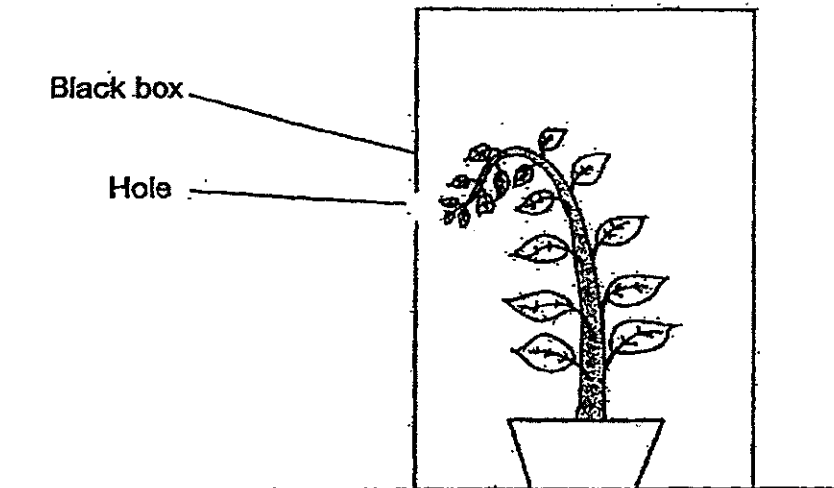
(60 marks)

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- 1 Which of the following need(s) to be present for mould to grow?
- A Light
  - B Food
  - C Water
  - D Oxygen
- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) B, C and D only
- 2 Which one of the following is a unique characteristic of fish?
- (1) They grow.
  - (2) They use gills to breathe.
  - (3) They have three body parts.
  - (4) They have hair on their bodies.
- 3 What is the function of the stem of a plant?
- (1) The stem holds the plant upright.
  - (2) The stem holds the plant to the ground.
  - (3) The stem attracts insects to collect nectar from it.
  - (4) The stem absorbs water and mineral salts from the ground.

(Go on to the next page)

- 4 James put a plant inside a black box with a hole. He placed the set-up in a well-lit place and watered the plant with an equal amount of water daily as shown below. He observed that as the plant grew, the stem bent towards the hole.

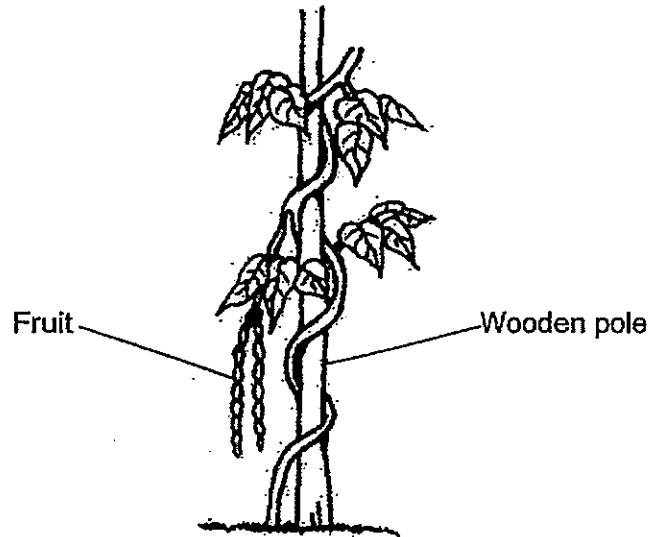


Which one of the following is a possible reason for such an observation?

- (1) The plant grew downwards due to gravity.
- (2) The plant was withering from a loss of water.
- (3) The leaves made the top of the plant heavier.
- (4) The plant bent towards the area with more light.

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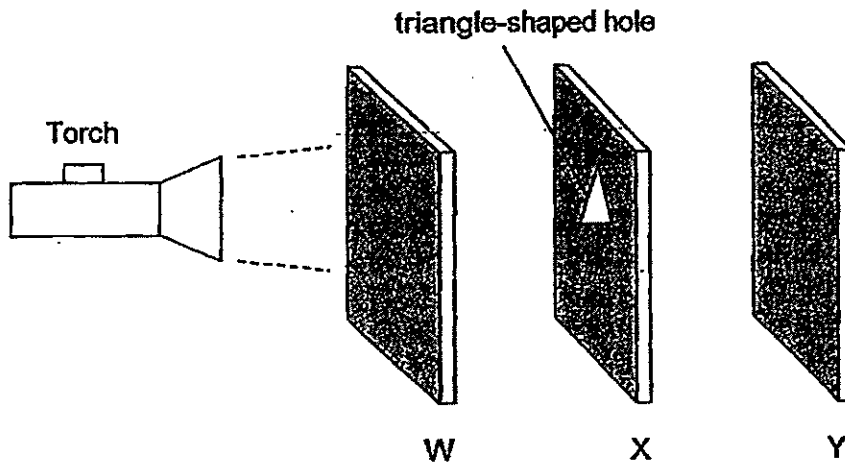
- 5 Desmond went to the garden and saw the plant shown below.



He wrote down a few inferences based on his observations. Which inference(s) is/are correct?

- A This plant has no roots.
  - B This plant has a weak stem.
  - C This plant is a flowering plant.
- (1) A only  
(2) C only  
(3) A and B only  
(4) B and C only

- 6 Shawn carried out an experiment in a dark room as shown in the diagram below.



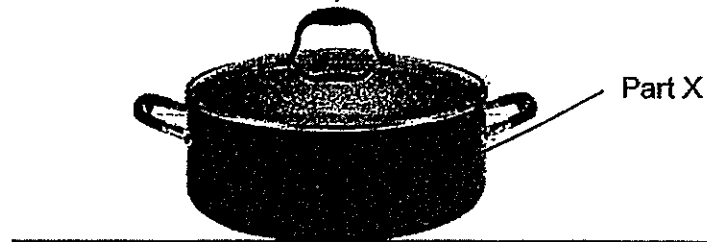
Sheets W, X and Y were arranged in a straight line. When Shawn switched on the torch, a bright triangular patch of light was shown on Sheet Y only.

Which one of the following correctly describes the properties of the materials that sheets W, X, and Y are made of?

	<b>Allows light to pass through</b>	<b>Does not allow light to pass through</b>
(1)	W and X	Y
(2)	W and Y	X
(3)	W	X and Y
(4)	X	W and Y

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- 7 The picture below shows a metal cooking pot.

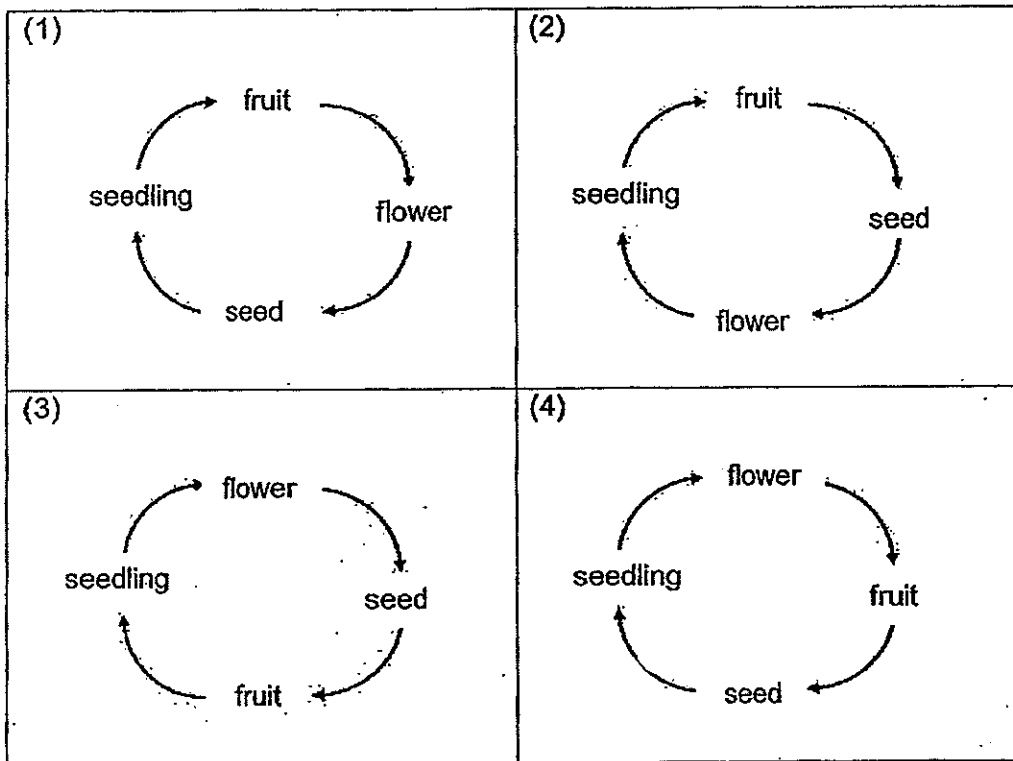


- Which material, metal or plastic, is better for making part X? What is the reason?
- (1) Metal is better because it is easier to make a pot.
  - (2) Metal is better because it is a good conductor of heat.
  - (3) Plastic is better because it is cheaper than metal.
  - (4) Plastic is better because it is a poor conductor of heat.
- 8 Muthu wrote some observations about the life cycles of a cockroach and a grasshopper as shown below.
- A Their youngs have wings.
  - B Their life cycles consist of three stages.
  - C They moult as they grow.

Based on the observations above, which statement(s) is/are true?

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

- 9 Which one of the following best represents the life cycle of a plant?



- 10 Sean conducted an experiment by following these procedures:

Step 1: Pour 500 ml of water into a measuring cylinder.

Step 2: Put a ball of clay into the measuring cylinder and measure the new water level.

Step 3: Carefully remove the clay from the measuring cylinder and flatten it.

Step 4: Put the flattened clay back into the measuring cylinder.

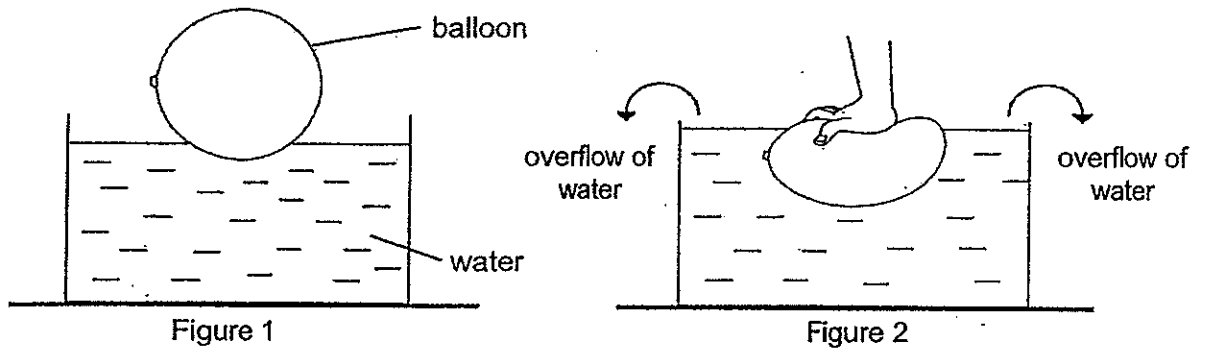
Step 5: Measure and record the water level again.

Which one of the following is the aim of Sean's experiment?

- (1) To find out whether the shape of the clay affects the mass of the clay.
- (2) To find out whether the shape of the clay affects the volume of the clay.
- (3) To find out whether the volume of the clay affects the volume of the water.
- (4) To find out whether the volume of the water affects the volume of the clay.

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- 11 Study the figures below carefully. Figure 1 shows a balloon filled with air, floating on water in a glass container. When the balloon was pushed downwards, some water in the container overflowed as shown in Figure 2.



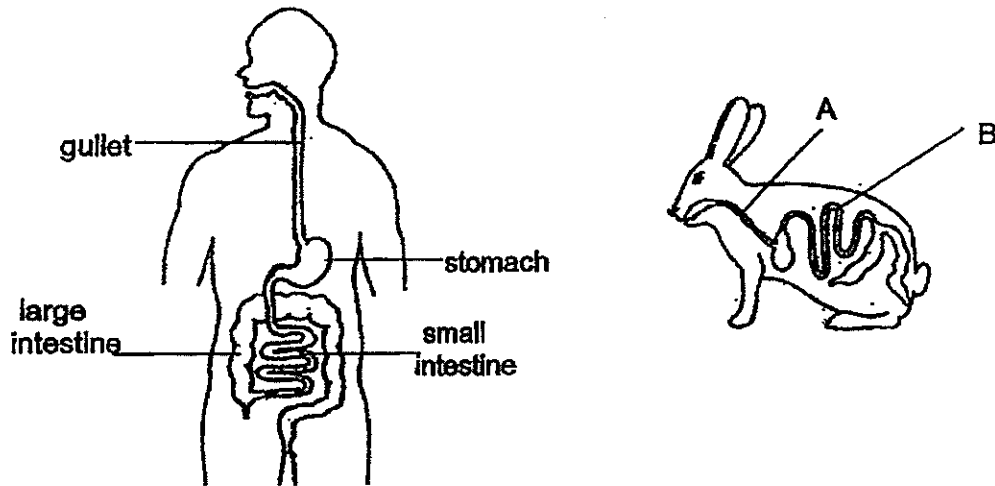
Which one of the following can be inferred from the overflow of water in Figure 2?

- (1) Air has weight.
- (2) Air occupies space.
- (3) Air can be compressed.
- (4) Air has no definite shape.

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- 12 The digestive systems of rabbits and humans share many similarities. The diagrams below show the digestive systems of a human and a rabbit.

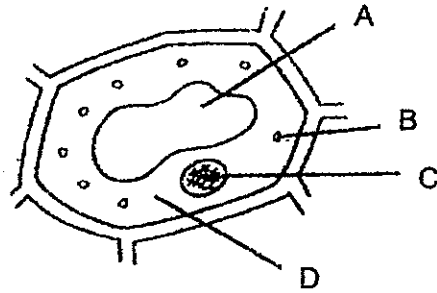


With reference to the human digestive system, identify parts A and B of the rabbit's digestive system.

	A	B
(1)	gullet	stomach
(2)	small intestine	gullet
(3)	gullet	large intestine
(4)	gullet	small intestine

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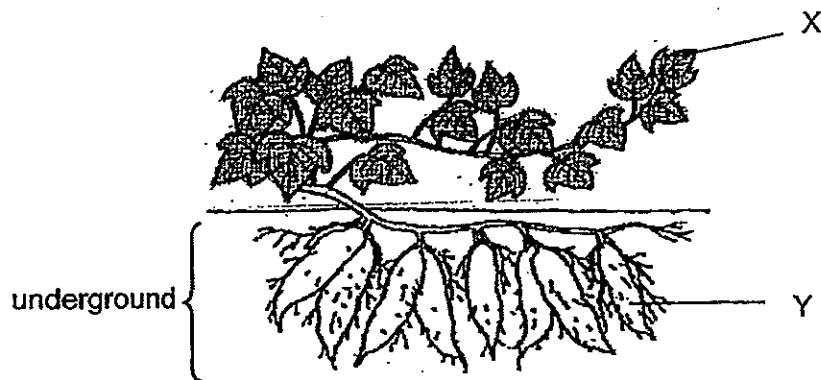
- 13 A scientist wants to create a seedless passion fruit.



Which one of the following parts of the plant cell of a passion fruit must the scientist insert the genetic information into so that the plant will produce seedless passion fruit?

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

- 14 The diagram below shows a plant.

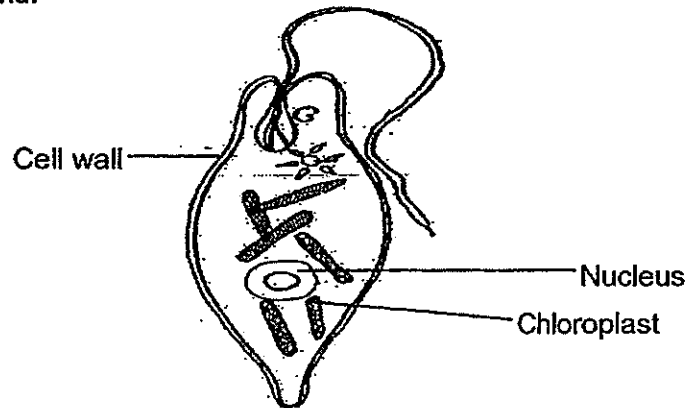


Cells were taken from the Parts X and Y. What are the cell parts you can find in **both** Part X and Part Y of the plant?

- A Nucleus
  - B Cell wall
  - C Chloroplast
  - D Cell membrane
- 
- (1) A and C only
  - (2) A, B and C only
  - (3) A, B and D only
  - (4) B, C and D only

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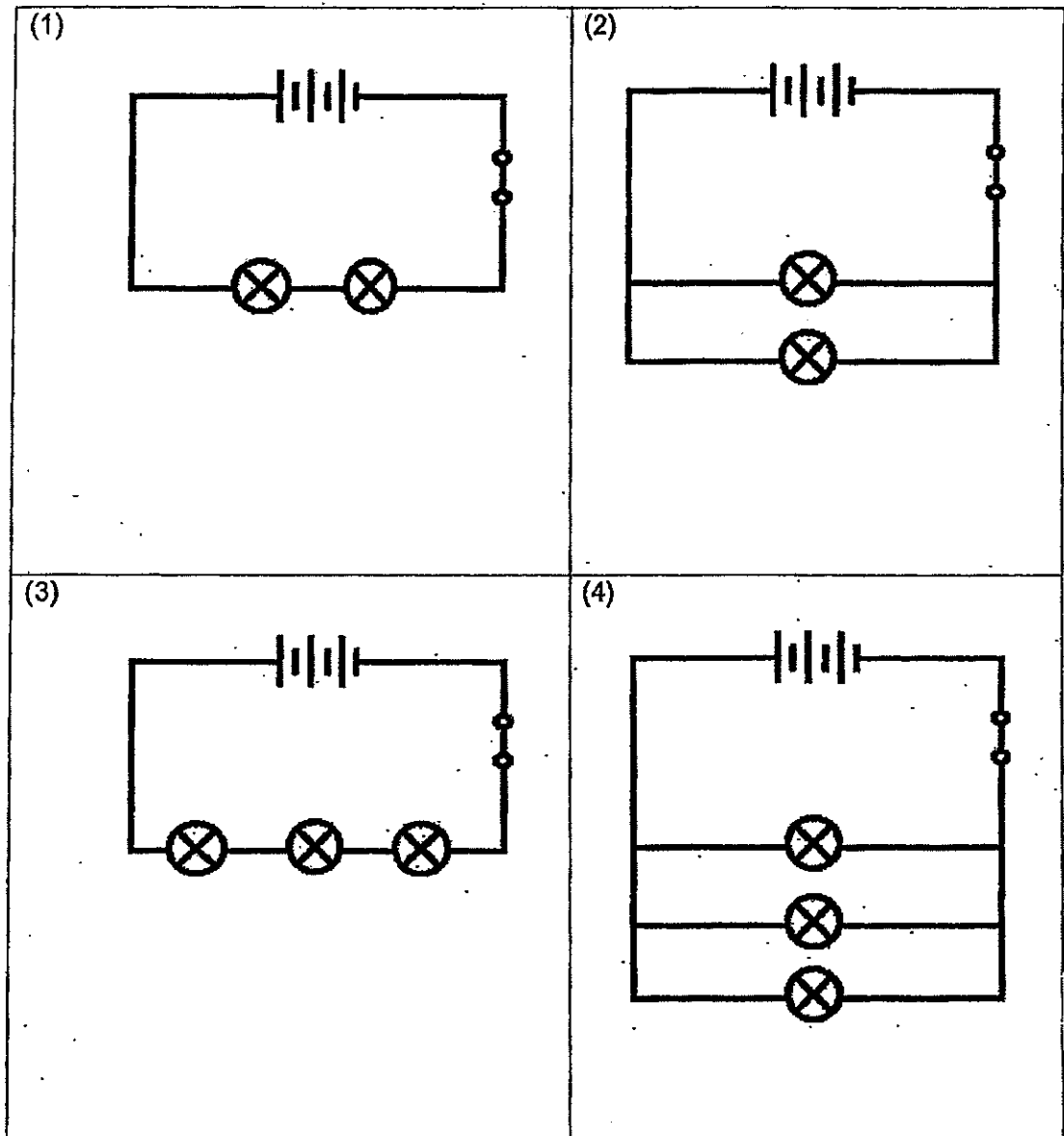
- 15 The diagram shows a magnified view of a single-celled organism which Kelvin had found in a pond.



Based on the diagram above, which of the statements below is/are likely to be true?

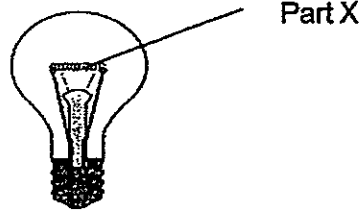
- A The organism is a plant.
  - B The organism is an animal.
  - C The organism can make its own food.
- (1) A only  
(2) A and B only  
(3) A and C only  
(4) A, B and C only

- 16 Study the diagrams below carefully. All the circuits have identical batteries and bulbs and they are all working properly. Which one of the following circuits has the dimmest bulbs?



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- 17 The picture below shows a light bulb.

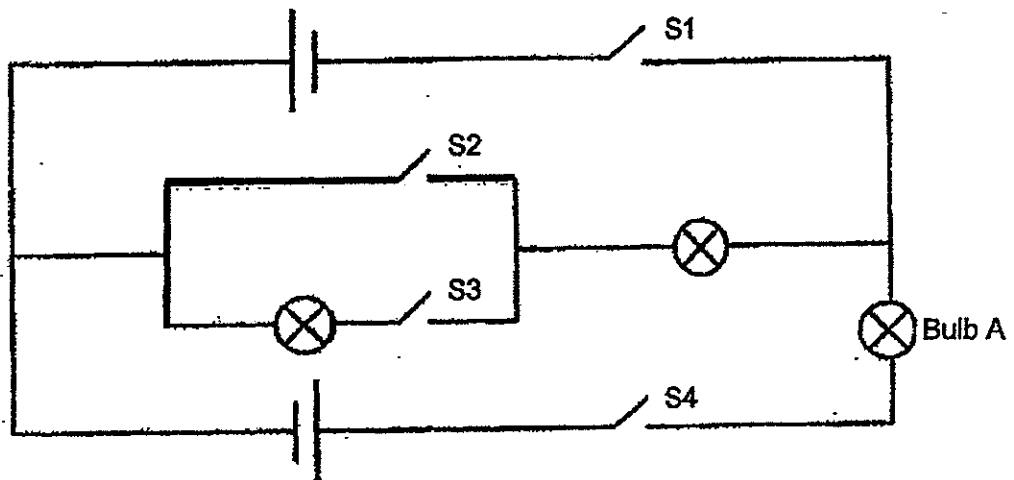


Which material is most suitable for making Part X of the light bulb?

Material	Properties of Material
A	Is a good conductor of electricity and has a high melting point.
B	Is a poor conductor of electricity and has a high melting point.
C	Is a good conductor of electricity and has a low melting point.
D	Is a poor conductor of electricity and has a low melting point.

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

- 18 In the circuit below, the bulbs and batteries are all identical and working properly.

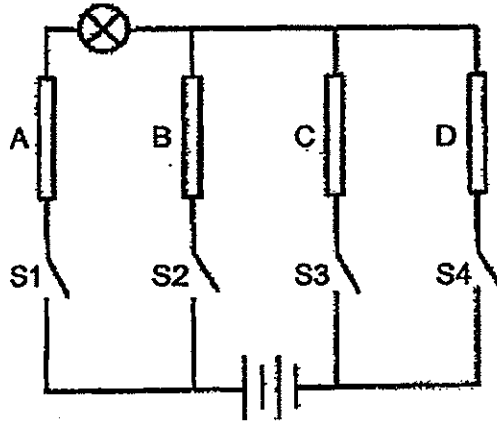


Which switches need to be closed for bulb A to be at its brightest?

- (1) S1 and S2 only
- (2) S1 and S4 only
- (3) S2 and S4 only
- (4) S3 and S4 only

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- 19 Christopher sets up a circuit as shown below.



The table below indicates what each object is made of.

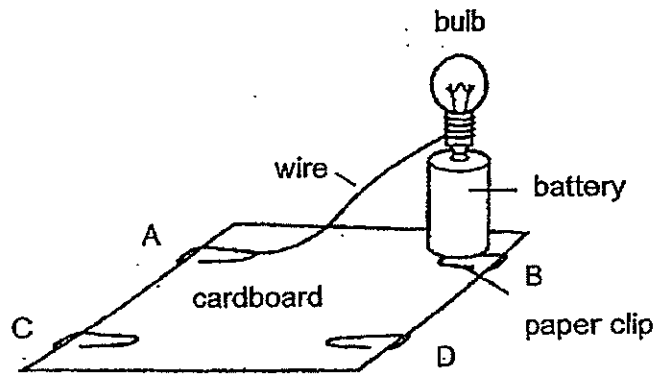
Object	Material object is made of
A	Aluminium
B	Iron
C	Steel
D	Rubber

Which switches (S1, S2, S3, S4) must he close in order for the bulb to light up?

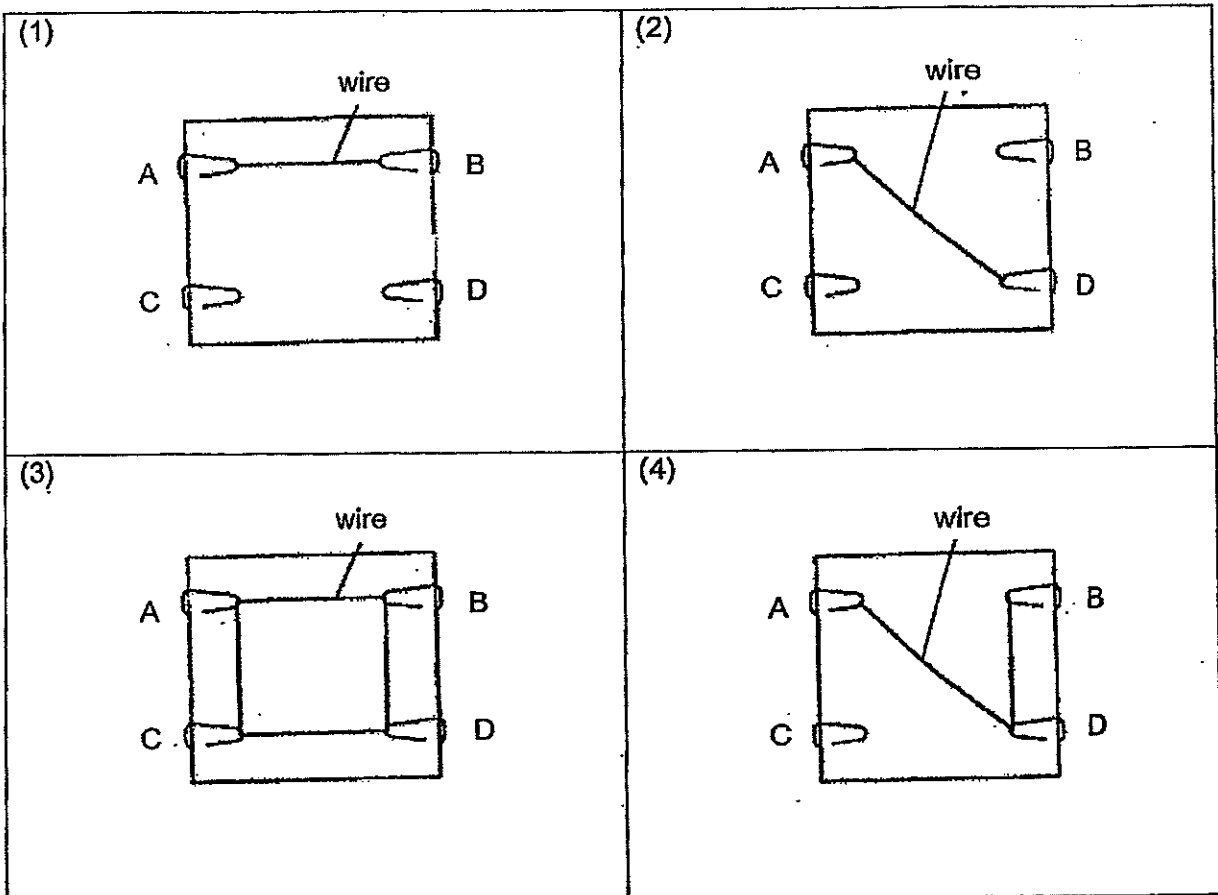
- (1) S1 and S4 only
- (2) S2 and S3 only
- (3) S1 and S3 only
- (4) S2 and S4 only



- 20 Study the circuit below. There are wires connecting the paper clips underneath the cardboard.

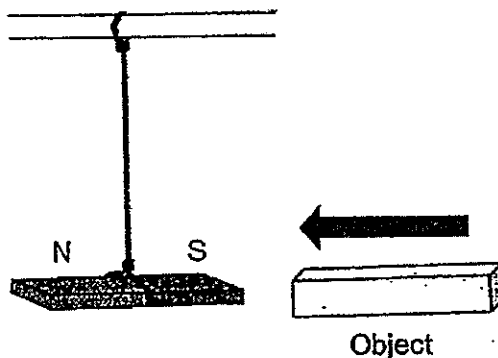


The bulb in the above circuit did not light up. Which one of the following connections shown in the diagrams below represents how the wires were connected underneath the cardboard?



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- 21 Michael held four objects, R, S, T and U one at a time near a freely-suspended bar magnet. He held the objects near both poles of the magnet one at a time and recorded his observations in the table below.



Object	When held near the North pole of the magnet	When held near the South pole of the magnet
R	Attracted	Attracted
S	Attracted	Attracted
T	No response/ no movement	No response/ no movement
U	Attracted	Repelled

Michael made the following statements.

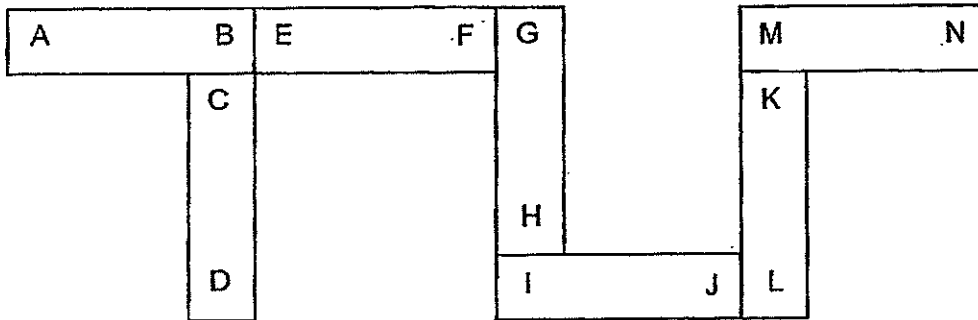
- A Object U is a magnet while objects R, S and T are not.
- B Object R, S and U are magnets while object T is not.
- C Objects R and S are made of magnetic materials while objects T and U are not.
- D Objects R, S and U are made of magnetic materials while object T is not.

Which of the following statements are true?

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

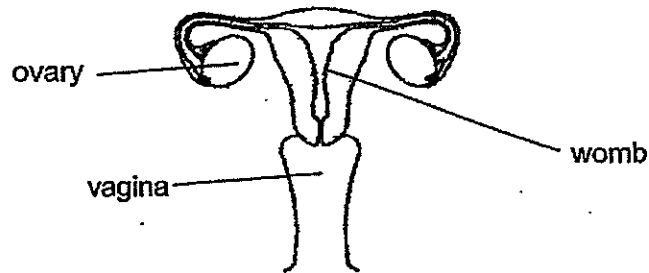
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- 22 Seven bar magnets with their ends marked A to N can be arranged as shown below.



Which pair of ends will likely exert a magnetic force of attraction towards each other?

- (1) A and G
  - (2) C and J
  - (3) D and N
  - (4) F and K
- 23 The picture below shows the human female reproductive system.



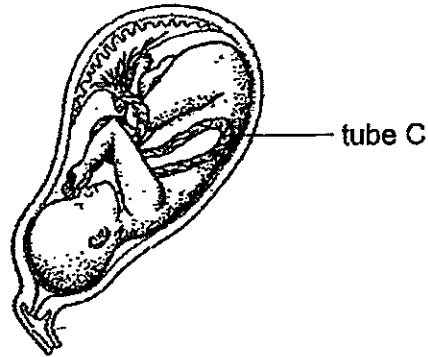
The male will deposit his sperm through **Part X** and the foetus will develop into a baby in **Part Y** after the egg has been successfully fertilized.

Identify the organs that represent Part X and Y in the picture above.

	Part X	Part Y
(1)	Womb	Vagina
(2)	Womb	Ovary
(3)	Vagina	Womb
(4)	Vagina	Ovary

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- 24 The picture below shows a developing baby in the mother's womb.

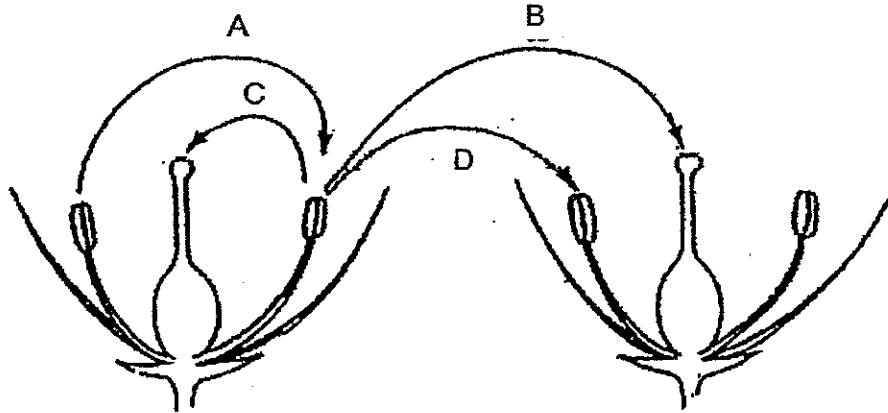


What is transported from the mother to the developing baby through tube C?

- A Blood
  - B Oxygen
  - C Nutrients
  - D Carbon dioxide
- (1) A and B only
- (2) B and C only
- (3) A, C and D only
- (4) B, C and D only
- 25 In the human reproductive system, how many sperm(s) is/are needed to fertilise an egg.
- (1) One sperm only
  - (2) Two sperms only
  - (3) Four sperms only
  - (4) As many sperms as possible

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- 26 The diagram below shows two flowers of the same plant.



The arrows indicate the movement of pollen grains. Which two arrows show the pollination of the flower?

- (1) A and B
  - (2) A and C
  - (3) B and C
  - (4) B and D
- 27 James wanted to find out how much water is needed for the germination of coffee seeds. The table below shows the different set-ups.

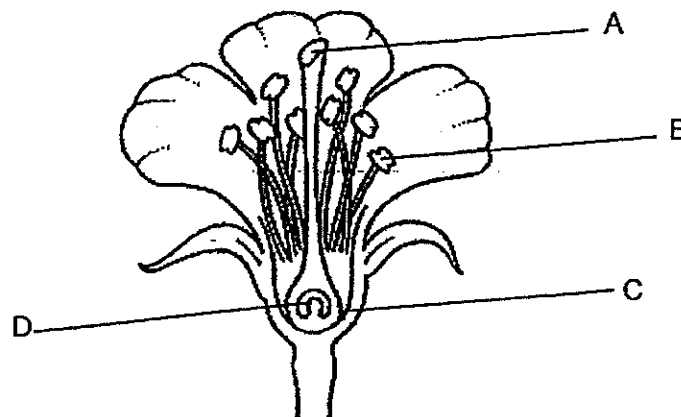
Variables	Set-up A	Set-up B	Set-up C	Set-up D
Amount of soil	80 cm <sup>3</sup>	80 cm <sup>3</sup>	80 cm <sup>3</sup>	80 cm <sup>3</sup>
Type of soil	Garden soil	Sandy soil	Garden soil	Garden soil
Amount of water given daily	100 cm <sup>3</sup>	100 cm <sup>3</sup>	100 cm <sup>3</sup>	80 cm <sup>3</sup>
Surrounding temperature	25°C	15°C	15°C	15°C

In order for James to carry out a fair test, which two set-ups should he use in his experiment?

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

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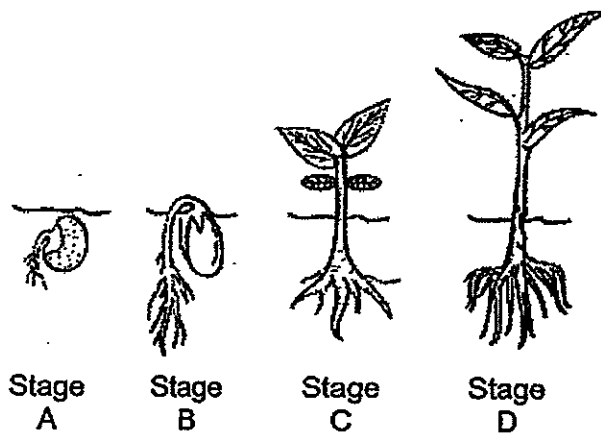
- 28 The diagram below shows the cross-section of a flower.



Which parts of the flowers will develop into the seed and the fruit respectively?

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

- 29 Study the diagram below.

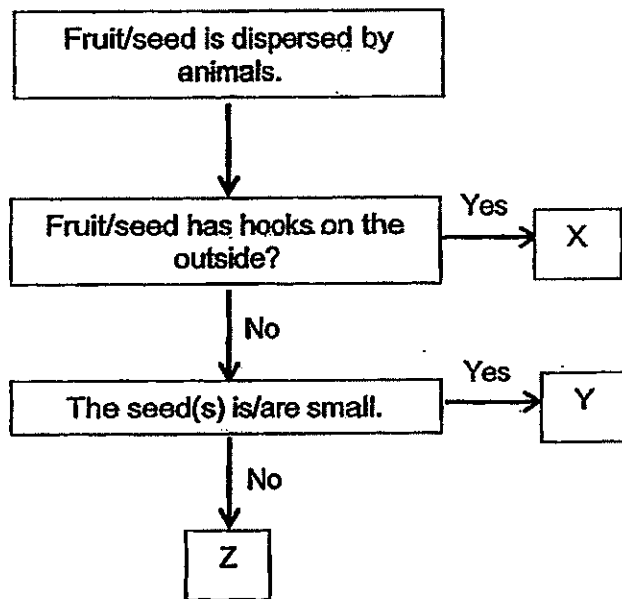
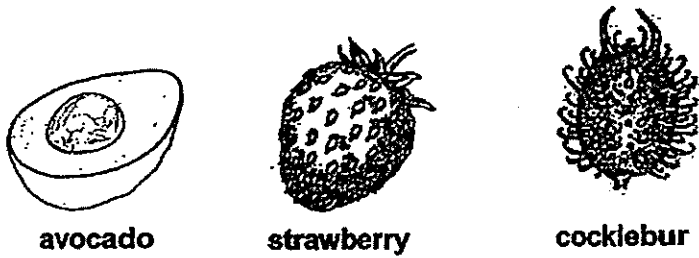


During which stages would the young plant be able to make its own food?

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

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30 Study the three fruits and the flowchart shown below carefully.



Which letters (X, Y and Z) represent the avocado, strawberry and cocklebur?

	X	Y	Z
(1)	Strawberry	Avocado	Cocklebur
(2)	Cocklebur	Strawberry	Avocado
(3)	Avocado	Cocklebur	Strawberry
(4)	Strawberry	Avocado	Cocklebur

End of Booklet A

Please go on to Booklet B.



Anglo-Chinese School (Primary)

**MID-YEAR EXAMINATION 2014  
SCIENCE  
PRIMARY FIVE  
BOOKLET B**

Name: \_\_\_\_\_ (     )

Class: Primary 5 \_\_\_\_\_

Date: 8 May 2014

Duration of paper: 1 h 45 min

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Parent's/Guardian's signature

**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 15 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.

<b>BOOKLET</b>	<b>MAXIMUM MARKS</b>	<b>MARKS OBTAINED</b>
A	60	
B	40	
Total	100	

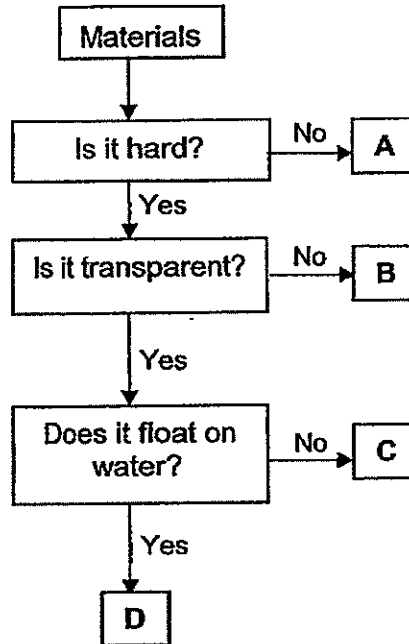


For questions 31 to 44, write your answers in the spaces provided.

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

(40 marks)

31 Study the flowchart below carefully.



(a) Based on the flowchart above, describe material B. [1]

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(b) Which letter in the flowchart represents a glass block? [1]

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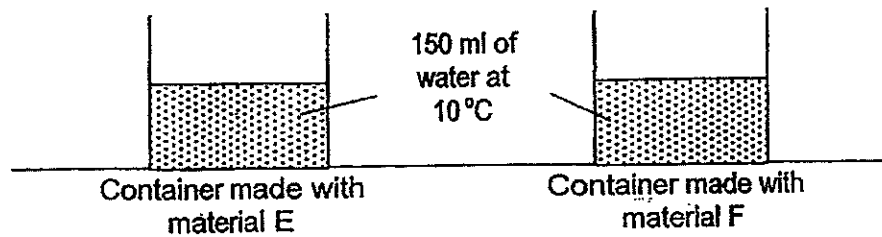


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Score	2
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- 32 Arnold set up an experiment as shown below in the Science Room.



The containers were of the same shape and capacity. They were filled with 150 ml of water at 10°C at the same time. Both containers were left on the table and allowed to naturally warm up to room temperature. The temperature of the water was taken every ten minutes and the readings were recorded in the table below.

	Temperature of the water after...			
	10 min	20 min	30 min	40 min
Material E	13°C	19°C	26°C	29°C
Material F	11°C	13°C	16°C	20°C

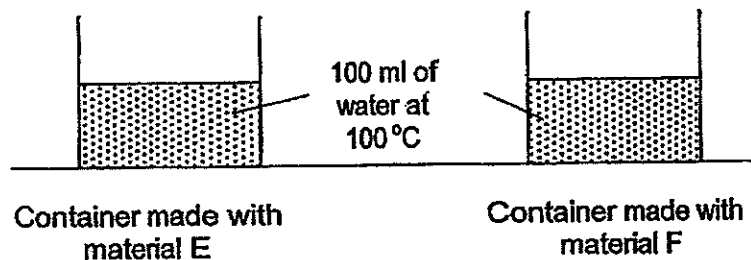
- (a) Which material is more suitable for making a frying pan? Explain your answer. [2]

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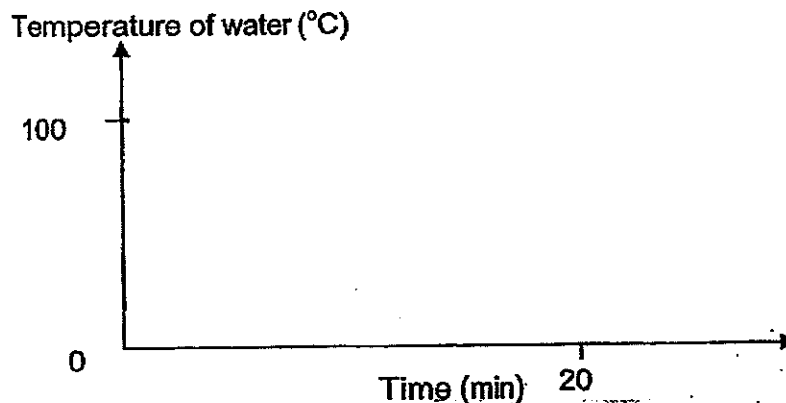


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Another experiment was set up at the same location using the same containers. This time, they were filled with 100 ml of water at 100°C at the same time.



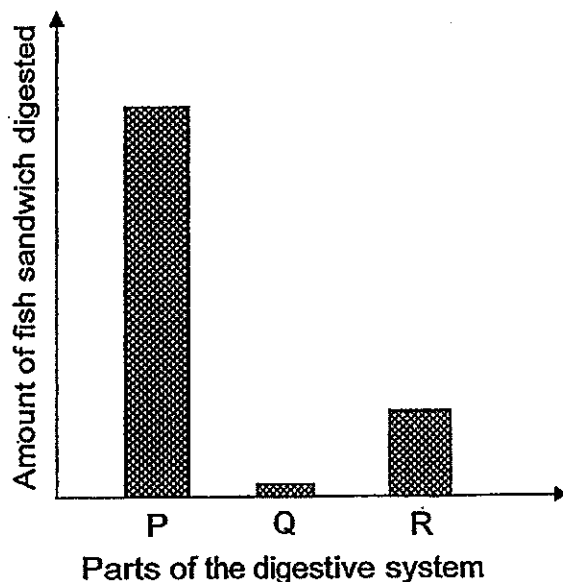
- (b) In the space provided, draw two straight line graphs to show the changes in temperature for both containers after 20 minutes. Use a pencil and ruler to draw the two lines. [2]



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Score	4
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- 33 Shin Ann ate a fish sandwich for lunch. The graph below shows the amount of fish sandwich that was digested at the different parts of his digestive system after his lunch.



Use the bar graphs above to answer the following questions.

- (a) Using the information shown in the graph above, identify the letters that represent the mouth and small intestines of the digestive system. [2]

Parts	Letters
Mouth	
Small Intestines	

- (b) What is the function of the large intestines in the digestive system? [1]

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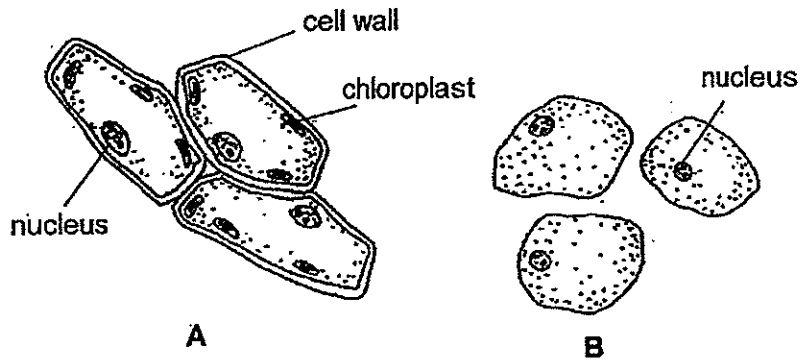


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Score	3
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34 Observe Cells A and B below carefully.



- (a) State one difference between Cells A and B. Do not mention differences in size and shape. [1]

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- (b) What is the function of the cell membrane? [1]

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Score	
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35 Daniel conducted an experiment to study how the arrangement of bulbs in a circuit affected their brightness. He had the following apparatus to use for his experiment:

- Six identical bulbs
- Four identical batteries
- Wires

After setting up his experiment, he discovered that when one bulb fused, the remaining bulbs in set-up A did not light up, while the remaining bulbs in set-up B still remain lit.

- (a) In the space provided below, draw a circuit diagram for each of the set-ups that he needed to conduct his experiment. He had to conduct both experiments at the same time. [3]

Set-up A	Set-up B

- (b) Daniel had to record the brightness of the bulbs in each circuit for comparison.

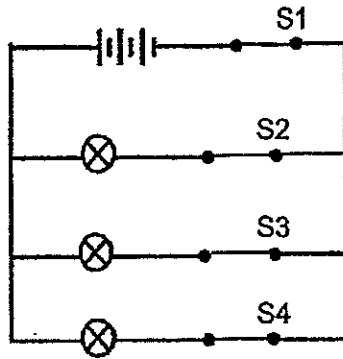
State the equipment he would need to use to obtain this reading. [1]

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Score	4
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- 36 A circuit is connected as shown below.



- (a) Which switch is able to switch off all the three bulbs at the same time in the circuit? [1]

\_\_\_\_\_

- (b) Besides being able to control the bulbs with the switches, what are the other two advantages of arranging the bulbs in parallel instead of in series? [2]

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

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Score	3
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37 Bernard wants to reduce electricity bill for his family.

(a) What can Bernard do differently to help him cut down electricity consumption?

[1]

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(b) Bernard's sister suggested putting many plugs into one socket to cut down electricity consumption. Is this a good suggestion? Why?

[1]

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Score	2
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38 Wires used in households are made of copper wrapped with rubber.

(a) State an advantage of using rubber to wrap the copper wires.

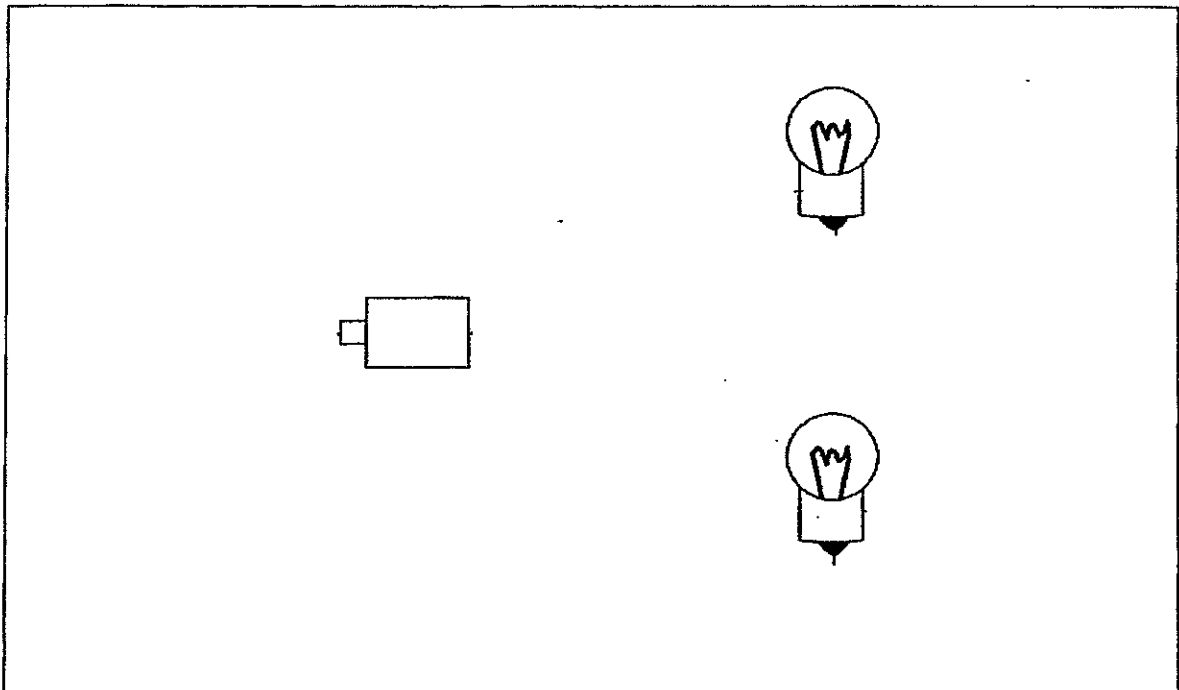
[1]

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(b) The diagram below shows two bulbs and one battery. Draw wires to complete the electrical circuit such that the two bulbs light up.

[2]

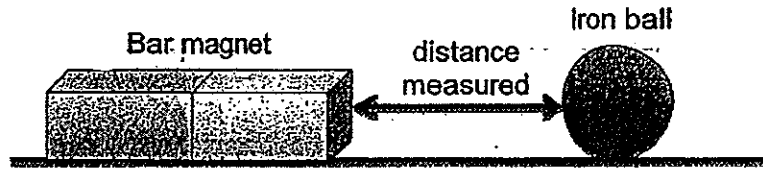


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Score	3
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- 39 Ameen carried out an experiment to find out the magnetic strength of four different bar magnets. He placed bar magnet P on the table and measured the furthest distance from which the bar magnet could attract the iron ball.



He then repeated the same procedure using bar magnets Q, R and S. All the bar magnets are similar in sizes. The results were recorded in the table below.

Bar magnet	Furthest distance measured (cm)
P	2.3
Q	5.2
R	8.6
S	1.9

- (a) Arrange the magnets in order of their magnetic strength from the weakest to the strongest. [1]

      ,       ,        
 weakest  → strongest

- (b) Will the experiment still be successful if an aluminium ball is used instead? Explain your answer. [1]

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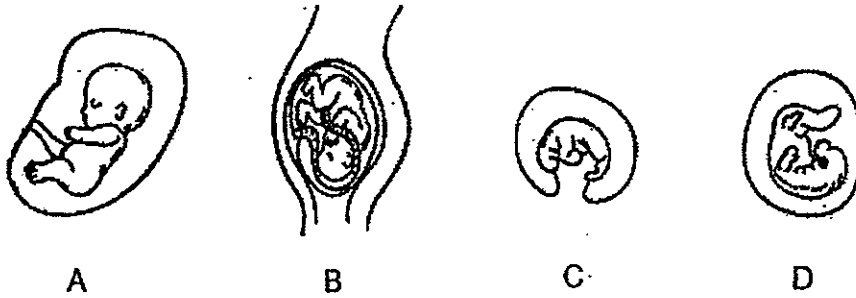


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Score	2
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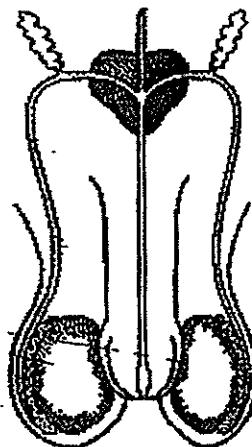
40 A scientist observed and drew the following diagrams to show an unborn baby at different stages of development.



(a) Arrange the diagrams above in the right order by writing the letters in the boxes below to show the order in which the baby develops. The first letter has been done for you. [1]

C			
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(b) The diagram below shows the male human reproductive system. Identify and label the part(s) that produce(s) the sperm cells in the diagram below. [1]

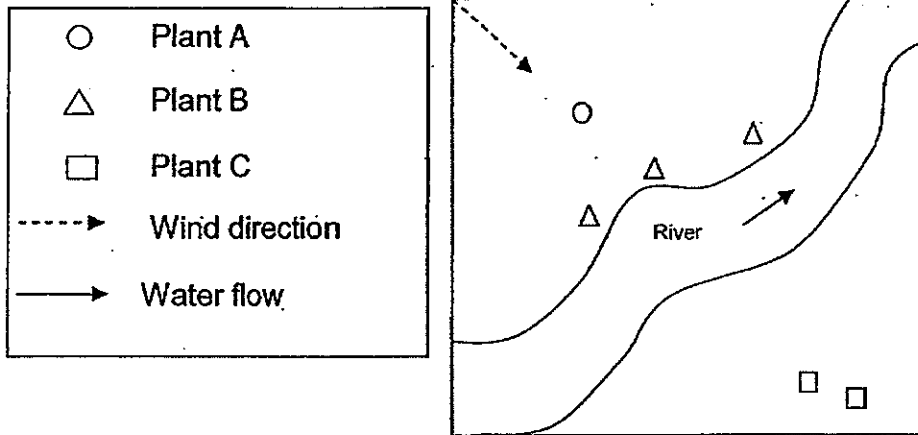


Male reproductive system  
(Front view)

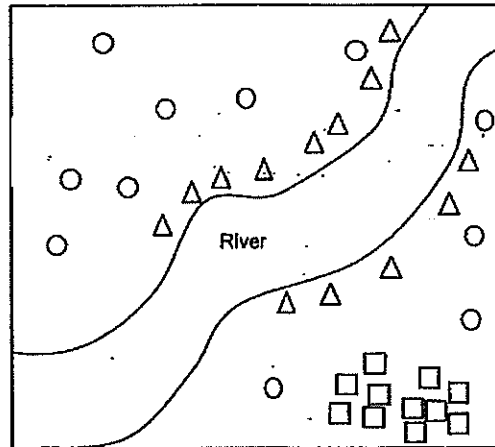
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Score	2
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41 The diagram below shows the population of three different types of plants in an area in the year 2004. The arrow indicates the direction of water flow and wind direction.



The diagram below shows the population of the same three different types of plants in the same area in the year 2014.



Based only on the diagrams above, indicate whether each of the statements below is True or False. Put a tick ( ✓ ) in the correct box. [2]

Statement	True	False
Plant A disperses its fruits/seeds by water.		
Plant A disperses its fruits/seeds by animals.		
The fruits/seeds of Plant B are dispersed by animals that only visit the river for water.		
The fruits/seeds of Plant C are most probably dispersed by splitting.		

(Go on to the next page)

Score	2
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42 Your teacher taught you that only warmth, water and oxygen are needed for seeds to germinate. You wanted to find out if sunlight is needed for seeds to germinate too. You are given the following items:

cotton wool	water	two identical beakers
some green beans	One black box and one glass box of the same size	

Design an experiment to determine if sunlight is needed for seeds to germinate.

(a) Draw and label the suitable set-ups for the experiment using all the items provided. Use ruler and pencil whenever appropriate. [2]

Set-up A	Set-up B
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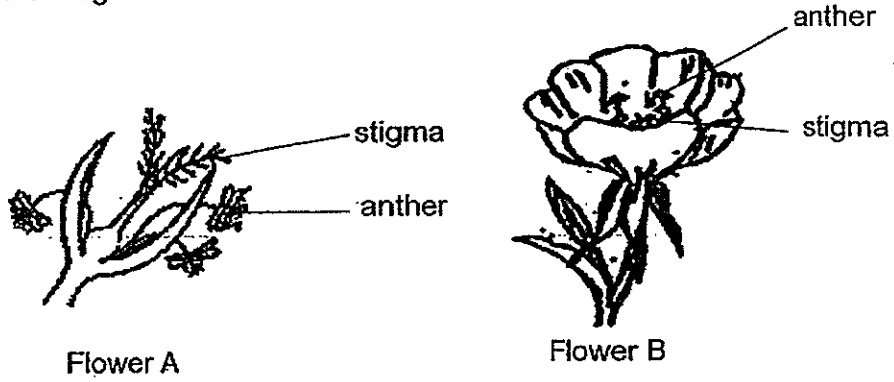
(b) Write down the steps you will take to conduct the experiment. You may use more than four steps. [2]

Step 1: Set up both set-up A and B as shown above.
Step 2:
Step 3:
Step 4:

(Go on to the next page)

Score	4
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43 Study the diagrams shown below.



(a) Based on your observations of the picture alone, state the agents of pollinations for flowers A and B. Support your choice with an explanation. [2]

Flower A

Agent: \_\_\_\_\_

Reason: \_\_\_\_\_

\_\_\_\_\_

Flower B

Agent: \_\_\_\_\_

Reason: \_\_\_\_\_

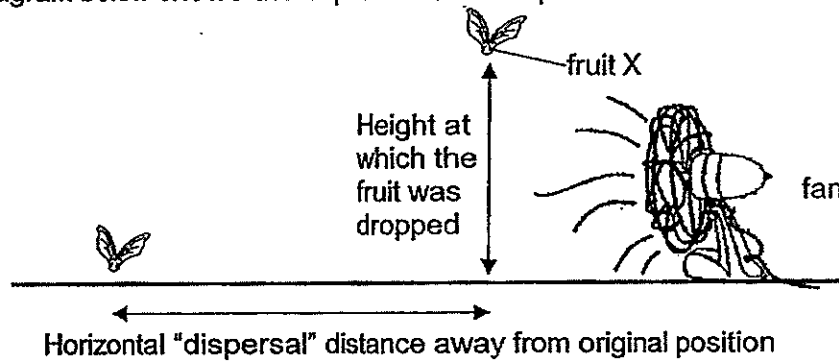
\_\_\_\_\_

(b) What is the process that may happen next after pollination? [1]

(Go on to the next page)

Score.	3
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- 44 Gideon carried out an experiment to investigate how the horizontal "dispersal" distance from the parent plant is affected by the height at which a fruit is dropped. The diagram below shows the experimental set-up.



He dropped fruit X from different heights and recorded the horizontal "dispersal" distance from its original position. He recorded the results in the table below.

Height at which the fruit was dropped (cm)	Horizontal "dispersal" distance away from original position (cm)
5	3
10	6
15	9
20	12
25	15

- (a) Based on the results shown in the table above, describe the relationship between the height at which the fruit was dropped with its horizontal "dispersal" distance away from its original position. [2]
- (b) Explain why being too near to the parent plant is not suitable for the germinating seeds of fruit X? [2]

# ANSWER SHEET

**EXAM PAPER 2014**

**SCHOOL : ACS**

**PRIMARY : P5**

**SUBJECT : SCIENCE**

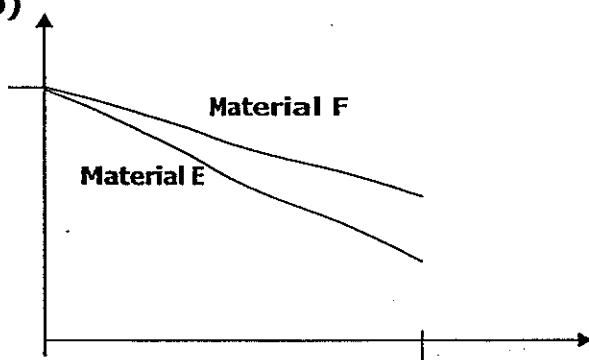
**TERM : SA1**

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

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

- 31)a) It is hard and it is not transparent.  
b) Letter C.

- 32)a) Material E as it is a better conductor of heat to material F.  
b)



33)a)Mouth : Q

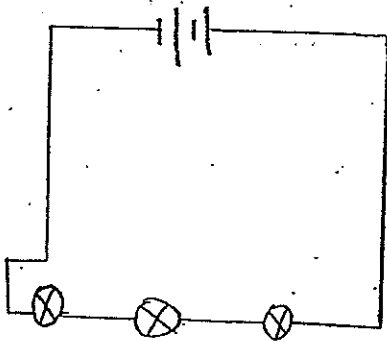
Small Intestines : P

b)To absorb water and dissolved mineral salts.

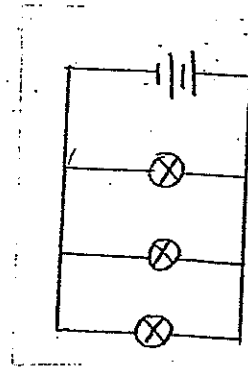
34)a)Cell A has a cell wall but cell B don't have.

b)To let the substance in and out of the cell.

35a)Set-up A



Set-up B



b)A data logger and a light sensor.

36)a)Switch 1.

b)i)When one bulb fuses the other bulbs still lights up in parallel but when one of the bulb fuses, the other bulbs will not light up in series.

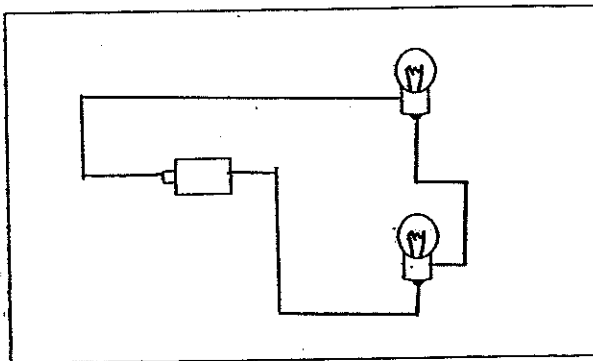
ii)The bulbs are brighter when arranged in parallel then when arranged in series.

37)a)He can switch off the fan if he is not using it.

b)No as it may create a fire.

38)a)Rubber does not conduct electricity, so electricity in wires will not be conducted to people touching when touch.

b)



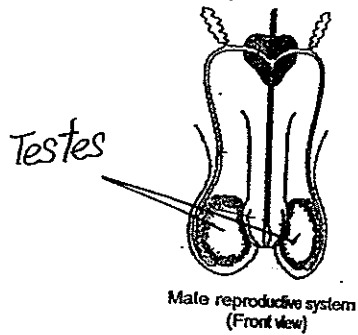


39)a)S, P, Q, R

b)No as it is not a magnetic material.

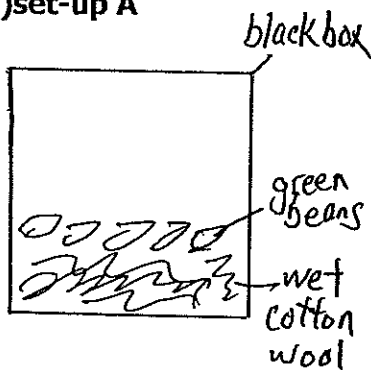
40)a)C, D, A, B

b)

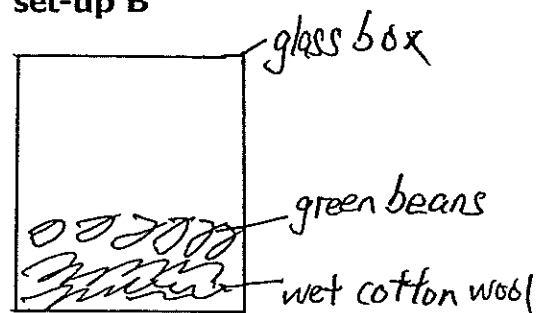


41)F, T, F, T

42)a)set-up A



set-up B



b)2)Put a black box in set-up A and a glass box in set-up B.

3)Place some cotton wool into each box.

4)Place them at the same location.

5)Pour some water into the cotton wool in both box.

6)See if the beans in each set-up germinates after a few weeks.

**43)a) Flower A**

**Agent: Wind.**

**Reason: The anthers are hanging out of flower to allow the wind to carry the pollen away.**

**Flower B**

**Agent: Bees**

**Reason: Anthers and stigma rest inside the petals.**

**b) Fertilisation.**

**44)a) Higher the fruit was dropped, the distance from the original position increases.**

**b) It is to prevent over crowding and if they are too near, the seeds of fruit X cannot germinate as the parent plant block the sunlight water, nutrient from the seeds of fruit X.**