

# Primary Five Examination Papers

2016

Science

1	Anglo Chinese School	CA1	SA1	CA2	SA2
2	Chij St Nicholas Girls' School	CA1	SA1		SA2
3	Nan Hua Primary School	CA1	SA1		
4	Pei Hwa Presbyterian Primary School	CA1	SA1		SA2
5	Red Swastika School	MT	SA1		SA2
6	Rosyth School	CA1	SA1	CA2	SA2
7	Henry Park Primary School		SA1	CA2	SA2
8	Nanyang Primary School		SA1		SA2
9	Raffles Girls' Primary School		SA1		SA2
10	Tao Nan School		SA1		SA2

2

# Anglo-Chinese School (Junior)



CONTINUAL ASSESSMENT 1 (2016)

PRIMARY 5

SCIENCE

BOOKLET A

Wednesday

9 MARCH 2016

1 hour

Name: \_\_\_\_\_ ( ) Class: 5.( )

## INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 15 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

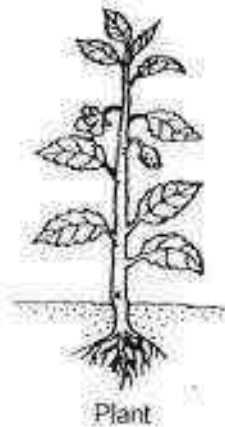
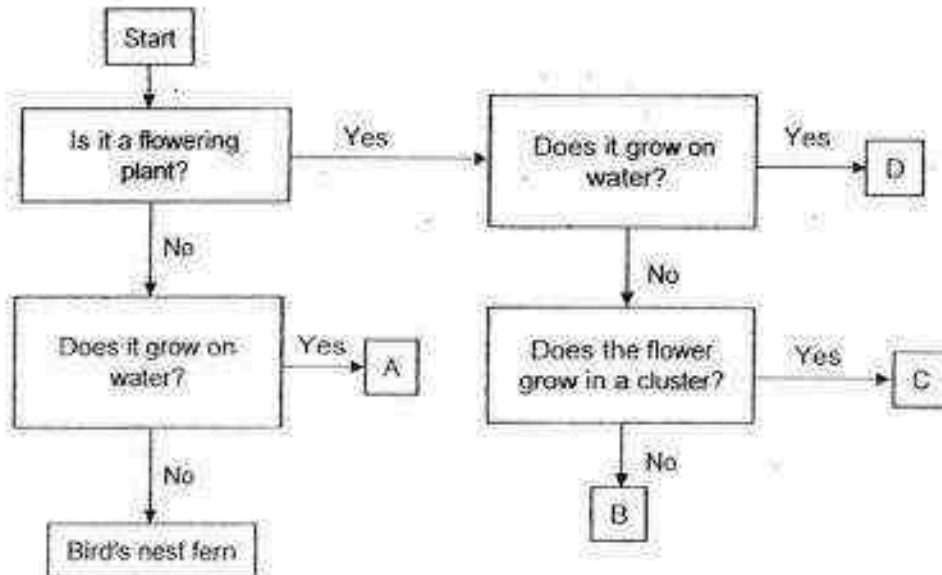
---

This question paper consists of 9 printed pages (inclusive of cover page).

**Booklet A (30 marks)**

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

1. Study the flowchart and plant below.







Based on the flowchart, which letter, A, B, C or D is most likely to represent the plant?

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

2. Bob needs a container to grow a plant. The container must have the three following conditions.

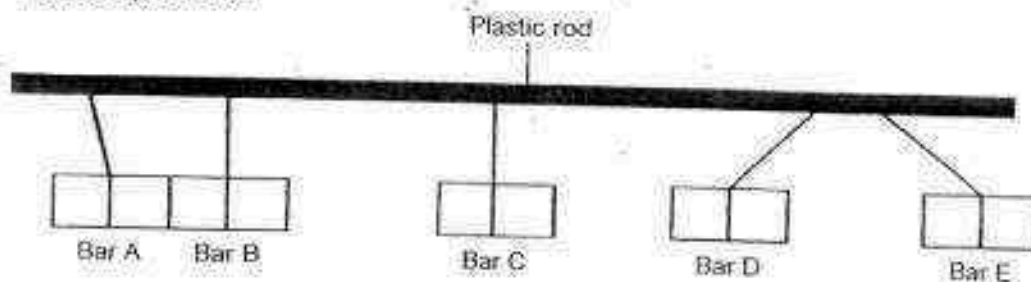
1.	Water should not be able to pass through it.
2.	He should be able to see the soil through the container.
3.	It should not break when it is dropped.

He wants to reuse a container to grow his plant. He has four containers as shown below.

			
made of plastic	made of paper	made of aluminum	made of glass
Container A	Container B	Container C	Container D

Based on the conditions stated above, which container would be most suitable to grow the plant?

- (1) Container A  
 (2) Container B  
 (3) Container C  
 (4) Container D
3. The diagram below shows five metal bars, A, B, C, D and E, of the same size tied to a plastic rod.

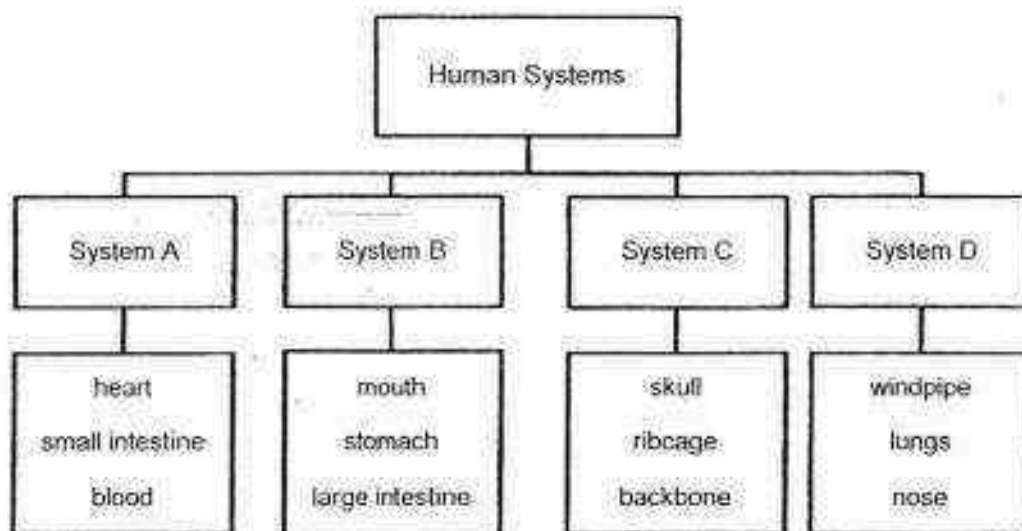


Which one of the metal bars, A, B, C or D, is most likely made of a non-magnetic material?

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

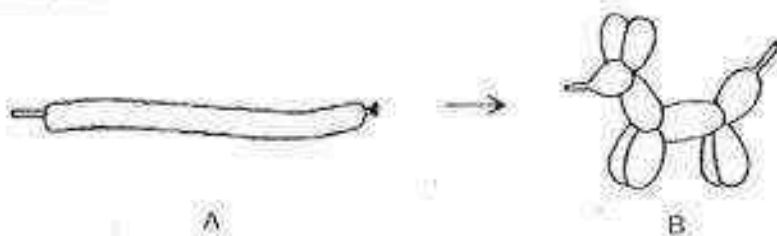


4. Study the classification chart below.



Which one of the systems above has a part that is incorrectly grouped?

- (1) System A
  - (2) System B
  - (3) System C
  - (4) System D
5. An entertainer blew up a balloon, A, and then twisted it to form the figure of a puppy, B, as shown below.



Three children, Amos, Bob and Chuck, made the following conclusions. Which child(ren) is/are correct?

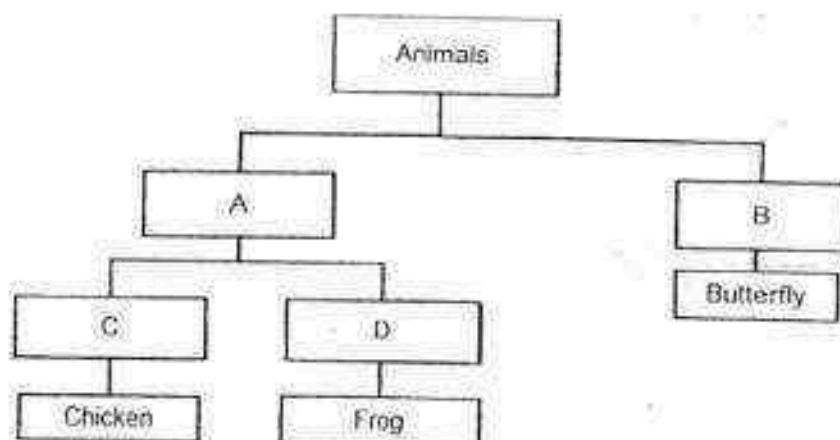
Amos : There is less air in B than A.

Bob : The mass of air in B is the same as A.

Chuck: Both the shape and volume of air in B are different from A.

- (1) Amos only
- (2) Bob only
- (3) Amos and Chuck only
- (4) Bob and Chuck only

6. Ali drew the classification table below based on the life cycle of animals.



What are the suitable headings for A, B, C and D?

	A	B	C	D
(1)	Three-stage life cycle	Four-stage life cycle	The young looks like the adult	The young does not look like the adult
(2)	Three-stage life cycle	Four-stage life cycle	The young does not look like the adult	The young looks like the adult
(3)	Four-stage life cycle	Three-stage life cycle	The young does not look like the adult	The young looks like the adult
(4)	Four-stage life cycle	Three-stage life cycle	The young looks like the adult	The young does not look like the adult

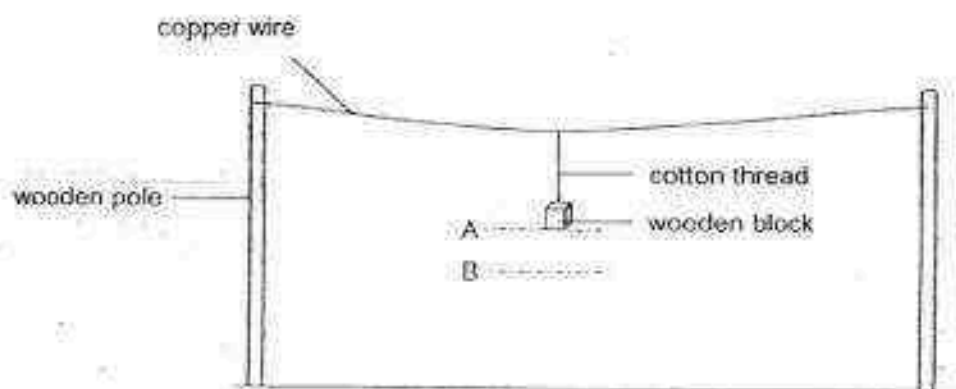
7. Lucy used a light sensor that was connected to a data-logger to measure the amount of light passing through three objects, R, S and T. She then recorded her results in the table below.

Object	None	R	S	T
Amount of light (units)	400	0	200	390

Which of the following is most likely to be objects R, S and T?

	R	S	T
(1)	clear glass	frosted glass	wooden block
(2)	tracing paper	book	mirror
(3)	wooden block	tracing paper	clear glass
(4)	mirror	frosted glass	book

8. A wooden block was hung from a copper wire using a cotton thread and placed in the school field.



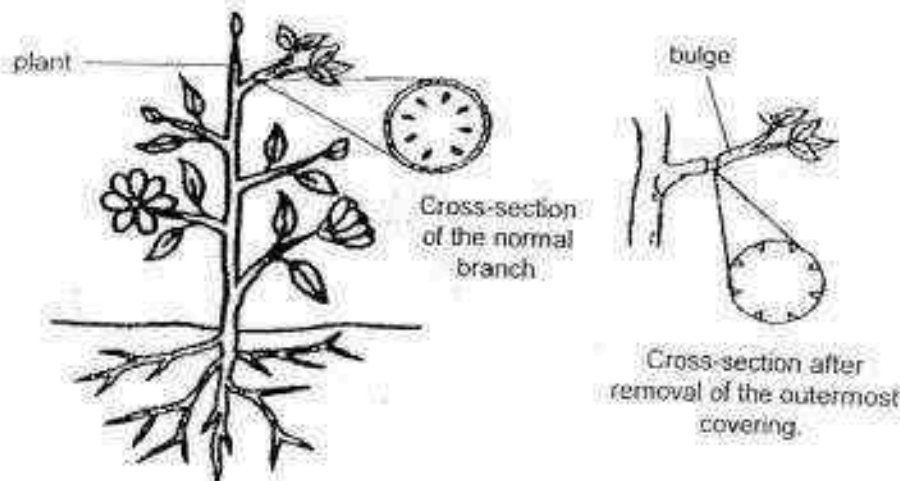
The block was at position A at the start of the experiment at 9 am. At noon, when it was hot and sunny, the block was at position B.

Which of the following best explains why the wooden block was at position B at noon?

- (1) The copper wire expanded.
  - (2) The copper wire contracted.
  - (3) The wooden block expanded.
  - (4) The wooden block contracted.
9. Where can the water-carrying and food-carrying tubes be found in a plant?

	Water-carrying tubes	Food-carrying tubes
(1)	roots and stem only	roots and stem only
(2)	all parts of the plant	all parts of the plant
(3)	roots and stem only	leaves and flowers only
(4)	leaves and flowers only	roots and stem only

10. Alice planted a plant in her garden. She removed the outermost covering of a branch which contained the food-carrying tube. She left the plant to continue to grow for several weeks.



After two weeks, Alice saw a bulge at the top part of the branch where she had removed the outer covering. Which of the following would explain Alice's observation?

- (1) The plant made too little food.
  - (2) The plant could not make food.
  - (3) The plant could not transport food to the other parts of the plant.
  - (4) The plant could not transport water to the other parts of the plant.
11. Which of the following statement(s) is /are true?
- A. The air we breathe out is cooler than the air we breathe in.
  - B. The air we breathe in contain more oxygen than the air we breathe out.
  - C. The air we breathe out contain more carbon dioxide than the air we breathe in.
  - D. The air we breathe in contains more water vapour than the air we breathe out.
- (1) A and D only
  - (2) B and C only
  - (3) A, C and D only
  - (4) A, B, C and D

12. Read the following description of the human breathing process below.

- A Air enters the nose.
- B The air goes into the lungs.
- C The air goes through the windpipe.
- D The hair in the nostrils traps dust present in the air.

Arrange the description in the correct order to describe what happens when a person takes a deep breath.

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

13. Which of the following are transported in the blood?

- A Oxygen
- B Digested food
- C Carbon dioxide
- D Waste materials

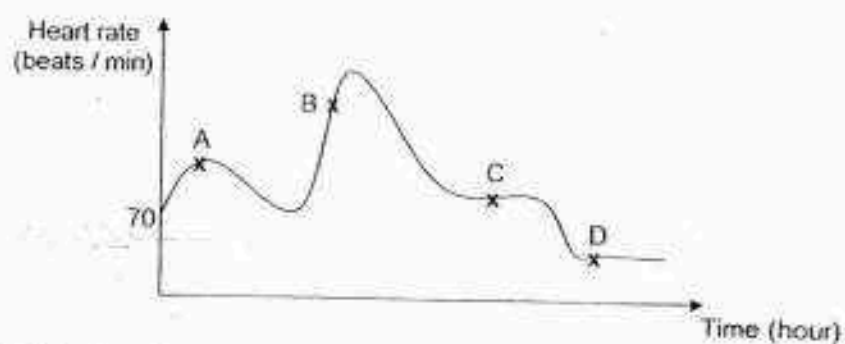
- (1) A and C only
- (2) B and D only
- (3) A, B and D only
- (4) A, B, C and D

14. Which of the following parts can be found in a plant cell but not in an animal cell?

- A Nucleus
- B Cell wall
- C Chloroplast
- D Cell membrane

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

15. The graph below shows Sam's heart rate from 9 am to 9 pm.



Which of the following activities carried out by Sam corresponds to his heart rate as shown in the graph above?

	A	B	C	D
(1)	sitting	sleeping	running	walking
(2)	sleeping	sitting	walking	running
(3)	sleeping	walking	sitting	running
(4)	walking	running	sitting	sleeping

End of Booklet A

## Anglo-Chinese School (Junior)



## CONTINUAL ASSESSMENT 1 (2016)

PRIMARY 5

SCIENCE

BOOKLET B

Wednesday

9 MARCH 2016

1 hour

Name: \_\_\_\_\_ ( ) Class: 5 ( ) Parent's Signature: \_\_\_\_\_

## INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 7 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	30	
B	20	
Total	50	

This question paper consists of 8 printed pages (inclusive of cover page).

**Booklet B (20 marks)**

For questions 16 to 22, write your answers in this booklet.

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

16. Charles found some mushroom growing at different parts of his garden. He observed them over a period of three days and recorded his observations in the table below.

Condition	Number of mushrooms		
	Day 1	Day 2	Day 3
Wet and shady	4	8	16
Dry and shady	1	3	7
Wet and sunny	2	3	5
Dry and sunny	0	1	2

- (a) Based on Charles' observations, what conditions are most suitable for the mushrooms to reproduce the fastest?

[1]

---



---

- (b)(i) Which group of living things are mushrooms classified under?

[½]

Group: \_\_\_\_\_

- (ii) How do the living things in this group obtain food?

[½]

---



---

- (c) Charles observed that mushrooms do not have flowers. Explain how mushrooms reproduce.

[1]

---



---

(Go on to the next page)

SCORE	3
-------	---



17. In an experiment, Haresh used three similar balsam plants, X, Y and Z. One part was removed from each of the plants as stated in the table below. The plants were left in the same part of the garden and watered daily.

Plant	Part being removed
X	All flowers
Y	All leaves
Z	All fruits

- (a) What will happen to the three plants after a week? Explain your answer.

[2]

---



---



---

- (b) State another variable that Haresh should keep the same to ensure a fair test.

[1]

---

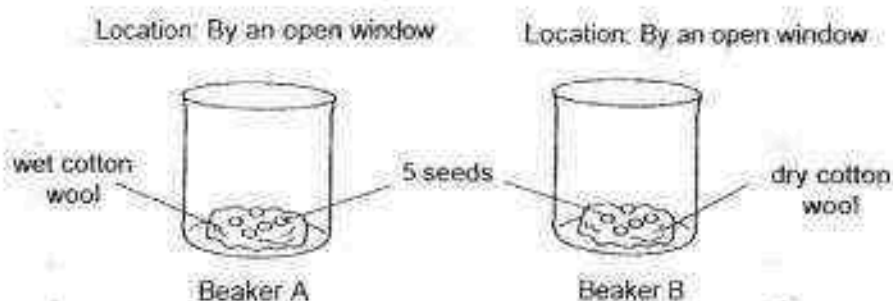


---

(Go on to the next page)

SCORE	3
-------	---

18. Si Ling set up the experiment as shown below. 5 seeds were placed on cotton wool in each beaker.



- (a) What was the aim of Si Ling's experiment? [1]

---



---

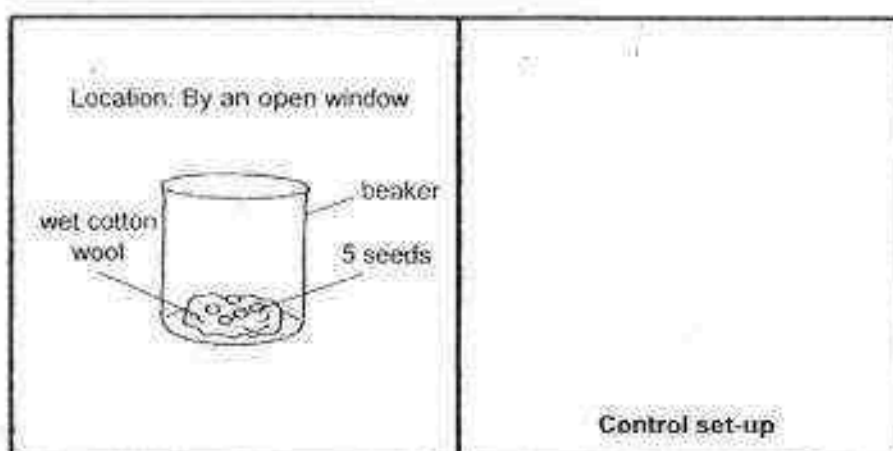
- (b)(i) In which beaker will the seeds most likely germinate? [½]

Beaker : \_\_\_\_\_

- (ii) Which part of the seed will grow first? [½]

---

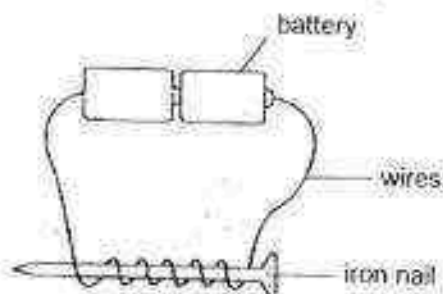
- (c) Si Ling wants to conduct another experiment to find out if seeds need light to germinate. She prepared one of the set-ups as shown below. Draw and label the control set-up for her experiment in the box. [1]



(Go on to the next page)

SCORE	
	3

19. Wei Xuan wants to find out if the number of coils of wire around an iron nail affects the strength of the electromagnet. He sets up the experiment as shown below.



- (a) Complete the table by placing a tick (✓) next to the variable(s) that is/are to be kept the same for the experiment to be a fair test.

[1]

Variables	Kept the same
Type of wire	
Number of coils	
Type of iron nail	
Number of batteries	

- (b) What would Wei Xuan observe if he replaced the iron nail with a copper nail and brought a magnet close to it? Explain your answer.

[1]

---



---

- (c) Wei Xuan placed a pile of paper clips 5 cm away from two electromagnets. Explain what Wei Xuan must observe so that he can conclude which electromagnet is stronger.

[1]

---



---

(Go on to the next page)

SCORE	
	3

- 20 Andy conducted an experiment as shown below. He repeated the experiment with 4 rods made of different materials. He used the same amount of wax and the same type of thumbtack for each experiment.



He recorded the time taken for the thumbtack to drop in the table below.

Rod	Is thumbtack still attached to the rod?		
	After 30 Seconds	After 45 Seconds	After 60 Seconds
A	Yes	Yes	Yes
B	Yes	Yes	No
C	Yes	No	No
D	No	No	No

- (a) Explain why the thumbtacks on Rods B, C and D dropped after some time. [1]

---



---

- (b) How will the time taken for each thumbtack to drop be different if the 4 rods were 15 cm long? [1]

---



---

- (c) Refer to the picture of a frying pan below. [1]



Which of the rods, A, B, C or D, is the best material to make the handle of the frying pan? Explain your answer.

---

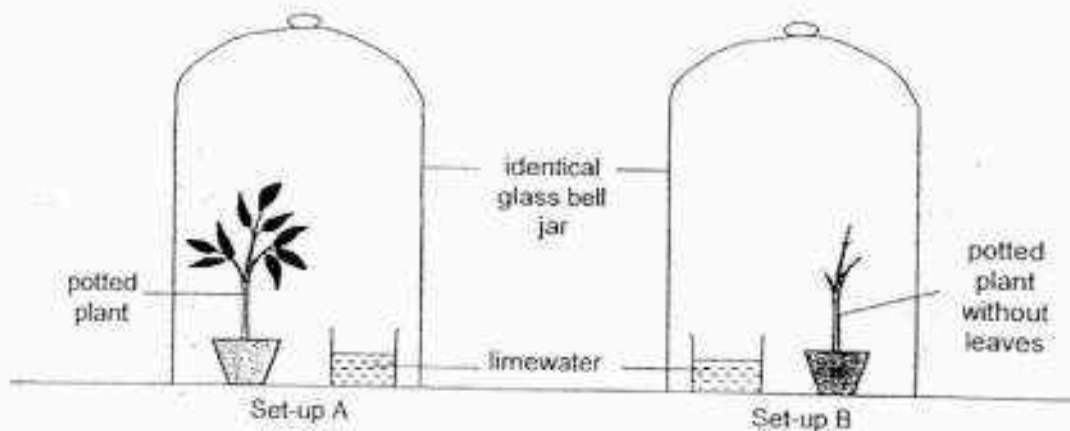


---

(Go on to the next page)

SCORE	3
-------	---

21. Lex sets up the experiment as shown in the diagram below. He placed the set-ups in a dark room for 6 hours.



What would he observe about the limewater in both set-ups at the end of 6 hours? Explain your answer.

[2]

**Set-up A**

Observation: \_\_\_\_\_

Explanation: \_\_\_\_\_

**Set-up B**

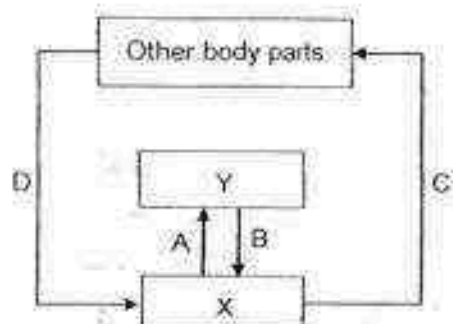
Observation: \_\_\_\_\_

Explanation: \_\_\_\_\_

(Go on to the next page)

SCORE	
	2

22. The diagram below shows the flow of blood in a human circulatory system. X and Y represent 2 organs of the body and A, B, C and D represent blood vessels. The arrows represent the movement of blood in the body.



- (a) What organs do X and Y represent? [1]

X: \_\_\_\_\_

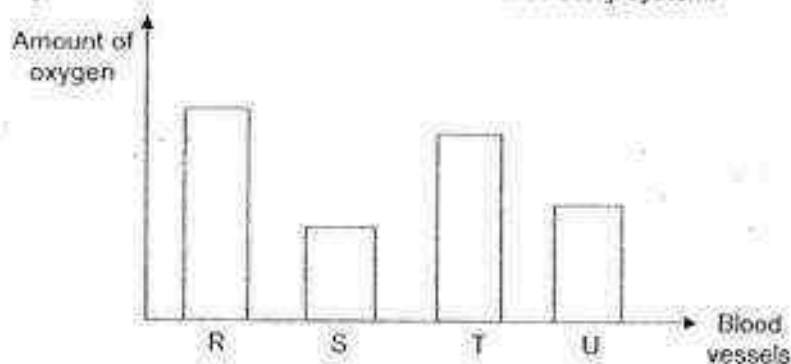
Y: \_\_\_\_\_

- (b) State a difference between the carbon dioxide content in blood vessels A and C. [1]

\_\_\_\_\_

\_\_\_\_\_

The bar chart below shows the amount of oxygen in four blood samples taken from different parts of the blood vessels in the human circulatory system.



- (c) Which blood sample, R, S, T or U, is most likely taken from the blood vessel which carries blood from the heart to the lungs? Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

End of Paper

SCORE	
	3

## SEMESTRAL ASSESSMENT EXAM PAPER 2016

SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)  
 SUBJECT : SCIENCE  
 TERM : CA1

## BOOKLET A

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

## BOOKLET B

Q16(a) Based on Charles' observation, moisture and wet and shady conditions are best suitable for the mushroom to reproduce.

(b)(i) Group: Fungi

(ii) Living things in this group obtain food from other dead organisms it grows on

(c) Mushrooms reproduce by spores that will eventually become mushrooms.

Q17(a) Plants X and Z will survive but plant Y will die. A plant can still live if the flowers and fruits are removed but will die without leaves.

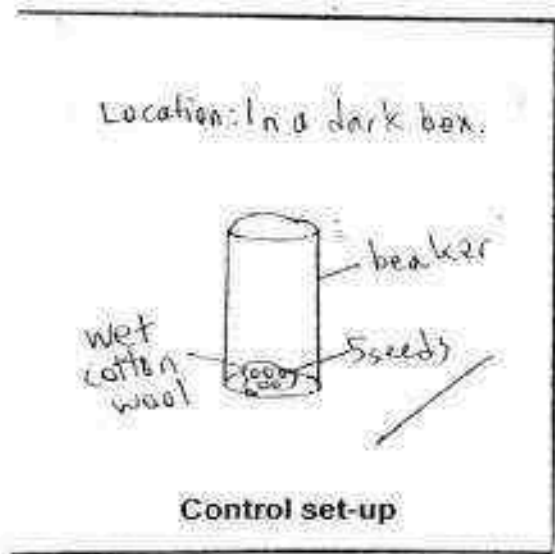
(b) The amount of water given to each plant.

Q18(a) The aim of Si Ling's experiment was to find out if seeds need water to grow.

(b)(i) Beaker A

(ii) The roof of the seed will grow first.

(c)



Q19(a) Type of wire, type of iron nail, number of batteries.

(b) Wei Xuan will observe nothing happening. As copper is a non-magnetic material and has no effect on the magnet nothing will happen.

(c) Wei Xuan will observe that the stronger electromagnet will attract more paper clips.

Q20(a) The thumbtacks dropped because the heat from the candle travelled through the rods and reached the wax and it gained heat and melted.

(b) The time taken would increase because it will take a longer time for the heat to reach the wax.

(c) Rod A is most suitable because it is the worst conductor of heat amongst the four rods.



Q21. Set-up A

**Observation:** The lime water will turn chalky.

**Explanation:** The plant gave out carbon dioxide turning the lime water chalky.

Set-up B

**Observation:** The limewater did not turn cloudy.

**Explanation:** The plant did not give out carbon dioxide as it did not respire.

Q22(a) X: Heart

Y: Lungs

(b) The carbon dioxide level in C is much less than in A.

(c) S. It contains the least amount of oxygen as the oxygen has been used by the other body parts.

3  
END

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

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

**CHIJ ST NICHOLAS GIRLS' SCHOOL**

**Primary 5**  
**Continual Assessment 1 – 2016**  
**SCIENCE**  
**BOOKLET A**  
**3 March 2016**

Total Time for Booklets A and B: 1 hour 15 minutes

15 questions  
30 marks

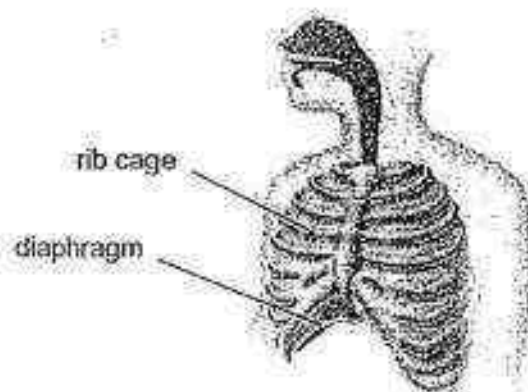
Do not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.

*This booklet consists of 14 printed pages.*

**Section A (15 x 2 marks = 30 marks)**

For each question from 1 to 15, 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 provided.

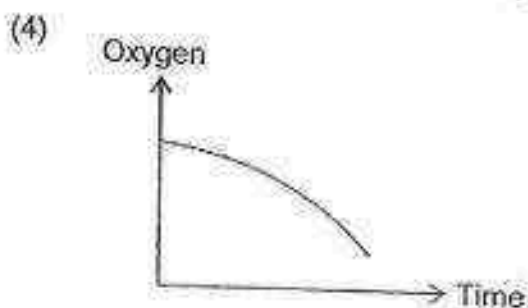
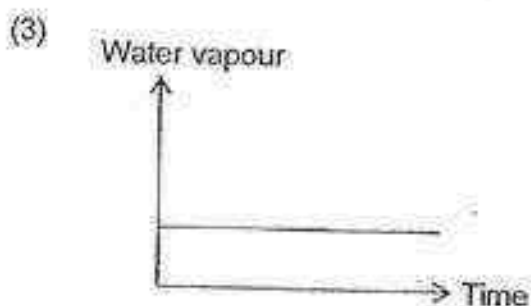
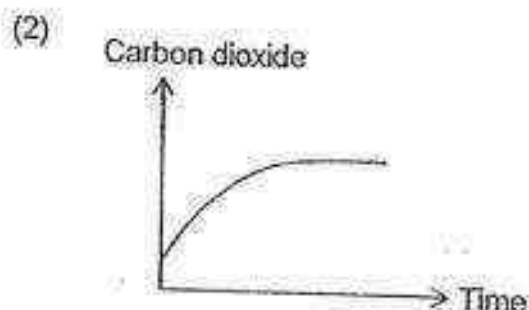
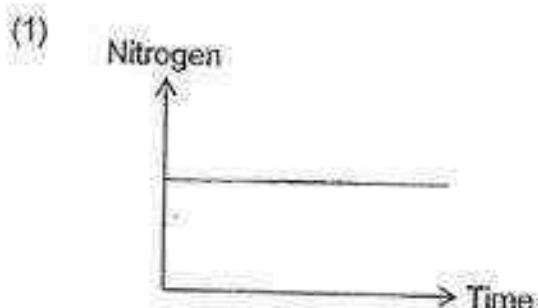
1. The diagram below shows the human respiratory system. Which of the following correctly shows the movement of the ribs and diaphragm when a person breathes in?



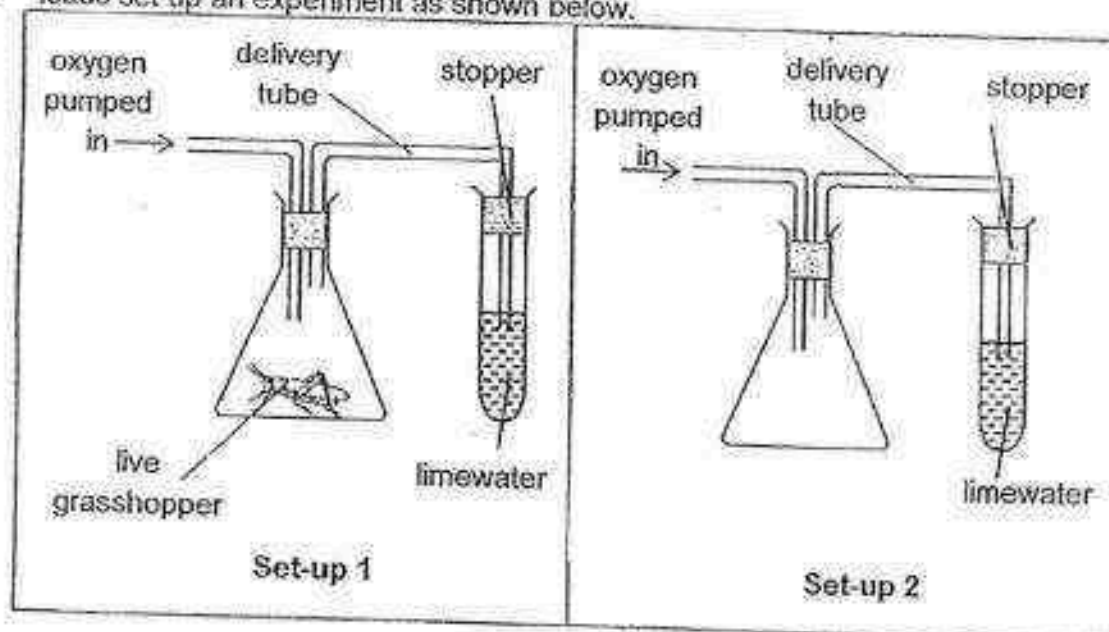
Front view

	Ribs	Diaphragm
(1)	Outwards and upwards	Downwards
(2)	Outwards and upwards	Upwards
(3)	Inwards and downwards	Downwards
(4)	Inwards and downwards	Upwards

2. A group of people was trapped in a lift. The following graphs show the changes in the amount of gases in the lift. Which one is most likely to be incorrect?



3. Isaac set up an experiment as shown below.



What is the purpose of having Set-up 2 in the experiment?

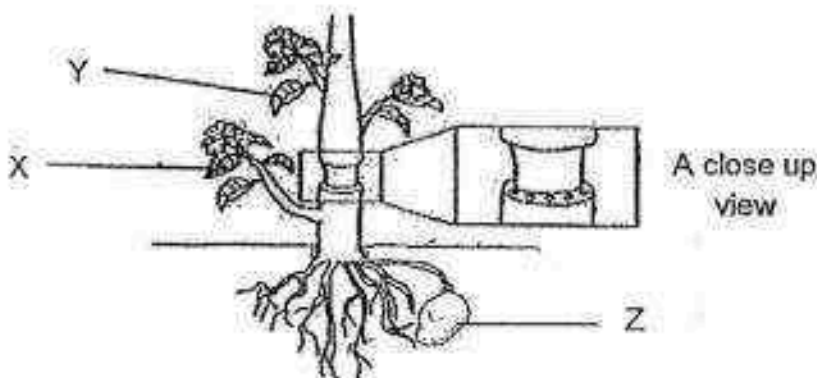
- (1) To show that limewater turns chalky in the presence of the oxygen gas.
- (2) To show that limewater remains clear in the presence of the grasshopper.
- (3) To show that limewater turns chalky when it reacts with the gas given out by the grasshopper.
- (4) To show that limewater remains clear when it reacts with the gas given out by the grasshopper.

4. What does blood help to transport throughout our body?

- A: water
- B: oxygen
- C: digested food
- D: carbon dioxide

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

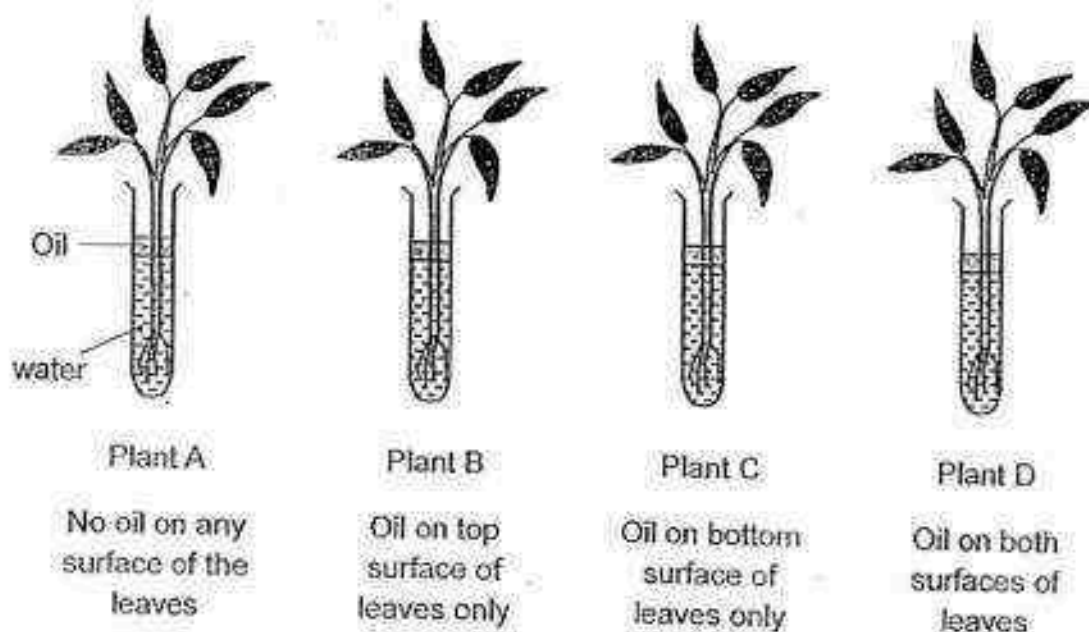
5. Keith removed an outer ring of a stem from a plant and as a result, the food-carrying tubes and the water-carrying tubes were removed as shown in the diagram below.



After a few weeks, it was observed that Z grew bigger. Which of the following statement best explains the observation?

- (1) Food is made by Z itself.
- (2) Food is transported to Z from Y.
- (3) Food is transported to Z from X.
- (4) Food is absorbed by Z from the soil.

6. Alif set up an experiment using 4 similar plants and placed each of them in a test-tube with equal amounts of water. He coated some surfaces of the leaves with oil and placed all the test-tubes in an open field.

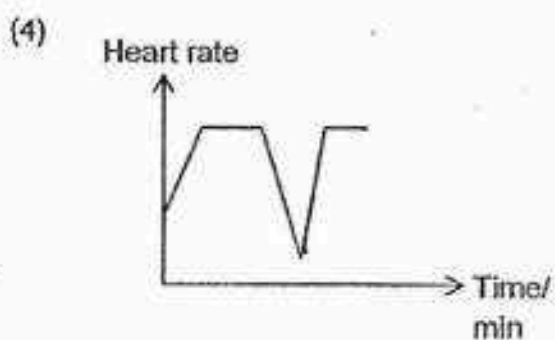
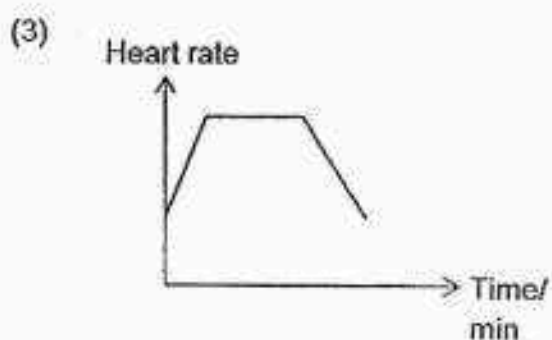
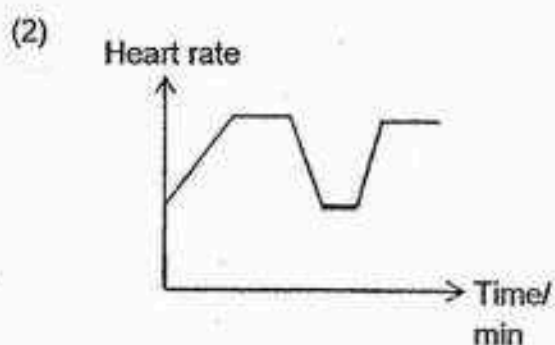
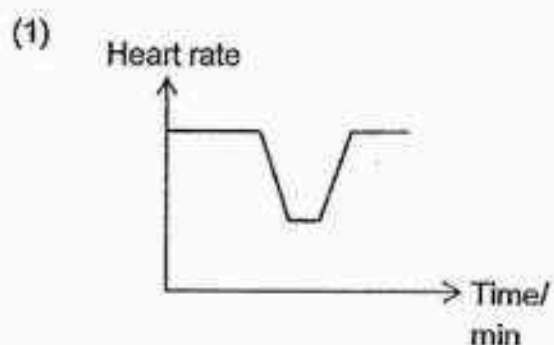


The amount of water left in each test-tube after 1 day was recorded. Which of the following shows the correct order of the amount of water left in each test-tube after 1 day?

	Greatest amount of water → Least amount of water			
(1)	A	B	C	D
(2)	B	C	D	A
(3)	C	B	A	D
(4)	D	C	B	A

7. Bryan played rugby with his friends. The match lasted 40 minutes and there was an interval of 5 minutes for rest.

Which of the following graphs most likely represents the change in Bryan's heart rate from the beginning of the match to the end?



8. Diagram 1 below shows a ring magnet lowered onto a tray of steel pins. Diagram 2 shows the bottom view of the magnet.

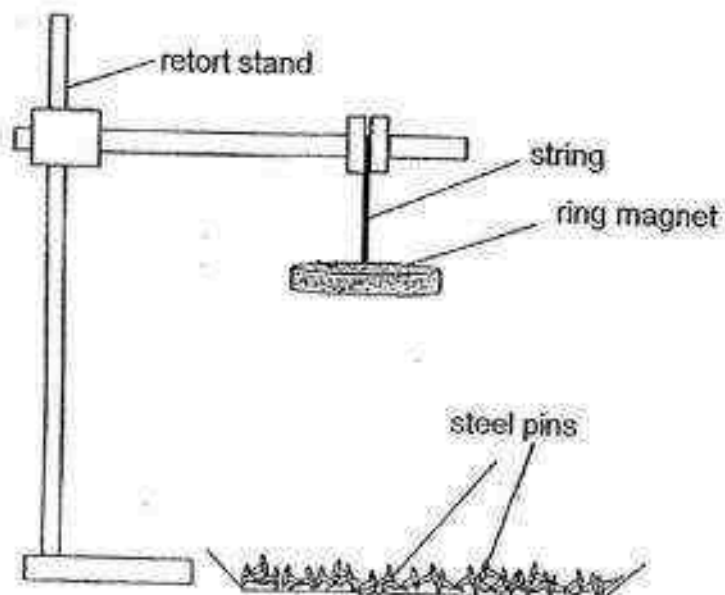


Diagram 1

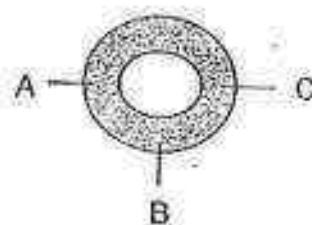


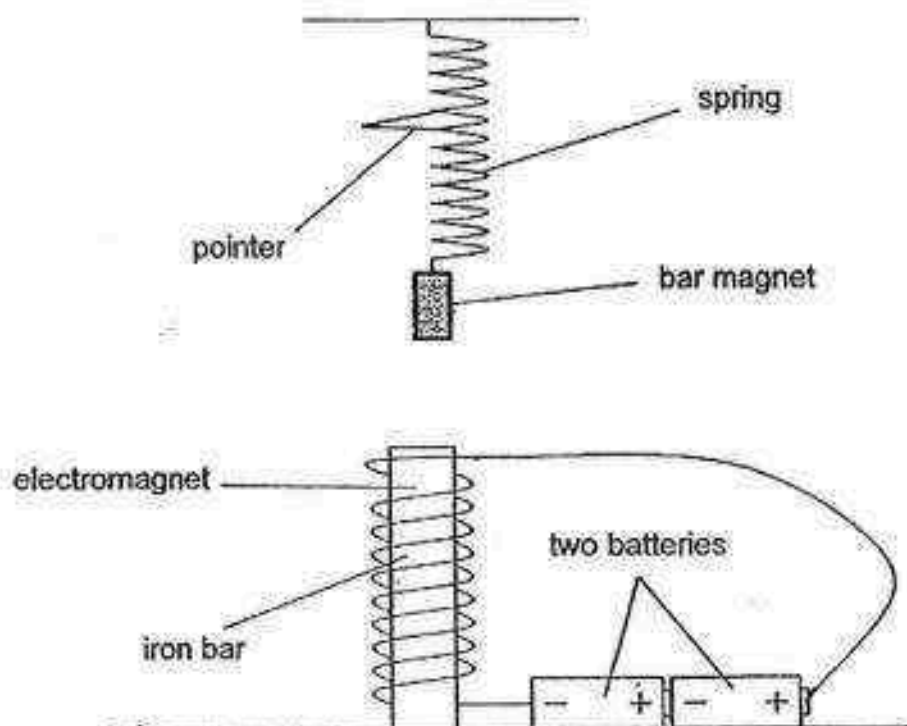
Diagram 2

Which of the following most likely shows the number of pins attracted to the bottom of the magnet at positions, A, B and C?

	A	B	C
(1)	8	20	8
(2)	14	8	14
(3)	17	12	7
(4)	12	12	12



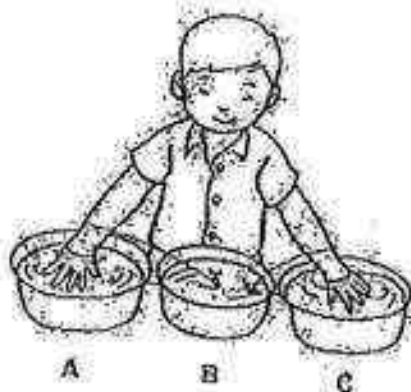
9. In the set-up shown below, the bar magnet is repelled by the electromagnet. A pointer attached to the spring moves when the circuit is closed.



How will the pointer move when the number of coils around the iron bar is reduced? Why?

	Movement of pointer	Strength of the electromagnet
(1)	Downwards	Increase
(2)	Downwards	Decrease
(3)	Upwards	Increase
(4)	Upwards	Decrease

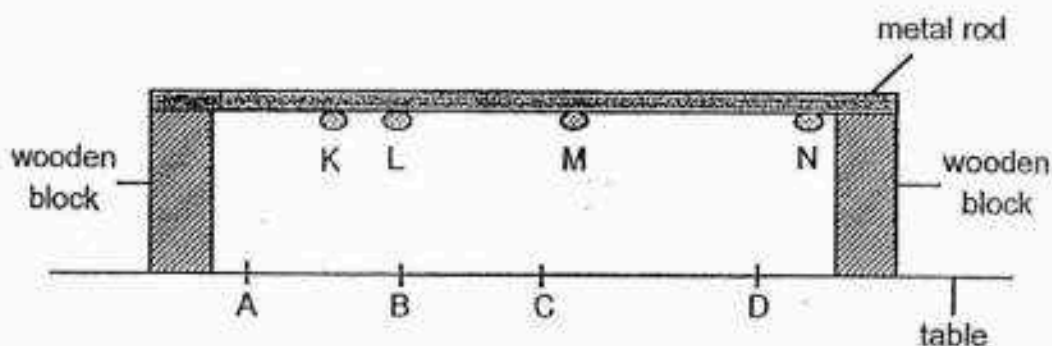
10. Weiqlang placed his right hand into the water in basin A and his left hand into the water in basin C at the same time. After 30 seconds, he placed both hands into the water in Basin B. His right hand felt hot but his left hand felt cold.



Which one of the following shows the possible temperatures of the water in the basins, A, B and C?

Temperature of water ( $^{\circ}\text{C}$ )			
	Basin A	Basin B	Basin C
(1)	12	30	46
(2)	46	30	12
(3)	46	25	30
(4)	25	46	12

11. The diagram below shows a metal rod supported by two wooden blocks. 4 similar pieces of wax, K, L, M and N, were attached to the rod. A heat source was then placed on the table below the metal rod. The order in which the wax pieces fell from the rod was recorded in the chart below.

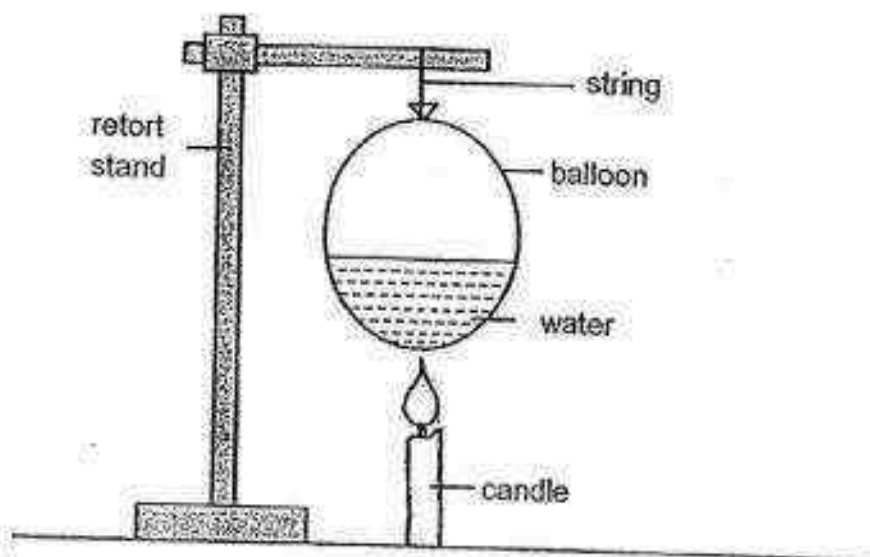


First to fall	→	Last to fall	
M	L	K	N

At which position, A, B, C or D on the table was the heat source placed?

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

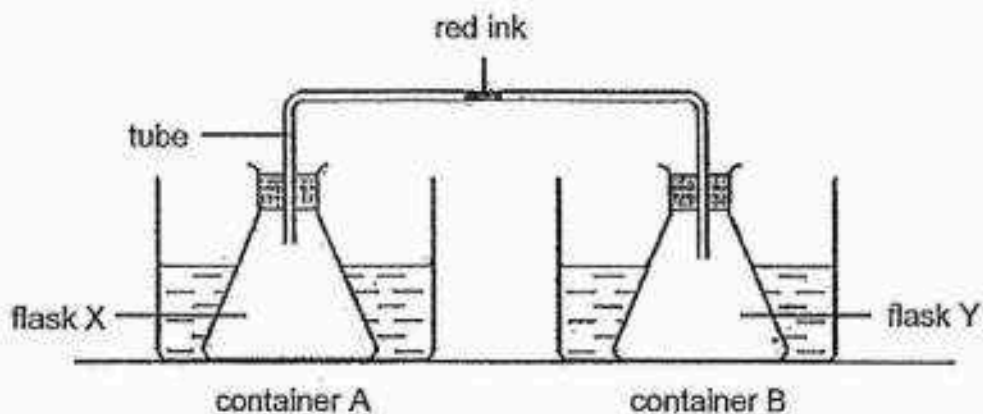
12. Ravi filled a balloon with some water and inflated it. He then held it over a lighted candle for 30 seconds as shown in the diagram below.



Which one of the following shows the most likely observation and the corresponding explanation for the experiment above?

	Observation	Explanation
(1)	The balloon burst	The heat from the candle caused the rubber to melt.
(2)	The balloon burst	The heat from the candle caused the air in the balloon to expand.
(3)	The balloon did not burst	The air in the balloon was able to conduct the heat away from the balloon quickly.
(4)	The balloon did not burst	The water in the balloon was able to conduct the heat away from the balloon quickly.

13. Kathy set up the following experiment.



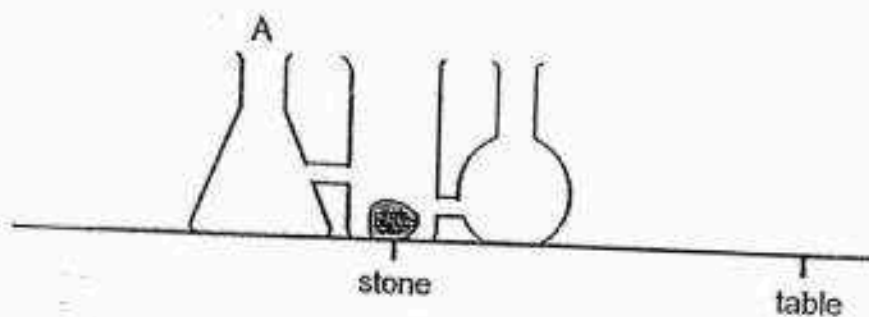
After five minutes, she noted that the drop of red ink moved away from container A towards container B.

What could Kathy have done to the set-up above to produce the observed result?

- A: Heated container A
- B: Heated container B
- C: Added hot water into container A
- D: Added ice cubes into container B

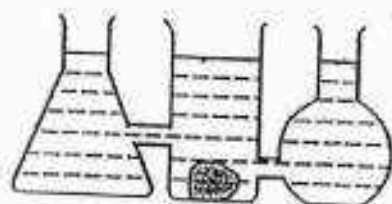
- (1) A and C only
- (2) B and C only
- (3) B and D only
- (4) A, C and D only

14. The diagram shows a communicating vessel.

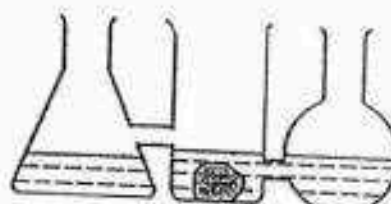


Mina poured some water into the container at point A. Which one of the following shows the most likely observation she will make?

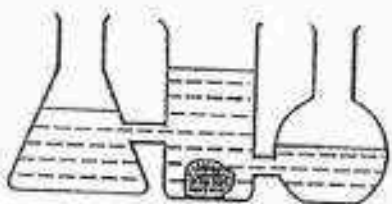
(1)



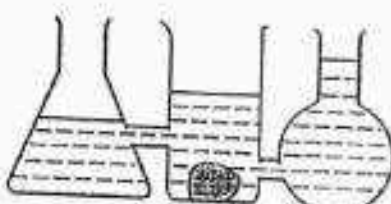
(2)



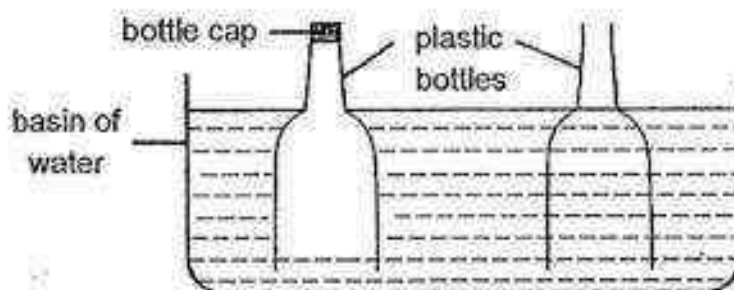
(3)



(4)



15. The base of two identical plastic bottles were removed and used in the set-up below. The cap of one of the bottles was removed. The diagram shows what happened when the two bottles were pushed into a basin of water at the same time.



Based on the result above, which one of the following is a possible aim of the experiment?

- (1) To find out if air has mass.
- (2) To find out if air occupies space.
- (3) To find out if water has a definite shape.
- (4) To find out if water has a definite volume.

**End of booklet A**

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

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

**CHIJ ST NICHOLAS GIRLS' SCHOOL****Primary 5****CONTINUAL ASSESSMENT 1 – 2016****SCIENCE****BOOKLET B****3 March 2016**

Total Time for Booklets A and B: 1 hour 15 minutes

7 questions  
20 marksDo not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.*This booklet consists of 8 printed pages.*

Booklet A	30
Booklet B	20
Total	50

\_\_\_\_\_  
Parent's Signature/Date

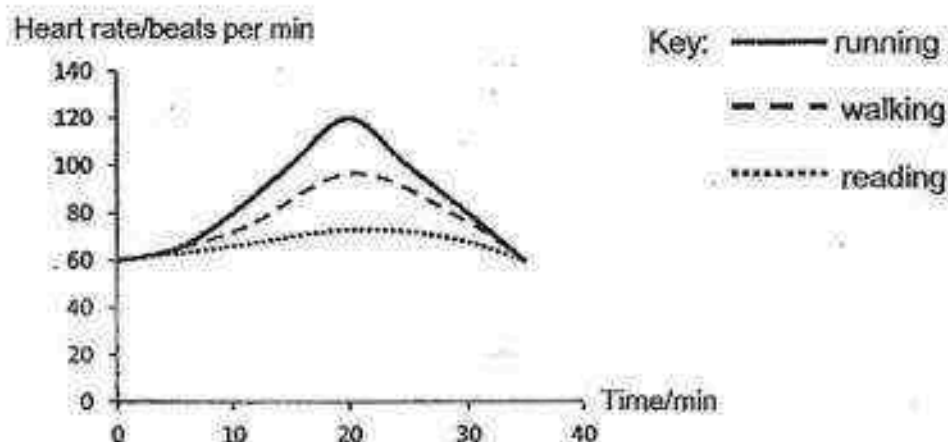


**Section B (20 marks)**

For questions 16 to 22, write your answers in this booklet.

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

16. Lisa measured and recorded her heart rate for different activities as shown in the graph below.



- (a) Lisa noticed that the more intense her activity, the higher her heart rate. Explain why. [2]

---

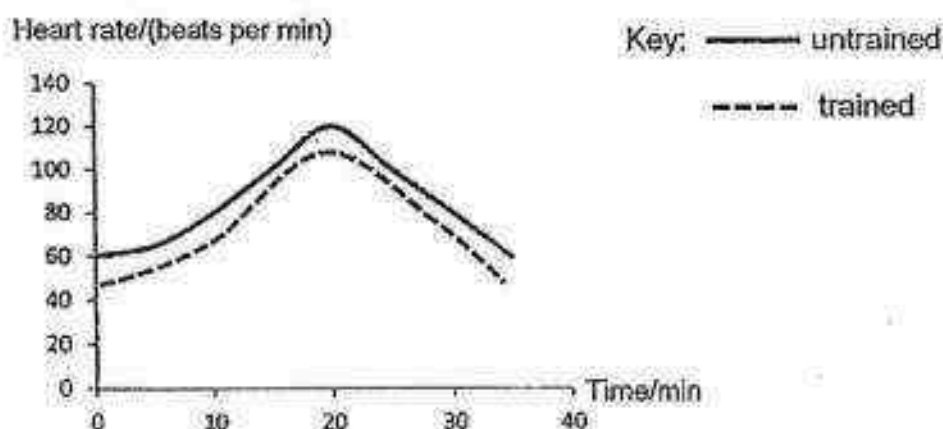


---



---

- (b) The graph below shows the effect of the same intensity of exercise on the heart rate of a trained athlete and an untrained one



- Based on the graph above, what can you conclude about their heart rate? [1]

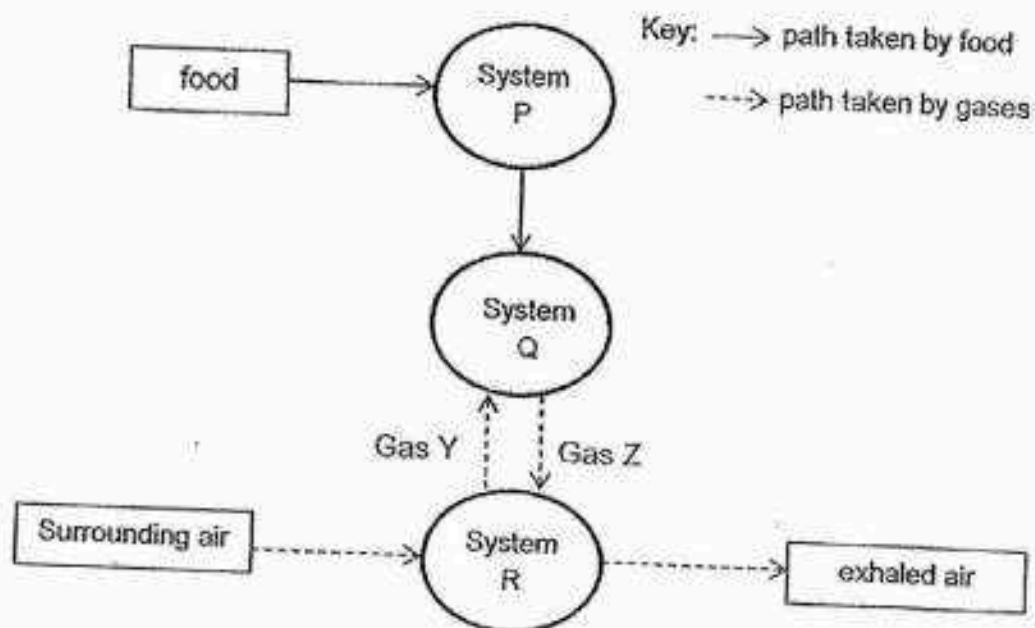
---



---



17. The diagram below shows how food and various gases are transported in the human body.



- (a) State two functions of System Q.

[1]

Function 1: \_\_\_\_\_

\_\_\_\_\_

Function 2: \_\_\_\_\_

\_\_\_\_\_

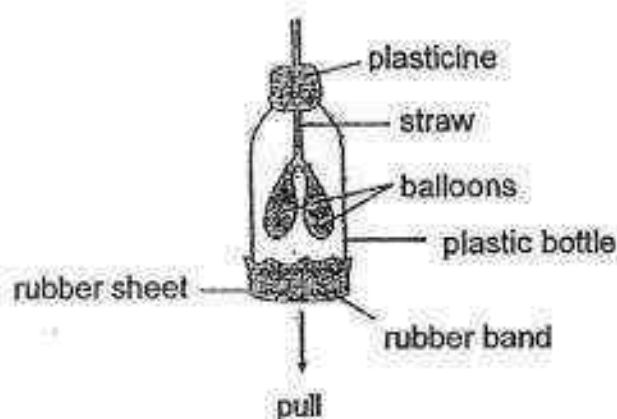
- (b) What are gases Y and Z?

[1]

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

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

18. Qing Zi made a model of the human respiratory system as shown below.



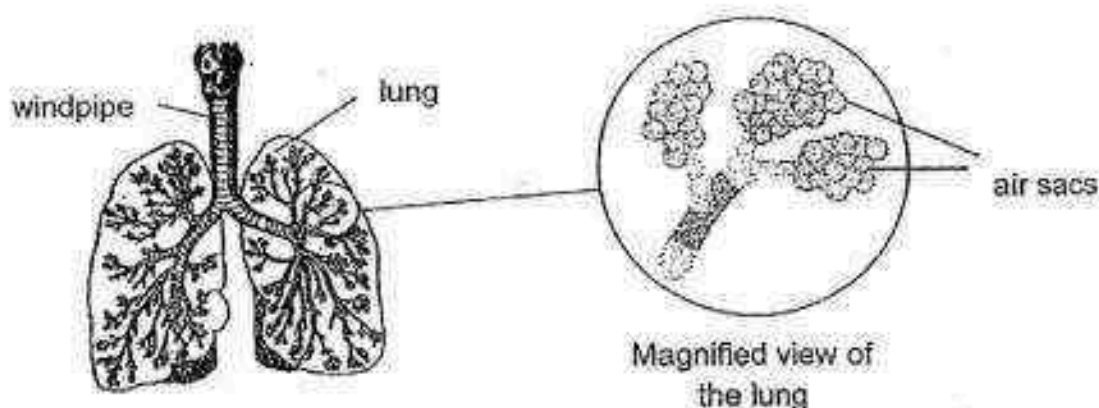
- (a) What would Qing Zi observe when the rubber sheet is pulled downwards? Explain your answer. [1]

---



---

The diagram below shows part of the human respiratory system. The lungs contain millions of tiny air sacs.



- (b) Explain why it is important to have a large number of air sacs in the lungs. [1]

---



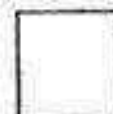
---

- (c) There are numerous very thin blood vessels surrounding each of the air sacs in our lungs. Why are the walls of the blood vessels around the air sacs very thin? [1]

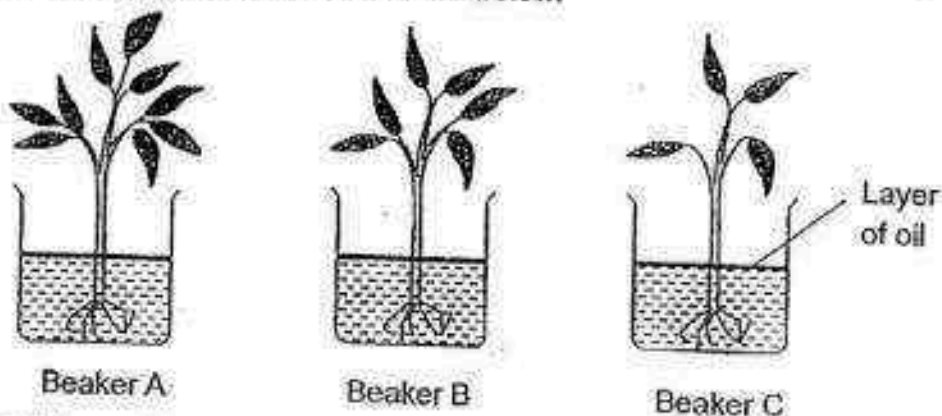
---



---



19. The diagram below shows three similar plants with different number of leaves that were placed in identical beakers with equal amounts of water. A layer of oil was poured into each beaker as shown below.



After 24 hours, Kaylee measured the amount of water left in each beaker. She recorded them in the table shown below.

	Amount of water at the beginning	Amount of water at the end of 3 hours
Beaker A	400 ml	
Beaker B	400 ml	
Beaker C	400 ml	

- (a) Predict the amount of water in the beakers A and C after 24 hours and write your answer in the table above. [1]

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

---



---

- (c) Why was the layer of oil added to the water in the beakers? [1]

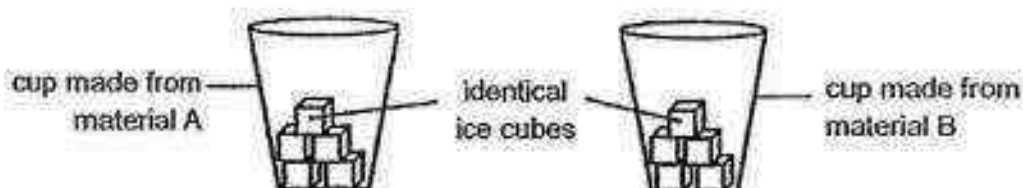
---



---



20. Wendy used two similar cups made of different materials, A and B, to carry out the following experiment. She noted that cup B felt much colder than cup A at room temperature. She placed an equal number of identical ice cubes into each cup and recorded the time taken for the ice cubes in each cup to melt completely.



- (a) In which cup, A or B, would the ice cubes melt faster? Explain your choice. [2]

---



---

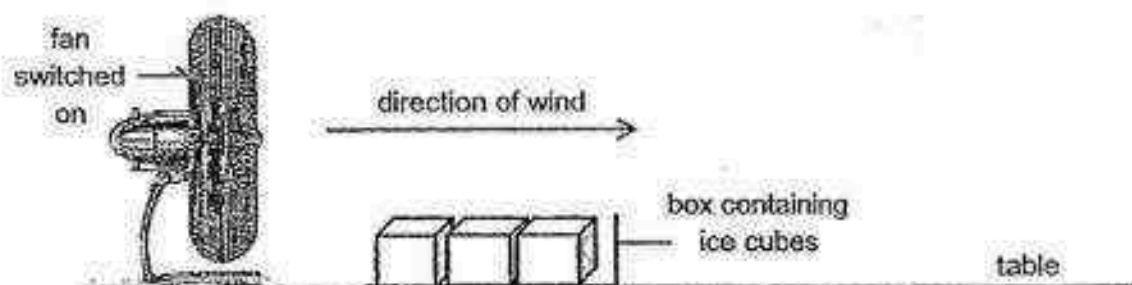


---



---

- (b) One hot day, Wendy's air conditioner broke down. She decided to cool herself down using the set-up shown below.



Explain how the set-up above is able to cool the surrounding air in the room more effectively.

[2]

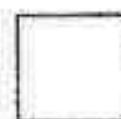
---



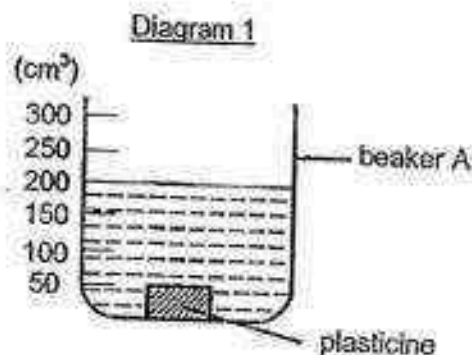
---



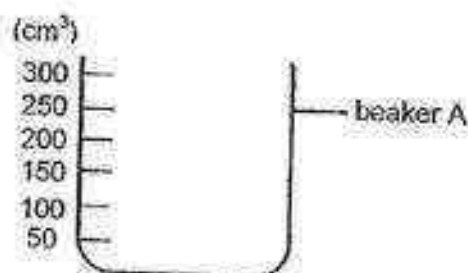
---



21. Michael poured some water into beaker A. He then placed a piece of plasticine with a volume of  $50\text{cm}^3$  into a beaker. Diagram 1 below shows the results of his experiment.

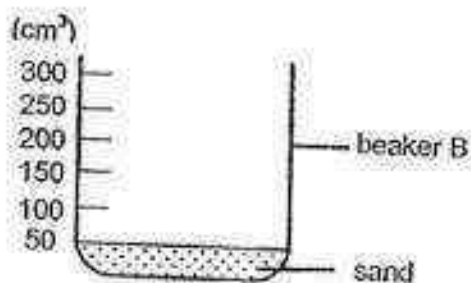


- (a) In the beaker below, draw the original water level before the plasticine was placed into the beaker. [1]



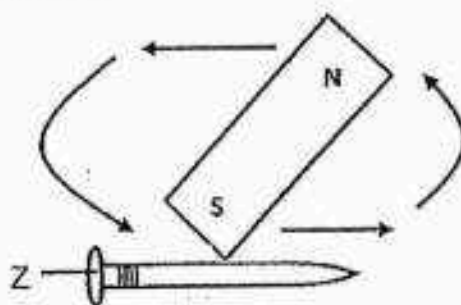
- (b) Michael removed the plasticine carefully and reshaped it into a ball before placing it back into the beaker. Would the water level be higher, lower or the same as before? Explain your answer. [1]

- (c) Michael was given a beaker B containing  $50\text{cm}^3$  of sand as shown in the diagram below.



- If Michael poured the same volume of water in part (a) above into beaker B, would the water level be higher, lower or the same as that in diagram 1? Why? [1]

22. Kai Lin used the south pole of a magnet to stroke a copper nail 100 times in the direction shown by the arrows.



What would happen when the north pole of the magnet was brought near part Z of the nail? Explain your answer. [2]

---

---

---

---



End of paper

EXAM PAPER 2016 (P5)

SCHOOL : CHIJ

SUBJECT : SCINECE

TERM : CA1

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

16)a)This is because a more intense activity would require more energy. The heart needs to pump faster so that more oxygen and digested food can be transported to all parts of the body to be converted to extra energy needed.

b)The trained athlete has a lower heart rate than the untrained athlete.

17)a)i)It carries digested food, water and oxygen in the blood to all parts of the body.

ii)It carries waste materials and carbon dioxide away from the different parts of the body.

b)Gas Y: oxygen

Gas Z: carbon dioxide

18)a)The balloons would inflate as when the rubber sheet was pulled down, more space is created in the jar, causing air to enter the straw and inflating the balloon.



b)It increases the total surface area for exchange of gases to take place more efficiently.

c)It allows oxygen and carbon dioxide to be absorbed and removed from the blood stream at a faster rate.

19)a)Beaker A: 100ml

Beaker C: 300ml

b)The aim is to find out whether the number of leaves would affect how much water was absorbed.

c)The layer of oil is to ensure that any loss of water is only due to the absorption of water through the plants' roots.

20)a)Cup B. As B was a better conductor of heat, it would conduct the heat from the cup's surrounding to the ice cubes faster.

b)The ice gained heat from the warmer surrounding. As the ice melts, the fan helps to blow more warm air towards the ice so that more heat loss to the ice, thus cooling the air faster.

21)a)150cm<sup>3</sup>

b)The water level would be the same as plasticine did not change.

c)The water level would be lower as there are air spaces in the sand that the water can occupy.

22)The magnet will not attract the nail. Copper is not a magnetic material and hence will not be magnetised by the magnet.



**NAN HUA PRIMARY SCHOOL**  
**CONTINUAL ASSESSMENT 1 2016**  
**PRIMARY FIVE**  
**SCIENCE**

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

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

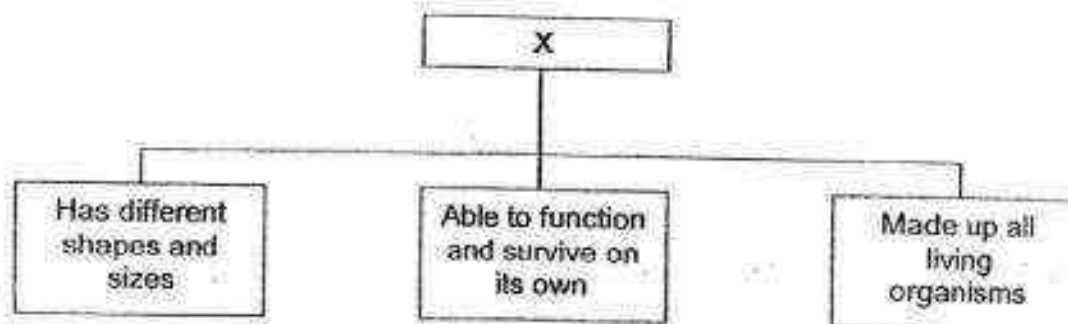
Date : 26 February 2016

MARKS	
Sect A:	/ 56
Sect B:	/ 44
<b>Total :</b>	<b>/ 100</b>

**Section A: (28 x 2 marks = 56 marks)**

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

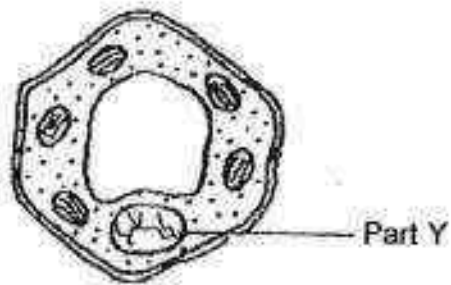
1. The chart below provides some information on X.



What is X?

- (1) Cell
- (2) Plant
- (3) Spores
- (4) Human

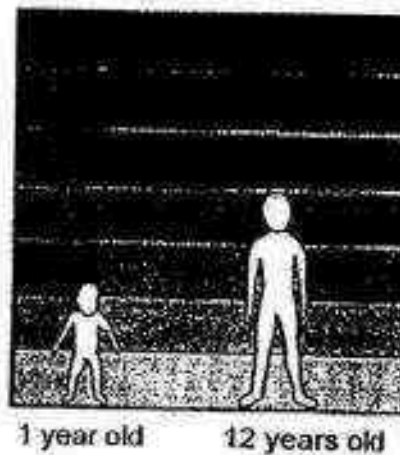
2. The diagram shows a plant cell.



Which one of the following statements about part Y is correct?

- (1) Part Y protects the cell.
- (2) Part Y contains all the parts of the cell.
- (3) Part Y is found in plant cells but not in animal cells.
- (4) Part Y is responsible for the reproduction of the cell.

3. The diagram below shows the physical growth of a boy.

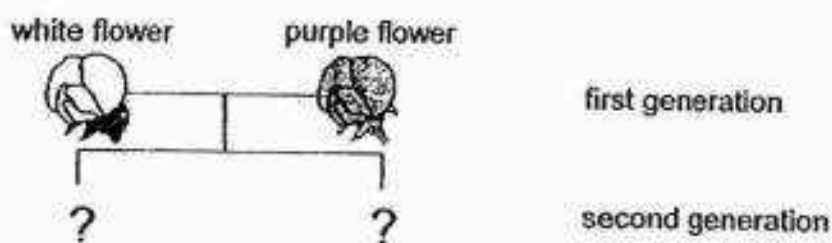


What has/have caused the growth in the boy?

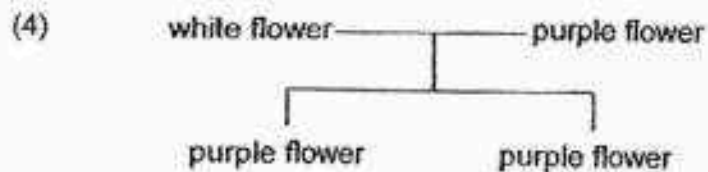
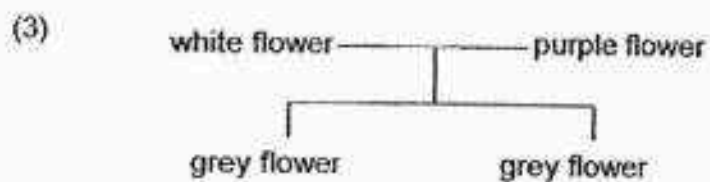
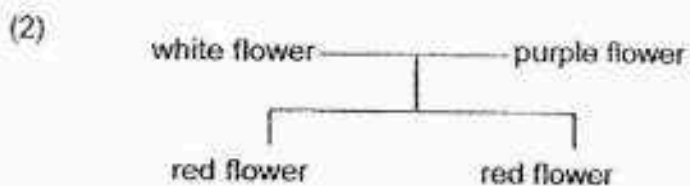
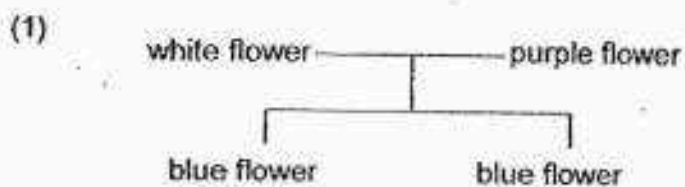
- A Cells increased in size.
- B Cells increased in numbers.
- C Cells dying and replacing themselves.

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

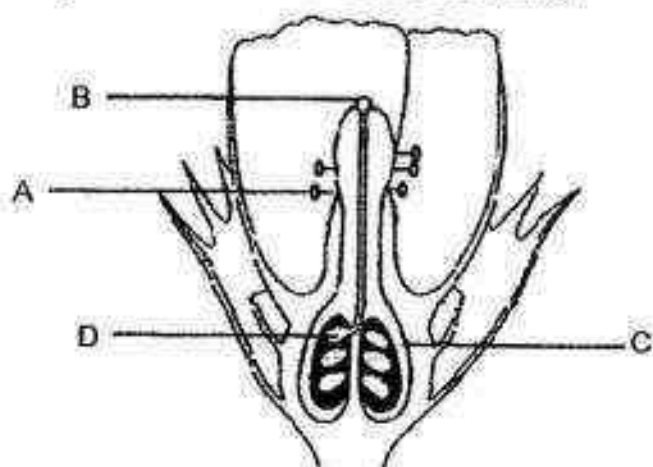
4. The reproduction of the same type of plants with flowers of different colours is carried out.



Which one of the following is most likely the colour of the second generation flowers?



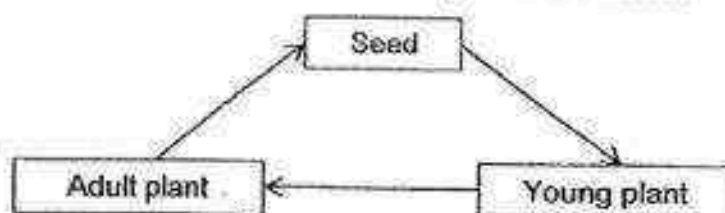
5. The diagram shows a cross-section of a flower.



Based on the diagram, in which of the labelled parts will the male reproductive cell be released from to fuse with the egg cell?

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

6. The diagram below shows the development of Plant X.

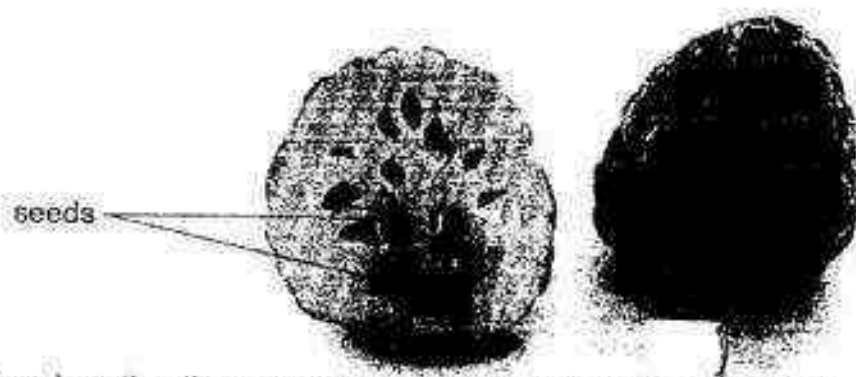


Which of the following statements about Plant X are definitely correct?

- A Plant X is a flowering plant.
- B Germination has occurred for Plant X.
- C Seeds of Plant X are dispersed by explosive action.

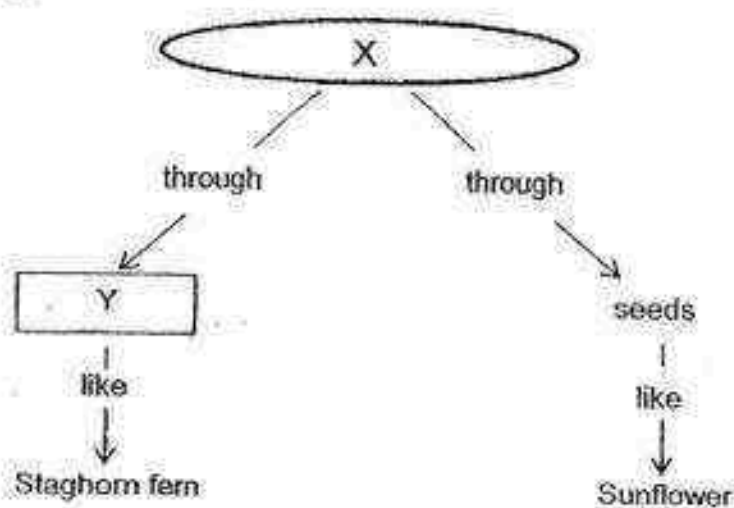
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

7. The diagram below shows the cross-section of a fruit.



Based on the diagram, which one of the following statements is definitely true about the flower from which this fruit has developed from?

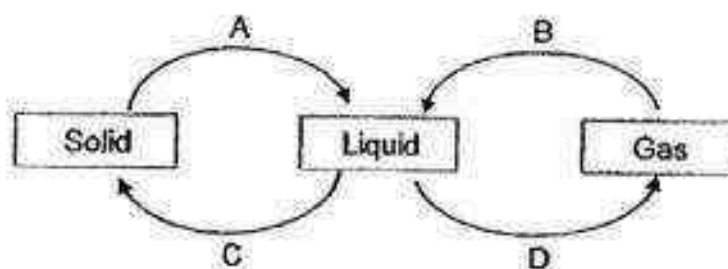
- (1) The flower has many ovaries.
  - (2) The flower has more than one ovule.
  - (3) The flower has more than one stigma.
  - (4) The flower has brightly-coloured petals.
8. Study the chart below.



Which of the following can X and Y be?

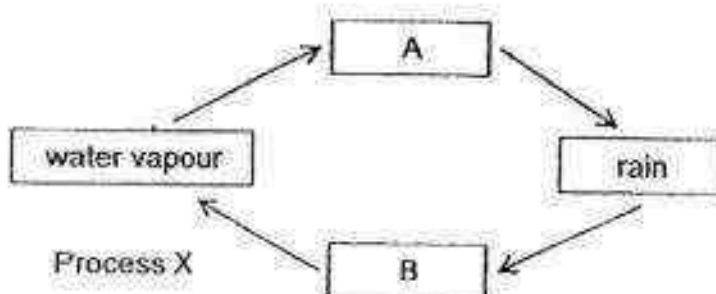
	X	Y
(1)	Plants dispersal	spores
(2)	Plants dispersal	seeds
(3)	Plants reproduction	spores
(4)	Plants reproduction	seeds

9. The diagram below shows processes A, B, C and D when water changes state.



Which one of the following correctly classifies the processes that require heat to be gained by the water?

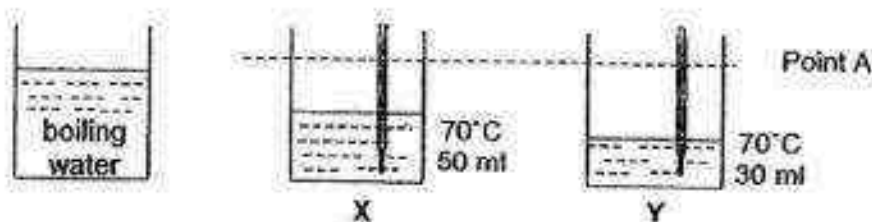
- (1) A and B only
  - (2) A and D only
  - (3) C and B only
  - (4) C and D only
10. The diagram below shows the water cycle.



Which one of the following correctly represents A, B and Process X?

	A	B	Process X
(1)	cloud	sea water	condensation
(2)	sea water	cloud	condensation
(3)	cloud	sea water	evaporation
(4)	sea water	cloud	evaporation

11. The diagram below shows three beakers of water.



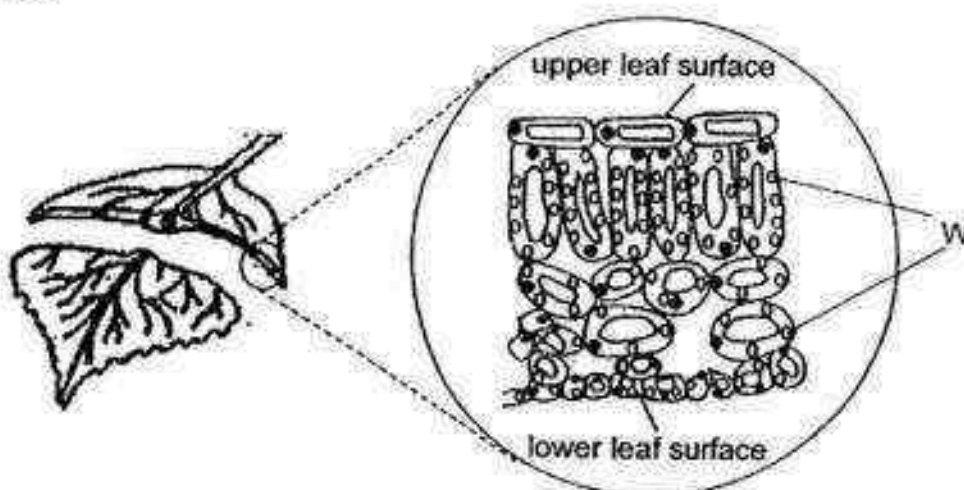
Boiling water is poured into beaker X and Y until Point A.

Which of the following statements are correct almost immediately after boiling water is poured into beakers X and Y?

- A The water in beakers X and Y has the same temperature.
  - B The water in beakers X and Y has the same amount of heat.
  - C The water in beaker X has less heat than the water in beaker Y.
  - D The water in beaker X has a lower temperature than the water in beaker Y.
- (1) A and B only  
 (2) A and C only  
 (3) B and D only  
 (4) C and D only



12. Study the diagram below which shows a leaf and the cross-section through the leaf.



The number of part W is not the same on the upper and underside of the leaf.

Which of the following statement(s) is/are true with the different number of part W distributed throughout the leaf?

- A The upper leaf surface will trap more light than the lower leaf surface.
- B The upper leaf surface will be darker green than on the lower leaf surface.
- C The upper leaf surface will swell and wilt faster than the lower leaf surface.

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

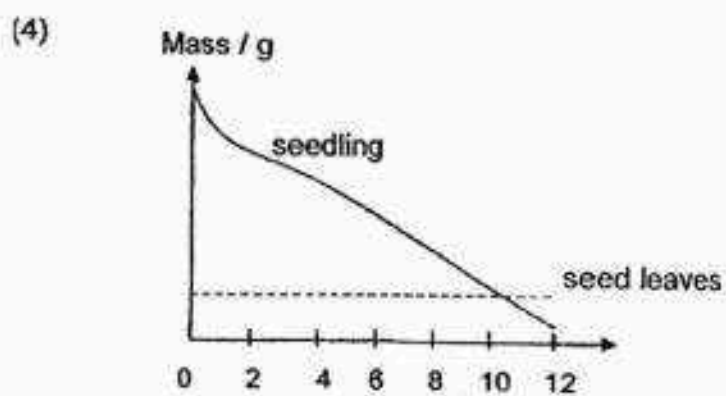
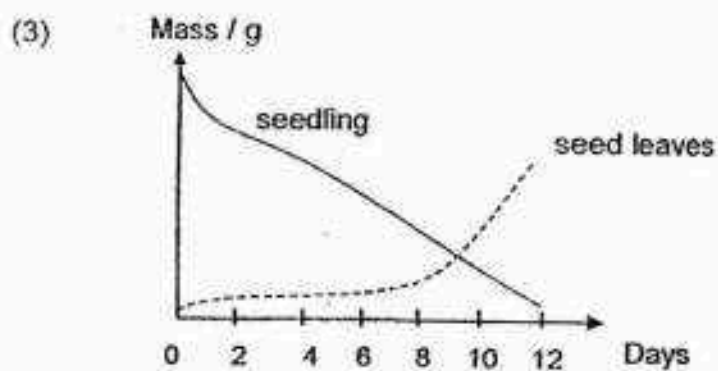
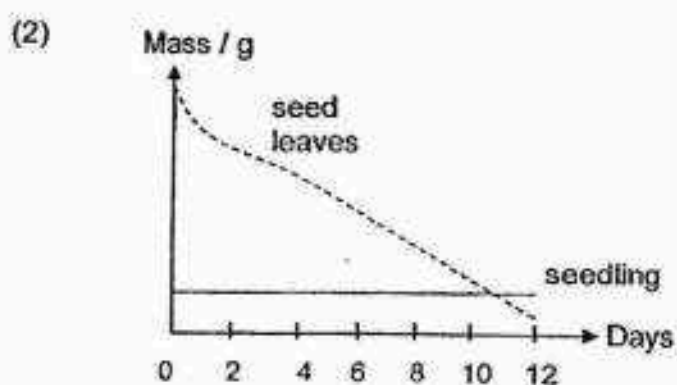
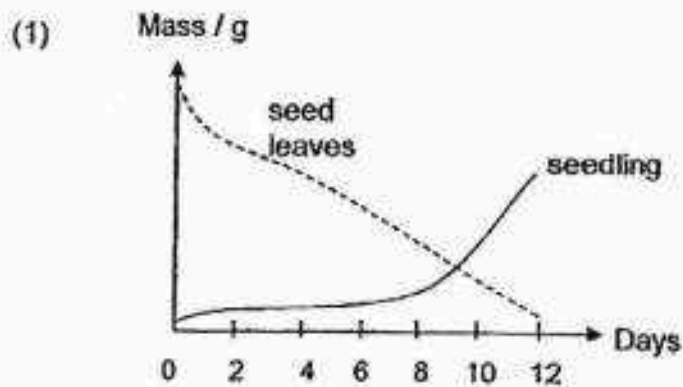
13. Ali was given 3 cells, A, B and C, from different parts of a plant and an animal. He observed the cells under the microscope and recorded his observations in the table below. A tick (✓) indicates that the part is present in the cell.

	Cell A	Cell B	Cell C
<b>Nucleus</b>	✓	✓	✓
<b>Cell Wall</b>		✓	✓
<b>Cytoplasm</b>	✓	✓	✓
<b>Chloroplast</b>			✓
<b>Cell membrane</b>	✓	✓	✓

Which one of the following classifications is correct?

	Animal cell	Plant cell
(1)	A and B	C
(2)	C	A and B
(3)	A	B and C
(4)	B and C	A

14. Which one of the graphs below shows the mass of the growing seedling and the mass of the seed leaves?



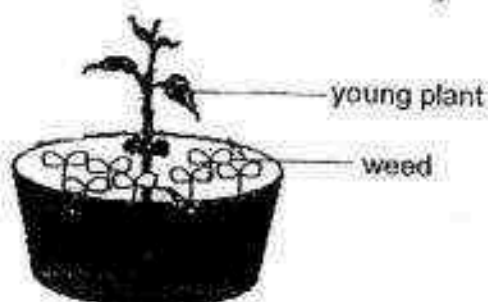
15. Plant Y produces fruits that sometimes get caught in an animal's mouth. The animal may die of starvation because it is not possible to get the fruits out of the mouth.

Which of the following statement(s) about the fruit is/are most likely to be true?

- A The fruits are big in size.
- B The fruits most likely have hooks.
- C The seeds in the fruits are most likely dispersed by wind.
- D The seeds in the fruits are most likely dispersed by animals.

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

16. The diagram shows a young plant surrounded by weeds.

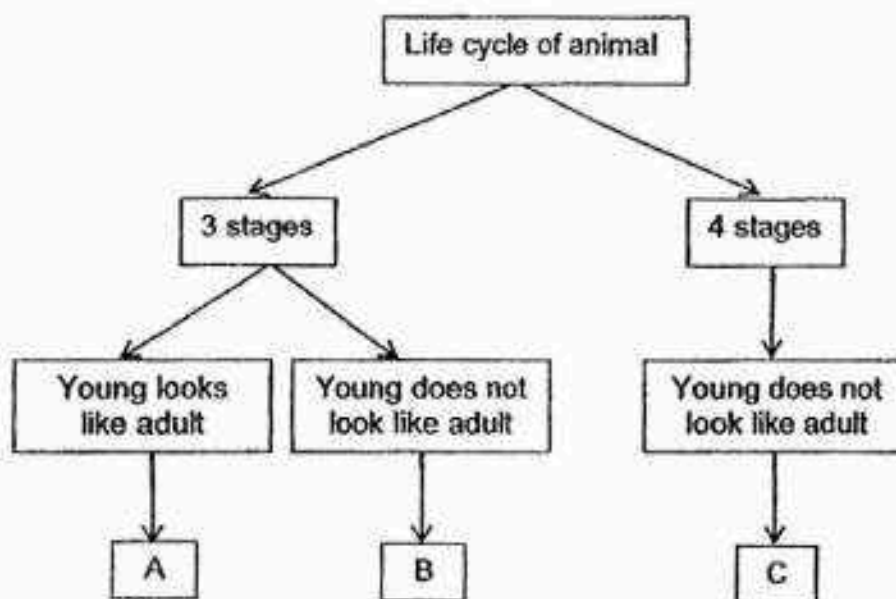


Which of the following do the young plant need to compete with the weeds?

- A Food
- B Water
- C Space
- D Nutrients

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

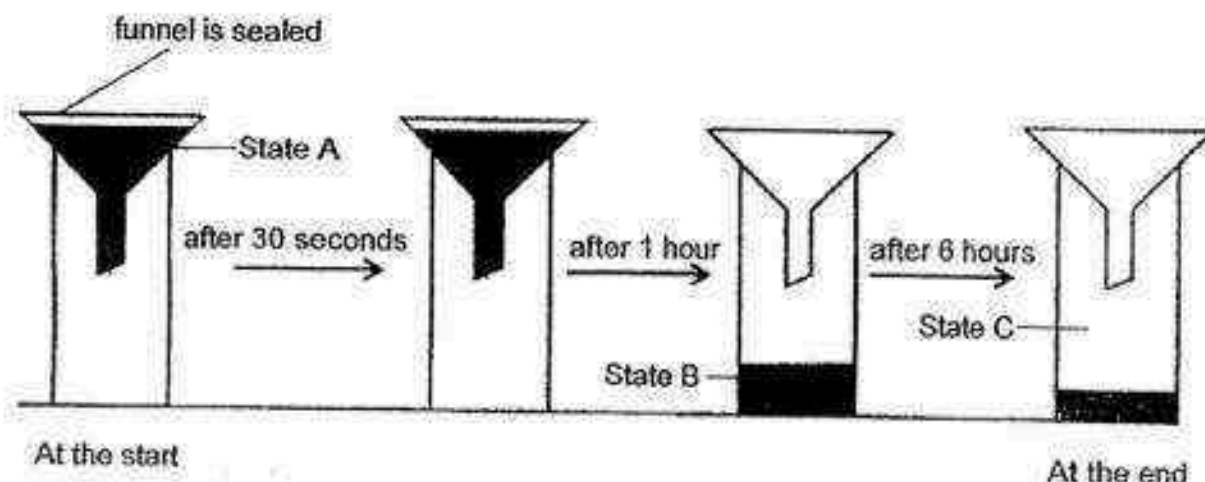
17. Study the diagram below.



Which one of the following correctly represents A, B and C?

	A	B	C
(1)	grasshopper	frog	beetle
(2)	beetle	grasshopper	frog
(3)	beetle	frog	grasshopper
(4)	frog	beetle	grasshopper

18. Wei Meng had a set-up that contained Substance X in a particular state at the beginning. He placed the set-up near a window and observed the change in state of substance X as shown the diagram below.



Based on the observations, which of the following statements are correct?

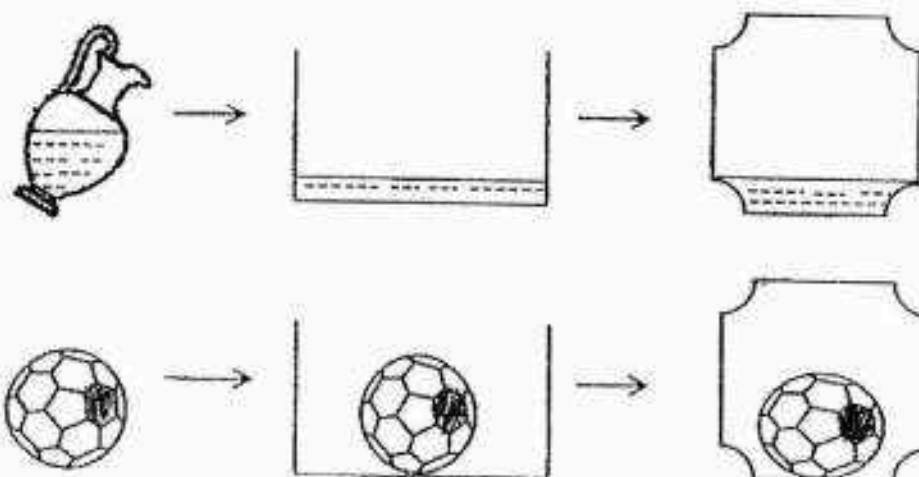
- A Substance X in states A and B has mass, but does not have mass in state C.
- B Substance X in state A has a definite shape, but does not have definite shape in states B and C.
- C Substance X in state C can be compressed, but cannot be compressed in states A and B.

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

19. Ann is trying to conduct an investigation. Which one of the following shows the correct sequence of steps for conducting an investigation?

(1)	<table><tr><th>Steps</th><th>Action to be taken</th></tr><tr><td>1.</td><td>State an aim</td></tr><tr><td>2.</td><td>Conduct experiment</td></tr><tr><td>3.</td><td>Make a conclusion</td></tr><tr><td>4.</td><td>Analyze data</td></tr></table>	Steps	Action to be taken	1.	State an aim	2.	Conduct experiment	3.	Make a conclusion	4.	Analyze data
Steps	Action to be taken										
1.	State an aim										
2.	Conduct experiment										
3.	Make a conclusion										
4.	Analyze data										
(2)	<table><tr><th>Steps</th><th>Action to be taken</th></tr><tr><td>1.</td><td>Make a conclusion</td></tr><tr><td>2.</td><td>Conduct an experiment</td></tr><tr><td>3.</td><td>State an aim</td></tr><tr><td>4.</td><td>Analyze data</td></tr></table>	Steps	Action to be taken	1.	Make a conclusion	2.	Conduct an experiment	3.	State an aim	4.	Analyze data
Steps	Action to be taken										
1.	Make a conclusion										
2.	Conduct an experiment										
3.	State an aim										
4.	Analyze data										
(3)	<table><tr><th>Steps</th><th>Action to be taken</th></tr><tr><td>1.</td><td>Make a conclusion</td></tr><tr><td>2.</td><td>State an aim</td></tr><tr><td>3.</td><td>Analyze data</td></tr><tr><td>4.</td><td>Conduct an experiment</td></tr></table>	Steps	Action to be taken	1.	Make a conclusion	2.	State an aim	3.	Analyze data	4.	Conduct an experiment
Steps	Action to be taken										
1.	Make a conclusion										
2.	State an aim										
3.	Analyze data										
4.	Conduct an experiment										
(4)	<table><tr><th>Steps</th><th>Action to be taken</th></tr><tr><td>1.</td><td>State an aim</td></tr><tr><td>2.</td><td>Conduct an experiment</td></tr><tr><td>3.</td><td>Analyze data</td></tr><tr><td>4.</td><td>Make a conclusion</td></tr></table>	Steps	Action to be taken	1.	State an aim	2.	Conduct an experiment	3.	Analyze data	4.	Make a conclusion
Steps	Action to be taken										
1.	State an aim										
2.	Conduct an experiment										
3.	Analyze data										
4.	Make a conclusion										

20. Sandy put some water and a ball into two containers of different shapes.



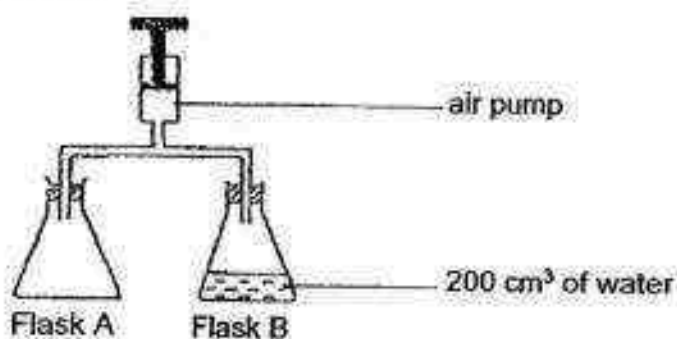
Based on the diagrams, what observation(s) can be made about the ball and the water?

- A The ball has more mass than the water.
- B The ball has a definite shape but the water does not have a definite shape.
- C The ball has a definite volume but the water does not have a definite volume.

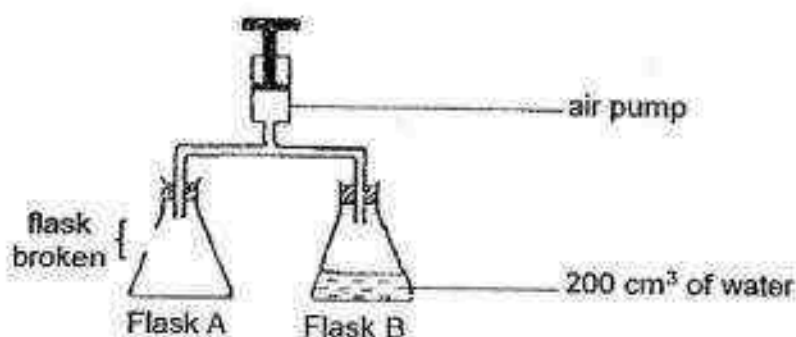
- (1) A only
- (2) B only
- (3) B and C only
- (4) A, B and C only



21. Two  $400 \text{ cm}^3$  conical flasks A and B are joined to an air pump as shown in the diagram below.



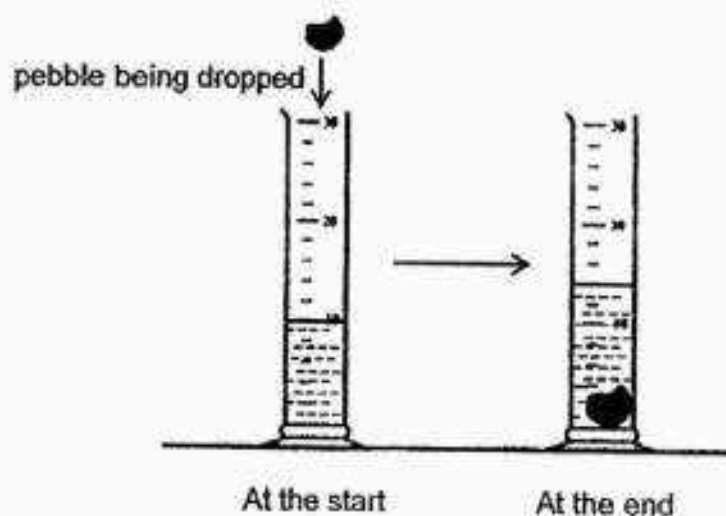
The handle of the air pump is pushed down twice, pushing in  $50 \text{ cm}^3$  of air with each pumping action.



If a hole is made at the side of Flask A, what is the volume of air in each flask at the end of the experiment?

	Flask A ( $\text{cm}^3$ )	Flask B ( $\text{cm}^3$ )
(1)	700	200
(2)	500	400
(3)	400	400
(4)	400	200

22. An activity is being carried out.

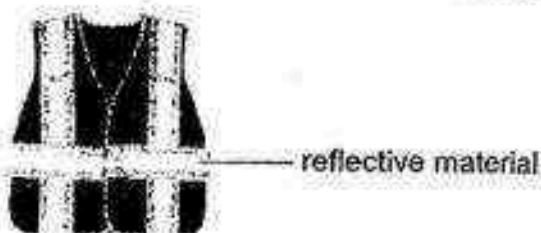


Which of the following statement(s) is/are true of the above activity?

- A The activity is to find the mass of the pebble.
- B The activity is to find the shape of the pebble.
- C The activity is to find the volume of the pebble.

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

23. The diagram below shows the safety vest for road construction workers.



A manufacturer wants to make a safety vest to ensure that the workers are easily seen by drivers especially at night and that the workers will not feel tired wearing the vest for long hours. Information on the materials are collected.

The table below shows the amount of light that is reflected off materials P, Q, R and S. It also shows the mass of each material of equal size.

Which material P, Q, R or S is best suited to make the vests?

	Material	Amount of light reflected when a torch is shone on it (lux)	Mass of the material (g)
(1)	P	450	150
(2)	Q	150	150
(3)	R	450	500
(4)	S	0	50

24. Siew Fang used an umbrella to shade herself from the Sun.

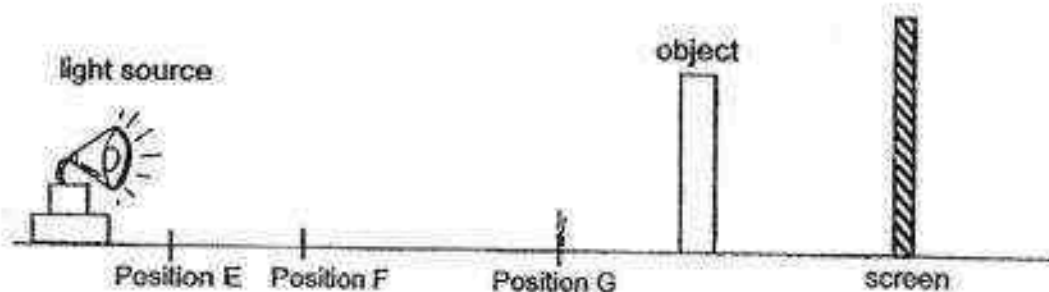


Which of the following statement(s) is/are correct?

- A The shade is the shadow of Siew Fang.
- B The shade is the shadow of the umbrella.
- C The material of the umbrella is opaque.
- D The material of the umbrella is transparent.

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

25. Hui Min conducted an experiment to find out how the distance between an object and a light source affects the height of the shadow.

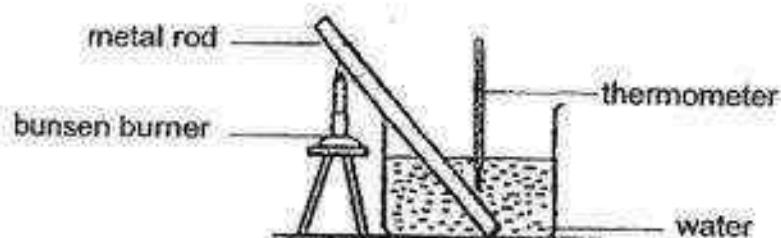


She placed the light source at different positions, E, F and G, and measured the respective heights of the shadow cast on the screen.

Which one of the following most likely shows the height of the shadow formed?

Height of shadow formed (cm)			
	Position E	Position F	Position G
(1)	20	15	5
(2)	5	15	20
(3)	20	19	18
(4)	18	19	20

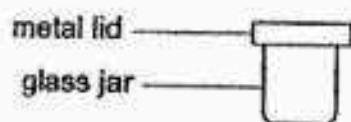
26. Study the experimental set-up below.



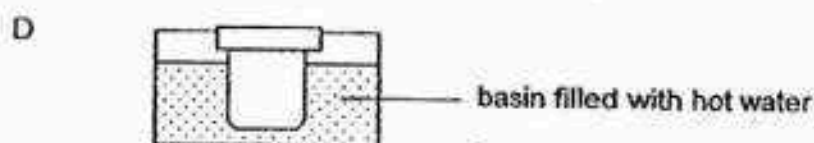
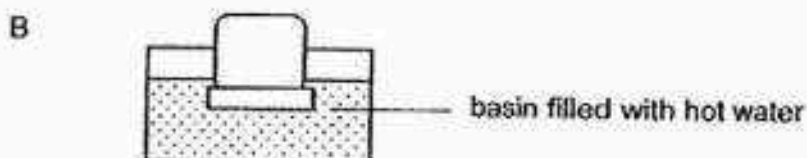
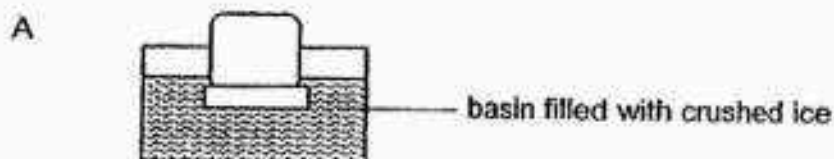
How does the heat flow?

- (1) Bunsen burner → rod → thermometer → water
- (2) Bunsen burner → rod → water → thermometer
- (3) Water → rod → bunsen burner → thermometer
- (4) Thermometer → water → rod → bunsen burner

27. Mrs Lee could not open the metal lid of a jar.



In the diagrams below, which method(s) will make it easier for her to open the jar?



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

28. Four cups are filled with equal amount of water at  $90^{\circ}\text{C}$ . Each cup is of the same shape and size but is made of different materials. The four cups are left at the same place and the time taken for the water in the cup to reach the room temperature is recorded.

Material the cup is made of	Time taken for water to reach room temperature (min)
A	10
B	20
C	60
D	80

Based on the results shown above, which material is best for making a cup to keep cold drinks cool for the longest time?

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

End of Section A



**NAN HUA PRIMARY SCHOOL**  
**CONTINUAL ASSESSMENT 1 2016**  
**PRIMARY FIVE**  
**SCIENCE**

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

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

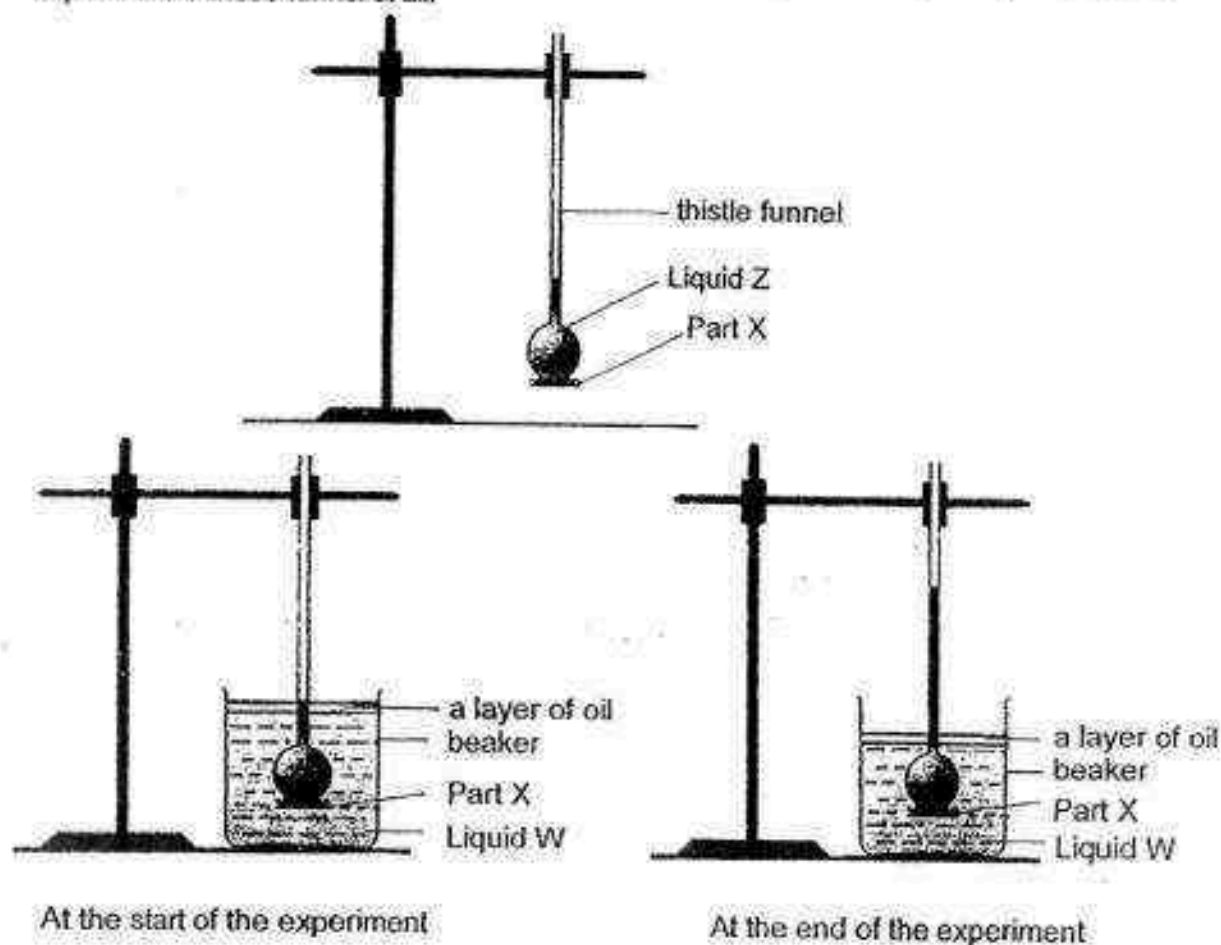
MARKS
44

**Section B: (44 marks)**

Write your answers to questions 29 to 40.

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

29. An experiment is set up with Part X showing the function of a specific cell part. Liquid Z did not drip out of the thistle funnel at all.



(Go on to the next page)

- (a) At the end of the experiment, why did the water level of Liquid W in the beaker drop? Explain your answer. [2]

---

---

---

- (b) Which part of the cell does part X represent? [1]

---

---

- (c) Why is the layer of oil added to the set-up? [1]

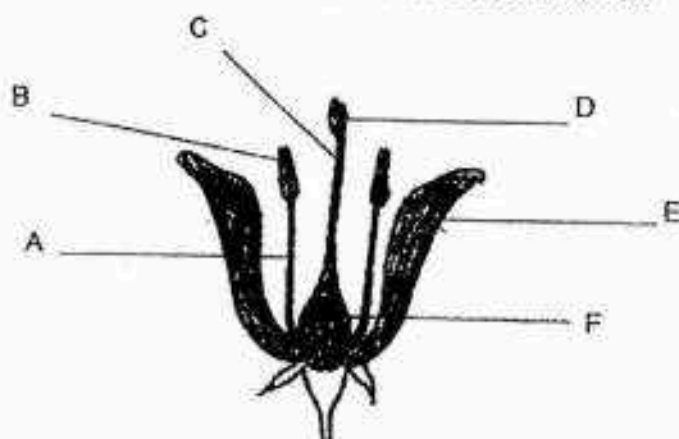
---

---

Score	<div>4</div> 4
-------	----------------



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



- (a) Name the labelled part that is needed to attract insects to the flowers. [1]

\_\_\_\_\_

- (b) Explain how the flower and the insect rely on each other [2]

\_\_\_\_\_

\_\_\_\_\_

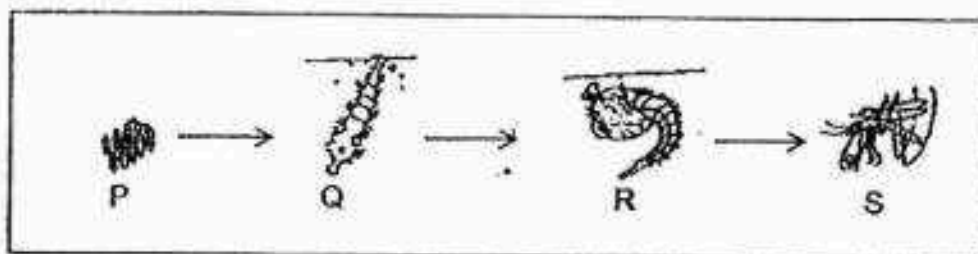
- (c) Which labelled part(s) will drop off after the fruit is formed? [1]

\_\_\_\_\_

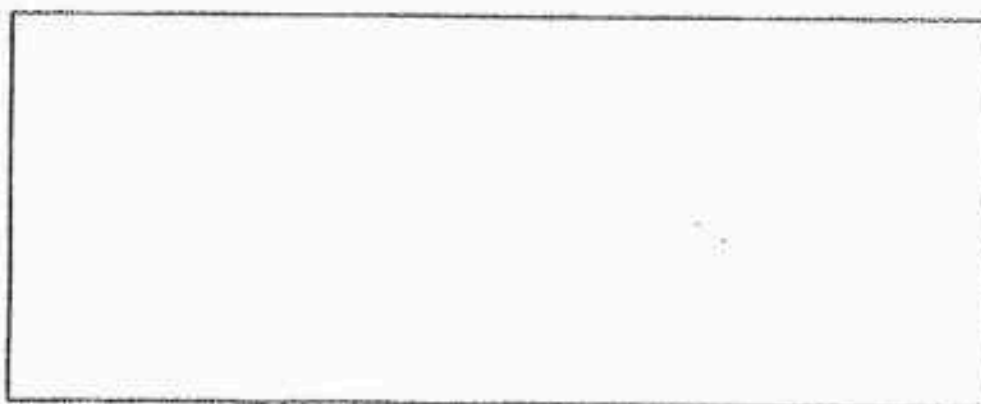
\_\_\_\_\_

Score	4
-------	---

31. Shanthi drew a diagram on the life cycle of a mosquito. However, it was not correctly drawn as it did not show cycle of life.



- (a) Construct the correct life cycle of the mosquito using the stages, P, Q, R and S, in the box below. [2]



- (b) In the life cycle of the mosquito, how many stages are spent in water? [1]

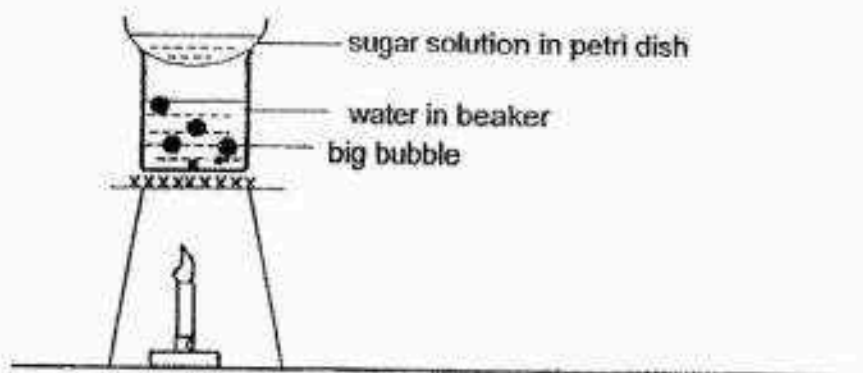
---



---

Score	3
-------	---

32. A sugar solution, formed by mixing sugar in water, is given to Cindy. She has to get sugar crystals from the solution. She set up an experiment as shown below.



Describe in details how the beaker of water helps Cindy to get the sugar crystals? [3]

---

---

---

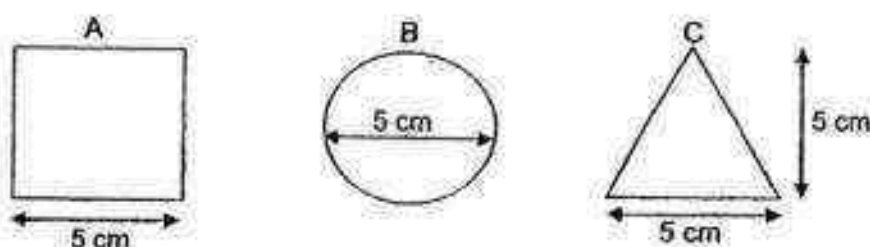
---

---

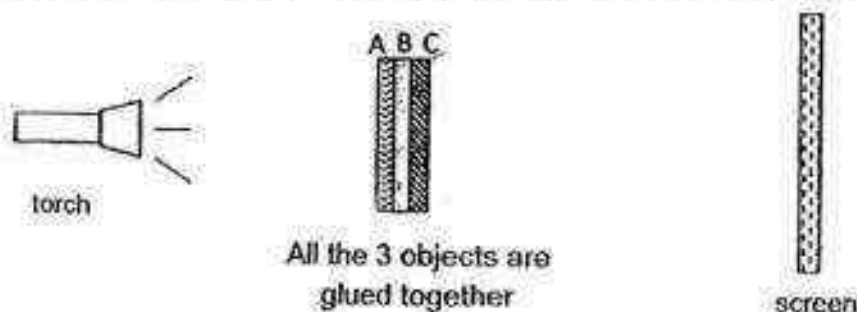
---

Score	3
-------	---

33. The diagram below shows 3 objects, A, B and C, of different materials.



An experiment is conducted to find out how the materials will affect the shadow formed. Light is shown on A, B and C to see what shadow will be formed.



The shadow formed is shown below.



- (a) Based on the experiment, put a tick to indicate which statement about the material for each of the objects is true, false or not possible to tell. [2]

	Statement	True	False	Not possible to tell
(i)	Object A could be made of clear glass.			
(ii)	Object B is transparent.			
(iii)	Object C is opaque.			
(iv)	Object B is definitely made of wood.			

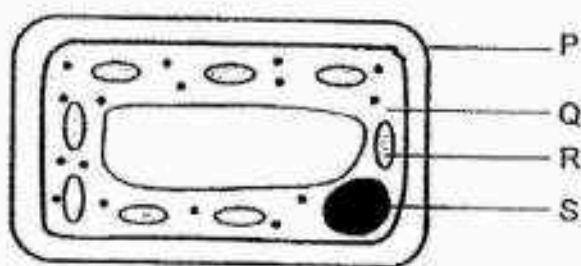
- (b) Based on this experiment, state the property of the material that allows the lighter part of the shadow to be formed. [1]

---



---

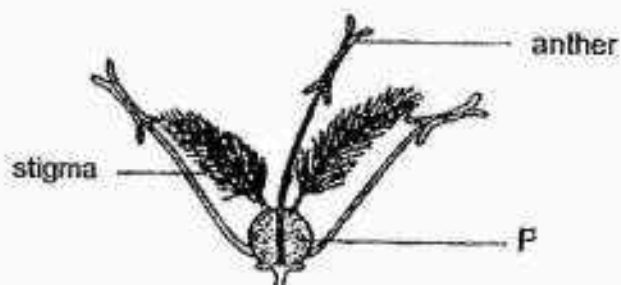
34. The diagram shows a plant cell.



- (a) Which two parts are also found in animal cells? [2]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) Which part(s) is/are definitely found in all plant cells but not in the animal cells? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) State the function of the part(s) mentioned in part (b). [1]
- \_\_\_\_\_
- \_\_\_\_\_

Score	4
-------	---

35. The diagram below shows a wind pollinated flower.



- (a) Name part P [1]

---

- (b) State the main function of P [1]

---



---

- (c) How does the position of the anther above the stigma helps in pollination? [1]

---



---

- (d) Name the process that comes immediately after pollination. [1]

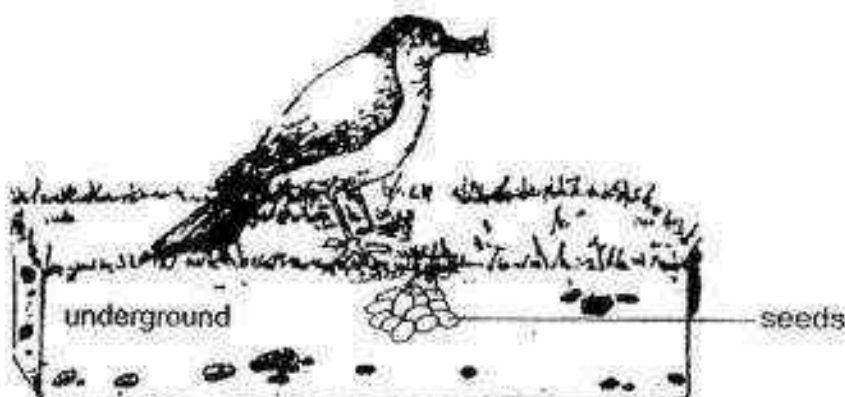
---



---

Score	4
-------	---

36. The diagram below shows seeds being stored by some types of bird especially during winter. Winter is the coldest season of the year, the temperature can dropped below  $0^{\circ}\text{C}$ .



- (a) Give a reason why it is necessary for the birds to dig out the stored seeds from underground for survival. [1]

---

- (b) Some of the stored seeds not dug out are left in the ground until winter is over. In spring time, when the temperature increases, young plants are found at the spot where the seeds are stored. Explain what had happened. [2]

---



---



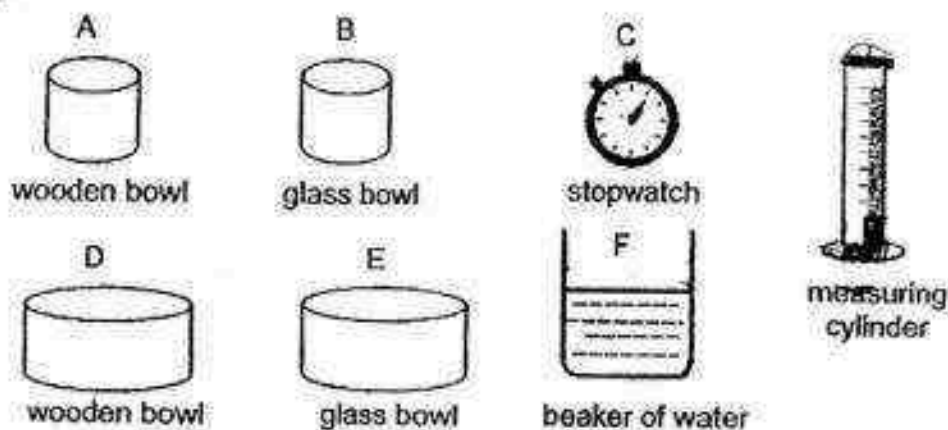
---



---

Score	3
-------	---

37. An experiment is carried out to find out how the exposed surface area will affect the rate of evaporation of water. Below are the only laboratory apparatus that are provided.



- (a) Besides the measuring cylinder, which of the following apparatus should be used? [1]

---



---

- (b) State 2 constant variables. [1]

---



---

- (c) What data should be collected for the experiment? [1]

---



---

- (d) What conclusion can most likely be drawn from the experiment? [1]

---

- (e) What is the purpose of using the measuring cylinder at the end of the experiment? [1]

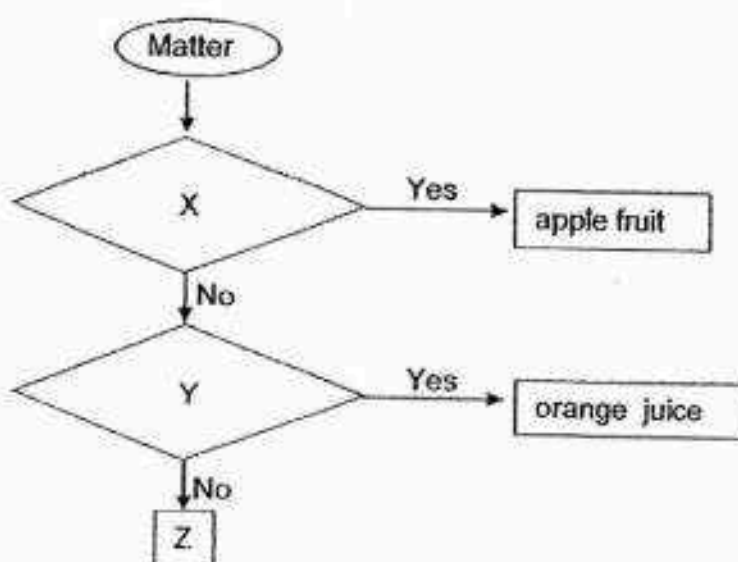
---



---



38. Apple fruit, orange juice and Z are examples of matter in different states. The flow chart of the three states of matter is shown below.



- (a) X and Y are questions on the properties of matter. What could questions X and Y be?

[2]

X: \_\_\_\_\_

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

- (b) State an example that can represent Z.

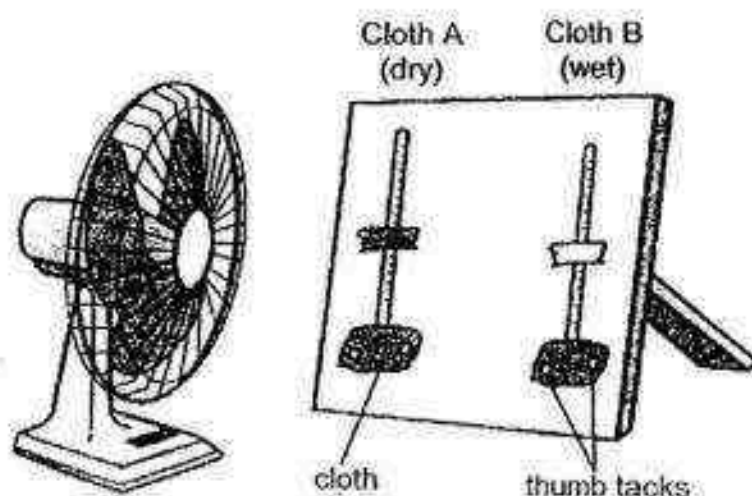
[1]

\_\_\_\_\_

Score	3
-------	---

39. An experiment was conducted to find out if the temperature of an object will drop with water surrounding it.

The set-up for the experiment is shown below. Cloth A was dry while cloth B was wet. An electric fan was placed in front of the thermometers. The fan was turned on and the temperature readings on each thermometer were recorded at fixed duration.



Cloth	Temperature ( $^{\circ}\text{C}$ )			
	1 <sup>st</sup> reading	2 <sup>nd</sup> reading	3 <sup>rd</sup> reading	Average
A	29	30	30	29.5
B	28	26	26	26.6

- (a) What is the purpose of turning on the fan?

[1]

---



---

- (b) Why is there a need to take three readings for each cloth?

[1]

---

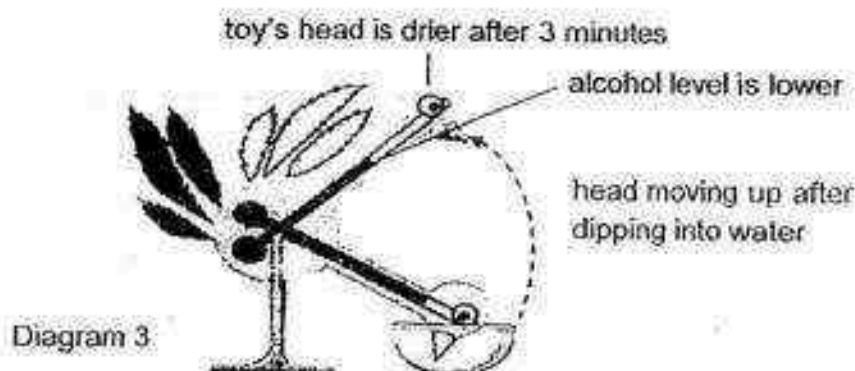
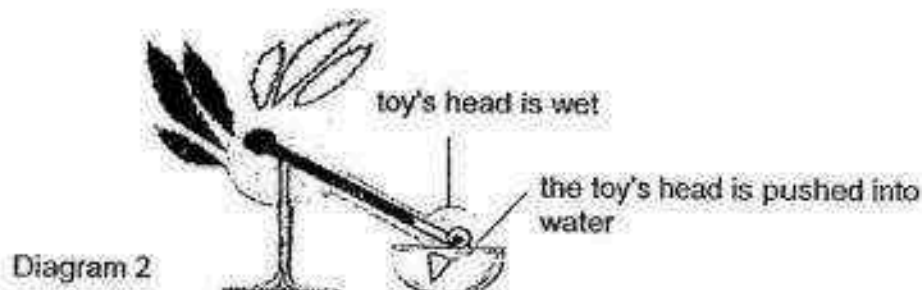
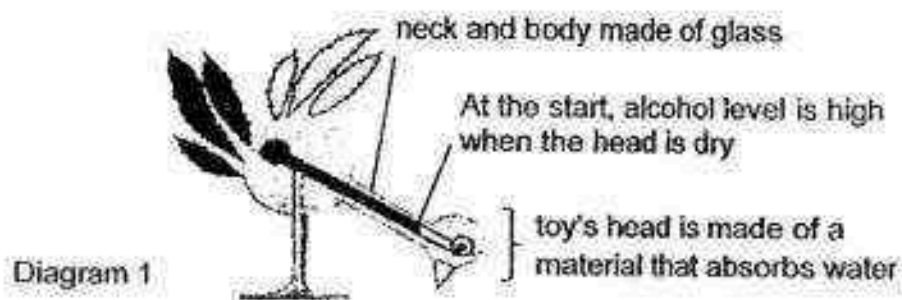


---

(Go on to the next page)

Score	
-------	--

The diagram below shows a toy bird dipping into water.



(c) Name the process that causes the temperature reading to drop for cloth B. [1]

---

(d) Explain how the alcohol level becomes lower after 3 minutes. [2]

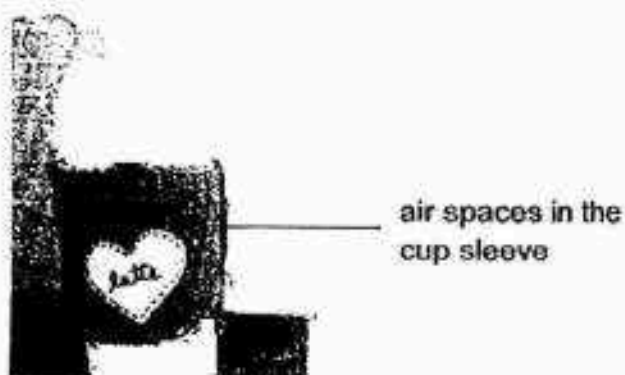
---



---

Score	3
-------	---

40. The woollen cup sleeve is used for hot drinks as shown below.



- (a) Explain how air spaces throughout the cup sleeve help to keep drinks warm? [2]

---

---

---

---

- (b) How does the cup sleeve made it easier for the hand to hold the hot drinks? [1]

---

---

End of paper

EXAM PAPER 2016 (P5)

SCHOOL : NAN HUA

SUBJECT : SCIENCE

TERM : CA1

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

29)a)Part X allows the thistle funnel to let liquid W pass through and do not let both liquid get out.

b)Cell membrane.

c)To prevent the evaporation of liquid W.

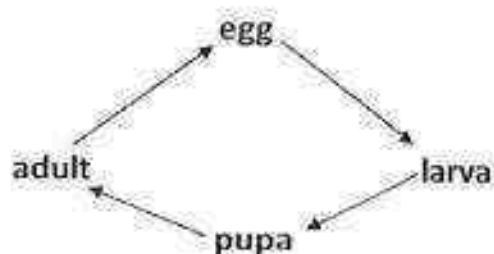
30)a)Petals.

b)The insects come and collect nectar from one flower and touches the pollen grains from the anther.

When the insects collect nectar from another flower, the pollen grains on the leg stick onto the stigma, creating the pollination stage.

c)Part B, C, D, E and A.

31)a)



b) 3 stages are spent in water.

32) The water in the beaker will boil. The steam loses heat to the cooler underside of the petri dish. The water in the sugar solution will gain heat from the petri dish and evaporate.

33)a) i) T    ii) F    iii) F    iv) Not

b) Object C is translucent and allows little light to pass through.

34)a) Part S and Part Q.

b) Part P.

c) Not all plant cells have part R as not all plant cells make food for the plant but all plant cells have parts P as they have a regular shape.

35)a) Ovary.

b) Part P produces the egg. Or Part P contains ovules. Or Part P produces ovules.

c) The wind can easily blow the pollen grains to the stigma.

When there is no wind the pollen grain can drop on the stigma.

36)a) To have food for survival during the winter as to live.

b) When winter is over, the seed has water, air and warmth for germination and the suitable temperature for growth.

37)a) Wooden bowl A, wooden bowl D, stopwatch and a beaker of water.

b) The amount of water poured and the seconds counted.

c) Amount of water left on the bowl.

37)d)The greater the exposed surface area, the greater the rate of evaporation of water.

e)To measure the amount of water left in each wooden bowl.

38)a)X: Does it have definite shape.

Y: Does it have a definite volume.

b)Oxygen.

39)a)To evaporate the water faster.

a)To provide wind for the water to evaporate.

b)To get a more reliable answer and average answer.

c)Evaporation.

d)The alcohol loses heat to the water and contracts from the water which gains heat.

40)a)Air is a poor conductor of heat the hot drinks will lose heat slower to the surrounding.

b)The cup sleeve is a poor conductor of heat and do not gain heat easily.



PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
**CONTINUAL ASSESSMENT 1**

**PRIMARY 5  
SCIENCE**  
3<sup>rd</sup> March 2016

(BOOKLET A)

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

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

Additional Material(s): Optical Answer Sheet (OAS)

Total time for Booklets A and B: 1 h 45 mins

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

There are a total of **19** pages in this booklet, excluding the cover page.



For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (56 marks)

1. Three classmates, Debbie, Kelvin and Samantha, made some observations about the living things in Group Z.

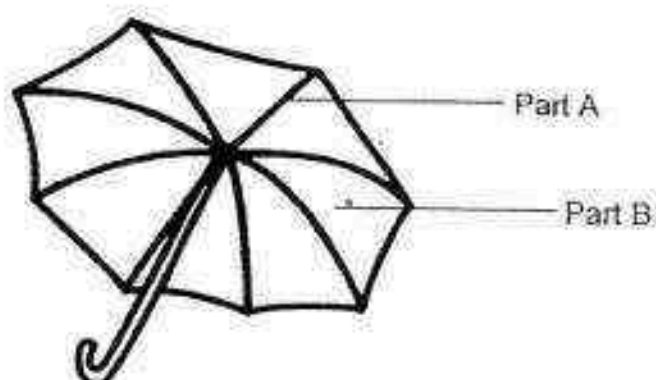
Debbie : Some of the living things in Group Z can make us sick.

Kelvin : Some of the living things in Group Z can be used to make yoghurt.

Samantha: These living things are very small and can only be seen under a microscope.

What could the living things in Group Z be?

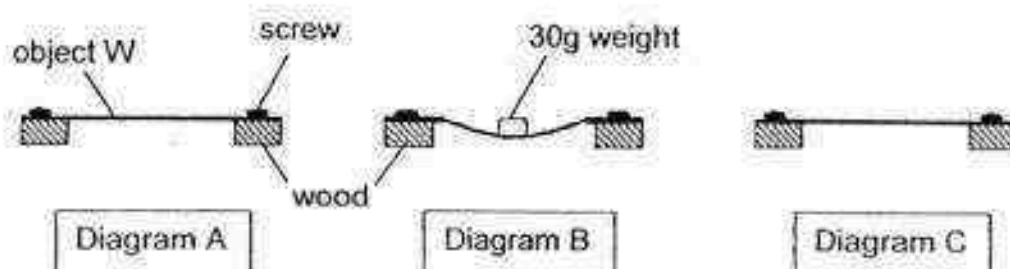
- (1) Fungi
  - (2) Mould
  - (3) Bacteria
  - (4) Mushrooms
2. The diagram below shows a fully opened umbrella.



The umbrella is able to keep its shape because \_\_\_\_\_.

- (1) both Part A and Part B are soft
- (2) both Part A and Part B are hard
- (3) Part A is flexible and Part B is strong
- (4) Part A is strong and Part B is flexible

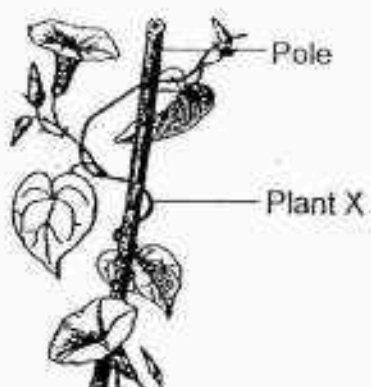
3. Pei Ying placed an object W on two blocks of wood and tightened it with screws as shown in Diagram A. She then put a 30g weight at the center of the object W and observed that object W bent as shown in Diagram B. When she removed the 30g weight, object W returned to its original shape as shown in Diagram C.



Which property of the material that is used to make object W was Pei Ying trying to find out?

- A Strength
  - B Flexibility
  - C Waterproof
  - D Transparency
- (1) C only
- (2) A and B only
- (3) B and D only
- (4) A, B and C only

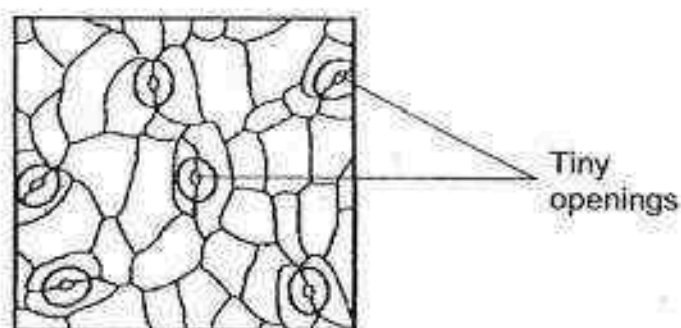
4. Study the picture below.



Which of the following are characteristics of Plant X?

- A It has flowers.
  - B It has a weak stem.
  - C It can stand upright on its own.
  - D It has leaves to make food.
- 
- (1) A and B only
  - (2) A, B and D only
  - (3) A, C and D only
  - (4) A, B, C and D

5. The diagram below shows tiny openings found on a plant part.

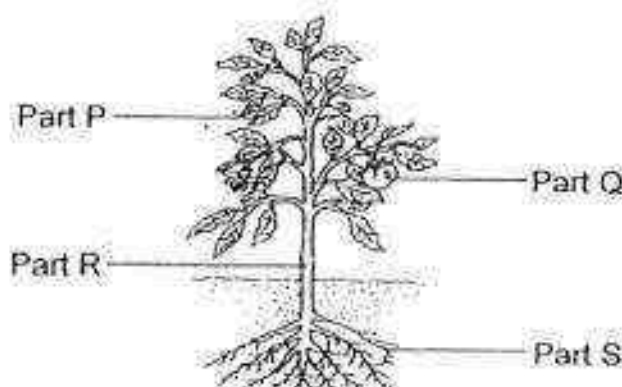


Which of the following statements about these tiny openings is/are true?

- A They are only found in the roots.
- B They help plants to take in and give out gases.
- C They are found only on leaves that are green in colour.

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

6. The diagram below shows a plant with parts labelled P, Q, R and S.



Which of the following statements about the plant parts is not correct?

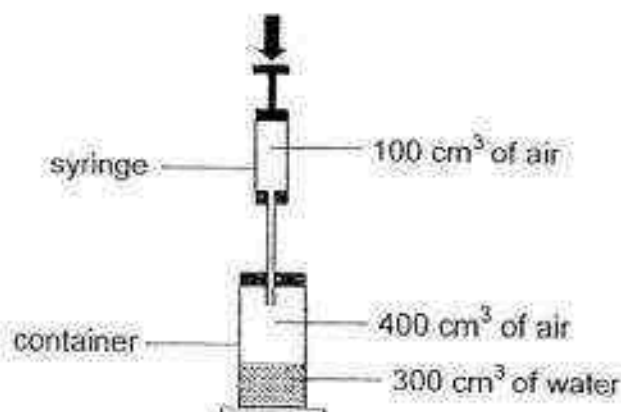
- (1) Part Q develops from a flower.
- (2) Part P makes food for the plant.
- (3) Part R holds the plant firmly to the ground.
- (4) Without Part S, the plant will not be able to absorb water and minerals from the soil.

7. The table below shows some of the characteristics of four different animals, C, D, E and F.

Characteristics	Animal			
	C	D	E	F
Does it moult?	Yes	No	Yes	No
Does it have a 4-stage life cycle?	Yes	No	No	No
Does their young resemble the adult?	No	No	Yes	Yes

Based on the information in the table, which animal is a beetle?

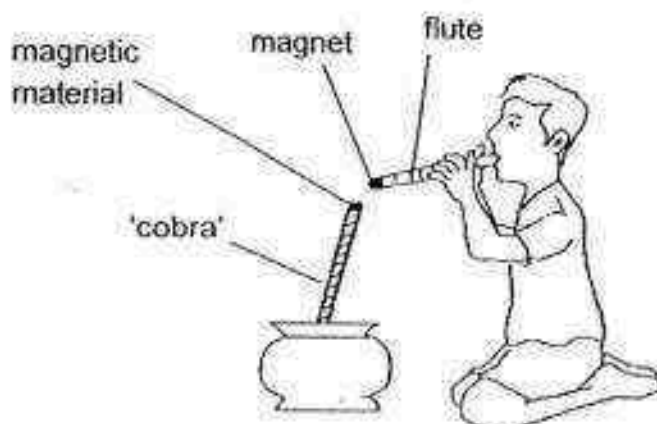
- (1) C
  - (2) D
  - (3) E
  - (4) F
8. Doreen set up an experiment as shown below. She used a container with a volume of  $700 \text{ cm}^3$ . It contained  $300 \text{ cm}^3$  of water. The syringe at the top contained  $100 \text{ cm}^3$  of air. When she pushed the syringe down all the way, all the air from the syringe went into the container.



At the end of the experiment, how much air was there in the container?

- (1)  $100 \text{ cm}^3$
- (2)  $300 \text{ cm}^3$
- (3)  $400 \text{ cm}^3$
- (4)  $500 \text{ cm}^3$

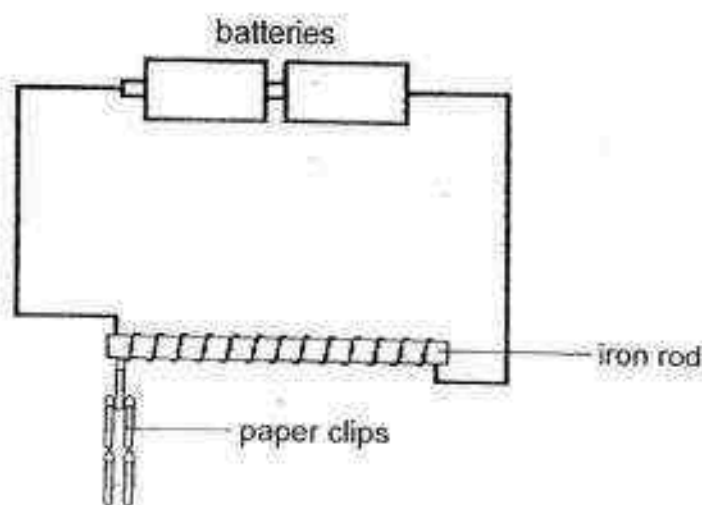
9. Zainal performed a 'magic trick' in front of his schoolmates. He made a flute with a magnet in it and a 'cobra', which is actually a piece of rope with a magnetic material attached to the end of the rope. By blowing a tune on his flute and moving, he made the 'cobra' move along with the music.



Which of the following concepts did Zainal use in his 'magic trick'?

- (1) Unlike poles of two magnets attract.
- (2) Magnetic forces can act at a distance.
- (3) Magnets attract non-magnetic materials.
- (4) Magnets always come to rest in a north-south direction.

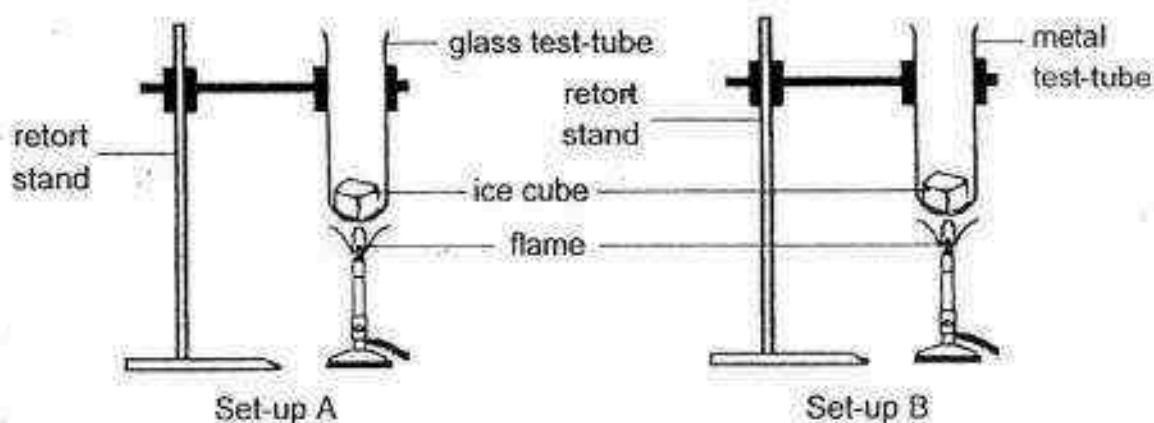
10. The diagram below shows a set-up with two batteries and an iron rod which became an electromagnet. When the electromagnet is placed near some paper clips, the paper clips are attracted to it.



What can be done to the set-up so that the electromagnet is able to attract more paper clips?

- A Add another battery
  - B Remove one battery
  - C Change the iron rod into a wooden rod
  - D Increase the number of turns of wire around the iron rod
- (1) A only
- (2) A and D only
- (3) B and C only
- (4) A, C and D only

11. Sarah set up an experiment as shown below.



After several minutes, she observed that only the ice cube in Set-up B had melted completely. Sarah then concluded that the ice cube in Set-up B melted faster because \_\_\_\_\_.

- (1) the ice cube lost heat to the surrounding air
  - (2) glass is a better conductor of heat than metal
  - (3) metal is a better conductor of heat than glass
  - (4) the ice cube gained heat from the surrounding air
12. Which of the statements about a developing baby is/are true?

- A It develops from one fertilised egg.
- B It contains genetic information from both parents.
- C It takes one year for a foetus to fully develop and to be born.
- D It receives nutrients from the mother's blood through the umbilical cord.

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



13. The diagrams below show a developing baby at different stages of growth inside the mother's womb.



A



B



C

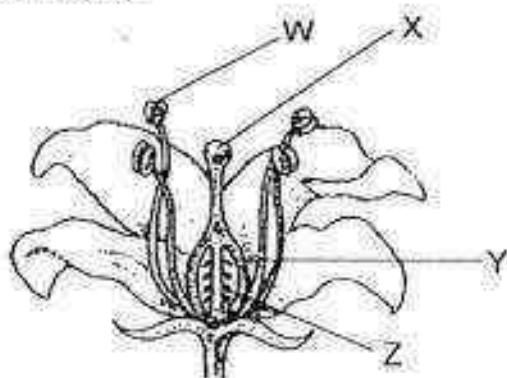


D

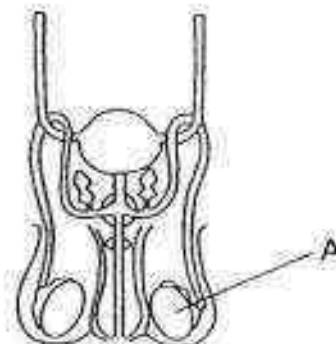
Which of the following shows the correct order of the stages of growth of the developing baby?

Stages of growth of developing baby				
(1)	A	B	D	C
(2)	A	B	C	D
(3)	B	A	C	D
(4)	B	A	D	C

14. The diagrams below show parts of the reproductive systems of a flower and a human being.



Plant reproductive system

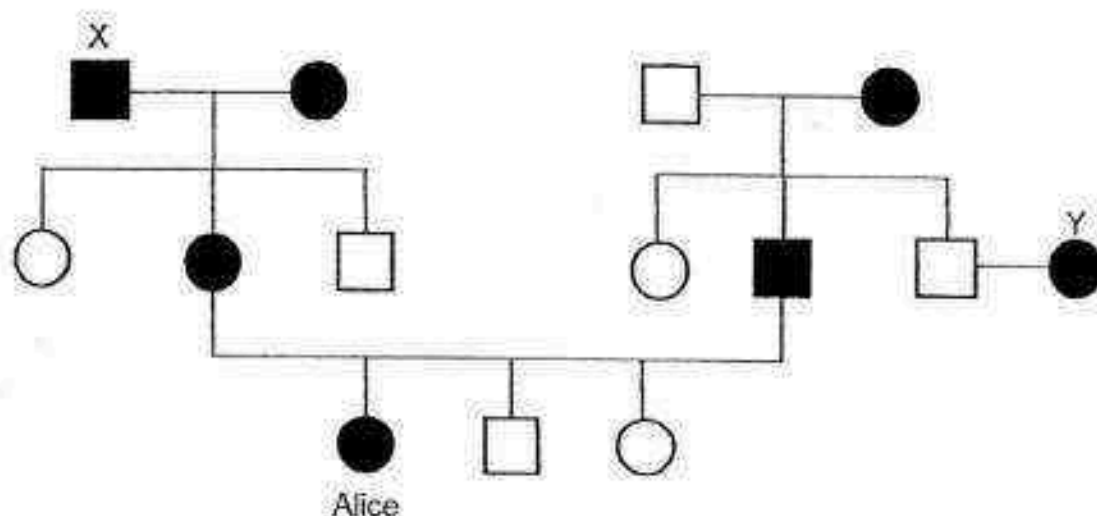


Human reproductive system

Which part of the flower (W, X, Y or Z) has the same function as the part marked A in the human reproductive system?

- (1) W
  - (2) X
  - (3) Y
  - (4) Z
15. Esther observes a plant and concludes that its flowers are pollinated by wind. Which of the following features enables Esther to arrive at her conclusion?
- (1) It has a strong smell.
  - (2) It has large pollen grains.
  - (3) It has brightly coloured petals.
  - (4) It has exposed anthers and stigma.

Study Alice's family tree below carefully and answer questions 16 and 17.



**Key**

- |                           |                           |
|---------------------------|---------------------------|
| Male with single eyelid   | Male with double eyelid   |
| Female with single eyelid | Female with double eyelid |

16. Which two of the following statements about Alice's family tree are true?

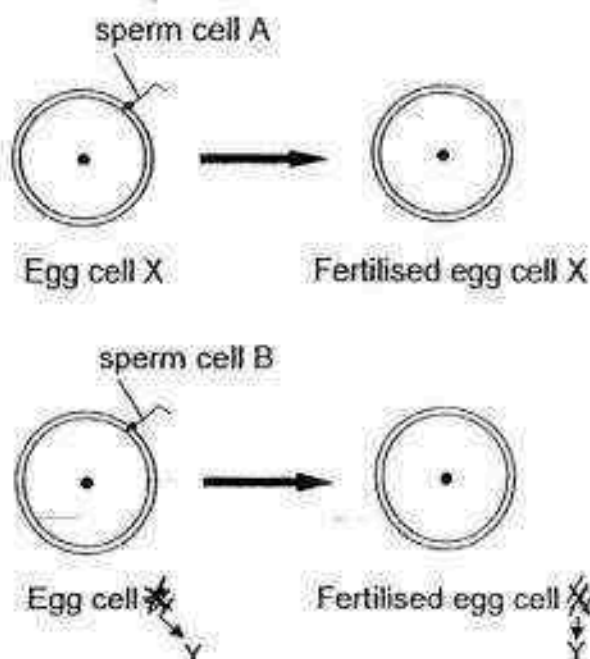
- A Y is Alice's cousin.
- B Alice has two sisters.
- C Alice's mother has two siblings.
- D X is Alice's mother's father.

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

17. How many males in Alice's family tree have double eyelids?

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

18. Two egg cells, X and Y, were released from the ovary in a female human body. Each egg cell fused with a different sperm cell, A and B, as shown in the diagram below.



Which of the following statements are true?

- A Fertilised eggs X and Y develop in the womb.
  - B Fertilised egg cells X and Y are genetically identical.
  - C The sperm cell fuses with the egg cell to become a fertilised egg cell.
- (1) A and B only  
 (2) A and C only  
 (3) B and C only  
 (4) A, B and C

19. Mr and Mrs Smith have the following features.

	<b>Eyelid</b>	<b>Eyes</b>	<b>Ears</b>	<b>Hair</b>
Mr Smith	Double	Blue	Detached	Short
Mrs Smith	Single	Brown	Detached	Short

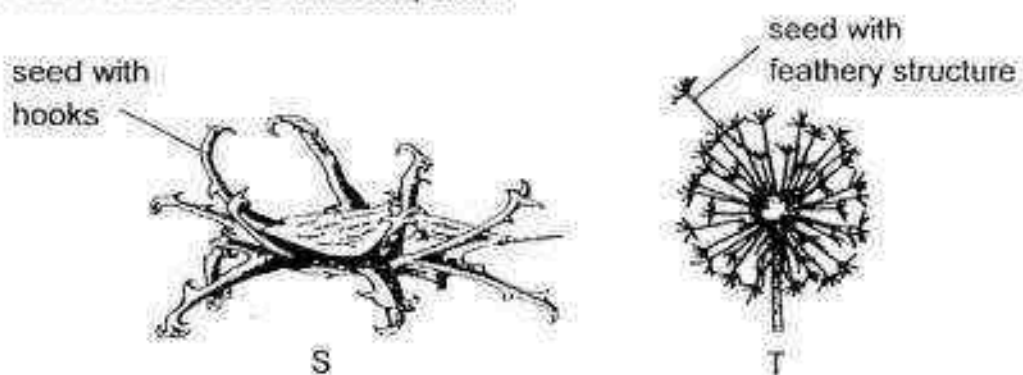
There are four children at a party and the table below contains their descriptions.

	<b>Eyelid</b>	<b>Eyes</b>	<b>Ears</b>	<b>Hair</b>
Amy	Single	Blue	Detached	Long
Britney	Double	Green	Attached	Short
Chloe	Double	Brown	Detached	Short
Dylan	Single	Brown	Detached	Short

Who is **most likely not** Mr and Mrs Smith's child?

- (1) Amy
- (2) Britney
- (3) Chloe
- (4) Dylan

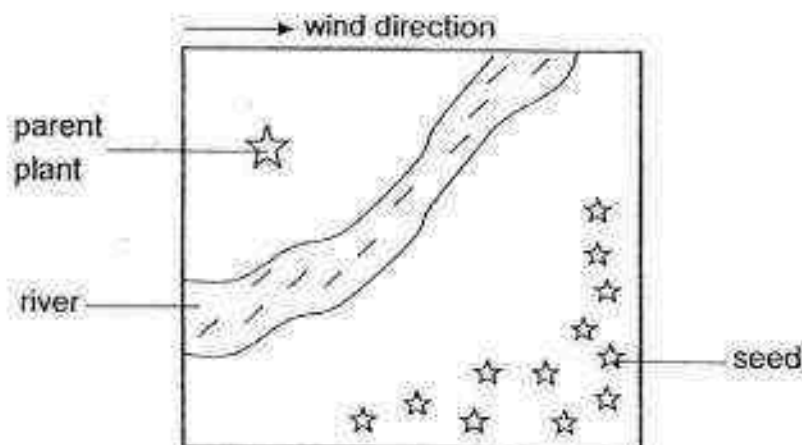
20. S and T are seeds of different plants.



Based on the information above, which of the following statements is/are definitely true about seeds S and T?

- A Both seeds S and T are dispersed by wind.
  - B Seed T is dispersed by animals but seed S is dispersed by wind.
  - C Seed S is dispersed by animals but seed T is dispersed by wind.
  - D Seed T can be dispersed further from its parent plant than seed S.
- (1) C only
- (2) A and D only
- (3) B and D only
- (4) C and D only

21. The diagram below shows the pattern of how the seeds of a plant are being dispersed within an area of  $1\text{km}^2$ .

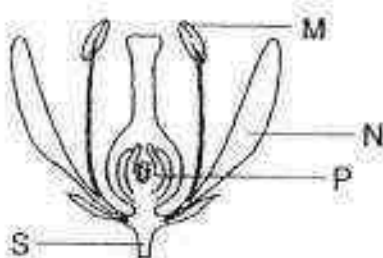


Based on the information above, what kind of characteristics would the seeds most likely possess?

- A light
- B sweet
- C fibrous husk
- D wing-like structure

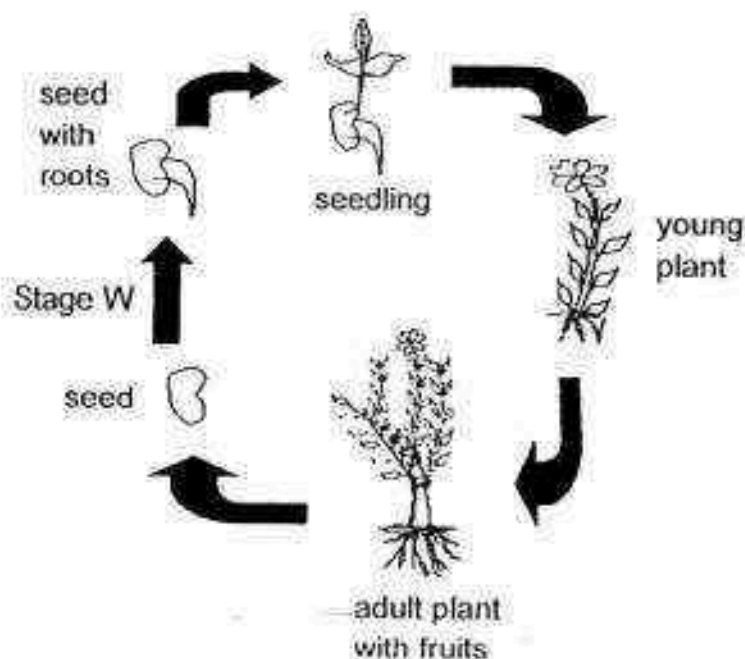
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) A, C and D only

22. After pollination, two parts of a flower that are not needed for the flower to become a fruit are \_\_\_\_\_.



- (1) M and N
- (2) M and P
- (3) S and N
- (4) S and P

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



What is the process at Stage W?

- (1) Pollination
  - (2) Fertilisation
  - (3) Germination
  - (4) Seed dispersal
24. Which one of the following plant parts does not match its function?

	Plant part	Function
(1)	Ovary	Contains the ovules
(2)	Anther	Supports the filament
(3)	Petal	Attracts insects to the flowers
(4)	Stigma	Receives pollen grains from another flower



25. John wanted to find out if a fruit is dispersed by water. Which of the following processes can he carry out?

- A Find the mass of the fruit.
- B Check if the fruit is able to float on water.
- C Examine if the fruit has fibrous husk.
- D Observe the pattern of dispersal of the fruits from its parent plant.

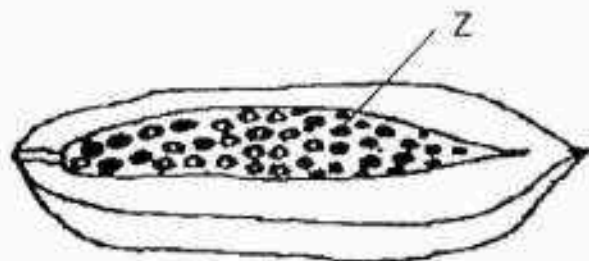
- (1) B and C only
- (2) A, B and C only
- (3) B, C and D only
- (4) A, B, C and D

26. The following statements describe how sexual reproduction takes place in plants. Arrange the following statements to show the correct sequence of the processes taking place in the flower.

- A Both the fruit and seed develop.
- B The anther releases pollen grains
- C The pollen tube grows towards the ovule.
- D Pollen grains are transferred to the stigma.
- E The male sex cell fuses with the female sex cell.

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

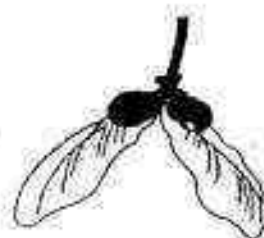
27. The diagram below shows the fruit of a papaya.



Which two of the following statements about Z are true?

- A They can grow into new plants.
  - B They help in the dispersal process.
  - C They were the pollen grains of the flower.
  - D They developed from the ovules of the flower.
- 
- (1) A and B
  - (2) A and D
  - (3) B and C
  - (4) C and D

28. Anthony wanted to find out how the wing-like structure of a fruit affects the time taken for it to reach the ground when dropped from a certain height. He used two similar fruits, A and B. Fruit A has a complete wing-like structure and fruit B has the wing-like structure cut off as shown below.



fruit A



fruit B

He repeated the experiment 3 times. The average time taken for the fruit to reach the ground when dropped from a certain height was taken and recorded in the table below. Which set of readings is most likely to be correct?

Average time taken for the fruit to reach the ground when dropped from a certain height		
	Fruit A	Fruit B
(1)	4.8s	2.6s
(2)	2.6s	4.8s
(3)	4.8s	4.6s
(4)	2.6s	6.2s



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
CONTINUAL ASSESSMENT 1**

**PRIMARY 5  
SCIENCE**

3<sup>rd</sup> March 2016

(BOOKLET B)

Name: \_\_\_\_\_ (   )

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

Parent's Signature
--------------------

Total time: 1 hour 45 minutes

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

**FOR TEACHER'S USE**

Marks (Booklet A) :	<b>56</b>
Marks (Booklet B) :	<b>44</b>
Total Marks (Booklet A & B) :	<b>100</b>

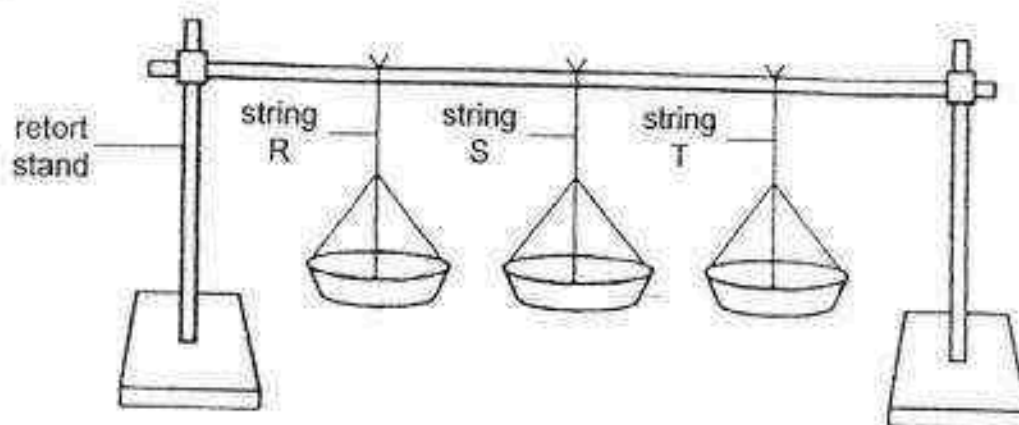
There are a total of 18 pages in this booklet, excluding the cover page.

For questions 29 to 41, write your answers in this booklet.

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

(44 marks)

29. Mr Lee set up an experiment in the Science lab to test the strength of three strings of different materials, R, S and T.



When Mr Lee put two similar weights on each pan, string S broke but strings R and T remained intact. Then Mr Lee put one more similar weight on each of the remaining two pans and string T broke.

- (a) Arrange the strings, R, S and T from the weakest to the strongest. [1]

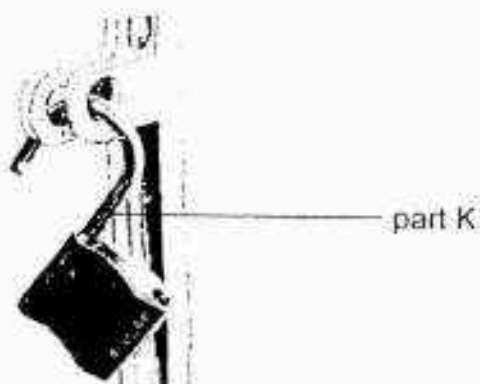
\_\_\_\_\_

- (b) Suggest two other variables which Mr Lee must keep the same throughout his experiment to ensure a fair test. [1]

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

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

30. A padlock is usually used to lock our metal grills at home.



- (a) The material that is used to make part K is usually metal. Suggest a property of the material that is used to make part K and explain how this property is suitable for its use as a padlock. [1]

---

---

- (b) Sandy wanted to buy a plastic plate for her 3-year old boy. Suggest two advantages of buying a plate made of plastic. [2]

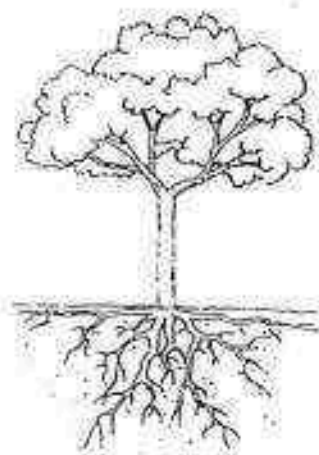
Advantage 1: \_\_\_\_\_

---

Advantage 2: \_\_\_\_\_

---

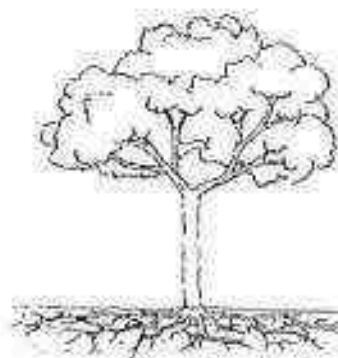
31. The diagrams below show three similar trees, X, Y and Z with different patterns of roots extending into the ground.



Tree X



Tree Y



Tree Z

- (a) Based on the diagrams above, which of the trees, X, Y or Z would most likely be able to withstand a thunderstorm? Explain your answer. [2]

---



---



---

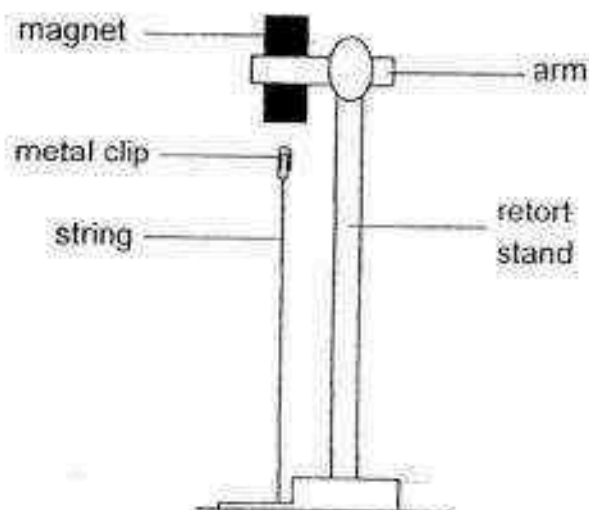
- (b) Tree Z is normally found in areas where there are light showers. How does the pattern of the roots of Tree Z help the plant obtain water? [1]

---



---

32. Pauline set up the following experiment. She clamped a magnet to the arm of a retort stand as shown. A metal clip, tied to the base of the retort by a string, remained in the air when it was brought near to the magnet.



- (a) Explain why the metal clip was suspended in the air. [2]

---

---

---

---

- (b) Pauline then applied heat to the magnet for a few minutes. After that, she observed that the metal clip was not able to remain suspended in the air. Other than increasing the length of the string, what can she do so that the metal clip is able to remain in the air without adding or removing items from the above set-up? [1]

---

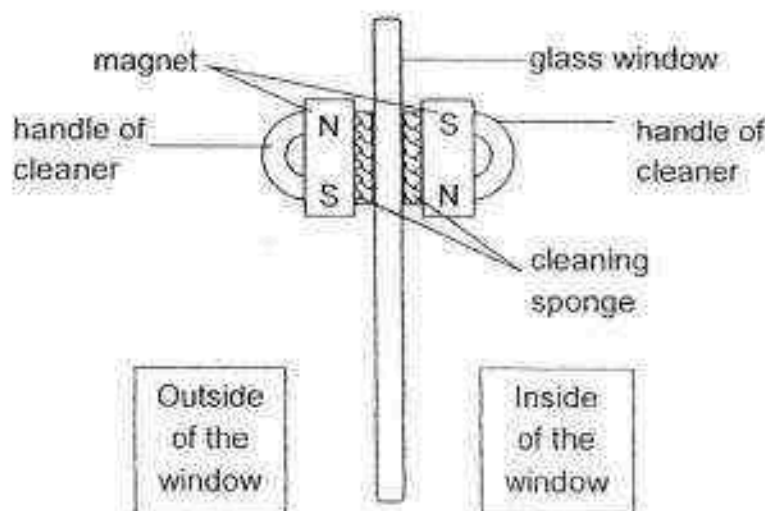
---

Question 32c continues on Page 24



- (c) Pauline then wanted to clean the outside of her glass windows. She bought a cleaning device designed to clean the outer surface of windows from the inside. The device uses two magnets as shown in the diagram below.

In order to use the cleaning device, Pauline has to hold the handle of the cleaner that is on the inside of the window and slide it up and down. The two cleaning sponges will move together.



Explain why the cleaning sponges will move together, even though they are separated by the glass. [2]

---

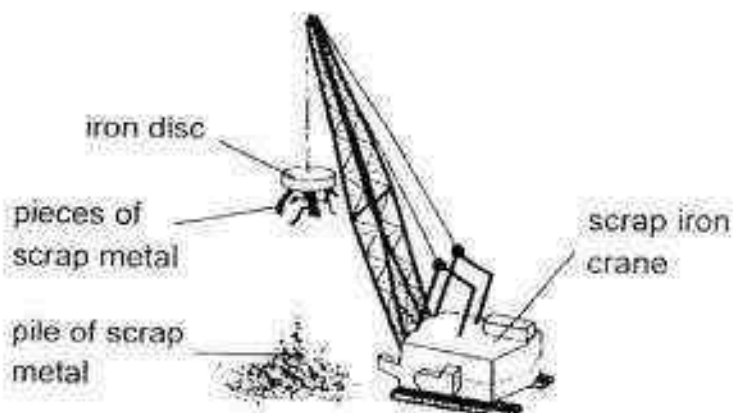


---



---

33. A scrap iron crane uses an electromagnet for moving scrap (unwanted) metals from one place to another in junk yards and recycling plants. The crane driver lowers the iron disc onto a pile of scrap metals and switches on the electricity. This causes the iron disc to become a powerful electromagnet and the scrap metals are attracted to the disc as shown below.



- (a) After the crane driver moves the attracted metals to the new location within the junk yard, he switches off the electricity and this causes the pieces of scrap metal to fall onto the ground. Why did the scrap metal fall onto the ground? [1]

---



---

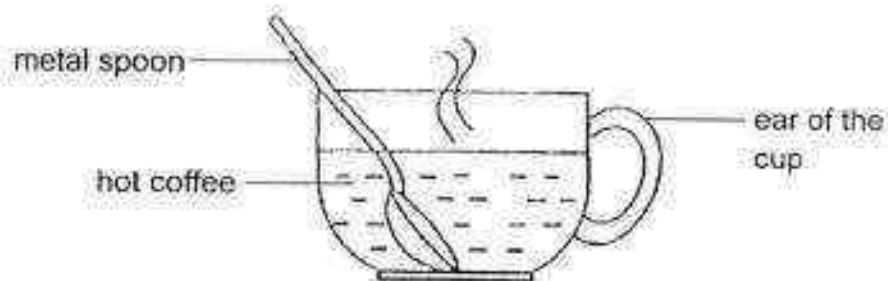
- (b) Can the iron disc be replaced by a permanent magnet? Explain your answer. [1]

---



---

34. Adrian put a metal spoon into a cup of hot coffee.



- (a) Will the metal spoon feel hotter, colder or the same as the surrounding temperature when he touches the spoon with his hand a few minutes later? Explain your answer. [1]

---

---

- (b) What will happen to the temperature of the metal spoon and the coffee after 1 day? [1]

---

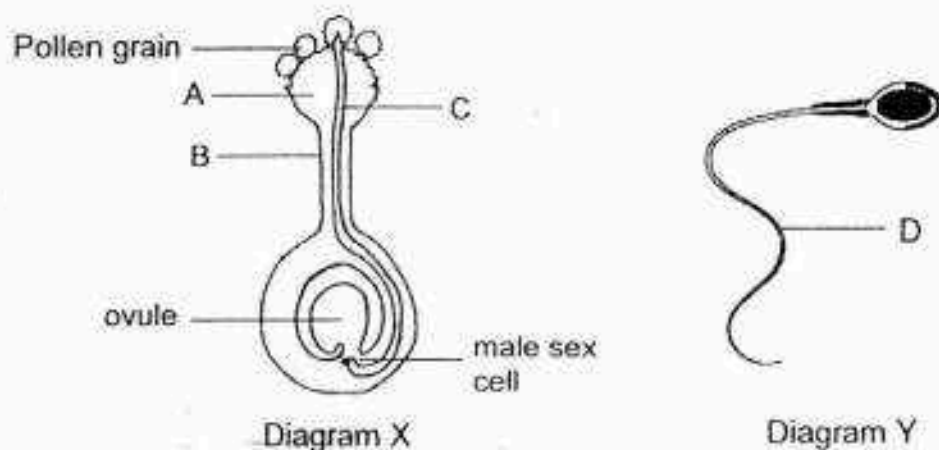
---

- (c) He realised he could hold the ear of the cup even when other parts of the cup were still hot. Suggest a reason and explain why he could hold the ear of the cup. [1]

---

---

35. Diagram X shows the structure of the female reproductive organ of a plant and Diagram Y shows the structure produced by the male reproductive organ of an animal.



- (a) Identify Parts A and B. [1]

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

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

- (b) Explain how parts C and D enable reproduction to take place in each of these structures. [2]

Part C: \_\_\_\_\_

\_\_\_\_\_

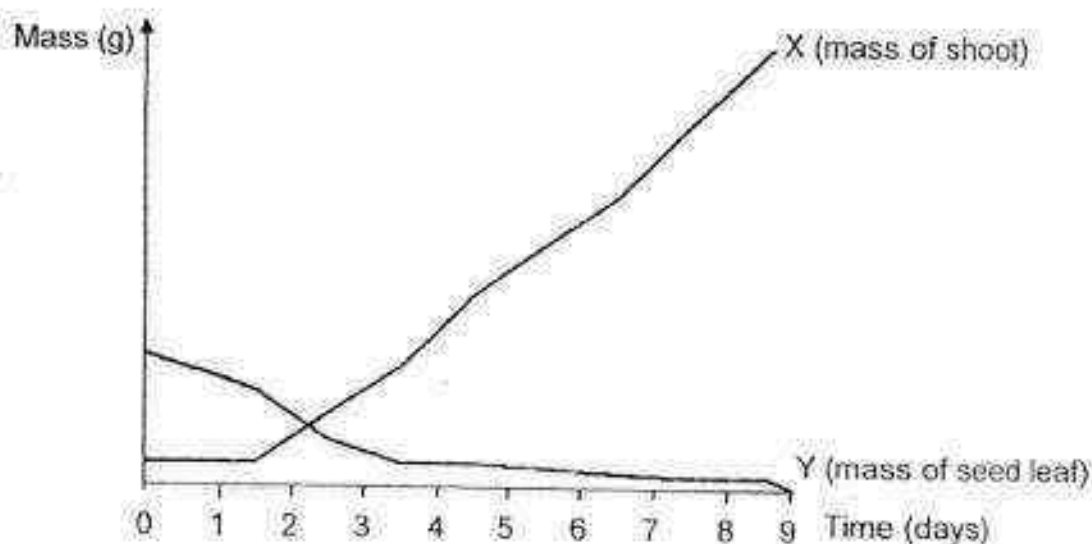
\_\_\_\_\_

Part D: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

36. Jordan grew a seed as part of his Science project. He observed its progress over a period of 9 days and plotted the following graph showing the changes in the mass of the shoot and the seed leaf during the experiment



- (a) What are the three conditions required for the process responsible for the change in mass shown by line X from day 1 to day 3? [1]

---



---

- (b) Explain why there is a change in mass shown by line Y. [1]

---



---

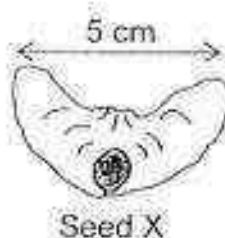
- (c) How did the seedling get its food from day 9 onwards? [1]

---

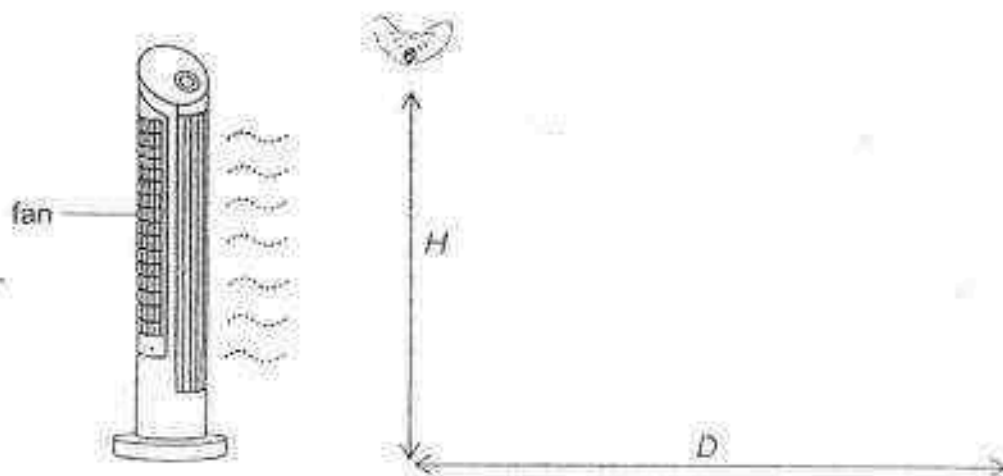


---

37. Fernando conducted an experiment to find out how the height at which seed X is dropped affects the distance it travels. Seed X has a 5 cm wing as shown below.



He dropped seed X from a height ( $H$ ) in front of a fan as shown below. He measured the distance ( $D$ ) travelled by seed X.



Seed X was dropped from different heights and Fernando's readings are shown below.

$H$ (cm)	110	90	70	50
$D$ (cm)	52	43	30	17

- (a) Based on the information in the table above, what can Fernando conclude from his experiment? [1]

---



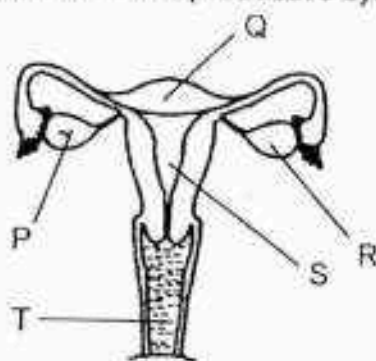
---

Question 37b continues on Page 30

- (b) Put a tick (✓) in the boxes below to show the variables that need to be changed and those that should not be changed so that the experiment is a fair one. [3]

Variables	Changed	Not Changed
Type of seed		
Height at which seed is dropped		
Type of fan		
Wind speed of the fan		
Size of the wing		
Location of the experiment		

38. Study the diagram of the female reproductive system in a human.



- (a) State the parts (P, Q, R, S or T) of the female reproductive system from which eggs are released. [1]

---

- (b) What would happen if two eggs are fertilised at the same time? [1]

---



---

- (c) Explain how Part S plays an important role after the eggs have been fertilised in the female reproductive organ. [1]

---

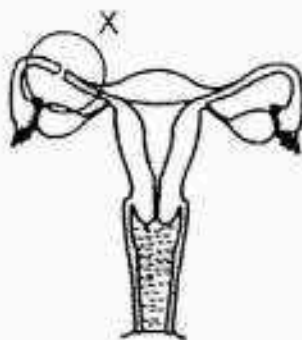


---

Question 38d continues on Page 32



- (d) The diagram below shows the reproductive system of a female patient after she had undergone an operation. In this operation, the tube near the ovary was cut at X.



Can fertilisation still take place? Explain your answer.

[1]

---

---

39. Benny conducted an experiment to find out how the surrounding temperature affects the splitting of 5 similar fruits, E, F, G, H and J. He placed the dried fruits in different rooms with different temperatures and recorded the results in the table below.

Dried Fruit	E	F	G	H	J
Temperature in the room	16°C	22°C	28°C	32°C	37°C
Time taken for fruit to split	Did not split	2 days	16 hours	8 hours	4 hours
Distance the seeds are scattered after splitting	No results	20cm	30cm	42cm	53cm

- (a) Based on the results above, what can Benny conclude about the relationship between the temperature in the room and the distance the seeds are scattered after splitting? [1]

---



---



---

- (b) Why do fruits need to disperse their seeds? [1]

---



---



---

Question 39c and d continues on Page 34

- (c) Give an example of a fruit that has its seeds dispersed by the above method. [1]

---

- (d) He also wanted to find out if the size of the fruit affects the time taken for the fruit to split. Suggest two variables that he has to keep constant when conducting this experiment. [1]

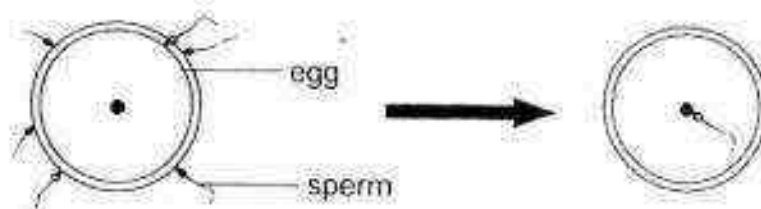
(i) 

---

(ii) 

---

40. The diagram below shows the fusion between two sex cells in a human.



- (a) State the process that is taking place. [1]

---

- (b) What is formed after the process in (a) has taken place? [1]

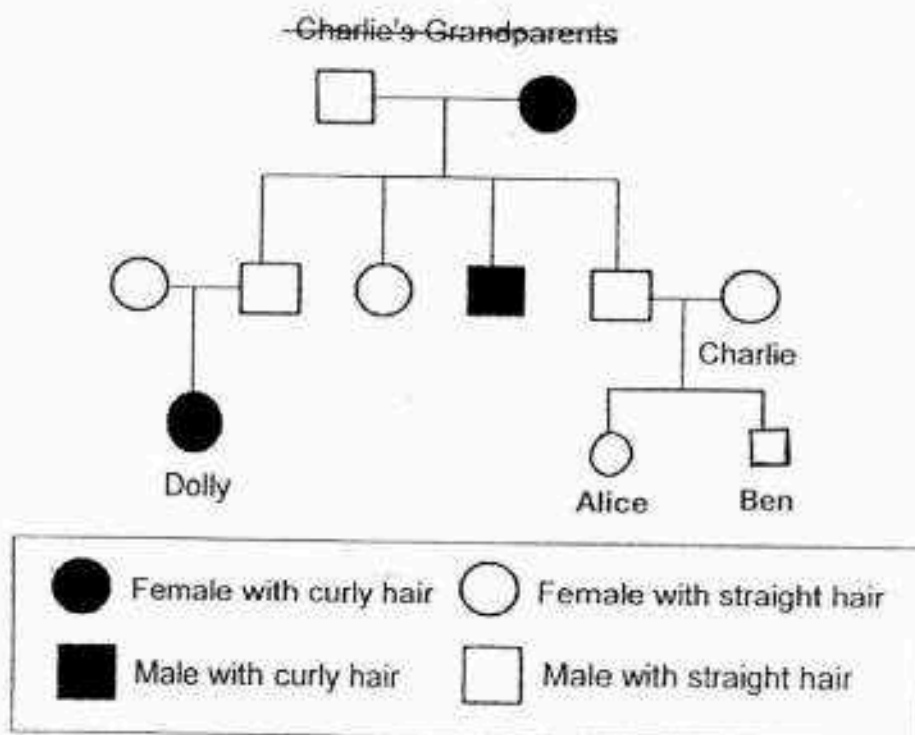
---

- (c) Which of the two sex cells above contains genetic information from the male human? [1]

---

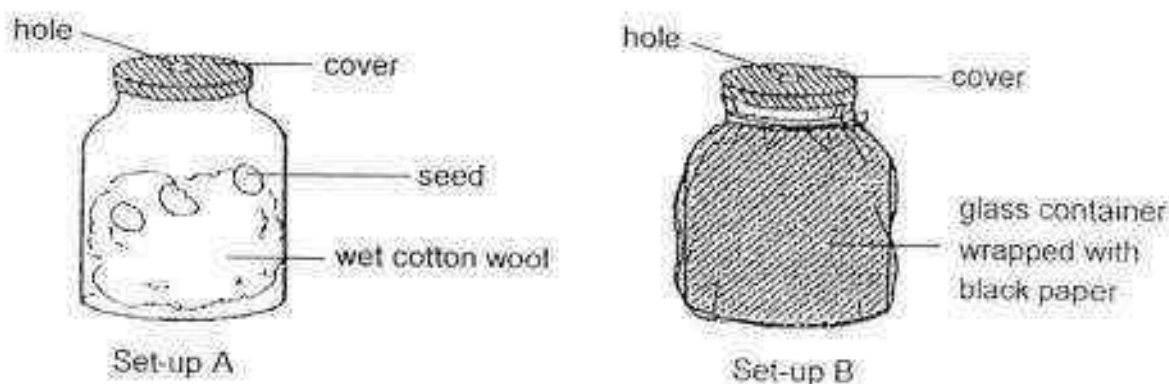
Question 40d continues on Page 35

- (d) The diagram below shows Charlie's family tree.



Charlie has a son and a daughter, Ben and Alice. Both Ben and Alice have straight hair. Complete Charlie's family tree by drawing and labelling in the diagram to show Charlie's son and daughter. [1]

41. Charlton carried out an experiment on the germination of seeds as shown below. In both of the set-ups, he lined two similar glass containers with cotton wool and poured equal amounts of water onto the cotton wool. He also cut a similar sized hole in the cover for each container and then wrapped the container in Set-up B with black paper. He placed 3 similar seeds onto the cotton wool in each container and left the two containers on the table for a few days.



- (a) What was the aim of Charlton's experiment? [1]

---



---

- (b) What do you think was the reason for having a hole in the cover? [1]

---



---

- (c) After five days, Charlton noticed the seeds in Set-up A started to germinate. Would the seeds in Set-up B be able to germinate? Explain your answer. [1]

---



---

Question 41d continues on Page 37

- (d) State **another** variable that Charlton must keep **constant** to ensure that his test is a fair one. [1]

---

---

End of Paper

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : PEI HWA PRESBYTERIAN PRIMARY  
 SUBJECT : SCIENCE  
 TERM : CA1

**Booklet A**

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

**Booklet B**

Q29a S, T, R

Q29b (i) The thickness of the string.  
(ii) The mass of each pan.

Q30a It is strong. It cannot be broken easily.

Q30b Advantage 1: Plastic would not break easily.  
Advantage 2: It is light in weight.

Q31a Tree X. Tree X has more roots to hold the tree more firmly to the ground.

Q31b The roots spread out on the surface to collect water when it rains.

Q32a The magnet attracted the metal clip and causes it to be suspended in the air as the string was not long enough.

Q32b Move the magnet closer to the metal clip.

Q32c Unlike poles facing each other, therefore the magnets attracted and the magnetism can pass through the glass.

Q33a The magnetism was off, causing the iron disc to lose the magnetism to attract the metals.

Q33b No. If the permanent magnet attract the metals, it would not be able to release the metals as it cannot be off or on.

- Q34a Hotter. The metal spoon has gained heat from the hot coffee.
- Q34b The temperature of the metal spoon and the coffee would be the same as the surrounding temperature.
- Q34c The ear of the cup was made of a poor conductor of heat and does not allow heat to pass through easily.
- Q35a Part A: Stigma  
Part B: Style
- Q35b Part C: It acts as a channel to transport the male sex cell to the female sex cell.  
Part D: It helps the sperm to swim faster to reach the egg.
- Q36a Water, oxygen and warmth.
- Q36b The seed took the food provided by the seed leaf. Hence, the mass of the seed leaf decreased in mass.
- Q36c It has leaves to help it trap sunlight and make food.
- Q37a The higher the height at which seed X is dropped, the further the distance it travels.
- Q37b
- | Variables                       | Changed | Not Changed |
|---------------------------------|---------|-------------|
| Type of seed                    |         | ✓           |
| Height at which seed is dropped | ✓       |             |
| Type of fan                     |         | ✓           |
| Wind speed of the fan           |         | ✓           |
| Size of the wing                |         | ✓           |
| Location of the experiment      |         | ✓           |
- Q38a Parts P and R.
- Q38b There would be a pair of twins.
- Q38c It keeps the developing baby safe.
- Q38d Yes. Only one tube was cut so the other tube can continue fertilisation.
- Q39a The higher the temperature in the room, the distance the seeds are scattered after splitting would be further.



Q39b It is to ensure that there is no competition for space, sunlight, water and nutrients.

Q39c Rubber

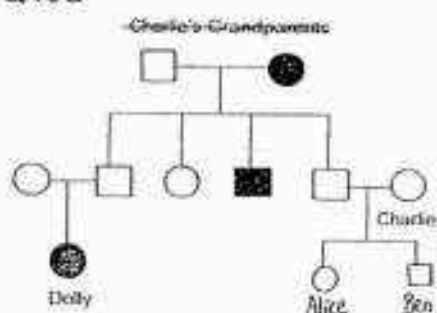
Q39d (i) The temperature of the room.  
(ii) Type of fruit.

Q40a Fertilisation

Q40b A foetus

Q40c The sperm

Q40d



Q41a He wanted to find out if seeds need light to germinate.

Q41b To allow air to enter for the seed to germinate.

Q41c Seeds need only air, warmth and water to germinate.

Q41d The location of his experiment.

End



# RED SWASTIKA SCHOOL

## 2016 MOCK TEST SCIENCE PRIMARY 5

Name : \_\_\_\_\_ (      )

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

Date : 29 February 2016

### BOOKLET A

Total time for Booklets A & B: 1h 45 min

Booklet A: 28 questions (56 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
  - a. Page 1 to Page 19
  - b. Questions 1 to 28

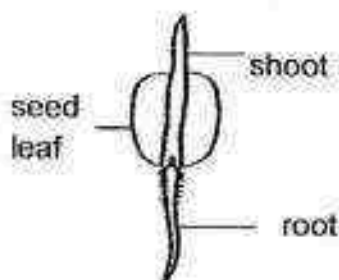
**SECTION A**

For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

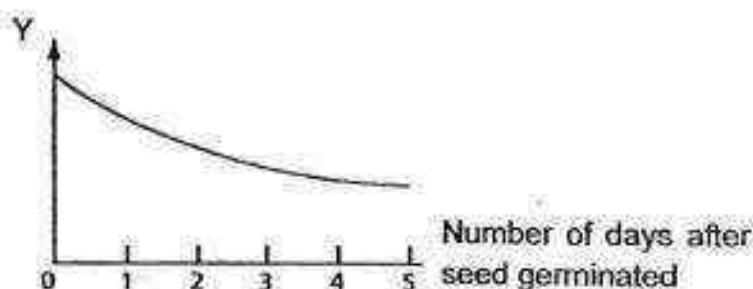
1. Danny's aquarium had fourteen fishes. After a week, four fishes died and two months later, there were seventeen fishes left. No fish had been added to the aquarium.

Which of the following best explains the increase in the number of fishes in Danny's aquarium?

- (1) The fishes had laid eggs.
  - (2) The fishes had grown in size.
  - (3) The eggs laid by some fishes had hatched.
  - (4) The fishes had been fed with too much food.
2. Sharifah carried out an experiment to observe how a seed grows into a seedling.



At the end of five days, she drew a line graph as shown below.



What could Y represent?

- (1) Mass of the seed leaf
- (2) Mass of the shoot
- (3) Length of the shoot
- (4) Length of the root

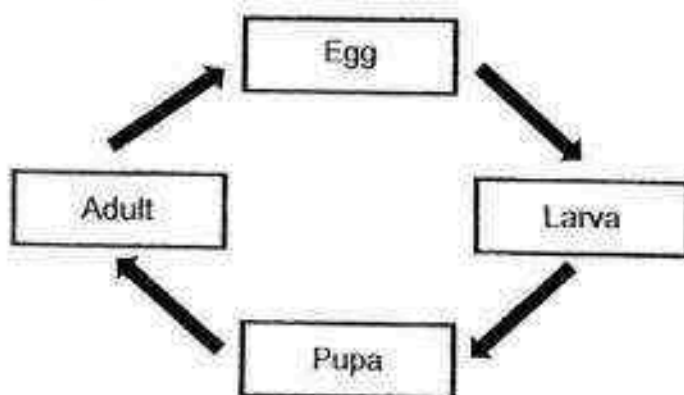
3. Some animals have been classified into two groups as shown below.

Group A	Group B
fox	grasshopper
bear	crocodile
guppy	platypus

Which one of the following characteristics of the animals is used to classify them?

- (1) The number of legs
- (2) The way they move
- (3) The method of reproduction
- (4) The type of outer covering.

4. The life cycle of insect X is shown below.

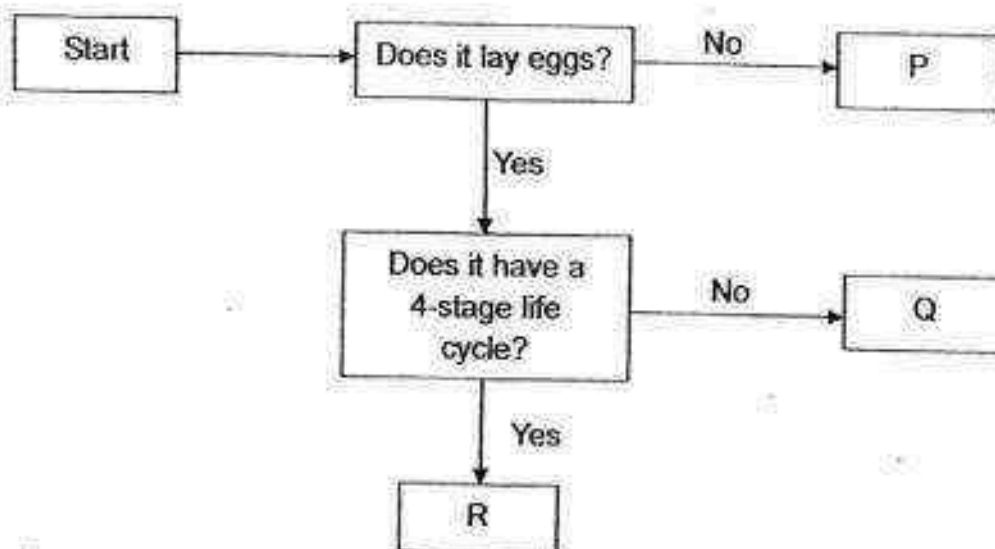


Which of the following statements about the life cycle of insect X is/are correct?

- A : The larva of the insect looks like its adult.  
 B : There are four stages in the life cycle of the insect.  
 C : The egg is laid in water.

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

5. The flowchart below shows the characteristics of three animals, P, Q and R.



Based on the above flowchart, which of the following statements is/are correct?

- A: P has a 4-stage life cycle  
 B: Q lays eggs.  
 C: R gives birth to young alive.

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

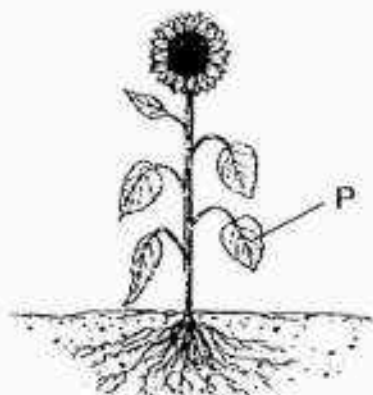
6. Gabriel set up an experiment with some seeds and cotton wool. At the end of the experiment, he observed that the seeds grew in some set-ups but not in others. He listed the conditions used in his experiment set-ups in the table below.

Set-up	Temperature	Cotton wool	Number of seeds
A	0°C	wet	6
B	30°C	wet	6
C	0°C	dry	6
D	30°C	dry	6

What was Gabriel trying to find out from the experiment using all the set-ups?

- (1) To find out if seedlings need warmth to make food.  
 (2) To find out if the number of seeds affects its growth.  
 (3) To find out if seeds need water and warmth to grow into seedlings.  
 (4) To find out if seeds need water, warmth and cotton wool to grow into seedlings.

7. The diagram below shows a green plant.



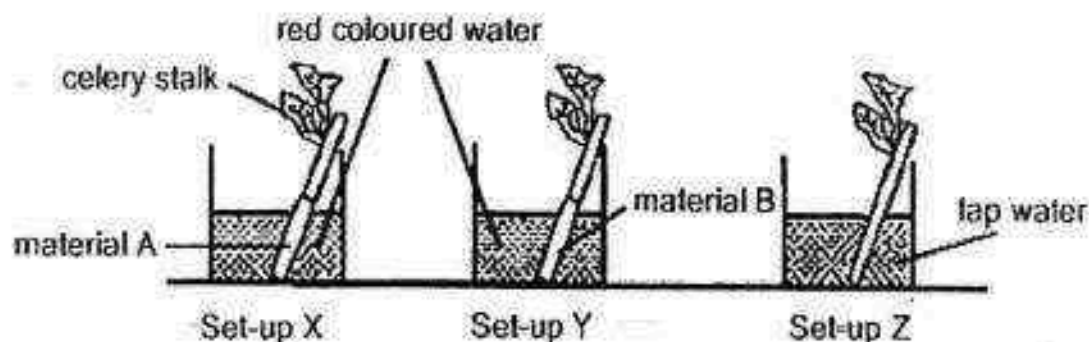
Which of the following statements describe the functions of the part marked "P"?

- A: It helps the plant to stay upright.
- B: It helps the plant to make food.
- C: It transports water and food to other parts of the plant.
- D: It allows gaseous exchange to take place

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

8. Alvin set up an experiment as shown below.

The base of the celery stalks in set-up X and Y were wrapped with material A and B respectively before placing them into the beaker of red coloured water. The celery stalk in set-up Z was placed in clear tap water.



Three days later, Alvin recorded his observations of the 3 celery stalks in the table below.

	Set-up X	Set-up Y	Set-up Z
Observations	Leaves turned reddish and were not wilted.	Leaves turned yellowish and were wilted.	Leaves remained green and were not wilted.

Which of the following statements can be inferred from Alvin's observations?

- A. Water can pass through material A.
- B. Red dye can pass through material A but not material B.
- C. Material B has prevented the celery stalk from taking in water.

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

9. Ahmad conducted an experiment with two types of beans, A and B. He carried out the following steps.

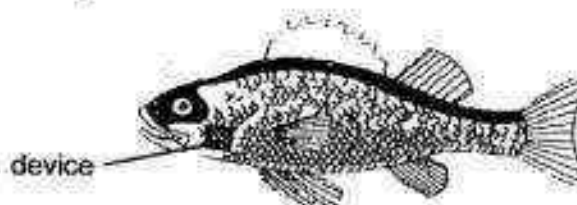
Step	Action Taken
1	Filled pots X and Y with the same amount of garden soil. Pots X and Y are of the same size.
2	Placed the same number of bean A and bean B in pots X and Y respectively.
3	Placed pot X and pot Y in the garden.
4	Poured 20ml of water into each pot daily.
5	Measured and recorded the height of the plants daily.

Which of the following could be the aim of Ahmad's experiment?

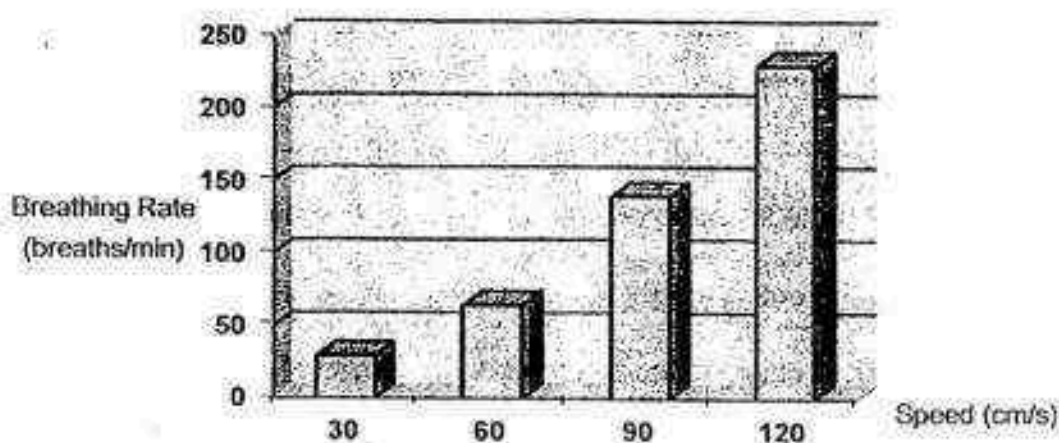
- (1) To find out if sunlight affects the growth of the plants.
- (2) To find out if garden soil affects the growth of the plants.
- (3) To find out if the amount of water affects the growth of the plants.
- (4) To find out the different growth rates of different types of plants.



10. A device was attached to the body of an unknown fish as shown below. This device is able to track the speed at which the fish is swimming and its breathing rate (number of breaths per min) in the water.



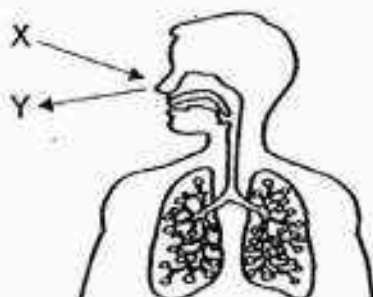
The table below shows how fast the fish was swimming and its breathing rate.



Based on the information above, what can we conclude about the relationship between the breathing rate and swimming speed of the fish?

- (1) The smaller the fish, the faster the breathing rate.
- (2) The faster the fish swims, the slower its breathing rate.
- (3) As the swimming speed increases, the breathing rate of the fish increases.
- (4) As the breathing rate increases, the swimming speed of the fish decreases.

11. The diagram below shows the human respiratory system. X represents the air from the surroundings that enters the respiratory system while Y represents the air that leaves the respiratory system into the surrounding.



Which of the following statements about X and Y are correct?

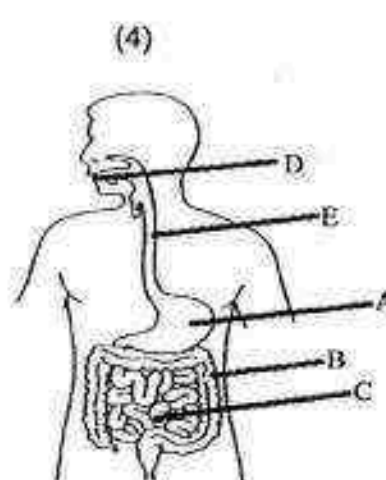
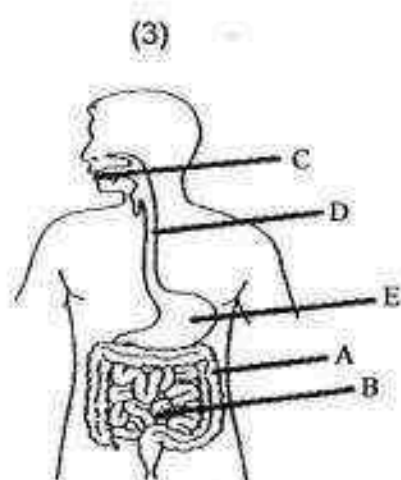
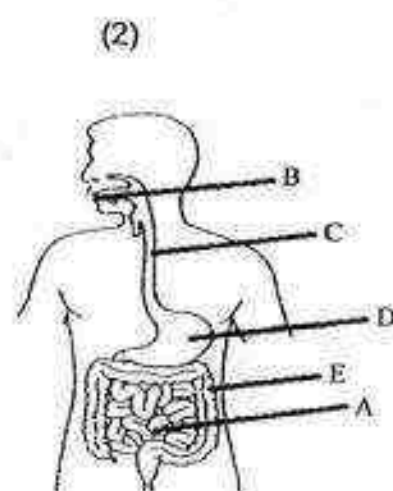
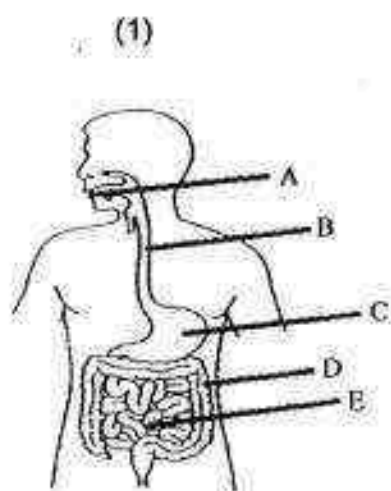
- A : Y can make limewater turn chalky faster than X.
- B : X contains the same amount of water vapour as Y.
- C : X enters the nose, travels down the windpipe and into the lungs.

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

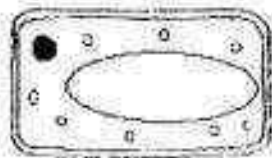
12. Study the table below.

	Parts of the digestive system				
	A	B	C	D	E
Adds digestive juice	✓	✓		✓	
Absorbs digested food	✓				
Absorbs excess water					✓

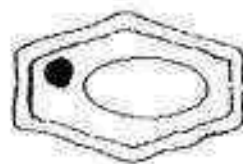
Based on the table above, which one of the following diagrams correctly represents parts A, B, C, D and E?



13. The diagrams show two cells, A and B.



Cell A



Cell B

Which of the following could cell A and cell B represent?

	Cell A	Cell B
(1)	leaf of a lime plant	onion skin
(2)	roots of a green bean plant	leaf of a lime plant
(3)	leaf of a lime plant	leaf of a green bean plant
(4)	roots of a green bean plant	onion skin

14. Jasmine observed three different types of cells under the microscope. She recorded the following observations.

Cell A	Cell B	Cell C
Does not have any green pigment.	Does not have any green pigment.	Contains some green pigment.
No regular shape	Has a regular shape	Has a regular shape

Which of the following is most likely the type of cells that Jasmine had observed?

	Cell A	Cell B	Cell C
(1)	nerve	root	onion
(2)	onion	cheek	root
(3)	nerve	onion	fern
(4)	cheek	fern	nerve

15. Samad tripped over a box containing steel pins, copper coins, aluminium screws, plastic beads and wooden match sticks. He then used a magnet to pick up the objects. Which objects will be left on the floor after Samad's attempt to clear up the mess?

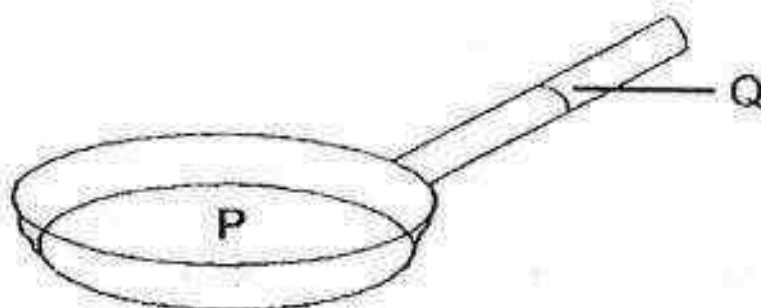
- (1) Steel pins and wooden match sticks only.
- (2) Plastic beads and wooden match sticks only.
- (3) Aluminium screws, steel pins and copper coins only.
- (4) Copper coins, wooden match sticks, plastic beads and aluminium screws only.

16. Ariel conducted an experiment on four different types of materials of the same size and thickness. She soaked the materials in a bucket of water for 20 minutes. She recorded the mass of each material before and after soaking as shown in the table below.

Material	Mass at the beginning	Mass after 20 minutes
W	10g	20g
X	11g	12g
Y	12g	18g
Z	13g	13g

Which material is the most suitable for making a raincoat?

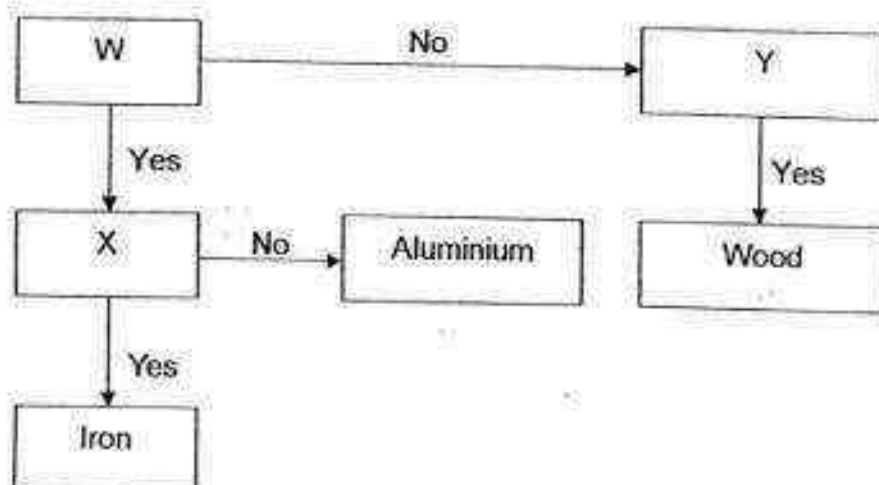
- (1) W
  - (2) X
  - (3) Y
  - (4) Z
17. Mrs Tan wants a frying pan which is able to conduct heat quickly. She also wants to be able to hold the frying pan without burning her hand.



What should the parts, P and Q, of the frying pan be made of?

	Part P	Part Q
(1)	stainless steel	wood
(2)	iron	stainless steel
(3)	plastic	rubber
(4)	copper	iron

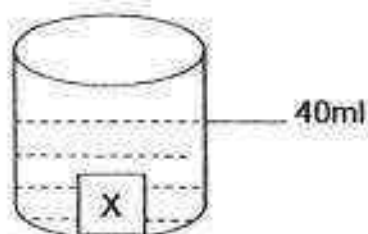
18. Study the flowchart below.



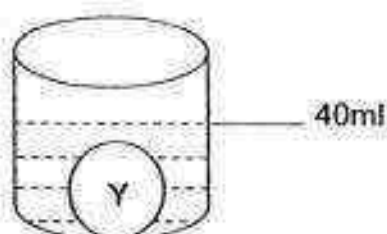
Which of the following are the questions that should be placed in W, X and Y of the flowchart respectively?

	W	X	Y
(1)	Can it float on water?	Is it a good conductor of heat?	Is it a magnetic material?
(2)	Is it a magnetic material?	Is it a good conductor of heat?	Can it float on water?
(3)	Is it a magnetic material?	Can it float on water?	Is it a good conductor of heat?
(4)	Is it a good conductor of heat?	Is it a magnetic material?	Can it float on water?

19. Study the two sets of beakers below.

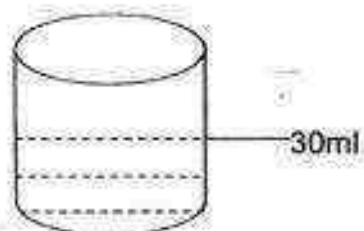


Beaker 1

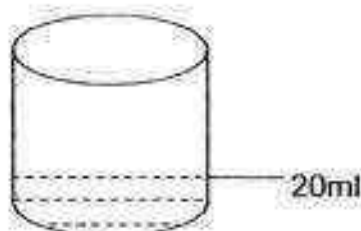


Beaker 2

The water levels in the two beakers above are at 40ml. When objects X and Y are taken away, the water levels of the containers are shown below.



Beaker 1



Beaker 2

Which one of the following statements is true?

- (1) X has a larger mass than Y.
- (2) Y has a larger mass than X.
- (3) X has a larger volume than Y.
- (4) Y has a larger volume than X.

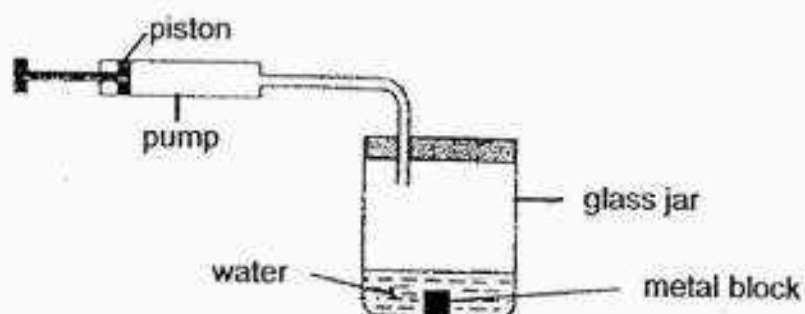
20. Study the table below.

Item	Definite shape	Definite volume	Can be compressed
X	No	Yes	No
Y	No	No	Yes

Which of the following is correct?

	Item X	Item Y
(1)	oxygen	water
(2)	milk	magazine
(3)	oil	water vapour
(4)	spoon	carbon dioxide

21. A pump was connected to a glass jar as shown below. The capacity of the glass jar is  $500 \text{ cm}^3$  and the jar contains  $200 \text{ cm}^3$  of water. A  $50 \text{ cm}^3$  metal block was placed in the water.

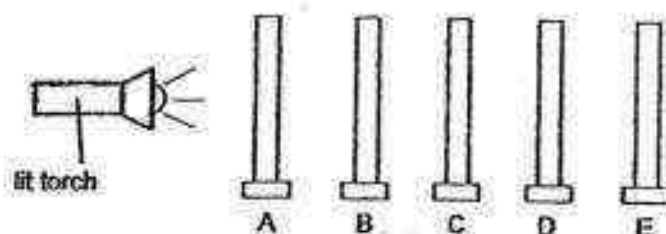


When the piston is completely pushed in,  $50 \text{ cm}^3$  of air is pumped into the glass jar. What is the volume of air in the glass jar after the piston is pushed in once?

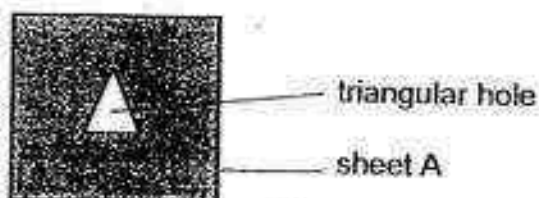
- (1)  $50 \text{ cm}^3$
- (2)  $250 \text{ cm}^3$
- (3)  $300 \text{ cm}^3$
- (4)  $350 \text{ cm}^3$



22. The experiment below was carried out in a dark room. Sheets of materials A, B, C, D and E were arranged in a straight line.



A triangular hole was observed on sheet A as shown below.



The degree of transparency of the materials are given in the table below.

Allows most light to pass through	Does not allow any light to pass through
B	A
E	C
	D

On which sheet of material, B, C, D or E, would a triangular patch of light be seen when the torch was switched on?

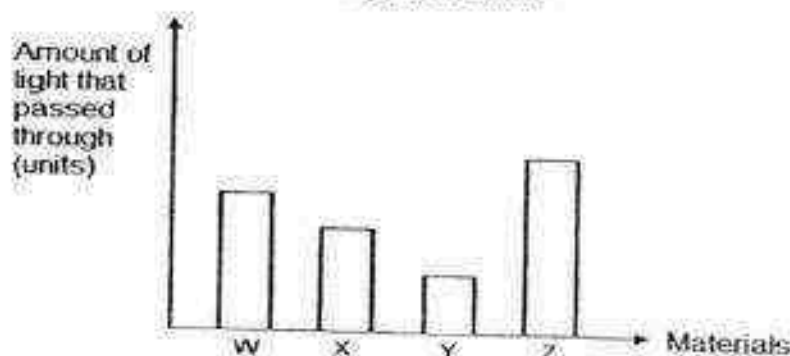
- (1) B
- (2) C
- (3) D
- (4) E

23. The table shows the initial temperature of water in four cups, A, B, C and D and the final temperature after 30 minutes. The cups are similar in size and thickness but are made of different materials. They are placed under the sun in an open field.

Cups made of material	Initial temperature in the cup ( $^{\circ}\text{C}$ )	Final temperature in the cup ( $^{\circ}\text{C}$ )
A	28	34
B	28	32
C	28	35
D	28	30

Which of the following is correct?

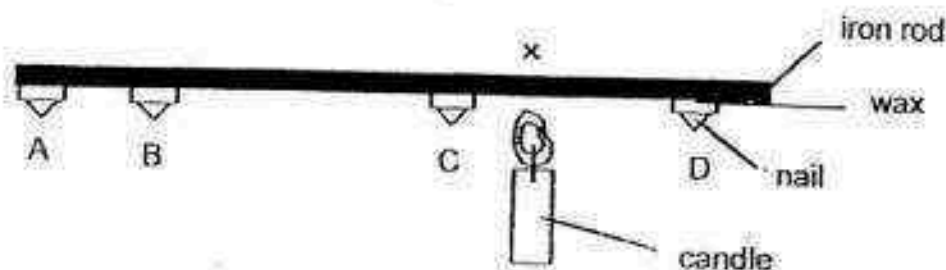
- (1) Material A conducts heat slower than Material B.
  - (2) Material B conducts heat slower than all the others
  - (3) Material C conducts heat faster than Material D.
  - (4) Material D conducts heat faster than Material A
24. May used a light sensor and a datalogger to find out how much light passes through four sheets, W, X, Y and Z of the same size and thickness. The four sheets were made of four different materials. The same torch was used to shine on each sheet of material. The torch was placed at the same distance from each sheet of material. The results were shown in the bar graph below.



May observed that shadows were formed when the light from the torch passed through each sheet of material. Which sheet of material will form the shadow that is the lightest in shade?

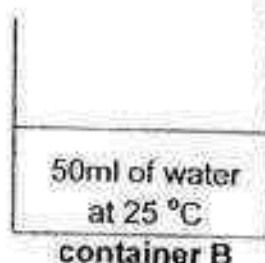
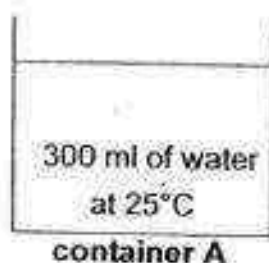
- (1) W
- (2) X
- (3) Y
- (4) Z

25. Joshua set up the experiment as shown below.



He used some wax to attach 4 nails A, B, C and D to the iron rod. He lit a candle and held it near the rod at the part marked X. Which one of the following options shows the correct order in which the nails will drop from the rod?

- (1) A,B,D,C
  - (2) C,B,A,D
  - (3) C,D,B,A
  - (4) D,A,B,C
26. Jeremy conducted an experiment using two similar metal containers. He poured 300ml of water into container A and 50 ml of water into container B as shown in the diagrams below. The temperature of the water in both containers was the same.

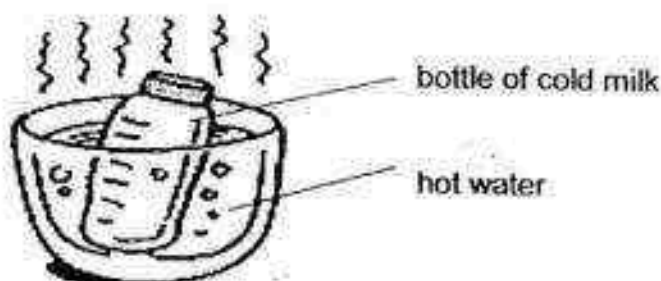


He used a bunsen burner to heat container A for two minutes. Then, he recorded the temperature of the water using a thermometer immediately after the heating. He repeated the experiment with container B.

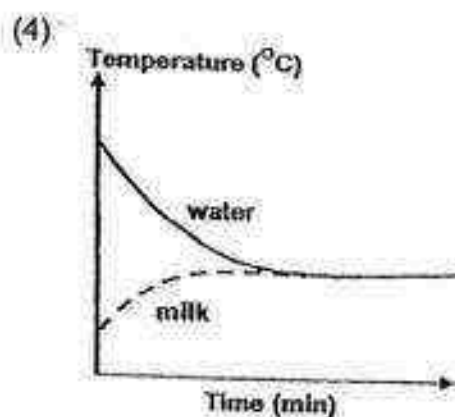
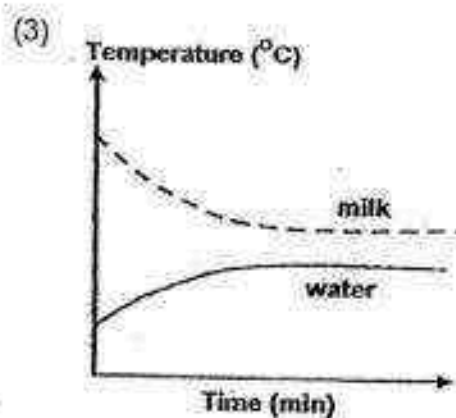
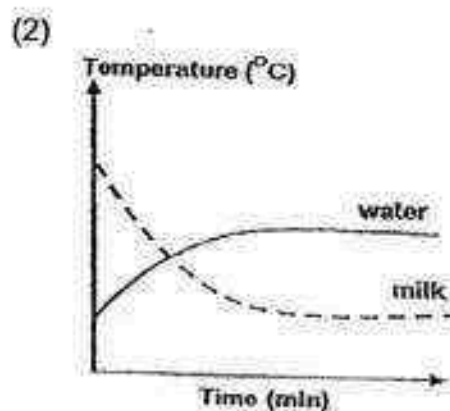
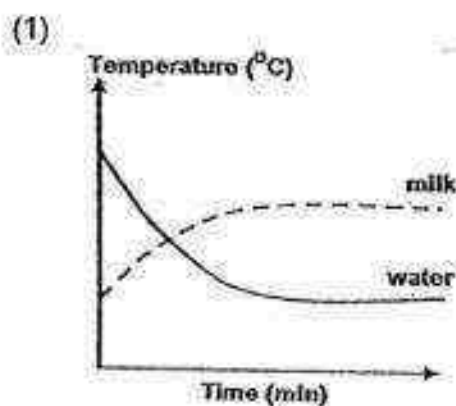
Which of the following are possible temperature of the water recorded in both containers immediately after heating for two minutes?

	Container A	Container B
(1)	40°C	40°C
(2)	40°C	60°C
(3)	60°C	40°C
(4)	25°C	25°C

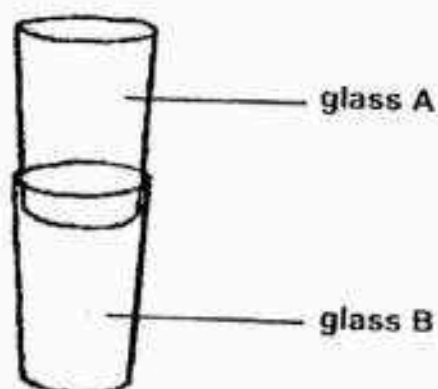
27. Mrs Ravi took a bottle of cold milk from the refrigerator and warmed it up in a bowl of hot water as shown below.



Which one of the following graphs shows the correct change in temperature of the milk and water after some time?



28. Charmaine tries to separate two glasses that are stuck together as shown in the diagram below.



Which one of the following methods should she use in order to separate the two glasses without breaking any of them?

- (1) Put glass B in cold water.
- (2) Pour hot water into glass A.
- (3) Pour hot water into glass A and put glass B in cold water.
- (4) Pour cold water into glass A and put glass B in hot water.

**END OF SECTION A**  
**PLEASE CHECK YOUR WORK**



# RED SWASTIKA SCHOOL

## 2016 MOCK TEST SCIENCE PRIMARY 5

Name : \_\_\_\_\_ (      )

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

Date : 29 February 2016

### BOOKLET B

Booklet B: 13 questions (44 marks)

In this booklet, you should have the following:

- Page 20 to Page 34
- Questions 29 to 41

### MARKS

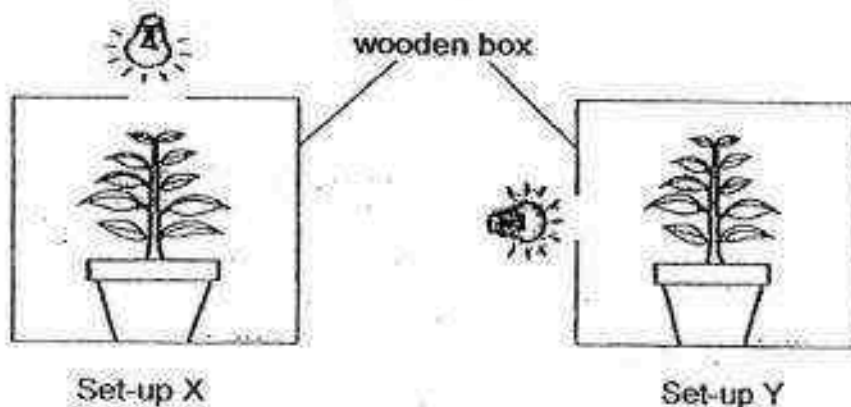
	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Parent's Signature : \_\_\_\_\_

**SECTION B**

Answer all the questions in the spaces provided.

29. Peter set up an experiment as shown below.



Each set-up consisted of a similar wooden box with an opening at one of its sides. A brightly lit lamp was placed at the opening of each box. A similar pot of plant was placed at the center of the wooden box. After a week, Peter observed the plants.

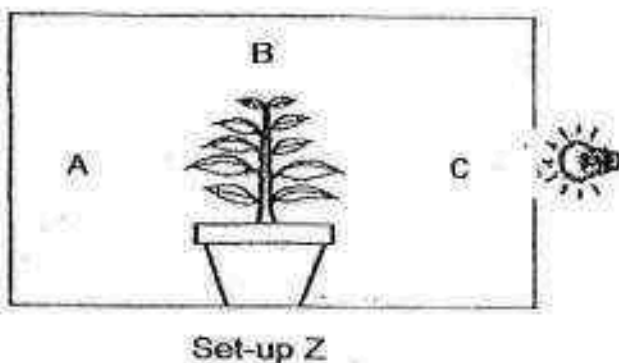
- (a) Based on the information above, what was the aim of Peter's experiment? (1m)

---



---

Peter had another similar pot of plant in set-up Z shown below. The plant was given enough water each day.



- (b) In the diagram above, circle the correct letter, A, B or C, to show the direction the plant would be growing towards after two weeks. (1m)
- (c) Explain why the plant in set-up Z would grow in such a manner. (1m)

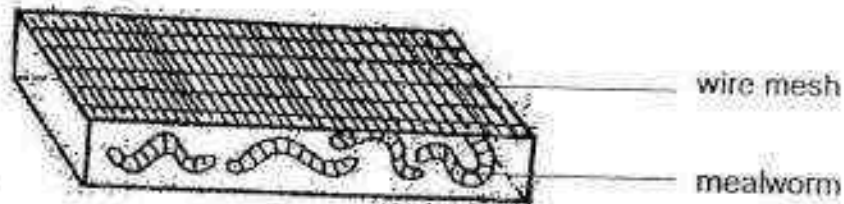
---



---

30. Gopal put 10 mealworms in a box as shown below. He ensured that the mealworms had enough food to eat. Two weeks later, he found that he had only 4 mealworms left. He looked everywhere in the box but found no sign of the other 6 mealworms.

Instead, he discovered six organisms which he had not seen before. He was puzzled as he had not added any other organisms into the box. His mother told him that the six organisms were related to the mealworms.



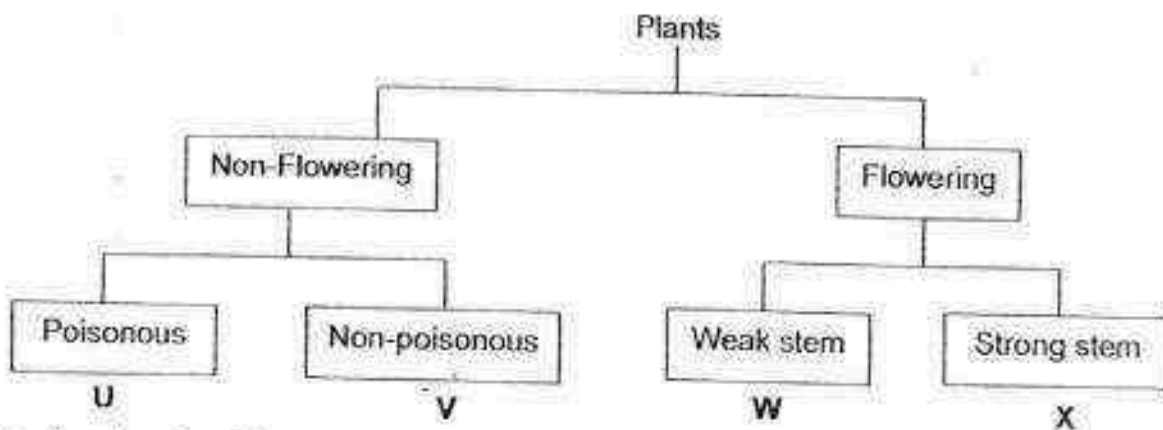
- (a) State what the six new organisms were. (1m)

---



---

Study the classification chart below carefully and answer the questions that follow.



- (b) Based on the classification chart, describe plant W. (1m)

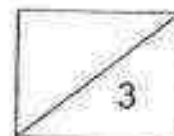
---



---

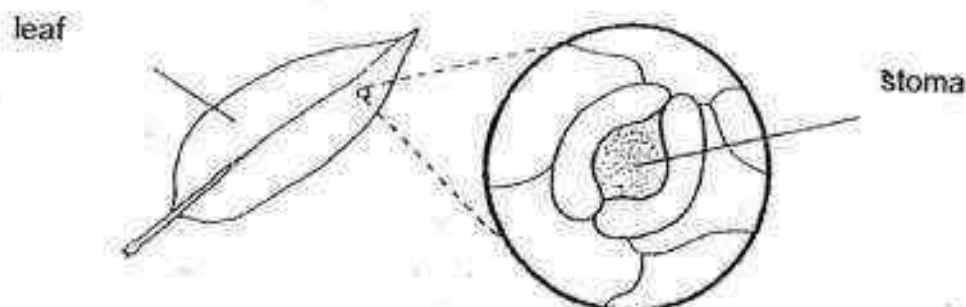
- (c) Classify the organisms in the table below into the correct group. (1m)

Organism	Group U, V, W or X?
Bird's nest fern	
Sunflower	





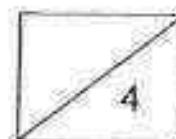
31. A leaf has tiny openings called stomata on its surface.



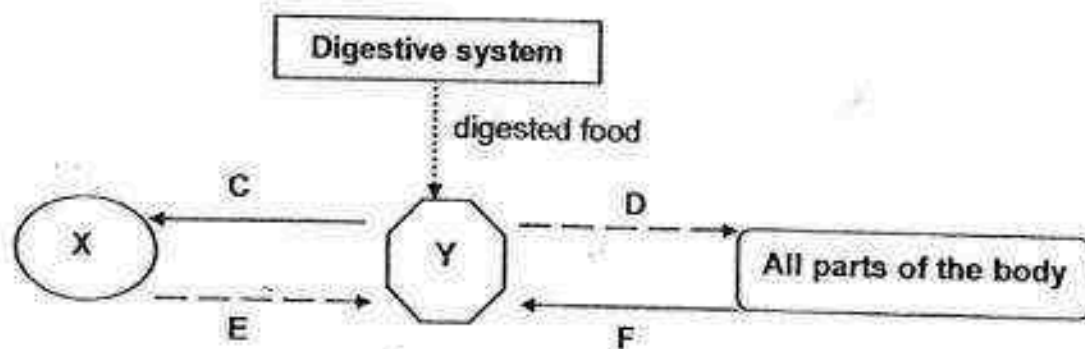
June measured the changes in the size of the stomata of some leaves on a plant placed in the open field at different times of the day. She recorded her results in the table below.

Time	4am	8am	12pm	4pm	8pm
Average size of the stomata (units)	8	11	15	12	9

- (a) Based on the table, what can be observed about the change in size of the stomata from 4am to 8pm? (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- (b) How is the size of the stoma in the day different than at night? Explain your answer. (2m)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- (c) What is the disadvantage to the plant when the stoma remained open? (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



32. The different systems of the human body are represented in the diagram below. The arrows symbolise the different substances moving within the body. The arrows are also part of system Y.



- (a) Based on the above diagram, which systems, respiratory system or circulatory system, do the letters X and Y represent? (1m)

System X : \_\_\_\_\_

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

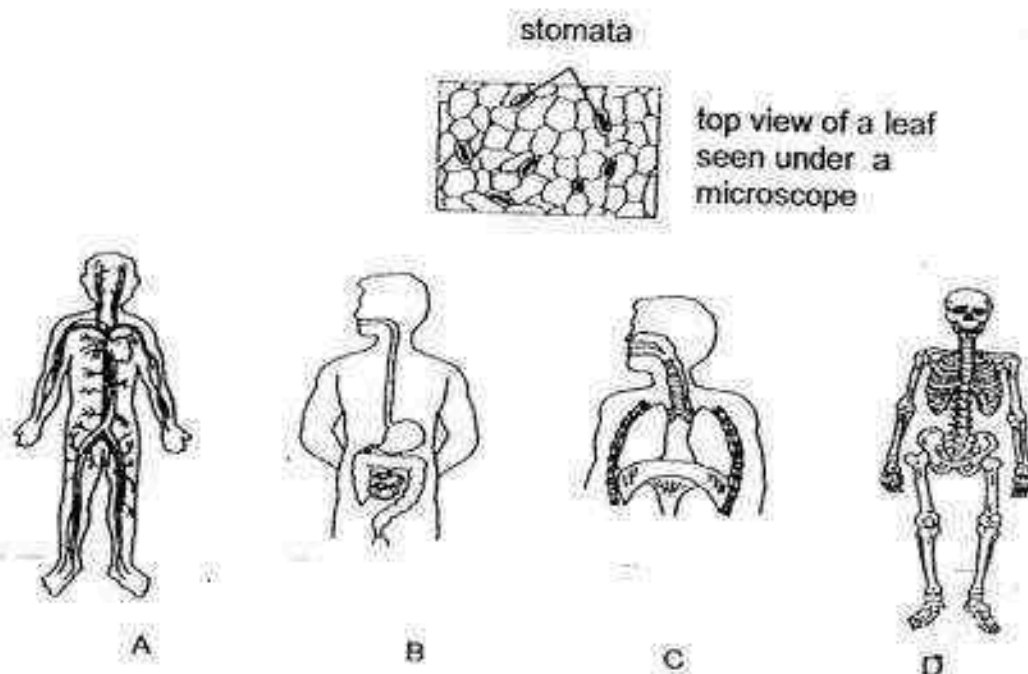
- (b) Name the gas that blood vessels at D and F are rich in. (1m)

Blood vessels at D : \_\_\_\_\_

Blood vessels at F : \_\_\_\_\_



33. Study the diagrams of the stomata of a leaf and the different human body systems shown below.



- (a) Which one of the systems, A, B, C or D in the human body performs a similar function to the stomata in the leaf? Name the system. (1m)

---

- (b) Based on the answer in part (a), what is the similarity in the function of both the stomata and the system chosen in part (a)? (1m)

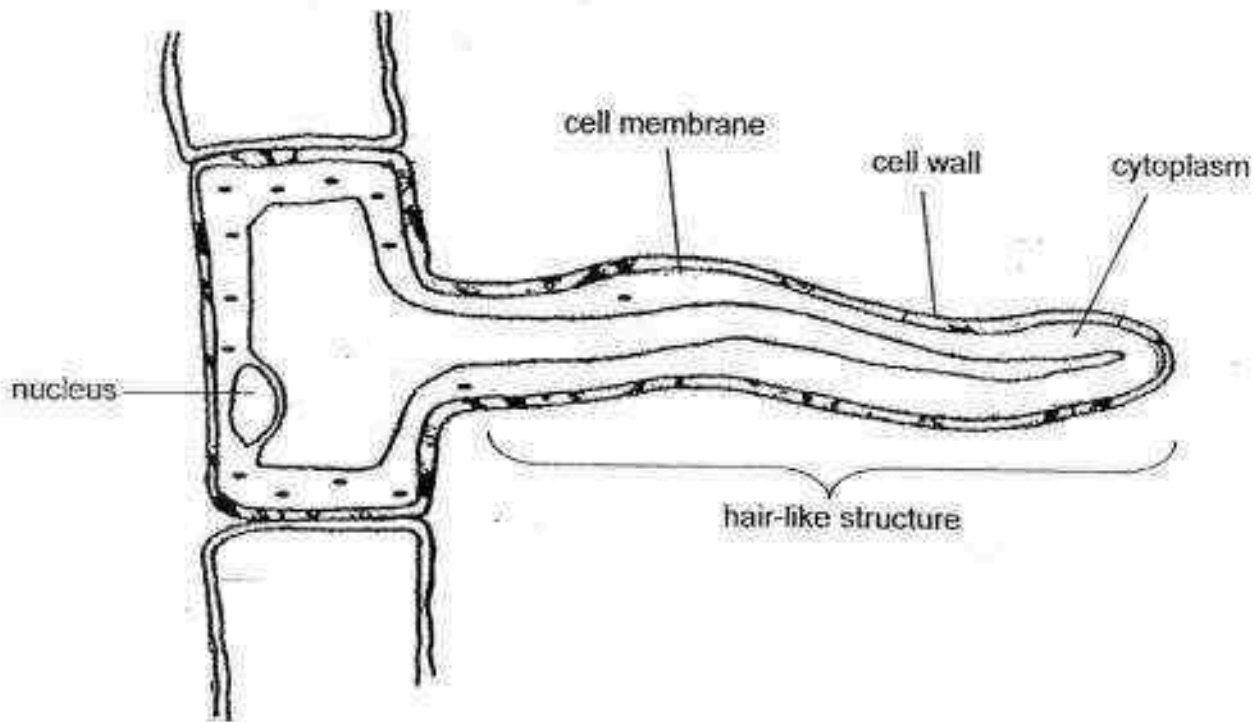
---



---



34. The diagram shows a root hair cell. The root hair helps the plant to absorb water.



(a) How does the hair-like structure help the root hair cell in absorbing water? (2m)

---

---

(b) Explain what will happen to the root hair cell if its nucleus is missing? (2m)

---

---



35. Jane carried out an experiment with a pair of cells, a plant cell and an animal cell. She placed the plant cell and the animal cell in pure water as shown below.



- (a) After 30 minutes, she recorded her observations below.

Plant cell	Animal cell
Cell swelled slightly but remained the same shape and did not burst.	Cell swelled greatly and burst.

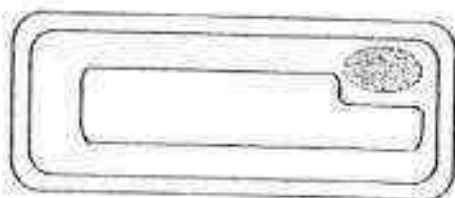
- (i) What had happened that caused the two cells to swell? (1m)

---

- (ii) Explain why the animal cell burst but the plant cell did not. (1m)

---

Halim observed two different cells, X and Y. He made drawings of his observation.



Drawing of Cell X



Drawing of Cell Y

- (b) Are cells X and Y able to make food? Explain your answer. (2m)

---



---



36. Gabriel carried out an experiment in the science room with four different magnets, A, B, C and D. The table below shows the greatest number of paper clips each magnet can attract when the magnet was placed at the same distance from some paper clips.

Magnet	A	B	C	D
Number of paper clips attracted	9	12	7	4

- (a) What could be concluded about the magnetic strength of magnets B and D? (1m)

---



---

- (b) For the experiment to be a fair test, state two other variables that must be kept the same. (2m)

(i) 

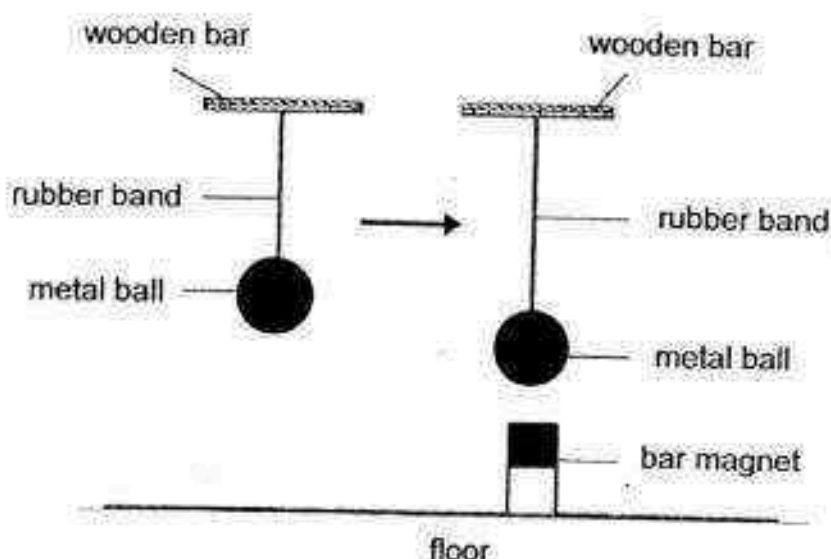
---

(ii) 

---



37. (a) A metal ball was hung from a wooden bar with a rubber band. The length of the rubber band increased when a bar magnet was placed under the metal ball as shown below.



- (i) Based on the information given, state the physical property of the metal ball that caused the rubber band to increase its length when a bar magnet was placed under it. (1m)

---



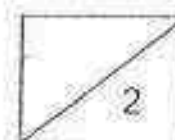
---

- (ii) Explain why the length of the rubber band increased when the bar magnet was placed under the metal ball. (1m)

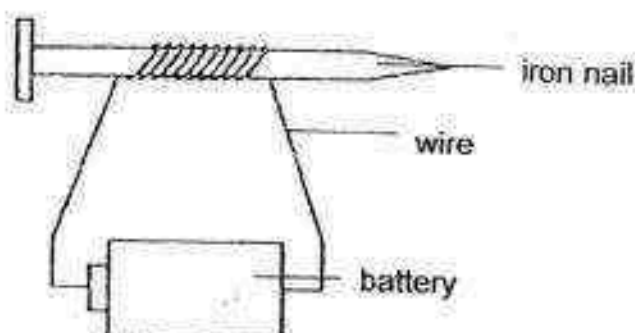
---



---



- 37.(b) An iron nail can be made into an electromagnet by coiling some wires around it and connecting it to a battery as shown below.

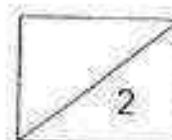


Razali wanted to find out how the number of turns of wires around the iron nail would affect the magnetic strength of the electromagnet. He drafted out his plan shown in the table below. For each arrangement, he tested the magnetic strength of the electromagnet by counting the number of paper clips it could attract.

Set-up	Number of batteries used	Number of turns of wires around the iron nail
A	1	20
B	3	20
C	2	30
D	3	30

- (i) Which ~~two~~ set-ups should he use to carry out a fair test? (1m)

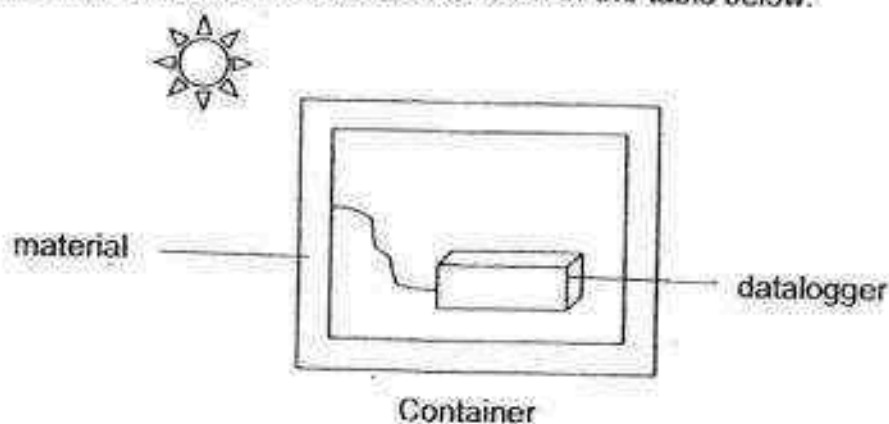
- (ii) What is Razali trying to find out if he uses set-up A and B to conduct an experiment? (1m)





38. The Housing Development Board (HDB) wanted to find out which material they should choose for the construction of the latest block of flats in Singapore.

An engineer set up the following experiment. He placed a datalogger in the container and recorded the results as shown in the table below.



Surrounding temperature outside the container (°C)	Average temperature of air inside the container after one hour (°C)			
	Material A	Material B	Material C	Material D
27	30	28	42	27
30	35	30	45	29
35	37	33	48	32

- (a) Which material is the best for constructing the wall to keep the interior of the house as cool as possible? Explain your choice. (2m)

---



---

- (b) Explain why the choice of material in part (a) is also the most suitable for constructing buildings in countries which experience winter. (2m)

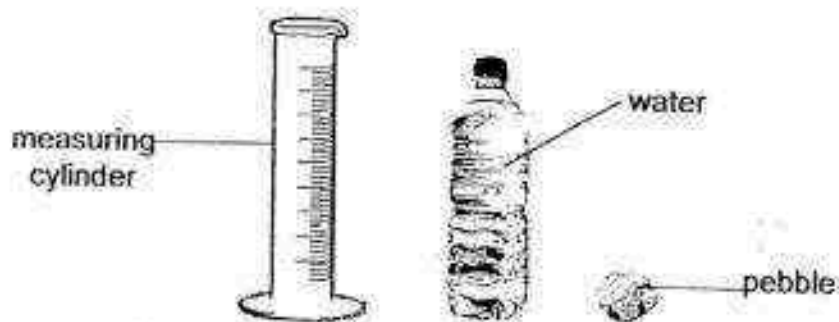
---



---



39. Mrs Tan was going to class and accidentally dropped a stack of cards with the instructions on how to measure the volume of a pebble using a measuring cylinder and a bottle of water.



- (a) Help Mrs Tan put the instruction cards in the correct order by numbering the steps. Step 1 has been done for you. (2m)

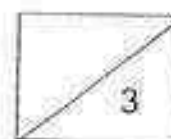
Step	Instruction
	Record the volume of water in the measuring cylinder.
	Subtract the original volume of water from the volume of water and pebble.
1	Pour water into the measuring cylinder.
	Place the pebble into the water.
	Measure the volume of water with the pebble inside.

- (b) Which property of a solid makes it possible to find out the volume of the pebble using the method given in (a)? (1m)

---

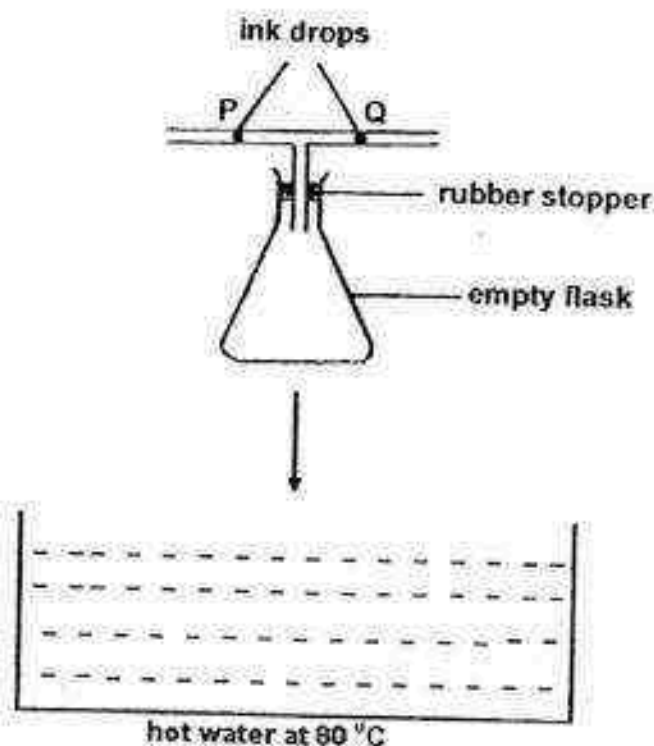


---

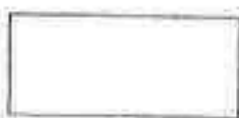


- 40.(a) Hendrick had an empty conical flask with a T-shaped tube. He placed two drops of black ink, P and Q, in the tube as shown in the diagram. Then he placed the flask into a basin containing hot water at a temperature of  $80^{\circ}\text{C}$ .

After two minutes, he noticed that P and Q had moved.



- (i) Based on the diagram, draw an arrow in each box provided to show the directions of the movement of P and Q after the flask was placed in the basin of hot water for two minutes. (1m)



P



Q

- (ii) Explain why P moved in such a manner. (2m)

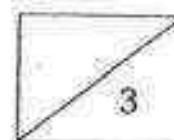
---



---

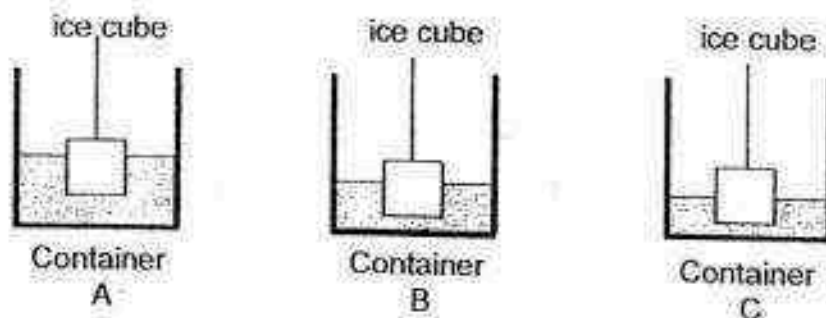


---



40. (b) Hendrick poured different amount of water at  $100^{\circ}\text{C}$  into 3 identical containers labelled A, B and C. He then dropped a cube of ice into each container.

The ice cube in container A melted first, while the ice cube in container C melted last.



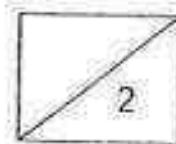
If Hendrick wants to show how the temperature of water affects the melting rate of an ice cube, which two changes must he make to his experiment? (2m)

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

\_\_\_\_\_

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

\_\_\_\_\_



41. Devi set up an experiment as shown below to find out the amount of light that passes through a material of different thickness.



First, Devi used a data logger to measure the amount of light from the surrounding when the torch was switched on and off. The results were recorded in Table 1 below.

Table 1

	Amount of light detected (lux)
Torch switched off	0
Torch switched on	2500

Then, Devi used the data logger to measure and record the amount of light that could pass through the material when it was cut into different thickness.

Table 2

Thickness of material (cm)	Amount of light detected (lux)
0.3	2000
0.6	1200
1	0

- (a) What is the relationship between the amount of light detected by the datalogger and the thickness of the material? (1m)

---



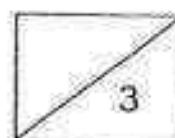
---

- (b) Devi wants to find out how the growth of a plant is affected when the plant is kept in total darkness. She needs to make a box to conduct the experiment. Based on the results in Table 2, how thick should the material be for making the box? Why? (2m)

---



---



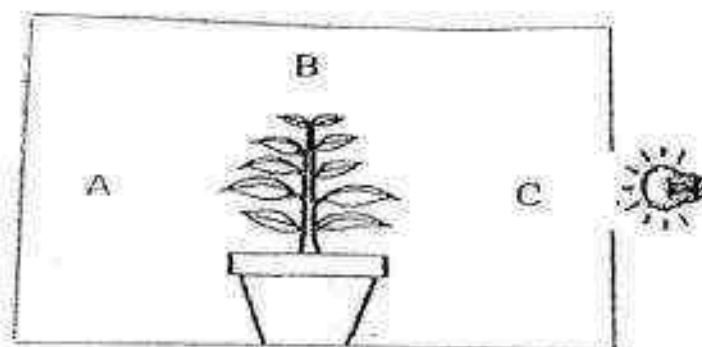
END OF SECTION B  
PLEASE CHECK YOUR WORK

**EXAM PAPER 2016****LEVEL : PRIMARY 5****SCHOOL : RED SWASTIKA SCHOOL****SUBJECT : SCIENCE****TERM : MOCK TEST**

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
3	1	3	2	2	3	2	4	4	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
3	2	1	3	4	4	1	4	4	3
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28		
2	2	3	4	3	2	4	4		

Q29a) To find out if plants grow towards sunlight.

b)

**Set-up Z**

c) The plant bends towards the direction of the light source so that it can get as much sunlight as possible to make food.

Q30a) Beetles or pupas.

b) Plant W is a flowering plant and it has a weak stem.

c) Bird's nest fern – V

Sunflower – X

Q31a) From 4am to 12pm, the size of the stomata increased but from 12pm to 8pm, the size of stomata decreased.

b) The stomata is bigger to allow the plant to take in more carbon dioxide to help the plant to make food when there is light.

c) The plant will lose water vapour.

Q32a) System X – Respiratory system

b) System Y – Circulatory system

Q33a) C, respiratory system.

b) Both allow gaseous exchange with the surroundings to take place.

Q34a) To increase the surface area of the cell so that it can absorb more water for the plant.

Q35a)(i) The pure water.

(ii) The animal cell do not have cell wall, however the plant cell have, therefore the cell wall gives the plant cell another protection.

b) No. Both do not have chloroplast and do not contain chlorophyll to trap light and make food.

Q36a) Magnet B has a stronger magnetic strength than magnet D.

b)(i) The type of paper clips used.

(ii) The paper clips must be the same when the magnet is going to attract.

Q37a)(i) The metal ball is made of a magnetic material.

(ii) The bar magnet attracted the metal ball which was suspended by the rubber band, causing the rubber band to stretch.

b)(i) B and D.

(ii) Razali will be trying to find out whether the number of batteries used will affect the magnetic strength.

Q38a) Material D. The average temperature of the air inside the container made of D is the lowest. This shows that material D conducts heat slowest from the surroundings outside the container to the inside container.

b) D is the poorest conductor of heat. It will conduct heat away from the building the slowest.

Q39a)

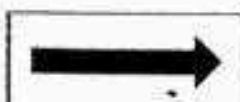
Step	Instruction
2	Record the volume of water in the measuring cylinder.
5	Subtract the original volume of water from the volume of water and pebble.
1	Pour water into the measuring cylinder.
3	Place the pebble into the water.
4	Measure the volume of water with the pebble inside.

b) The stone occupies space and has a definite volume.

Q40a)(i)



P



Q

(ii) The air in the flask gains heat from the hot water and expands. The air escapes through the tube as there is not enough space in the flask and pushes P to the left.

b)(i) Use the same amount of water in all containers.

(ii) Use water of different temperature in all containers.

Q41a) As the thickness of the material increases, the amount of light detected decreases.

b) She should have made the box 1cm, as it does not let any light pass through.

3  
END

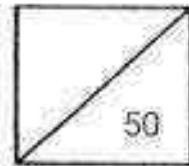




**Rosyth School**  
**Continual Assessment 1 for 2016**  
**STANDARD SCIENCE**  
**Primary 5**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 5 \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1 h 15 min

Date: 29 February 2016

Parent's Signature: \_\_\_\_\_

**Instructions to Pupils:**

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 Parts, Part I and Part II.
4. For questions 1 to 14 in Part I, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 15 to 22, give your answers in the spaces given in the Part II.

	Maximum	Marks Obtained
Part I	28 marks	
Part II	22 marks	
Total	50 marks	

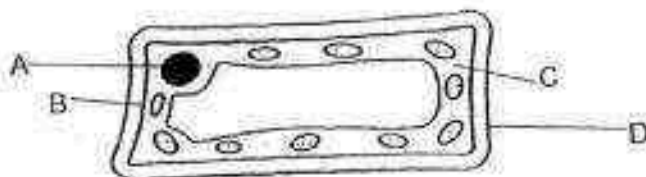
\* This booklet consists of 16 printed pages.

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

**Part I (28 Marks)**

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

1. The diagram below shows a cell.



Which part of the cell allows food and oxygen to move within it?

- (1) A (2) B  
(3) C (4) D
2. Ang Xiang, Ben and Chandra recorded the parts of cells observed in the table as shown below.

	Parts of cells observed
Ang Xiang	cytoplasm, nucleus, cell wall
Ben	cytoplasm, nucleus, cell membrane
Chandra	cell membrane, chloroplasts, cytoplasm

Who could have observed animal cells?

- (1) Ang Xiang only (2) Ben only  
(3) Ang Xiang and Chandra only (4) Ben and Chandra only

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

3. Which of the following statements about the cells is correct?

- (1) All cells have nucleus.
- (2) All cells have cell walls.
- (3) All cells have cytoplasm.
- (4) All cells have chloroplasts.

4. Which of the following are made of cells?

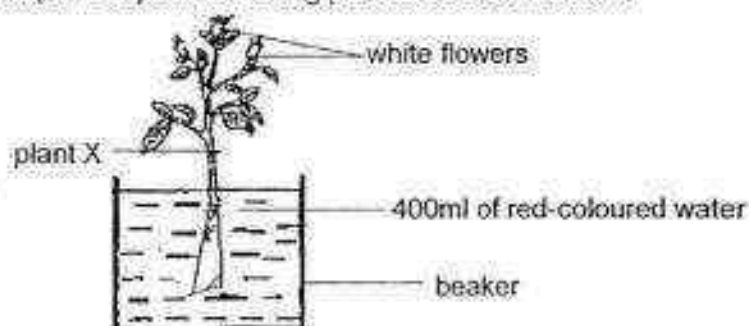
- A: Sun
- B: Elephant
- C: Chilli plant
- D: Plastic Chair

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

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

Read the following and answer questions 5 and 6.

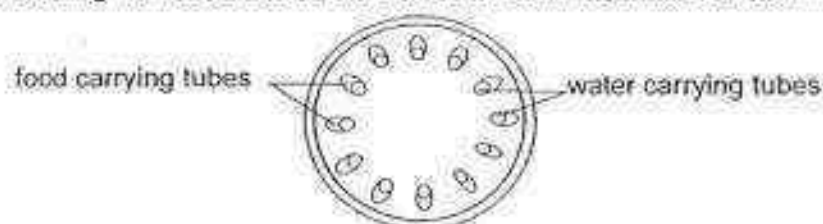
Yan Ching set up the experiment using plant X as shown below.



5. There was 400ml of red-coloured water in the beaker at the start of the experiment. What will her observation be after 2 days?

	Colour of flowers	Amount of water left in the beaker
(1)	White	400ml
(2)	White	360ml
(3)	Red	400ml
(4)	Red	360ml

6. Yan Ching removes a cross section of the stem of plant X as shown below.



Which of the following correctly describes the result of her experiment?

	colour at water-carrying tube	colour at food-carrying tube
(1)	turned red	turned red
(2)	turned red	no change
(3)	no change	turned red
(4)	no change	no change

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

7. The diagrams P and Q shows the directions in which different substances are transported in the stems.

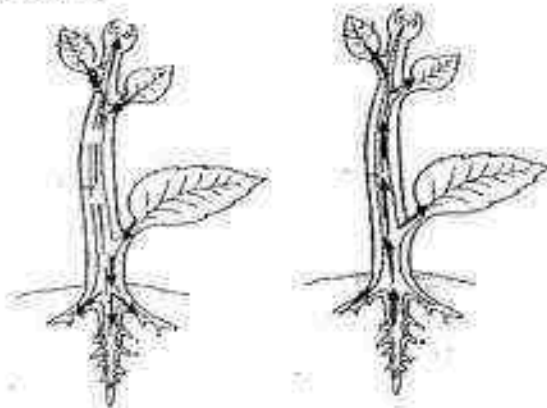


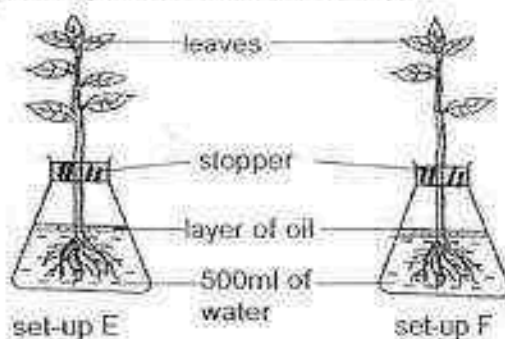
diagram P

diagram Q

Which of the following below correctly matches the substances with the direction of the arrows as shown in diagrams P and Q?

	P	Q
(1)	food	water and dissolved mineral salts
(2)	water and dissolved mineral salts	food
(3)	food and carbon dioxide	water and oxygen
(4)	water and oxygen	food and carbon dioxide

8. Alim set up an experiment as shown below.

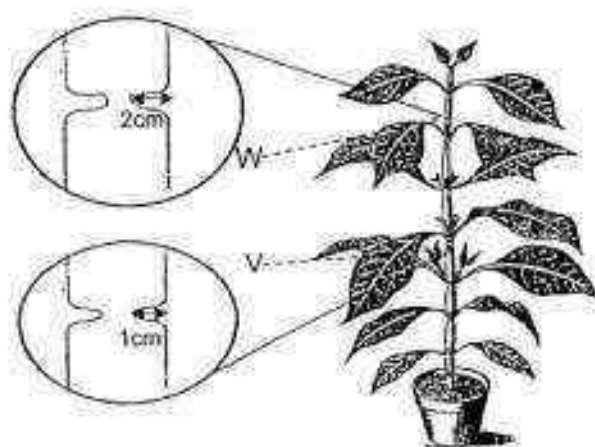


What is the aim of the experiment?

- (1) To find out if roots take-in water.
- (2) To find out if plants need water to survive.
- (3) To find out if the presence of oil affects the amount of water taken in by the plant.
- (4) To find out if the number of leaves affect the amount of water taken in by the plant.

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

9. Stella used a knife to cut away the outer ring of the stem at parts V and W of a plant as shown below.



After some time, only the parts of the plant above W withered.

Which of the following statements is/are correct?

- A: The water-carrying tubes at V were removed.  
 B: The water-carrying tubes at W were removed.  
 C: The food-carrying tubes at V were removed.

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

10. Rae wanted to find out how the type of soil will affect the growth of hibiscus plants. She planted 3 hibiscus plants in 3 pots G, H and K and placed them in the garden.

Which variables should Rae keep the same to carry out a fair experiment?

- A: Type of soil  
 B: Type of hibiscus plant  
 C: Amount of soil  
 D: Amount of water per day

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

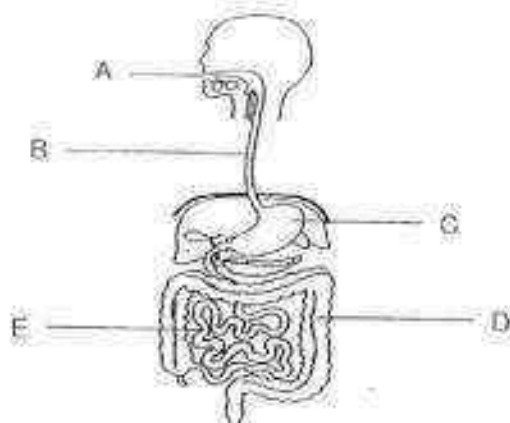
## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

11. Wen Han wanted to find out how temperature would affect the amount of water taken in by plants. He placed four similar plants in containers with similar amount of water under different temperatures.

Plant	A	B	C	D
Temperature of water ( $^{\circ}\text{C}$ )	20	25	30	35
Amount of water left after 10 hours (ml)	400	380	340	280

Based on the results table, what can he conclude?

- (1) At  $20^{\circ}\text{C}$ , the plant takes in the most amount of water.
  - (2) The best temperature of water is  $30^{\circ}\text{C}$  for all plants to take in water.
  - (3) Temperature of water has no effect on the amount of water taken in by the plant.
  - (4) The higher the temperature of water, the greater the amount of water taken in by the plant.
12. Study the diagram below.

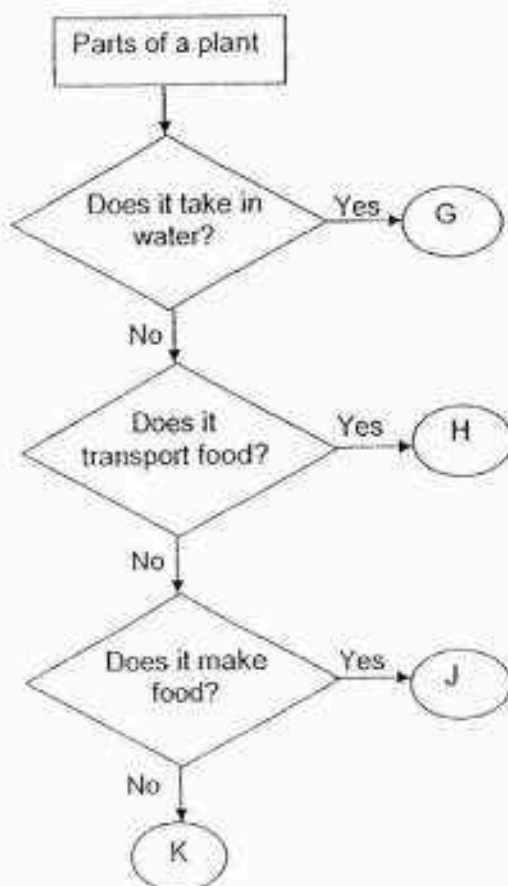


Which one of the following shows the correct pathway of food through the digestive system before it is absorbed into the blood stream?

- (1)  $A \rightarrow B \rightarrow C \rightarrow E$
- (2)  $A \rightarrow B \rightarrow C \rightarrow D$
- (3)  $A \rightarrow B \rightarrow C \rightarrow E \rightarrow D$
- (4)  $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E$

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

13. Study the flowchart below.



Which of the following identifies G, H, J and K?

	G	H	J	K
(1)	water-carrying tubes	leaves	food-carrying tubes	flower
(2)	water-carrying tubes	food-carrying tubes	leaves	root
(3)	roots	food-carrying tubes	leaves	flower
(4)	roots	food-carrying tubes	flower	leaves



## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

14. The table below provides some information on organisms X, Y and Z. A tick (✓) in the box indicates the presence of the characteristic.

Organism	It makes its own food	It reproduces by spores	It grows on land
X	✓	✓	✓
Y	✓		✓
Z		✓	✓

Using the information above, Ming Yi drew the following diagram to classify them.



Shi Min reclassified the organisms in the diagram below.



What would be the suitable headings for the groups?

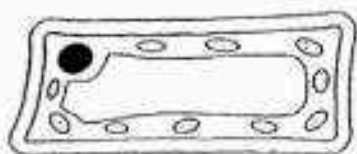
	R	S	T	U
(1)	able to make food	not able to make food	land plant	water plant
(2)	land plant	water plant	ferns	fungi
(3)	ferns	fungi	flowering plants	non-flowering plants
(4)	able to make food	not able to make food	flowering plants	non-flowering plants

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

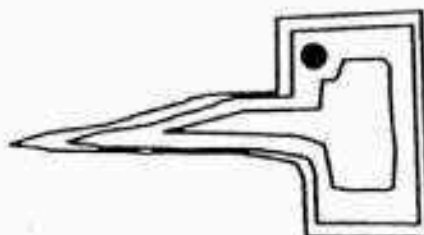
Part II (22 Marks)

For questions 15 to 22, write your answers in this booklet.

15. Study the two plant cells below.



cell L



cell M

- (a) State a difference between the two cells. (1m)

---

---

- (b) Which part of the above cells can be compared to a security guard in the school? Explain your answer. (1m)

---

---

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

16. The table below shows parts of a cell that is present in cells S, T, U and V. A tick (✓) in the box indicates the presence of the characteristic.

parts of a cell	cell S	cell T	cell U	cell V
nucleus		✓	✓	✓
cell wall		✓		✓
cytoplasm	✓	✓	✓	✓
chloroplast		✓		
cell membrane	✓	✓	✓	✓

- (a) All the cells were soaked in four containers of equal amount of water. After sometime, two cells burst while the other two cells remained the same. Which two cells remained the same? Support your choice. (1m)

---



---

- (b) What would eventually happen to cell U if the nucleus is removed? (1m)

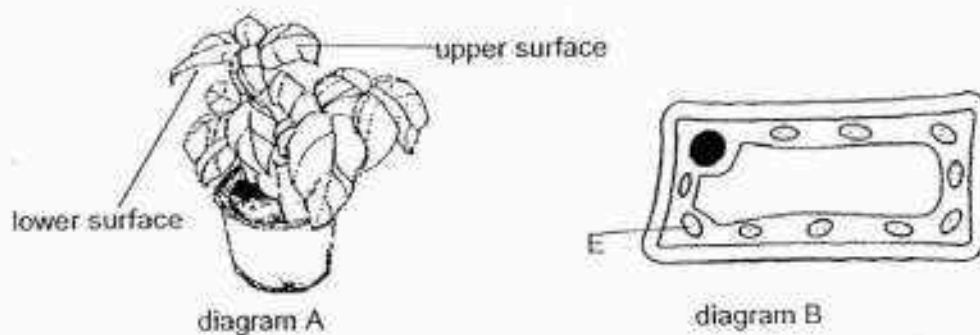
---



---

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

17. The diagrams below show a plant and leaf cell respectively.



- (a) Name the part labelled E in diagram B. (1m)

\_\_\_\_\_

- (b) Explain why the upper surface of the leaf in diagram A has more of 'E'. (1m)

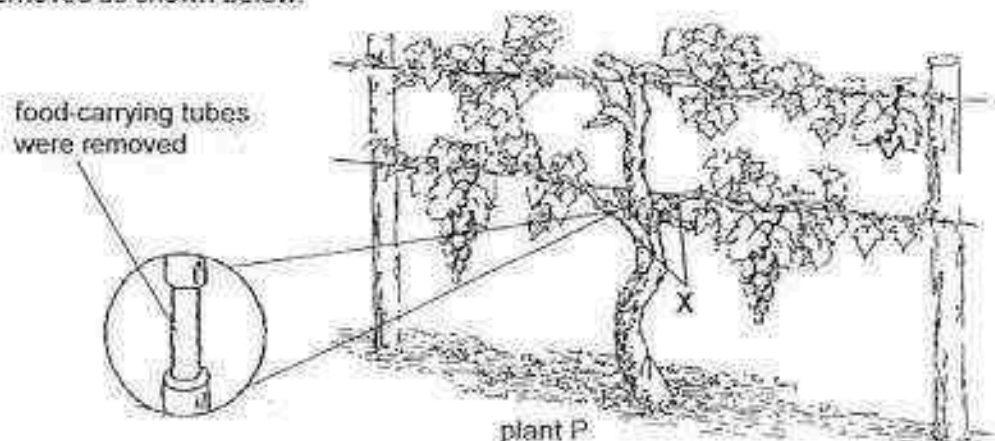
\_\_\_\_\_  
\_\_\_\_\_

- (c) When the plant in diagram A grows taller, what happens to the cells in the plant? (1m)

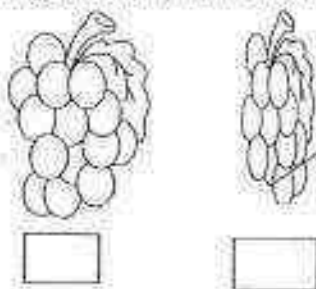
\_\_\_\_\_  
\_\_\_\_\_

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

18. Sue carried out an experiment with plant P. The food-carrying tubes at part X were removed as shown below.



- (a) Which of the following is likely to be the fruit of plant P after a few weeks? Choose your answer by putting a tick (✓) in the box below.



Explain your choice.

(1m)

---



---

- (b) Explain why the water-carrying tubes must not be removed from the plant P during the experiment. (1m)

---



---

- (c) Farmers use the above method to grow grapes. After some time the stem will recover. Why is this important to the roots? (1m)

---

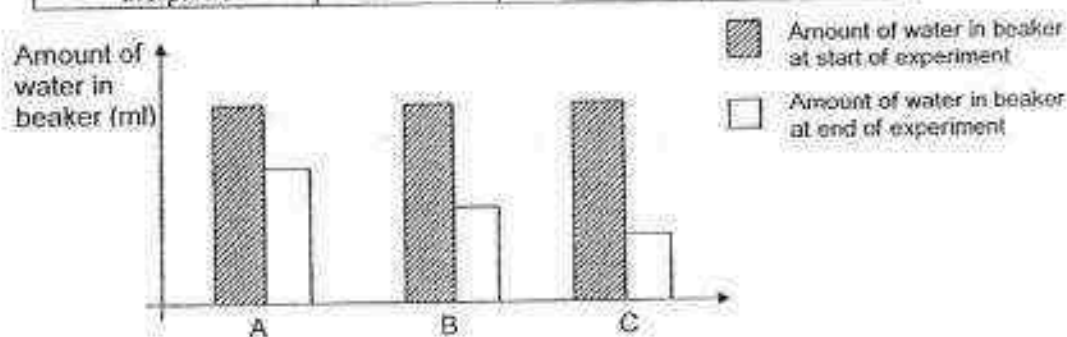


---

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

19. Pei Ling carried out an experiment using the three set-ups A, B and C.

set-up	A	B	C
number of leaves on the plant	15	25	35



- (a) What is the variable that was changed in this experiment? (1m)

\_\_\_\_\_

- (b) What conclusion can be made based on the results shown in the graph? (1m)

\_\_\_\_\_

\_\_\_\_\_

- (c) It was observed that most of the leaves of a plant dropped off during the hot and dry months, leaving only some of the leaves on the plant. Explain how this helps the plant to survive during the hot and dry months. (1m)

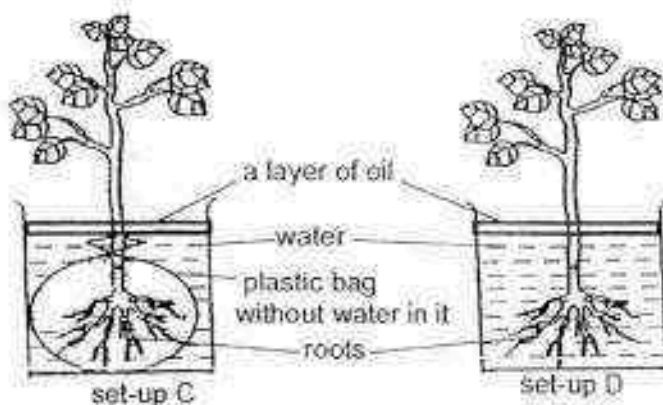
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

20. Jasmine set up the following experiment as shown below and left them indoors.



She recorded her observation in the table below.

Set-up	Amount of water at the start of the experiment	Amount of water at the end of the experiment
C	500ml	500ml
D	500ml	470ml

- (a) What is the aim of her experiment? (1m)

---



---

- (b) Describe how the leaves obtain water from the plant. (1m)

---



---

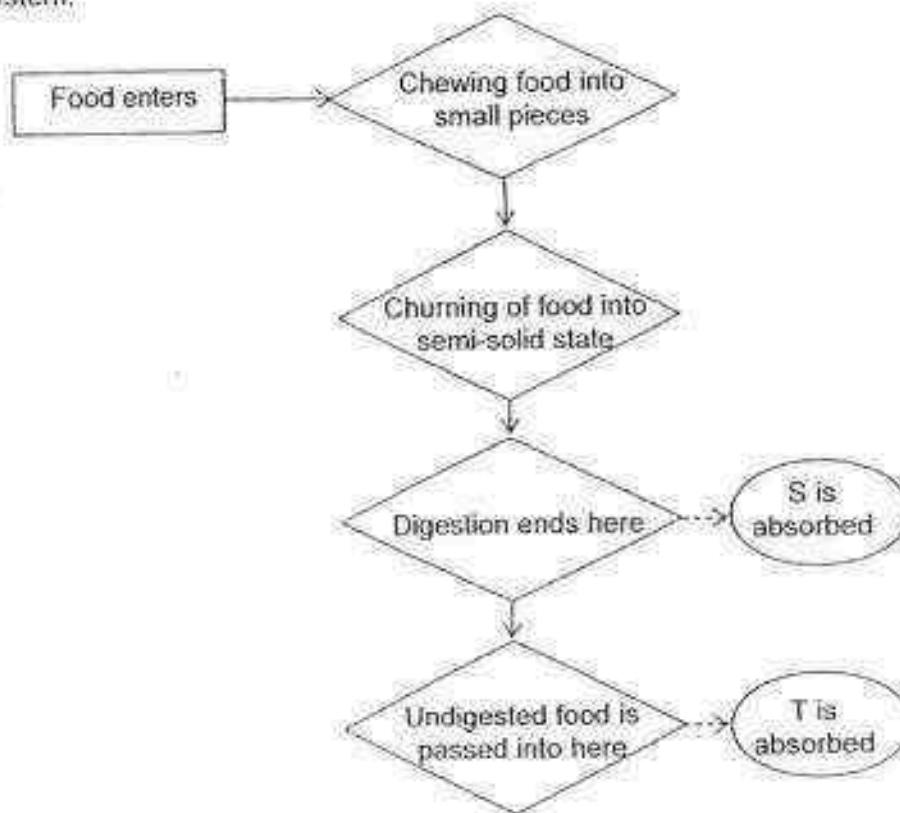
- (c) Why must the number of leaves on the plant be kept the same? (1m)

---



---

21. The flow chart below shows the processes involved in the human digestive system.



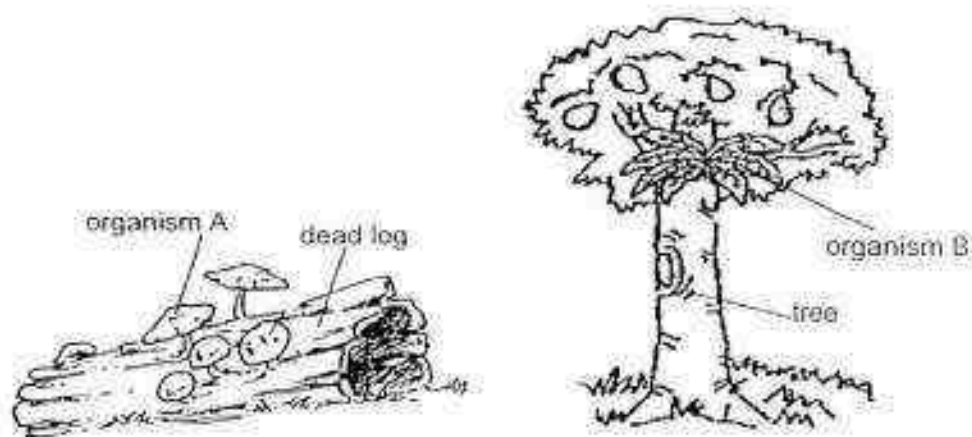
Based on the information given in the flow chart, state what are S and T in the blanks below. (2m)

(a)	S	
(b)	T	



## Rosyth School/Continual Assessment 1/ Standard Science/P5/2016

22. The diagram below shows organism A growing on a dead log and organism B growing on a tree.



- (a) State a similarity and a difference between the organisms A and B. (2m)

Similarity (in terms of reproduction of the organisms) :

---



---

Difference (in terms of how the organisms obtained food) :

---



---

- (b) Both organisms A and B are found growing on another plant. State the reasons for the organisms to grow on another plant. (2m)

i) Organism A: 

---

---

ii) Organism B: 

---

---

End of Paper

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : ROSYTH  
 SUBJECT : SCIENCE  
 TERM : CA1

**PART I**

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

**PART II**

- Q15a Cell L have chloroplasts but cell M does not have chloroplasts.
- Q15b Cell membrane. Cell membrane is like the security guard which controls substances going in and out of the cell.
- Q16a Cell T and V as they have cell walls to protect the cell.
- Q16b Cell u will eventually die.
- Q17a Chloroplast
- Q17b The chloroplast help the plant to capture more sunlight so it would make more food.
- Q17c The cells in the plant has multiply.

Q18a



More food is stored in the fruit as the food from the leaves cannot be transported down to the rest of the plants.

- Q18b The plant needs to make food to survive.
- Q18c The roots would have more food to absorb water for the plant.

- Q19a The number of leaves on the plant.
- Q19b The greater the number of leaves, the greater the amount of water taken in by the plant.
- Q19c The lesser the number of leaves, the lesser amount of water lost through the leaves.
- Q20a To find out if roots take in water.
- Q20b The root of the plant absorbs the water from the beaker and the water-carrying tubes carries the water to the rest of the plant.
- Q20c The number of leaves are kept the same as they affect the amount of water taken in by the plant which affects the result of the experiment.
- Q21a S – Nutrients from the digested food.
- Q21b T – Water from the undigested food.
- Q22a Similarity : Both organisms reproduce by spores.  
Difference : Organism A feeds on the dead log while organism B uses photosynthesis to make food.
- Q22b i) Organism A: Feeds on the dead log.  
ii) Organism B: B are found on another plant so that it will have more sunlight to make more food.

End

# Anglo-Chinese School (Junior)



## SEMESTRAL ASSESSMENT 1 (2016)

PRIMARY 5

SCIENCE

BOOKLET A

Tuesday

10 May 2016

1 hr 30 min

Name: \_\_\_\_\_ (   )     Class: 5.(   )

### INSTRUCTIONS TO PUPILS

1. Do not turn over the pages until you are told to do so.
2. Follow all instructions carefully.
3. There are 25 questions in this booklet.
4. Answer ALL questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

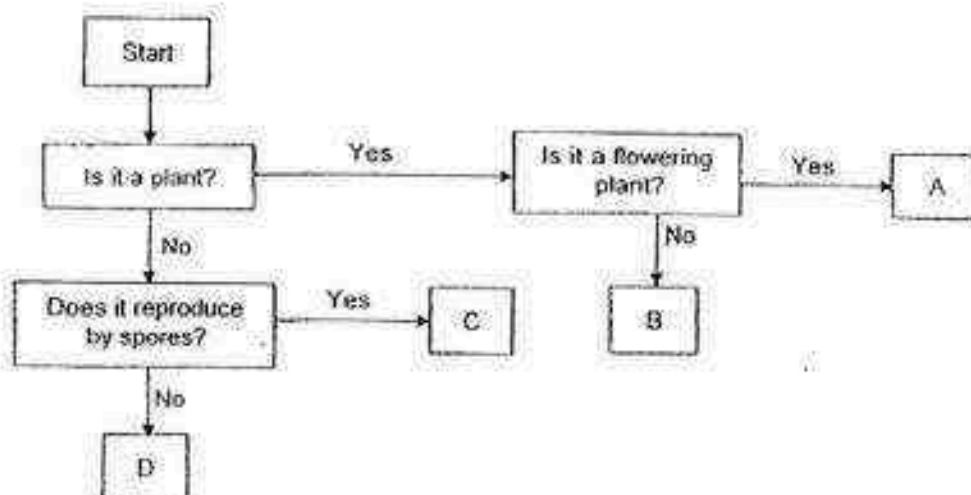
---

This question paper consists of 17 printed pages (inclusive of cover page).

**Booklet A (50 marks)**

For each question from 1 to 25, four options are given. One of them is the correct answer. Choose the correct option (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet (OAS). (25 x 2 marks)

1 Study the flowchart below.

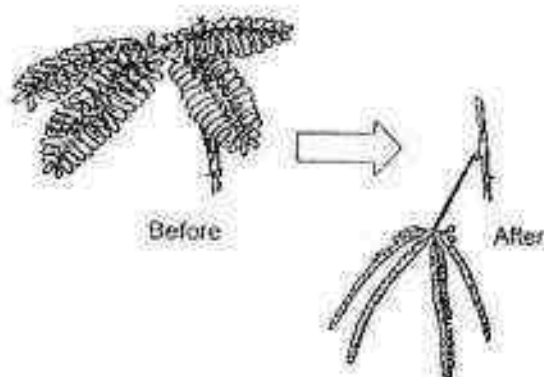


Which of the following can be organisms, A, B, C, and D?

	A	B	C	D
(1)	Mould	Balsam	Bacteria	Hibiscus
(2)	Balsam plant	Mould	Bracket Fungi	Bacteria
(3)	Hibiscus plant	Bird's nest fern	Bacteria	Toadstool
(4)	Hibiscus plant	Moss	Bracket Fungi	Bacteria

3

- 2 A mimosa plant, as shown below, will fold its leaves when touched or exposed to heat.



This shows that the mimosa plant is a living thing because it can \_\_\_\_\_

- (1) grow
- (2) reproduce
- (3) respond to changes
- (4) move freely from place to place

- 3 Aaron, Ben, Caleb and Donovan were each given an identical piece of clay. They each conducted a simple experiment to show that the clay has volume.

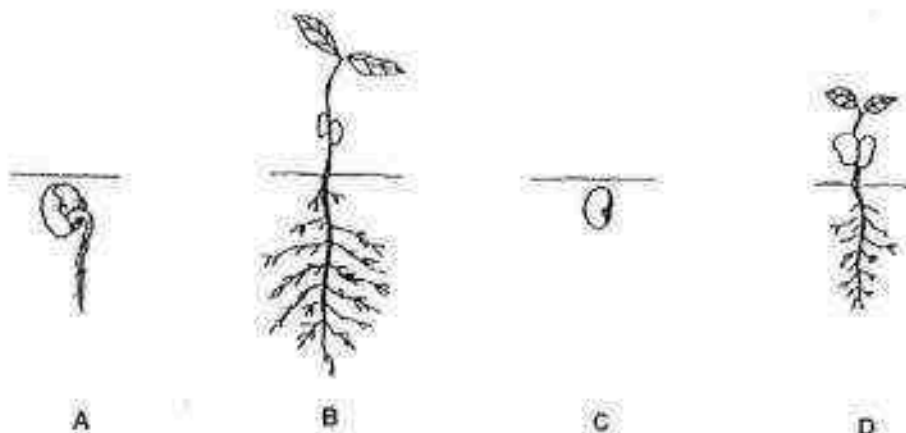
Name	Experiment
Aaron	Molded and shaped it into many different shapes.
Ben	Placed it on a weighing scale and measured its mass.
Caleb	Placed it in a sunny spot in the garden and let it dry up.
Donavan	Placed it in a beaker of water and observed the change in the water level in the beaker.

Whose experiment best shows that the clay has volume?

- (1) Aaron
- (2) Ben
- (3) Caleb
- (4) Donovan

4

- 4 The diagrams below show the growth of a bean plant.



Which of the following shows the correct order of the growth of the bean plant?

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

- 5 The table below shows the properties of 3 types of matter.

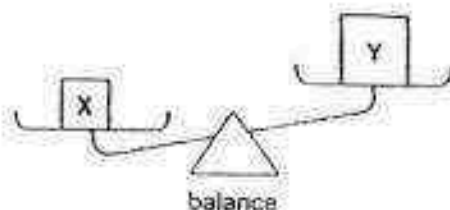
Property	X	Y	Z
Does it have a definite shape?	No	No	Yes
Can it be compressed?	No	Yes	No
Can it be seen?	Yes	No	Yes

Which of the following correctly identifies X, Y and Z?

	X	Y	Z
(1)	oxygen	water	glass marble
(2)	water	glass marble	oxygen
(3)	water	oxygen	glass marble
(4)	glass marble	oxygen	water

5

6. Calvin placed two objects, X and Y, which were made of different materials, on a balance. He observed that the balance tilted towards its left, as shown in the diagram below.

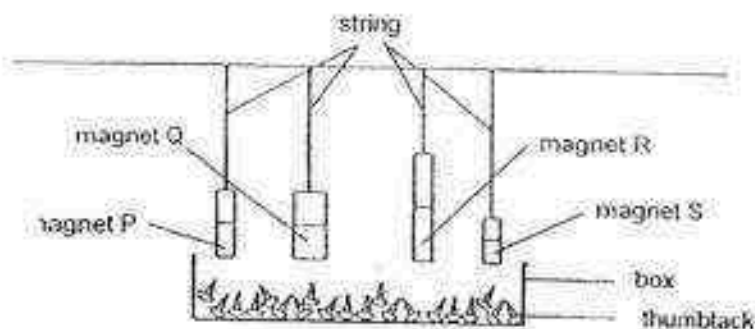


Based on his observation, which of the following conclusions can Calvin make?

- A X has a greater mass than Y.
- B Y occupies more space than X.
- C Both do not have definite shape.
- D X is lighter than Y because it is smaller.

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

7. Mark had four magnets, P, Q, R and S, suspended on strings. He brought the magnets close to a box of thumbtacks as shown in the diagram below. All the magnets were placed an equal distance away from the thumbtacks.



He observed the number of thumbtacks that each magnet was able to attract and recorded his findings in the table below.

Magnet	P	Q	R	S
Number of thumbtacks attracted	2	5	3	7

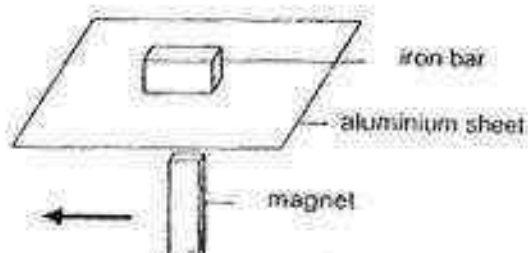
Based on the results in the table, which of the following is the best / most likely conclusion Mark can make?

- (1) Small magnets are weaker than big magnets.
- (2) Shorter magnets are weaker than longer magnets.
- (3) The strength of a magnet is dependent on its length.
- (4) The strength of a magnet is not dependent on its size.



6

- 8 Tom carried out an experiment involving an iron bar, an aluminium sheet and a magnet as shown in the diagram below.



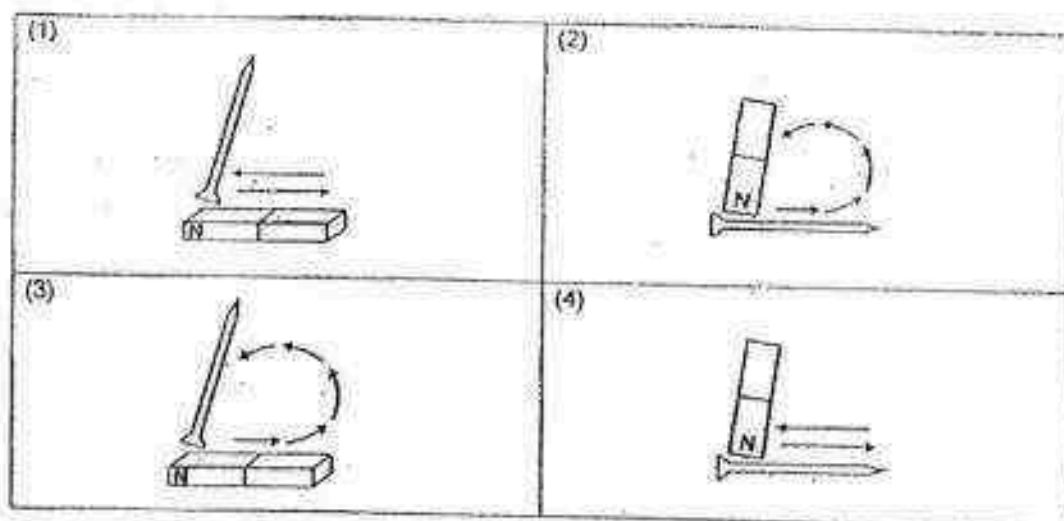
When Tom held the magnet a distance below the aluminium sheet and moved it in the direction of the arrow, the iron bar moved in the same direction as the magnet.

Based on his observations, which of the following conclusions can Tom make?

- A Iron is a magnetic material.
- B Like poles of two magnets repel.
- C Magnetic attraction can act from a distance.
- D Magnetic attraction can pass through magnetic material.

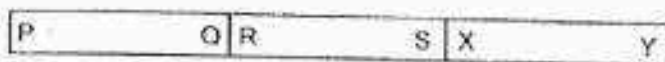
- (1) A and C only
- (2) B and C only
- (3) B and D only
- (4) A and D only

- 9 Which of the following shows the correct way of making an iron nail into a temporary magnet?

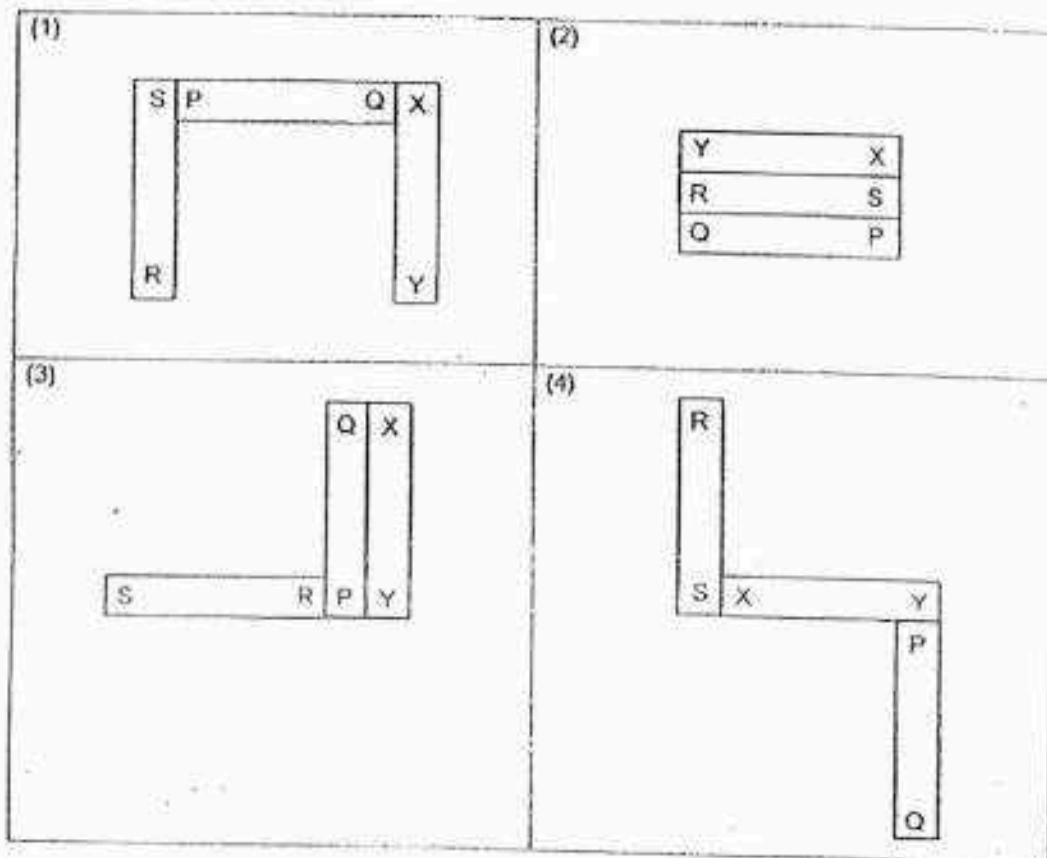


7

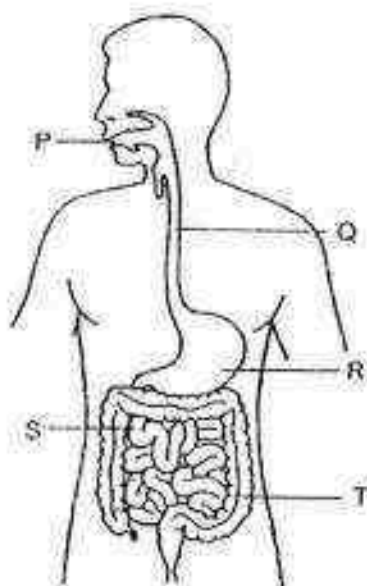
- 10 Three bar magnets PQ, RS and XY are arranged as shown below.



Which one of the following arrangement of magnets is not possible?



- 11 The diagram below shows the human digestive system.



In which parts of the digestive system are digestive juices present to help with the breaking down of food into simpler substances?

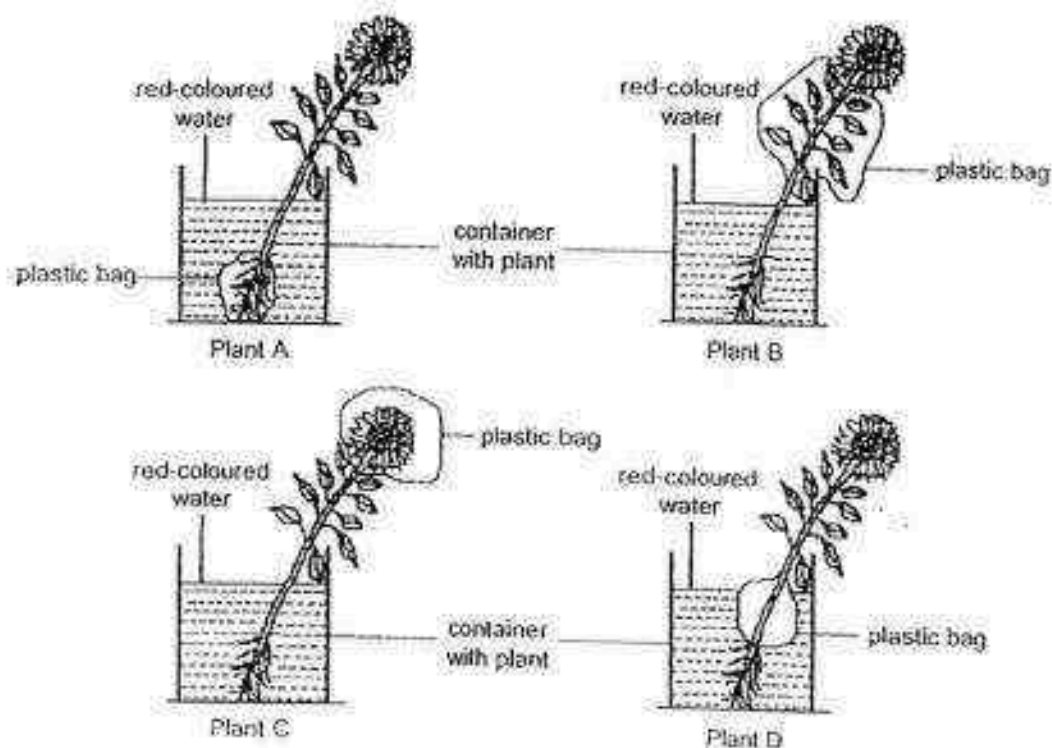
- (1) P and R only
  - (2) Q, R and T only
  - (3) P, R and S only
  - (4) P, Q, S and T only
- 12 Dillon coated the underside of a few leaves from a potted plant with a thick layer of oil. He placed the plant in a sunny spot in the garden and continued to water it daily.
- After a week, he noticed that all the leaves that were coated with oil turned yellow while the leaves that were not coated with oil remained green and healthy.

What could be the reason for the leaves that were coated with oil to turn yellow?

- (1) They absorbed the sunlight and turned yellow.
- (2) They were not able to absorb the water vapour in the air.
- (3) They were not able to exchange gases with the surrounding air.
- (4) They were not able to distribute food made to other parts of the plant.

9

- 13 Cayden conducted an experiment using 4 identical flowering plants. He covered a particular part of each plant with a plastic bag before placing them into a container of red-coloured water.



After 2 days, he noticed that more than 1 flower had red stains.

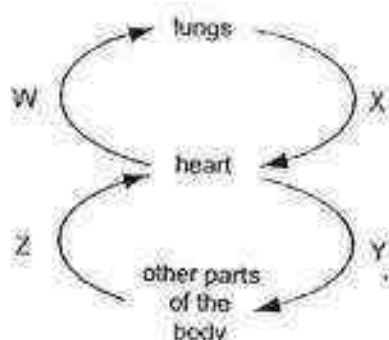
Which of the following plants most likely had red-stained flowers?

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

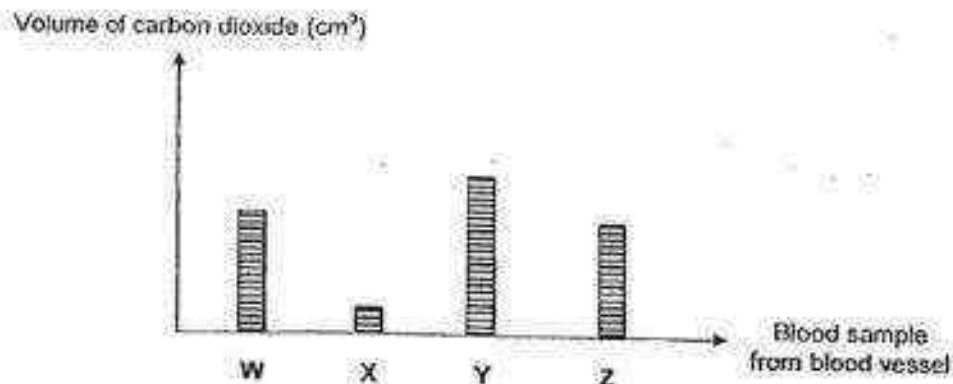
- 14 Ten people were trapped in an elevator for 20 minutes due to a power failure. The lights and ventilation fans in the elevator were not working as well. Which of the following correctly show the changes in the amount of gases in the elevator after 15 minutes?

	Amount of oxygen	Amount of carbon dioxide	Amount of water vapour
(1)	increases	decreases	increases
(2)	decreases	increases	increases
(3)	increases	decreases	decreases
(4)	decreases	increases	decreases

- 15 The diagram below shows the blood flow in blood vessels W, X, Y and Z in a human circulatory system.



The graph below shows the composition of carbon dioxide for each of the blood sample taken from W, X, Y and Z.



Which one of the bars shows the incorrect composition of carbon dioxide in the blood sample?

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

11

- 16 Marcus listed some information about three different cells, P, Q and R.

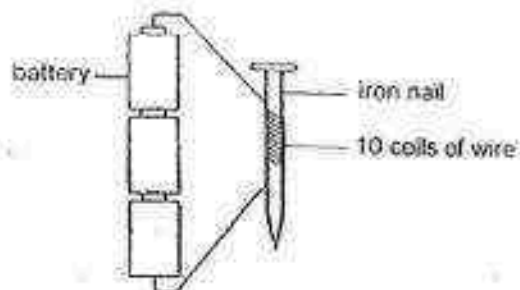
Parts of a cell	Cell P	Cell Q	Cell R
Cell wall	No	Yes	Yes
Nucleus	Yes	Yes	Yes
Chloroplast	No	No	Yes

Based on the information given above, which of the following statements describe(s) cells P, Q and R correctly?

- A Cell P can be an animal cell.
- B Cell Q can possibly be taken from a root of a plant.
- C Cell R is able to make food for the plant.

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

- 17 Tessa set up an electromagnet as shown below.



Which of the following can increase the strength of the electromagnet?

- A Using a longer iron nail.
- B Increasing the number of batteries used.
- C Using a nail made of silver instead of an iron nail.
- D Increasing the number of coils of wire around the iron nail.

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

12

18

Jayden set up an electrical circuit in an experiment to sound a buzzer. He tested if the buzzer rings with various combination with switches S1 and S2 opened, closed or opened and closed. His results are shown in the table below.

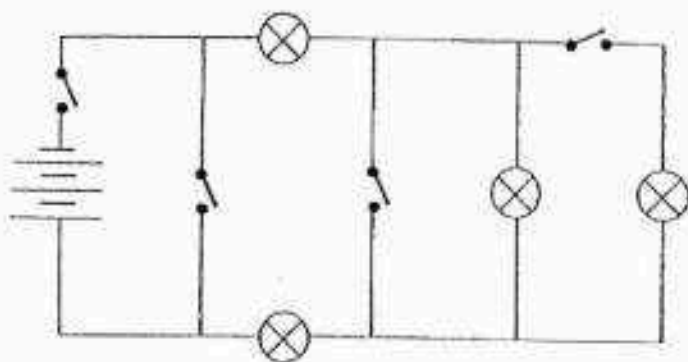
Switch S1	Switch S2	Does the buzzer ring?
opened	closed	Yes
closed	opened	No
opened	opened	No
closed	closed	Yes

Based on the results, which of the following circuits did Jayden use for the set-up?

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

13

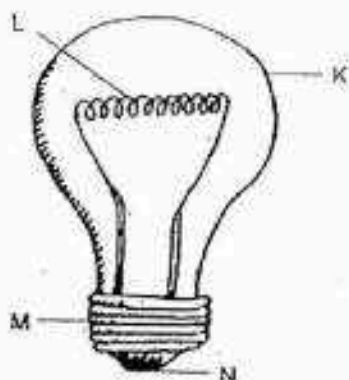
- 19 A circuit diagram is shown below.



What is the least number of switches that have to be closed in order to have all the bulbs light up?

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

- 20 Study the diagram below.



Which of the following statements are true about the light bulb?

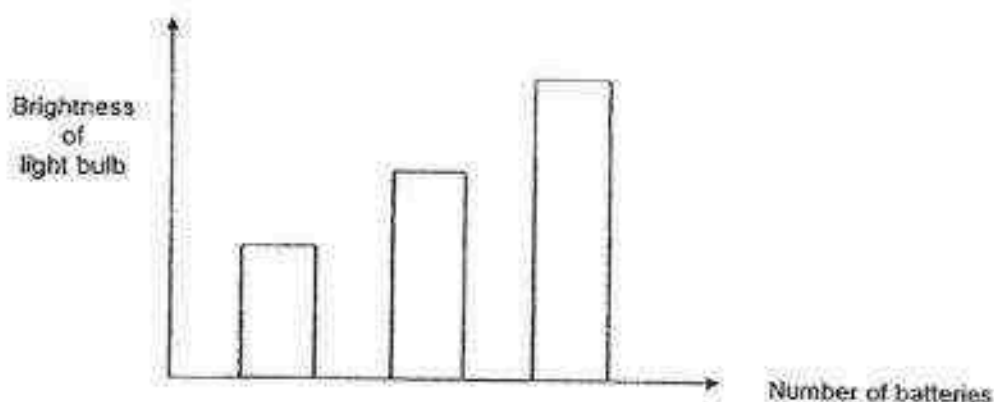
- A Part L is usually made of tungsten.
- B Part K is soft, flexible and transparent.
- C Part M and N must be conductors of electricity.
- D Part L gives off light and heat when there is electricity flowing through it.

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



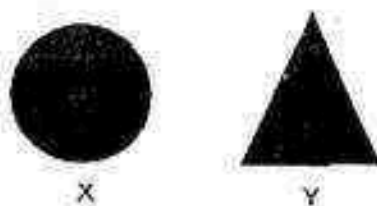
14

21. The graph below shows the relationship between the number of batteries and the brightness of the light bulb in an electrical circuit.

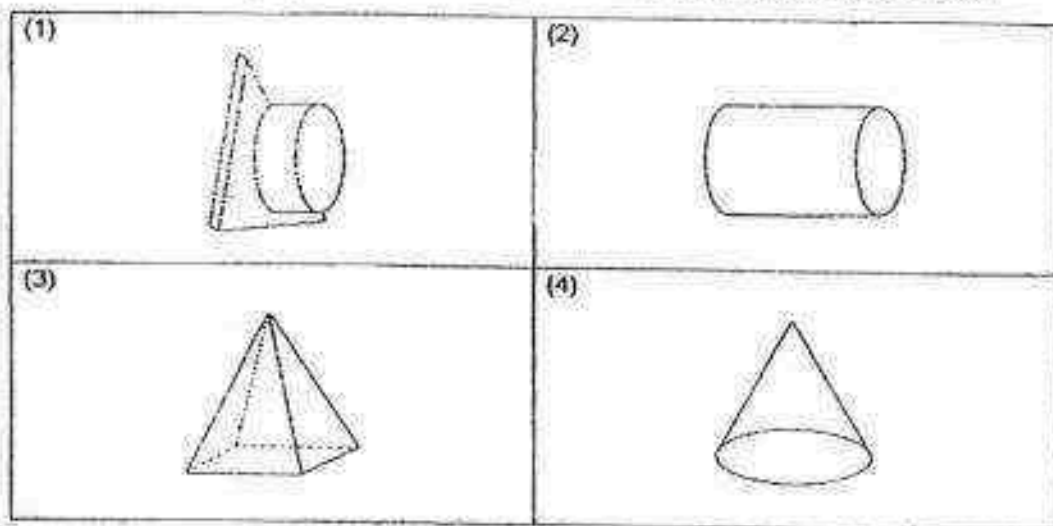


Which of the following statements correctly describes the graph above?

- (1) The number of batteries depends on the brightness of the light bulb.
  - (2) The brightness of the light bulb increases as the number of batteries increases.
  - (3) The number of batteries increases as the brightness of the light bulb decreases.
  - (4) The brightness of the light bulb decreases but the number of batteries increases.
22. Two different shadows, X and Y, were cast by an object when a light was shone on it from a different direction each time. The shadows are shown in the diagrams below.

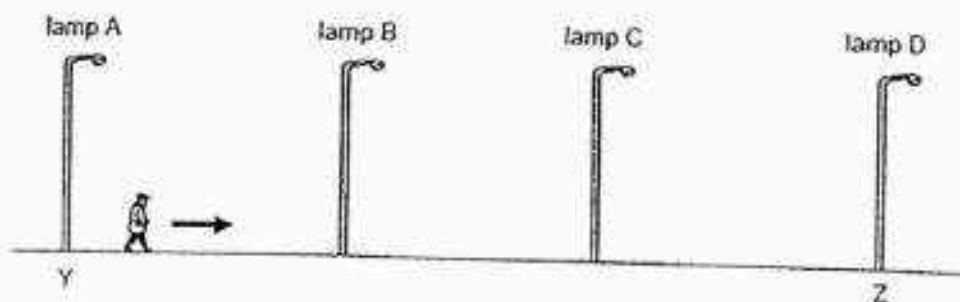


Which of the following objects could have cast the shadows, X and Y, as shown above?

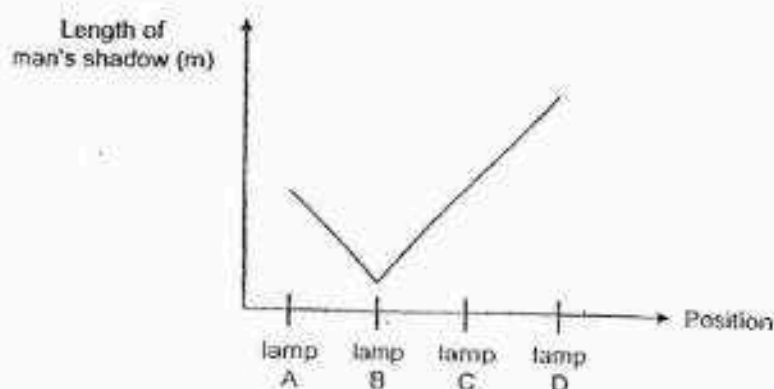


15

- 23 The diagram below shows a man walking down a street from Point Y to Point Z on a dark night. There were 4 street lamps along the street but only one street lamp was actually lighted up. The street lamps were the same distance apart from each other.



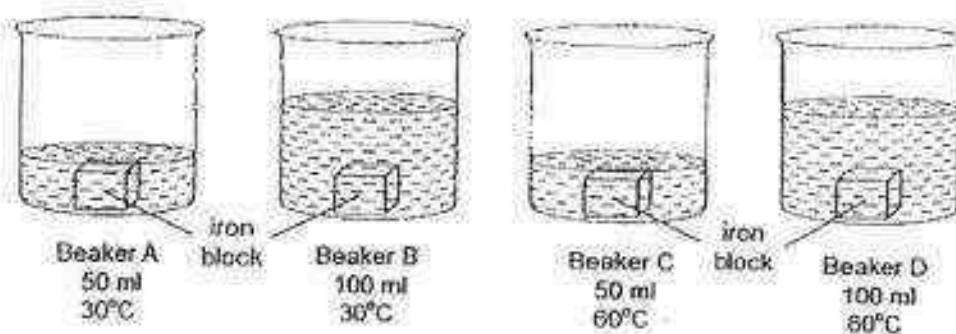
The graph below shows how the length of his shadow changes from Point Y to Point Z.



Based on the graph above, which of the street lamps, A, B, C, or D, was lighted up?

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

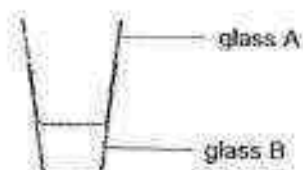
- 24 Four identical iron blocks were heated to a temperature of  $100^{\circ}\text{C}$ . Each block was then dropped into a beaker of water as shown in the diagram below. Each beaker contained a different amount of water, at a different temperature.



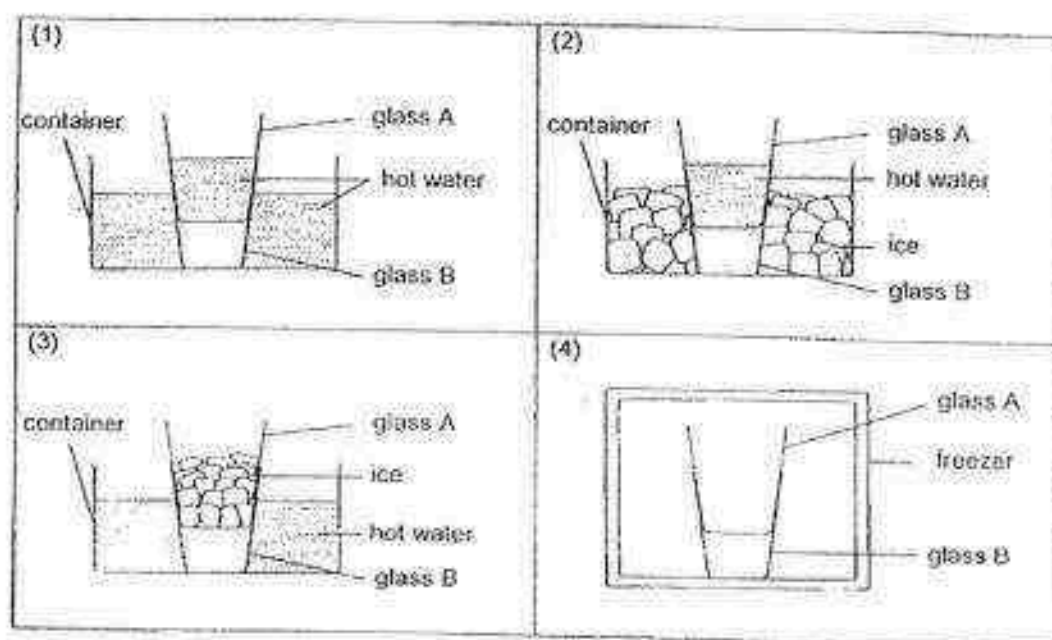
Which of the following correctly indicates the beakers with water at the highest and lowest temperature 1 minute after the blocks were dropped in?

	Water with Highest Temperature	Water with Lowest Temperature
(1)	Beaker A	Beaker D
(2)	Beaker B	Beaker C
(3)	Beaker C	Beaker B
(4)	Beaker D	Beaker A

- 25 When Sally went to the kitchen to get herself a glass of water, she found that glass A was stuck inside glass B, as shown in the diagram below.



Which of the methods shown below would best enable her to separate glass A from glass B in the shortest time?



## Anglo-Chinese School (Junior)



## SEMESTRAL ASSESSMENT 1 (2016)

PRIMARY 5

SCIENCE

BOOKLET B

Tuesday

10 May 2016

1 hr 30 min

Name: \_\_\_\_\_ ( ) Class: 5.( ) Parent's Signature: \_\_\_\_\_

## INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 14 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	50	
B	40	
PBA	10	
Total	100	

---

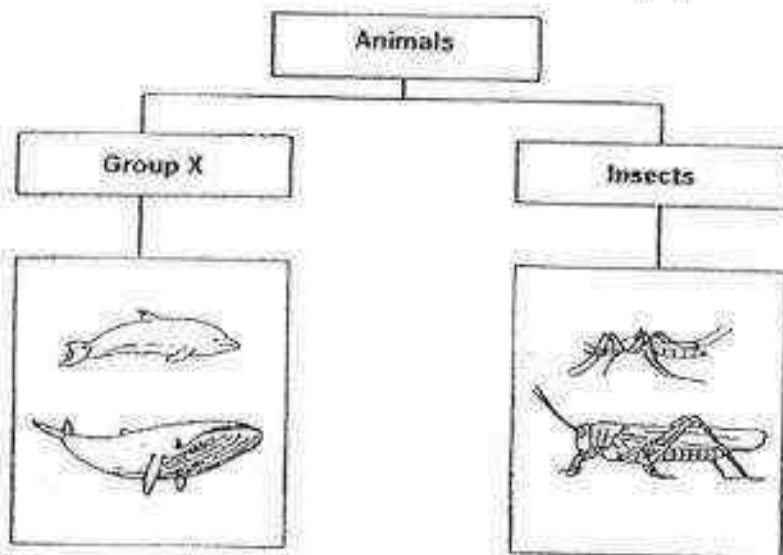
This question paper consists of 17 printed pages (inclusive of cover page).

**Booklet B (40 marks)**

For questions 26 to 39, write your answers in this booklet.

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

- 26 The classification chart below shows how some animals can be grouped.



- (a) What is the correct heading for Group X? [1]

\_\_\_\_\_

- (b) Besides laying eggs, what are 2 other characteristics of insects? [1]

\_\_\_\_\_

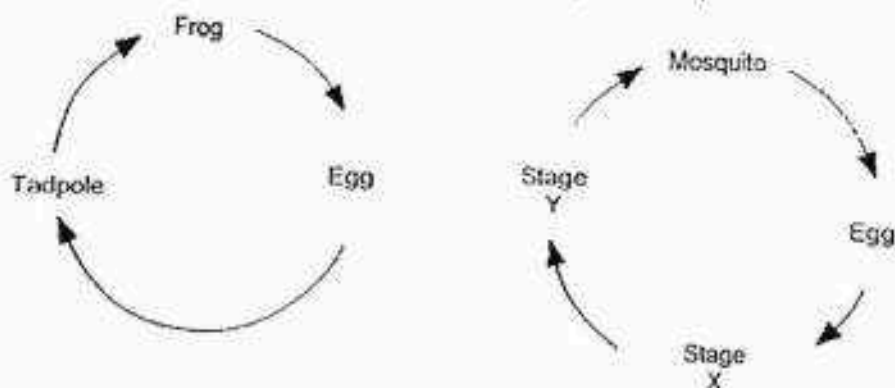
\_\_\_\_\_

(Go on to the next page)

SCORE	
	2

3

- 27 The diagram below shows the life cycles of a frog and mosquito.



- (a) Based on the life cycles above, state one similarity and one difference between the life cycles of both animals. [1]

(i) Similarity ;

---



---

(ii) Difference ;

---



---

- (b) Name the stages X and Y in the life cycle of the mosquito. [1]

(i) X: \_\_\_\_\_ stage

(ii) Y: \_\_\_\_\_ stage

- (c) State 2 differences between stages X and Y in the life cycle of a mosquito. [1]

---



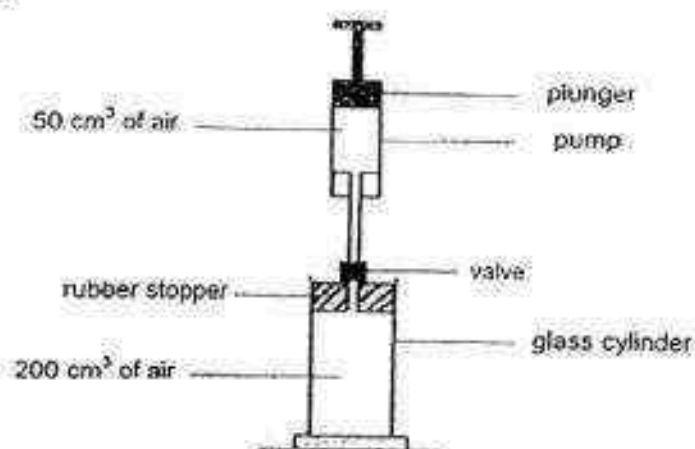
---

(Go on to the next page)

SCORE	
	3

4

- 28 The diagram below shows a glass cylinder containing  $200\text{ cm}^3$  of air connected to a pump containing  $50\text{ cm}^3$  of air. A valve prevents the air in the glass cylinder from flowing back into the pump.



$50\text{ cm}^3$  of air goes into the glass cylinder when the plunger is pushed all the way into the pump. The plunger is pushed all the way once.

- (a)(i) What is the volume of air in the glass cylinder? Explain why. [1]

---



---

- (ii) Has the mass of air in the glass cylinder decreased, increased or remained the same? Explain your answer based on the property of matter. [1]

---



---

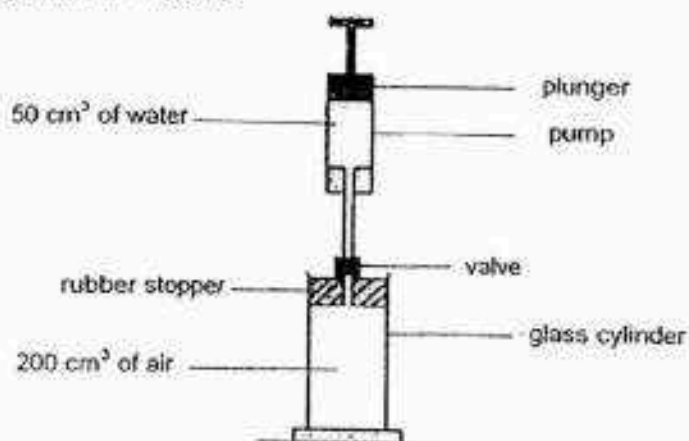
(Go on to the next page)

SCORE	
	2



5

In another set-up, a glass cylinder containing  $200\text{ cm}^3$  of air is connected to a pump containing  $50\text{ cm}^3$  of water. A valve prevents the air in the glass cylinder from flowing back into the pump.



$50\text{ cm}^3$  of water goes into the glass cylinder every time the plunger is pushed all the way into the pump.

What would the volume of air in the glass cylinder be after the plunger is pushed in all the way? Explain why. (1)

---



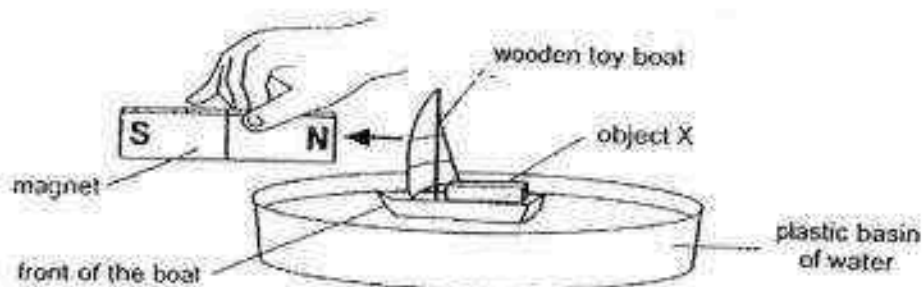
---

(Go on to the next page)

SCORE	
	1

6

- 29 Jack placed object X on a wooden toy boat floating on a plastic basin of water as shown in the diagram below.



When Jack brought the N-pole of a magnet close to the front of the wooden toy boat, the wooden toy boat moved towards the magnet.

- (a) Why did the wooden toy boat move towards the magnet? Explain your answer. [1]

---



---

When Jack brought the S-pole of the magnet close to the front of the wooden toy boat, the wooden toy boat moved away from the magnet.

- (b) Based on Jack's observation above, what can Jack conclude about object X? Explain why. [1]

---



---

- (c) When Jack brings the N-pole of the magnet close to the front of the wooden toy boat, will the wooden toy boat move towards the magnet if object X is made of copper? Explain your answer. [1]

---



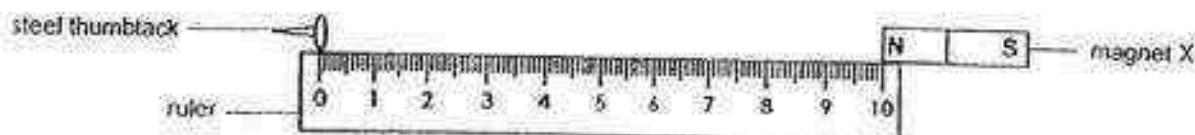
---

(Go on to the next page)

SCORE	
	3

7

- 30 The pulling distance of a magnet is the greatest distance from which a magnet is able to attract an object made of a magnetic material. Tom carried out an experiment to find the pulling distance of 3 magnets, X, Y and Z, using the set-up as shown in the diagram below.



Tom placed magnet X at the 10 cm mark of the ruler and a steel thumbtack at the 0 cm mark of the ruler. He then slowly pushed magnet X towards the thumbtack, stopping immediately when the thumbtack was attracted by magnet X and recorded the pulling distance of the magnet. He repeated the experiment using magnets Y and Z.

The results of his experiment are shown in the table below.

Magnet	Pulling Distance (cm)
X	1.5
Y	4
Z	2.5

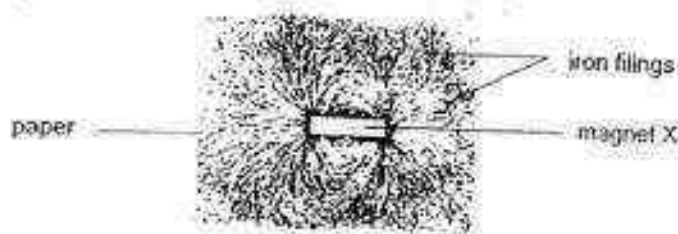
- (a) List the magnets, X, Y and Z according to their magnetic strength, from strongest to weakest. [1]

\_\_\_\_\_

- (b) State the relationship between the magnetic strength of a magnet and the pulling distance of a magnet. [1]

\_\_\_\_\_

Tom placed magnet X on a piece of paper, before sprinkling iron filings over magnet X and the piece of paper. The diagram below shows the pattern formed by the iron filings.



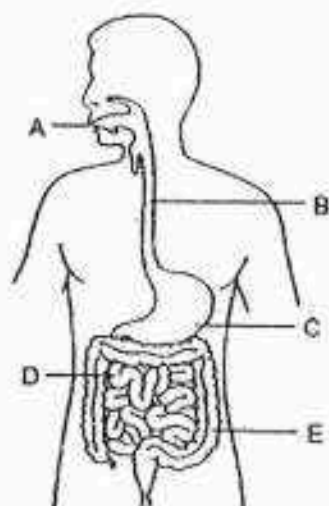
- (c) Tom observed that there were more iron filings at the two ends of the magnet. What can Tom infer from this observation? [1]

\_\_\_\_\_

(Go on to the next page)

SCORE	
	3

- 31 Study the diagram of the human digestive system below.



- (a) State the function of part E of the digestive system.

[1]

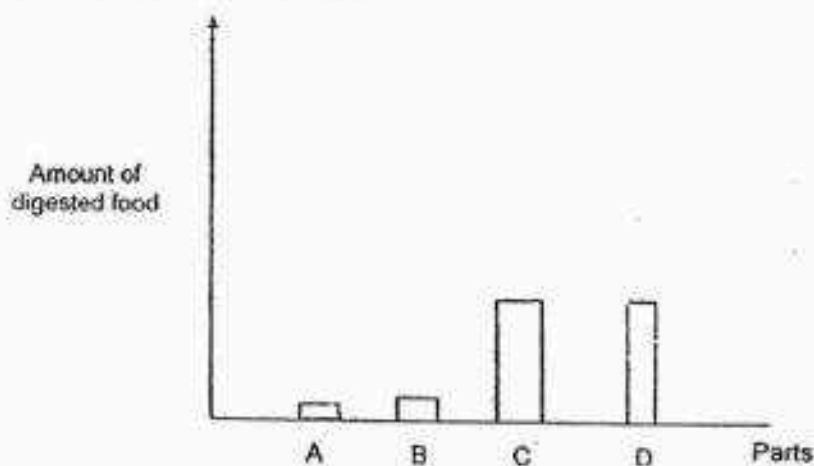
---



---

- (b) The bar graphs below show the amount of digested food in the contents taken from part B and part C. Draw another 2 bar graphs to show the most likely amount of digested food in part A and part D.

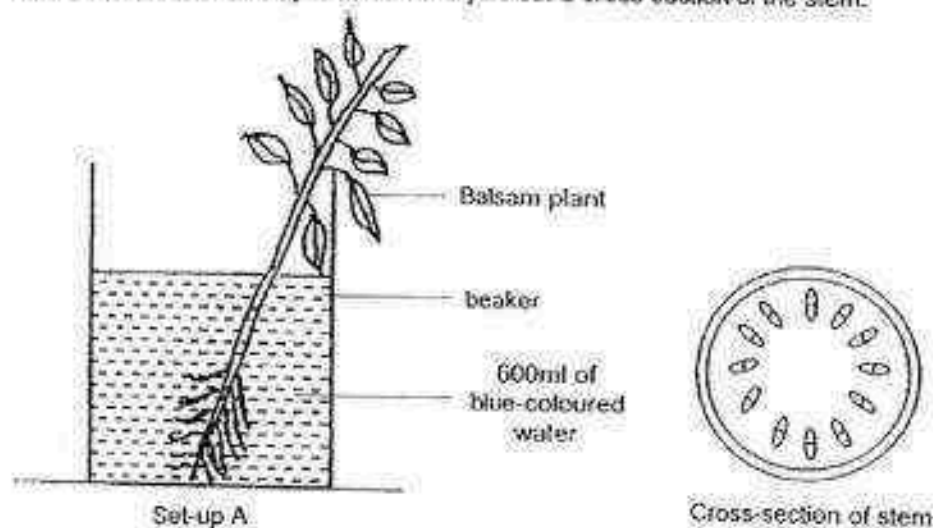
[1]



(Go on to the next page)

SCORE	
	2

- 32 Christopher placed a balsam plant in a beaker with 600ml of water that had been mixed with blue-coloured food dye. The next day he cut a cross-section of the stem.



Christopher noticed that there were blue stains on some parts of the cross-section of stem.

- (a) Which part of the plant structure in the cross-section of stem was stained blue? [1]

\_\_\_\_\_

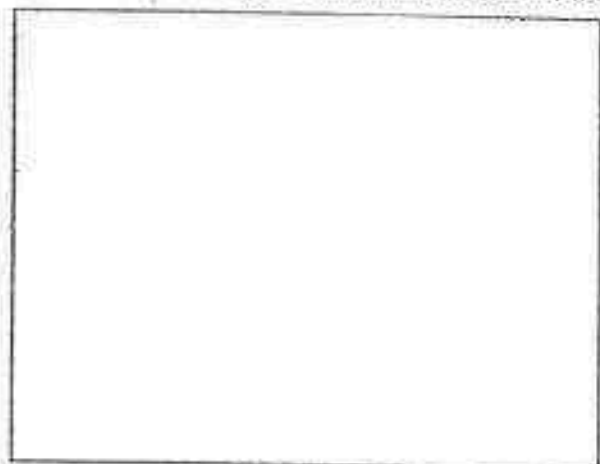
- (b) Explain how it is possible for the part mentioned in (a) to be stained blue. [1]

\_\_\_\_\_

\_\_\_\_\_

Christopher wanted to carry out an experiment to find out if the number of leaves of a balsam plant affects the amount of water taken in by the plant using set-ups A and B.

- (c) Draw and label Set-up B in the box below to carry out a fair test. [1]



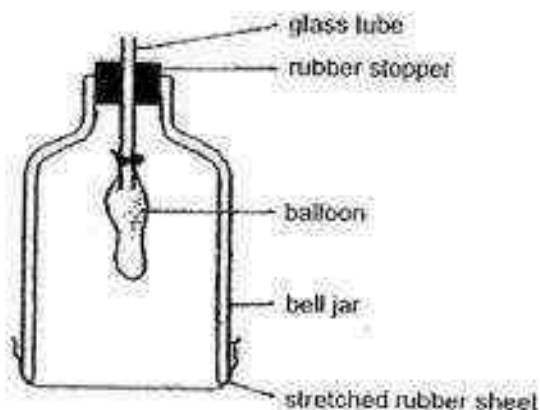
(Go on to the next page)

SCORE	
	3

10

33

Daniel made the following model of the human respiratory system. The balloon in the jar will expand when the stretched rubber sheet at the bottom of the bell jar is pulled downwards.



Complete the table below to show what each part of the model represents in the human body system. [2]

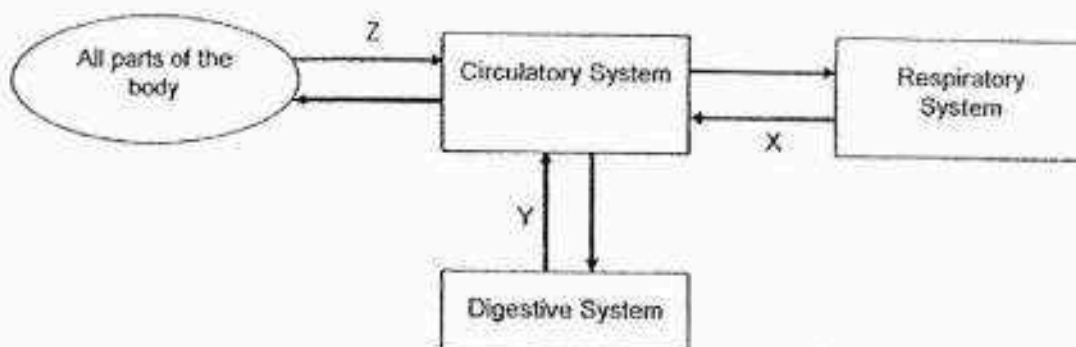
Model	Part of the Human Body System	Function
bell jar		
balloon		

(Go on to the next page)

SCORE	2
-------	---

11

- 34 The diagram below shows how the respiratory, circulatory and digestive systems in our body work together. The arrows represent the movement of the blood.



- (a) Name a substance that is greater in amount in the blood at Y than the blood at X. [1]

---

- (b) Give a reason why the substance in (a) is greater in amount in the blood at Y than the blood at X. [1]

---



---

- (c) State a difference between the blood at Z and blood at X. [1]

---



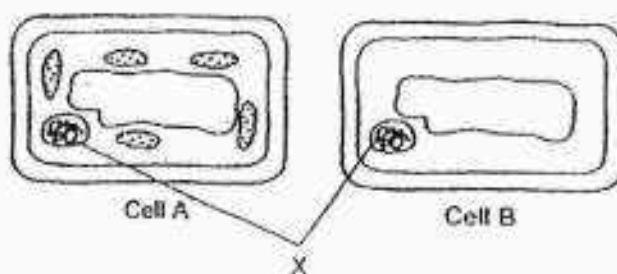
---

(Go on to the next page)

SCORE	
	3

12

- 35 The diagram below shows two plant cells, A and B, as seen under a microscope.



- (a) State the difference between Cell A and Cell B. [1]

---

- (b) Name the part labeled X and its function. [1]

---

- (c) Which part of the plant is Cell B most likely from? Explain your answer. [1]

---

---

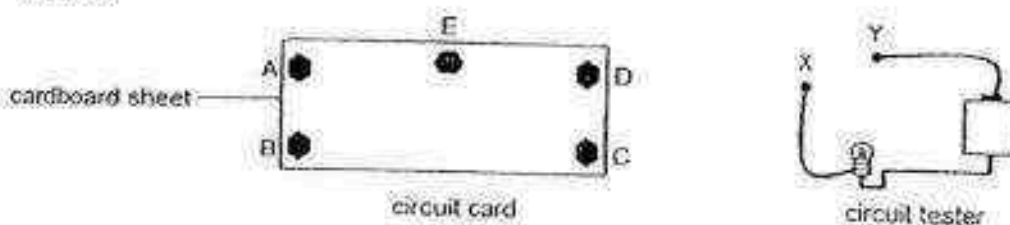
(Go on to the next page)

SCORE	
	3



13

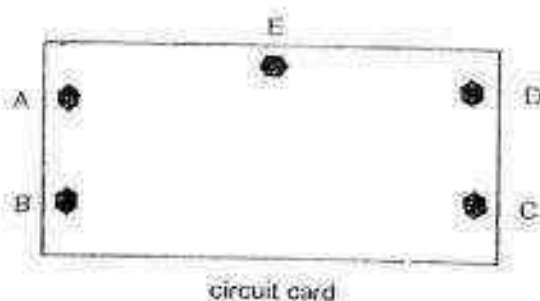
- 36 Gabriel used a circuit tester to test a circuit card. He connected the points X and Y of the circuit tester to the metal pins A, B, C, D and E on the circuit card to see if the bulb would light up.



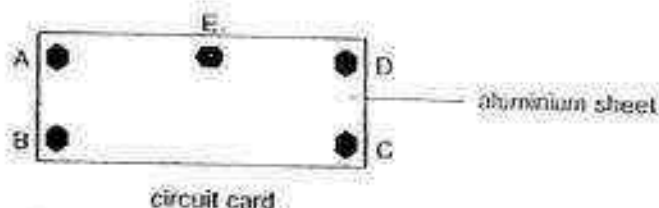
He recorded the results of the connection in the table below.

Metal pins connected		Did the bulb light up?
A	D	No
A	C	No
C	B	Yes
E	B	Yes
E	C	Yes
E	D	Yes

- (a) Based on the results, draw lines(s) on the circuit card below to show how the metal pins are connected. [1]



Gabriel changed the cardboard sheet to an aluminium sheet.



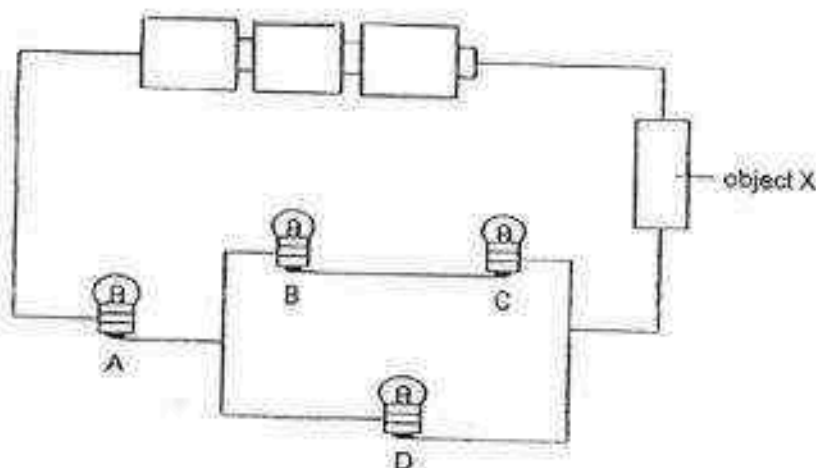
- (b) He then showed the circuit card to his friend. His friend told him that the circuit card will not be able to produce the same results as shown in the table above. Explain why. [1]

(Go on to the next page)

SCORE	
	2

14

- 37 Benjamin set up a circuit as shown below.



- (a) He observed that the bulbs light up when he connected object X to the circuit. What is object X most likely made of? State a property of object X that allows him to make this observation. [1]

---



---

- (b) Complete the table below to show what happens if one of the bulbs in the circuit fuses. [2]

Bulb that fused	Bulb(s) that will remain light up
A	
B	
C	
D	

- (c) Benjamin's teacher said that it is better to connect the light in the classroom in a parallel arrangement. Explain why. [1]

---



---

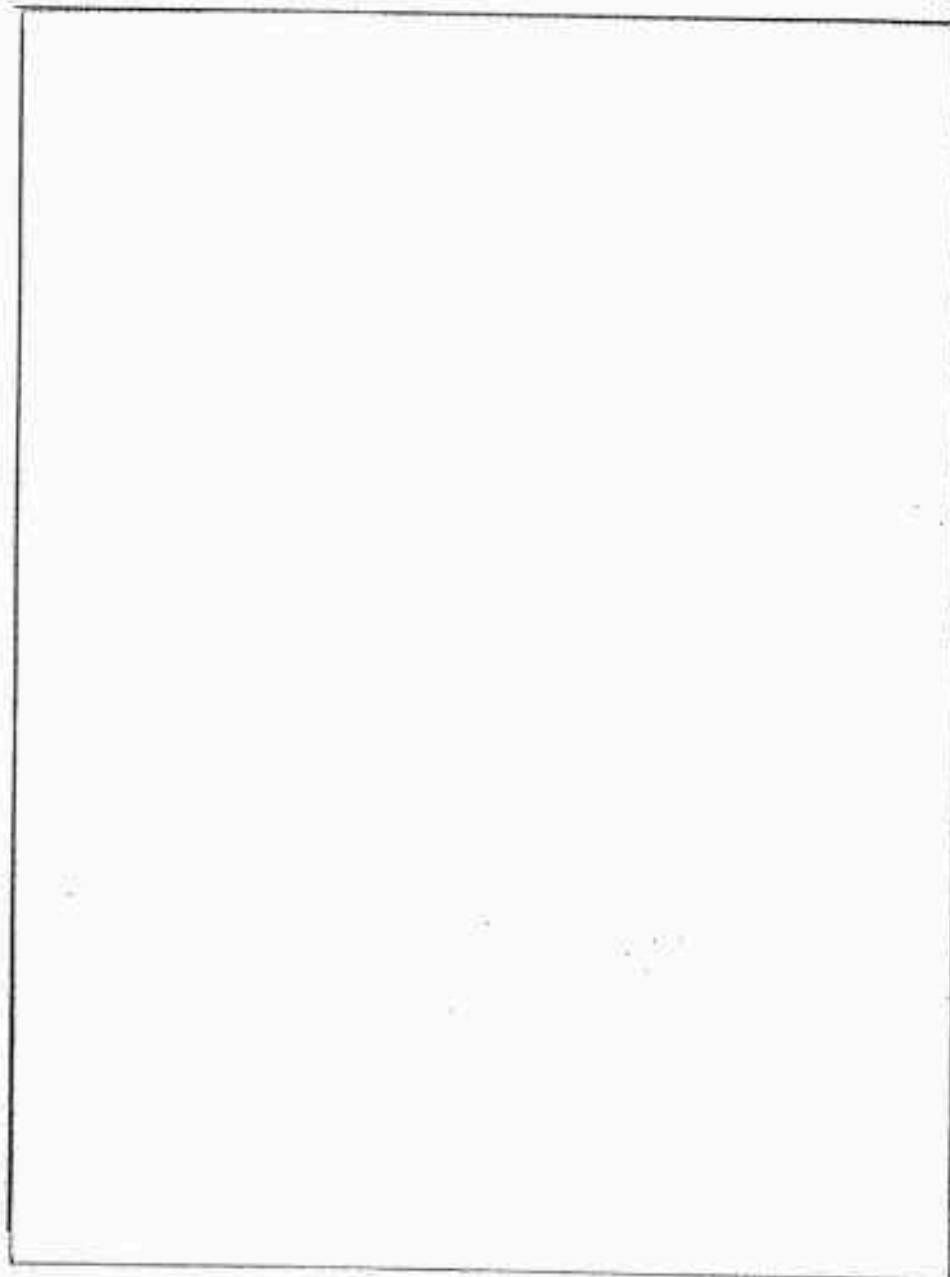
(Go on to the next page)

SCORE	
	4

15

Benjamin wanted to add some switches so that he is able to switch on all the 4 bulbs or only 3 bulbs.

- (d) Draw a circuit diagram and show where the switches can be placed in the circuit. [1]

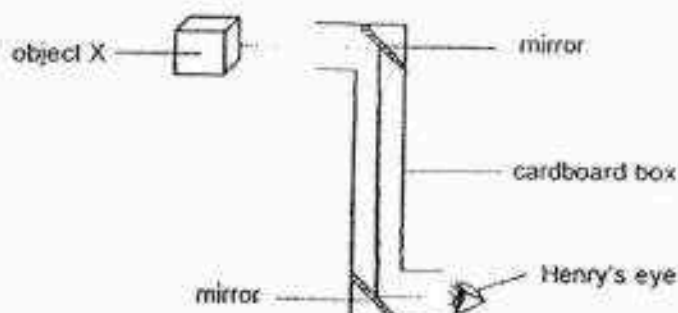


(Go on to the next page)

SCORE	
	1

16

- 38 Henry made a simple periscope using a cardboard box and two small mirrors as shown in the diagram below.



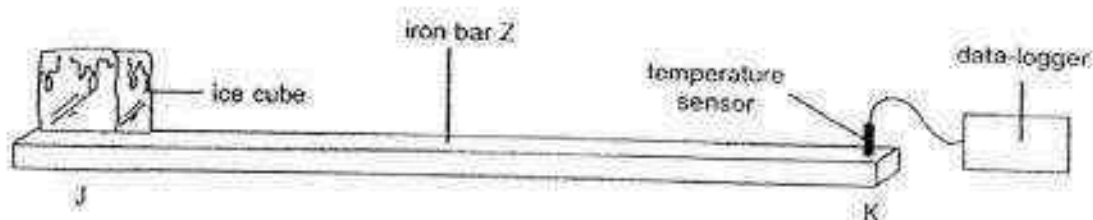
- (a) Using the periscope, Henry is able to see object X. Draw an arrow (  $\rightarrow$  ) in the diagram above to represent the path of light that enables Henry to see object X. [1]
- (b) State two properties of light that allow Henry's periscope to work. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) Henry's classmate, Linda, told him that light is matter. Is Linda correct? Give two reasons to support your answer. [1]
- \_\_\_\_\_
- \_\_\_\_\_

(Go on to the next page)

SCORE	
	3

17

- 39 The diagram below shows an iron bar Z at room temperature. An ice cube is placed at point J on the iron bar Z. A temperature sensor connected to a data-logger was used to measure the temperature of the iron bar Z at point K.



- (a) After 5 minutes, it was observed that the temperature of the iron bar Z at point K dropped from room temperature to  $5^{\circ}\text{C}$ . Explain clearly how this happened. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) After one hour, the temperature of the iron bar Z gradually returned to room temperature. Explain clearly why this happened to the iron bar Z. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) The experiment was repeated using bars P, Q and R that are identical to iron bar Z but made of different materials. The temperature of the bars was at room temperature at the start of the experiment. The results of the temperature of the bar after 5 minutes at point K are recorded in the table below.

Bar	Temperature of Bar after 5 min ( $^{\circ}\text{C}$ )
P	5
Q	24
R	22

What is the aim of the experiment?

[1]

End of paper

SCORE	
	3

## SEMESTRAL ASSESSMENT EXAM PAPER 2016

SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)  
 SUBJECT : SCIENCE  
 TERM : SA1

## BOOKLET A

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

26. (a) The correct heading for Group X is mammals.

## BOOKLET B

(b) Besides laying eggs, insects also have six legs and three body parts.

27(a)(i) Both lay many eggs at a time.

(ii) The life cycle of a mosquito has four stages while the frog has three.

(b)(i) X: Larva stage

(i) Y: Pupa stage

(c) In stage Y the mosquito does not move but in stage X it moves. In stage X mosquito eats unlike in stage Y.

Q28(a)(i) The volume of the air in the glass cylinder is  $200\text{cm}^3$ . Although more air is being pumped into the glass cylinder, the air can compress for more air to enter.

(ii) The mass of the glass cylinder increased. As more air is pumped into the glass cylinder, the mass increases because all matter has mass.

(b) Air can be compressed but matter cannot be compressed and has taken up the space.

Q29(a) The magnet was attracting object X that was placed on the wooden toy boat as it is made of a magnetic material.

(b) Jack can conclude that object X is a magnet. Only magnets can be repelled by other magnets.

(c) The wooden toy boat will not move towards the magnet. As copper is not a magnetic material, the magnet would not attract it.

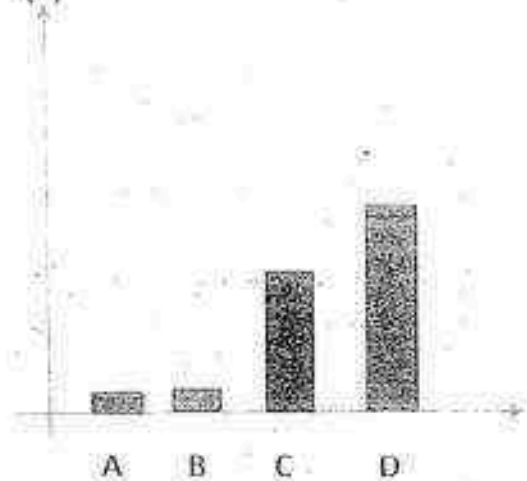
Q30(a) Magnets Y, Z and X.

(b) The more magnetic strength has, the further away the magnetic materials can be for the magnet to attract it.

(c) The magnet strength is strongest at its ends.

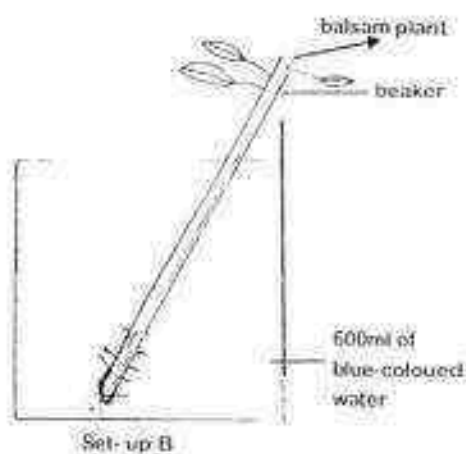
Q31(a) Part E absorbs water from undigested food.

(b)



Q32(a) The water carrying tubes of the stem was stained blue.

(b) The roots absorb the blue-coloured water and transports it through the water-carrying tubes.



(c)

Q33.

Model	Part of the human body system	Function
Bell Jar	Ribcage	Protects the heart and other organs and gives the body its shape.
Balloon	Lungs	Allows the exchange of gases to take place.

Q34(a) There is more digested food in the blood at Y than the blood at X.

(b) The blood transports the digested food from the digestive system to all parts of the body before reaching the respiratory system and there will be less food compared to the blood at Y.

(c) The blood at X has more oxygen compared to the blood at Z.

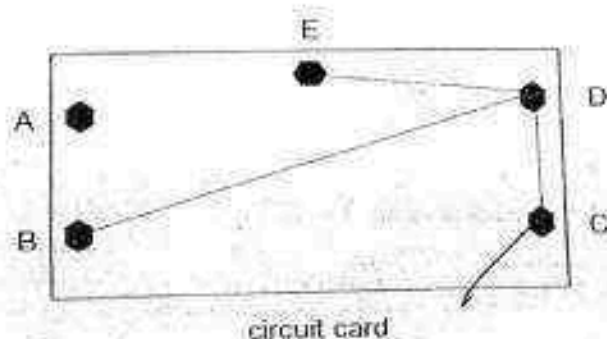


Q35(a) Cell A has chloroplast but cell B does not have chloroplast.

(b) The part labelled X is the nucleus. The nucleus controls all the activities in the cell and passes information from generation to generation.

(c) Cell B is likely to be from the roots. The cells in the roots have no chloroplast as it is not needed to make food.

Q36(a)



(b) As aluminium is a conductor of electricity, no matter which pin you connect the bulb will still light up.

Q37(a) Object X is most likely made of a magnetic material such as iron. Object X must be able to conduct electricity.

(b) A- None

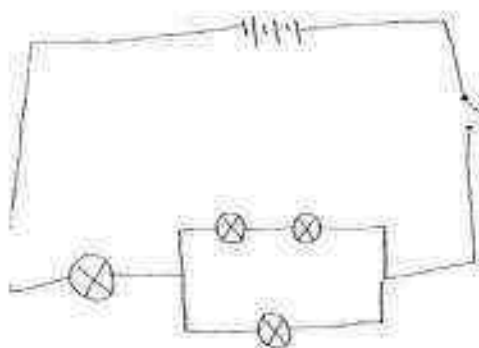
B- A and D

C- A and D

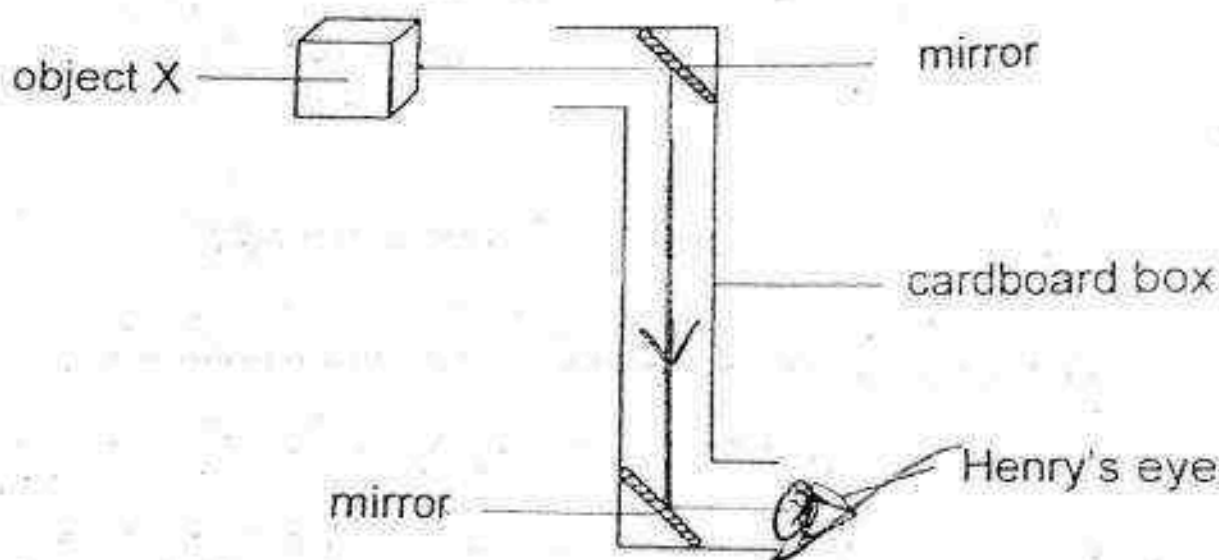
D- A, B and C

(c) If one bulb fuses in a parallel circuit, the other bulbs will still light up. However if they are connected in a series circuit when one bulb fuses none of the bulbs will light up.

(d)



Q38(a)



(b) Light must travel in straight lines and must be able to be reflected by mirrors for the periscope to work.

(c) Linda is wrong. As light has neither mass nor volume, light is not matter.

Q39(a) Iron bar Z lost heat to the ice cube as iron bar is a good conductor of heat. Hence, the temperature dropped to  $5^{\circ}\text{C}$ .

(b) The ice cube melted and iron bar Z gained heat from the surroundings.

(c) To find out which are good conductors of heat.

5  
END



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

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

**CHIJ ST NICHOLAS GIRLS' SCHOOL****Primary 5****Semestral Assessment 1 – 2016****SCIENCE****BOOKLET A****12 May 2016**

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

28 questions  
56 marksDo not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.*This booklet consists of 20 printed pages.*

**Section A (28 x 2 marks = 56 marks)**

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

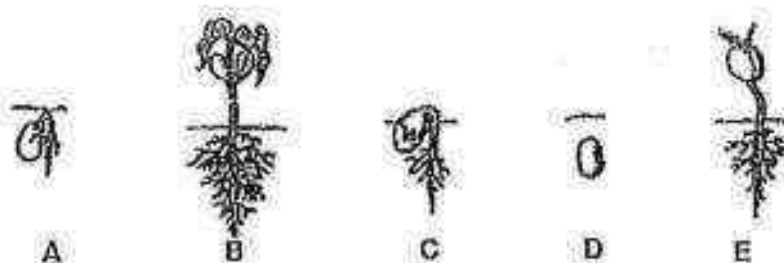
1. Which of the following about the human digestive system is correct?

	Organ involved in the digestion of food	Organ involved in the absorption of food
(1)	large intestine	small intestine
(2)	mouth	large intestine
(3)	small intestine	gullet
(4)	stomach	small intestine

2. Which of the following characteristics can be used to show the similarity between a crocodile and a salamander?

- (1) Both have scales.
- (2) Both live on land only.
- (3) Both reproduce by laying eggs.
- (4) Both breathe through lungs only.

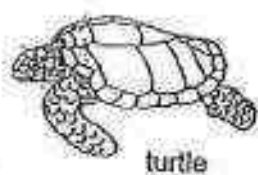
3. The diagram below shows the different stages in the growth of a seedling.



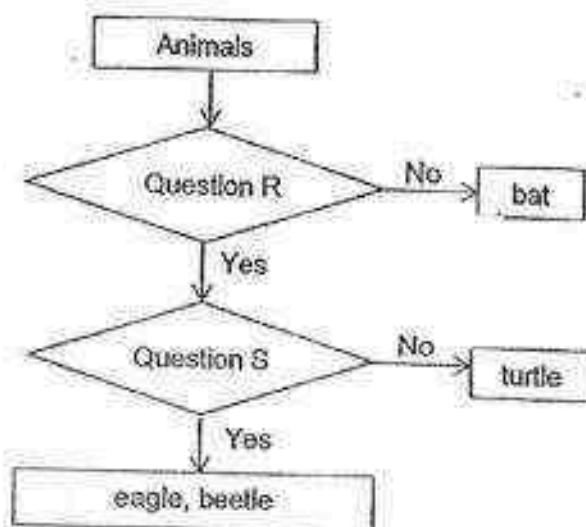
At which stage(s) does the seedling need light to survive?

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

4. Amelia observed four animals as shown below.



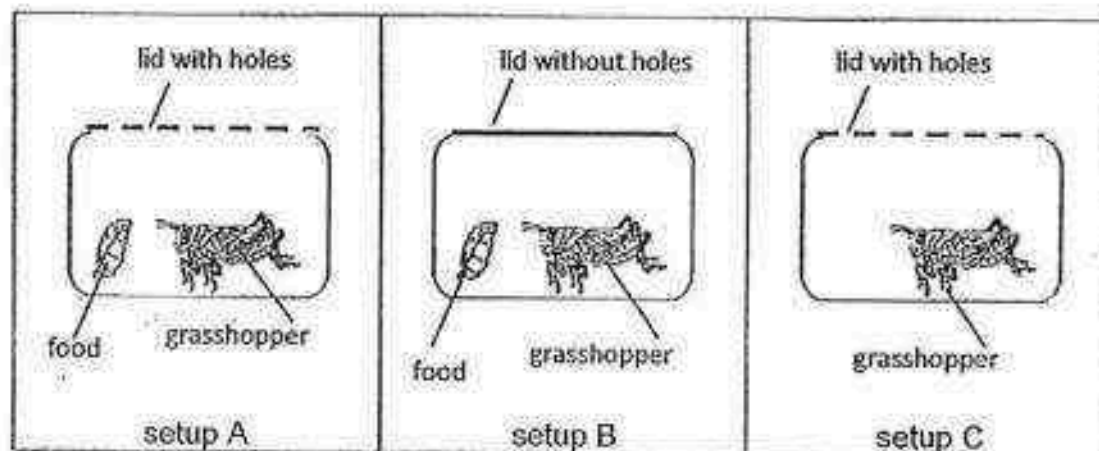
She classified them in the flowchart below.



Which of the following best represents the two questions, R and S, in the flow chart?

	Question R	Question S
(1)	Can they fly?	Do they have wings?
(2)	Do they have wings?	Do they feed their young with milk?
(3)	Do they feed their young with milk?	Do they lay eggs?
(4)	Do they lay eggs?	Can they fly?

5. Amy thought of three possible setups to keep a grasshopper in a glass container as a pet.



Which one of the following is correct?

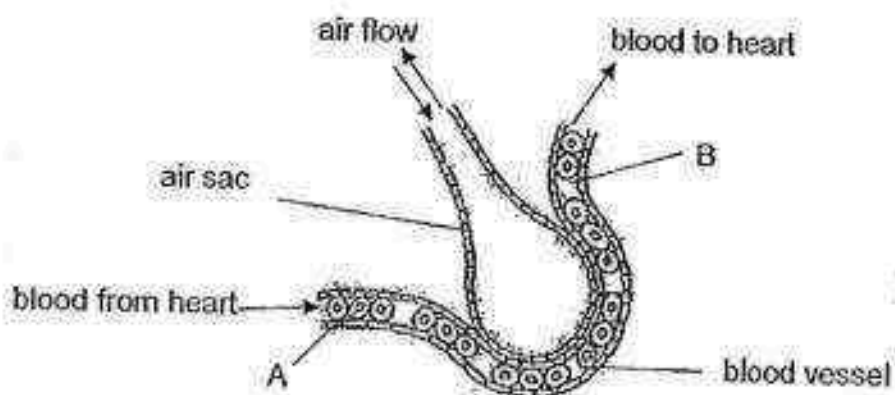
	Least suitable way to keep the grasshopper	Most suitable way to keep the grasshopper
(1)	A	B
(2)	A	C
(3)	B	A
(4)	B	C

6. Which of the following is not part of the human circulatory system?

A : Red blood cells  
 B : Lungs  
 C : Heart  
 D : Blood vessels  
 E : Windpipe

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

7. The diagram below shows the gaseous exchange between the surface of an air sac and the blood vessel of a human.



Which of the following correctly represents the level of oxygen and carbon dioxide respectively in A and B?

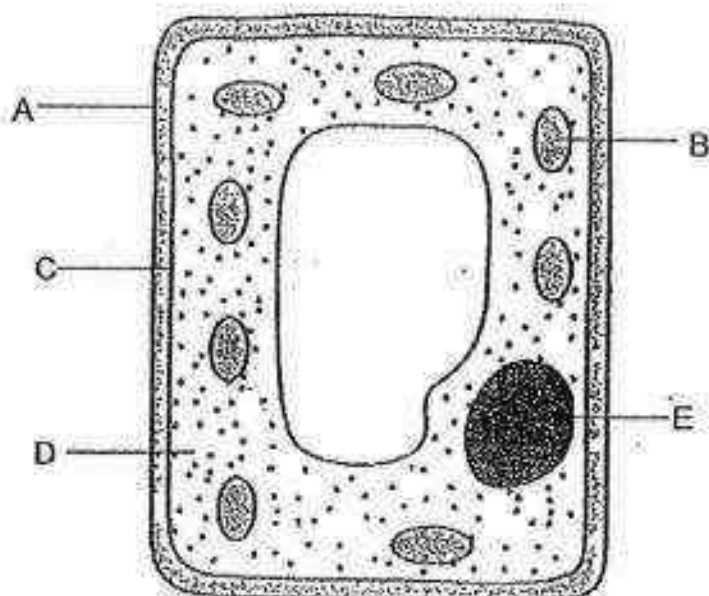
	A		B	
	oxygen	carbon dioxide	oxygen	carbon dioxide
(1)	high	high	low	low
(2)	low	low	high	high
(3)	high	low	low	high
(4)	low	high	high	low

8. Which of the following correctly shows the path of the air when we breathe out?

- (1) Nose → windpipe → lungs  
 (2) Nose → windpipe → mouth  
 (3) Lungs → mouth → nose  
 (4) Lungs → windpipe → nose



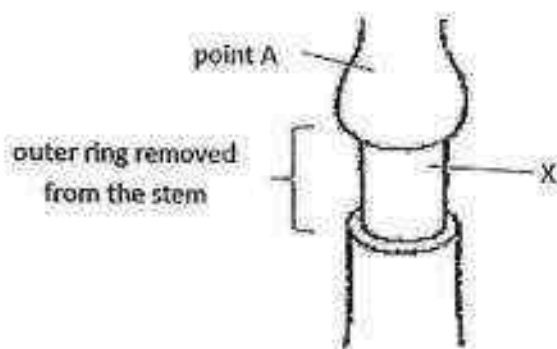
9. The diagram below shows a plant cell taken from a leaf.



Which three parts are also found in cheek cells?

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

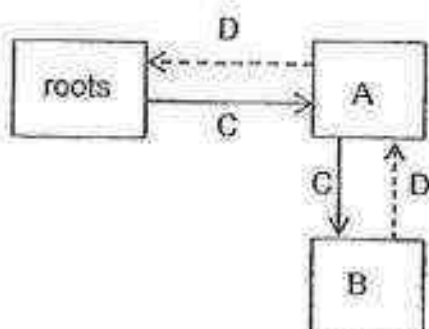
10. The diagram below shows a stem with its outer ring removed. After some time, the stem was swollen at point A.



What is transported in the part labelled X?

- (1) food only
- (2) water only
- (3) food and water
- (4) water and mineral salts

11. The diagram below shows the movement of substances in a plant.



Which of the following correctly represents, A, B, C and D?

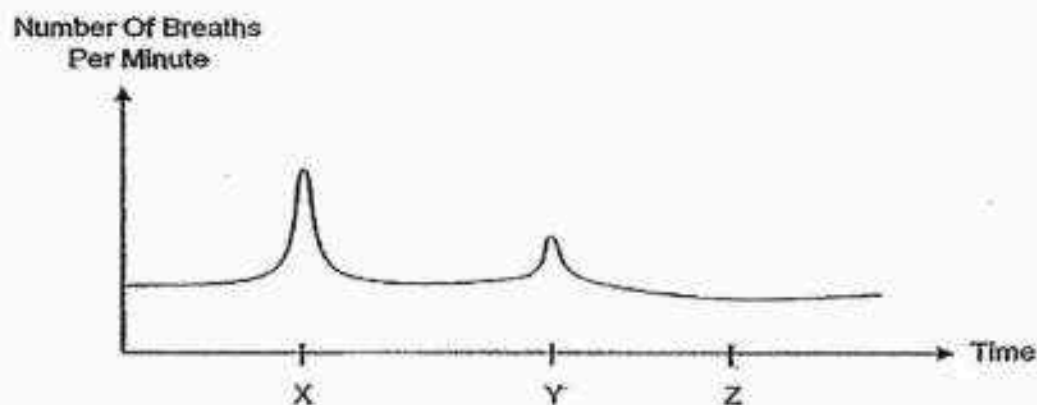
	A	B	C	D
(1)	leaf	stem	water	food
(2)	leaf	flower	food	water
(3)	stem	leaf	water	food
(4)	flower	stem	food	water

12. Tom and Jerry were trapped in a small lift. They remained still for about 30 minutes while waiting for help to arrive.

Which of the following correctly shows the changes in the amount of gases in the lift after 30 minutes?

	Oxygen	Carbon dioxide	Water vapour
(1)	increase	decrease	decrease
(2)	decrease	increase	increase
(3)	increase	decrease	remain the same
(4)	decrease	increase	remain the same

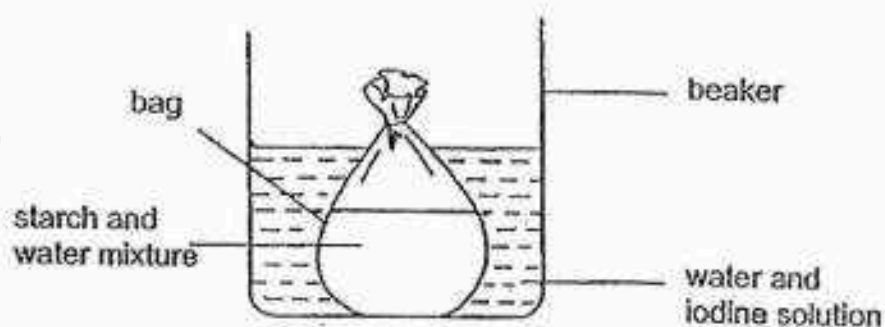
13. The graph below shows the number of breaths per minute taken by a cat over a period of time.



Which of the following correctly states the cat's activities at X, Y and Z?

	X	Y	Z
(1)	sleeping	walking around	chasing a mouse
(2)	chasing a mouse	sleeping	walking around
(3)	chasing a mouse	walking around	sleeping
(4)	walking around	chasing a mouse	sleeping

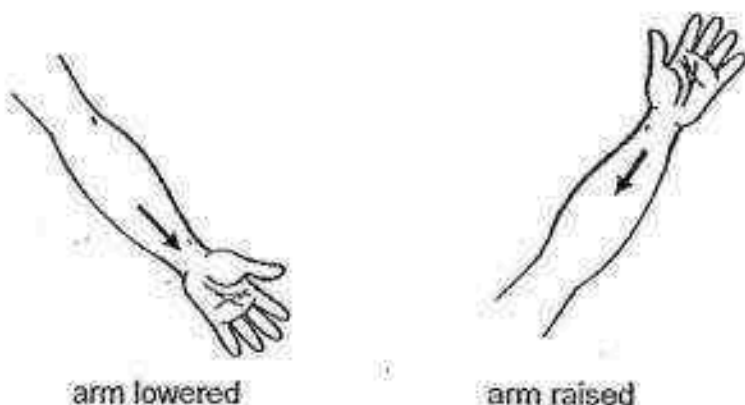
14. When the setup below was left overnight, the mixture inside the bag turned dark blue.



Which of the following shows the correct comparison between the parts of the setup and parts of a cell?

	Parts of the setup	Parts of a cell
(1)	Bag	Cell membrane
(2)	Beaker	Cell membrane
(3)	Starch and water mixture	Nucleus
(4)	Water and iodine solution	Cytoplasm

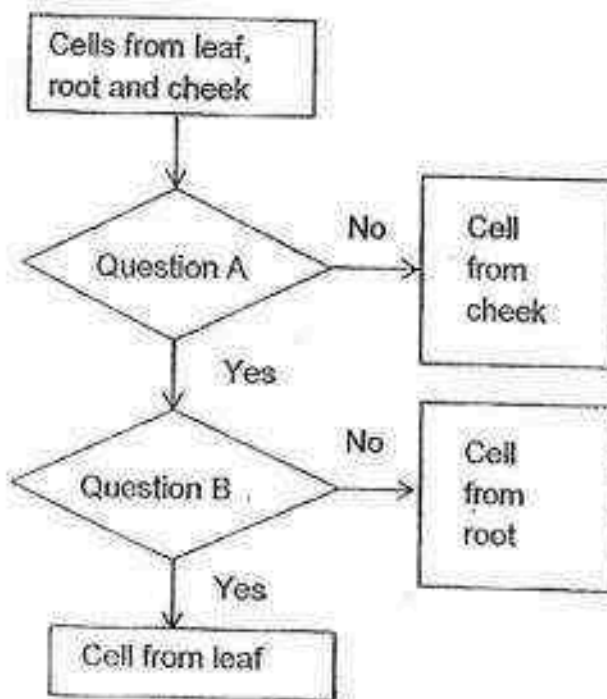
15. Wei Ming drew a diagram as shown below. The arrows indicate the direction of blood flow in the same blood vessel when his arm is lowered then raised.



Wei Ming's teacher told him that his diagram was incorrect because \_\_\_\_\_.

- (1) blood should stop flowing when the arm was raised
- (2) the direction of blood flow in all blood vessels should always be towards the heart
- (3) the direction of blood flow in all blood vessels should always be away from the heart
- (4) the direction of blood flow in a particular blood vessel should not change when the position of the arm changes

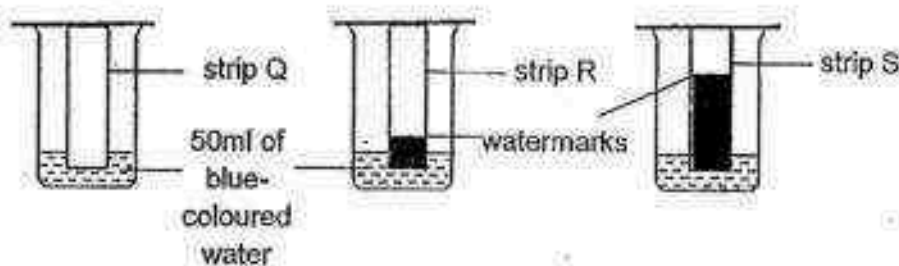
16. John classified three types of cells as shown below.



What are questions A and B?

	Question A	Question B
(1)	Does the cell have chloroplast?	Does the cell have a cell wall?
(2)	Does the cell have a cell wall?	Does the cell have chloroplast?
(3)	Does the cell have a nucleus?	Does the cell have a cell membrane?
(4)	Does the cell have a cell wall?	Does the cell have a nucleus?

17. Eileen placed 3 strips, Q, R and S, made of different materials into 3 beakers each containing 50ml of blue-coloured water. She left the strips in the beakers for 10 minutes and observed that there were different watermarks on each strip as shown in the diagram below.



Based on her observations, Eileen wrote the following statements.

- A Strip Q is waterproof.
- B Strip R absorbed more water than strip S.
- C Strip S is the most water absorbent material.
- D None of the materials is suitable to be used to make hand towels.

Which of the statements above are correct?

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

18. Sharon set up an experiment to investigate the transparency of three different materials, X, Y and Z, using a data logger and a light sensor.

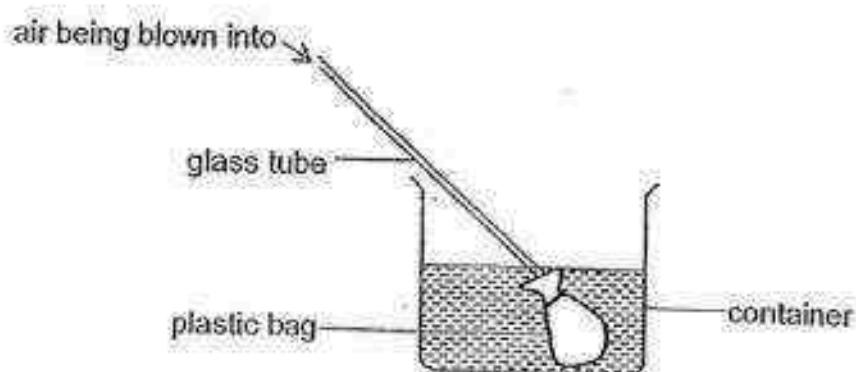
Which of the following variables should she keep constant in order to conduct a fair test?

- A Type of materials
- B Brightness of the torch
- C Thickness of materials used
- D Distance between the torch and the materials
- E Distance between the light sensor and the materials

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

19. Hayley inserted a glass tube into an empty plastic bag and fastened them with a rubber band as shown in the diagram below.

She marked the water level on the container. She then blew air through the glass tube into the plastic bag.

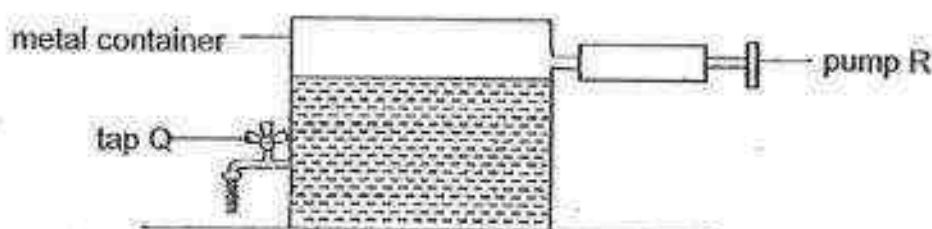


Which one of the following would be Hayley's observation when she blew air into the glass tube?

- (1) The volume of water will increase.
- (2) The water level in the container will drop as water would enter the plastic bag.
- (3) The air in the plastic bag would occupy less space and caused the water level in the container to decrease.
- (4) The air in the plastic bag would occupy more space and caused the water level in the container to increase.

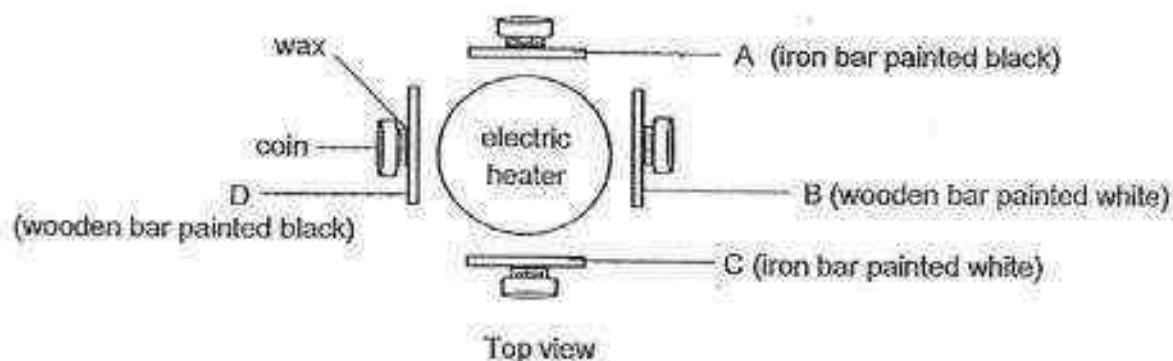


20. Study the diagram below. An experiment was set up using a sealed metal container which holds  $80\text{cm}^3$  of water and  $40\text{cm}^3$  of air.  $20\text{cm}^3$  of water was removed from the container through tap Q and  $50\text{cm}^3$  of air was then pumped in through pump R.



What would be the final volume of air in the container?

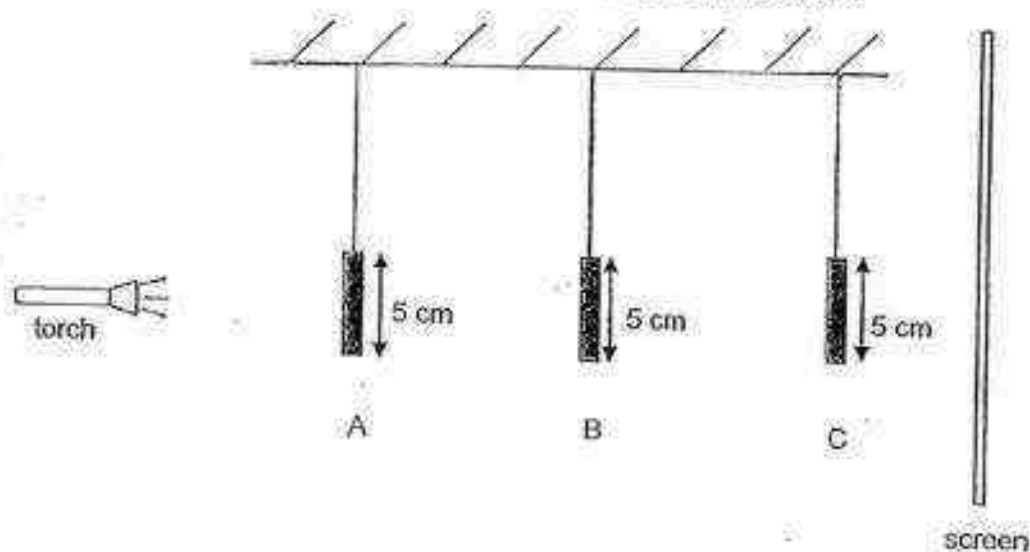
- (1)  $50\text{cm}^3$
  - (2)  $60\text{cm}^3$
  - (3)  $90\text{cm}^3$
  - (4)  $110\text{cm}^3$
21. Sulimah attached a coin to each of the four bars, A, B, C and D, using some wax. The diagram below shows the top view of the setup.



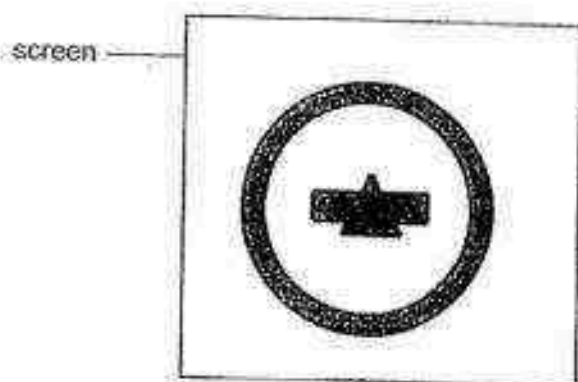
From which bar, A, B, C or D, will the coin drop first?

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

- 22 The setup below shows light shining on three shapes, A, B and C, made of wood. They are placed at different distances from the torch.



The diagram below shows what was seen on the screen.



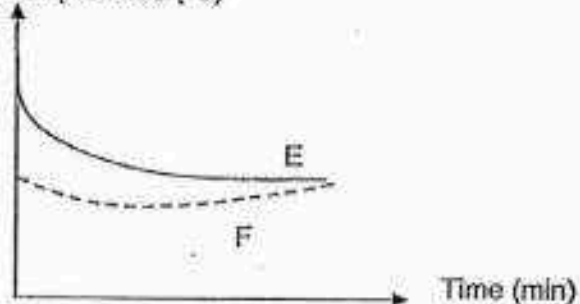
Which one of the following correctly represents shapes, A, B and C, respectively?

	A	B	C
(1)	ring	rectangle	triangle
(2)	ring	triangle	rectangle
(3)	rectangle	triangle	ring
(4)	rectangle	ring	triangle

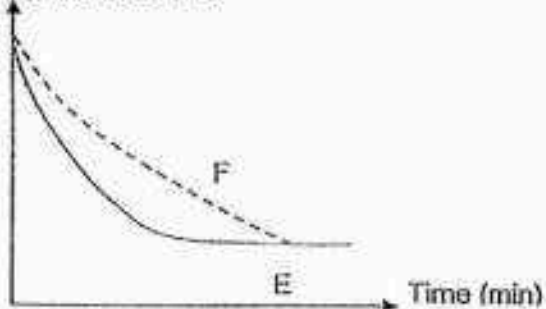
23. Two beakers, E and F, contained 200ml and 500ml of water at  $100^{\circ}\text{C}$  respectively. Both beakers were left on a table in an air conditioned room of temperature  $20^{\circ}\text{C}$ .

Which of the following line graphs best represents the changes in the temperature of water in both beakers?

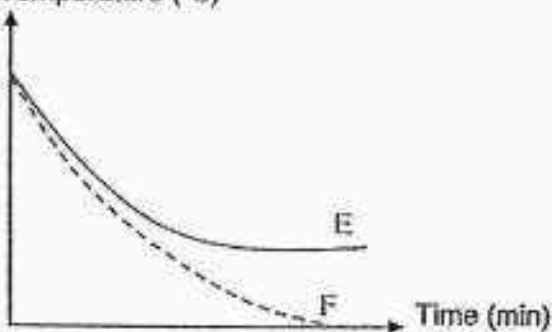
(1) Temperature ( $^{\circ}\text{C}$ )



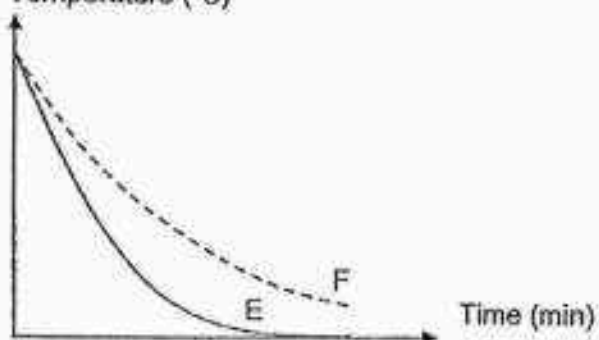
(2) Temperature ( $^{\circ}\text{C}$ )



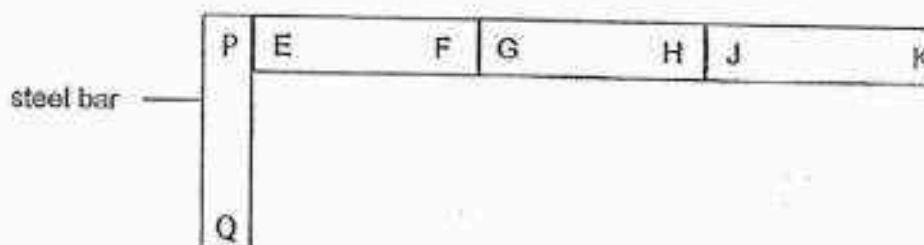
(3) Temperature ( $^{\circ}\text{C}$ )



(4) Temperature ( $^{\circ}\text{C}$ )

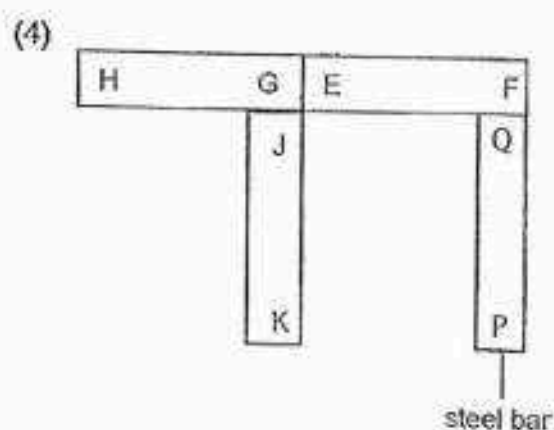
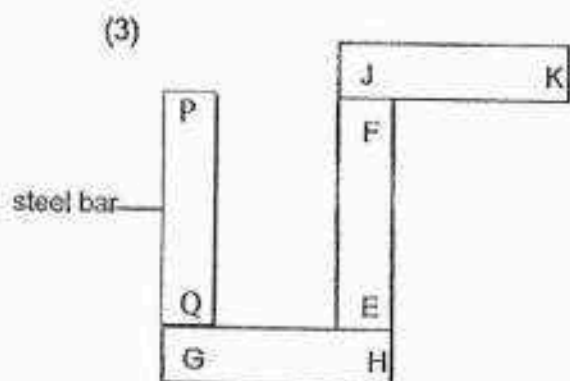
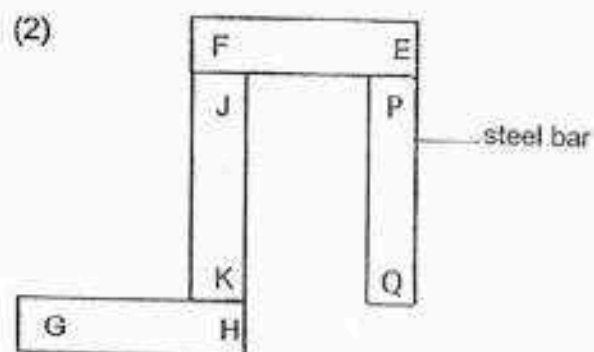
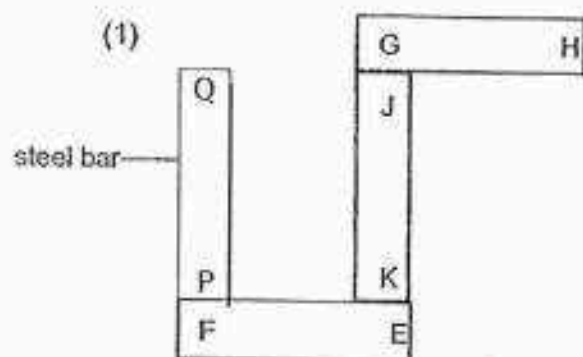


24. Ainul arranged three magnets, EF, GH, JK, and a steel bar PQ as shown below.

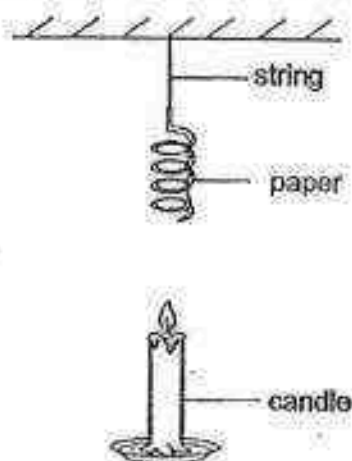


She then tried to rearrange the magnets and the steel bar.

Which one of the following arrangements is possible?



25. Priscilla hung a paper spiral above a candle as shown in the diagram below.

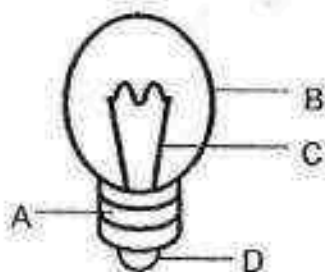


After some time, Priscilla made an observation about the paper spiral.

Which of the following is correct?

	Observation	Explanation
(1)	It will not spin.	The heat from the candle is lost to the surrounding.
(2)	It will be burnt.	The heat from the candle will be transferred to the paper spiral and it caught fire.
(3)	It will spin slowly.	The heat from the candle will heat up the surrounding air and the moving air will cause the paper spiral to spin slowly.
(4)	It will become shorter.	The heat from the candle will allow the paper spiral to contract.

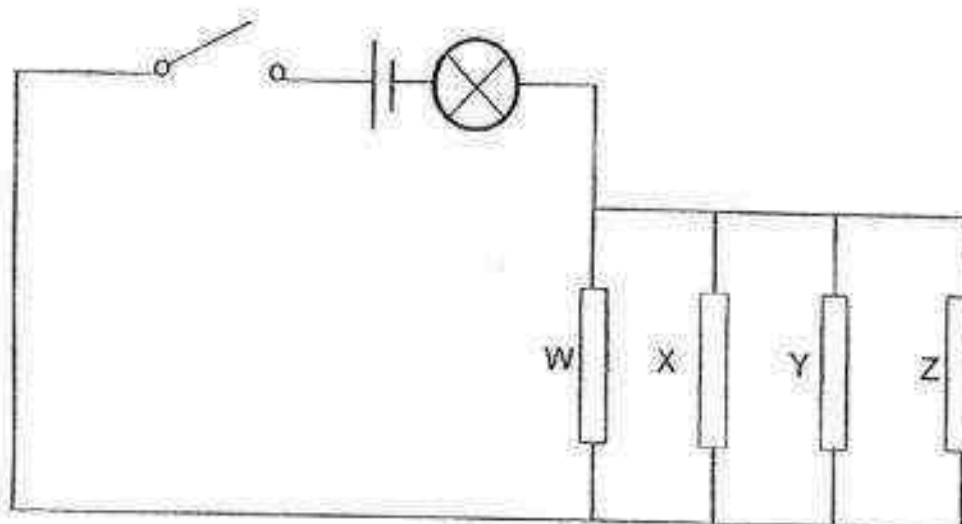
26. The diagram below shows a light bulb.



Which of the following part(s) are electrical insulators?

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

27. Sally set up a circuit as shown in the diagram below.



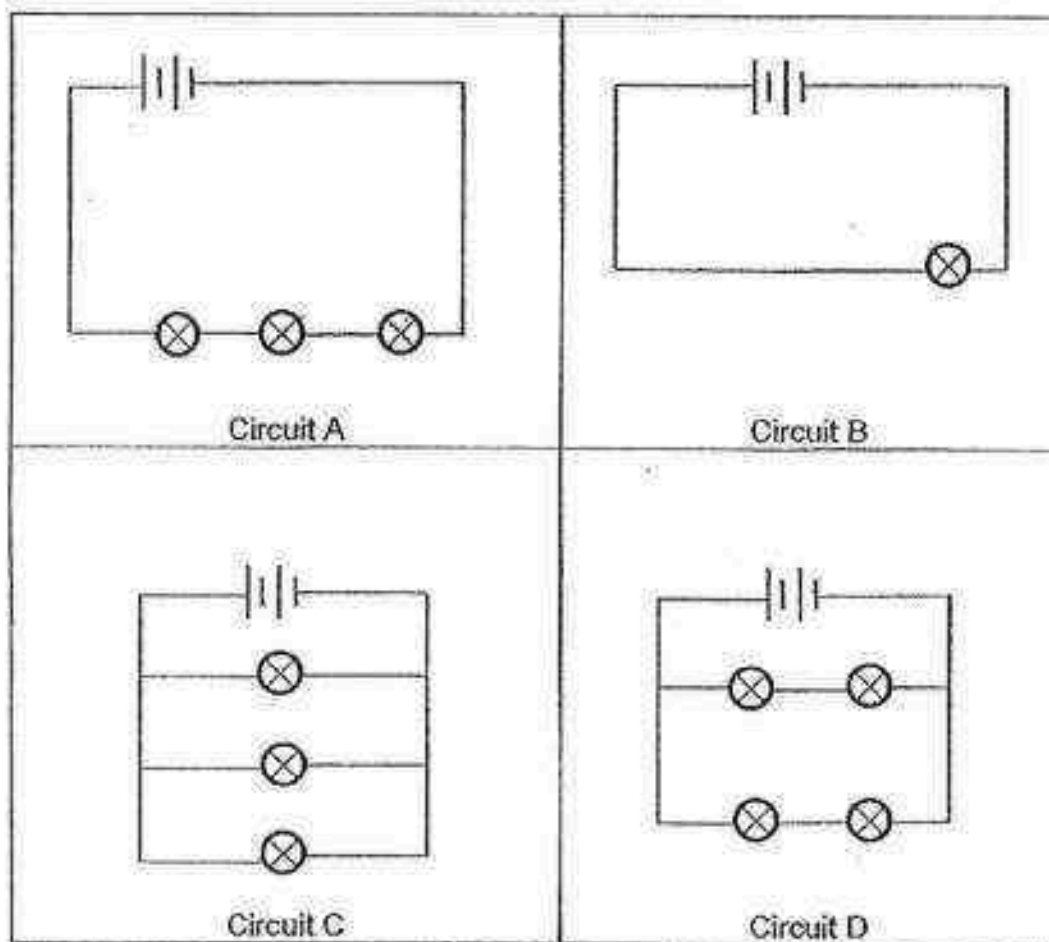
The table below shows the observations she made when the switch is closed.

Object(s) removed from circuit	Did the bulb light up?
W	yes
X and Y	yes
W, X and Y	no
W, Y and Z	no

Based on the observations above, which one of the following conclusions is correct?

	W	X	Y	Z
(1)	conductor	insulator	insulator	insulator
(2)	insulator	conductor	conductor	conductor
(3)	conductor	insulator	conductor	insulator
(4)	insulator	conductor	insulator	conductor

28. Study the electrical circuits below. The circuits have been set up using identical batteries, bulbs and wires.



Which 2 of the above circuits will have the same brightness in each bulb?

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

End of Booklet A

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

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

**CHIJ ST NICHOLAS GIRLS' SCHOOL**

**Primary 5**  
**Semestral Assessment 1 – 2016**

**SCIENCE****BOOKLET B****12 May 2016**

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

13 questions  
 44 marks

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

This paper consists of 16 printed pages.

Booklet A	56
Booklet B	44
Total	100

---

 Parent's Signature/Date

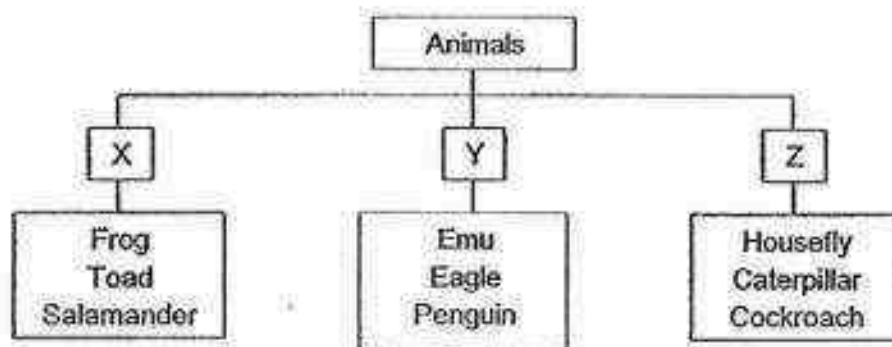


**Section B (44 marks)**

For questions 29 to 41, write your answers in this booklet.

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

29. Study the classification chart below carefully.

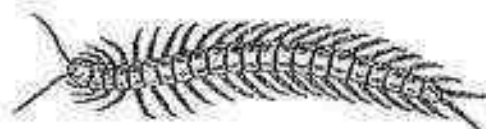


- (a) State one difference between animal X and Y in terms of their body coverings.

[1]

---

The diagram below shows animal Q.



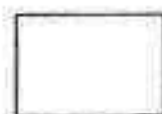
animal Q

- (b) Based on the classification chart, state 2 reasons why animal Q cannot be placed in group Z.

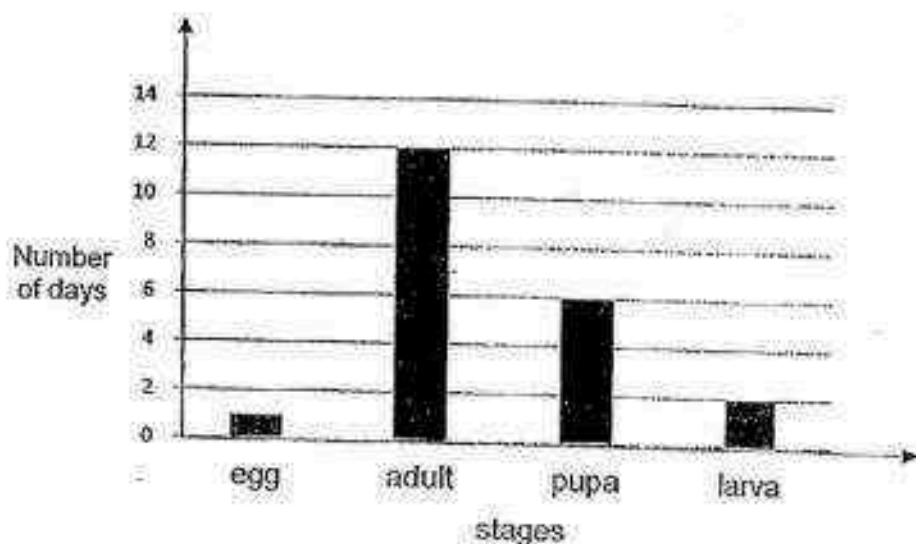
[1]

Reason 1: \_\_\_\_\_

Reason 2: \_\_\_\_\_

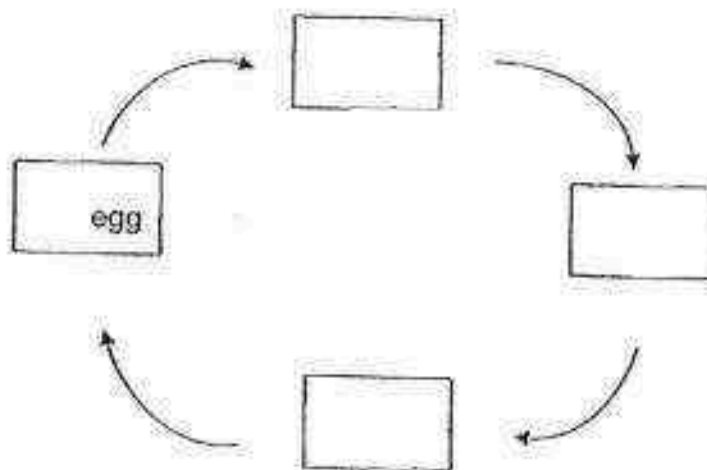


30. The graph below records the duration of the stages in the life cycle of organism X. The stages of the life cycle is not in the correct order.



- (a) Write the stages of the life cycle of organism X in the correct order.

[1]



- (b) How many days would organism X take to become an adult after the egg is hatched?

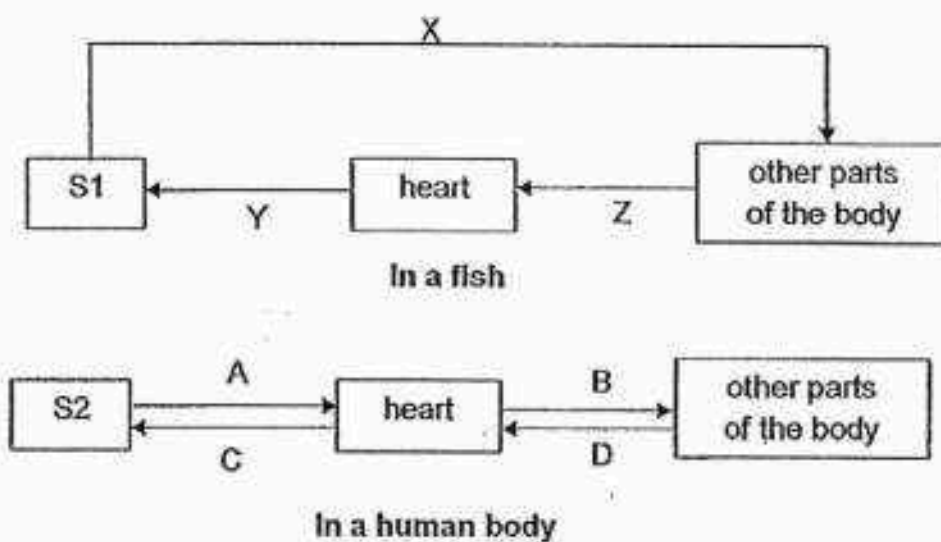
[1]

- (c) Organism X lay many eggs at one time. Give a reason why.

[1]



31. The diagram below shows the flow of blood in a fish and a human body.



(a) Identify organs, S1 and S2.

[1]

S1: \_\_\_\_\_

S2: \_\_\_\_\_

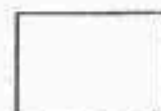
(b) State one difference between the blood flow found in the circulatory system of a fish and in a human.

[1]

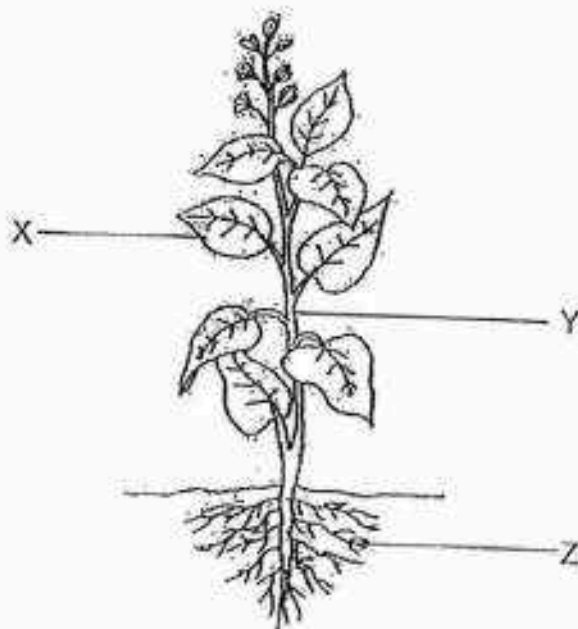
---



---

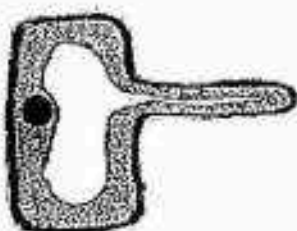


32. Look at the diagram below.



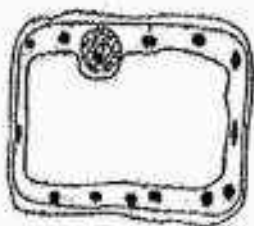
(a) Which part, X, Y or Z, of the plant will the following cells be found? [1]

(i)



Part: \_\_\_\_\_

(ii)



Part: \_\_\_\_\_

(b) Explain your answer in (a) (i).

[2]

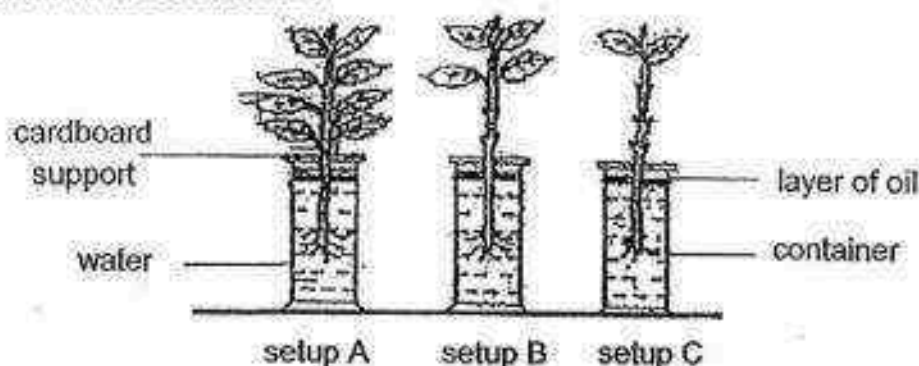
---



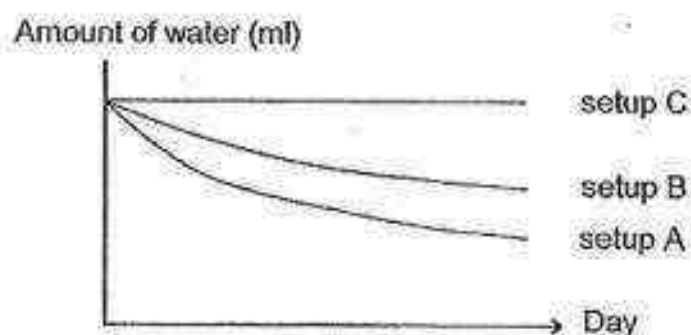
---



33. Anne conducted an experiment as shown below. Equal amounts of water and oil were added into each container. The setups were placed next to a window in the science lab.



The amount of water left in all the containers were recorded daily over a period of 1 week and the results obtained were plotted in the graph as shown below.



Anne's teacher commented that she had plotted one graph incorrectly.

- (a) Which graph is plotted wrongly? Explain why. [1]

\_\_\_\_\_

- (b) What conclusion can she make from the results of her experiment? [1]

\_\_\_\_\_

- (c) Give a reason how each of the following actions helps to make her experiment a fair test. [2]

- (i) using similar containers

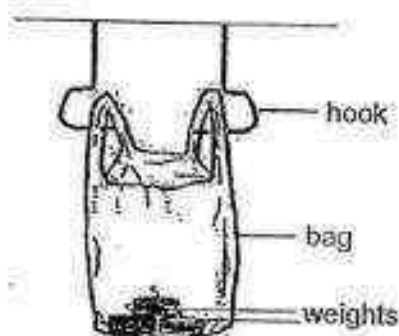
\_\_\_\_\_

- (ii) placing all the three set-ups at the same place

\_\_\_\_\_



34. Judy conducted an experiment with 3 bags of the same size, C, D and E, made of different materials. Bag C was hung on 2 hooks and some weights were added into the bag. She recorded the maximum weight bag C could hold before it broke. She repeated the experiment with bags, D and E.



The results are shown below.

Material	Maximum weight each bag can hold (g)
C	1000
D	2500
E	500

- (a) State the property of material that Judy was testing. [1]

---

- (b) Which of the bags, C, D or E, could Judy use if she wanted to carry a 1.5-litre bottle of coke in it? Give a reason for your answer. [2]

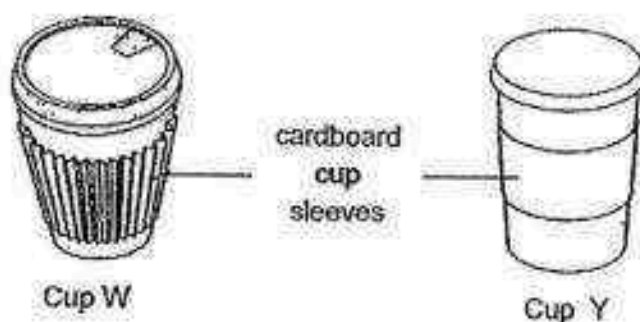
---



---



35. The diagram below shows two cups of the same size and made of the same material. The cups are fitted with 2 different cardboard sleeves. Same amount of hot coffee of  $90^{\circ}\text{C}$  were poured into the 2 cups.



- (a) Which cup, W or Y, could be held for a longer period of time before it became too hot to hold on to? Explain your answer. [2]

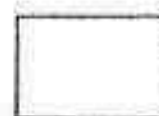
---

---

- (b) State 2 properties of the cardboard that makes it suitable for making the cup sleeves. [1]

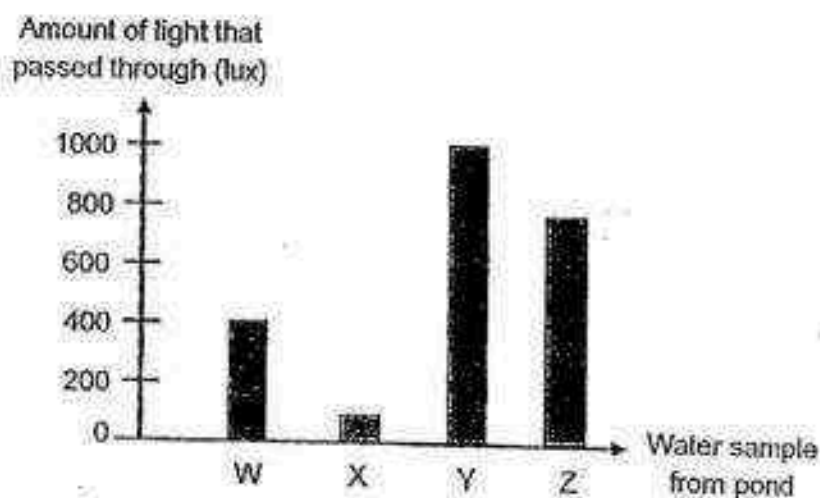
Property 1: \_\_\_\_\_

Property 2: \_\_\_\_\_



36. An experiment was set up to measure the amount of light that passed through water samples taken from different ponds, W, X, Y and Z.

The bar graph below shows the results.



- (a) State one changed variable for this experiment.

[1]

---

- (b) Plant A is a submerged plant that requires a lot of light for growth. Which pond, W, X, Y or Z, would be most suitable for plant A to grow well in. Give a reason for your answer.

[1]

---



---

- (c) Based on the graph, give a possible reason to explain the result obtained for water sample from pond X.

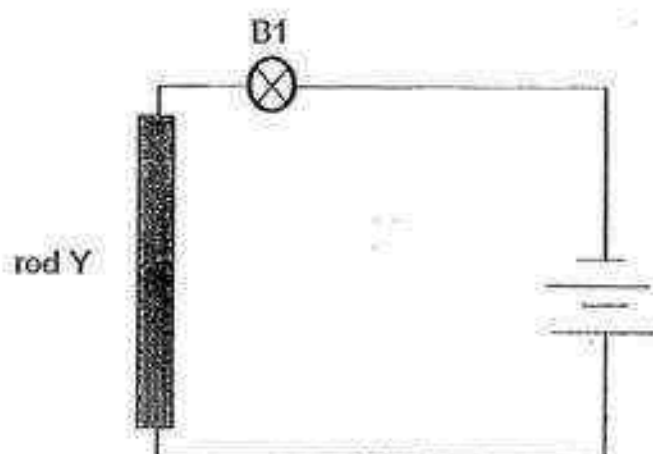
[1]

---





37. Shi Wei conducted the following experiment with a simple circuit as shown below. He started the experiment by connecting a very long rod Y to the circuit and measured the brightness of bulb B1 with the use of a data logger and a light sensor. He repeated his experiment with decreasing lengths of rod Y.



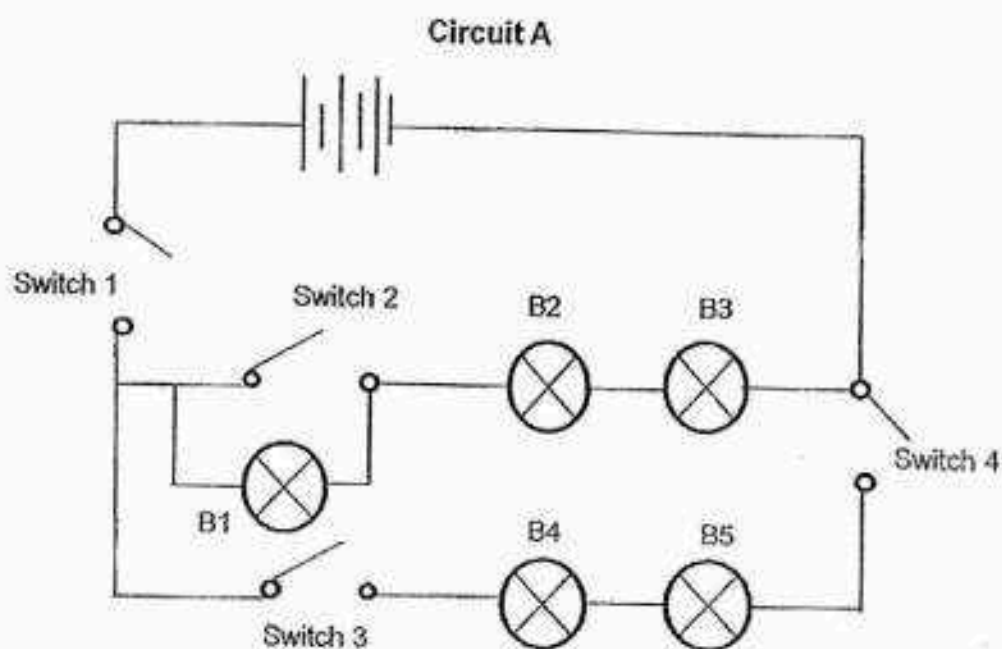
He recorded his results in the table below.

Length of rod Y (cm)	Brightness of B1 (lux)
2	900
4	700
6	(      )
8	300
10	100

- (a) What should the brightness of the bulb be when the length of rod Y is 6cm? Write the answer in the table above. [1]
- (b) When Shi Wei closed the above circuit with a 4cm rod Y and added another similar bulb to the circuit, would the brightness of bulb B1 increase, decrease or remain the same? Explain your answer. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) When Shi Wei replaced rod Y with another rod W made of a different material, bulb B1 did not light up. What is rod W made of? [1]
- \_\_\_\_\_



38. Study circuit A below.



- (a) Complete the table below by stating the bulb(s) that would light up when different switches are closed. [2]

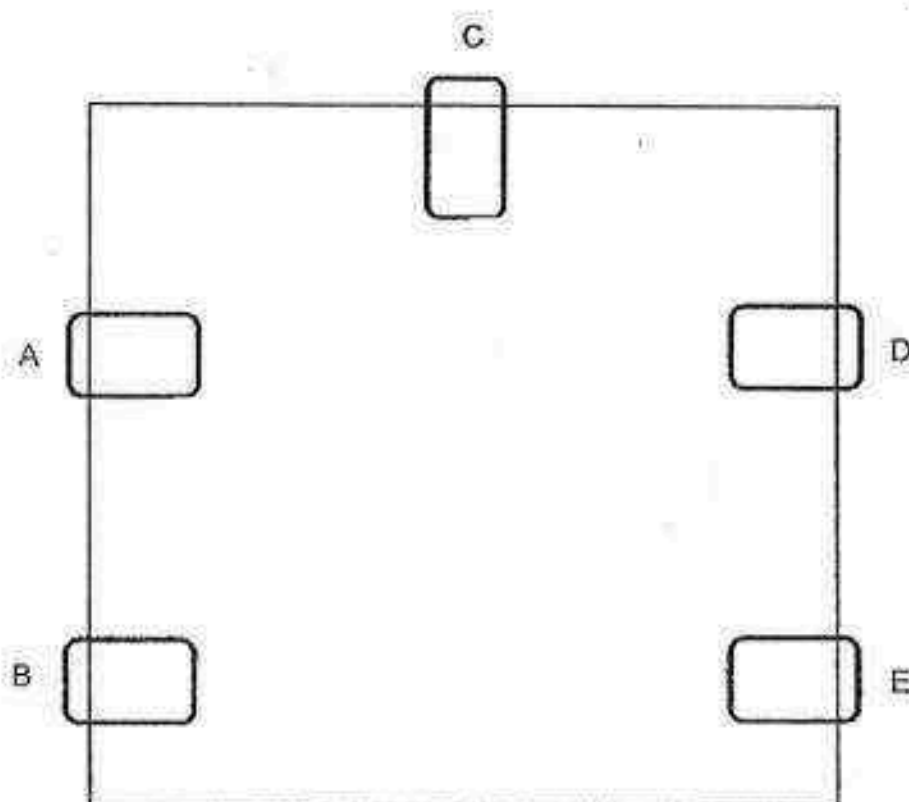
Switches that are closed	Bulbs that will light up
Switch 1	
Switch 1 and 4	
Switch 2, 3 and 4	
Switch 1, 3 and 4	



- (b) A circuit card is tested with a circuit tester and the results are recorded in the table below.

Clips tested	Bulb of circuit tester lights up?
A and B	Yes
A and D	No
B and E	Yes
C and E	Yes

- (i) Based on the results recorded in the table above, draw 3 lines in the circuit card below to show how the wires in the circuit card should be connected. [1]



- (ii) Explain why the bulb in the circuit tester did not light up when clips A and D were tested. [1]

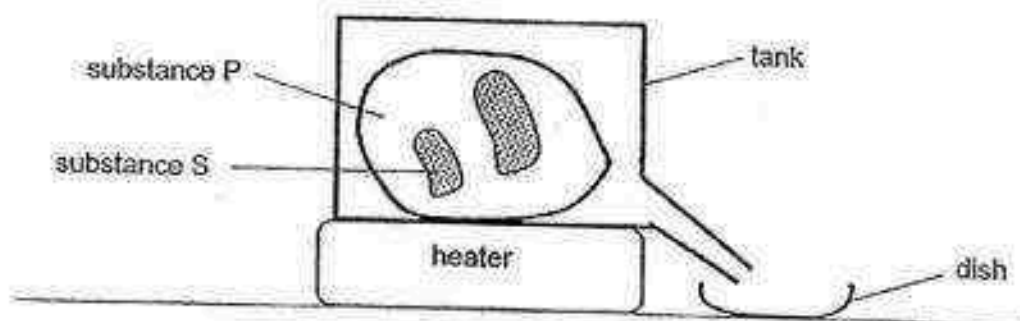
---



---



39. Matthew placed a solid made of substances P and S in a tank. Substance P has a lower melting point than substance S.



- (a) He wanted to obtain a solid made of substance P only.

- (i) Explain how he could use the set-up above to do so. [2]

---



---

- (ii) In order to ensure that the solid does not contain substance S, at what temperature should he set the heater? [1]

---

- (b) Matthew wanted to obtain a bar as shown below.



Suggest one change in the above set-up that would allow Matthew to obtain a bar as shown. Explain your answer. [1]

---

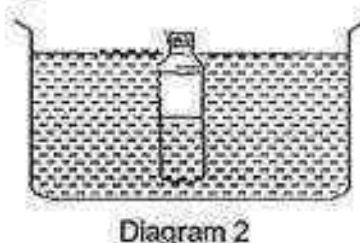
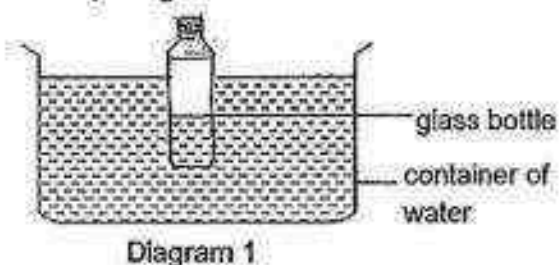
- (c) What can Matthew do to obtain the bar made of substance P within a shorter time? [1]

---



40. Elena filled a glass bottle with some water. She then placed the glass bottle in a container of water. The glass bottle floated slightly as shown in diagram 1.

When she filled the glass bottle with more water and placed it in a container of water, the glass bottle sank as shown in diagram 2.



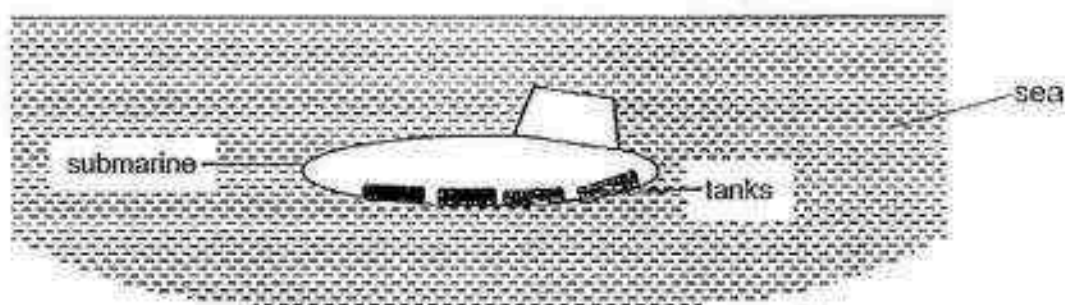
- (a) Give a reason why the glass bottle sank when it was filled with more water. [1]

---



---

- (b) A submarine is a type of ship that can travel underwater in the sea. Some tanks which are filled with water can be found inside the submarine.



Based on Elena's experiment, what should be done to make the submarine rise to the surface of the sea? [1]

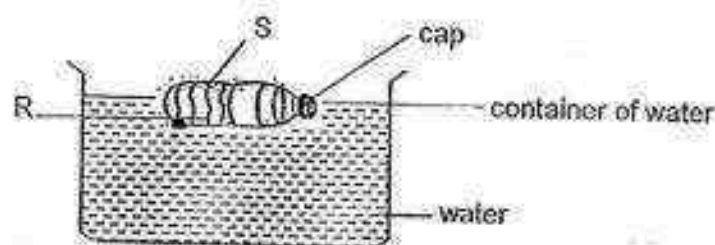
---



---



- (c) In another experiment, Elena placed an empty bottle with two holes at points, R and S, into the container of water as shown below. She recorded the time taken for the bottle to sink to the bottom of the container.



Give a reason why the plastic bottle sank after a while.

[2]

---



---

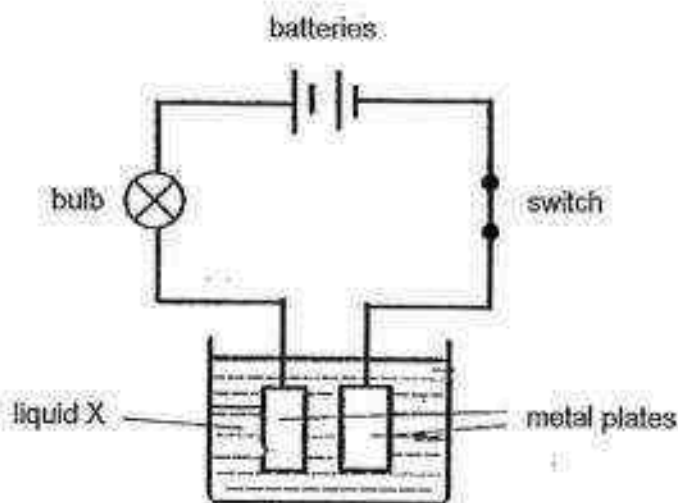
- (d) Elena wants to find out if the number of holes on the plastic bottle would affect the time taken for the plastic bottle to sink to the bottom of the container. Using the same apparatus, what could Elena do to carry out an investigation?

[1]

---



41. An experiment is set up as shown in the diagram. The bulb lights up when the switch is on.



- (a) What does this experiment tell you about liquid X? [1]

---

- (b) What would you notice about the bulb if the number of batteries is increased? [1]

---

- (c) Give a reason for your answer in (b). [1]

---



---

- (d) Explain what you would observe if the metal plates are replaced with glass plates. [2]

---



---



---

End of Booklet B



EXAM PAPER 2016 (P5)

SCHOOL : CHIJ

SUBJECT : SCINECE

TERM : SA1

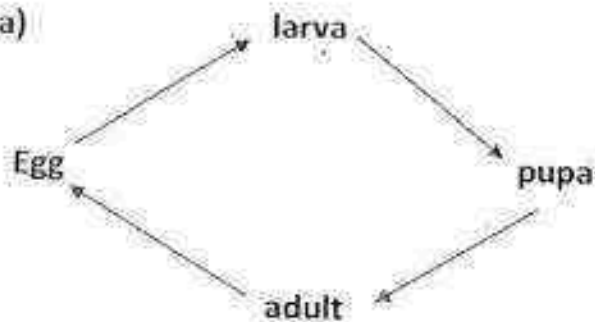
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	1	4	3	2	4	4	4	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	3	1	4	2	1	4	4	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	2	2	3	3	1	3	3		

29)a)The animals in X has moist skin while the animals in Y have feathers for their outer covering.

b)Reason 1: It does not have 6 legs.

Reason 2: It does not have 3 body parts.

30)a)





30)b)8

c)When some eggs are eaten, there will still be remaining eggs left.

31)a)S1: gills

S2: lungs

b)In a fish, the heart pumps the blood and blood enters the heart once and gets pumped to the gills and transported to the other parts of their body.

32)a)i)Z

ii)X

b)The roots of a plant is found underground and does not need to make food. Therefore, it does not have chloroplast which contain chlorophyll to make food for the plant.

33)a)Set up C. Although C had the least amount of roots and leaves the roots will still absorb some water in the container.

b)The plant with the most number of leaves is able to absorb the most water.

c)i)The same water level.

ii)The same amount of sunlight.

34)a)Strength

b)D. D could hold the most number of weights before breaking, therefore it is considered the strongest and most suitable to carry a 1.5 litre bottle of coke.

35)a)Cup W. The uneven part of the cup sleeves found on cup W decrease between the customer's hand and the hot drink. Hence, it will not feel so hot as there is lesser heat gain by the hand.

b)Property 1: flexibility

Property 2: poor conductor of heat

36)a) Different pond water.

b) Y. The most amount of light is able to pass through Y and A is able to receive sufficient light and grow.

c) The water was murky.

37)a) 500

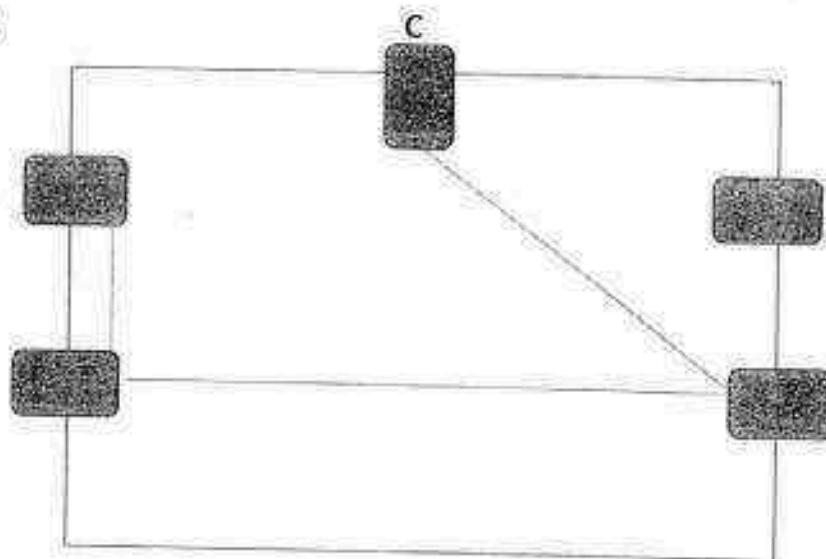
b) Brightness decrease.

c) An insulator of electricity.

38)a)

Bulbs that will light up
B2, B3, B1
B1, B2, B3
None
B1, B2, B3, B4, B5

b)i)



ii) D was made of an insulator of electricity and electricity was not able to pass through it.

39)a)i)Heat up the solid at the temperature that is all slightly higher than the melting point of P so that P will melt into a liquid to flow into the dish to cool.

ii)A temperature that is higher than the melting point P and lower than S melting point of P.

b)Change the dish to a rectangular container when P melts into a liquid it will flow into the container and take the shape of it.

c)Make the temperature colder.

40)a)The water in the bottle's mass increased so the glass bottle sank.

b)They should release the water into the sea.

c)Air in the bottle could escape through the holes and allow water to enter and take up the space that was once occupied by air.

d)Poke some holes in it.

41)a)X is a conductor of electricity.

b)It would be brighter.

c)The batteries would release more energy and the bulb would be brighter.

d)The bulb will not light up as glass is an insulator of electricity and does not allow electricity to pass through it. The circuit will become open and the bulb will not light up.



**HENRY PARK PRIMARY SCHOOL**  
**FIRST SEMESTRAL ASSESSMENT 2016**  
**PRIMARY 5**  
**SCIENCE**  
**BOOKLET A (56 MARKS)**

**INSTRUCTIONS TO CANDIDATES**

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

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

Class: Primary 5 ( )

Date: 12 May 2016

Total Time for Booklets A and B: 1 h 45 min

Booklet	Marks
A	
B	
Total (A+B)	

Parent's Signature: \_\_\_\_\_

**Booklet A (56 marks)**

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

---

1. Which of the following are similarities between the reproduction of flowering plants and animals?

A: Both involve reproducing from seeds.

B: Both involve male and female sex cells.

C: Both ensure the continuity of their own kind.

(1) A and B only

(2) A and C only

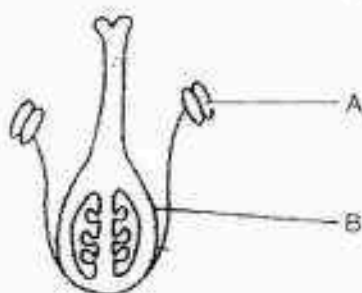
(3) B and C only

(4) A, B and C

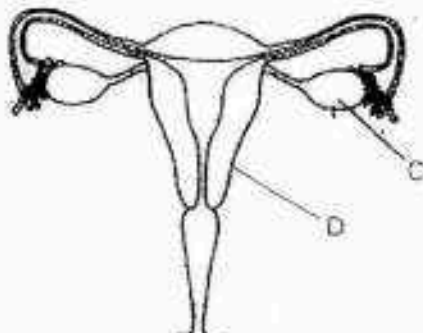
{ }



2. The diagrams below show the female reproductive parts of a flowering plant and human.



female reproductive parts in  
flowering plant



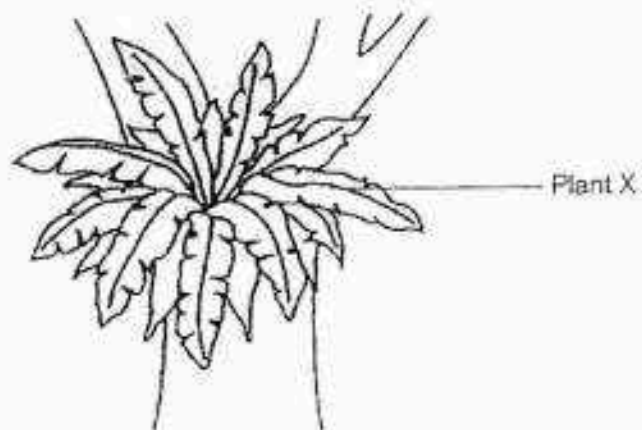
female reproductive  
parts in human

Which parts, A, B, C or D, perform similar functions in flowering plants and humans?

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



3. The diagram below shows a non-flowering plant X.



Which of the following about non-flowering plant X are correct?

- A. It can make food.
- B. It can be pollinated.
- C. It can reproduce by spores.

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

( )

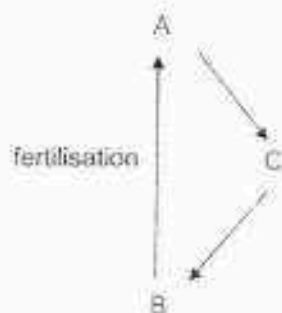


4. The table below describes three stages (A, B and C) in the growth of a flowering plant. The stages, A, B and C are not in order.

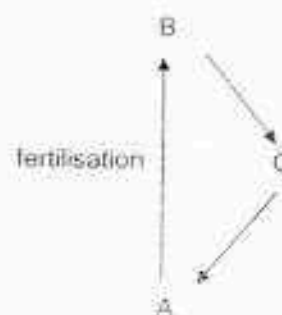
A	B	C
Plant bears flowers	Plant reaches adult stage	Plant produces seeds

Based on the table above, which one of the following diagrams shows correctly the growth of a flowering plant and when fertilisation occurs?

(1)



(2)



(3)

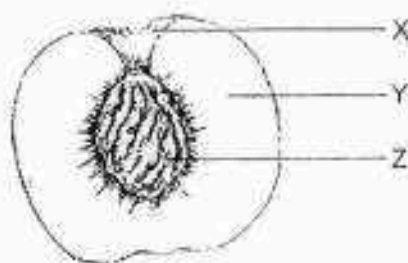


(4)





5. The fruit below is dispersed by animals.



Which of the following help in this method of dispersal?

A: X is colourful and attractive.

B: Y is fleshy, sweet and juicy.

C: Z is stone-like and hard.

(1) A and B only

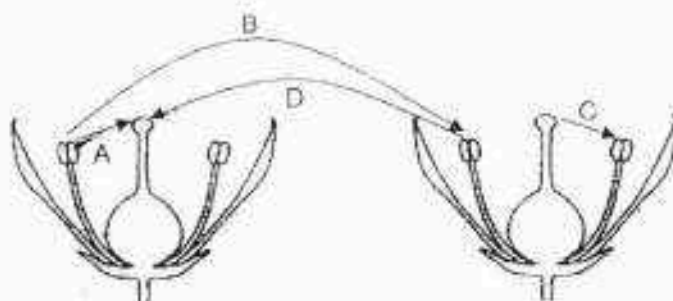
(2) A and C only

(3) B and C only

(4) A, B and C

( )

6. The diagram below shows two flowers of the same species.



Which of the arrows, A, B, C and D, show pollination taking place?

(1) A and B

(2) A and D

(3) B and C

(4) B and D

( )



7. The diagram below shows a fruit that Celeste picks up along the beach.



She wants to find out whether the fruit is dispersed by water.

Which of the following actions are useful for her purpose?

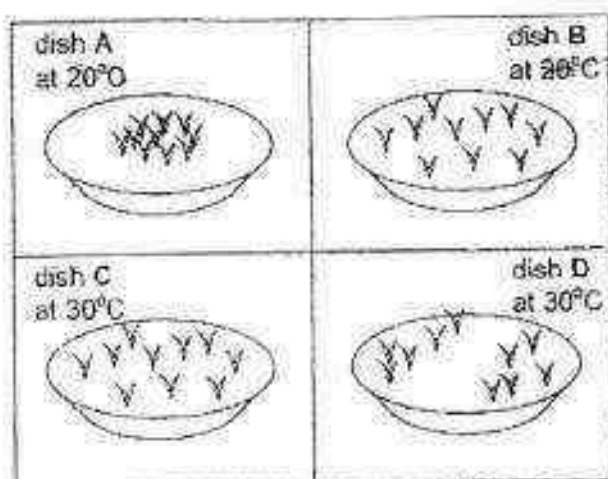
- A: Place the fruit in the water.
- B: Drop the fruit from a height.
- C: Open the fruit to see if the fruit has a fibrous part.

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

{ }



8. Joe wanted to investigate the effect of temperature on the growth of plants.



Each dish contains ten similar type of seedlings.

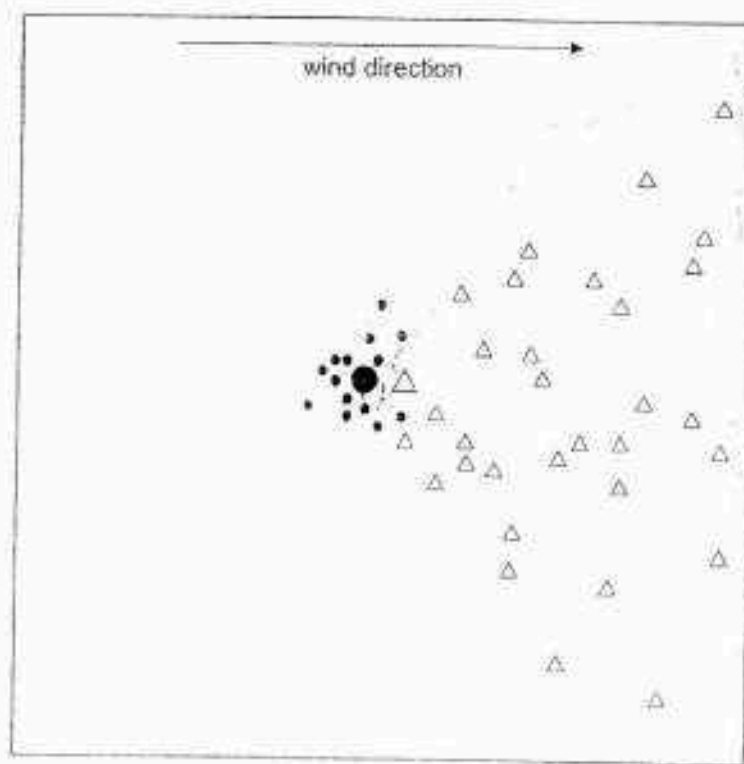
Joe wanted to conduct a fair test, so he chose dishes A and D for his investigation.

Has he made a correct choice?

	Answer	Reason
(1)	No	The temperature of the dishes was not the same.
(2)	No	The spacing of the seedlings was not the same.
(3)	Yes	The number of seedlings used was the same.
(4)	Yes	The size of the dish used was the same.



9. The diagram shows the dispersal patterns of two plants.



Key		
Parents	●	△
Seedlings	•	△

How are the seeds of these plants dispersed?

Plant	
●	△
(1) animals	animals
(2) wind	animals
(3) splitting	wind
(4) wind	splitting

( )



10. Jane carries out an experiment to find out how the mass of winged fruits affects the distance travelled from the parent plant.

Which of the following should she keep the same for a fair test?

A: Mass of seeds

B: Length of the wing-like parts

C: Height from which the seeds were dropped

D: Wind condition at the place where experiment was carried out

(1) A only

(2) B and C only

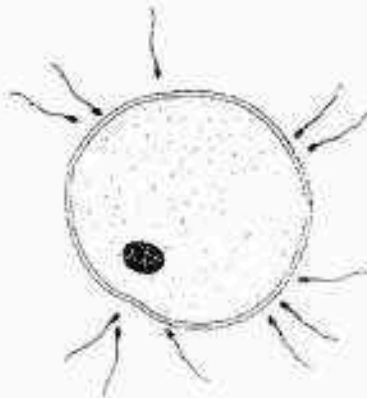
(3) A, C and D only

(4) B, C and D only

(     )



11. The diagram below shows a human egg and some sperms.



Which of the following about the human egg and the sperms are correct?

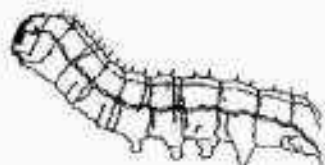
- A : The fertilised egg grows in the stomach.
- B : Only one sperm is needed to fertilise the egg.
- C : The sperm has a tail-like structure but not the egg.

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

( )



12. The diagram below shows a stage in the life cycle of a butterfly, where the animal feeds continuously.



Which of the following diagrams shows the next stage in the life cycle of the butterfly?

(1)



(2)



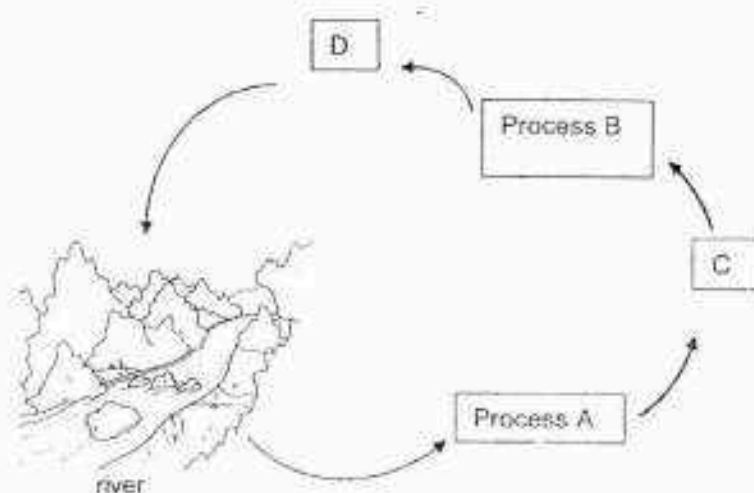
(3)



(4)



13. The diagram below shows a water cycle.



Which one of the following correctly describes A, B, C and D?

	Process A	Process B	C	D
(1)	condensation	evaporation	water droplets	water vapour
(2)	evaporation	condensation	water vapour	water vapour
(3)	condensation	evaporation	water droplets	water vapour
(4)	evaporation	condensation	water vapour	water droplets

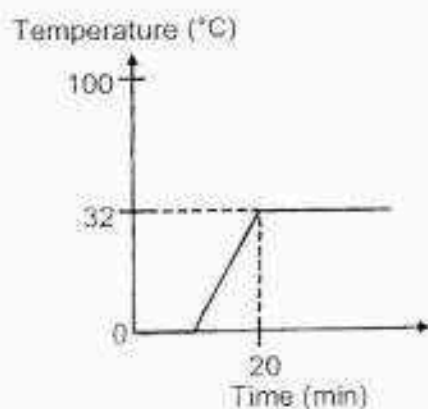
( )



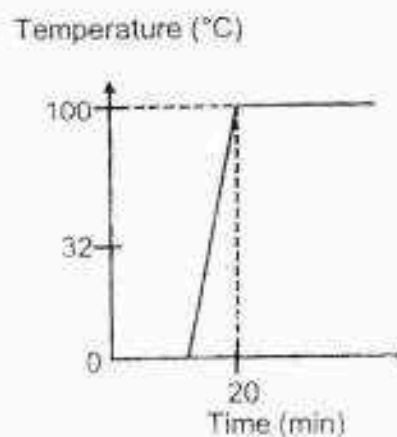


14. Which one of the following graphs correctly shows the change in the temperature of ice that was left on a dish in a room for 60 minutes?

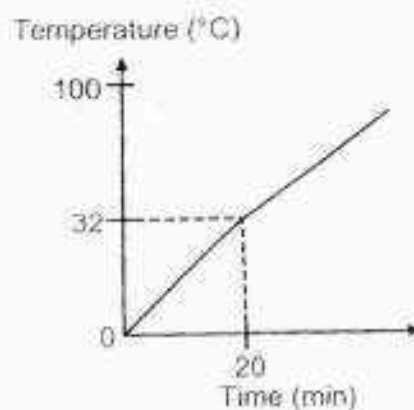
(1)



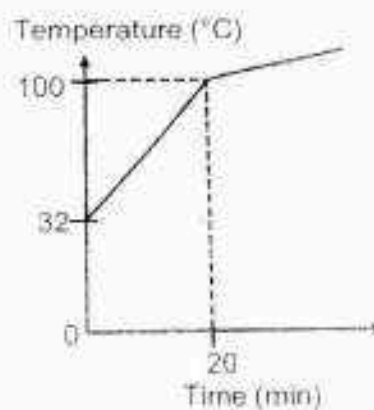
(2)



(3)



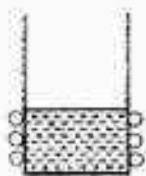
(4)



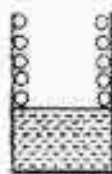
15. An experiment was set up to observe the condensation of water vapour. Hot water at  $85^{\circ}\text{C}$  was poured into a glass beaker that was of room temperature.

Which one of the following diagrams correctly shows where water droplets would form after a short while?

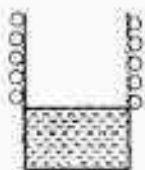
(1)



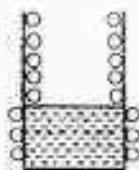
(2)



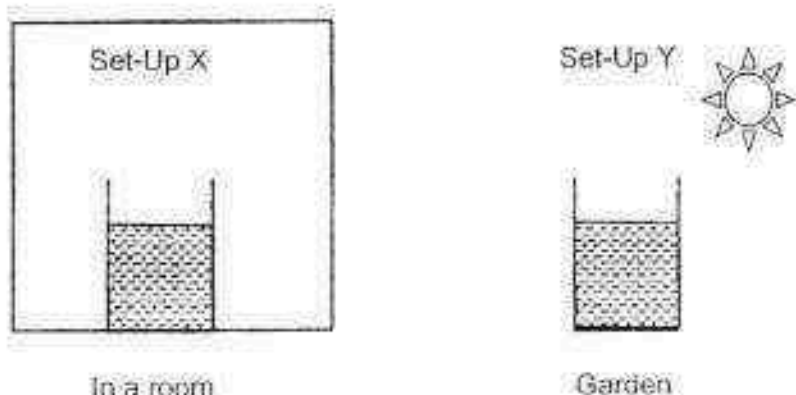
(3)



(4)



16. Renee placed the same amount of water in two identical containers. At the start of the experiment, she left them in two different locations as shown below.



After five hours, she compared the amount of water left in each container.

Which one of the following describes correctly the amount of water in set-up Y as compared to set-up X?

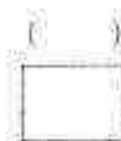
	Amount of Water Left in the container in Set-Up Y	Rate of Evaporation	Reason
(1)	Lesser	Faster	More heat
(2)	Lesser	Slower	Less heat
(3)	More	Slower	More heat
(4)	More	Faster	Less heat

17. The following statements describe the stages in a water cycle.

- A: Water droplets fall from clouds as rain.
- B: Water vapour condenses into clouds.
- C: Water evaporates from lakes, rivers, seas and oceans.

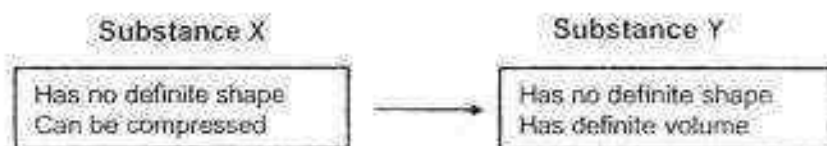
Which of the following shows the correct order of the water cycle?

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



18. Substance X and Substance Y are water in two different states.

The diagram below shows the properties of Substance X and Substance Y.



What process takes place as Substance X changes into Substance Y?

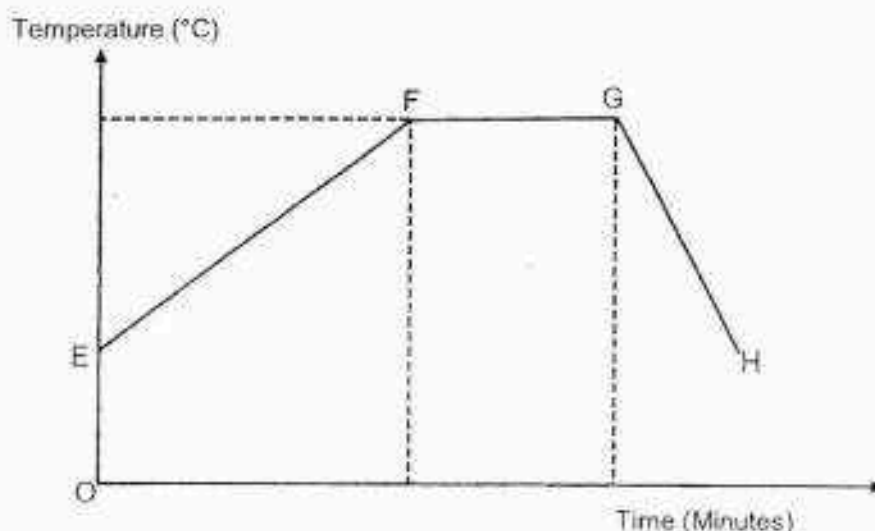
- (1) Boiling  
(2) Freezing  
(3) Evaporation  
(4) Condensation
19. Which of the following statements are correct about evaporation and boiling of water?

	Evaporation	Boiling
A.	Takes place on the surface of water	Takes place throughout the water
B.	Happens at all temperatures	Happens at 100°C
C.	Water loses heat during this process	Water gains heat during this process

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



20. The graph below shows the changes in the temperature of water over a period of time.



Based on the graph above, which of the following correctly describes the reason for the changes in the temperature of water?

	From E to F	From G to H
(1)	Heat Gain	Heat Gain
(2)	Heat Loss	Heat Gain
(3)	Heat Gain	Heat Loss
(4)	Heat Loss	Heat Loss

( )

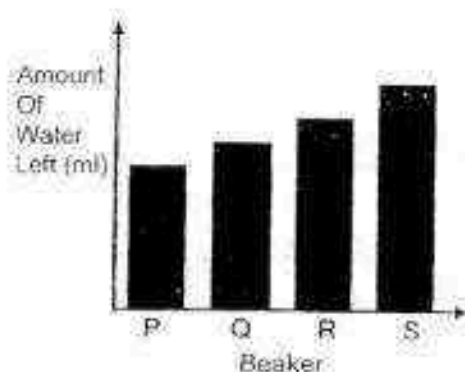


21. Four identical beakers, P, Q, R and S, were each filled with the same volume of water. They were left in four places with different conditions for 5 hours as shown in the table below.

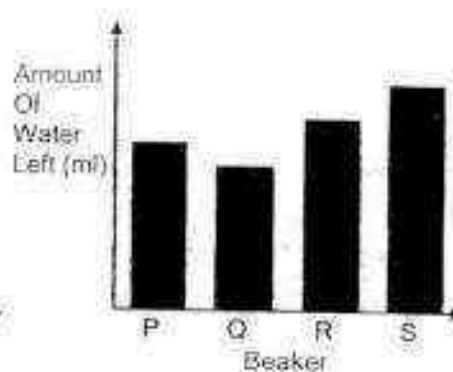
Beaker	P	Q	R	S
Conditions during the 5 hours	Sunny Not windy	Sunny Windy	Cloudy Not windy	Cloudy Windy

Which one of the following graphs shows the volume of the water left in the four beakers after 5 hours?

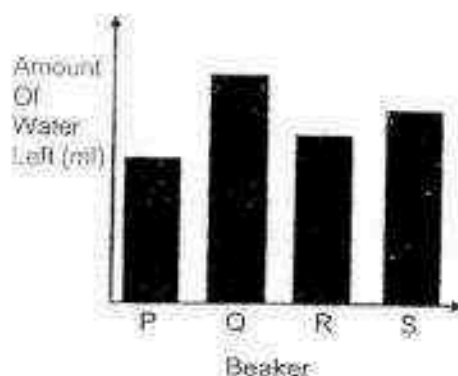
(1)



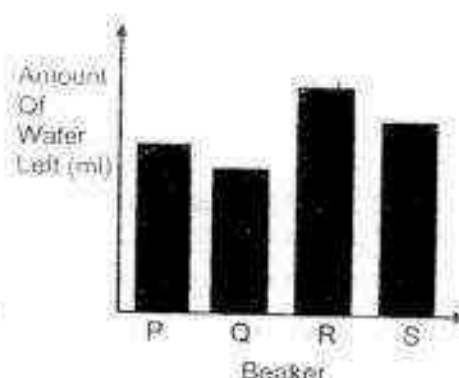
(2)



(3)



(4)



22. Deforestation is harmful to our environment.

Which of the following is/are least likely caused by deforestation?

A: Less variety of animals

B: More oxygen in the air

C: More soil being washed away by rain

(1) A only

(2) B only

(3) A and B only

(4) A, B and C

( )

23. Which of the following actions results in bottle caps being found in the stomach of dead whales along the shore?

(1) Discarding of food wrappers along the shore.

(2) Littering of plastic bottles along the beach.

(3) Spillage of oil by tankers in the ocean.

(4) Washing of clothes in the river.

( )

24. Which of the following actions do not contribute to an increase in greenhouse gases?

A: Mary walks to school.

B: Ray drives his car to work.

C: Peter grows plants in the garden.

D: Nurul opens the windows on sunny days.

(1) A and B only

(2) A and C only

(3) A, C and D only

(4) B, C and D only

( )



25. The ring and the ball below are made of the same material.



ball



ring

At room temperature, the ball was not able to pass through the ring.

Which of the following explains what Ali should do to the ring so that the ball is able to pass through it?

	Action	Reason
(1)	Put the ring in boiling water.	The ring expands.
(2)	Put the ring in boiling water.	The ring contracts.
(3)	Put the ring in the freezer.	The ring expands.
(4)	Put the ring in the freezer.	The ring contracts.



26). Jerrell wants to find out which object, X or Y, has a greater volume:

He placed the objects into two empty similar cylinders, A and B. He then poured water to the same level as shown in Diagram 1.

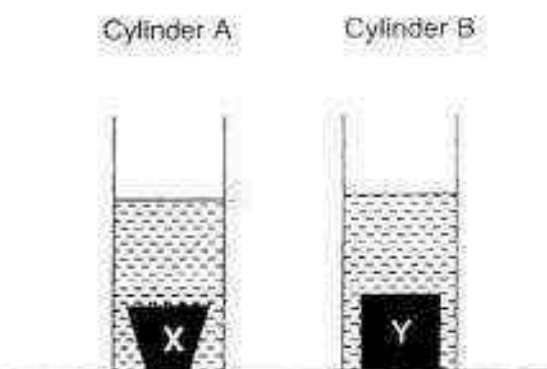


Diagram 1

He removed both objects carefully such that the least amount of water is dripped from the objects as shown in Diagram 2.

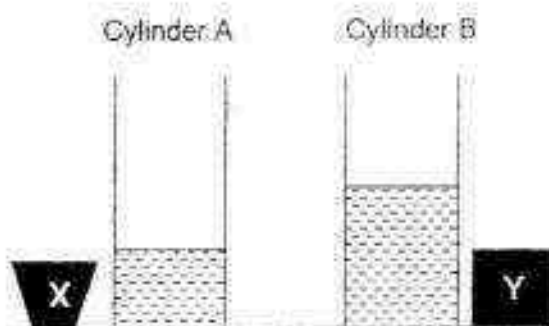


Diagram 2

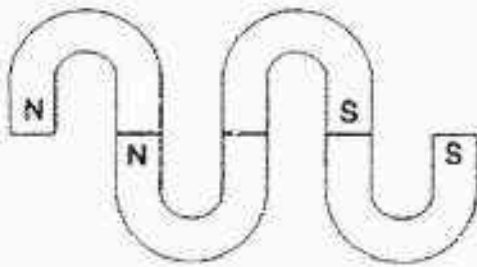
Which of the following correctly explains Jerrell's conclusion for the above experiment?

	Object with a greater volume	Explanation
(1)	X	Volume of water left in A is less than that in B
(2)	X	Volume of water left in B is <del>more</del> <sup>less</sup> than that in A
(3)	Y	Volume of water left in A is less than that in B
(4)	Y	Volume of water left in B is <del>more</del> <sup>less</sup> than that in A

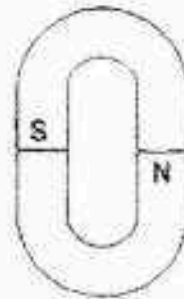
27. Mala used some U-shaped magnets to form different shapes.

Which one of the following shapes cannot be formed?

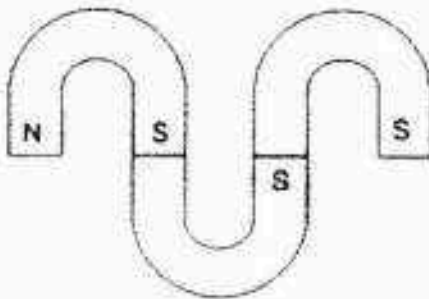
(1)



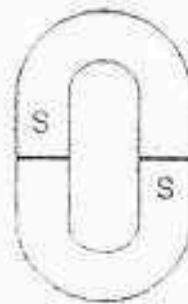
(2)



(3)



(4)



( )



28. Jane wants to make a diving springboard as shown below at a swimming pool.



The table below shows some characteristics of four materials, A, B, C and D.

Material	Strong	Flexible
A	✗	✓
B	✓	✗
C	✗	✗
D	✓	✓

(✓ - has the characteristic, ✗ - does not have the characteristic)

Which one of these materials, A, B, C or D, is most suitable for making part X of the springboard?

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

( )

End of Booklet A





**HENRY PARK PRIMARY SCHOOL**  
**FIRST SEMESTRAL ASSESSMENT 2016**  
**PRIMARY 5**  
**SCIENCE**  
**BOOKLET B (44 MARKS)**

**INSTRUCTIONS TO CANDIDATES**

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

Name: \_\_\_\_\_ (      )

Class: Primary 5 (      )

Date: 12 May 2016

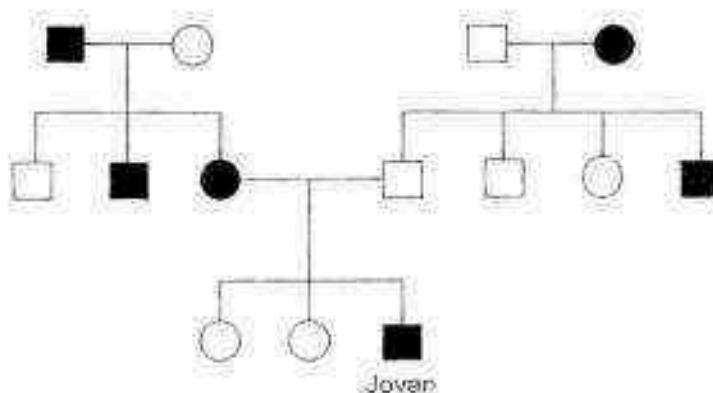
Total Time for Booklets A and B: 1 h 45 min

Marks for Booklet B: \_\_\_\_\_

**Booklet B (44 marks)**

Write your answers to questions 29 to 40 in the spaces given.

29. Study the family tree of Jovan below. The family tree shows the members who are tongue rollers and non-tongue rollers.



**Key :**

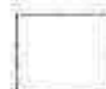
- male tongue roller
- female tongue roller
- male non-tongue roller
- female non-tongue roller

The following statements are about the family tree of Jovan.

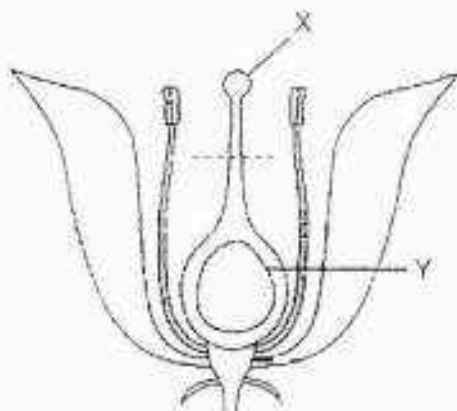
(3m)

Write 'T' if the statements are true and 'F' if the statements are false.

	Statements	T or F
(a)	Jovan's mother is a tongue roller	
(b)	Jovan's mother has a brother who is a tongue roller	
(c)	There are more male non-tongue rollers than female non-tongue rollers in Jovan's family	



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



- a) Identify the parts labelled, X and Y. (2m)

Part X : \_\_\_\_\_

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

- b) Two processes are required to take place for part Y to develop into a fruit. However, when part X is cut off along the dotted line, part Y is still able to develop into a fruit. (2m)

Explain why this is so.

---



---

- c) Without removing any parts of the flower, suggest **another** way to prevent this flower from becoming a fruit. (1m)

---



---



31. Kieron carried out three experiments with some seeds and cotton wool under different conditions as shown in the table below.

Experimental Set-up	Conditions	Results
P	<ul style="list-style-type: none"> <li>Wet cotton wool</li> <li>In the presence of light</li> <li>Temperature of 30°C</li> </ul>	Seeds germinated
Q	<ul style="list-style-type: none"> <li>Wet cotton wool</li> <li>In the presence of light</li> <li>Temperature of 5°C</li> </ul>	Seeds did not germinate
S	<ul style="list-style-type: none"> <li>Dry cotton wool</li> <li>In the presence of light</li> <li>Temperature of 30°C</li> </ul>	Seeds did not germinate

- a) Based on the table above, list down 2 conditions that are necessary for the seeds to grow into seedlings.

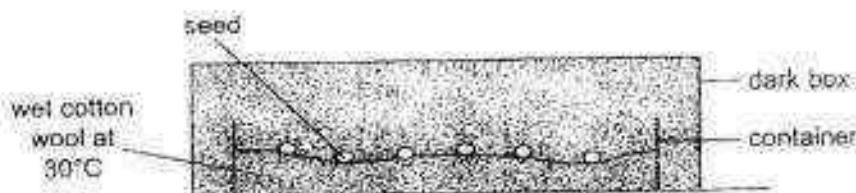
(2m)

Condition 1 : \_\_\_\_\_

Condition 2 : \_\_\_\_\_

- b) The diagram below shows another experiment where the seeds are kept in the dark.

(2m)



Suggest two possible reasons why the seeds germinated.

Reason 1 :

\_\_\_\_\_

\_\_\_\_\_

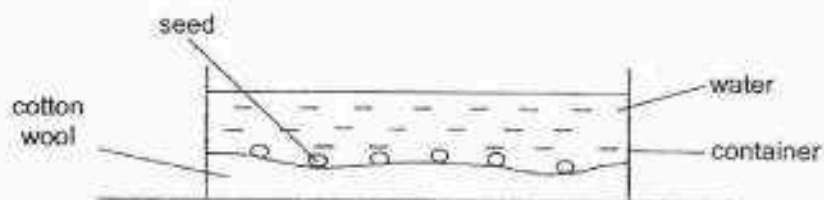
Reason 2 :

\_\_\_\_\_

\_\_\_\_\_



- c) In the next experiment, the seeds are submerged in water in a lighted place at 30°C. (1m)



The seeds were able to germinate. Explain why.

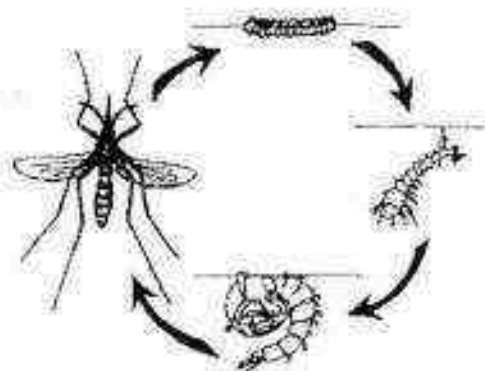
---

---





32. Amir studied the life cycle of organism M as shown below.



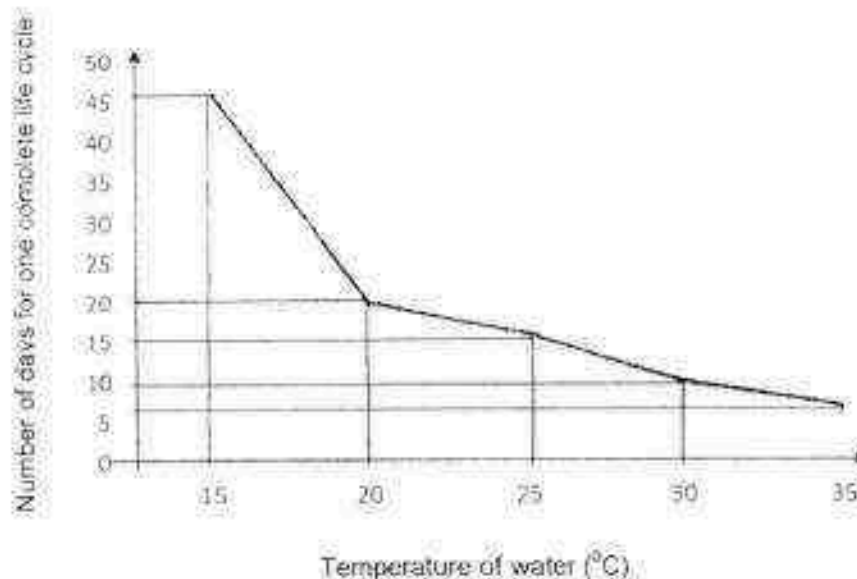
Life Cycle of organism M

a) Name **another** animal that has four stages in its life cycle.

(1m)

Amir studied the effect of the temperature of water on the life cycle of organism M.

The graph below shows the results of his study

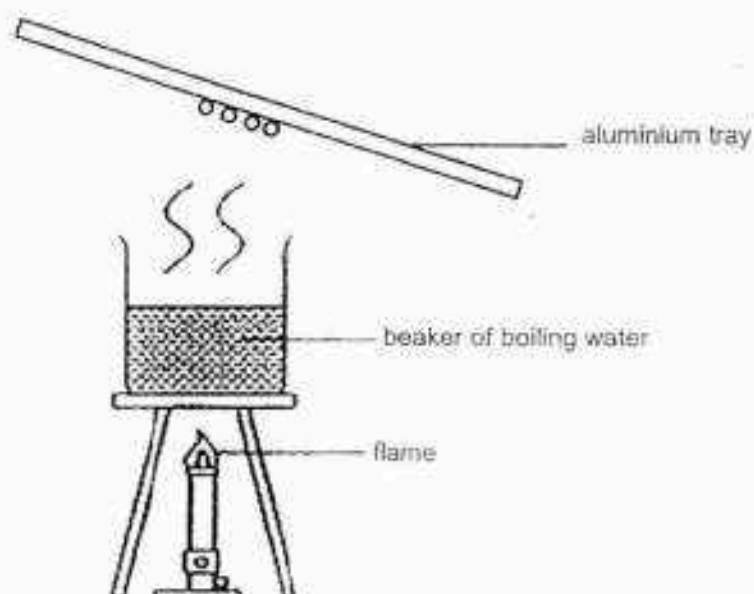


b) Based on the graph, how would the temperature of water affect the number of days taken for one complete life cycle of organism M?

(1m)



33. In the set-up below, some water was heated in a beaker. After ten minutes, water droplets started to form on the aluminium tray as shown below.



- a) Explain how the water droplets were formed. (2m)

---

---

- b) After half an hour, May observed that less water droplets formed on the aluminium tray.

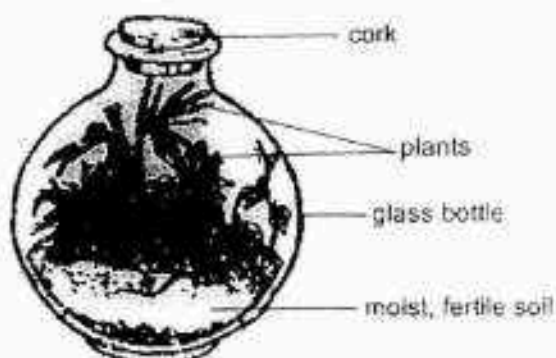
Give a reason for her observation. (2m)

---

---



34. The diagram below shows a sealed bottle garden. It is placed near a window where the plants receive light from the sun.



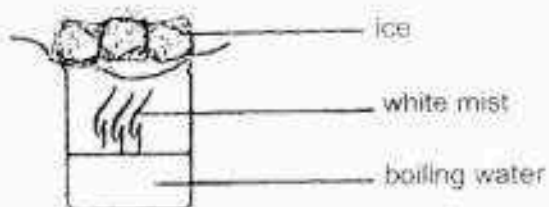
- a) Explain how the plants were able to obtain water to survive for some time. (2m)

---



---

- b) The set-up below shows how the water cycle works:



Which part of the set-up represents the 'clouds' in the water cycle above?

Explain your answer.

(2m)

---



---



35. Susan conducted an experiment to find out if the exposed surface area of water would affect the rate of evaporation of water. She poured an equal amount of water into three different containers, A, B and C, as shown below.



Container A



Container B



Container C

- a) Put a tick (✓) in the box where the variable is kept the same.

(2m)

Variable	Kept the same in the experiment
Duration of experiment	
Material of container	

- b) Name the **changed** variable in this experiment.

(1m)

- c) Susan measured the amount of water left in each container after 2 hours.

(1m)

She found the amount of water left to be 36 ml, 80 ml and 165 ml.

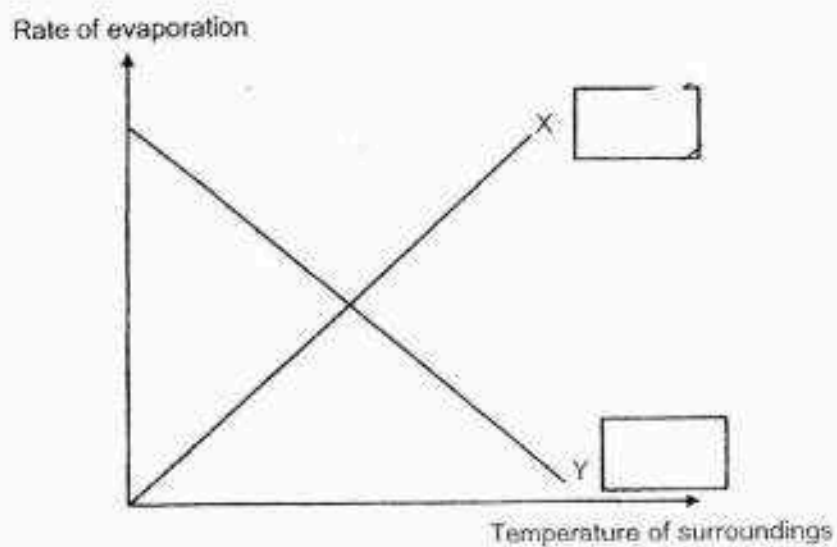
Write the correct amount of water (36 ml, 80 ml and 165 ml) in the correct boxes below.

Container	Volume of water (ml)	
	At the start of experiment (ml)	After 2 hours (ml)
A	200	
B	200	
C	200	



- d) The graph below shows the relationship between the temperature of the surroundings and the rate of evaporation. (1m)

Tick (✓) the box that shows the correct relationship between the temperature of the surroundings and the rate of evaporation.



35. The average temperature of surrounding air in Country S is increasing steadily.

The table below shows the temperature of surrounding air in Country S from 2002 to 2014.

	2002	2006	2010	2014
Temperature of surrounding air ( $^{\circ}\text{C}$ )	26.3	26.5	?	26.9

- a) What was the temperature of the surrounding air in Country S in 2010?

(2m)

Temperature in 2010: \_\_\_\_\_  $^{\circ}\text{C}$

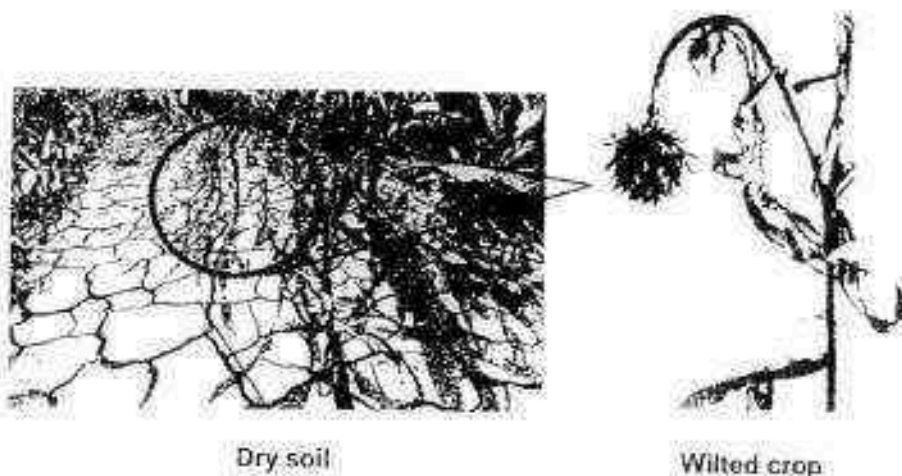
Explain how this increasing trend is likely to affect the plants and animals in Country S.

---



---

The picture below shows wilted crops and dry soil in a neighbouring country of Country S.



- b) Suggest a possible reason for the wilted crops and dry soil.

(1m)

---



---



37. Sean conducted an experiment and his set-ups are shown in Diagram 1. The test-tubes were sealed with stoppers. He poured the same amount of coloured water at room temperature into both test-tubes. The water rose to the same levels in the glass tubes.

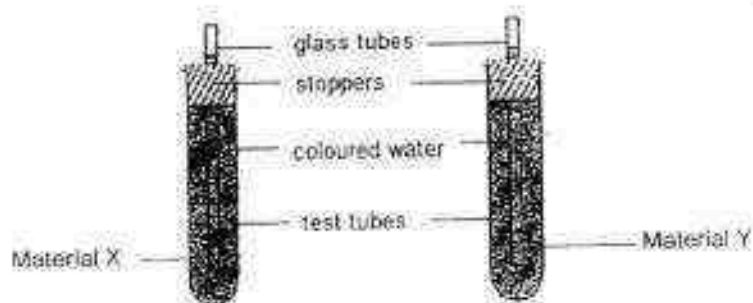


Diagram 1

Sean wanted to find out what material X and material Y are. He placed the test tubes in a trough of hot water at the same time.

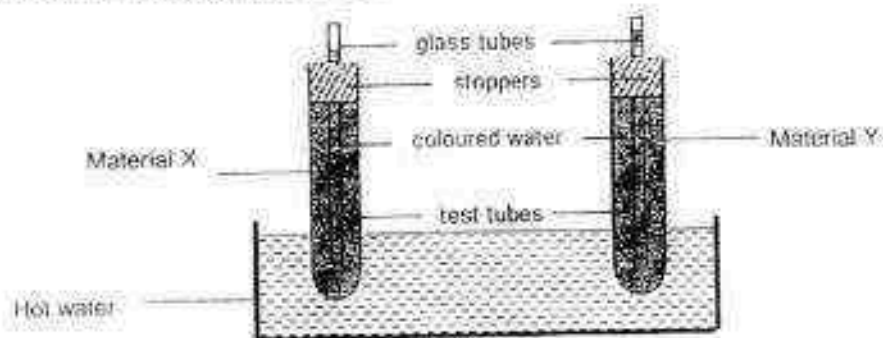


Diagram 2

Diagram 2 shows the water level in each glass tube after 2 minutes.

- a) State the difference in the water level in the two glass tubes.

(1m)

---



---

- b) What is the purpose of placing the test tubes in hot water?

(1m)

---

- c) Which material is a **poorer** conductor of heat? Explain why.

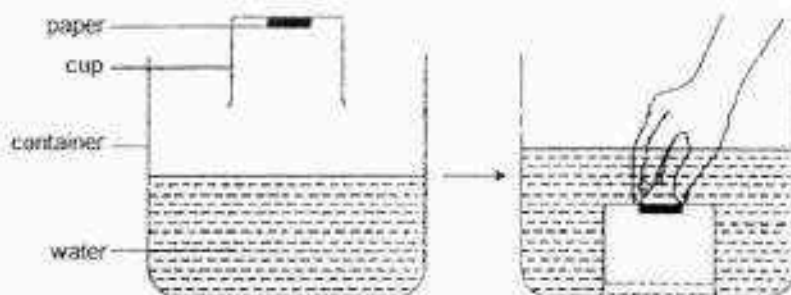
---



---



38. Megan stuck a paper in an inverted cup and pushed it into a container of water as shown below.



- a) Explain why there was a rise in water level in the container after the cup was pushed in. (2m)

---



---

- b) Megan observed that the paper in the cup was not wet in the container. (2m)  
Explain why.

---

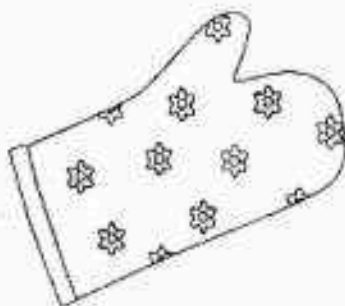


---





39. The picture below shows a mitten. It is used to remove hot trays from ovens.



- a) Based on the function of the mitten stated above, what is an important property of the material suitable for making the mitten? (1m)

---

---

- b) Give a reason for your answer in (a). (1m)

---

---



40. Cheryl observed that magnet X and Object Y were attracted as shown below.



- a) Give a reason why Cheryl is not able to conclude that Object Y is a magnet. (1m)

---



---

In another experiment, Cheryl placed magnet X near five paper clips as shown below.



- b) The number of paper clips attracted to Point A is given.

State in the box below the number of paper clip/s that Magnet X would attract at Point B.

(1m)



- c) Give a reason for your answer in (b).

(1m)

---



---

End of Booklet B

**Setters:**

Mr Tan Joo Nam  
Mdm Cecilia Quah  
Mrs Priscilla Heng



YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : HENRY PARK PRIMARY  
 SUBJECT : SCIENCE  
 TERM : SA1

Booklet A

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

Booklet B

Q29a True

Q29b True

Q29c False

Q30a Part X : Stigma  
Part Y : Ovary

Q30b Pollination and fertilisation has taken place.

Q30c Cover Y.

Q31a Condition 1 : Water  
Condition 2 : Moisture/Warmth

Q31b Reason 1 : The seeds can still germinate without light.  
Reason 2 : There are water, air and warmth needed for germination.

Q31c The seeds can take in (dissolved) oxygen from the water.

Q32a Butterfly

Q32b The lower the temperature of water, the longer the number of days for one complete life cycle of organism M.

Q33a The water in the beaker gained heat and evaporated. The water vapour touched the cooler surface of the aluminium tray, lost heat and condensed into water droplets.

Q33b The tray gained heat and less water vapour condensed on it.

Q34a The water from the soil evaporated to form water vapour. It touched the cooler inner surface of the bottle, lost heat and condensed into water droplets which fall back into the soil.

Q34b White mist. It is formed when the water vapour comes into contact with the cooler surrounding air, lose heat and condense into water droplets.

Q35a

Variable	Kept the same in the experiment
Duration of experiment	✓
Material of container	✓

Q35b Exposed surface area of water.

Q35c

Container	Volume of water (ml)	
	At the start of experiment (ml)	After 2 hours (ml)
A	200	36 ml
B	200	80 ml
C	200	165 ml

Q35d

Tick : X



Q36a

Temperature in 2010 : 26.7 °C

Plants and animals will decrease in number / die as Country S gets hotter / surrounding temperature increases.

Q36b

There was a lack of rain / water.

Q37a

The water level in the glass tube on the right (Material Y) is higher than the water in glass tube on the left (Material X).

Q37b

The coloured water in the glass tubes will gain heat and expand.

Q37c

Material X. The water level in X glass tube is lower than the water level in Y glass tube. The coloured water in X did not gain heat faster than Y.

- Q38a The air inside the cup took up space in the water, pushing the water in the container upwards.
- Q38b Air inside the cup occupies the space, so water does not have space in the cup to enter to reach the paper.
- Q39a It is a poor conductor of heat.
- Q39b The mitten conducts heat to the hand slowly.
- Q40a Only magnets can repel other magnets. As Cheryl did not test if object Y could repel Magnet X, she cannot conclude that Object Y is a magnet.
- Q40b 2
- Q40c Magnetism is strongest at the poles of the magnet.



**NAN HUA PRIMARY SCHOOL  
SEMESTRAL ASSESSMENT 1 – 2016  
PRIMARY 5**

**SCIENCE**

**BOOKLET A**

**28 Multiple Choice Questions (56 marks)**

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

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

**Marks Obtained**

Booklet A		/ 56
Booklet B		/ 44
Total		/ 100

Name: \_\_\_\_\_ (      ) Class: P 5 \_\_\_\_\_

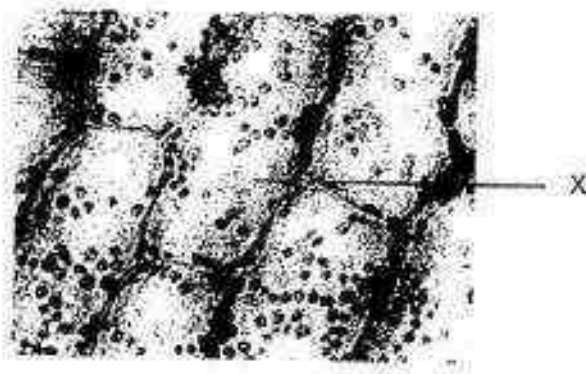
Date : 6 May 2016

Parent's Signature: \_\_\_\_\_

**Section A: (28 x 2 marks = 56 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. The photograph below shows a picture of plant cells.



What is the part labelled X?

- (1) Nucleus  
(2) Cytoplasm  
(3) Chloroplast  
(4) Cell membrane
2. The diagram below shows the characteristics of four adult plants, R, S, T and U.

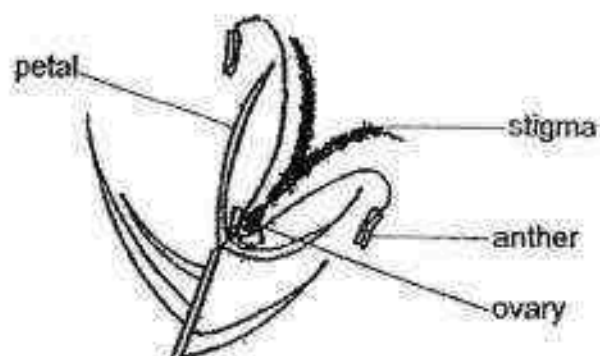
R	S	T	U
Sweet fruits	Large leaves	Sweet fruits	Large leaves
Large flowers	Long stem	Long stem	Large flowers

Two of them were used to breed a new young plant, V, which has sweet fruits, large flowers and large leaves.

Which two plants are most likely the parents of V?

- (1) R and S  
(2) R and T  
(3) S and T  
(4) S and U

3. The diagram below shows a wind-pollinated flower.

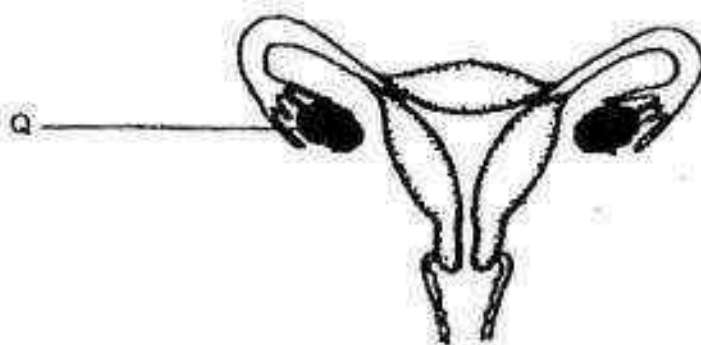


Which of the following characteristics show(s) that the flower is pollinated by wind?

- A Feathery stigmas
- B Ovary hidden in flower
- C Anthers thinner than stigmas
- D Anthers hanging out of flower

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

4. The diagram below shows the female human reproductive system.

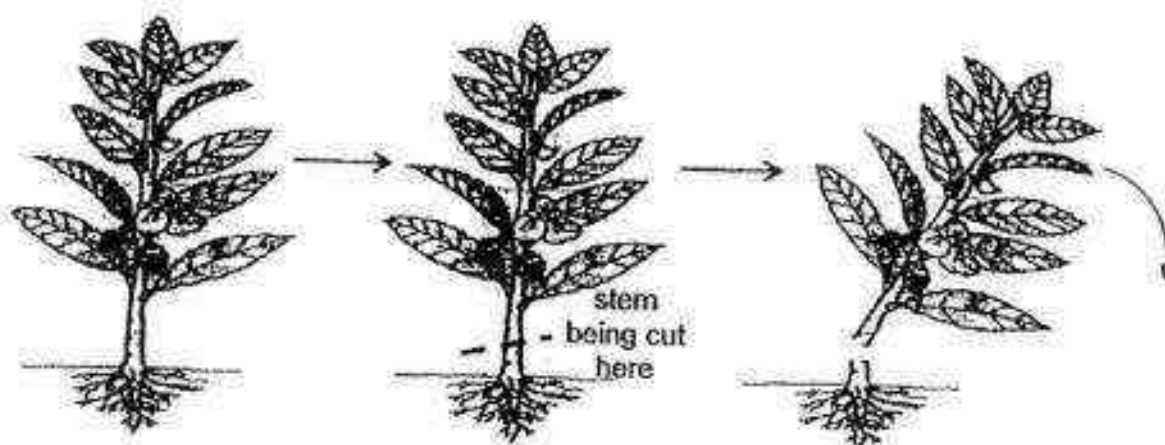


In order for fertilisation to happen, Part Q has to release \_\_\_\_\_

- (1) sperms
- (2) nutrients
- (3) fertilised eggs
- (4) unfertilised eggs



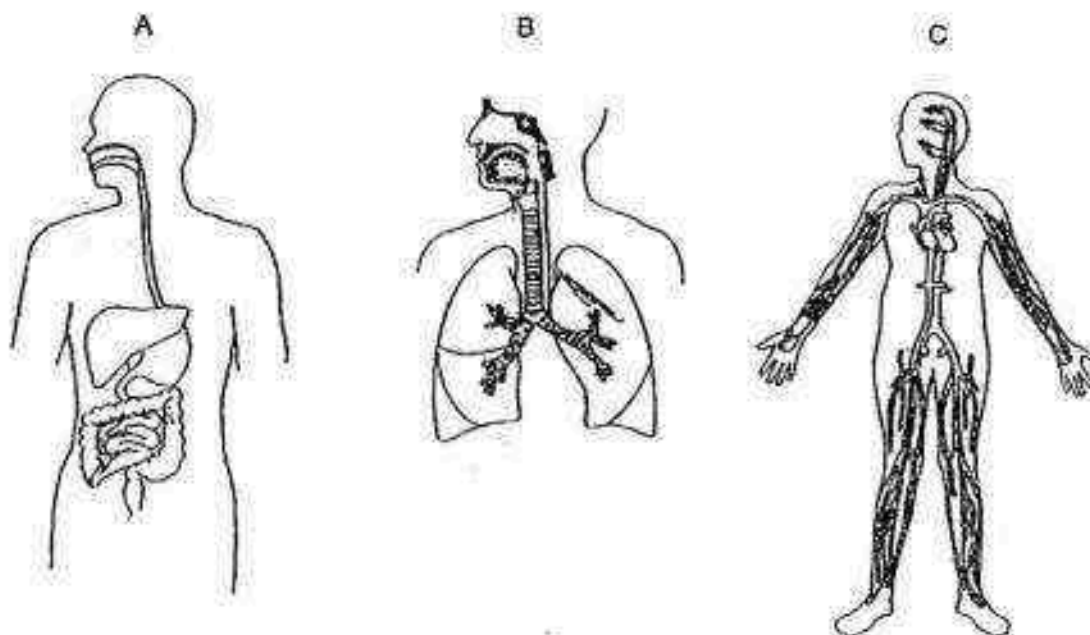
5. The diagram below show a plant being cut at the stem.



Based only on the diagram above, which statement(s) is/are correct about the function(s) of the roots?

- A The roots respond to changes.
  - B The roots absorb water from the soil.
  - C The roots hold the plant firmly to the ground.
- (1) B only
  - (2) C only
  - (3) A and B only
  - (4) B and C only
6. Mr Tan has the habit of cutting all the hairs in his nostrils. He is advised by the doctor to leave sufficient hairs in his nostrils so that the air that he breathes into his lungs will \_\_\_\_\_.
- (1) be dry
  - (2) be warm
  - (3) contain less dust particles
  - (4) contain more water vapour

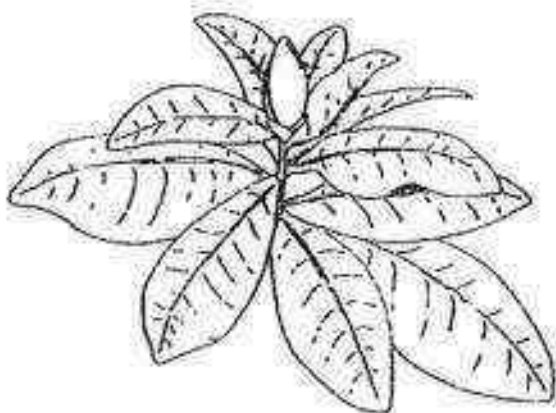
7. The following pictures show the various systems in a human body.



Which of the following shows the correct systems represented by A, B and C?

	A	B	C
(1)	digestive	circulatory	respiratory
(2)	digestive	respiratory	circulatory
(3)	circulatory	digestive	respiratory
(4)	respiratory	digestive	circulatory

8. The plant below grows on the forest floor with many tall trees. It is observed that the plant has broad green leaves.

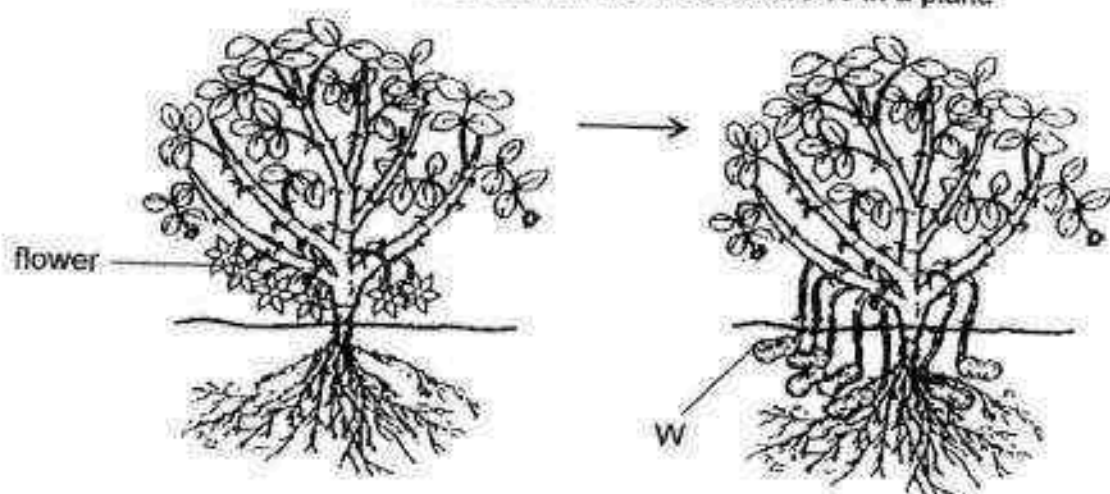


The plant has broad green leaves so that it is able to absorb more \_\_\_\_\_.

- (1) oxygen from the surrounding
  - (2) nutrients from the forest floor
  - (3) sunlight reaching the forest floor
  - (4) water vapour from the surrounding
9. A plant is suffering from a disease that results in yellow leaves. Which of the following cell part is most likely affected?

- (1) Cell wall
- (2) Cytoplasm
- (3) Chloroplasts
- (4) Cell Membrane

10. The diagram below shows the development of structure W in a plant.



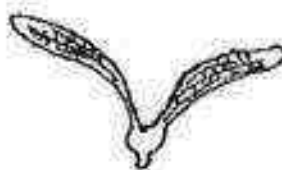
Which one of the following statements about W is correct?

- (1) Structure W is the fruit of the plant.
- (2) Structure W is the root of the plant.
- (3) Structure W is the stem of the plant.
- (4) Structure W is the seed of the plant.

11. Two fruits, R and S, from the same tree were used in an experiment to find out how the wing-like structures affects the distance it travels.

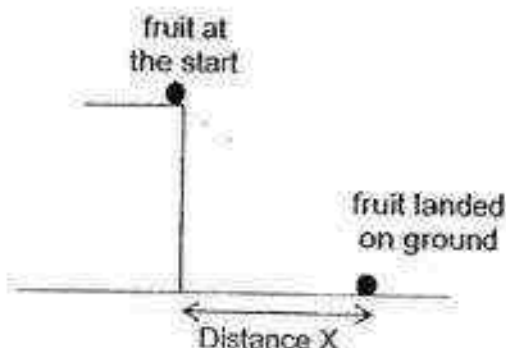


R



S

The fruits were dropped at the same time from the 5<sup>th</sup> storey of a building. The distance the fruits travelled was recorded as distance X.



The table below shows the distance travelled by each fruit from the starting point to where it landed on the ground.

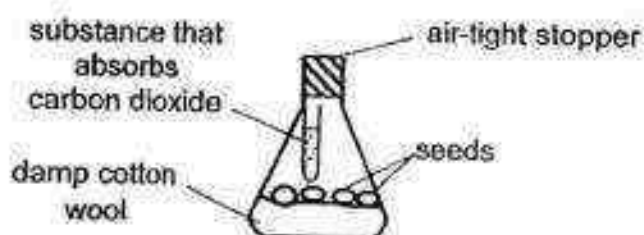
Fruit	R	S
X (cm)	320	150

Which of the following is/are **definitely** correct about how fruit R is able to travel a longer distance than fruit S?

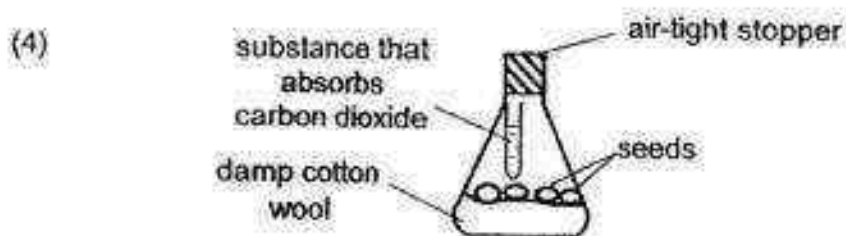
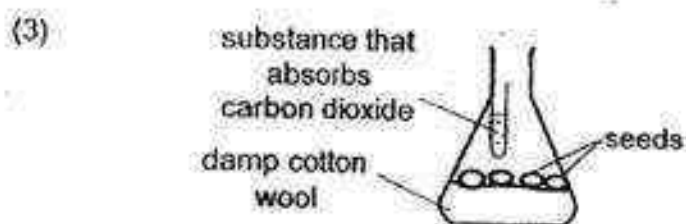
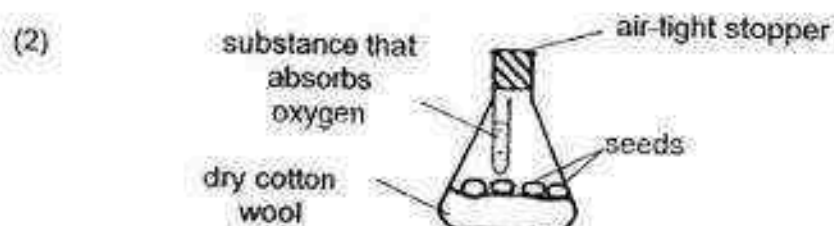
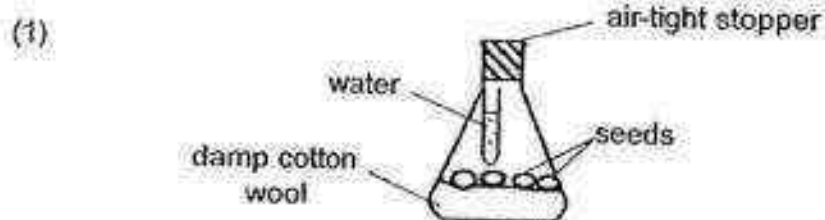
- A Fruit R can stay longer in the air.
- B Fruit R and fruit S have the same mass.
- C Fruit R has more wing-like structures than fruit S.
- D Fruit R is dispersed by animals, but fruit S is dispersed by wind.

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

12. Shanthi wanted to find out how the germination of seeds is affected by carbon dioxide. Her set-up is shown below.



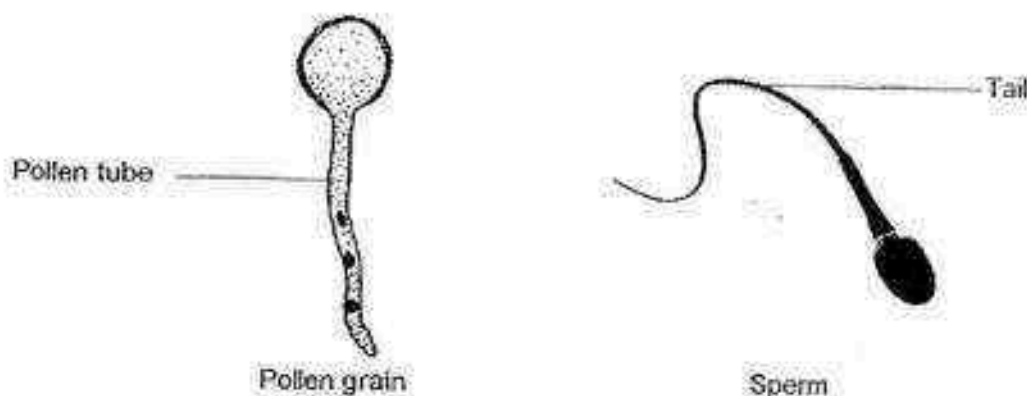
Which one of the following should Shanthi use as a control set-up for her experiment?



13. Married couples who are unable to produce a baby may undergo In Vitro Fertilisation (IVF). In IVF, the egg and sperm are made to fuse in the laboratory. The fertilised egg is then placed inside the human body. Where should the fertilised egg be placed so that the foetus can develop?

- (1) Testis
- (2) Ovary
- (3) Womb
- (4) Vagina

14. A pollen tube and the tail of a sperm have a common purpose in the process of sexual reproduction.

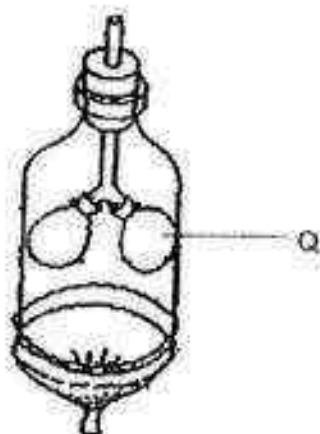


Which one of the following statements states this purpose correctly?

The pollen tube and the tail of a sperm allows the \_\_\_\_\_.

- (1) male sex cell to reach the female sex cell
  - (2) male sex cell to choose which egg to fertilise
  - (3) female sex cell to be released from the ovary
  - (4) female sex cell to release its nucleus to the male sex cell
15. Which one of the following statements about the process of breathing is correct?
- (1) Only oxygen is breathed into the human body
  - (2) Only carbon dioxide is breathed out of the human body.
  - (3) Only oxygen and carbon dioxide are breathed into and out of the human body.
  - (4) Nitrogen, oxygen, carbon dioxide, water vapour and other rare gases are breathed into and out of the human body.

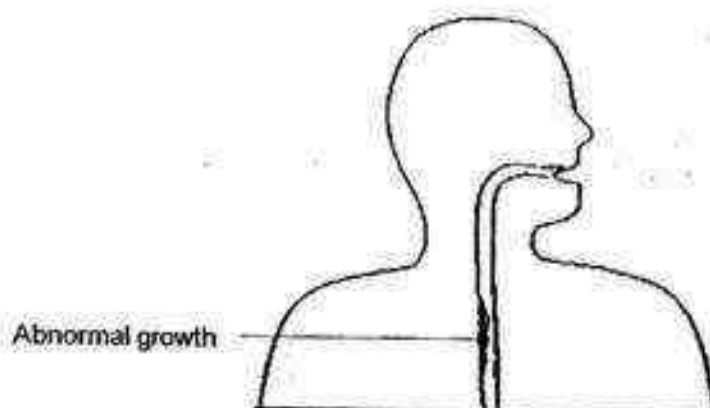
16. The diagram below shows a model of a human respiratory system.



Organ Q has the similar function as an organ in the fish respiratory system. Which one of the following correctly represents the organ in the fish respiratory system?

- (1) Gills
- (2) Nose
- (3) Heart
- (4) Lungs

17. The diagram below shows a patient with an abnormal growth along the gullet.

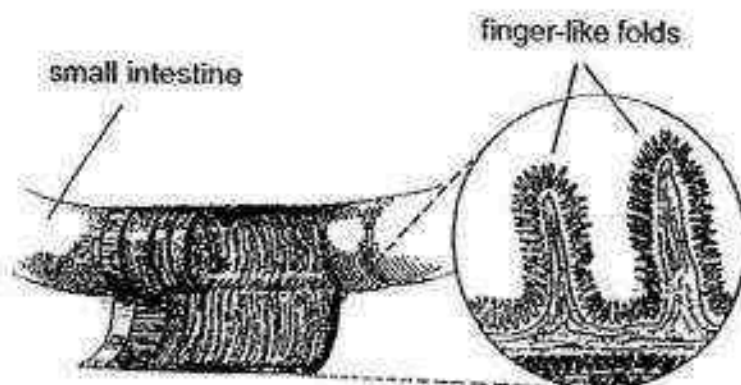


How would the abnormal growth affect the function of the gullet?

- (1) Less food will be digested.
- (2) Food will be transported to the stomach slower.
- (3) Water cannot be reabsorbed into the bloodstream.
- (4) Less nutrients will be released into the bloodstream.



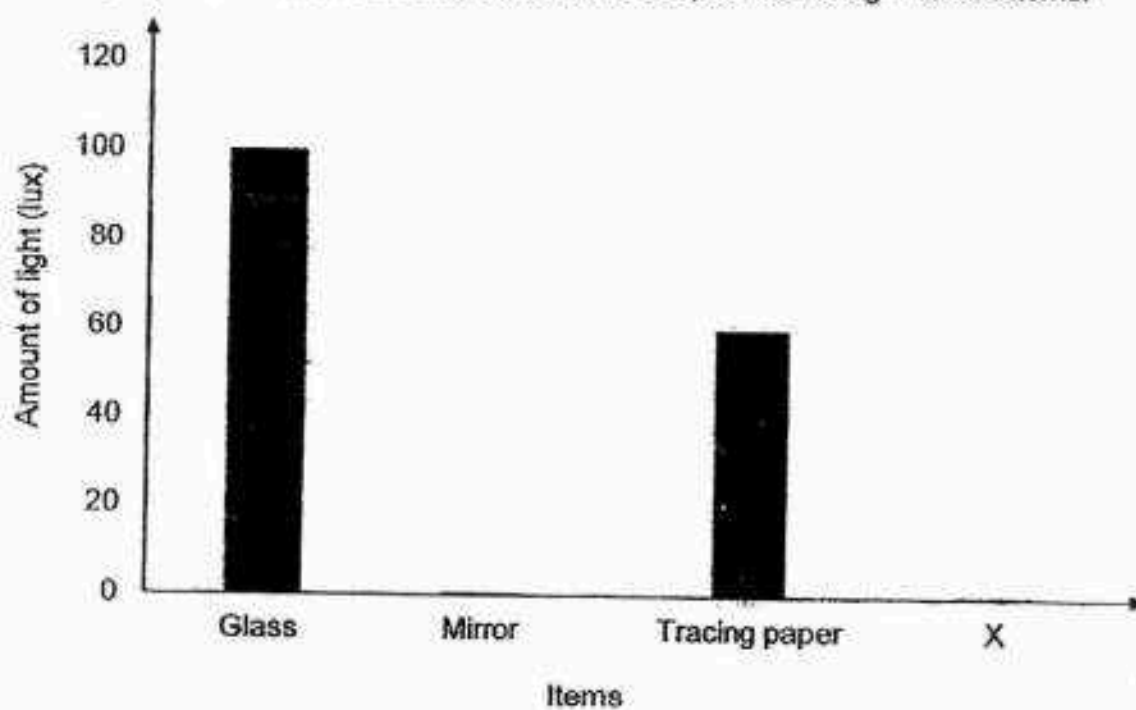
18. Small intestines do not have smooth walls. Instead, there are finger-like folds lining the walls as shown in the diagram below.



What is a possible reason for these finger-like folds?

- (1) Increase the amount of water entering the small intestines.
- (2) Decrease the amount of digested food entering the small intestines.
- (3) Decrease the surface area for absorption of water into the bloodstream.
- (4) Increase the surface area for absorption of digested food into the bloodstream.

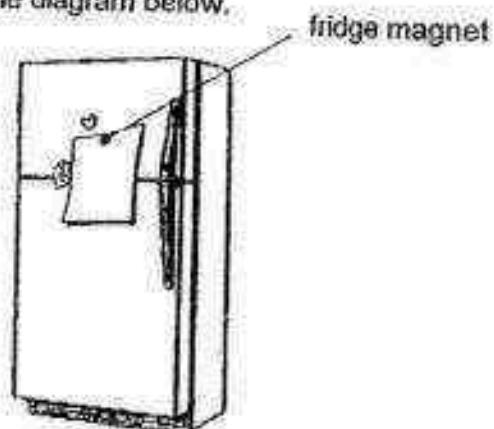
19. The graph below shows the amount of light that passes through various items.



What could X be?

- (1) Cardboard
- (2) Clear plastic
- (3) Frosted glass
- (4) Tissue paper

20. Sam was able to use a fridge magnet to attach a paper note onto the door of the refrigerator as shown in the diagram below.



Which of the following statements is/are most likely true about why the magnet was able to attach the paper note onto the refrigerator?

- A Magnetism could pass through the paper.
- B The paper note was attracted to the fridge magnet.
- C The door of the refrigerator could be made of aluminium.

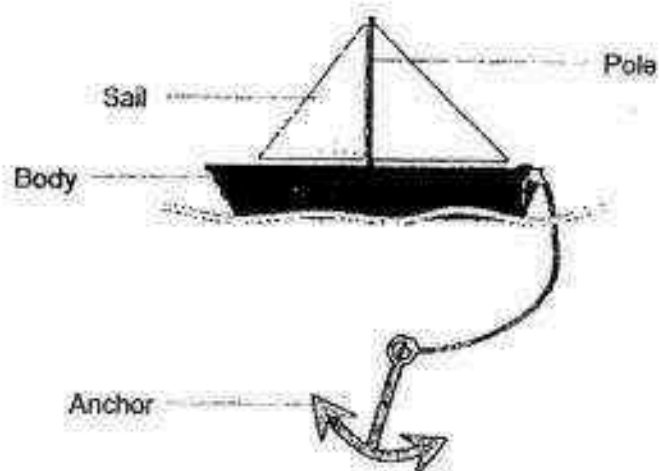
- (1) A only
- (2) C only
- (3) A and B only
- (4) A, B and C

21. Which of the following statements correctly show(s) how water usage at home can be reduced?

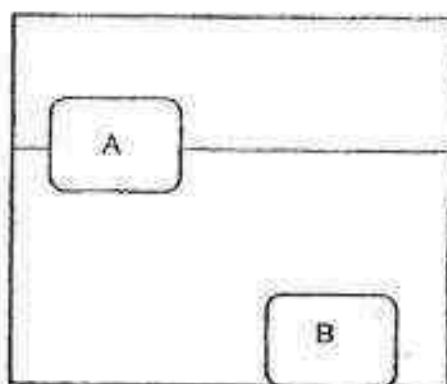
- A Using water that had been used to wash the rice grains to water the plants.
- B Install shower heads to allow large amount of water to gush out of the shower heads.
- C Reduce the amount of water in the water tank for flushing by placing a plastic bottle of pebbles in the tank to take up the space of some water.

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

22. Gerald wants to make a toy boat as shown below.



He placed two blocks of the same size, A and B, into a tank of water. A and B are made of different materials.



He also bent the blocks and realised that A is flexible while B is stiff. Which of the following correctly shows the materials that could be used to make the parts of the toy boat?

	A	B
(1)	Anchor	Pole
(2)	Sail	Body
(3)	Body	Anchor
(4)	Sail	Anchor

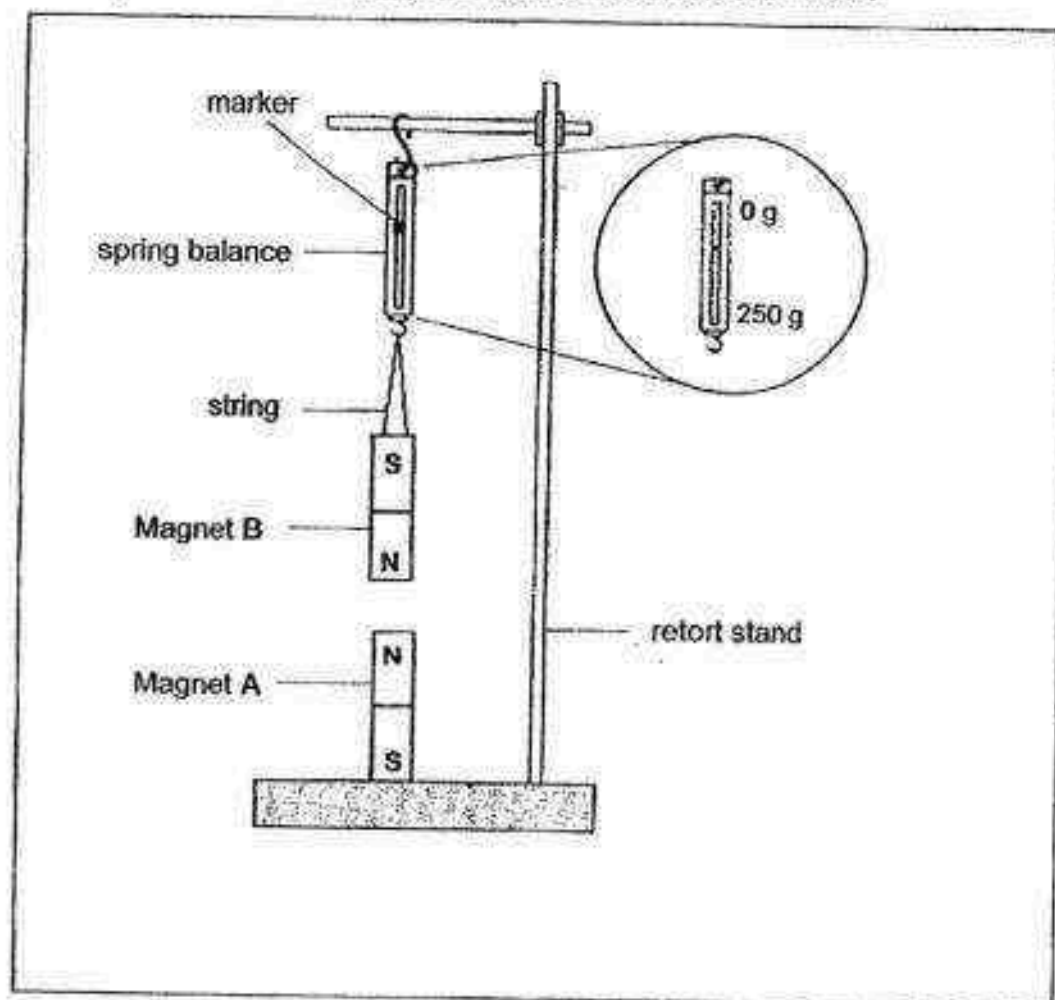
23. Paul wants to buy a sleeping bag for his hiking trip. He needs to carry the sleeping bag with him during the day as he moves from place to place and sleep in the cold and damp forests during the night.



What properties should he look out for when he selects the sleeping bag?

	Light	Waterproof	Conductor of heat
(1)	No	Yes	Poor
(2)	No	No	Good
(3)	Yes	Yes	Poor
(4)	Yes	No	Good

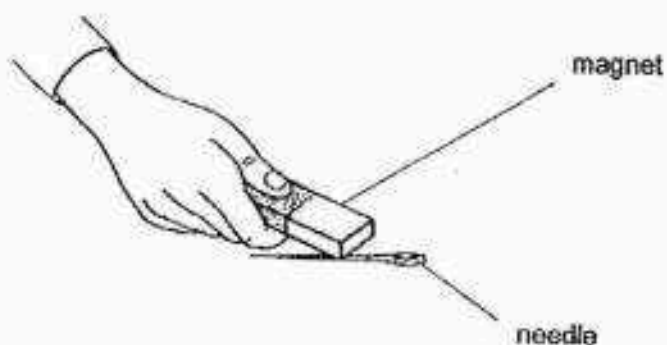
24. Mr Ali set up an experiment using two identical strong bar magnets as shown in the diagram below. Both Magnets A and B have the same mass.



Which one of the following statements is most likely correct when magnet B is hung above magnet A?

- (1) Magnet B will move towards magnet A.
- (2) Magnet A will move towards magnet B.
- (3) The marker on the spring balance will move up and give a lower reading.
- (4) The marker on the spring balance will move down and give a higher reading.

25. A needle is magnetised by using the stroking method. However, no paper clips can be picked up by the needle.



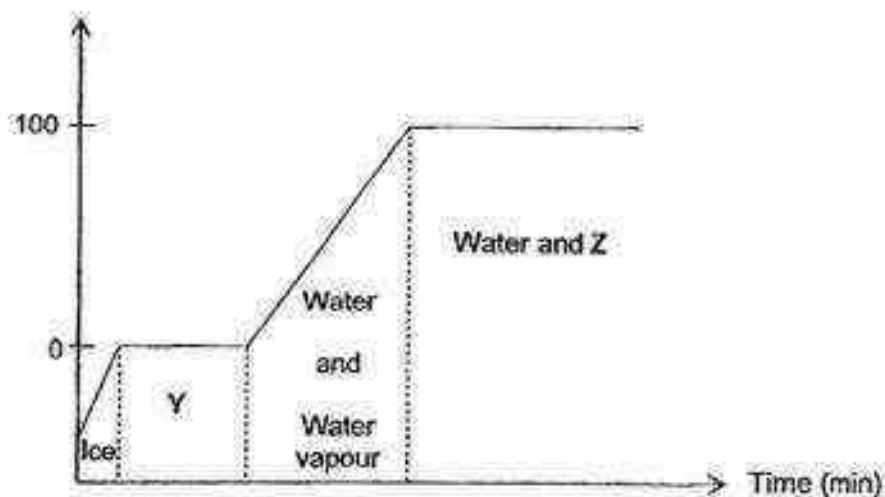
Which of the following could be the likely reason(s) why the needle could not pick up any paper clips?

- A The needle is made of copper.
- B The needle was stroked in more than one direction.
- C Only the North pole of the magnet is used to stroke the needle.

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

26. The graph below shows the different states of water when it gains heat.

Temperature ( $^{\circ}\text{C}$ )



Which of the following correctly shows what Y and Z represent?

	Y	Z
(1)	Ice	Water vapour
(2)	Water	Steam
(3)	Ice and water	Water vapour
(4)	Ice and water	Steam

27. The table below shows the temperature of a can of cold drink placed in an air-conditioned room. The temperature of the room is  $25^{\circ}\text{C}$ .

Time (mins)	0	30	60	90	120
Temperature ( $^{\circ}\text{C}$ )	10	15	20	25	?

What would be the temperature of the can of drink 120 minutes later?

- (1)  $20^{\circ}\text{C}$
- (2)  $25^{\circ}\text{C}$
- (3)  $30^{\circ}\text{C}$
- (4)  $35^{\circ}\text{C}$



28. The following diagram shows a part of a metal bridge.



On a hot day, the gaps on the bridge will become smaller. What process will result in such an observation?

- (1) Melting
- (2) Expansion
- (3) Contraction
- (4) Condensation



NAN HUA PRIMARY SCHOOL  
SEMESTRAL ASSESSMENT 1 – 2016  
PRIMARY 5

SCIENCE

BOOKLET B

12 Open-ended questions (44 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B

	/ 44
--	------

Name: \_\_\_\_\_ (     )     Class: P 5 \_\_\_\_\_

Date : 6 May 2016

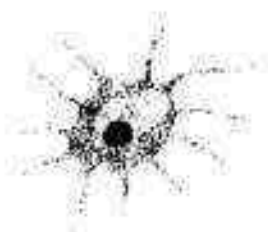
Parent's Signature: \_\_\_\_\_

**Section B: (44 marks)**

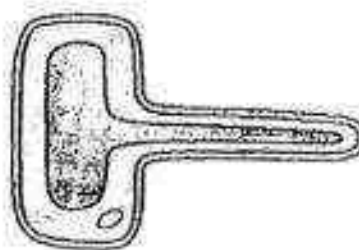
Write your answers to questions 29 to 40.

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

29. The diagrams below show an animal cell and a root hair cell found in a plant.



Animal Cell



Root Hair Cell

- (a) Based on your observations, name one cell part that is found in both the root hair cell and the animal cell. [1]

---

- (b) A part in the root hair cell is not found in the animal cell. Label it "X" on the diagram above. [1]

- (c) Explain why there are no chloroplasts in a root hair cell. [1]

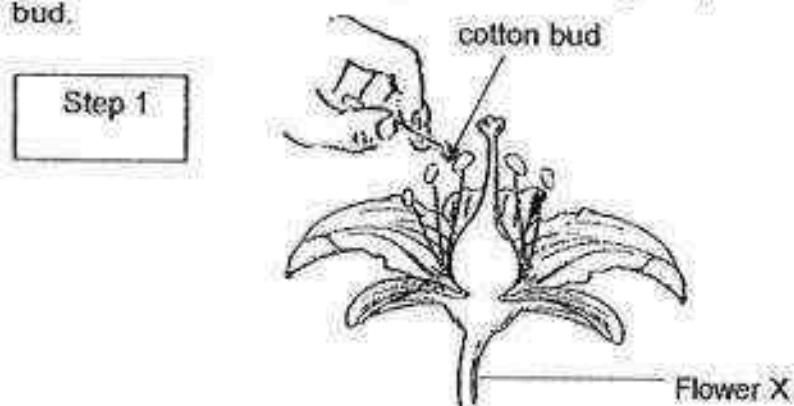
---



---

Score	3
-------	---

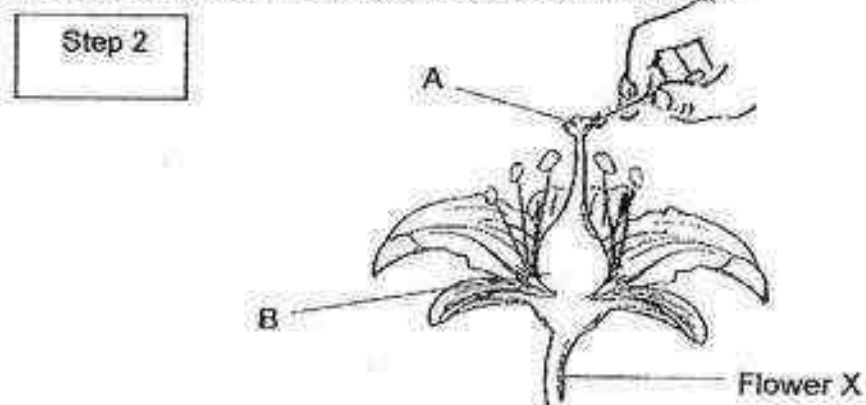
30. The diagram below shows a gardener brushing one part of flower X with a cotton bud.



- (a) What are the powdery substances found on the cotton bud?

[1]

Next, he brushed the substances on part A of flower X.



- (b) Name the reproduction process that is taking place during the brushing in step 2.

[1]

(Go on to the next page)

Score	2
-------	---

- (c) One week later, B started to grow into a fruit. What could have taken place after the brushing? [1]

---

---

- (d) Name the part of the flower that would develop into seeds. [1]

---

Score	2
-------	---

31. The diagram below shows the male human reproductive system.



- (a) What is the function of the testis? [1]

---

---

The diagram below shows a sperm.



- (b) What is found inside the nucleus of a sperm? [1]

---

---

(Go on to the next page)

Score	2
-------	---

Gestation period is the period of time when the young develops in the mother's womb before it is born. The table below shows the gestation periods of four different animals R, S, T and U.

Animal	Gestation Period (days)	Mass of young at birth (kg)
R	253	3
S	336	22
T	450	?
U	510	113

- (c) What is the relationship between the gestation period and the mass of young at birth? [1]

---

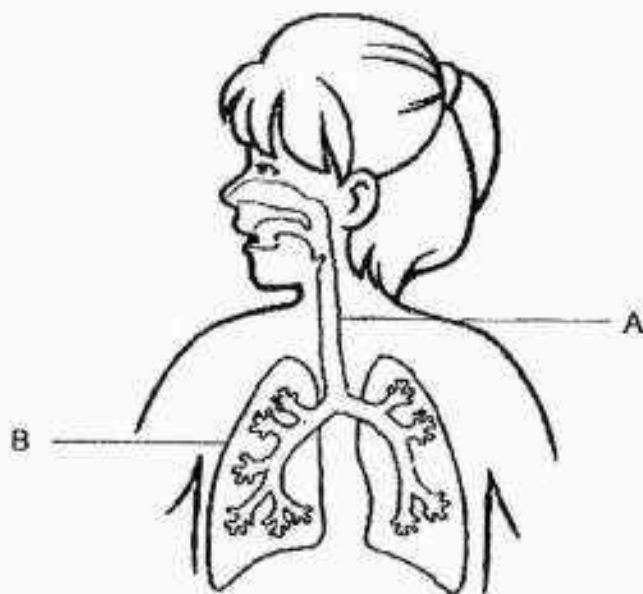


---

- (d) State a possible mass of the young at birth of animal T. [1]

---

32. Study the diagram below.



- (a) The human body contains many different systems working together. What system is shown above? [1]

---

- (b) Name the organs labelled A and B. [1]

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

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

- (c) What is the function of B? [1]

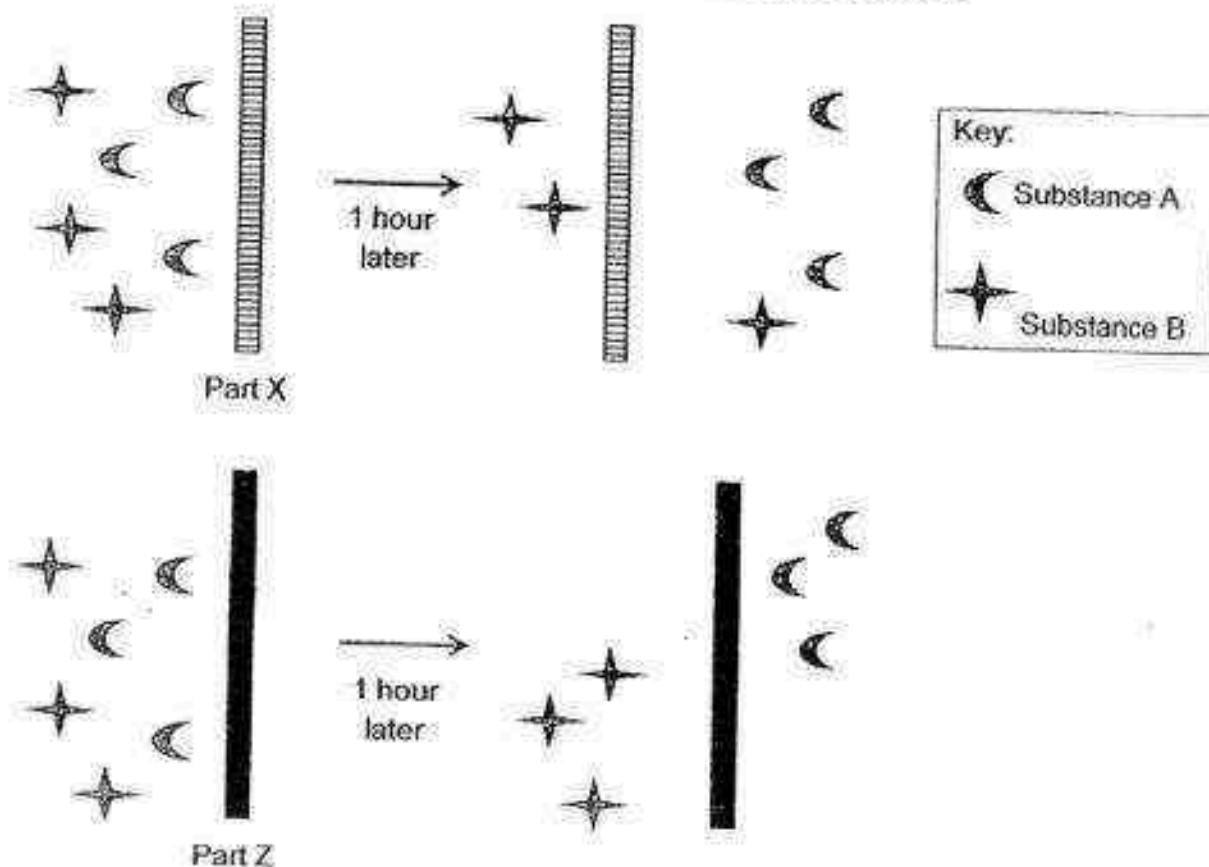
---



---



33. Part X and Part Z represent certain parts of a plant cell. The diagrams below show the reactions of Part X and Part Z to substances A and B.



- (a) Which parts of the cell do X or Z represent?

[1]

(i) Part X: \_\_\_\_\_

(ii) Part Z: \_\_\_\_\_

- (b) Give a reason for your answer in a(ii).

[1]

---



---

- (c) Will water be able to pass through parts X and Z? Give a reason for your answer.

[1]

---

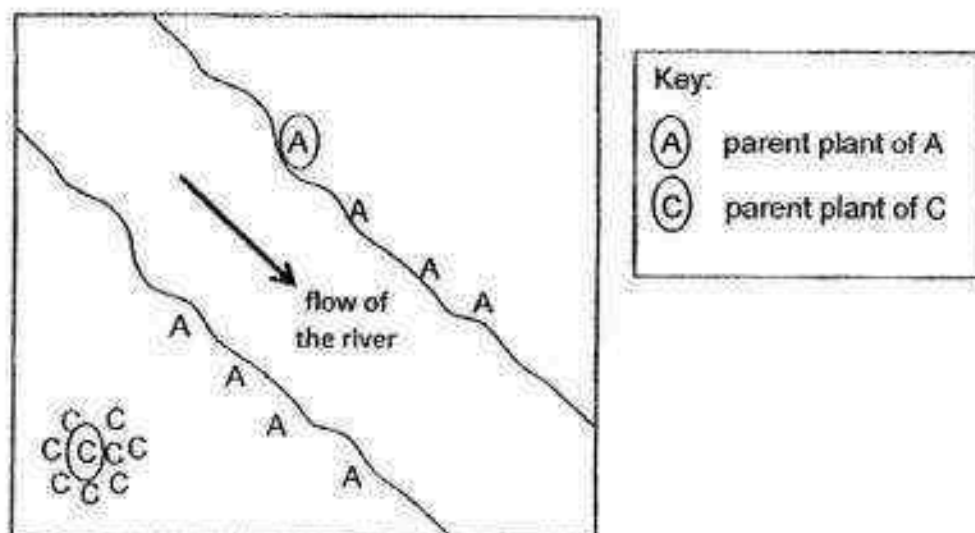


---

7

Score	3
-------	---

34. The diagram below shows the dispersal patterns of Plant A and Plant C.



- (a) What is the method of seed dispersal for Plant C? [1]

---



---

- (b) Based on the diagram above, give a reason for your answer in part (a). [1]

---



---

- (c) Compare the dispersal methods of Plant A and Plant C. What advantage does the dispersal method of Plant A have over Plant C? [1]

---



---

(Go on to the next page)

Score	3
-------	---

Ali was given a marble to be used as the seed for Plant A.



He was also given a piece of bubble wrap and some cotton balls. He was told to use the marble and one of the objects below to make a model of the fruit of plant A.



bubble wrap



cotton balls

- (d) Which object, bubble wrap or cotton ball, should he used to make the outer covering of the fruit so that the seed can be dispersed by water? Explain your answer clearly. [2]

---



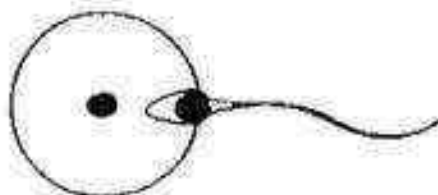
---



---

Score	2
-------	---

35. A sperm enters an egg in the diagram below.



- (a) State the process of sexual reproduction shown.

[1]

Diagrams X and Y are stages in the reproduction of human and flowering plant.



Diagram X



Diagram Y

- (b) Label the seed leaves in Diagram Y.

[1]

- (c) Compare how the young in Diagrams X and Y obtain food.

[2]

---



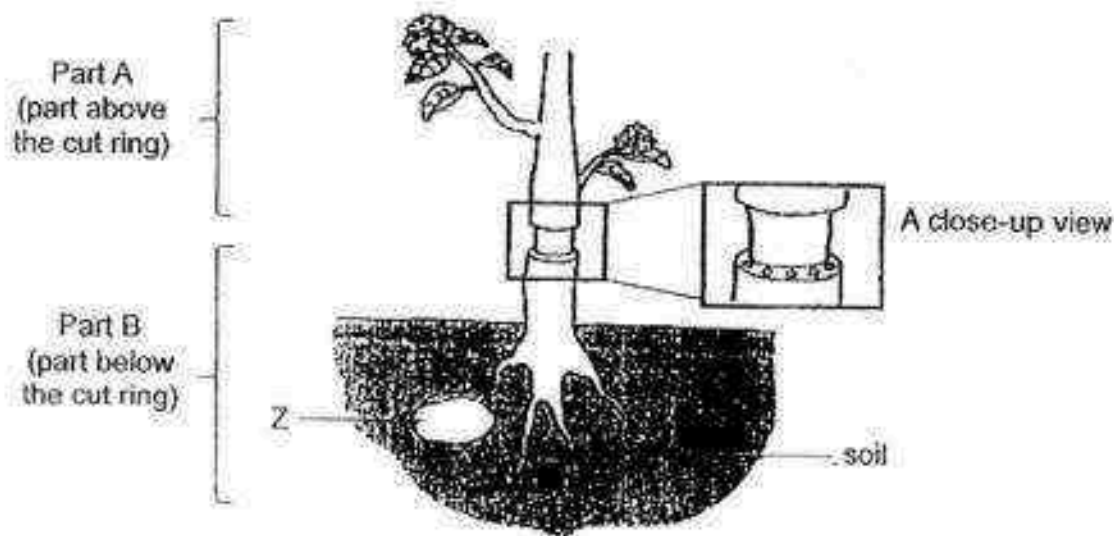
---



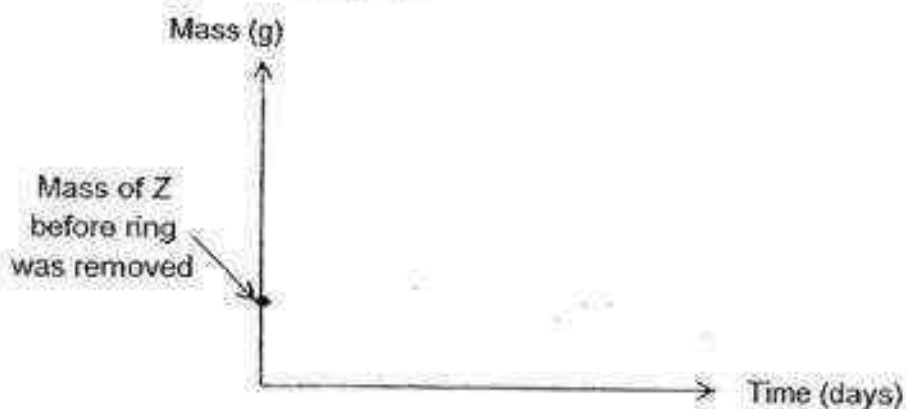
---

Score	4
-------	---

36. An outer ring of a stem was removed from a green plant, as shown below. As a result, the tubes carrying food and water were removed.



- (a) In the graph below, draw a line graph to represent the mass of structure Z after the ring was removed. The mass of structure Z before the ring was removed is given on the graph. [1]



- (b) Part A of the plant died first compared to part B. Explain why. [2]

---



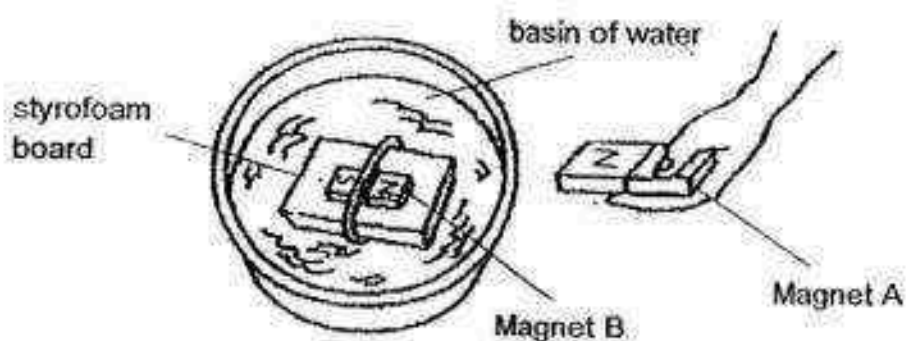
---



---

Score	3
-------	---

37. Study the experimental set-up below.



- (a) What will happen when Magnet A is brought near Magnet B? [1]

---



---

- (b) Give a reason for your answer in part (a). [1]

---



---

- (c) What should be done to magnet A to make the styrofoam board moves towards Magnet A? Explain your answer. [2]

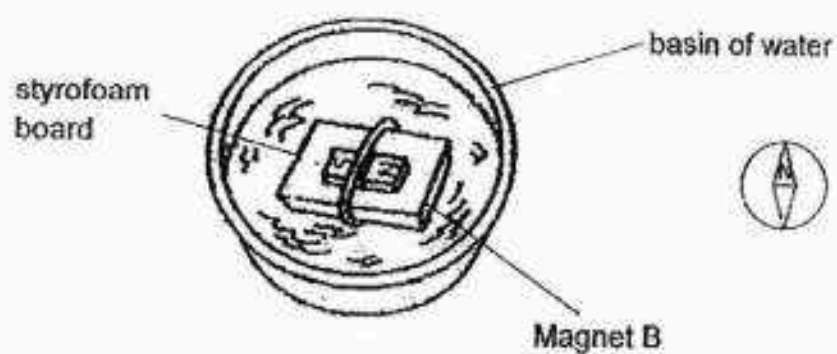
---



---

(Go on to the next page)

Score	4
-------	---



- (d) The styrofoam board is spinned a few times, in what direction will the styrofoam board come to a rest? [1]

---



---

Score	1
-------	---

38. Below shows a picture of a phone that has cracked when a heavy object fell on it.



- (a) Based on the given situation above, which physical property of the phone screen needs to be improved? [1]

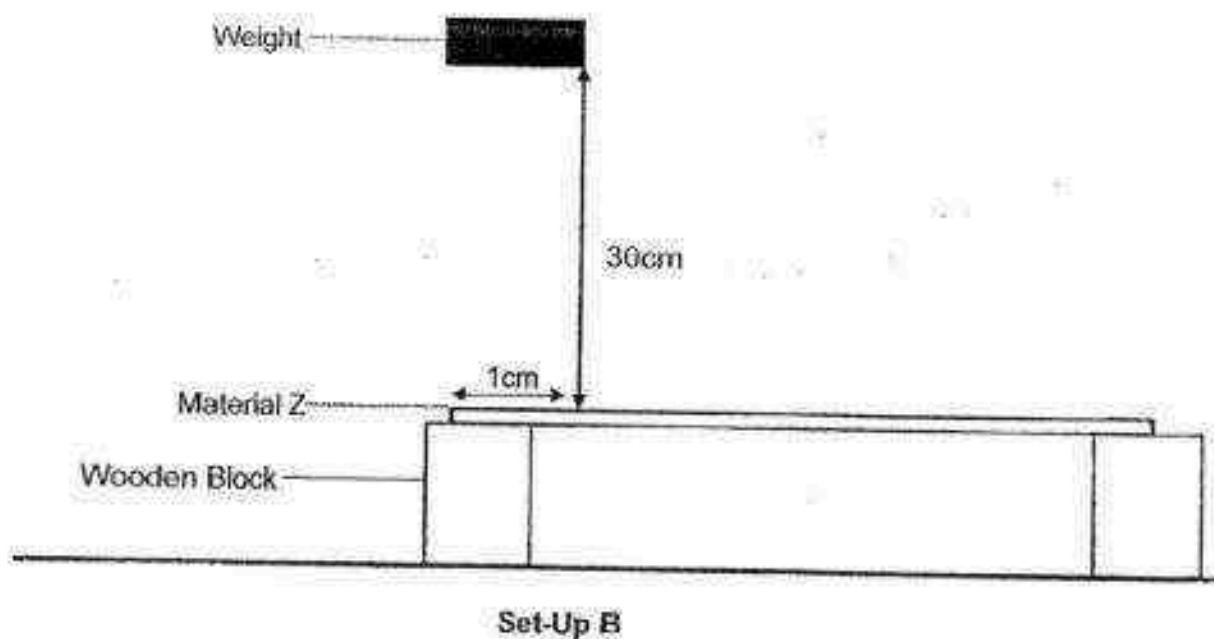
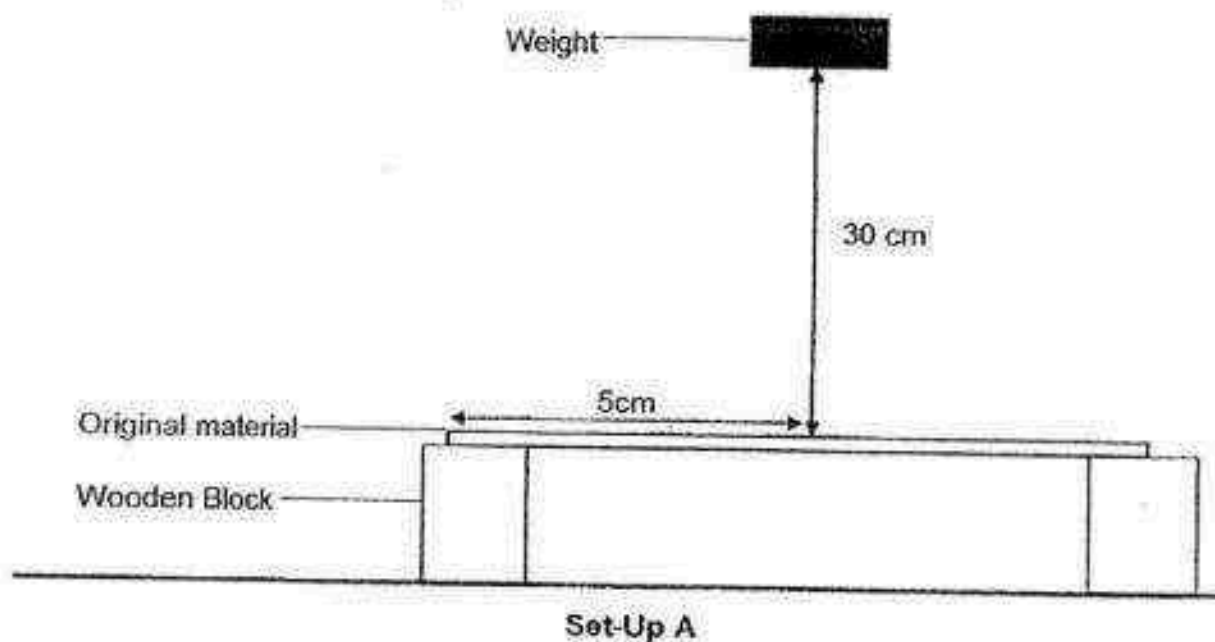
Properties	Needs to be improved
Strength	
Waterproof	
Transparency	

(Go on to the next page)

Score	1
-------	---



The phone company would like to improve the quality of the phone. An experiment was carried out in the laboratory to determine if Material Z is a better material to be used to make the phone screen. A weight of 1kg was dropped at a height of 30 cm on a square piece of Material Z and a square piece of the original material respectively.



(Go on to the next page)

- (b) State one other constant variable related to the material used. [1]

---

- (c) It was observed that the experiment was not a fair test. What should be done to Set-up B to improve the fairness of the experiment? [1]

---

---

- (d) After improving on the fairness of the experiment, scientists repeated the experiment a few times before drawing a conclusion. Why is there a need to repeat the experiment? [1]

---

---

Score	3
-------	---

39. The diagram below shows how Tom hang his wet bath towel to dry on the bathroom door. His mother told him that his towel will take a long time to dry when the towel is all clumped together.



- (a) Explain clearly why the towel will take a long time to dry when the towel is all clumped together? [2]

---



---

- (b) Suggest what Tom should do with the towel so that it will dry faster on the bathroom door without using any household appliances? [1]

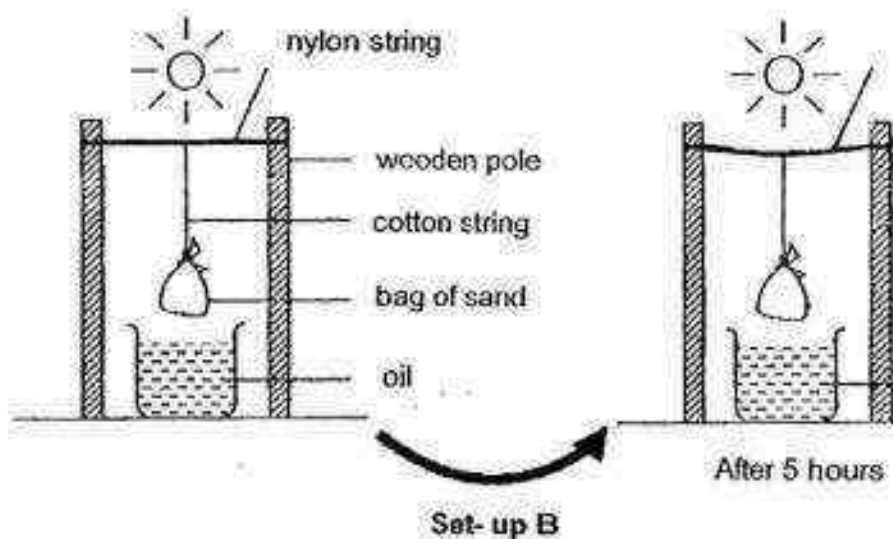
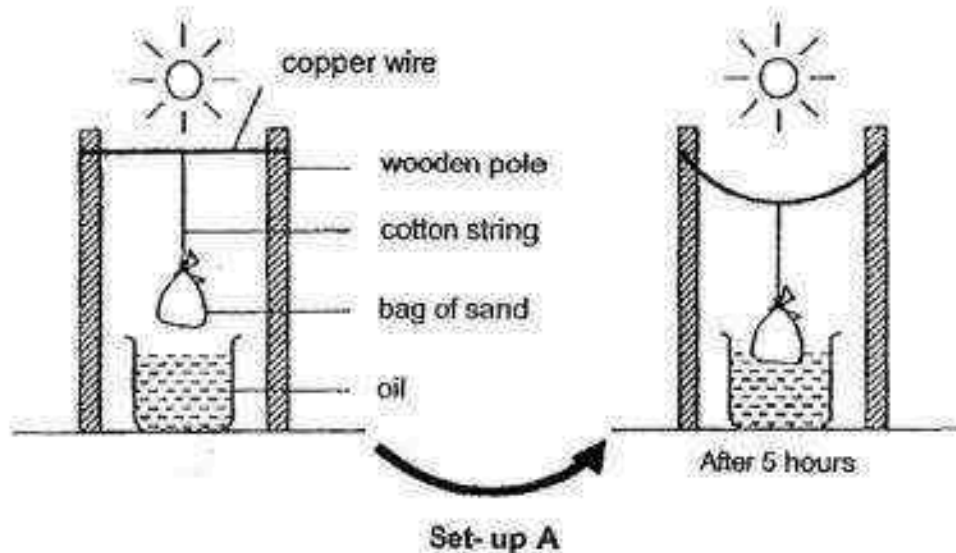
---



---

Score	3
-------	---

40. An experiment was set up on a hot day and observed after five hours.



- (a) Explain the difference in the positions of the bags in set-up A and set-up B five hours later. [2]

---



---

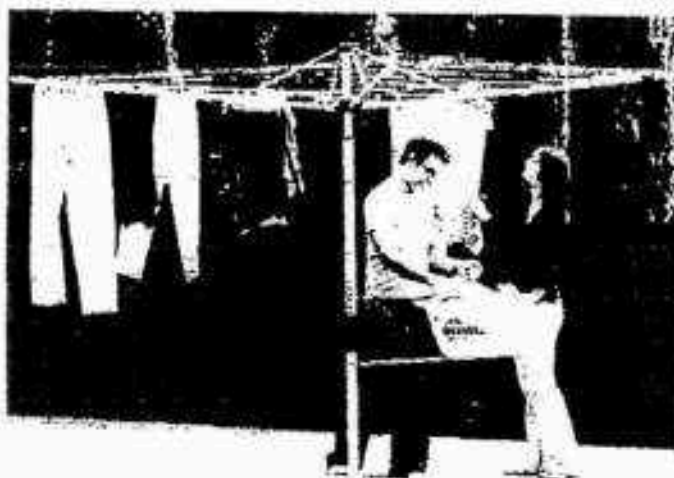


---

(Go on to next page)

Score	2
-------	---

Clothes that have been washed are hung along laundry lines to be dried on a sunny day.



(b) What is the advantage of using nylon instead of copper as a laundry line? [ 1 ]

---

---

End of Paper

Score	
-------	--

EXAM PAPER 2016 (P5)

SCHOOL : NAN HUA

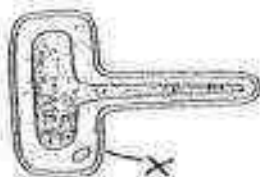
SUBJECT : SCIENCE

TERM : SA1

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

29)a)The Nucleus.

b)



Root Hair Cell

c)The root hair does not make food for the plant.

30)a)Pollen grains.

b)Pollination.

30)c)Fertilisation had occurred.

d)Ovules.

31)a)To produce sperms for fertilisation.

b)The nucleus contains genetic information.

c)The more number of days for the gestation period the more mass the young is at birth.

d)72kg.

32)a)Respiratory system.

b)A: Windpipe.

B: Lungs.

c)Lungs is where gaseous exchange will take place.

33)a)i)Cell wall.

ii)Cell membrane.

b)A cell membrane only allow certain substance to enter as it controls the movement of the in and out of the cell.

c)Yes. Water is needed for survival as cells are living things.

34)a)Explosive action .

b)The seeds are not far away from the parent plant as explosive action will gather round the parent plant.

c)The seeds of plant A will be dispersed further away from the parent plant than the seeds of plant C.

d)Bubble wrap. Bubble wrap is water proof and traps air. The fruit will be able to float on water.

35)a)Fertilization.

b)



35)c) The young in diagram X obtains food, water, air and nutrients from the mother through the umbilical cord while diagram Y obtains food from its seed leaves and make its own food with chloroplast and sunlight.

36)a)



b) The leaves at Part A could not receive water and could not make food. The plant parts at Part B soil and receive food from Z.

37)a) Magnet B will repel from Magnet A.

b) Magnet A and Magnet B are facing like poles as like poles of magnets repel.

c) Make Magnet B and Magnet A face unlike poles. Unlike poles of the magnet attract to each other causing Magnet B to move towards Magnet A.

d) North and south direction.

38)a) Strength

b) The thickness of the material.

c) Drop the weight at the same place area point as set-up A.

d) To get a more reliable result.

39)a) The towel has less exposed surface area so less water will evaporate.

b) He should spread out the towel.

40)a) Both the copper wire and the nylon string gained heat but the copper wire, being a better conductor of heat gained more heat and expanded more.

b) The washed clothes will not touch the ground and get dirtied.





NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1

2016

**BOOKLET A**

Date : 4 May 2016

Duration : 1 h 45 min

Name : \_\_\_\_\_ (     )

Class: Primary 5 (     )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 18 printed pages including this cover page.

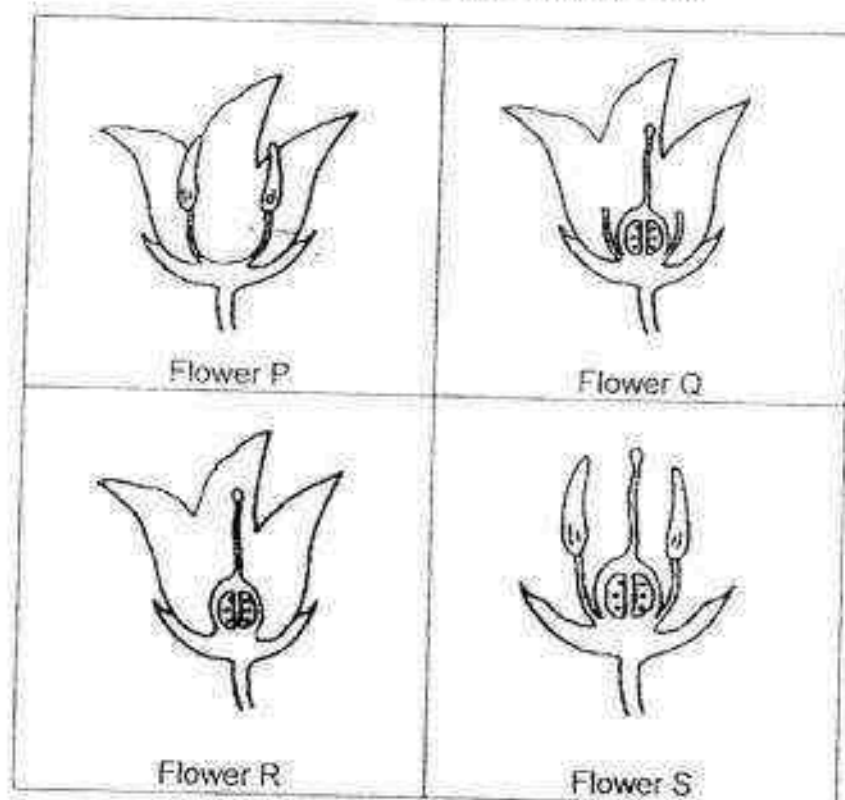
**Section A (28 x 2 marks = 56 marks)**

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

1. Both seeds and spores can develop into young plants.  
Which of the statements below **correctly** compare seeds and spores?
- A Seeds are found in fruits but spores are found in spore bags.
  - B Seeds are dispersed only by animals or water while spores are dispersed by wind.
  - C Seeds are produced by flowering plants but spores are produced by ferns and mosses.

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

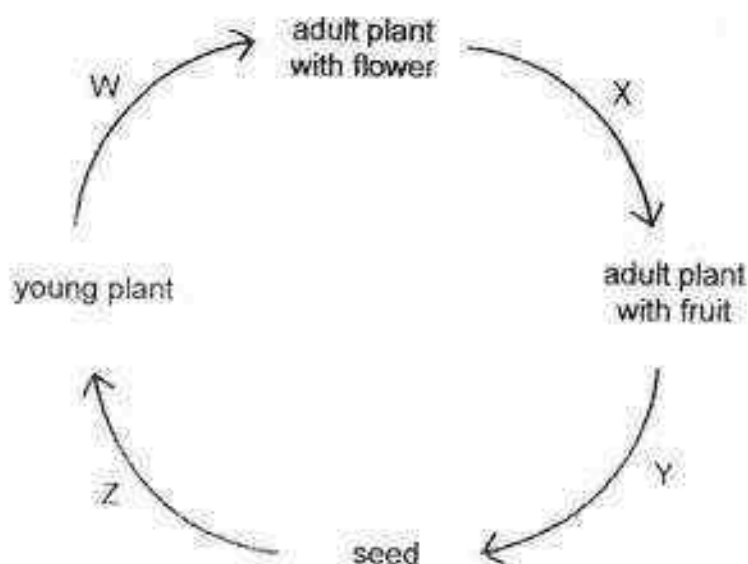
2. Mrs Chan removed some parts of one flower and showed it to her son. She stated that it would still be able to form a fruit.



Which of the flower(s) above could Mrs Chan have used to show her son?

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

3. The diagram below shows the development of a flowering plant and the processes, W, X, Y and Z, that it goes through.



Which one of the following matches the processes **correctly**?

	dispersal	fertilisation	germination	pollination
(1)	W	W	Z	X
(2)	Y	X	Z	X
(3)	Z	Y	Y	W
(4)	Y	Z	Y	W




4. Before a flower can become a fruit, a series of events, A, B, C and D, must take place.

- A The pollen tube grows down through the style.
- B The pollen tube grows out from the pollen grain.
- C The male reproductive cell fuses with the egg cell.
- D The pollen tube leads the male reproductive cell to the ovule.

Which sequence of events is **correct**?

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

5. Kristin and her two friends kept 3 types of flowers, P, Q and R, in an enclosure. She recorded the characteristics of the flowers in the table below.

Flower P	Flower Q	Flower R
		
<ul style="list-style-type: none"> <li>• red petals</li> <li>• no scent</li> </ul>	<ul style="list-style-type: none"> <li>• blue petals</li> <li>• floral scent</li> </ul>	<ul style="list-style-type: none"> <li>• purple petals</li> <li>• no scent</li> </ul>

The three girls observed that insect X visited the enclosure. They visited the enclosure for an hour daily and recorded the total number of insect X that visited each type of flower over 5 days as shown in the table below.

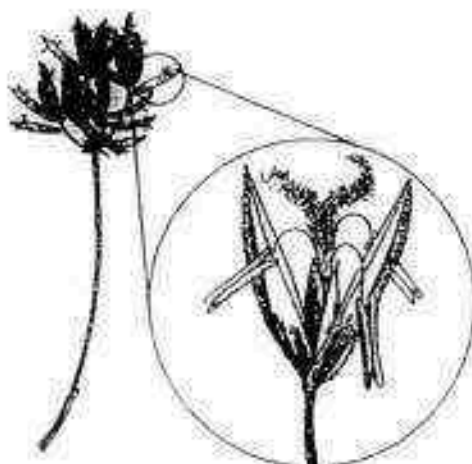
Day	Flower P	Flower Q	Flower R
1	0	7	15
2	0	8	12
3	0	6	13
4	0	7	11
5	0	5	13

Based only on the observations and characteristics above, which of the following can the girls conclude?

- A Insect X is most attracted to flower R.
- B Flower P is not pollinated by insect X.
- C Insect X is attracted to the blue petals of flower Q.
- D The blue petals of flower Q look brighter than the purple petals of flower R.

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

6. The flower below is pollinated by wind.

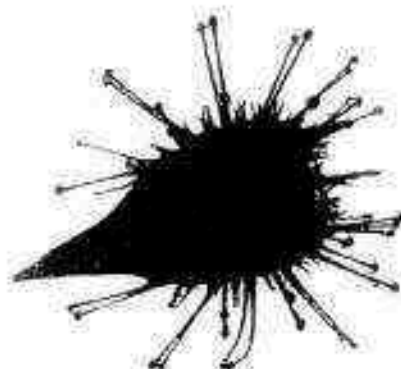


Flower (enlarged view)

Which of the following are the most likely characteristics of the flower?

- |     |   |     |               |
|-----|---|-----|---------------|
| A   | It has no nectar.                           |     |               |
| B   | It has large, feathery stigma.              |     |               |
| C   | It has bright, colourful petals.            |     |               |
| D   | It has anthers hanging out from the flower. |     |               |
| (1) | A and D only                                | (2) | B and C only  |
| (3) | A, B and D only                             | (4) | A, B, C and D |

7. Susie ran through a garden and found her socks covered with seeds. She observed that each seed had hooks. How do the hooks on the seed help the plant?



seed with hooks

- |     |  |
|-----|--|
| (1) | They help the seed to stick on to the stigma better.                 |
| (2) | They help the seed to cling on to animal fur for dispersal.          |
| (3) | They enable the seed to attach to an insect for pollination.         |
| (4) | They enable the seed to anchor itself to the ground for germination. |

8. Zoe was walking along a forest trail. She heard a loud sound from above. Then she saw seeds floating through the air in all directions. She picked up one of the seeds that drifted slowly to the ground near her.

Which one of the characteristics is the seed most likely to have?

- (1) stiff hairs
- (2) fibrous husk
- (3) fleshy and juicy
- (4) wing-like structure

9. Figure 1 shows the location of 3 parent plants near a river. Figure 2 shows the location of their seedlings several months later.

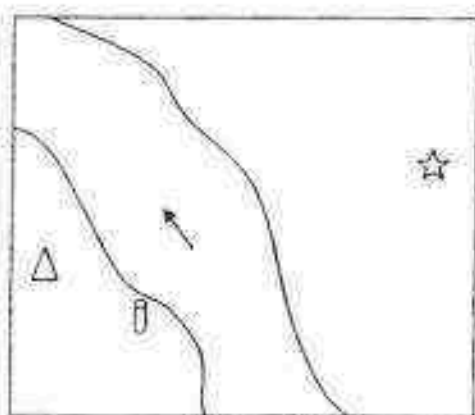


Figure 1

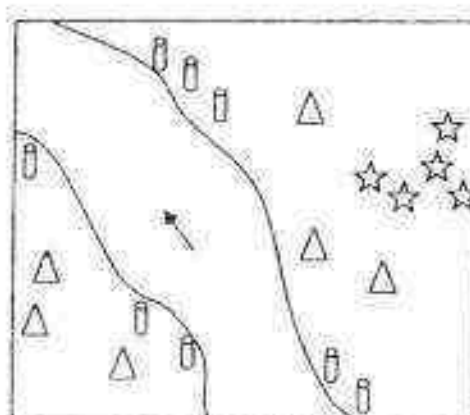


Figure 2

→ direction of water flow

Which one of the following shows the most likely dispersal method for each plant?

	Δ	☆	⊖
(1)	wind	animal	water
(2)	water	splitting	animal
(3)	animal	water	splitting
(4)	wind	splitting	animal

10. Andrew learnt that animals have a part to play in the dispersal of seeds. He observed some animal behaviour and recorded them as shown below.

Which of these behaviour are helpful in seed dispersal?

- A Birds eat fruits and spit out large seeds at the parent plant.
- B Moth larvae feed on seeds and develop into pupae in the seed cases.
- C Elephants eat fruits and deposit the seeds in their droppings a distance away.
- D Squirrels store seeds in many different spots on the ground and leaving some uneaten.

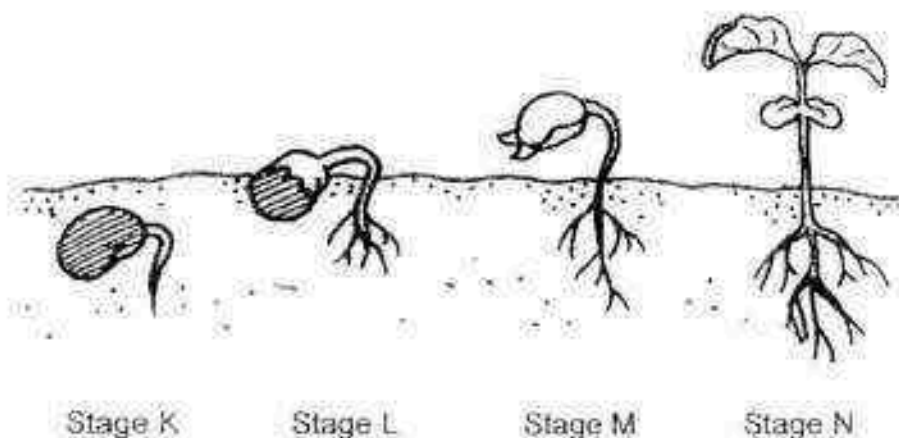
(1) A and B only

(2) A and C only

(3) C and D only

(4) B, C and D only

11. The diagram below shows the stages of development (K, L, M and N) of a seed into a seedling.



Which statements about the stages of development are correct?

- A At stage K, the seed has a store of food.
- B The seed leaf is no longer needed at stage L.
- C The seedling needs only water and light at stage M.
- D At stage N, the seedling is able to make its own food.

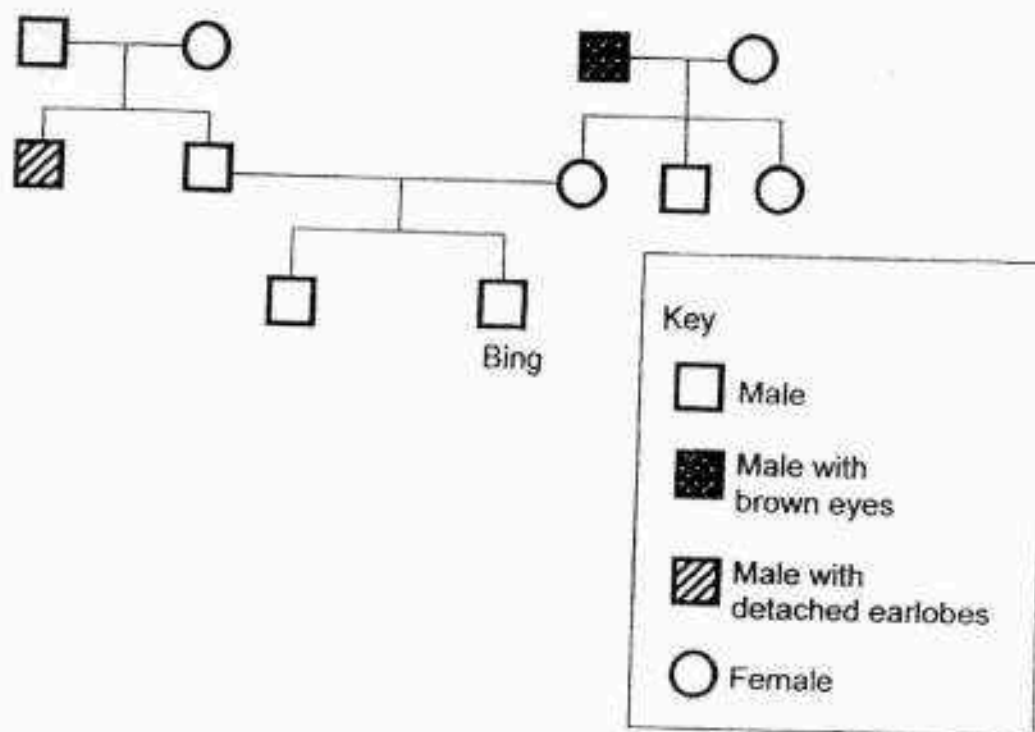
(1) A and D only

(2) B and C only

(3) A, B and D only

(4) A, C and D only

12. Study Bing's family tree below.



Based only on the family tree above, which statement about Bing's family tree is **correct**?

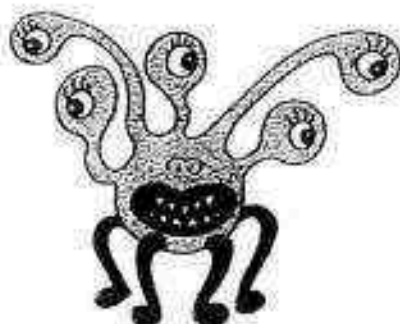
- (1) Bing has two aunts.
- (2) Bing's father has a brother.
- (3) Bing's maternal grandmother has brown eyes.
- (4) Bing's paternal grandfather has detached earlobes.



13. The table below shows the traits of 4 monsters.

Name	Traits			
	eyes	legs	teeth	spots
Muz	3	4	sharp	no
Sui	2	6	sharp	yes
Bog	5	2	none	no
Kat	6	4	none	yes

Based on the information given above, which two monsters produced the young as shown below?

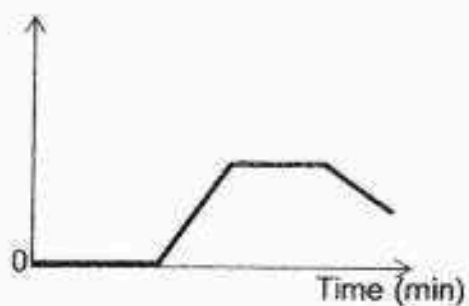


- (1) Muz and Bog  
(2) Sui and Kat  
(3) Sui and Bog  
(4) Bog and Kat
14. In what way is the human reproductive system similar to the plant reproductive system?
- A Fertilisation occurs in the female reproductive part.  
B The male reproductive cells in both systems are found in the testes.  
C The female reproductive cells in both systems are found in the ovary.
- (1) A and B only  
(2) A and C only  
(3) B and C only  
(4) A, B and C only

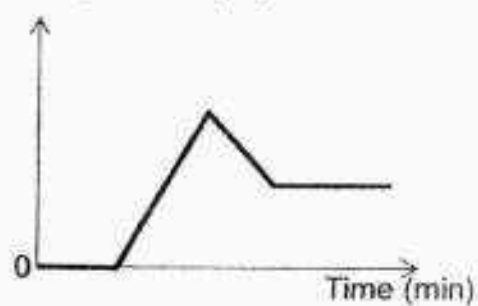
15. Rashim left several ice cubes in a beaker. He put in a thermometer to monitor the temperature of the set-up. After all the ice had melted, he heated the beaker of water until it started boiling. Upon boiling, he removed the heat source.

Which one of the following graphs **correctly** shows the changes in the temperature of the set-up during his experiment?

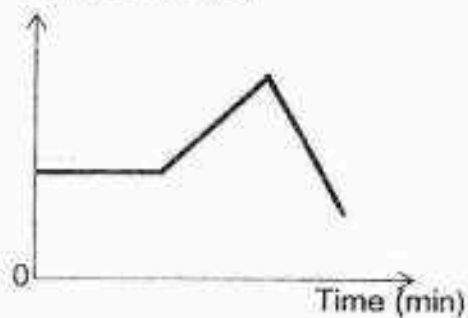
(1) Temperature ( $^{\circ}\text{C}$ )



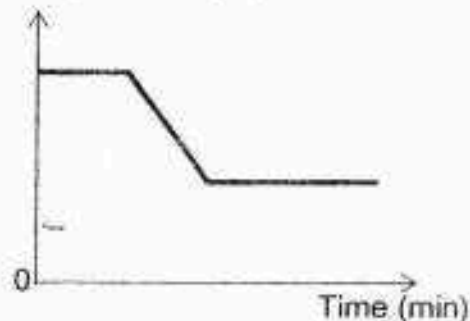
(2) Temperature ( $^{\circ}\text{C}$ )



(3) Temperature ( $^{\circ}\text{C}$ )



(4) Temperature ( $^{\circ}\text{C}$ )



16. Jie Ling placed two identical beakers near a window in a classroom. She filled one beaker completely with liquid X and the other beaker completely with liquid Y.

The next day, she observed that the beaker containing liquid X was completely empty while the beaker containing liquid Y still contained half a beaker of liquid.

What can Jie Ling conclude from her observations?

- A Both liquids evaporated.
- B Liquid X evaporates faster than liquid Y.
- C The water vapour in the surrounding has condensed on the cooler surface of beaker Y.

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

17. The table below shows the freezing points of three substances, P, Q and R.

Substance	Freezing Point ( $^{\circ}\text{C}$ )
P	5
Q	36
R	123

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

- (1) P is a solid at  $0^{\circ}\text{C}$ .
- (2) R is a gas at  $123^{\circ}\text{C}$ .
- (3) P and Q are both liquids at  $28^{\circ}\text{C}$ .
- (4) Q and R are both solids at  $100^{\circ}\text{C}$ .

18. Three pupils, Siti, Jamie and Pei Yi, observed a glass of ice-cold water and made the following observations.



- Siti : The ice gains heat from the water and the surrounding air.  
 Jamie : The water droplets can only be found on the inner surface of the glass.  
 Pei Yi : The water vapour in the air comes into contact with the cooler surface of the glass, loses heat and condenses.

Who made the **correct** statements?

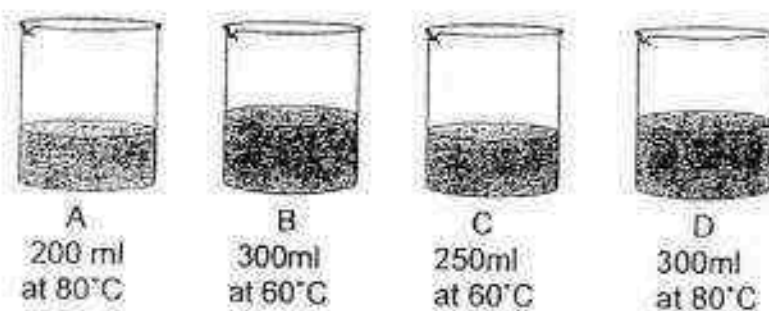
- |                               |                                      |
|-------------------------------|--------------------------------------|
| (1) <del>All and</del> Pei Yi | (2) Siti and Jamie                   |
| (3) Siti and Pei Yi           | (4) <del>All, Jamie and</del> Pei Yi |

19. During a hiking trip, Zac and his friends were at a river. How could they tell if the river was polluted?

- A By the smell of the water  
 B By the colour of the water  
 C By the presence of litter in the water  
 D By the amount of water in the river

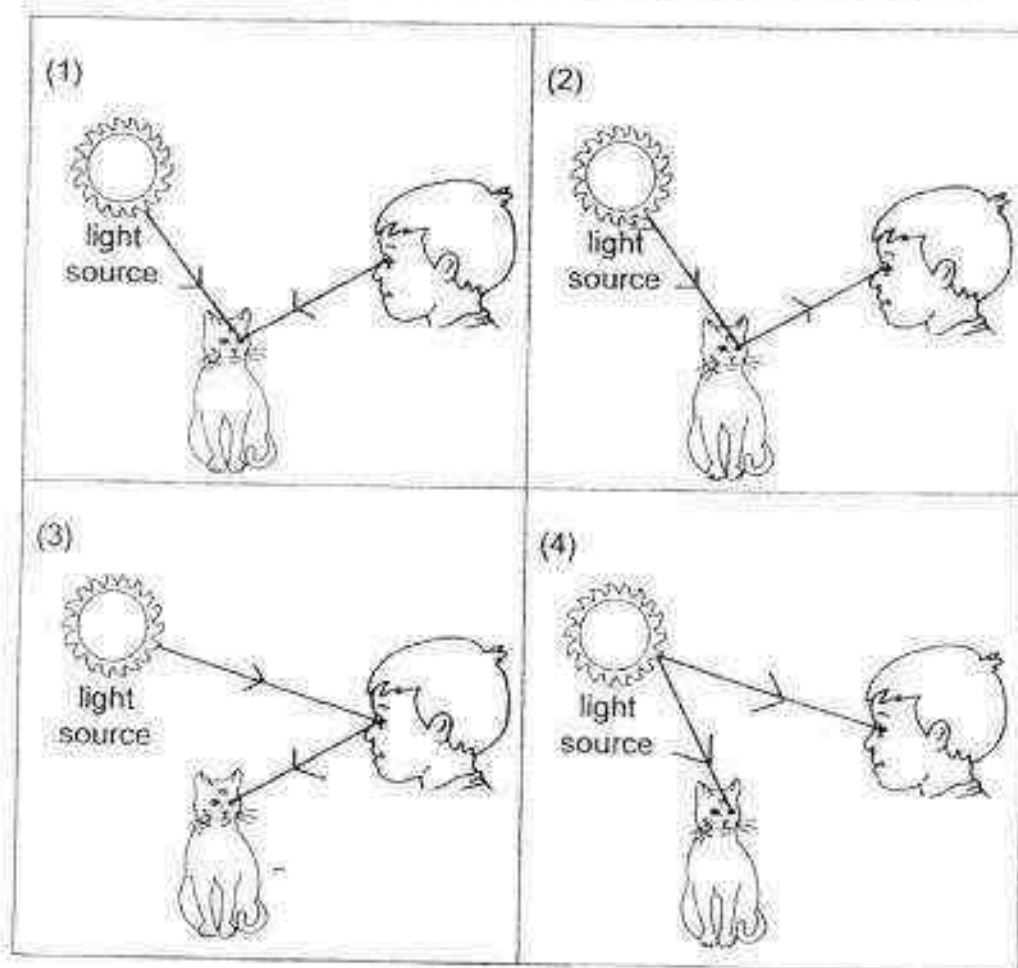
- |                     |                     |
|---------------------|---------------------|
| (1) A and C only    | (2) B and D only    |
| (3) A, B and C only | (4) A, C and D only |

20. Mason wanted to test if water at a higher temperature evaporates faster than water at a lower temperature. Which two beakers of water should he choose to conduct his experiment?

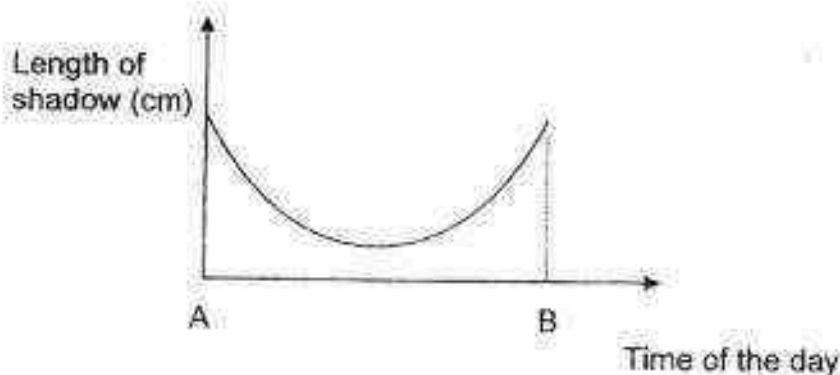


- |     |         |     |         |
|-----|---------|-----|---------|
| (1) | A and B | (2) | B and C |
| (3) | C and D | (4) | B and D |

21. Which one of the diagrams shows how the boy is able to see the cat?



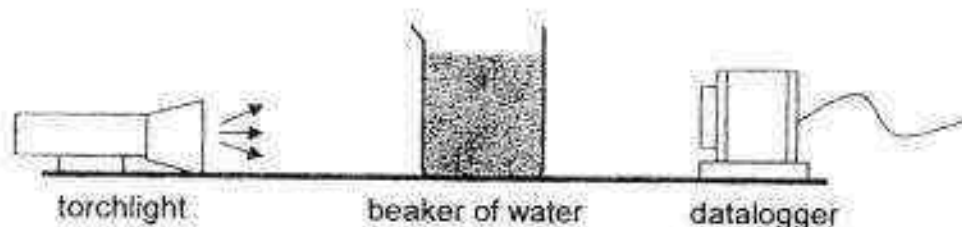
22. The graph below shows how the length of a shadow changes over a six-hour period.



Which one of the following timings could represent A and B?

	A	B
(1)	6 am	12 noon
(2)	9 am	3 pm
(3)	12 noon	6 pm
(4)	3 pm	9 pm

23. Lucy set up the experiment as shown in the diagram below. She used the same amount of water from 4 different ponds, P, Q, R and S. She shone the torchlight through each beaker of water and recorded the amount of light detected using the datalogger.



Pond Water	Amount of light (lux)
P	5
Q	10
R	1
S	7

Based only on the results above, in which pond would a fully-submerged water plant have the best chance of survival?

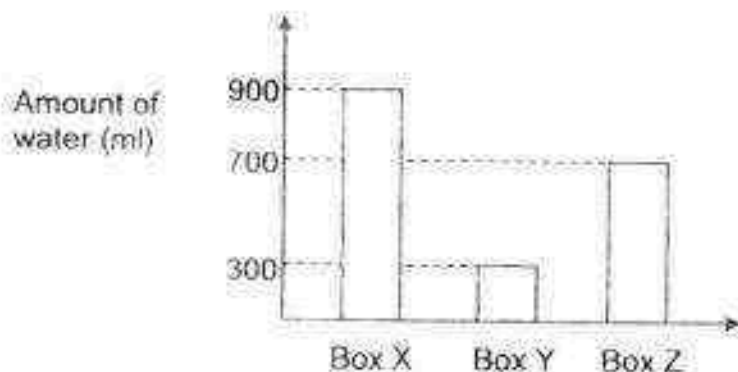
- |       |       |
|-------|-------|
| (1) P | (2) Q |
| (3) R | (4) S |

24. George poured some hot tea into a cup as shown below. The cup and the metal spoon were originally at room temperature. After 5 minutes, he felt that the spoon had become hot.



Which one of the following **correctly** explains his observation?

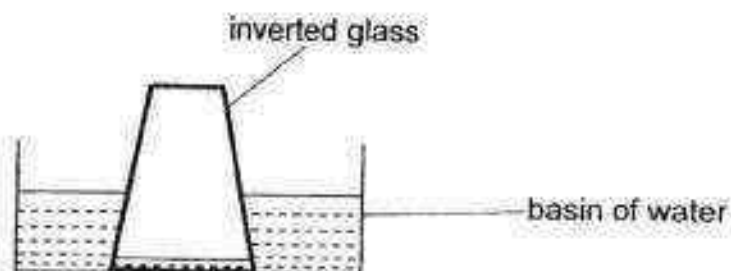
- (1) The spoon gained heat from his hand and the hot tea.
  - (2) His hand lost heat to the hot tea and the hot tea lost heat to the spoon.
  - (3) The hot tea gained heat from the spoon and the spoon lost heat to his hand.
  - (4) The spoon gained heat from the hot tea and the spoon lost heat to his hand.
25. Sally placed a 1-kg ice block in each of the three boxes, X, Y and Z, of the same size and thickness. The graph below shows the amount of water collected in each box after one hour.



Which of the following statement(s) explain(s) the results shown on the graph **correctly**?

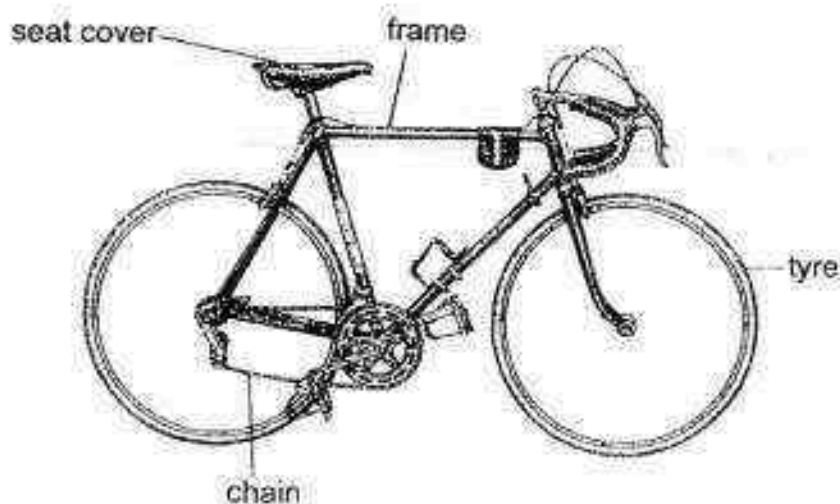
- A Box X conducts heat the fastest.
  - B Box Y gains heat more quickly than Box Z.
  - C The three boxes are made of different materials.
- (1) A only
  - (2) C only
  - (3) A and C only
  - (4) B and C only

26. Shane inverted a glass and lowered it into a basin of water. He noticed that the water level inside the glass was not the same as the water level in the basin.



What could be the reason for the difference in the water levels?

- (1) The air in the glass occupies space.
  - (2) Water does not have a definite volume.
  - (3) The water in the glass can be compressed.
  - (4) The glass has a smaller volume than the basin.
27. The diagram below shows a bicycle with some of its parts labelled.



Four pupils made the following statements regarding the suitable materials for the bicycle parts and their properties.

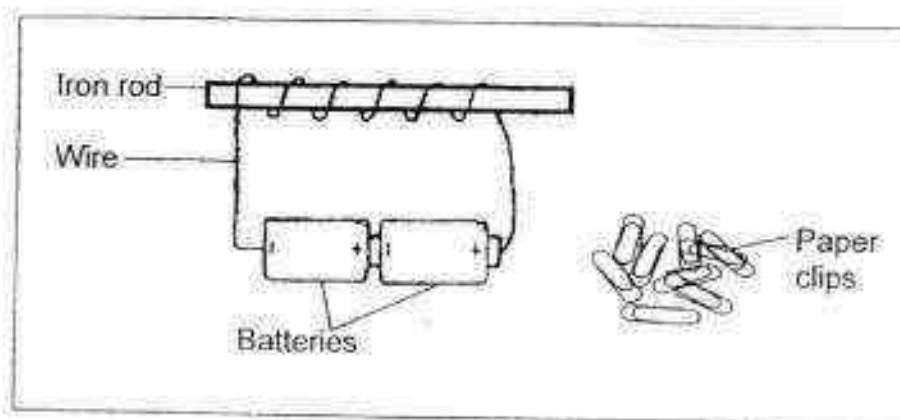
- |          |   |  |
|----------|---|--|
| Abdul    | : | The frame is made of steel as it is elastic.           |
| Raj      | : | The tyre is made of rubber as it is flexible.          |
| Belle    | : | The chain is made of leather as it is strong.          |
| Xiao Mei | : | The seat cover is made of plastic as it is waterproof. |

Which of the children have made the **correct** statements?

- |                      |                        |
|----------------------|------------------------|
| (1) Abdul and Raj    | (2) Abdul and Belle    |
| (3) Xiao Mei and Raj | (4) Xiao Mei and Belle |

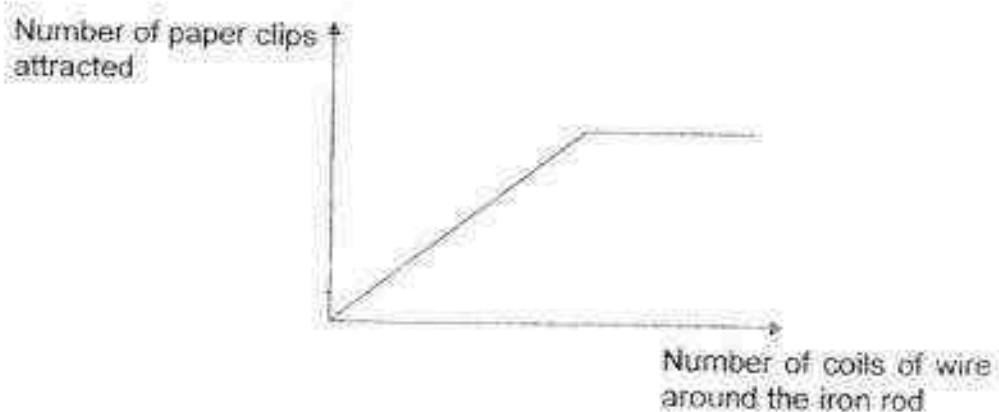


28. An electromagnet was set up as shown in the diagram below.



Electromagnet setup

The graph below shows the relationship between the number of paper clips attracted and the number of coils of wire around the iron rod.



Which one of the following statements describes the graph correctly?

- (1) There is a maximum number of paper clips that can be attracted by the iron rod.
- (2) The more coils of wire around the iron rod, the lower the number of paper clips attracted.
- (3) The number of paper clips attracted does not depend on the number of coils of wire around the iron rod.
- (4) The more coils of wire there are around the iron rod, the number of paper clips attracted remained the same.



**NANYANG PRIMARY SCHOOL**

**PRIMARY 5 SCIENCE**

**SEMESTRAL ASSESSMENT 1**

**2016**

**BOOKLET B**

**Date : 4 May 2016**

**Duration : 1 h 45 min**

**Name : \_\_\_\_\_ (      )**

**Class: Primary 5 (      )**

**Marks Scored:**

<b>Booklet A:</b>		<b>56</b>
<b>Booklet B :</b>		<b>44</b>
<b>Total :</b>		<b>100</b>

**Any query on marks awarded should be raised by 18 May 2016. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.**

**Parent's signature: .....**

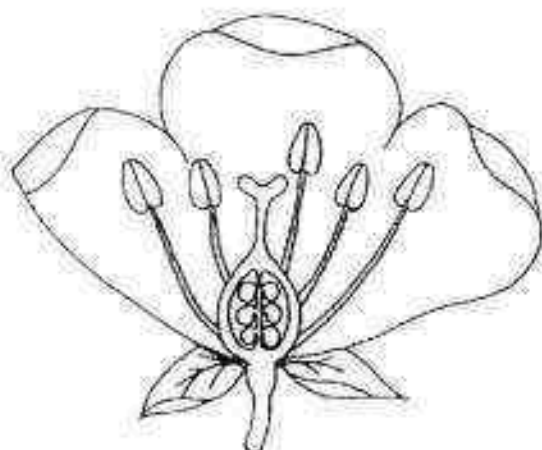
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet B consists of 16 printed pages including this cover page.**

**Section B (44 marks)**

Write your answers to questions 29 to 41 in the spaces provided.

29. The diagram below shows the cross-section of Flower Z.



Flower Z

- (a) Label the following parts, P, Q, R and S on the diagram above, according to the description of their functions below. [2]

Part	Function
P	produces and stores the pollen grains
Q	receives the pollen grains
R	supports the anther
S	contains the egg cell

- (b) After fertilisation, will Flower Z develop into a fruit with more than one seed? Give a reason for your answer. [1]

---



---

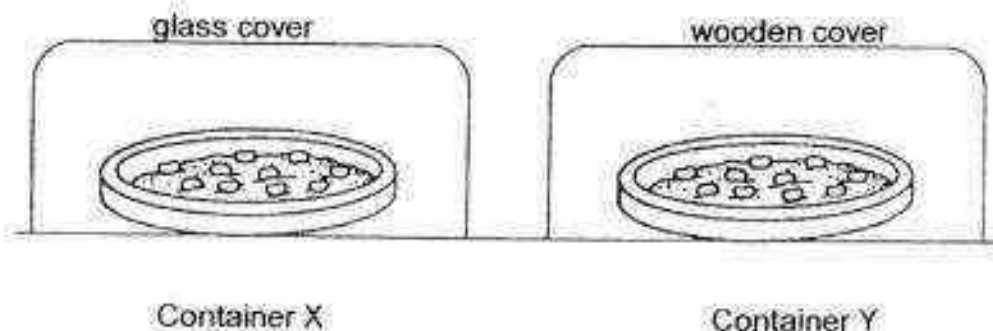
- (c) State one advantage for plants to bear fruits with many seeds. [1]

---



---

30. Jacob lined two identical containers, X and Y, with the same amount of wet cotton wool and placed 10 seeds in each of them. He placed container X under a glass cover and container Y under a wooden cover for five days as shown in the diagram below.



He ensured that the cotton wool in each dish were kept moist throughout. Then he counted the number of seeds that germinated in each container.

- (a) What was the aim of Jacob's experiment? [1]

---



---

- (b) State two changes Jacob would have observed in the beans placed in container X during the five days. [1]

i) 

---

ii) 

---

- (c) Would the changes in part (b) be observed for the beans in container Y too? Give a reason for your answer. [1]

---



---

- (d) List a variable that is not stated above, that Jacob should keep constant in order to carry out a fair test. [1]

---



---

31. Emma and Anna were both given 8 seeds of the same kind. They used their own pots and planted all the seeds given to them using the same type of soil. Both pots were placed in the sun and watered during the two weeks. No fertiliser was added.

The observations of the seedlings were recorded in the table below.

Day	Observations	
	Emma's seedlings	Anna's seedlings
7	tall and thin stems	short and thick stems
14	small, narrow leaves tall, weak stems	big leaves firm stems

Emma compared the seedlings and concluded that Anna's grew more healthily.

- (a) Explain clearly why Emma's seedlings grew less healthily than Anna's? [2]

---



---



---

- (b) Based on the observations above, suggest what Anna could have done differently from Emma at the start of the experiment? [1]

---



---

32. The African Baobab tree produces flowers that open at night and wither within 24 hours. These flowers are large and can support some weight.

Bats, which are active at night, are attracted to the nectar in the Baobab flowers.



Baobab flower

- (a) How are bats useful in the reproduction of the Baobab tree? [1]

---

---

- (b) State two characteristics of the Baobab flowers and explain how they make it easier for the bats to obtain nectar. [1]

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

\_\_\_\_\_

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

\_\_\_\_\_

33. Wei En drew diagrams 1 and 2 showing the female reproductive parts of a human and a plant respectively.

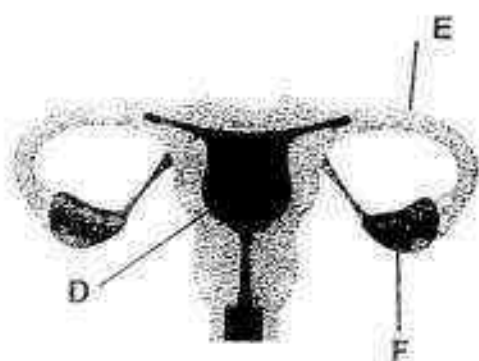


Diagram 1

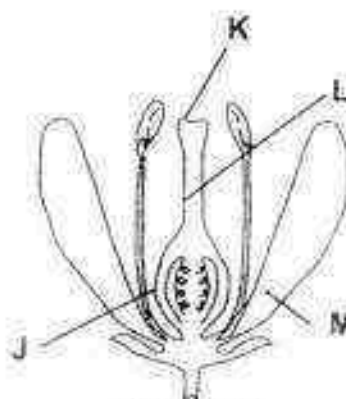


Diagram 2

- (a) Which letters represent the ovaries in diagrams 1 and 2? [2]

Diagram 1 - \_\_\_\_\_

Diagram 2 - \_\_\_\_\_

- (b) Name the part in the human reproductive system where the fertilised egg develops. [1]

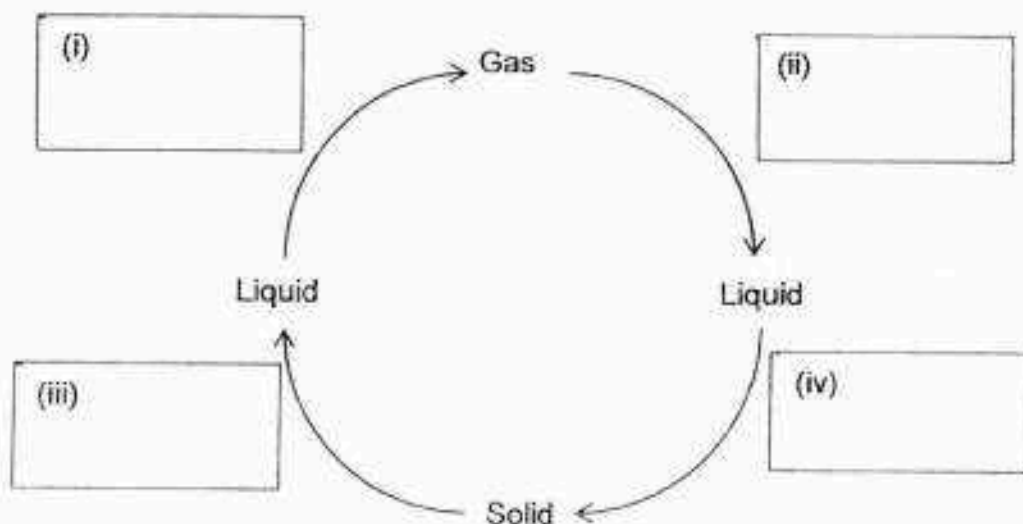
\_\_\_\_\_

- (c) What is the function of M in the plant reproductive system? [1]

\_\_\_\_\_

\_\_\_\_\_

34. The diagram below shows the three states of matter.



- (a) **Write in the boxes** in the diagram whether each substance "gain heat" or "lose heat" during each state of change. [1]
- (b) Xiao Min noticed that his glasses fogged up after he alighted from his father's air-conditioned car. Explain why this happened. [2]

---



---



---



35. Linda set up an experiment as shown below. She took 3 identical towels, soaked each of them in 100ml of water and left them on a table to dry.



Towel A  
Fully opened



Towel B  
Folded once



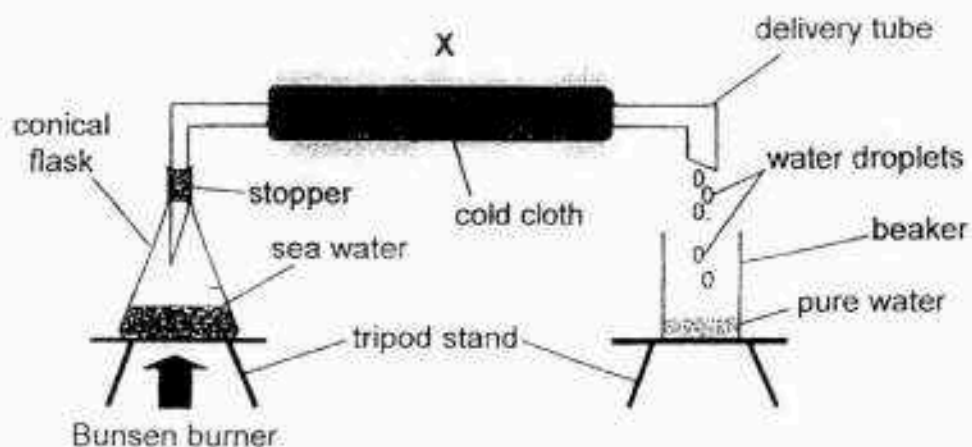
Towel C  
Folded twice

She measured the mass of the towels at 30-minute intervals. The results are shown below.

Towel	Mass of towel at the start of the experiment (g)	Mass of towel at each interval (g)			
		30 <sup>th</sup> min	60 <sup>th</sup> min	90 <sup>th</sup> min	120 <sup>th</sup> min
(i) _____	120	90	60	30	30
(ii) _____	120	110	100	90	85
(iii) _____	120	100	80	65	45

- (a) In the table above, fill in A, B and C to match the results of the experiment to the correct towels. [1]
- (b) Why was there a decrease in the mass of all the towels during the experiment? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) State 2 variables she should keep constant so that her experiment is a fair test. [2]
- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_

36. The set-up below shows how clean water can be obtained from sea water.

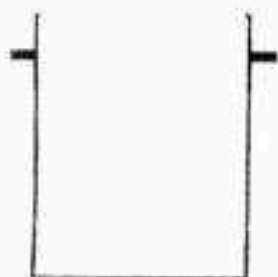


- (a) Name the processes needed to convert seawater to pure water in the above set-up. [1]
- (b) What is the purpose of wrapping a cold cloth at point X? [2]

- (c) Zac and his friends were stranded on a deserted island during a camping trip. They ran out of clean drinking water.

Using seawater and the equipment shown below, draw and label in the space provided how Zac and his friends can get pure drinking water from seawater.

[2]



pot



pot cover



cup



heat source



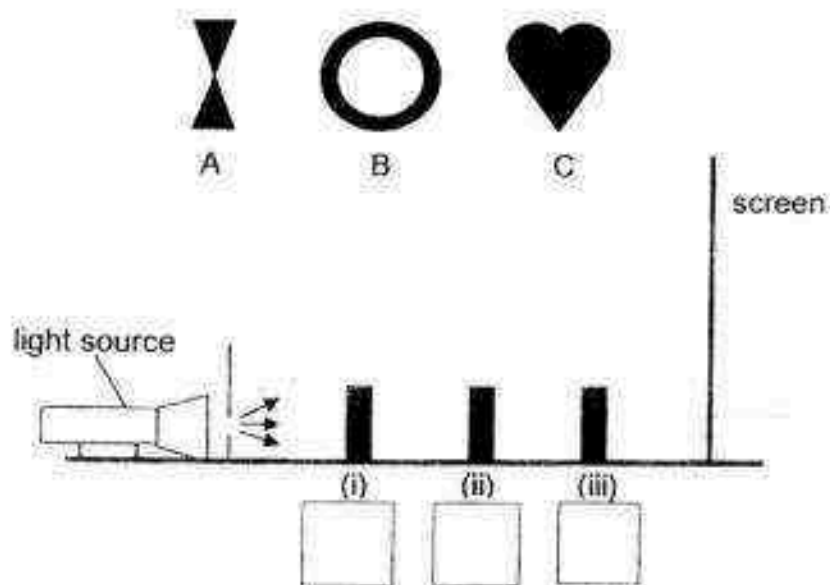
37. The diagram below shows the shadow that Jane sees on a screen.



- (a) If each of the objects below is of the same height, in what order had they been placed in the setup?

Write A, B or C into each of the boxes below.

[1]



- (b) Based on the setup and the resulting shadow shown above, what is the relationship between the distance of the light source to the objects and the size of the shadow formed? [1]

---



---

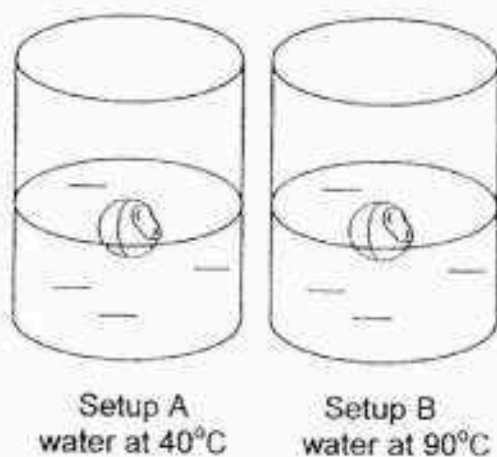
- (c) Based only on the results, state one property that objects A, B and C have. [1]

---



---

38. Tom placed a dented table-tennis ball each into two containers of water. Both containers have the same amount of water at different temperature.



- (a) Which setup should Tom choose if he wants the table-tennis ball to be inflated within a shorter time? Explain. [2]

---

---

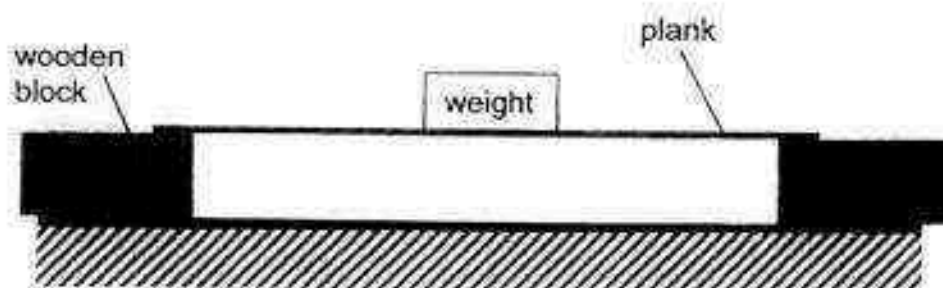
---

- (b) Compare the mass of air in the table-tennis ball before and after it is inflated. [1]

---

---

39. Ze Min set up an experiment as shown below to compare a property of three materials, W, X and Y. A plank made of material W was placed on top of two wooden blocks. Weights were added on top of the plank until it broke. He repeated the experiment with the other two planks of materials X and Y.



In the table shown below, Ze Min recorded the amount of weight added to each plank until it broke.

Material	Weight (kg)
W	60
X	150
Y	2

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

---



---

- (b) Based on the results above, which material is most suitable for making a chair? Give a reason for your answer. [1]

---

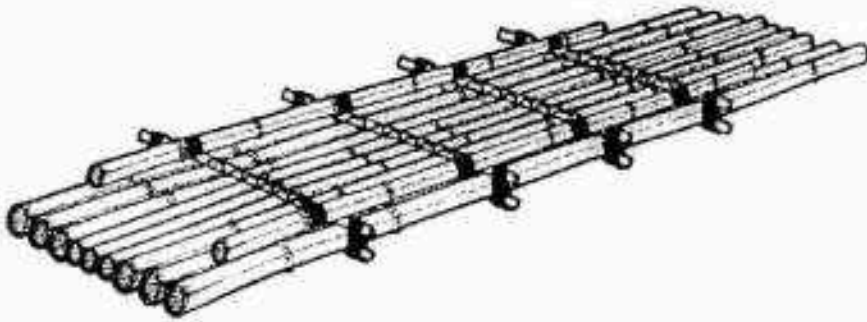


---



---

Ze Min wants to use Material X to make a raft as shown below.

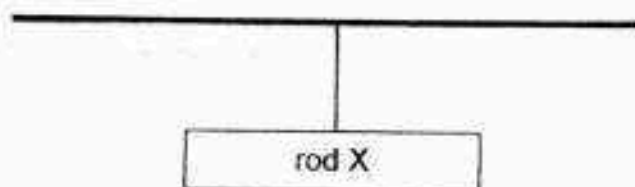


- (c) Besides the property mentioned in (b), in order for the raft to function, what property should material X have? [1]

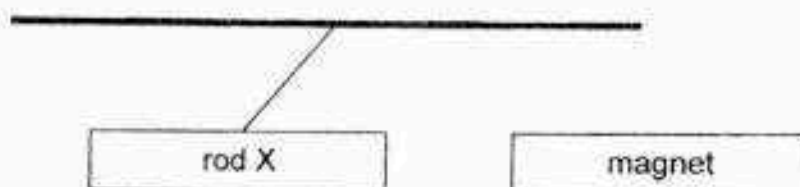
---

---

40. The diagram below shows rod X suspended by a string.



A magnet is brought near to rod X.



- (a) Give a reason why rod X moved to one side. [2]

---

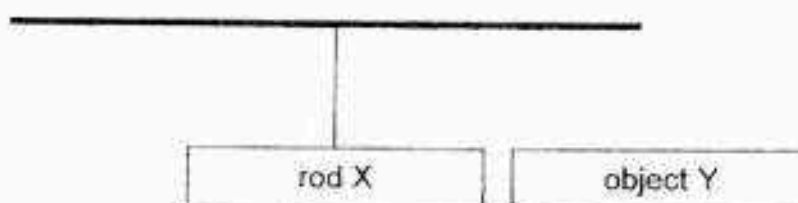


---



---

The magnet was then replaced with object Y.



- (b) Give a reason why rod X did not move to one side. [1]

---



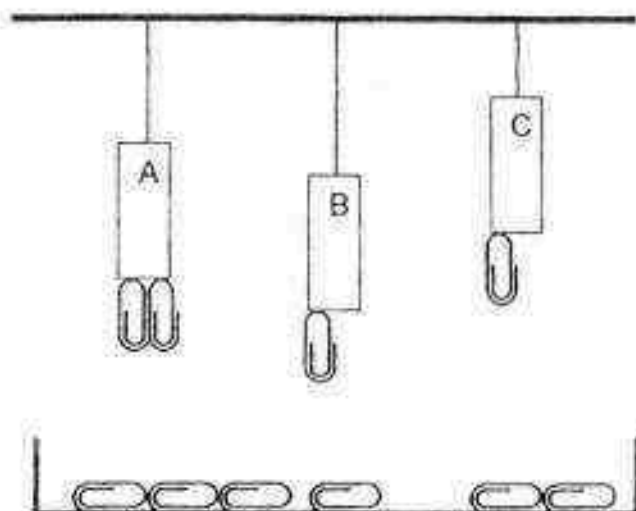
---

- (c) If object Y was replaced with an object Z made of steel, what observation can be made about rod X? [1]

---



41. The diagram below shows 3 magnets, A, B and C, suspended with strings above a tray of paper clips.



Based on the above observations, put a tick (✓) in the correct boxes for each description [2]

		True	False	Not Possible to Tell
(a)	Magnet A is stronger than magnet B.			
(b)	Magnet B is the weakest.			
(c)	Magnet C is stronger than magnet A.			
(d)	If magnet C is hung from the same height as magnet B, it would attract 2 paper clips.			

----- End of Paper -----  
Check your work carefully!

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : NANYANG PRIMARY  
 SUBJECT : SCIENCE  
 TERM : SA1

Booklet A

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

Booklet B

Q29a



Q29b Yes, the ovary contains more than one ovule which will develop into the seeds of the fruit.

Q29c It allows the plant to increase its chances of survival.

Q30a He wanted to find out if light was needed for the germination of seeds.

Q30b  
 i) The shoot emerged.  
 ii) The roots emerged.

Q30c Yes. The beans do not need light for germination.

Q30d The type of seeds.

Q31a Emma put her seedlings near to each other, so the seedlings would have a competition between each other for sunlight, water, mineral salts and space and Emma might have used a smaller pot than Anna thus, Emma's seedlings grew less healthily than Anna's.

Q31b Anna could have spaced her seeds further apart.

Q32a They help to pollinate the flower.

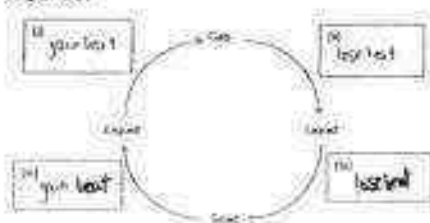
Q32b (i) The flowers open at night when the bats are out feeding.  
(ii) The flowers are large and can support the weight of the bat as it feeds on nectar from the flower.

Q33a Diagram 1 - F  
Diagram 2 - J

Q33b Womb

Q33c It attracts pollinators.

Q34a



Q34b The water vapour came into contact with the cooler surface of his glasses and condensed.

Q35a (i) A  
(ii) C  
(iii) B

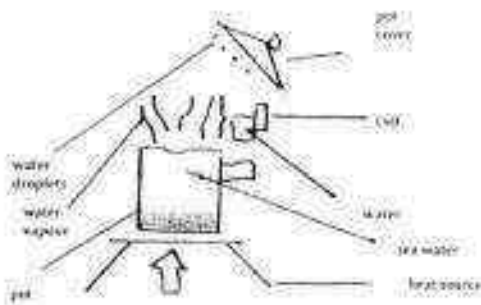
Q35b The water in the towels evaporated so there was a decrease in the mass of all the towels during the experiment.

Q35c (i) Presence of wind  
(ii) Amount of heat.

Q36a Evaporation and condensation.

Q36b It is to cool down the delivery tube for condensation to take place faster.

Q36c



- Q37a (i) B  
(ii) A  
(iii) C
- Q37b The closer the distance of the light source to the objects, the bigger the size of the shadow formed.
- Q37c They are opaque materials.
- Q38a B. The temperature of water is higher and the air inside will expand faster.
- Q38b They both will be the same mass.
- Q39a He wanted to find out which material was the strongest.
- Q39b Material X. It is the strongest material and can withstand the weight of the person sitting on it.
- Q39c Material X should be waterproof.
- Q40a Rod X is a magnet and the like poles of rod X and the magnet are facing each other causing rod X and the magnet to repel.
- Q40b Object Y is a non-magnetic material and it is not a magnet so rod X did not move to one side.
- Q40c Rod X will move towards object Z.
- Q41a ✓ True
- Q41b ✓ True
- Q41c ✓ Not Possible to Tell
- Q41d ✓ Not Possible to Tell

End



PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
SEMSTRAL ASSESSMENT 1

PRIMARY 5  
SCIENCE  
13<sup>th</sup> May 2016

(BOOKLET A)

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

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

Additional Material(s): Optical Answer Sheet (OAS)

Total time for Booklets A and B: 1 h 45 min

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

There are a total of 18 pages in this booklet, excluding the cover page.

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

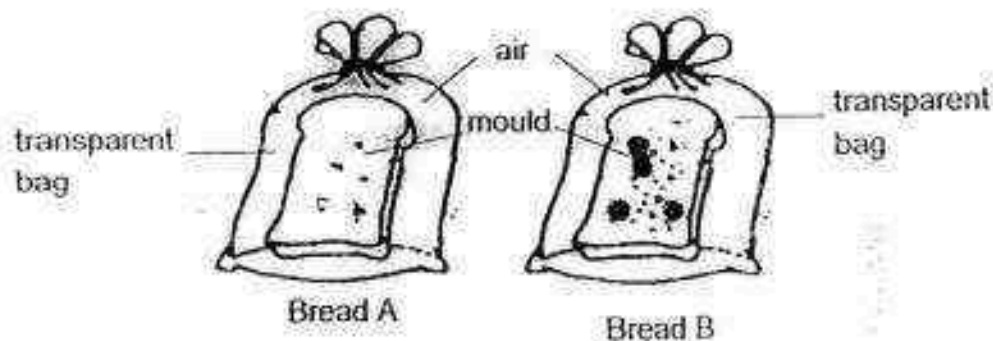
(56 marks)

1 Plants can be classified as \_\_\_\_\_.

- A land or water
- B poisonous or non-poisonous
- C flowering or non-flowering
- D reproductive or non-reproductive

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

2 Ali kept 2 identical pieces of bread, A and B, in a dark cupboard as shown below. Ali added some water to Bread B only. Three days later, he observed that mould was present on both pieces of bread. However, there was more mould growing on Bread B than on Bread A.

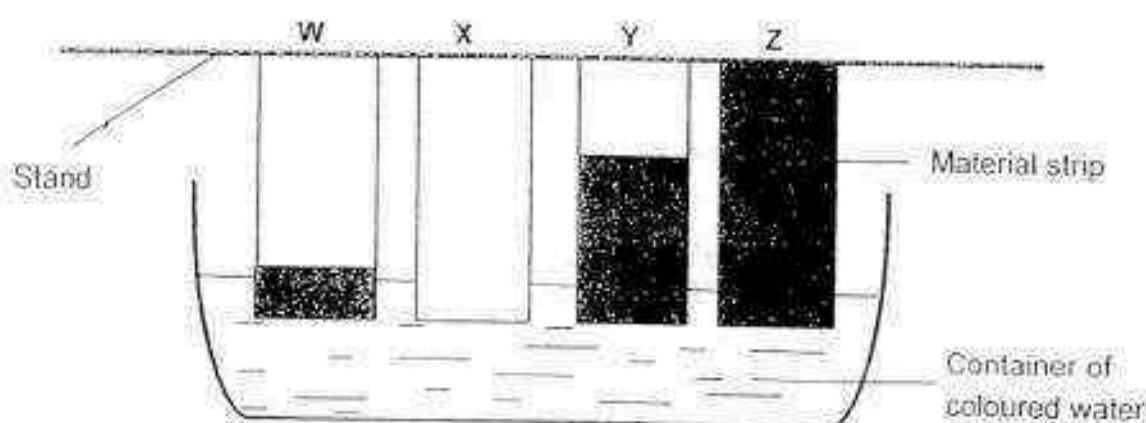


Based on the above observation, what could Ali conclude from his experiment?

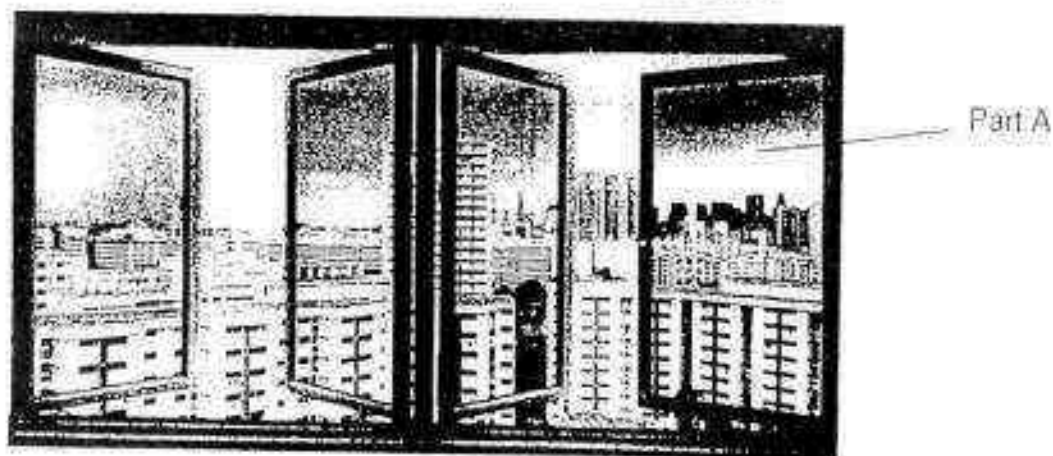
- (1) Mould needs air to grow.
- (2) Mould needs sunlight to grow.
- (3) Yeast in the bread causes the mould to grow.
- (4) Mould grows faster when there is more moisture.

- 3 Mei Mei cut out a strip from four different materials, W, X, Y and Z. Each strip was of similar size and thickness. The strips were hung from a stand such that one end of the tip was dipped into a container of coloured water.

She left the strips dipped in the coloured water for 1 hour and drew her observation as shown below. The parts stained by the coloured water are shaded.



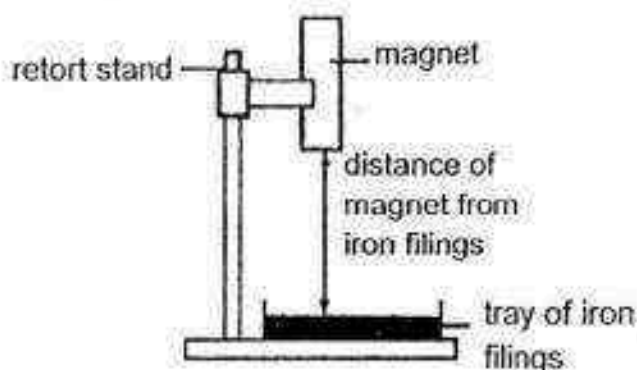
The diagram below shows a window with Part A labelled.



Based on the results in Mei Mei's experiment, which material will be most suitable to make Part A of the window?

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

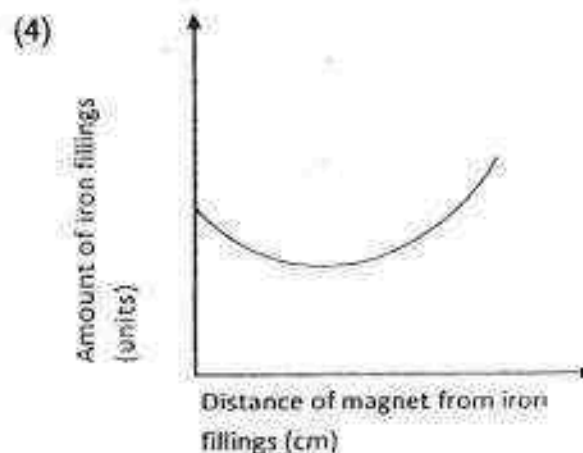
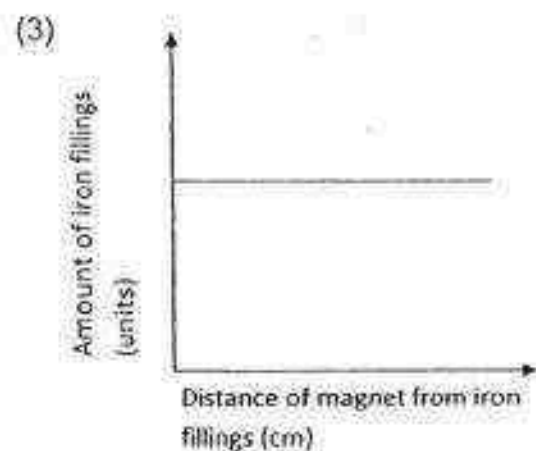
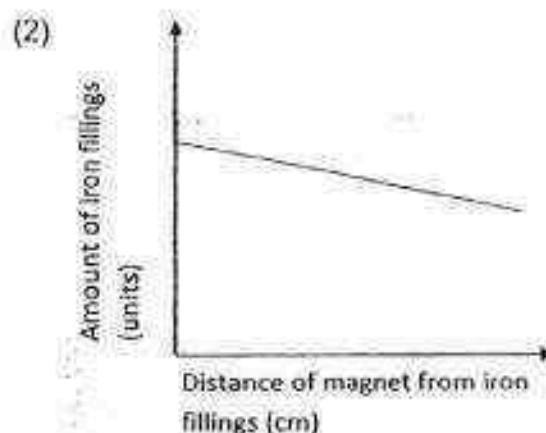
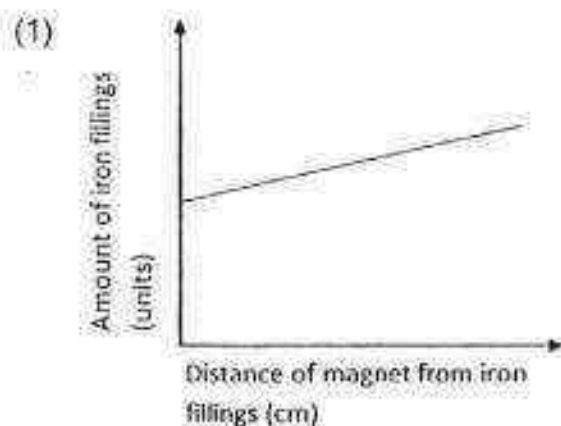
- 4 Mike wanted to find out how the distance of magnet from iron filings affects the amount of iron filings attracted.



He set up the experiment as shown above. He measured and recorded the mass of the iron filings attracted to the magnet. He repeated his experiment several times by decreasing the distance between the magnet and the iron filings each time.

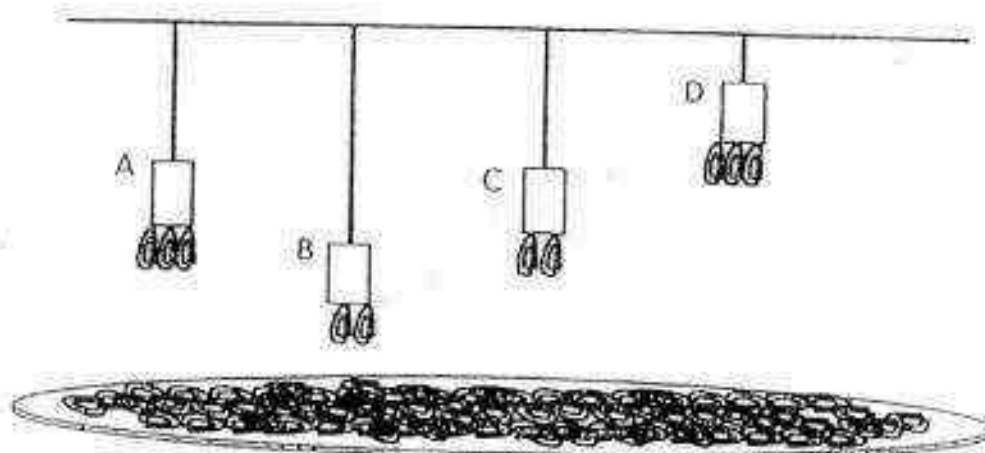
He plotted his results on a graph.

Which of the following graphs is most likely correct?



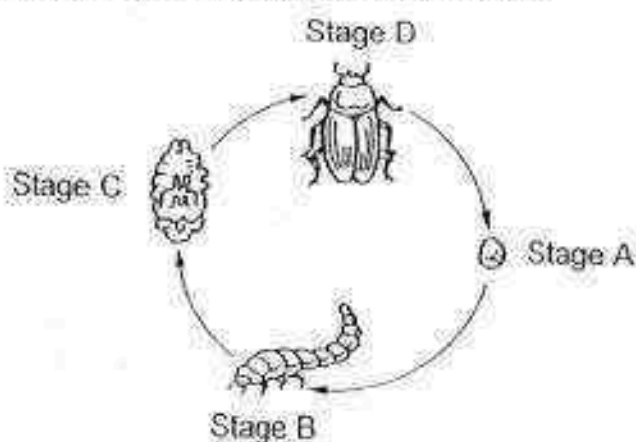


- 5 The diagram below shows the maximum number of paper clips that Magnets A, B, C and D attracted.



Which one of the following shows the correct order of magnets from the least magnetic strength to the greatest magnetic strength?

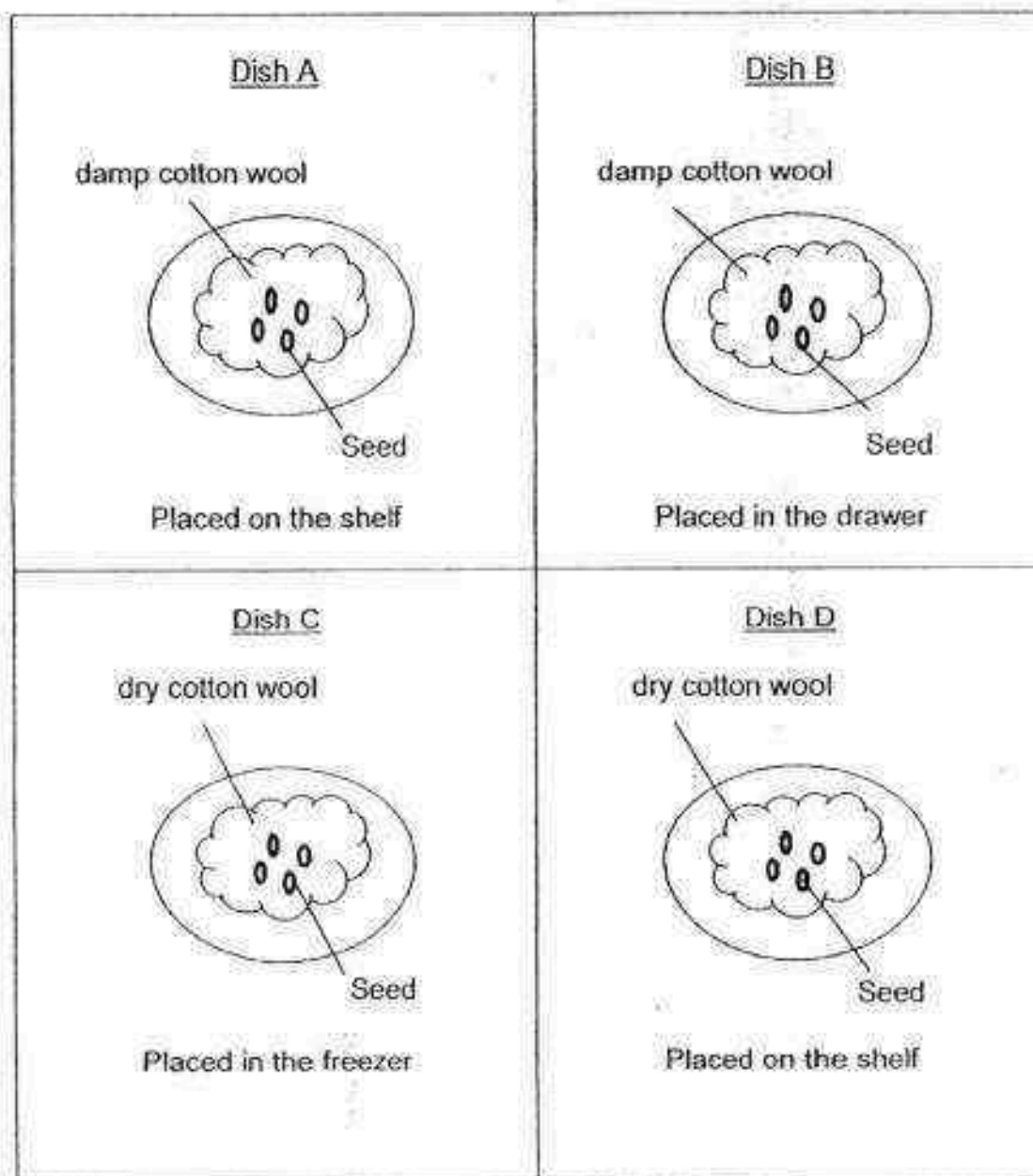
- (1) A, B, C, D
  - (2) B, C, A, D
  - (3) D, A, C, B
  - (4) D, C, A, B
- 6 The diagram below shows the life cycle of a beetle.



At which stage(s) of its life cycle does the beetle need to feed?

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

- 7 Pamela set up an experiment as shown below.



Which 2 dishes should Pamela use if she wanted to test if water is required for the germination of seed?

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

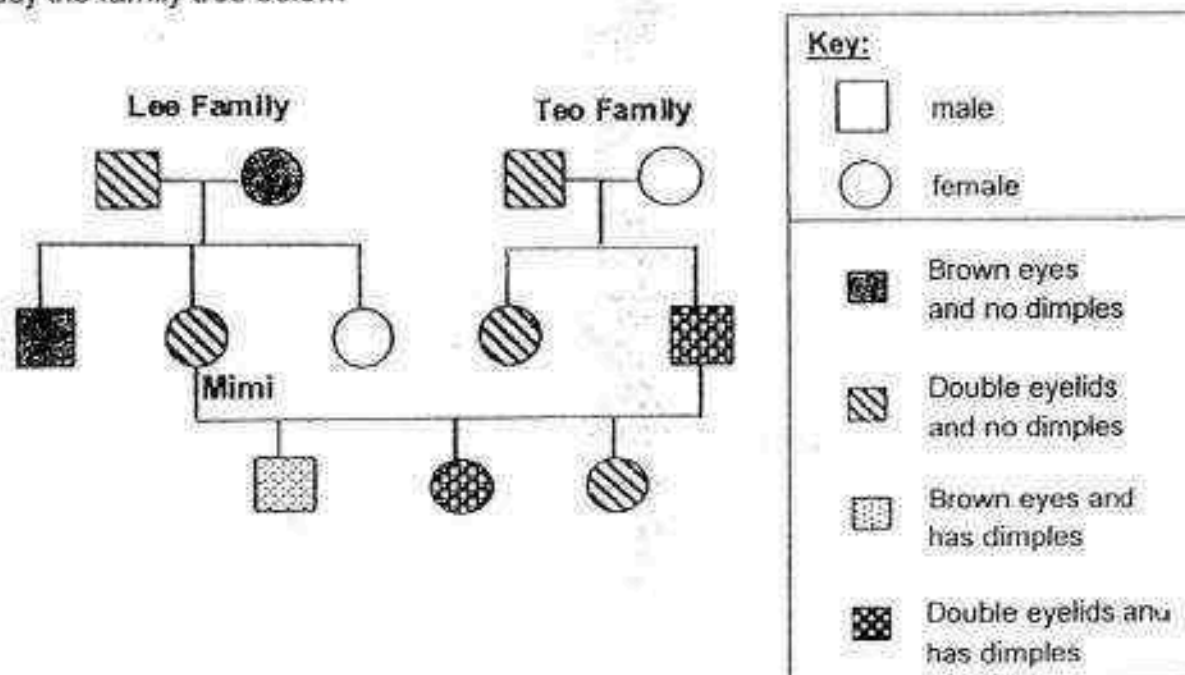
- 8 The diagram below shows a developing baby.



Which of the following statements are correct?

- A It develops from a fertilised egg.
  - B It does not need any food at this stage.
  - C It is developed inside the ovary of the mother.
  - D It takes about nine months to become fully developed.
- (1) A and C only
- (2) A and D only
- (3) B, C and D only
- (4) A, B and C only

9 Study the family tree below.

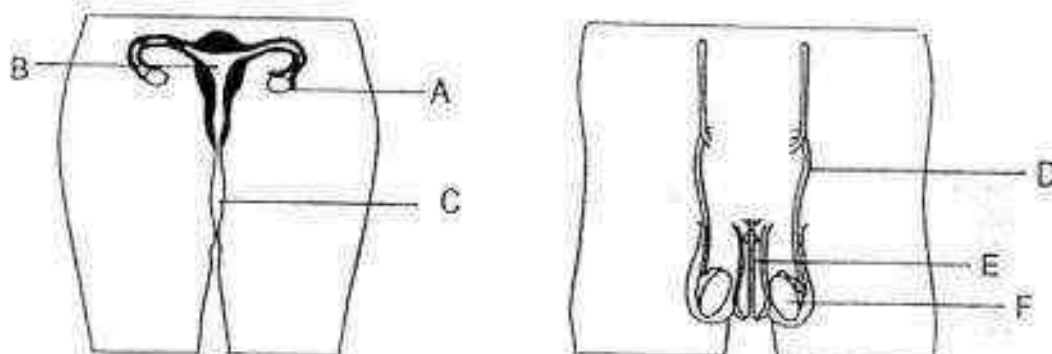


Joshua Teo and Mimi Lee have a son, Li Ming.

Based on the family tree above, which of the following characteristics did Li Ming inherit from his parents?

- A Double eyelids
  - B Brown eyes
  - C Dimples
- (1) A only
- (2) C only
- (3) A and B only
- (4) B and C only

- 10 The diagram below shows the human reproductive systems.



Which of the following is correct?

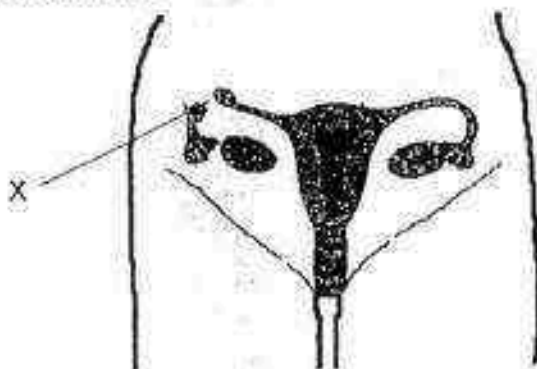
	Where the female reproductive cell is produced?	Where the male reproductive cell is produced?	Where the fertilised egg is developed?
(1)	A	D	C
(2)	A	F	B
(3)	C	E	B
(4)	B	F	A

- 11 Which of the following statements about human reproduction are true?

- A Many sperms are needed to fertilise one egg
- B The male produces sperms and the female produces eggs.
- C After fertilisation, the fertilised egg starts to divide to form more cells. ✓
- D Only characteristics that are observable physically can be inherited from parents to young.

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

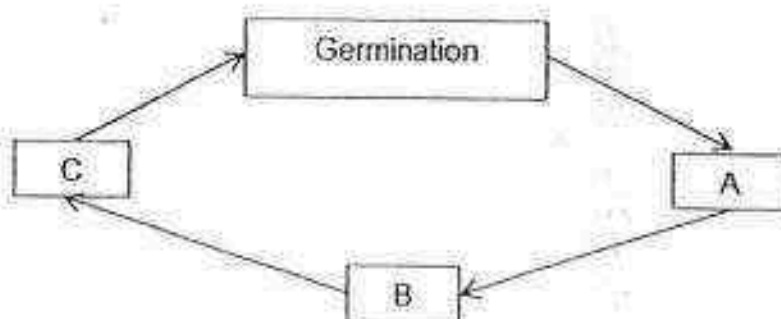
- 12 Study the diagram below which shows the reproductive system of a female patient after she had undergone an operation. In this operation, the tube near the ovary was cut at X and tied.



From the diagram, which of the following statements is most likely true as a result of this operation?

- (1) Fertilisation can still occur.
- (2) Egg cells will not be produced by the ovaries anymore.
- (3) No sperm cells are able to fuse with egg cells anymore.
- (4) Egg cells will not be released from the ovaries anymore.

- 13 The following diagram shows four processes in the sexual reproduction of a flowering plant.



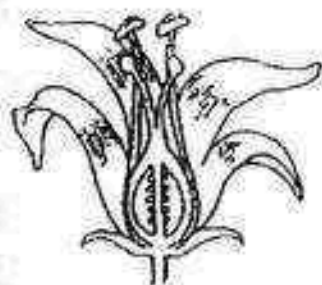
Which of the following shows the correct sequence of the processes?

	A	B	C
(1)	Dispersal	Pollination	Fertilization
(2)	Fertilization	Pollination	Dispersal
(3)	Dispersal	Fertilization	Pollination
(4)	Pollination	Fertilization	Dispersal

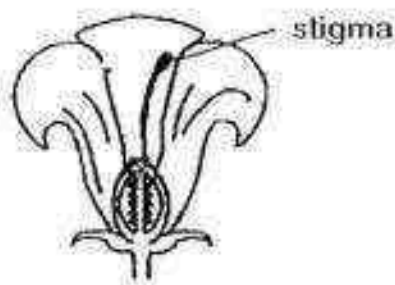
- 14 Li Shan observed a fruit and concluded that the seeds are dispersed by splitting. Which one of the following most likely describes the fruit she has observed?

- (1) The fruit has hair.
- (2) The fruit has hooks.
- (3) The fruit has a pod-like structure.
- (4) The fruit has a wing-like structure.

- 15 The diagrams below show the cross sections of two flowers from different plants.



Flower A



Flower B

What can you infer from the above diagrams?

- A Only Flower B requires pollinators.
  - B Both Flower A and B can develop into a fruit.
  - C Not all flowers have both male and female parts.
  - D Both Flower A and B can undergo pollination.
- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) B, C and D only
- 16 An experiment was set up using 4 identical insect-pollinated flowers, A, B, C and D, in a field. Different parts of the flowers were removed as shown in the table below. Insects were observed to be visiting the flowers.

Flowers	Anthers	Stigma	Petals
A	Removed	Present	Removed
B	Present	Removed	Removed
C	Removed	Present	Present
D	Present	Removed	Present

Which flowers are most likely to develop into a fruit after two weeks?

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



- 17 Sue conducted an experiment on two identical fruits, P and Q, to investigate how temperature of each fruit affects the time taken for the fruits to split.

Which of the following type of results should Sue observe so that she could draw a conclusion to the experiment?

- A The surrounding temperature of the fruits.
- B The distance scattered by the fruits.
- C The time taken for the fruits to split.
- D The number of seeds that were not scattered

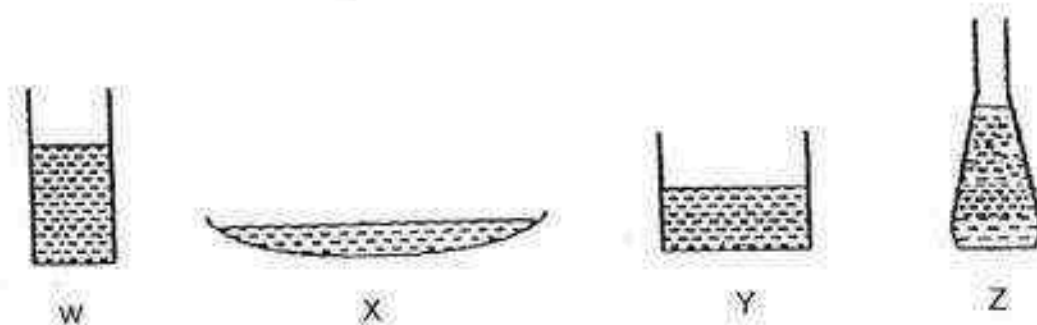
- (1) C only
- (2) B and C only
- (3) A, C and D only
- (4) B, C and D only

- 18 Which of the following statements about the rate of evaporation is/are true?

- A The higher the temperature of water, the faster it evaporates.
- B When there is more wind in the surrounding air, the rate of evaporation is higher
- C At room temperature, a liquid that has a lower boiling point than water evaporates more quickly than water.

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

- 19 Pete poured an equal amount of water into four different containers as shown below. He left them in the open and observed the time taken for the water in the containers to dry up completely.



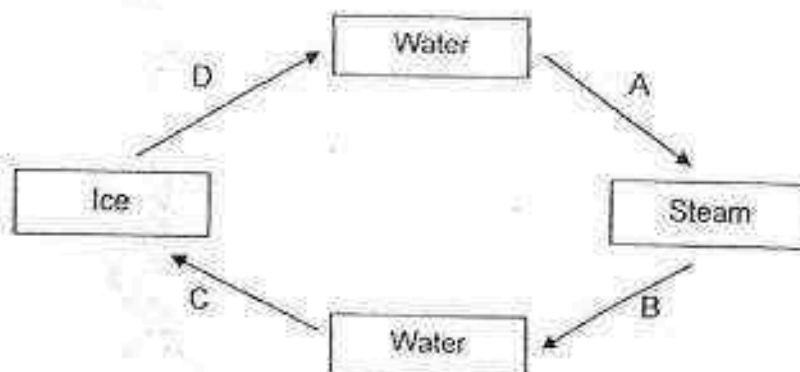
The table below shows the time taken for the water in containers W and Y to dry up completely.

Amount of time taken (hours):	
Container W	Container Y
10	6

Based on the information above, which of the following sets of results would most probably be the time taken (hours) for the water in containers X and Z to dry up completely?

	Container X	Container Z
(1)	3	8
(2)	14	12
(3)	8	12
(4)	3	14

- 20 The following diagram shows the changes of states of water.



Which of the following processes (A, B, C or D) involves heat loss or heat gain?

	Heat loss	Heat gain
(1)	A and B	C and D
(2)	B and D	A and C
(3)	B and C	A and D
(4)	C and D	A and B

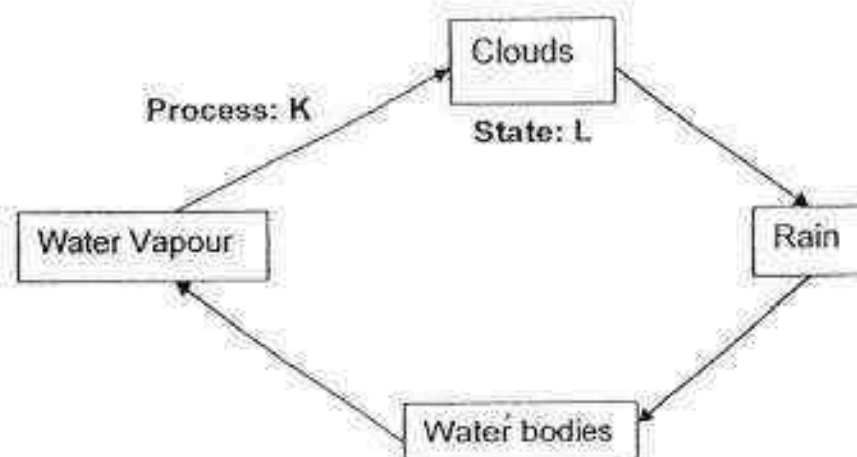
- 21 Lily wants to carry out an experiment to investigate how the amount of salt added to water affects its boiling point.

Which of the following variable(s) should be kept the same?

- A The source of water
- B The amount of salt
- C The volume of water
- D The boiling point of water

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

- 22 The diagram below shows the water cycle.



Which of the following is correct?

	K	L
(1)	Condensation	Liquid
(2)	Evaporation	Gas
(3)	Condensation	Gas
(4)	Evaporation	Liquid

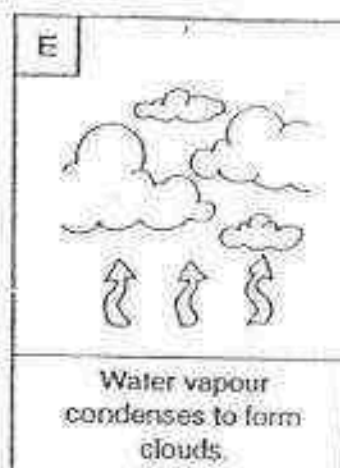
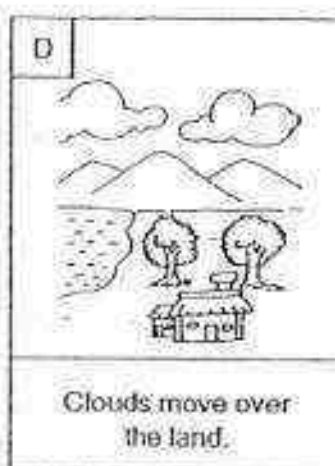
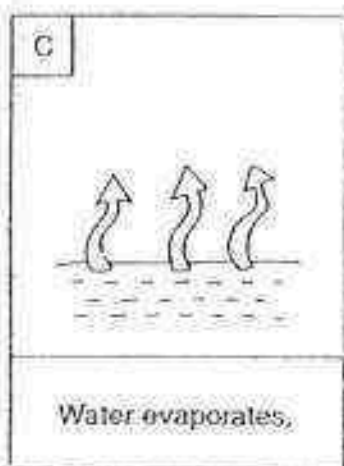
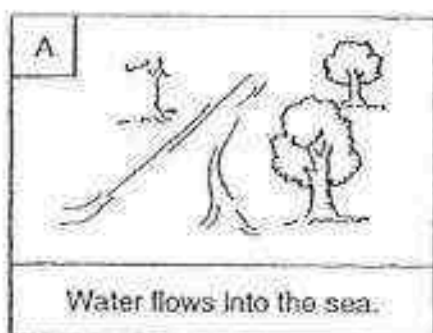
- 23 The table below shows the boiling and freezing points of 3 substances, X, Y and Z.

	X	Y	Z
Boiling Point ( $^{\circ}\text{C}$ )	19	110	72
Freezing Point ( $^{\circ}\text{C}$ )	5	38	13

What is the state of the substances, X, Y and Z, at room temperature of  $26^{\circ}\text{C}$ ?

	X	Y	Z
(1)	gas	liquid	solid
(2)	liquid	solid	gas
(3)	gas	solid	liquid
(4)	solid	gas	liquid

- 24 The diagrams below show the different stages of the water cycle.



Arrange the stages of the water cycle in the correct order, starting from Stage B.

B, \_\_\_\_\_

- (1) A, C, E, D
- (2) D, E, A, C
- (3) D, E, C, A
- (4) A, E, C, D

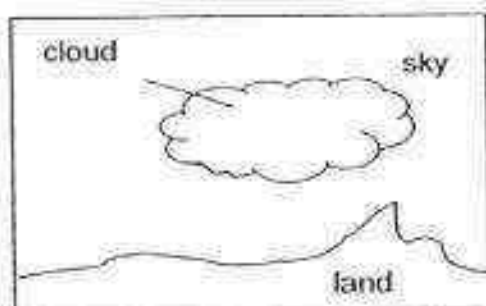
- 25 Hana puts an ice cube on a plate. After a while, the ice cube starts to melt. She writes down the following reasons for her observation.

- A The ice cube loses heat to the plate.
- B The ice cube loses heat to its surroundings.
- C The plate takes away heat from the ice cube.
- D The ice cube takes in heat from its surroundings.

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

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

- 26 Study the two diagrams below.



Which two statements describe the similarity between how are the clouds in the sky and the mist formed around the spout of a kettle of boiling water?

- A Both are made up of water vapour.
- B Both are made up of water droplets.
- C Both are caused by losing heat to the surrounding.
- D Both are formed by the evaporation of water.

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

27 Which one of the following activities helps to conserve water?

- (1) Using a hose to wash car.
- (2) Rinsing one's mouth under running water.
- (3) Leaving the tap on when washing your hands with soap.
- (4) Reuse water for washing clothes to wash the bathrooms.

28 The amount of \_\_\_\_\_ in the surrounding air is the cause of the change in the state of rain into chunks of ice as it falls to the ground.

- (1) gas
- (2) heat
- (3) clouds
- (4) water vapour



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
SEMESTRAL ASSESSMENT 1**

**PRIMARY 5  
SCIENCE**  
13<sup>th</sup> May 2016

(BOOKLET B)

Name: \_\_\_\_\_ (   )

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

Total time: 1 hour 45 minutes

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

**FOR TEACHER'S USE**

Marks (Booklet A) :	<b>56</b>
Marks (Booklet B) :	<b>44</b>
Total Marks (Booklet A & B) :	<b>100</b>

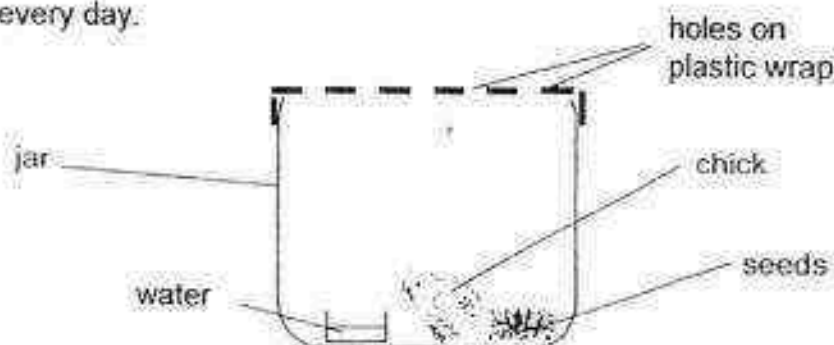
There are a total of 15 pages in this booklet, excluding the cover page.



For questions 29 to 41, write your answers in the booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. (44 marks)

29. Mary conducted an experiment on a chick. The jar was then covered with a plastic wrap and many holes were made on it. Mary added seeds into the jar and refilled the water every day.



- (a) What was the purpose of the holes on the plastic wrap? [1]

---



---

- (b) Then, Mary forgot to put any seeds in the jar for two weeks. She noticed that the chick had died. Explain her observation. [1]

---



---

30 The table below shows animals that are classified into 4 groups, A, B, C and D.

Group A	Group B	Group C	Group D
Angelfish	Beetle	Owl	Whale
Guppy	Ant	Rooster	Bat

- (a) State the animal groups for the animals in Group A and Group C. [1]

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

Group C: \_\_\_\_\_

- (b) State one similarity in the method of reproduction of the animals in Group B and Group C. [1]

---



---

- 31 Diagram A below shows a 50 ml beaker filled with 40ml of water.

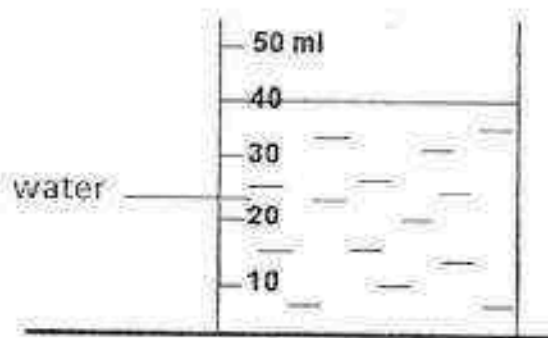


Diagram A

- (a) Ali put in 2 marbles of  $5 \text{ cm}^3$  each into the beaker.

Draw the new water level on Diagram B below

[1]

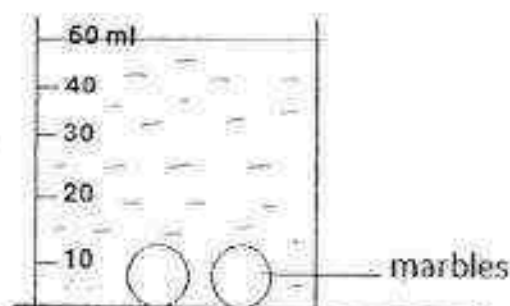


Diagram B

- (b) (i) Ali decided to put another 5 more marbles of the same volume into the beaker in Diagram B. Describe what he would observe.

[1]

---



---

- (ii) Explain Ali's observation in (b)(i).

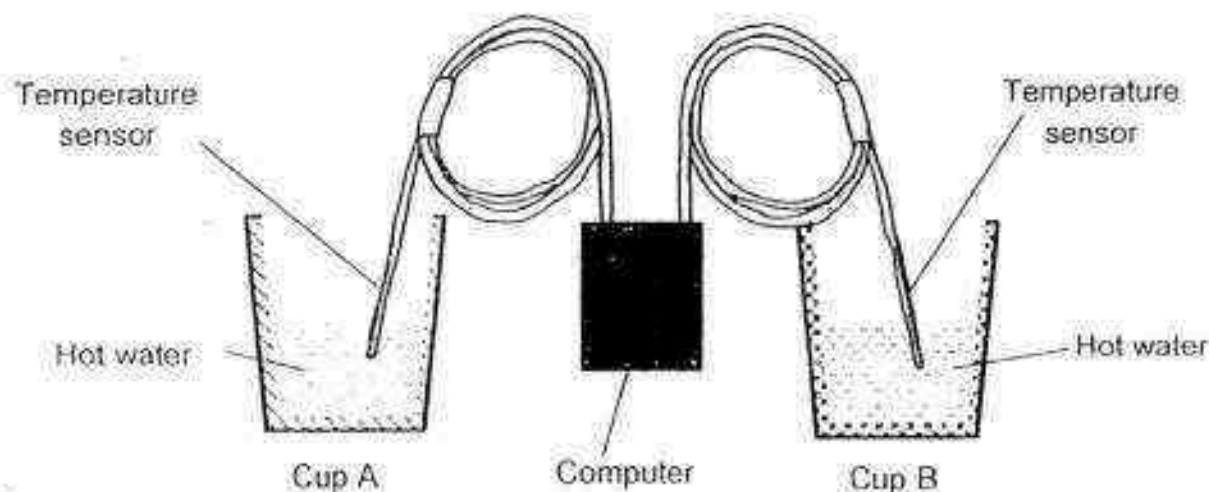
[1]

---

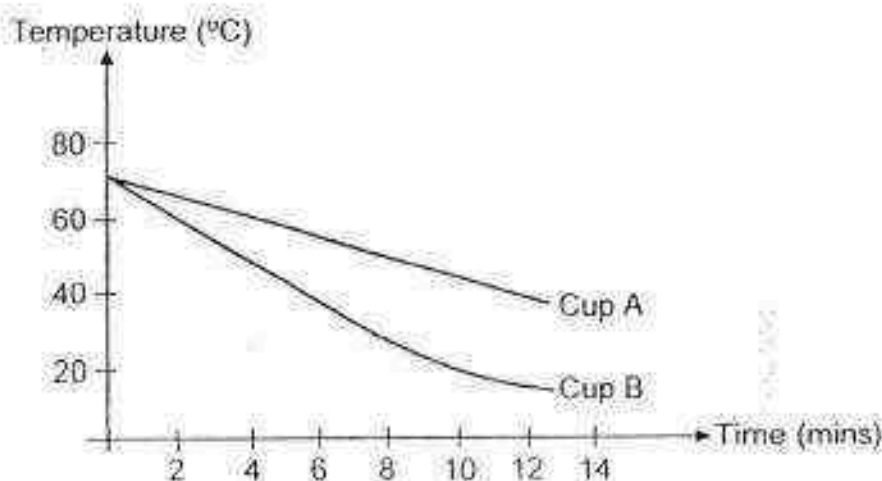


---

- 32 Han Han conducted an experiment as shown below. He used 2 cups made of different materials, Cup A and Cup B. He filled Cup A and Cup B with the same amount of hot water. After that, he connected two temperature sensors to a computer to measure the changes in the temperature of the hot water in Cup A and Cup B.



The computer displayed the results as shown below.



- (a) Based on the information in the graph, which cup, A or B, should Han Han use to keep his iced water cold for a longer period of time?

Explain your answer.

[2]

Question 32b continues on page 23

- (b) Explain what will happen to the temperature of the water in cup B if all the water from cup A is added to cup B at the 12<sup>th</sup> minute. [1]

---

---

- 33 The picture below shows a honey bee collecting nectar from a flower.



- (a) Explain how the nectar helps in the pollination of flowering plants. [2]

---

---

---

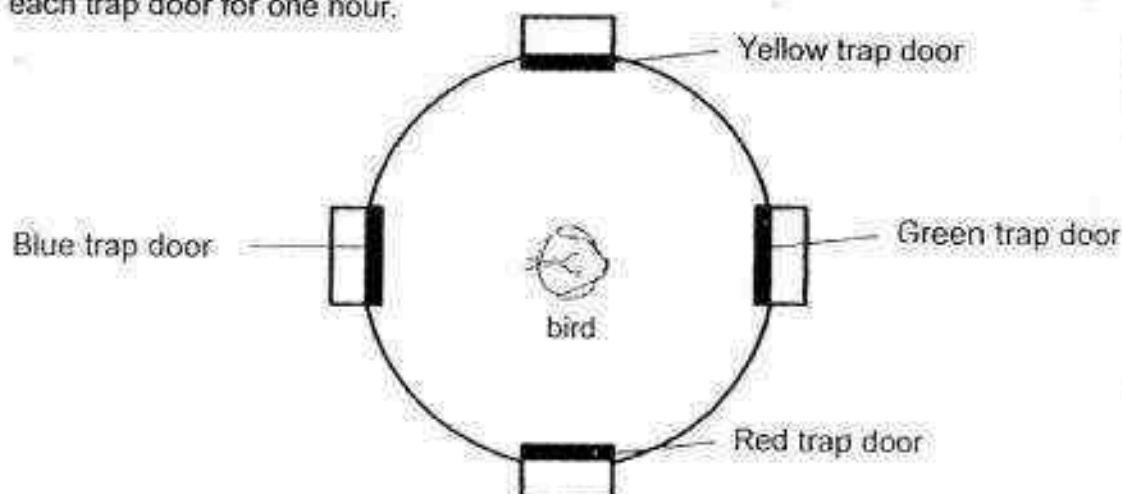
- (b) Besides nectar, state two characteristics insect-pollinated flowers have to attract the insects to the flower. [1]

---

---

- 34 Albert wanted to find out which fruit colour will increase the chance of the fruit being dispersed by the bird.

He set up the experiment using a circular box with 4 trap doors of different colours. Behind each trap door contained the same amount of food that the bird eats. He placed the bird in the centre and every time the bird had visited a trap door, he would move the bird to the centre again. He counted the number of times the bird visited each trap door for one hour.



He recorded his results in the table below.

Colour of trap door	Number of visit to each trap door			
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	Average
Yellow	24	23	22	23
Green	3	1	2	2
Red	30	24	26	30
Blue	6	8	7	7

- (a) Based on his results, what can he conclude about his experiment? [1]

---



---

- (b) Why did Albert repeat his experiment? [1]

---



---

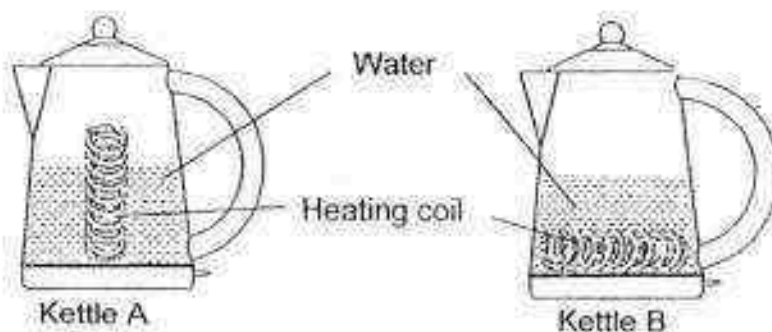
- (c) How does placing the bird in the centre ensure that the experiment is fair? [1]

---



---

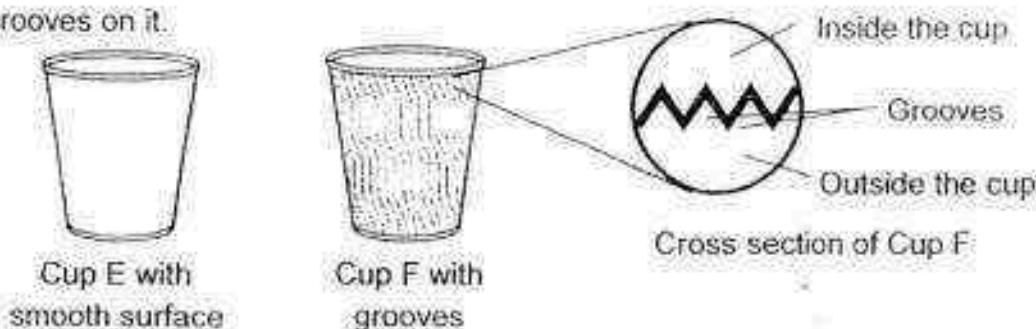
- 35 Warren used two kettles of the same material, size and shape to boil same amount of water. Kettle A took a longer time to boil the water than Kettle B. When he checked the heating coil of the two kettles, he found that although they are made of similar materials, they were placed differently in the two kettles.



- (a) Explain why it took a shorter time for the water in Kettle B to boil.

[1]

Eli bought two similar-sized hot coffee. He found that although the two cups were made of the same material, the surface of the cup E was smooth but the surface of cup F had grooves on it.



He also realised that Cup F felt less hot even though the temperature of coffee in both the cups were the same.

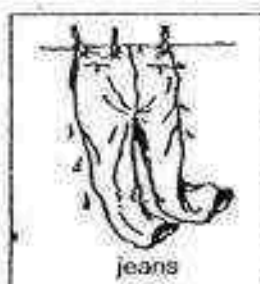
- (b) Explain why it felt less hot to hold Cup F.

[1]

- (c) State one property of the material that both paper cups must have in order for a person to be able to hold hot beverages without getting burned.

[1]

- 36 Ben carried out an experiment to find out how long it will take for his jeans to dry after washing.



He weighed his jeans immediately after washing. Then, he hanged it on a clothes line. Ben weighed his jeans every 15 minutes and recorded the mass in the table below.

Time (min)	Mass of jeans (g)
0	850
15	600
30	520
45	480
60	420
75	420
90	420

- (a) How long did the jeans take to dry? [1]

---

- (b) Based on the table above, how would he know that his jeans have completely dried? [1]

---



---

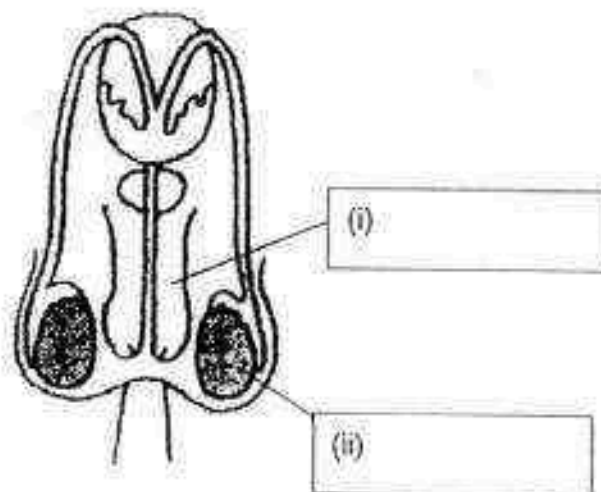
- (c) Besides hanging the jeans under the hot sun, state another environmental factors that would speed up the drying of Ben's jeans. [1]

---



- 37 (a) In the diagram below, label the reproductive parts of the male reproductive system in the boxes below.

[2]



- (b) If only one sperm is needed for fertilisation to occur, give a reason why millions of sperms are produced.

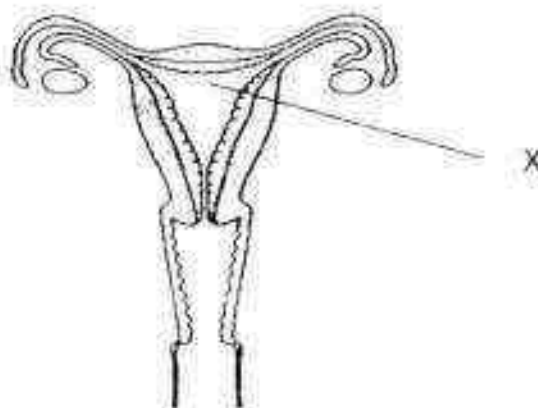
[1]

---



---

- (c) The diagram below show the female human reproductive system.



female human reproductive system

Identify and state the function of Part X in the diagram below.

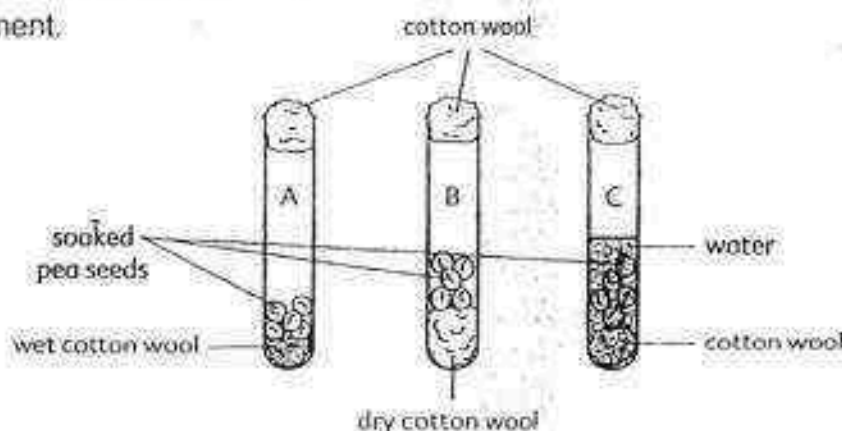
[1]

---



---

- 38 Susan investigated the germination of pea seeds. She set up three test tubes, A, B and C, as shown in the diagram below. She left them for ten days in a warm environment.



After ten days, the results were as follows:

Test tube	Observation
A	The seeds germinated and developed into a young plant.
B	The seeds started to germinate but did not develop into a young plant.
C	The seeds did not germinate at all.

- (a) Why did the seeds in test tube B start to germinate but did not develop into a young plant? [2]

---



---

- (b) Why did the seeds in test tube C not germinate at all? [1]

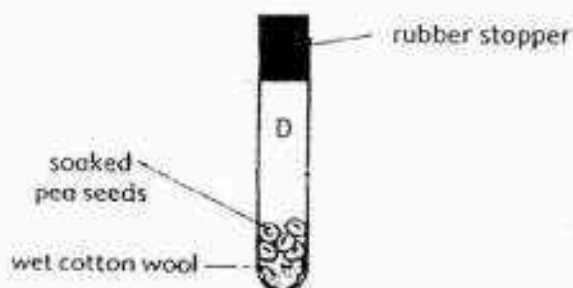
---



---

Question 38c continues on page 29

- (c) Susan then set up another test tube D and replaced the cotton wool with a rubber stopper as shown below.



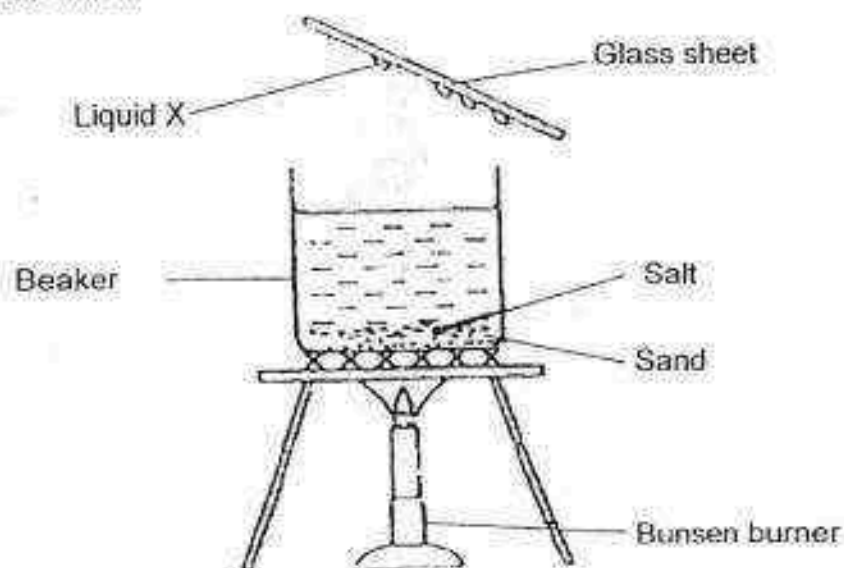
She found that the seeds in test tube D took a longer time to germinate when compared to the seeds in test tube A. Explain why.

[1]

---

---

- 39 A mixture of sand, salt and water was heated as shown below. The mixture was brought to a boil. After a few minutes, liquid X was formed on the underside of the glass sheet.



- (a) Tick (✓) the box(es) that describes liquid X.

[1]

- ☐ colourless  
☐ tastes salty  
☐ feels sandy

- (b) Explain how liquid X was formed.

[2]

---



---

- (c) After a while, less condensation took place on the glass sheet, even though the mixture in the beaker was still boiling.

Explain why this is so.

[1]

---

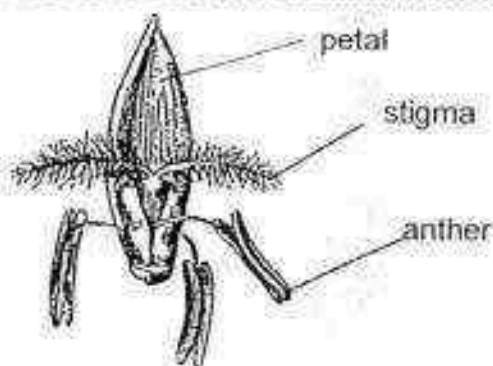


---



---

- 40 Tommy was studying a cross-section of flower P as shown below.



Flower P

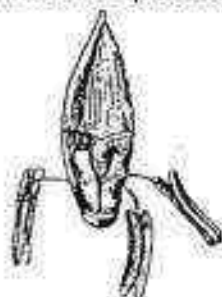
- (a) Based on the picture above, his friend, Nora, says that the flower is pollinated by wind.

Give 2 reasons why Nora is correct.

[2]

- (i) \_\_\_\_\_  
 \_\_\_\_\_  
 (ii) \_\_\_\_\_  
 \_\_\_\_\_

- (b) The diagram below shows 2 similar flower P, still attached to the plant, but with different reproductive parts removed.



Flower P1



Flower P2

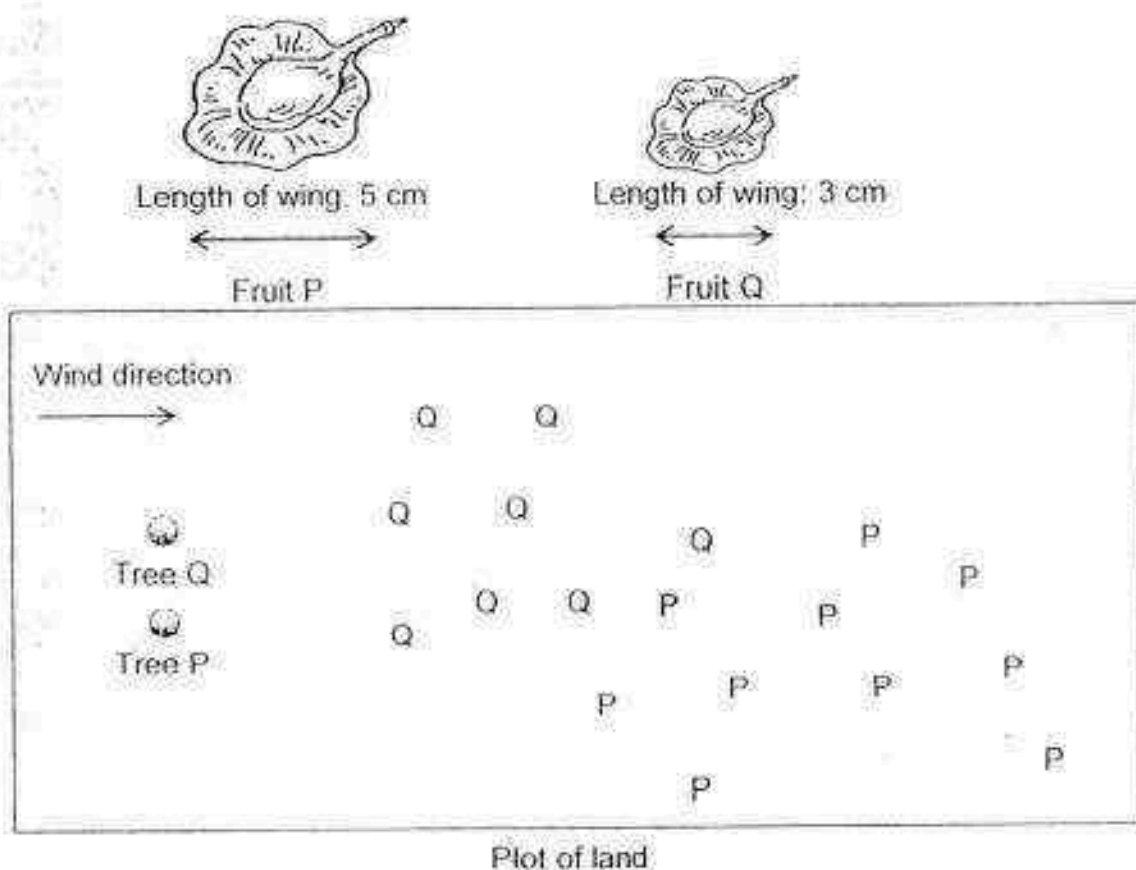
Which flower(s) cannot become a fruit? Give a reason for your answer.

[1]

\_\_\_\_\_  
 \_\_\_\_\_

Question 40c continues from page 32

- 40 (c) The diagrams below show 2 fruits, Fruit P and Fruit Q, from a tree P and tree Q respectively. They are dispersed by wind. (Measurements are not drawn to scale).



- (i) Based on the information above, what is the relationship between the length of the wing of the fruit and the distance the fruit is dispersed by the wind? [1]

---



---

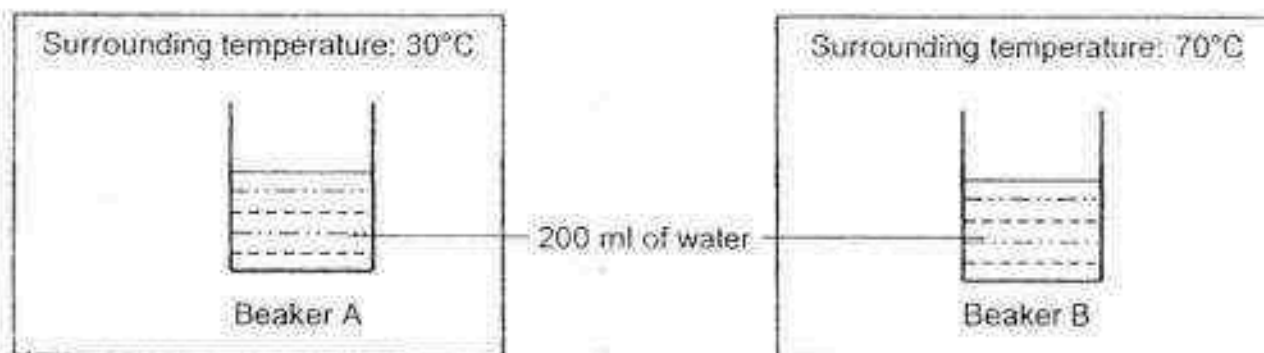
- (ii) Explain why P travelled further than Q. [1]

---



---

- 41 The set-ups below show two similar beakers A and B containing equal amount of water placed in rooms of different surrounding temperatures.



- (a) What is another variable that must be kept the same in order for the experiment to be fair? [1]

---

- (b) Which beaker, A or B, will have less water left after 2 hours? Explain your answer. [2]

---



---

- (c) Bala had two glasses of cold water from the refrigerator and left it on the table. He knew one of the glasses contained water that was colder than the other glass.

**Without using the sense of touch or a thermometer,** describe what Bala should do to find out which glass contained the colder water. [2]

---



---



---

– END OF PAPER –

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : PEI HWA PRESBYTERIAN PRIMARY  
 SUBJECT : SCIENCE  
 TERM : SA1

### Booklet A

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

### Booklet B

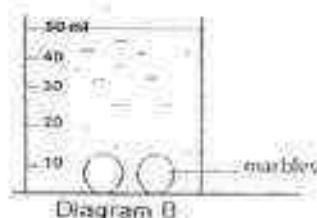
Q29a To allow air to enter for the chick to breathe.

Q29b Living things need air, food and water to survive. As the chick did not have any food to eat, it was unable to survive.

Q30a Group A: Fish  
Group C: Birds

Q30b Both animals in Group B and C lay eggs.

Q31a



Q31b (i) The water will overflow.  
(ii) The marbles occupy the space of the water.

Q32a Cup A. It is a poorer conductor than material B so it will gain heat from the surroundings more slowly.

Q32b The temperature of water in cup B will rise as it gains heat from the water in cup A.



- Q33a The nectar is a source of food for insects and insects will get attracted by it. The insects brush past the anthers, pollen grains will stick to its body and will be transferred to a stigma of a female flower.
- Q33b They have colourful petals and a pleasant smell to attract the insects.
- Q34a Red was the best colour to increase the chance of the fruit being dispersed by the bird.
- Q34b To ensure that his results are reliable.
- Q34c This is to ensure that the distance of the bird to each trap door is the same.
- Q35a Coil B which is arranged horizontally is fully immersed in the water allowing a larger surface area to be in contact with the water to allow more heat to move from the coil to the water than coil A.
- Q35b Cup F has grooves that has air spaces and air is a poor conductor of heat so it slows down the heat gained.
- Q35c They must be poor conductors of heat.
- Q36a 60 minutes
- Q36b From 60 to 90 minutes, the mass of the jeans remained the same.
- Q36c Hang it at a windy place.
- Q37a (i) Penis  
(ii) Testes
- Q37b It increases the chances of fertilising the egg.
- Q37c Womb. It is to protect the developing baby.
- Q38a The soaked seeds had water to germinate at first but there was not enough for the seeds to continue growing.
- Q38b There was too much water in test tube C and there was no oxygen resulting the seeds to be unable to breathe and germinate.
- Q38c The rubber stopper prevented air to enter so the seeds did not receive enough air.

- Q39a ✓ colourless
- Q39b The steam from the boiling water came into contact with the cooler underside surface of the glass sheet, lost heat and condenses into tiny water droplets.
- Q39c The glass sheet started to gain heat and steam from the boiling water was unable to condense on the underside of the glass sheet.
- Q40a (i) It has feathery stigmas hanging out.  
(ii) The anthers are hanging out.
- Q40b Both flowers cannot become a fruit, both flowers have their stigmas removal, thus pollen grains are unable to reach the ovaries for the flower to become a fruit.
- Q40c (i) The longer the length of the wing of the fruit, the further the distance the fruit is dispersed by the wind.  
(ii) A longer wing will allow the fruit to stay for a longer time in the air and be carried further away.
- Q41a The temperature of the water.
- Q41b B. Because the surrounding temperature is higher so more heat is gained by the water, so more evaporation takes place.
- Q41c Put both glasses at room temperature in the same environment. Then measure amount of water droplets, more droplets is colder water.

End



# RAFFLES GIRLS' PRIMARY SCHOOL

## SEMESTRAL ASSESSMENT (1) 2016

Section A	56
Section B	44
Your score out of 100	100
Parent's signature	

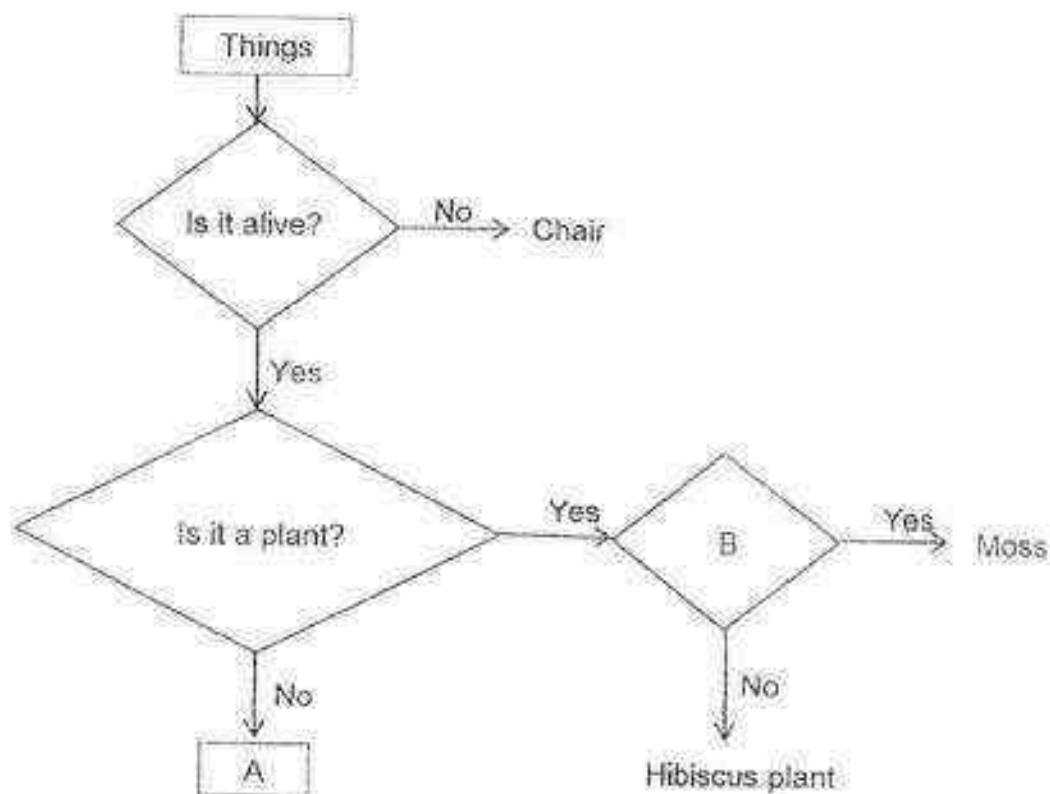
Name : \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P 5 \_\_\_\_\_

10 May 2016 SCIENCE Attn: 1 h 45 min

### SECTION A (28 X 2 marks)

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

1. Study the chart below.



Which one of the following is correct?.

	A	B
(1)	Bacteria	Is it poisonous?
(2)	Toadstool	Does it reproduce from spores?
(3)	Algae	Does it make food?
(4)	Grass	Does it grow?

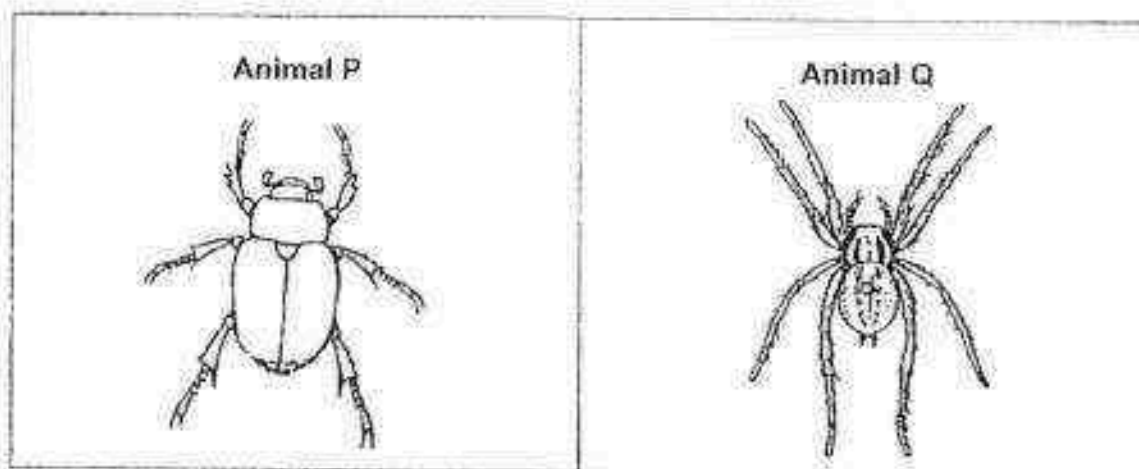
2. The table below shows the characteristics of animals P, Q, R and S. A tick (✓) indicates the presence of the characteristic in the animal.

Characteristic	Animal P	Animal Q	Animal R	Animal S
Live on land and in water	✓			
Body divided into three parts		✓		
Has hair			✓	
Has feathers				✓
Lays eggs	✓	✓	✓	✓

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

	Amphibian	Bird	Insect	Mammals
(1)	P	S	Q	R
(2)	P	Q	S	R
(3)	Q	R	P	S
(4)	S	P	R	Q

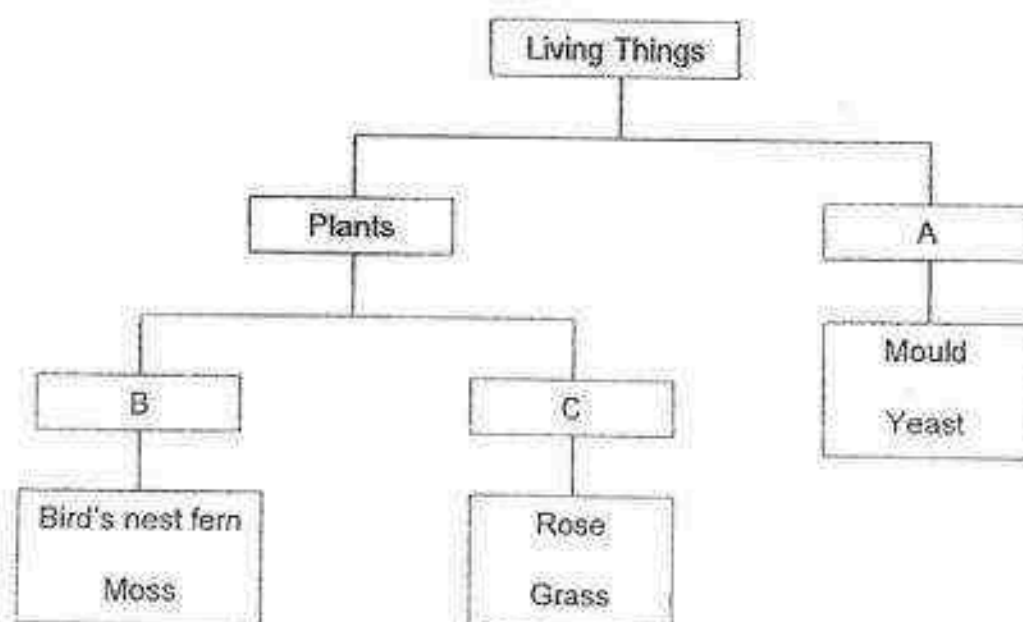
3. Study the animals below.



Based on the diagrams, which of the following statements is/are correct?

- A Both animals are insects.  
 B Both animals have eight legs.  
 C Animal P is an insect but not animal Q.  
 D Both animals have bodies divided into three parts.
- (1) C only  
 (2) A and D only  
 (3) B and C only  
 (4) A, C and D only

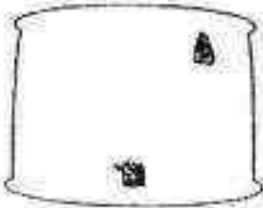

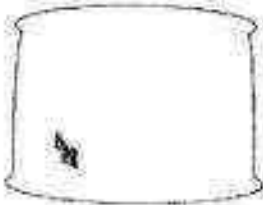

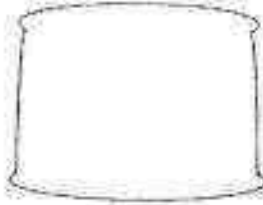
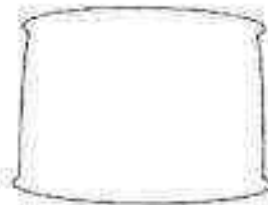
4. Study the classification table below.



Which one of the following identify A, B and C correctly?

	A	B	C
(1)	Fungi	Pollinated by wind	Pollinated by animals
(2)	Fungi	Non-flowering plants	Flowering plants
(3)	Non-flowering plants	Reproduce by spores	Reproduce by seeds
(4)	Non-flowering plants	Dispersed by wind	Dispersed by animals

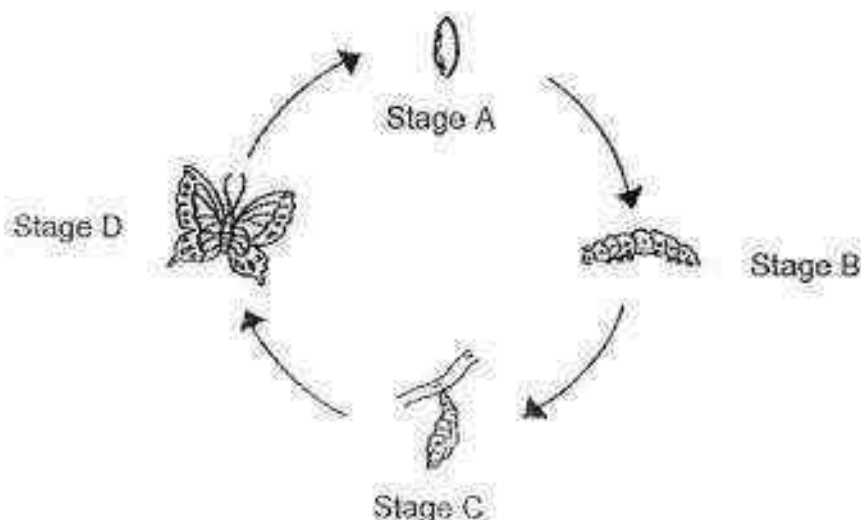
5. Sarah wanted to find out the conditions that affected the growth of bread mould. The table below shows the results of her experiment after 2 weeks.

<p>Toasted bread kept in a room with a temperature of <math>31^{\circ}\text{C}</math></p> 	<p>Bread kept in a room with a temperature of <math>31^{\circ}\text{C}</math></p> 
<p>Toasted bread kept in a room with a temperature of <math>25^{\circ}\text{C}</math></p> 	<p>Bread kept in a room with a temperature of <math>25^{\circ}\text{C}</math></p> 
<p>Toasted bread kept in a freezer with a temperature of <math>0^{\circ}\text{C}</math></p> 	<p>Bread kept in a freezer with a temperature of <math>0^{\circ}\text{C}</math></p> 

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

- (1) Mould only grows in an environment that has no light.
- (2) Moisture needed for moulds to grow is absent in toasted bread.
- (3) Mould will not grow if the temperature of the environment is  $0^{\circ}\text{C}$ .
- (4) Mould only grows if the temperature of the environment is  $20^{\circ}\text{C}$  and above.

6. The diagram below shows the stages in the life cycle of a butterfly.



Which of the following statements are correct?

- A It moults at Stage B.
- B It is a pupa at Stage A.
- C It is a larva at Stage B.
- D It stops eating at Stage C.

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

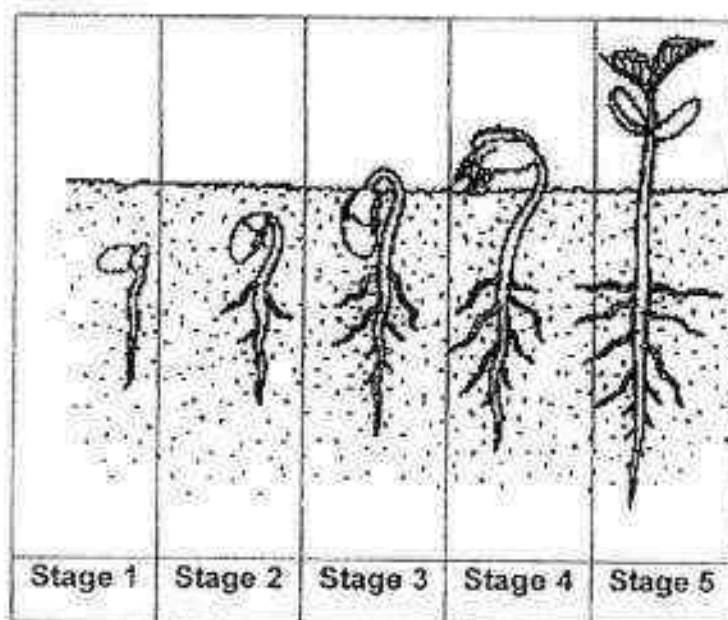
7. The table below shows the physical characteristics of Cat A and Cat B.

Cat A	Cat B
• Male	• Female
• Pink nose	• Black nose
• Short-tailed	• Short-tailed
• Black and white fur	• White fur

Based on the information above, what are the physical characteristics most likely displayed by the offspring of Cat A and B?

- (1) Brown nose, long-tailed, grey fur
- (2) Grey nose, long-tailed, brown fur
- (3) Black nose, short-tailed, brown fur
- (4) Pink nose, short-tailed, black and white fur

8. The diagram below shows the different stages of seed germination.



Which of the following statements is/are correct?

- A The seedling needs sunlight at Stage 1.
- B The seedling is able to make its own food at Stage 5.
- C The seedling gets its food from the seed coat in Stage 2.
- D The seed leaves provide food for the seedling at Stage 3.

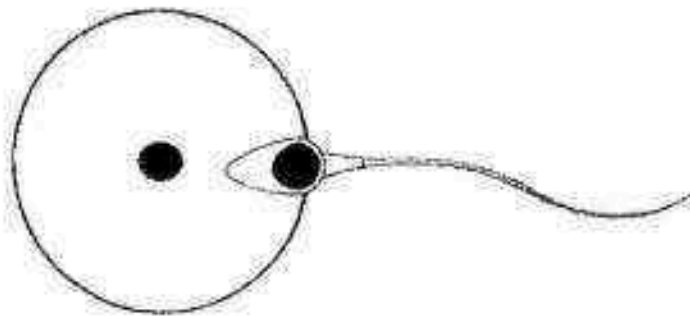
- (1) A and C only
- (2) A and B only
- (3) B and D only
- (4) A, B and D only



9. Which one of the following characteristics can be passed on from parents to their offsprings?

- (1) height, length of nail, lobed ears
- (2) colour of hair, face shape, freckles
- (3) freckles, length of hair, texture of hair
- (4) colour of eyes, ability to roll tongue, length of hair

10. The diagram below shows a process in the human reproduction.

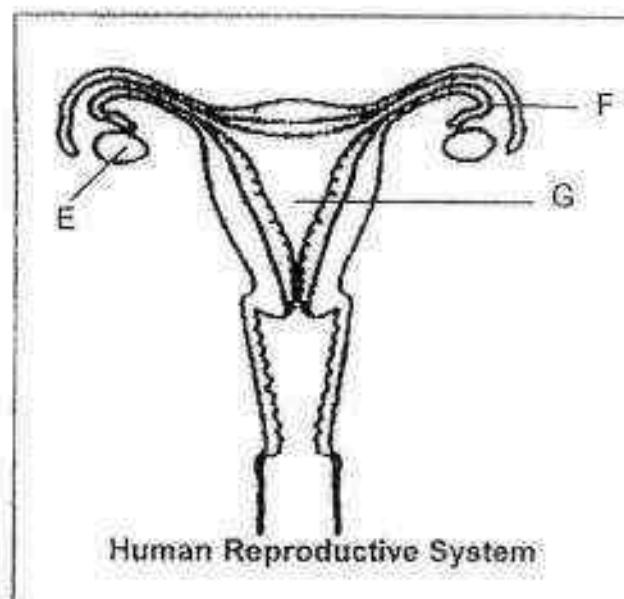
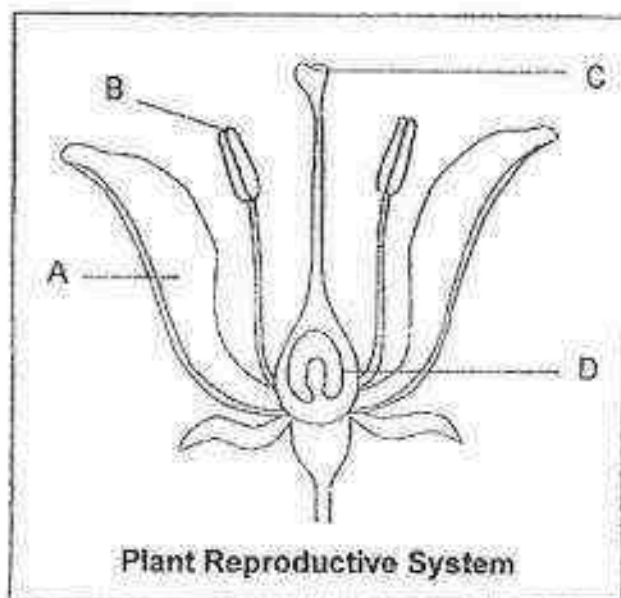


Which of the following are true about the process?

- A It takes place in the womb of the female.
- B It happens after division of cells take place.
- C It involves the fusing of an egg cell and a sperm.
- D Genetic information from the male and female adults are passed on to their young.

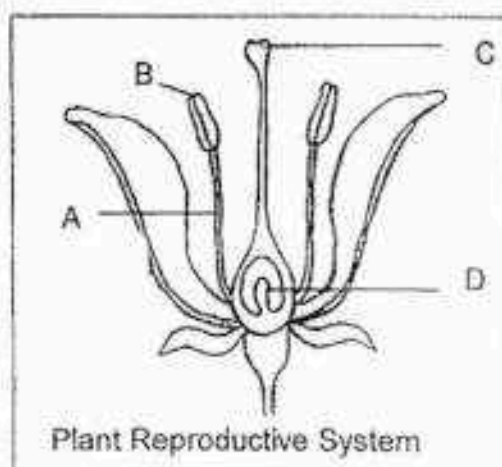
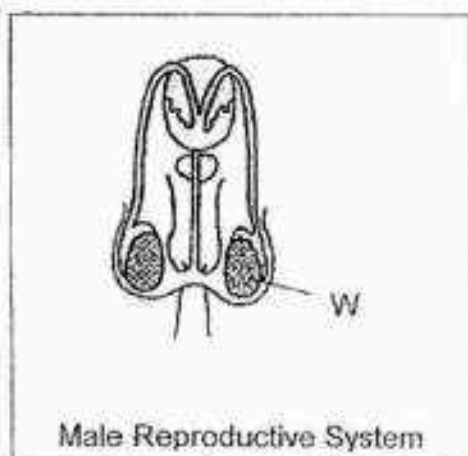
- (1) A and C only
- (2) C and D only
- (3) A, B and C only
- (4) B, C and D only

11. The table below compares the reproductive systems in a human and a plant.



	Where female reproductive cell is produced		Where fertilisation takes place	
	Human	Plants	Humans	Plants
(1)	E	D	F	D
(2)	F	B	E	C
(3)	G	A	G	D
(4)	E	C	F	B

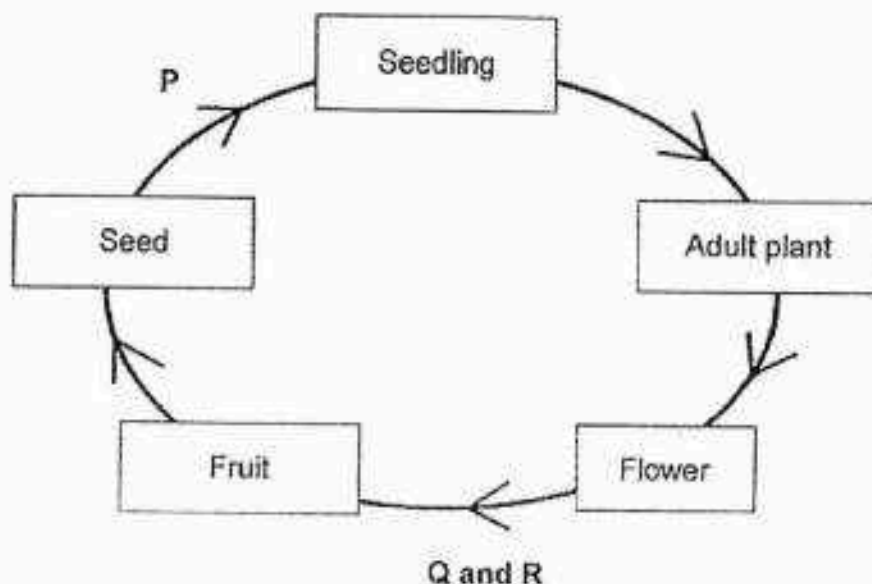
12. The diagrams below show the human male reproductive system and the plant reproductive system.



Which of the following part has a similar function as part W in the male reproductive system.

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

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



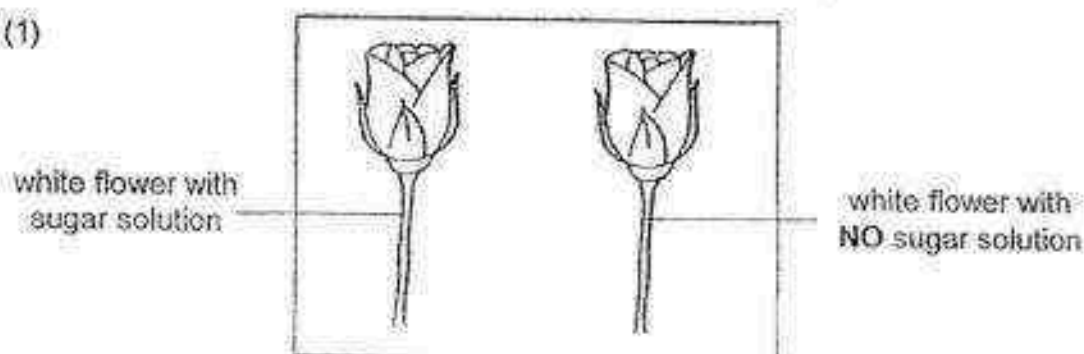
Which one of the following correctly identifies processes P, Q and R?

	P	Q	R
(1)	Germination	Pollination	Fertilisation
(2)	Fertilisation	Germination	Pollination
(3)	Pollination	Fertilisation	Germination
(4)	Fertilisation	Pollination	Germination

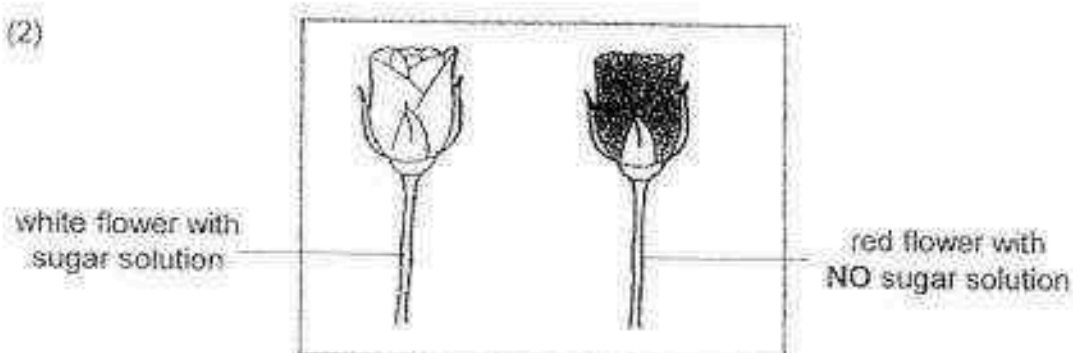
14. Ken wanted to find out if butterflies are attracted to red or white flowers. He used some red and white flowers and sprayed some of them with 10 cm<sup>3</sup> of sugar solution.

Which of the following set-ups should he use in order to carry out a fair test?

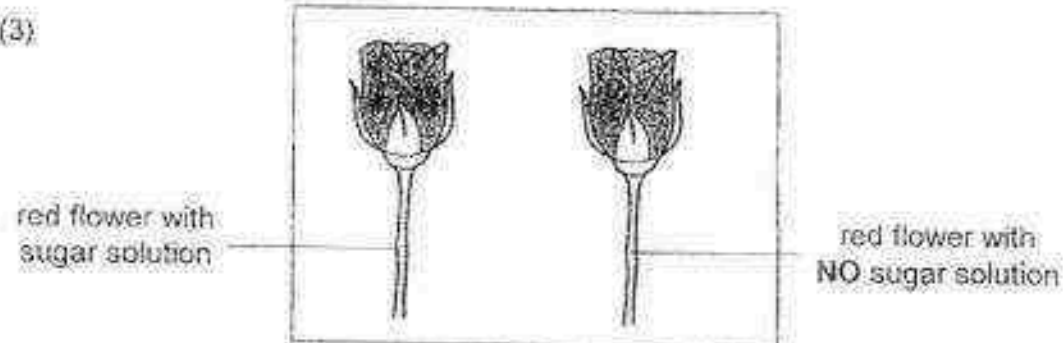
(1)



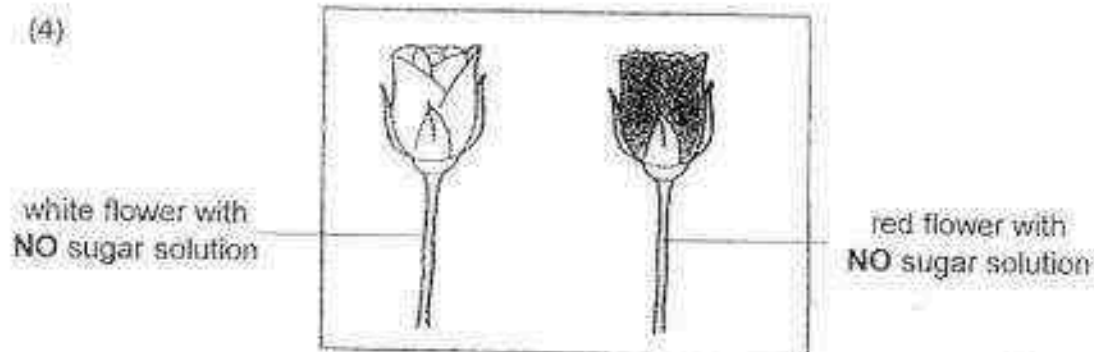
(2)



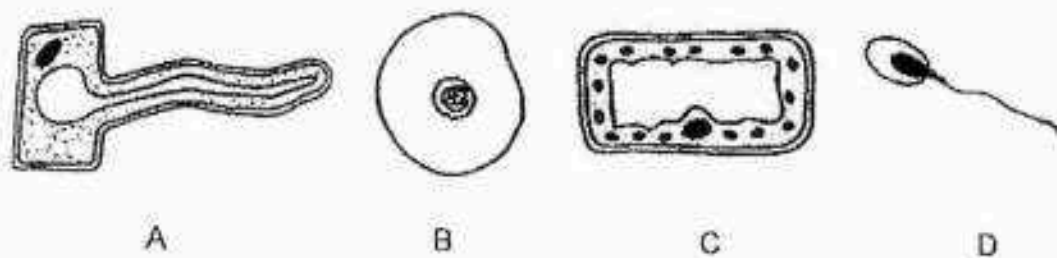
(3)



(4)



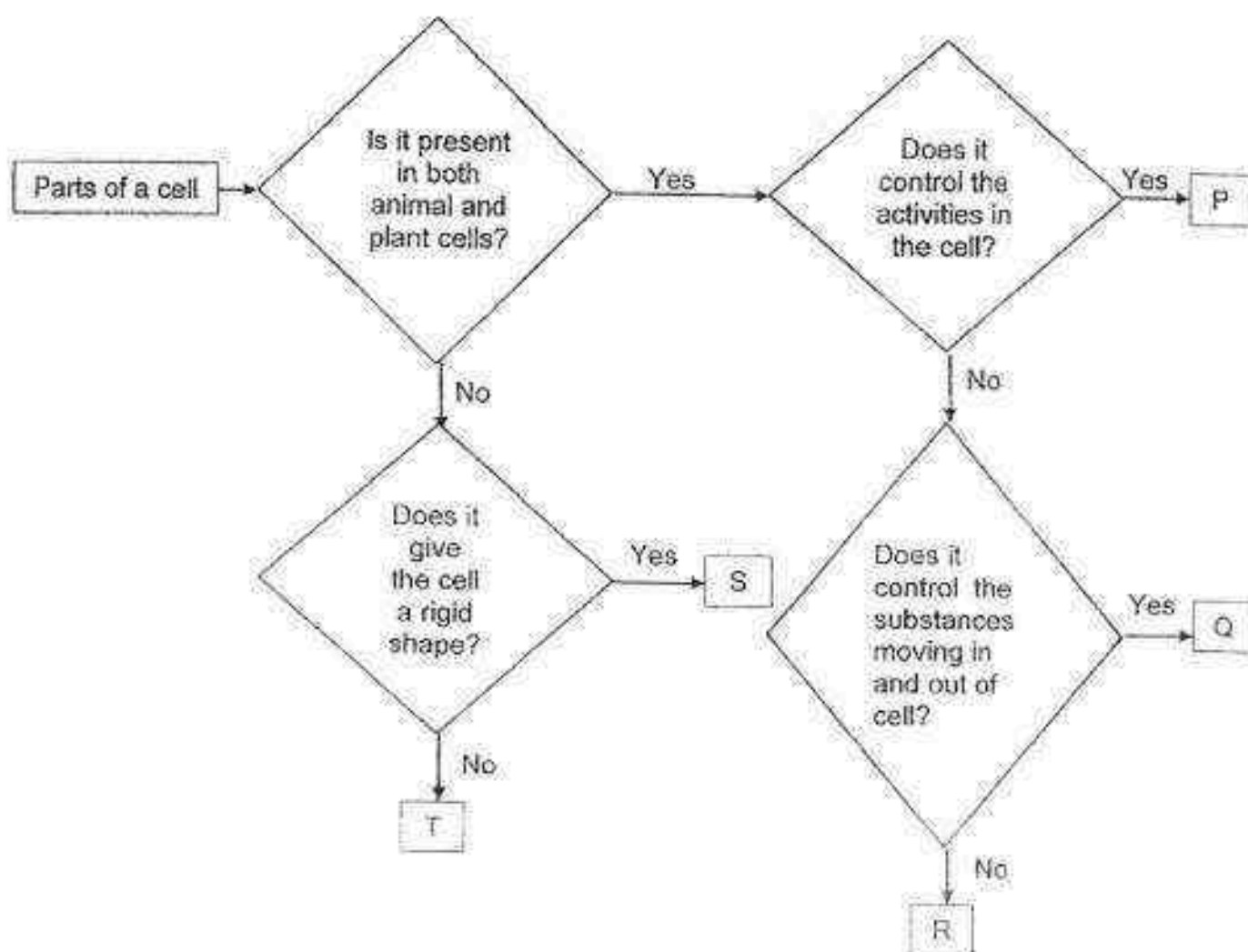
15. The diagram below shows four different cells, A, B, C and D.



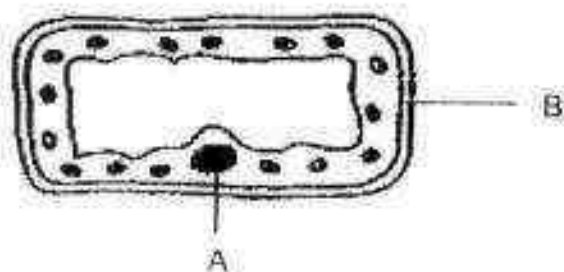
Which of the following is/are animal cell(s)?

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

16. Study the flow chart below.

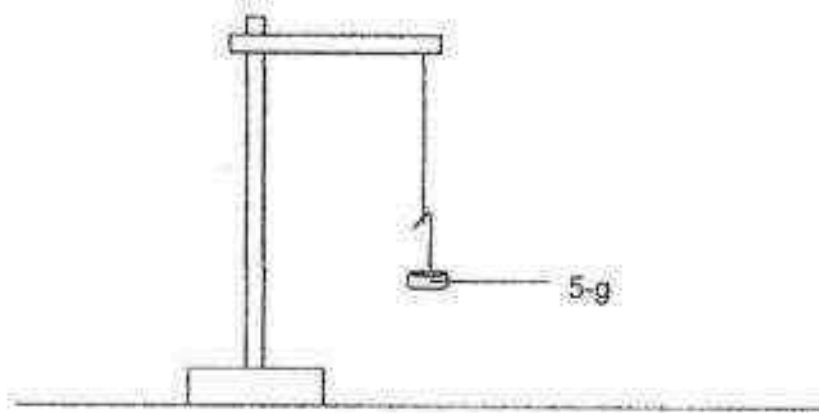


Which part, P, Q, R, S or T matches part A and B of the cell below?



	Part A	Part B
(1)	T	S
(2)	P	Q
(3)	Q	T
(4)	R	R

17. Siti hung 5-g weights onto 3 strings made of different materials. The strings were the same lengths and thickness. She continued to add 5-g weight onto each of the string and recorded the maximum number of weights that each string could hold before it broke.



Which property of materials was Siti testing?

- (1) strength
  - (2) flexibility
  - (3) waterproof
  - (4) transparency
18. The diagram below shows a picture of a life jacket.



The table below shows the physical properties of Materials A, B and C. A tick (✓) indicates the physical property of the material.

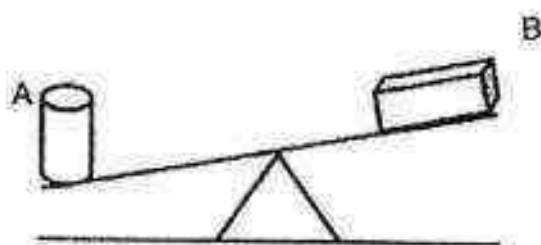
Material	Physical Property		
	Strong	Flexible	Waterproof
A			
B			
C			
D			

Based on the information given in the table, which one of the following materials is best used for making the life jacket?

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

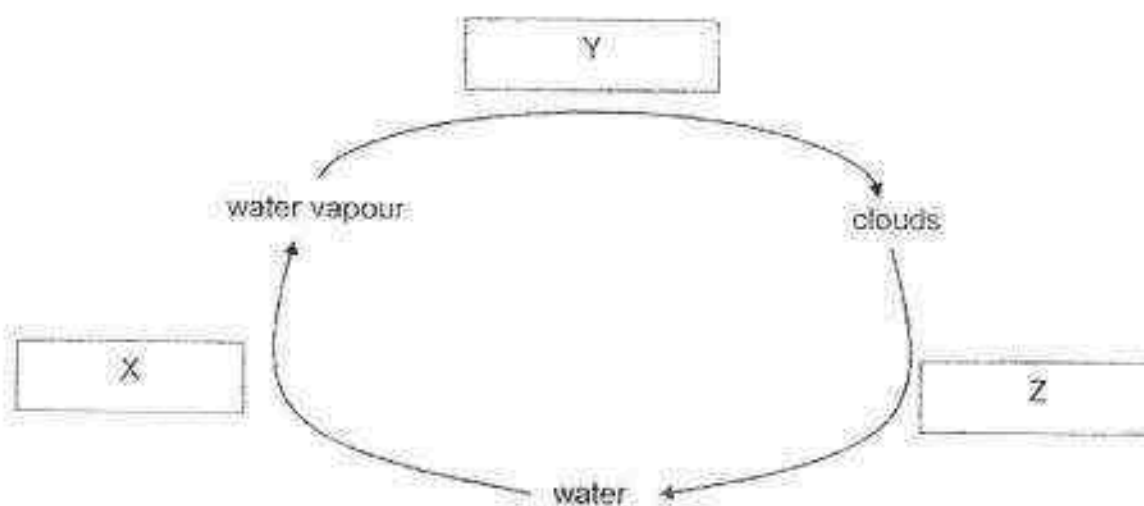


19. Two objects are placed on a balance as shown below.



Based on your observation of the diagram above, which one of the following statements is correct?

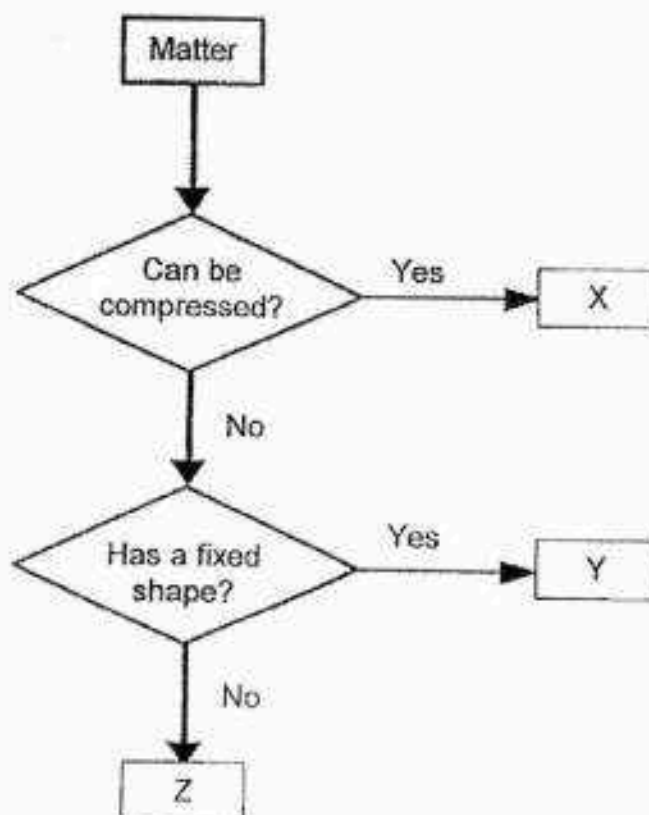
- (1) A has more mass than B
  - (2) A has more volume than B
  - (3) A and B cannot be compressed
  - (4) A and B are made of different materials
20. The diagram below shows the water cycle.



What do the letters X, Y and Z in the boxes stand for?

	X	Y	Z
(1)	evaporation	rain	condensation
(2)	evaporation	condensation	rain
(3)	condensation	evaporation	rain
(4)	condensation	rain	evaporation

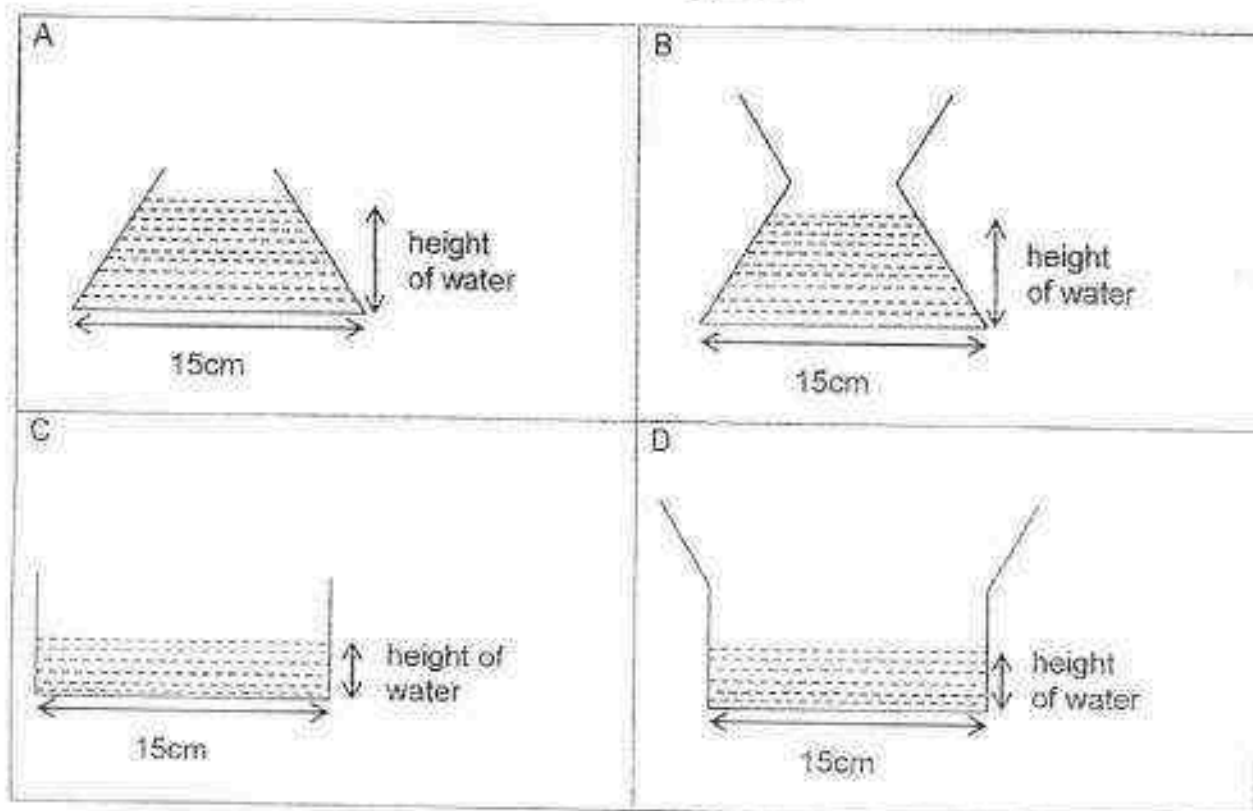
21. The flow chart is used to classify items, X, Y and Z.



Which one of the following correctly identifies oil, cup and water vapour?

	Oil	Cup	Water vapour
(1)	Z	Y	X
(2)	Y	X	Z
(3)	Z	X	Y
(4)	Y	Z	X

22. Peter poured  $300\text{cm}^3$  of water into each of the containers shown below which were made of the same material. The containers were left in the garden.



Which of the following containers would have the least amount of water left after a few hours?

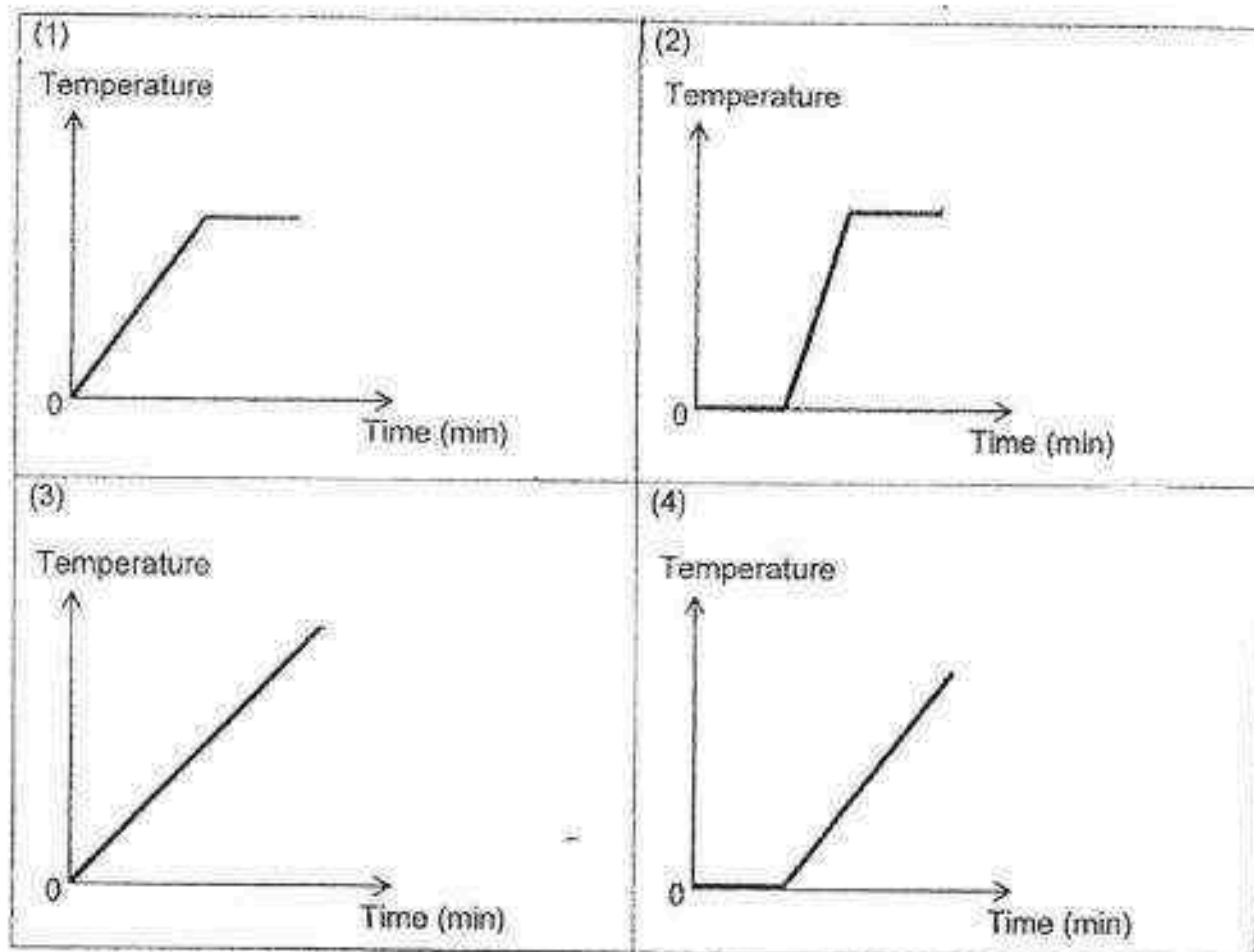
- (1) A and D only
- (2) A and B only
- (3) B and C only
- (4) C and D only

23. Substance P melts at  $65^{\circ}\text{C}$  and boils at  $600^{\circ}\text{C}$ . Which one of the following shows the state of substance P at  $50^{\circ}\text{C}$  and  $550^{\circ}\text{C}$  respectively?

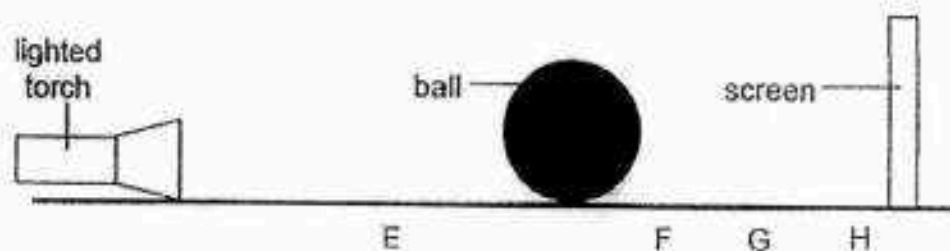
State of substance P at		
	50°C	550°C
(1)	solid	liquid
(2)	solid	gas
(3)	liquid	liquid
(4)	liquid	gas

24. In the kitchen, Ali heated a pot of ice cubes until it started to boil. Then he continued to let it boil for another 10 minutes.

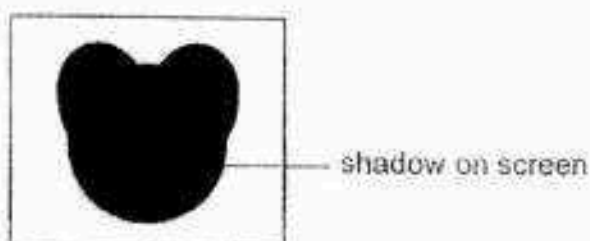
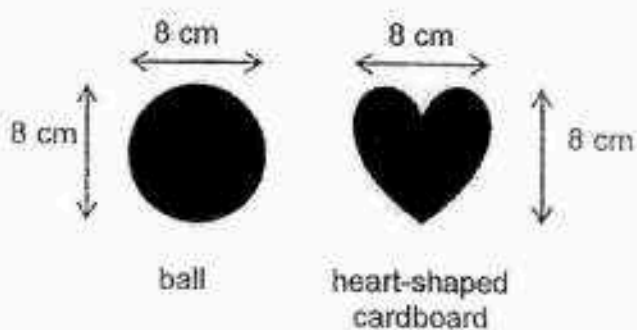
Which one of the following graphs below shows the changes in the temperature of the water correctly?



25. A ball was placed between a lighted torch and a screen as shown below.



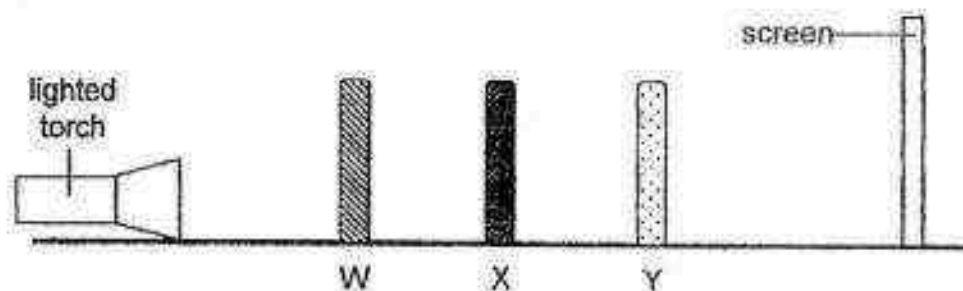
A ball was placed as shown in the diagram above. A heart-shaped cardboard could be placed in positions E, F, G or H, to obtain the shadow as shown below.



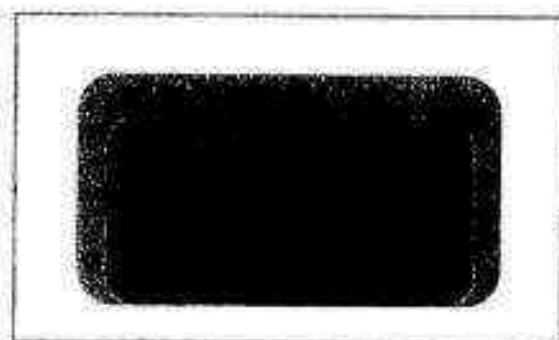
Which one of the following positions was the heart-shaped cardboard placed?

- (1) E
- (2) F
- (3) G
- (4) H

26. Three objects, W, X and Y, that were of identical size and shape, were placed between a lighted torch and a screen as shown below.



The following diagram shows the shadow cast on the screen.



Based on the above observation, which one of the following most likely describes the degree of transparency of objects, W, X and Y?

	W	X	Y
(1)	translucent	opaque	transparent
(2)	opaque	transparent	translucent
(3)	translucent	translucent	opaque
(4)	opaque	opaque	transparent

27. Johnny placed a glass of hot water into a basin filled with tap water.

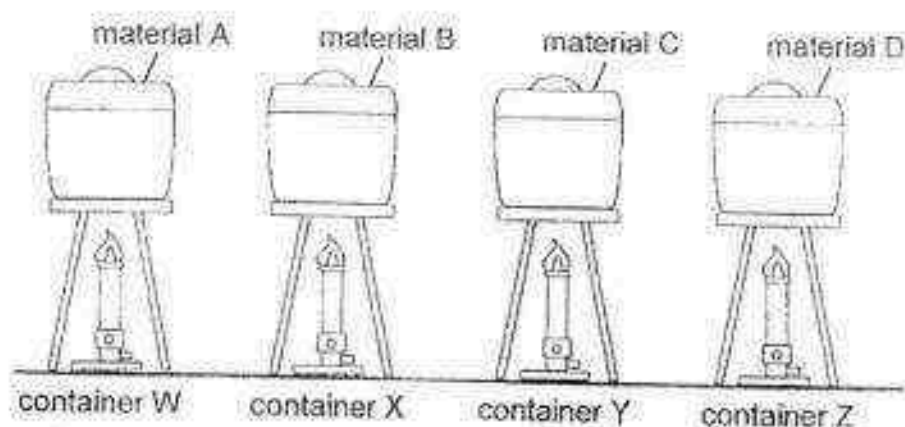


Which of the following statements are true as Jonny placed the set-up in a kitchen for 5 minutes?

- A The tap water lost heat to the hot water.
- B The temperature of the tap water increased.
- C The temperature of the hot water increased.
- D The hot water lost heat to the surrounding air.

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

28. Containers W, X, Y and Z are made of different materials A, B, C and D. The containers are of the same size and thickness. Same amount of water was poured into each container and heated with the same amount of heat.



The table below shows the time taken for the water in each container to boil.

	Container W	Container X	Container Y	Container Z
Time taken for the water to boil	40 min	15 min	65 min	35 min

Which material is the best conductor of heat?

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

Name: \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P5

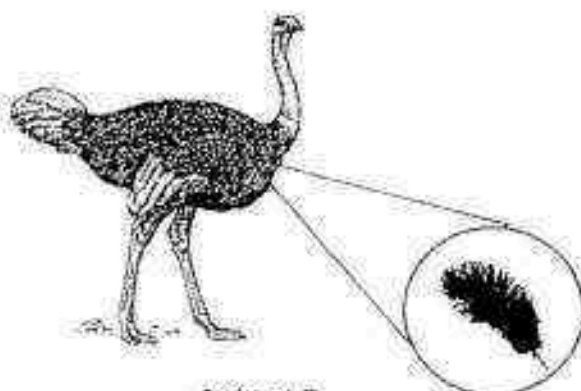
44

**SECTION B (44 marks)**

For questions 29 to 41, write your answers clearly in the spaces provided.

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

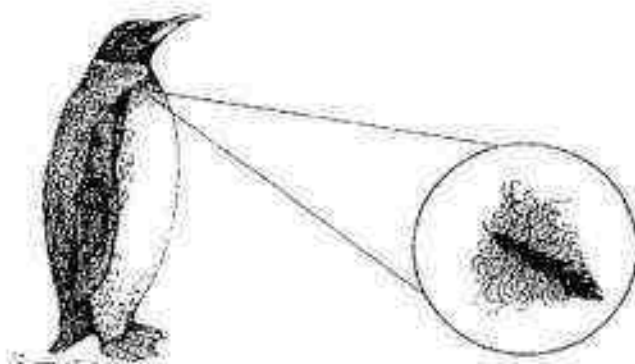
29. Study the diagrams below.



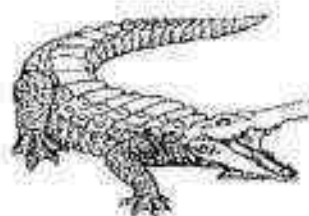
Animal P



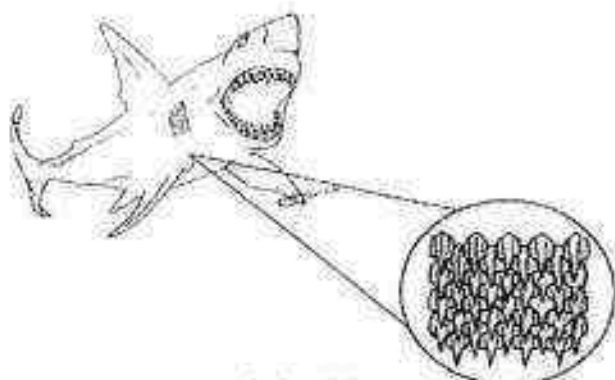
Animal Q



Animal R



Animal S



Animal T



Continue from Question 29

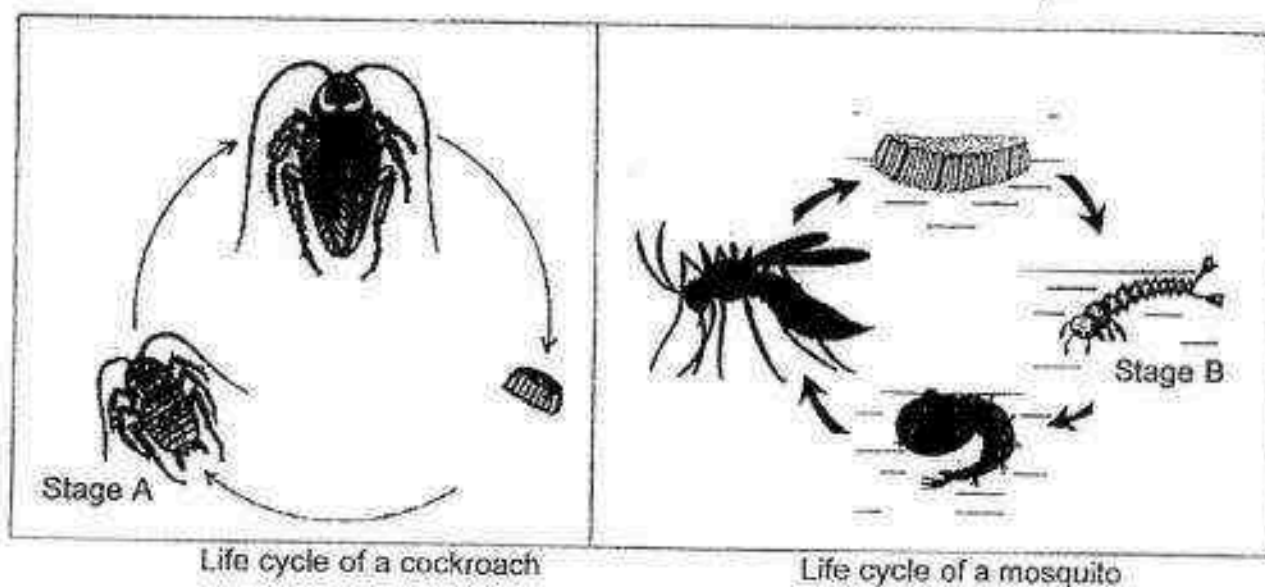
Classify Animals P, Q, R, S and T correctly in the table below.

[3]

Bird	Fish	Reptile

SCORE	3
-------	---

30. The diagram below shows the life cycles of the cockroach and mosquito.



- (a) State 2 differences between the animals shown at Stage A and Stage B. [2]

---



---



---

- (b) Based on the life cycle of the mosquito above, name the stage(s) which is/are most challenging to get rid of the mosquitoes. Explain your answer clearly. [1]

---



---



---

SCORE	3
-------	---

31. Ali wanted to find out if water is needed for seeds to germinate.

- (a) Which of the following variables should he keep constant in his experiment? [1]

Put a tick (✓) in the correct boxes.

Variables	To be kept constant (✓)
Type of seeds used	
Number of seeds used	
Amount of water given to the seed	
Location of set-ups	

- (b) Ali prepared a set-up by putting some of the healthy seeds into a pot of moist soil. Then he placed the set-up in a freezer. He told his friend that the seeds will germinate after a few days.

Do you agree with Ali? Explain your answer clearly. [2]

---



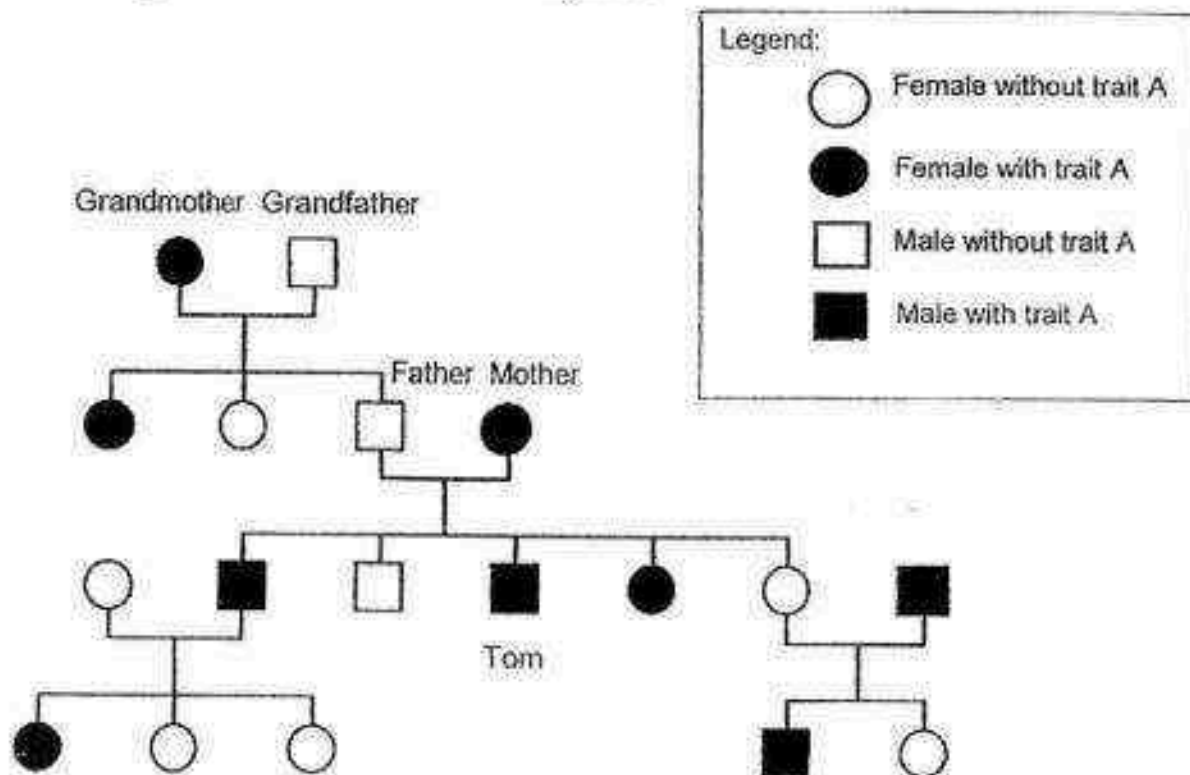
---



---

SCORE	3
-------	---

32. The diagram below shows Tom's family tree.



Based on the diagram above, answer the following questions.

(a) Who does Tom inherit trait A from? [1]

---

(b) How many of his siblings have inherited trait A? [1]

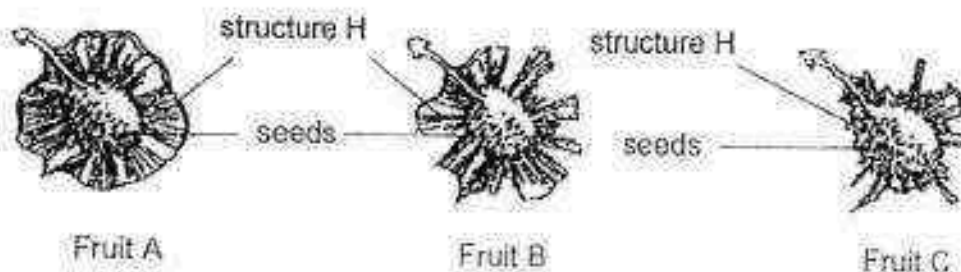
---

(c) Which part of the cell carries information of trait A that is passed on to the next generation? [1]

---

SCORE	3
-------	---

33. Mary wanted to investigate if the surface area of structure H of fruits A, B and C would affect the time taken by the fruits to reach the ground when dropped.



The fruits were released at the same time, 6 m above the ground. The time taken by each fruit to reach the ground is recorded in the table below.

Fruit	Time taken by the fruit to reach the ground (min)
A	2.6
B	1.3
C	0.9

- (a) Based on the results above, what is the relationship between the time taken by the fruits to reach the ground and the surface area of structure H of the fruit? [1]

---



---

SCORE	1
-------	---

## Continue from Question 33

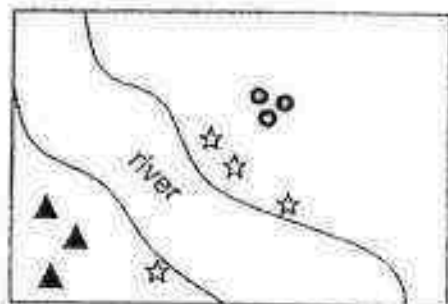
Mary studied the locations of three different plants, P, Q and R, on an area of land over time. The locations of the plants are shown on the maps below.

## Legend:

Plant P ▲

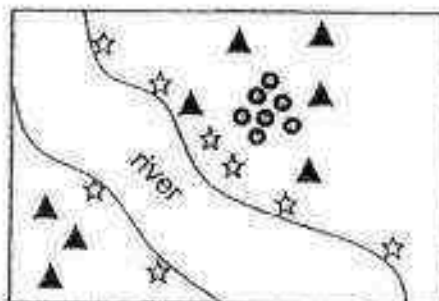
Plant Q ☆

Plant R ●



Before

wind  
direction



After

wind  
direction

- (b) Which plant is likely to have fruits with structure H? Explain your answer. [2]

---



---



---

- (c) Besides having structure H, state another characteristic that the fruits, stated in your answer in (a), may have. [1]

---



---

- (d) Which plant is likely to disperse its seeds by splitting? Give a reason for your answer. [1]

---

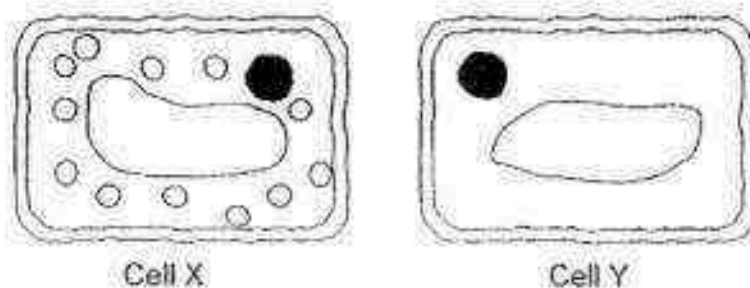


---

SCORE	4
-------	---

P5 SA1 Science 2016

34. James observed cell X and Y, taken from some parts of a plant, under the microscope.



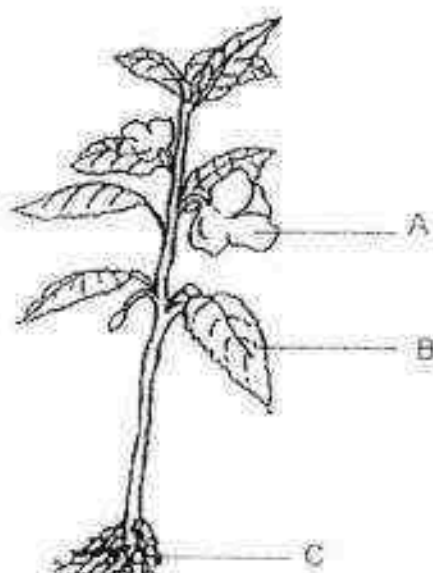
- (a) State an observable similarity between the cell X and Y. (Do not mention size and shape)

[1]

---



---



- (b) Is Cell X taken from part A, B or C of the plant? Explain your answer.

[2]

---

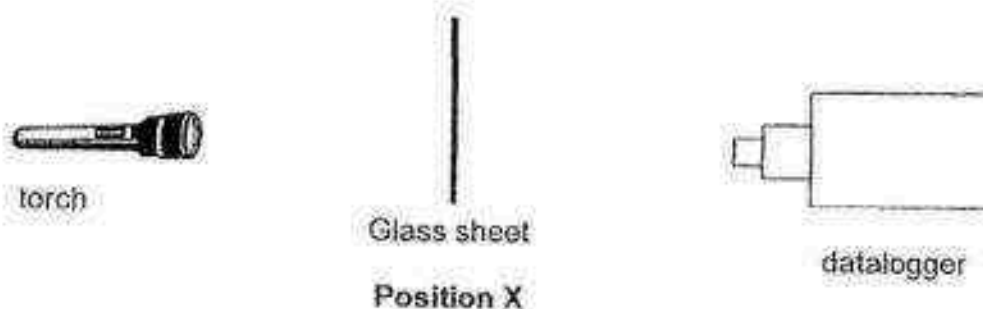


---

SCORE	3
-------	---

35. Alex wanted to find out the best type of glass to make a bottle to store olive oil. Olive oil is best stored away from light to preserve its taste.

He placed the glass sheets, A, B, C and D, of the same size at position X and shone a torch through it. The amount of light that passed through the glass was recorded in a datalogger as shown in the diagram below.



The amount of light detected from the torch, with the absence of glass sheet, was 50 units.

He repeated the experiment 3 times and recorded the average of the readings in the graph below.

Glass sheet	Average amount of light detected (units)
A	10
B	48
C	35
D	40

Based on the information given, answer the following questions.

- (a) Why is it important for Alex to repeat his experiment 3 times? [1]

---



---



---





## Continue from Question 35

- (b) Which kind of glass, A, B, C or D, should he use to make into bottles for storing olive oil? Give a reason for your answer. [2]

---

---

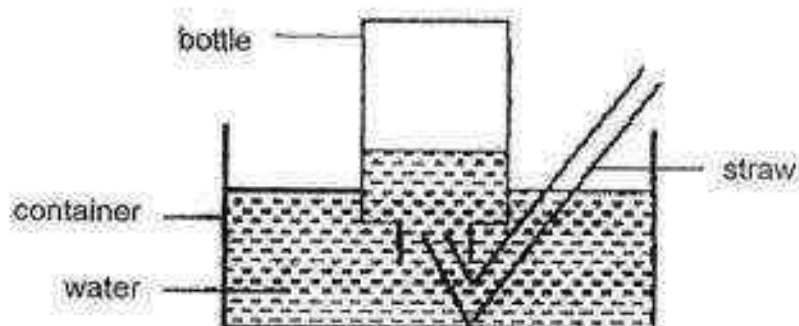
---

- (c) Based on the given data, which glass, A, B, C or D, is suitable to be made into a camera lens? [1]

---

SCORE	<div style="border: 1px solid black; width: 100px; height: 40px; position: relative;"><div style="position: absolute; bottom: 0; right: 0; width: 10px; height: 10px; text-align: center; line-height: 10px;">3</div></div>
-------	---

36. Linda prepared the following set-up and blew into the straw.



- (a) What would happen to the water level in the bottle when Linda blew into the straw? Explain your answer. [2]

---



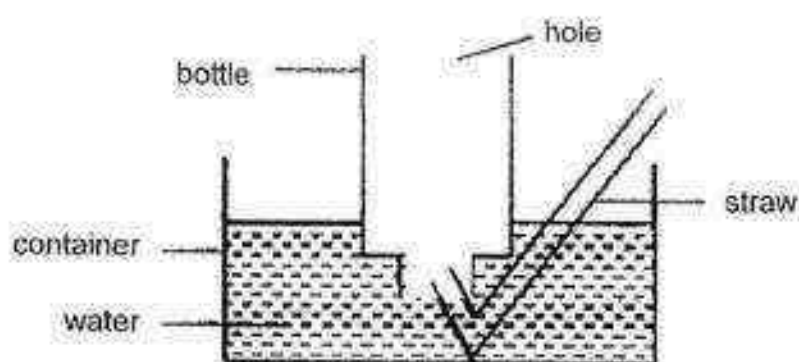
---



---

Linda cut a hole in the bottle as shown in the diagram below.

- (b) Draw the water level in the bottle in the diagram below. [1]



- (c) Explain your answer in (b) [1]

---



---



---

SCORE	4
-------	---

P5 SA1 Science 2016

37. Siti prepared 4 set-ups, W, X, Y and Z, using identical containers filled with water. The table below shows the different conditions that the set-ups were exposed to, at the start of the experiment.

	Experiment			
	W	X	Y	Z
Temperature of room	25°C	25°C	25 °C	30°C
Volume of water (cm <sup>3</sup> )	300	300	500	300
Presence of wind	Yes	No	No	Yes

Based on the information above, answer the following questions:

- (a) At the end of the experiment, which set-up will have the least amount of water left?

[1]

---

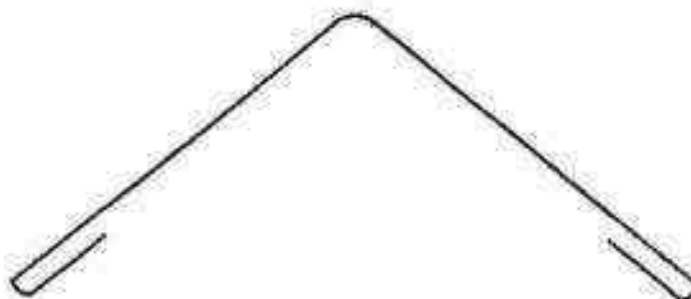
- (b) If Siti wanted to investigate how the rate of evaporation of water was affected by the presence of wind, which of the above set-ups should she use?

[1]

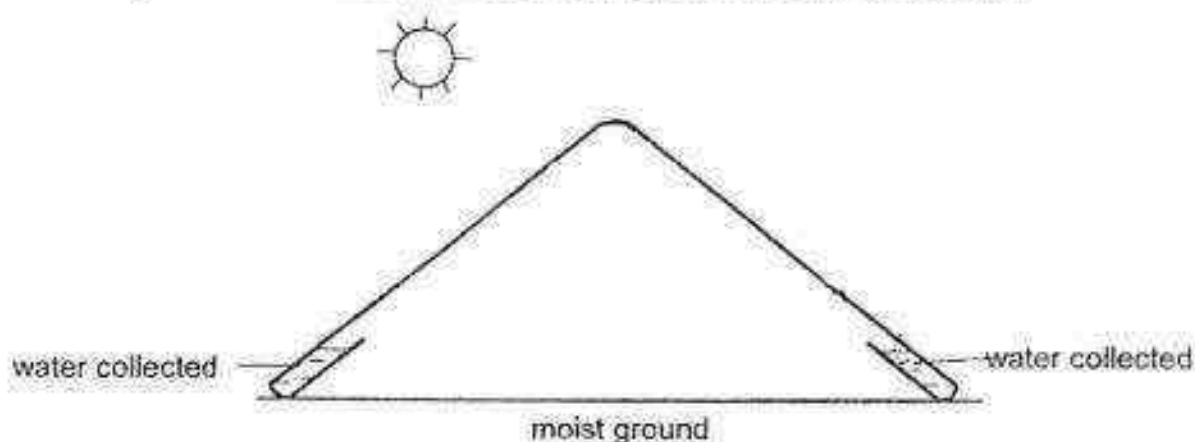
---

SCORE	
-------	---

38. The diagram below shows a watercone which is a water collecting device.



The diagram below shows how water is being collected in the watercone.



- (a) Explain how water is being collected in the watercone. [2]

---



---



---



---

- i) Under normal weather conditions, 2 litres of water can be collected by the Watercone. When there is a drought would the amount of water collected be less than or more than 2 litres. Explain your answer. [2]

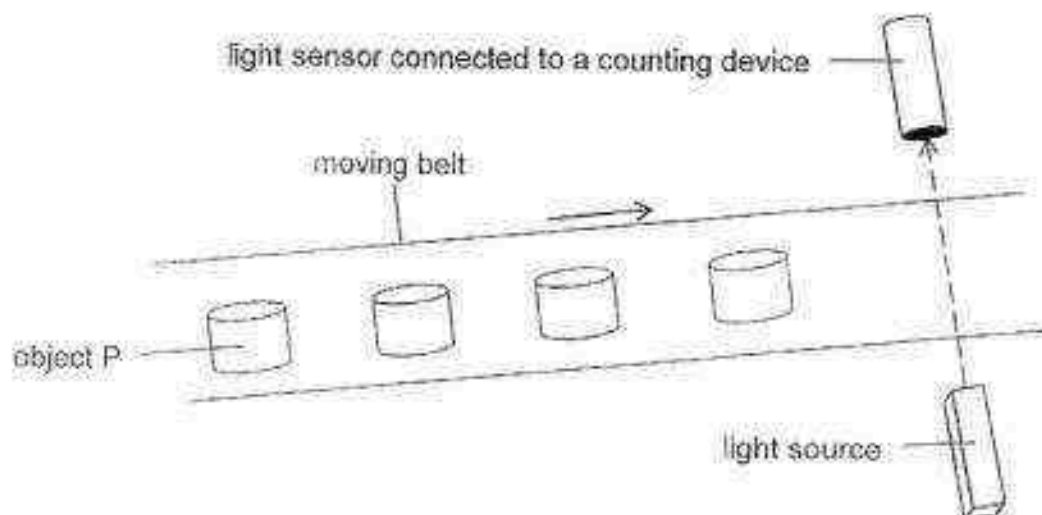
---



---

SCORE	4
-------	---

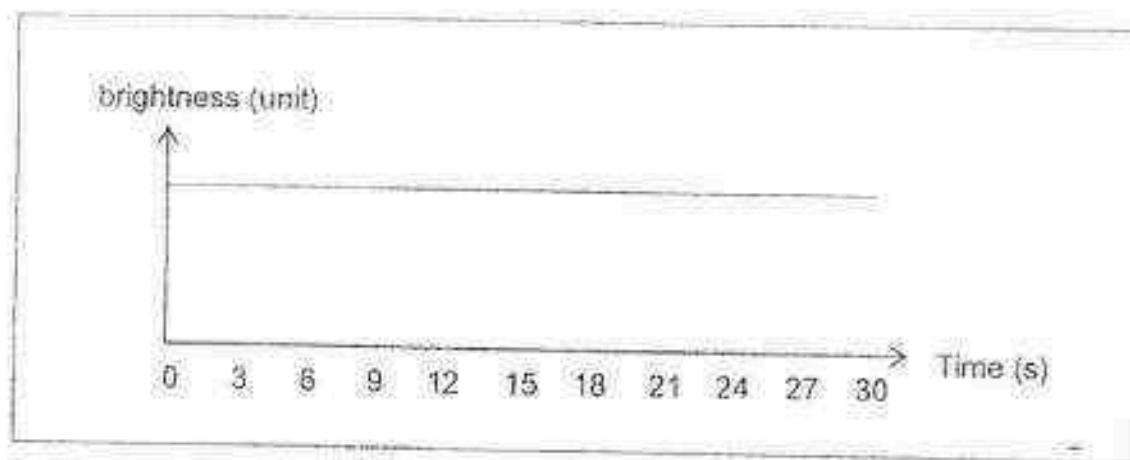
39. Kevin sets up an experiment to use a light sensor to count the number of identical object P on a moving belt which moves at a constant speed. Objects P do not allow light to pass through it. When object P is between the light source and the sensor, it blocks the light from reaching the sensor.



The height of object P is 10 cm. Kevin places the light source and sensor 15 cm above the belt respectively.



He records the data as shown below.



Continue from Question 39

- (a) When the light source and sensor are placed 15 cm above the belt, Object P cannot be counted. Explain why. [2]

---

---

---

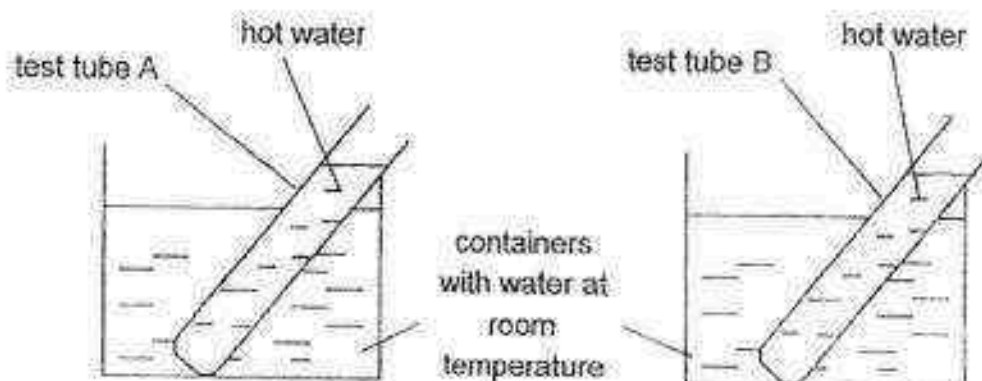
- (b) Without replacing object P, suggest two changes Kevin can do to the set-up shown above so that object P can be counted. [2]

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

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

SCORE	
-------	---

40. Karen placed identical test tubes, A and B, filled with equal amount of water at different temperatures in identical containers of water at room temperature as shown below.



After 30 minutes, she started to record the temperature of the water at every 10 minutes interval.

Duration (min)	Temperature of water in test tube ( $^{\circ}\text{C}$ )	
	A	B
30	32	30
40	30	30
50	30	30

- (a) Based on the information above, what is the room temperature? [1]

---



---

- (b) Which test tube contained water of a higher temperature at the start of the experiment? Give a reason for your answer. [1]

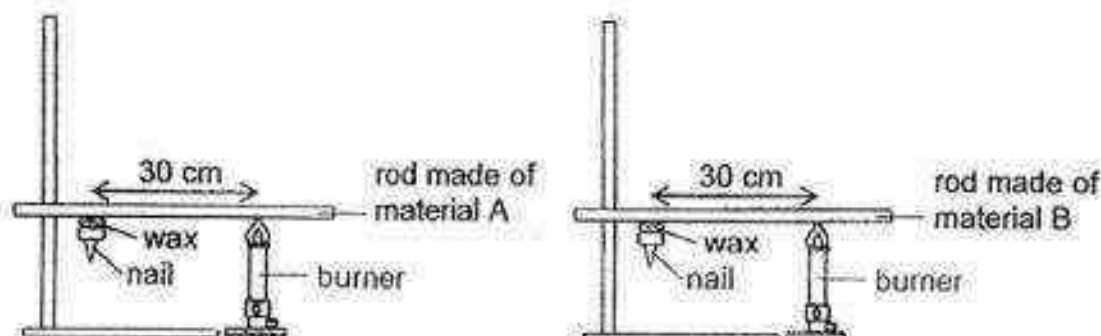
---



---

SCORE	2
-------	---

41. Jenny used identical burners to heat up rods made of materials A and B. She recorded the time taken for the wax to melt and the nails to drop.



- (a) Why did the wax in both set-ups melt after the burners were lit for some time? [1]

---



---

- (b) State another variable that should be kept the same in the two set-ups. [1]

---



---

- (c) The time taken for the wax to melt and nail to drop off is recorded in the table below.

Rod used	Time taken (min)
rod made of material A	3
rod made of material B	7

Which material is more suitable to make a cooking pot? Explain your answer. [2]

---



---



---

THE END



EXAM PAPER 2016 (P5)

SCHOOL : RAFFLES GIRLS'

SUBJECT : SCIENCE

TERM : SA1

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

29) Bird

Fish

Reptile

P,R

T

S,Q

30)a) At stage A the nymph of the cockroach does not live in the water but the larva of the mosquito lives in the water and At stage A the nymph have wings but the larva does not have wings.

b) The adult stage. The mosquito can fly away and would not be able to be caught as it has wings at adult stage therefore it was challenging.

31)a) Type of seeds used

Number of seeds used

Location of set-ups

31)b)No. I do not agree with Ali. Seeds need warmth to grow and there is no warmth in a freezer, so the seed will never germinate after a few days.

32)a)Tom inherit trait A from his mothers.

b)2 siblings.

c)The nucleus of the cell carries information of trait A.

33)a)As the surface area of structure H of the fruit increases, the longer the time taken by the fruits to reach the ground.

b)Plant P. The fruits with structure H has wing-like structures and so it gets dispersed by wind. It is also far apart from its parent plant and follows the wind direction, therefore plant P have fruits with structure P.

c)It has a light weight.

d)Plant R. The young plants of plant R are clustered together.

34)a)They both have a cell wall.

b)Part B. It has chloroplast that contains chlorophyll to trap light and make food for the plant and part B's function is to make food.

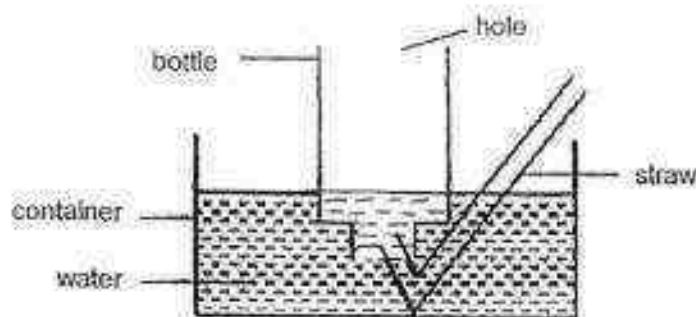
35)a)So that his result reliable.

b)Glass A. It allow the least amount of light to pass through it.

c)Glass B.

36)a)The water level will decrease. The air blown into the bottle will displace the water and occupy the space which was previously occupies by the water.

b)



36)c) The air in the bottle will escape through the hole and the water from the container will enter the bottle and rise to the same level as the water level in the container.

37)a) Set-up Z.

b) Set-up W and X.

38)a) The water vapour lost heat and condensed into water droplets on the cooler inner surface of the water cone, one water droplets then flow along the cooler inner surface of the water cone and is collected at the sides.

b) During droughts there will be less water present on the ground to be vapourated into water vapour therefore with the reduce amount of water vapour condensed into water droplets on the cooler water cone, less water will be added.

39)a) The light sensor might count on how much light can pass through the belt and not object P and just by luck that the belt might have the same amount of light that can pass through as object P.

b)i) Lower the light source by 5/10cm above the belt.

ii) Lower the light sensor by 5/10cm above the belt.

40)a) 30 °C

b) Test tube A. The water in test tube A took a lower time to lose heat to water in container to reach room temperature at 30 °C hence it contained water of higher temperature at the start.

41)a) The wax gain heat from the burner through the heated Rod.

b) Size of wax.

c) Material A. Material A is a better conductor of the wax on rod made of material A gained heat from heat source and melt faster hence the pot made of material A will allow the heat to be conducted from the flame to food faster to cook.



# RED SWASTIKA SCHOOL

## SCIENCE 2016 SEMESTRAL EXAMINATION 1 PRIMARY 5

Name : \_\_\_\_\_ (      )

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

Date : 10 May 2016

### BOOKLET A

Total time for Booklets A & B: 1h 45 min

Booklet A: 28 questions (56 marks)

#### Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
  - a. Page 1 to Page 17
  - b. Questions 1 to 28

### Section A

For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

1. Alex placed 100ml of water and 100g of food in three covered containers, X, Y and Z. He ensured that there was enough air in the containers. He recorded the amount of water and food left at the end of a week in the table below.

Container	Amount of water (ml)	Amount of food (g)
X	43	33
Y	28	38
Z	100	100

Based on the above information, which containers contain a living thing?

- (1) X and Y only
- (2) X and Z only
- (3) Y and Z only
- (4) X, Y and Z

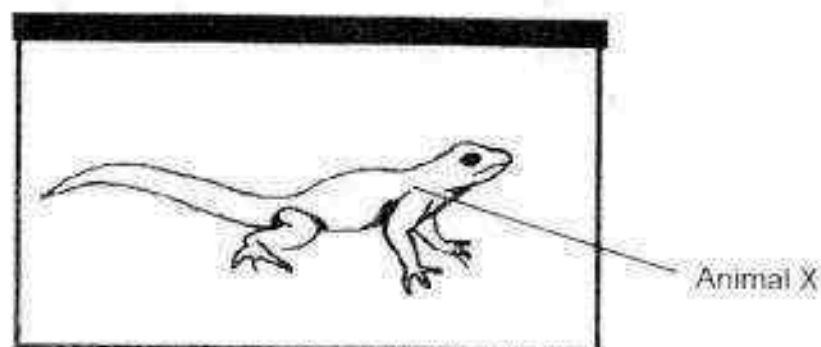
2. Study the flow chart shown.



Which of the following questions does X represent?

- (1) Does it lay eggs?
- (2) Does it have feathers?
- (3) Does it have six legs?
- (4) Does it have two pairs of wings?

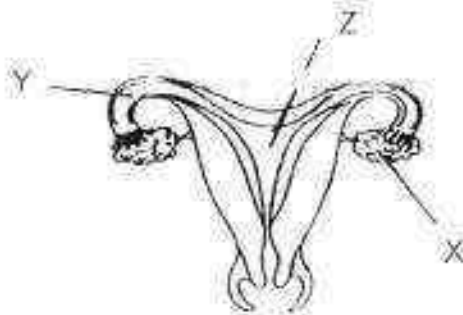
3. Yune puts animal X into a covered glass container as shown.



Which one of the following correctly describes how the amount of gas in the container will change after 10 minutes?

	carbon dioxide	oxygen	water vapour
(1)	decreases	increases	remains the same
(2)	increases	decreases	decreases
(3)	remains the same	decreases	remains the same
(4)	increases	decreases	increases

4. The diagram shows part of the human female reproductive system.



Which of the following statements is true of the system shown?

- (1) The egg travels from Y to X.
- (2) A fertilised egg is released from X every month.
- (3) The fertilised egg develops in Z.
- (4) The sperm fertilised the egg at X.

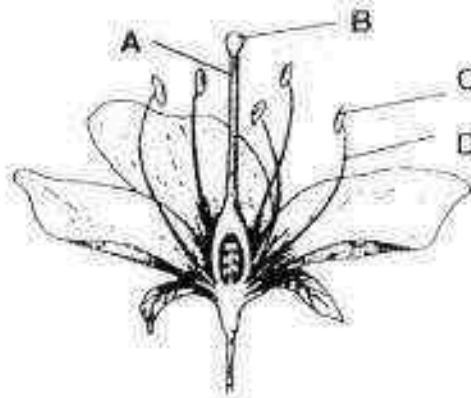
5. The statements below describe how sexual reproduction in plants takes place.

- A: Male reproductive cell fuses with female reproductive cell.
- B: Pollen grains are transferred to stigma.
- C: Anther releases pollen grains.
- D: Pollen tube grows towards ovule.
- E: Seed develops.

Which of the following shows the correct sequence of events in the process of sexual reproduction?

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

6. The diagram shows the cross section of a flower.



Which of the following correctly represents the parts of the flower?

	A	B	C	D
(1)	filament	anther	stigma	style
(2)	style	stigma	filament	anther
(3)	stigma	style	anther	filament
(4)	style	stigma	anther	filament

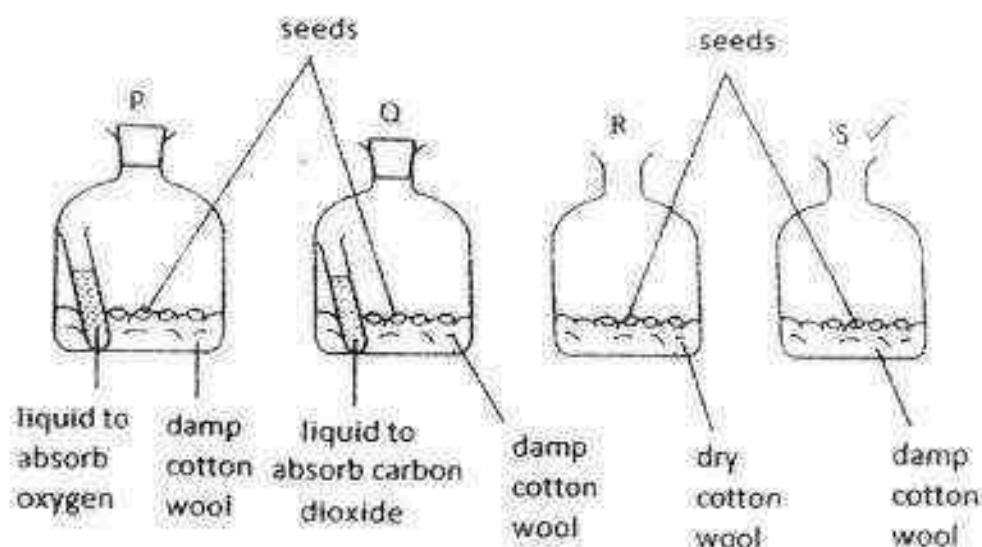
7. The table shows the characteristics of four fruits, A, B, C and D.

Fruit	Size	Weight	Other characteristics
A	Small	Light	It is sweet.
B	Small	Light	It has a wing-like structure.
C	Big	Heavy	It has fibrous husk.
D	Small	Light	It has a dry fruit wall when it is ripe.

How are fruits A, B, C and D most likely to be dispersed?

	A	B	C	D
(1)	Wind	Animals	Water	Splitting
(2)	Animals	Wind	Water	Splitting
(3)	Animals	Wind	Splitting	Water
(4)	Water	Splitting	Animals	Wind

8. Similar seeds were placed in four identical bottles at room temperature as shown in set-ups P, Q, R and S below.

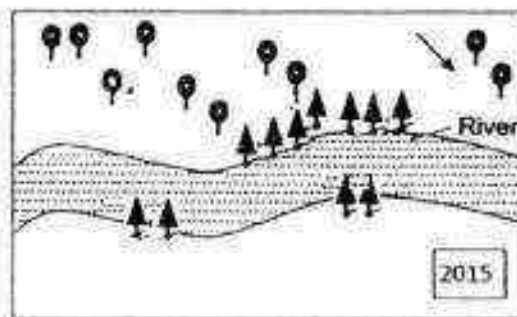
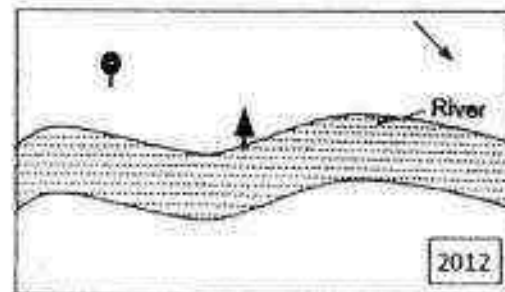


After three days, only seeds in two set-ups germinated. Which two set-ups could they be?

- (1) P and R
- (2) Q and R
- (3) P and S
- (4) Q and S



- 9 Two types of plants are grown on an island. ● and ▲ represent the two types of plant. The following diagrams show changes in plant growth on one part of the island over a period of three years.



Key

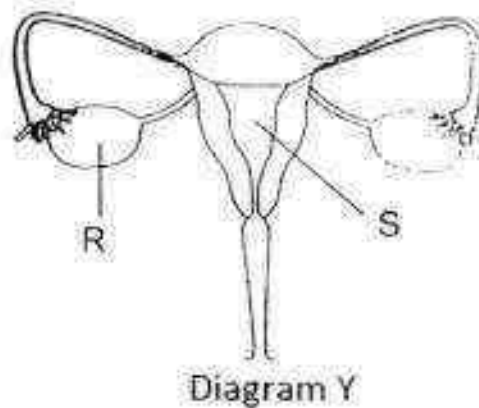
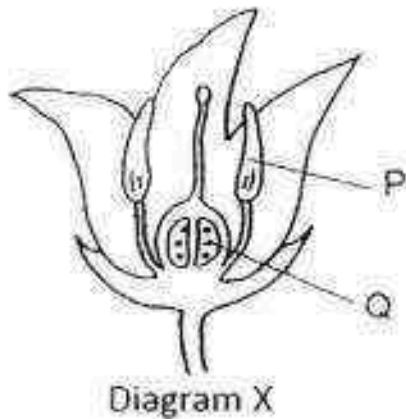
Direction of  
wind during  
fruiting season



Which of the following correctly shows the most likely characteristics of the fruits of the plants?

	●	▲
(1)	Has hooks	Has fibrous husk
(2)	Has fibrous husk	Has hooks
(3)	Has wing-like structure	Has fibrous husk
(4)	Has wing-like structure	Has hooks

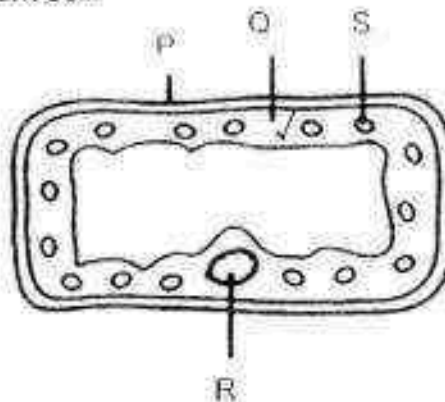
10. The diagrams below show the reproductive parts of a flower and a human.



Which of the following represent the female parts that contain egg cells?

- (1) P and R
- (2) P and S
- (3) Q and R
- (4) Q and S

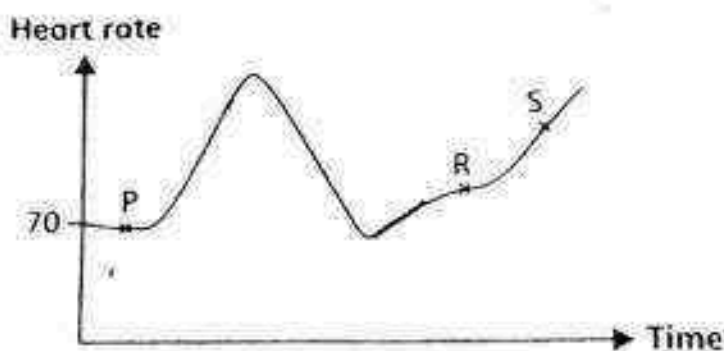
11. The diagram shows a plant cell.



Which two parts can also be found in animal cells?

- (1) P and Q
- (2) P and S
- (3) Q and R
- (4) R and S

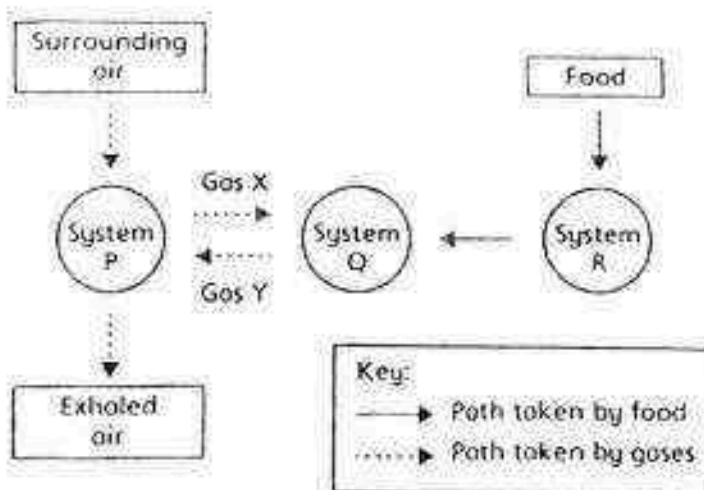
12. The following graph shows Judy's heart rate over a few hours.



Which one of the following correctly shows Judy's activity and her heart rate?

	P	R	S
(1)	Resting	Jogging	Running
(2)	Resting	Running	Walking
(3)	Jogging	Resting	Running
(4)	Running	Jogging	Resting

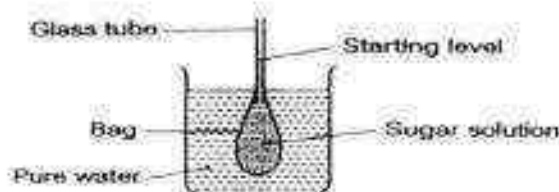
13. The diagram below shows how food and various gases are transported in the human body.



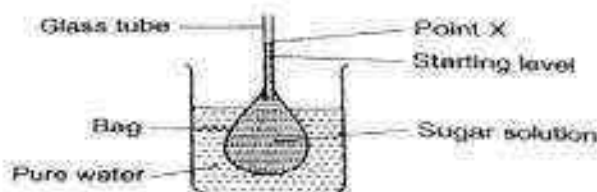
Which systems do P, Q and R represent and what is gas X?

	System P	System Q	System R	Gas X
(1)	Digestive	Respiratory	Circulatory	Carbon dioxide
(2)	Circulatory	Respiratory	Digestive	Carbon dioxide
(3)	Respiratory	Digestive	Circulatory	Oxygen
(4)	Respiratory	Circulatory	Digestive	Oxygen

14. Jasmine set up the experiment as shown. She recorded the starting level of the liquid in the glass tube.

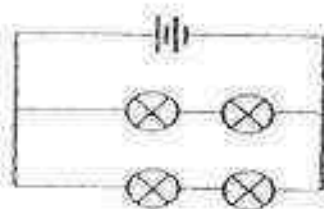


After three hours, she observed that the bag had become bigger and the liquid level in the glass tube had risen to point X.

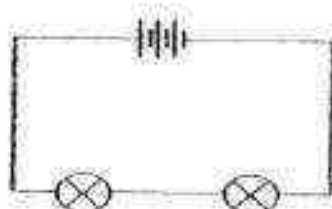


Which part of the plant cell performs the same function as the bag?

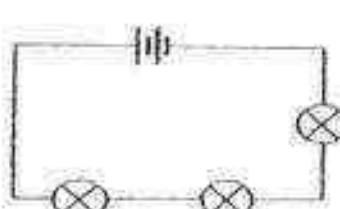
- (1) Nucleus
  - (2) Cytoplasm
  - (3) Chloroplast
  - (4) Cell membrane
15. The diagrams show three electrical circuits, X, Y and Z, made up of the same type of bulbs and batteries.



Circuit X



Circuit Y

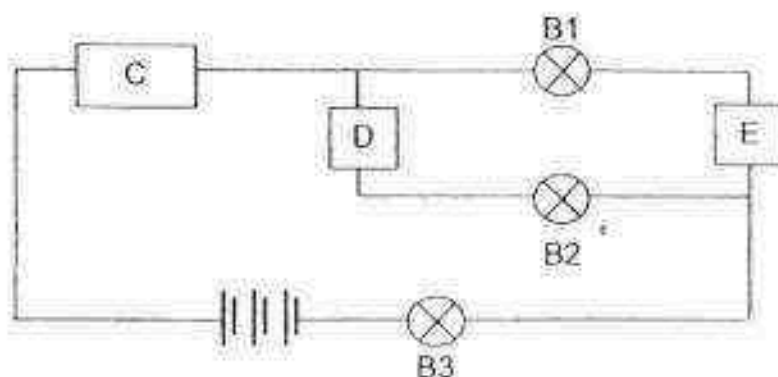


Circuit Z

Which of the following statements is correct?

- (1) The bulbs in circuit X are the brightest.
- (2) The bulbs in circuit Y are the dimmest.
- (3) The bulbs in circuit Z are dimmer than the bulbs in circuit X.
- (4) The bulbs in circuit X are brighter than the bulbs in circuit Y.

16. Aminah had three rods, C, D and E, made of different materials. She placed them with three bulbs, B1, B2 and B3, in the circuit below.



She observed whether each bulb lighted up. The results are shown in the table.

Did the bulb light up?		
B1	B2	B3
Yes	No	Yes

Which of the following is correct?

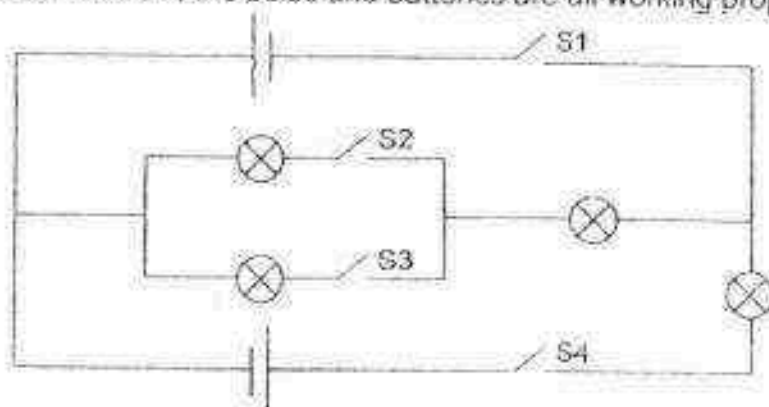
	C	D	E
(1)	insulator	conductor	insulator
(2)	conductor	insulator	insulator
(3)	insulator	conductor	conductor
(4)	conductor	insulator	conductor

17. Alfred bought two different brands of batteries. He created two similar set-ups to find out which brand of battery will enable the bulbs to remain lighted longer. Which of the **variables** below should he keep constant to ensure a fair test?

A. Type of wires  
 B. Brand of batteries  
 C. Number of switches  
 D. Arrangement of bulbs

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

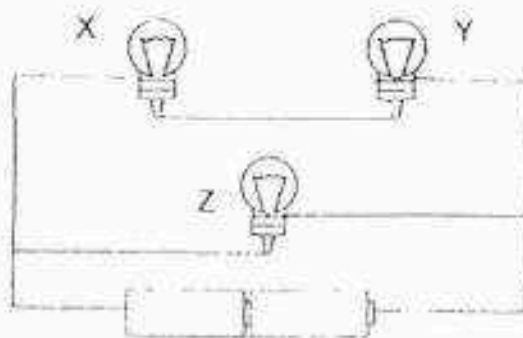
18. In the circuit below, the bulbs and batteries are all working properly



Which two switches should be closed so that only two bulbs will light up?

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

19. The electric circuit below is made up of some wires, two batteries and three bulbs X, Y and Z.

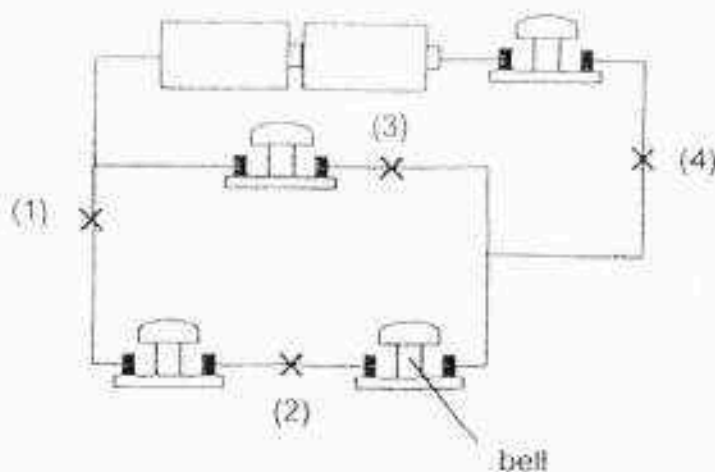


If bulb Y is fused, which of the bulb(s) will remain lit?

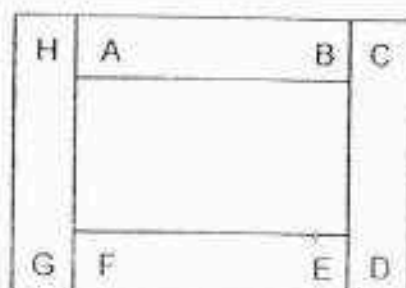
- (1) Bulb X only
- (2) Bulb Z only
- (3) Bulb X and Z only
- (4) None of the bulbs

20. Lily set up an electrical circuit as shown.

At which positions, 1, 2, 3 or 4, should she place a switch so that when the switch is opened and the rest of the switches are closed, only one bell will not ring?



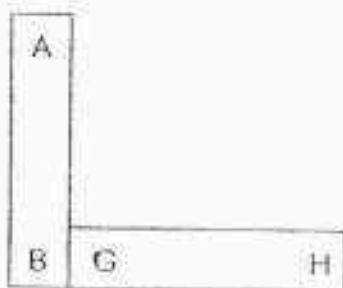
21. Xian Rui arranged four bar magnets such that they are attracted to one another as shown in the diagram below.



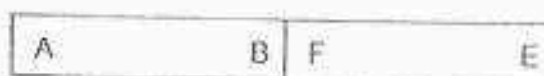
Xian Rui put two of the magnets near to each other.

Which one of the following arrangements will result in the poles repelling when the magnets are put near to each other?

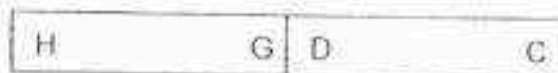
(1)



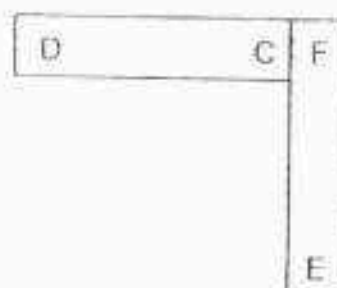
(2)



(3)

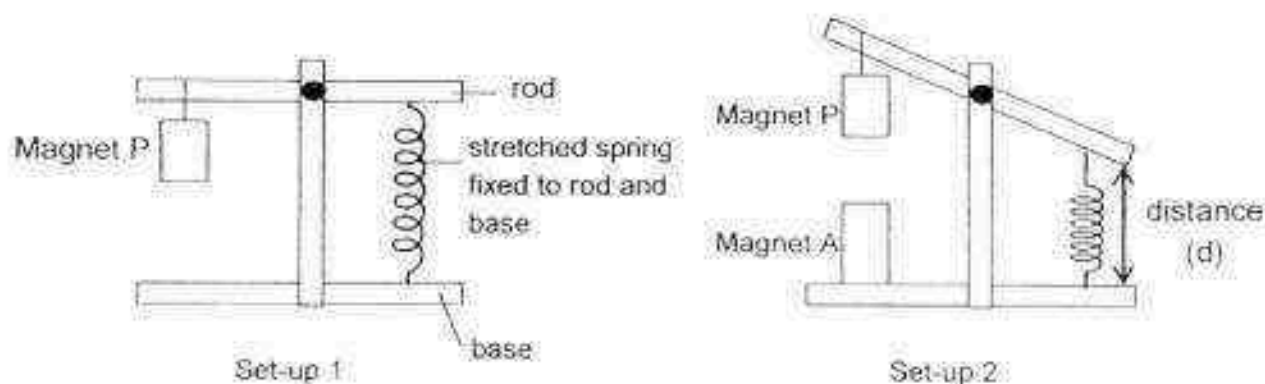


(4)





22. Ismail set up an experiment as shown. The rod was horizontal when magnet P was hung on it as shown in set-up 1. Magnet A was then placed directly below magnet P as shown in set-up 2.



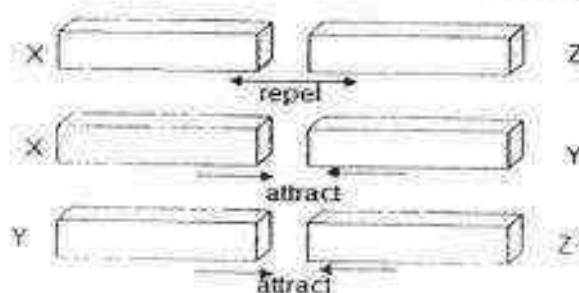
He repeated the experiment with magnets B, C and D. The table shows the distance (d) measured when the different magnets were used

Magnet	A	B	C	D
Distance in cm (d)	6	4	5	3

Rearrange the magnets, starting with the one with the strongest magnetism to the one with the weakest magnetism.

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

23. Hui Fang placed three bars, X, Y and Z, close to one another and observed how they interacted. The diagrams below show her observations.

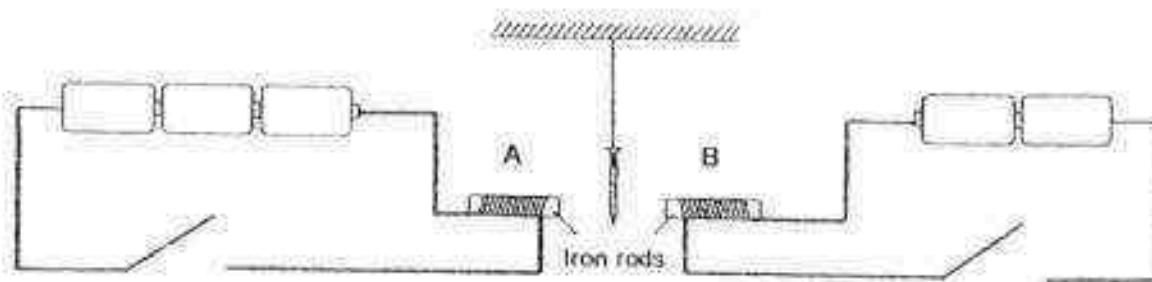


Based on Hui Fang's observations, which of the following statement(s) is/are definitely correct?

- A: Bar Y is not a magnetic material.
- B: Bar X and Z are magnets.
- C: Bar Y is definitely made of iron.

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

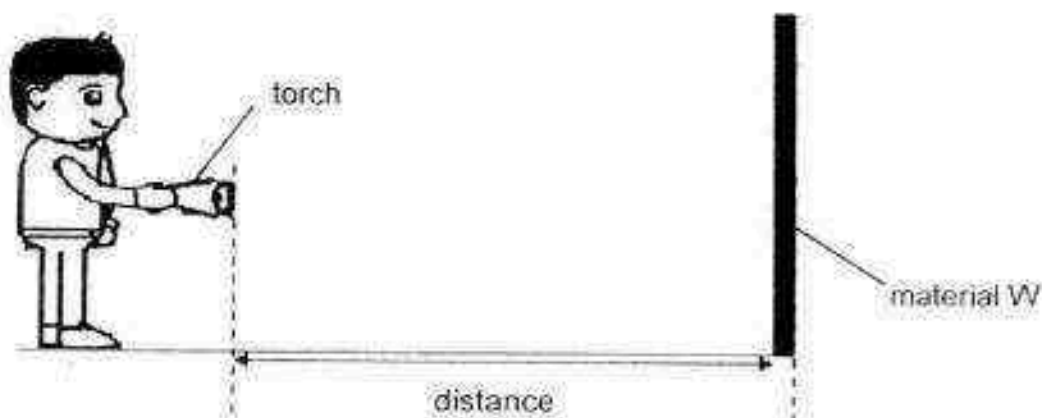
24. Devi set up a circuit with an iron nail suspended between two identical iron rods, A and B. The number of coils of wires around each rod is the same. Similar batteries and wires are used in both set-ups.



If both circuits are closed at the same time, what will most likely happen to the iron nail?

- (1) The nail moves nearer to rod A.
- (2) The nail moves nearer to rod B.
- (3) The nail moves above the rods.
- (4) The nail remains at the original position.

25. Zane wanted to find out which material was best at reflecting light. He set up the following experiment in a dark room.



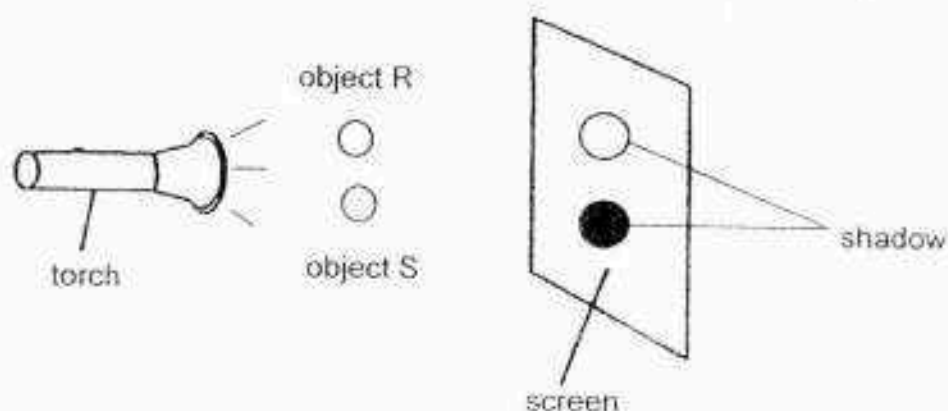
Zane shone the light onto material W and walked towards it. When he could see the material clearly, he stopped and measured the distance between the torch and the material. He repeated the experiment with materials X, Y and Z. The results are shown below.

Material	W	X	Y	Z
Distance (cm)	130	110	100	90

Which of the following statements is correct?

- (1) Material Z is better at reflecting light than material W.
- (2) Material Y is better at reflecting light than material Z.
- (3) Material W is poorer at reflecting light than material Z.
- (4) Material X is poorer at reflecting light than material Y.

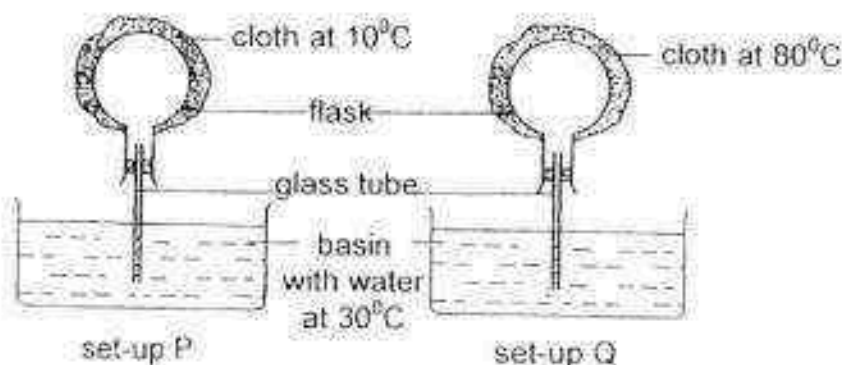
26. Zakina shone a torch on two objects, R and S, as shown in the diagram below.



Zakina observed that the shadow cast by object S seemed much darker than the other shadow cast by object R. Which of the following materials could object R and S be made of?

	Object R	Object S
(1)	cardboard	wood
(2)	frosted glass	copper
(3)	tracing paper	clear glass
(4)	aluminium	frosted glass

27. Fandi prepared two set-ups, P and Q, as shown below. He wrapped the identical flasks with a piece of cloth at  $10^{\circ}\text{C}$  and  $80^{\circ}\text{C}$  respectively.



Fandi observed the set-ups two minutes after the cloth was placed on the flasks.

Which one of the following is not a possible observation of the set-ups Fandi made two minutes after the cloth was placed on the flask?

- (1) Bubbles escape from the glass tube of set-up P.
  - (2) Bubbles escape from the glass tube of set-up Q.
  - (3) The water level in the glass tube of set-up P rises.
  - (4) The water level in the glass tube of set-up Q falls.
28. A glass cup containing boiling water was left in the Science room. Which of the following action(s) would cool the boiling water in the shortest time?
- A: Wrap the cup with a dry cotton cloth.
- B: Put a metal spoon in the water.
- C: Cover the top of the glass cup with a plastic lid.
- (1) A only
  - (2) B only
  - (3) A and C only
  - (4) B and C only

**End of Section A**



# RED SWASTIKA SCHOOL

## SCIENCE 2016 SEMESTRAL EXAMINATION 1 PRIMARY 5

Name : \_\_\_\_\_ (      )

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

Date : 10 May 2016

### BOOKLET B

13 Questions

44 Marks

In this booklet, you should have the following:

- Page 18 to Page 31
- Questions 29 to 41

### MARKS

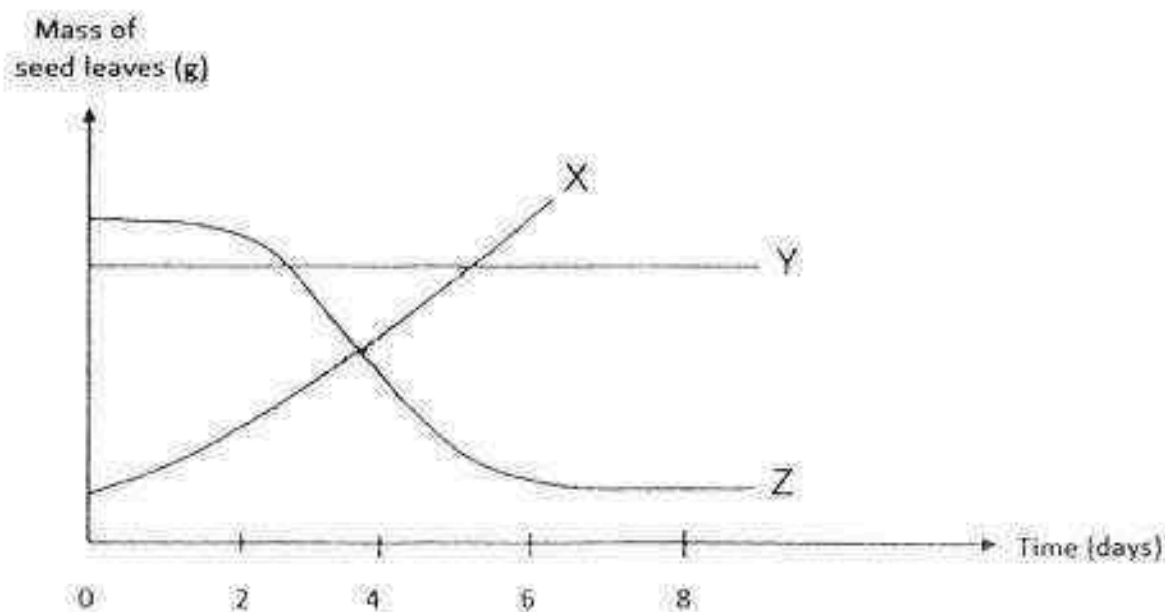
	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Parent's Signature : \_\_\_\_\_

**Section B**

Answer all the questions in the spaces provided.

29. Jade carried out an experiment on some seeds growing into young plants and recorded the results in the graph shown.



- (a) Which line, X, Y or Z, shows how the mass of the seed leaf of each young plant changed during the experiment? Give a reason for your answer. (1m)

---



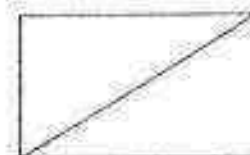
---

- (b) How do the young plants get their food from day 8 onwards? (1m)

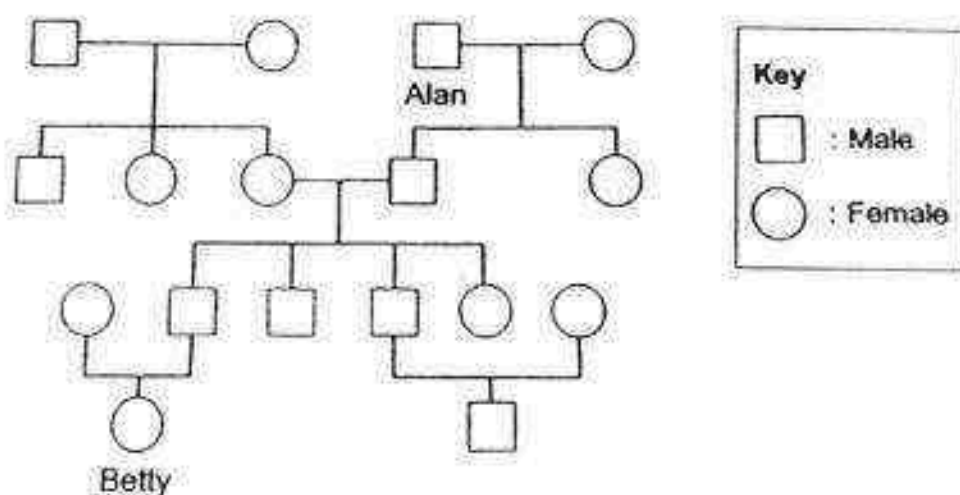
---



---



30. Study Betty's family tree below carefully.

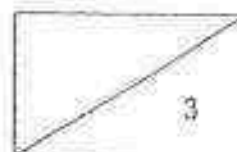


(a) Shade the square or circle in the above diagram that represents Betty's cousin. (1m)

(b) Alan has trait 'X'. This trait is passed down from generation to generation and it affects every male. Other than Alan, how many male(s) in this family tree has a chance of inheriting trait 'X'? (1m)

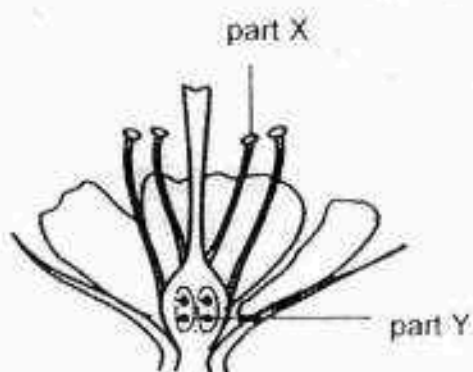
(c) Put a tick (✓) in the correct box for each statement. (1m)

	Statement	True	False	Not possible to tell
(i)	Betty's father is the eldest child in the family.			
(ii)	Four generations are represented in this family tree.			





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



(a) What does part X of the flower contain which helps in the reproduction of the flower? (1m)

---



---

(b) If all of part Y of the flower is removed, will the flower be able to develop into a fruit? Explain your answer. (2m)

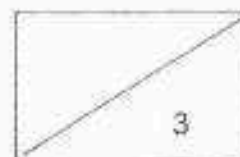
---



---



---



32. Tammy conducted an experiment with two shorea fruits, X and Y, as shown in the pictures. Some of the wing-like structure of fruit Y was cut off.



Fruit X



Fruit Y

She dropped both fruits from the same height and recorded the time taken for each fruit to land on the ground. She repeated the experiment twice and recorded the results in the table.

	Time taken to land on the ground (seconds)	
	First try	Second try
A	5.2	5.0
B	2.0	1.8

- (a) Which set of results, A or B, represents the time recorded for fruit X? Why? (1m)

---



---

- (b) What is the disadvantage to fruit Y if too many fruit Y land near the parent plant? Why? (1m)

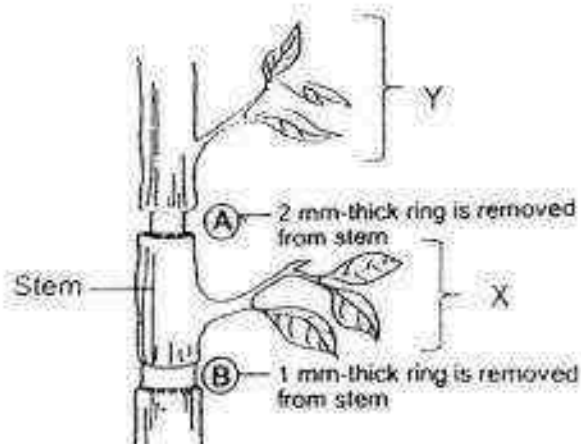
---



---



33. Peter conducted an experiment on a potted plant. The plant has enough light and water during the experiment. He cut two rings from the stem of the plant as shown below. He observed that only the leaves at position Y died after two days.



- (a) Which tube(s) is/are most likely removed at part A? (1m)

---



---

- (b) Explain why the leaves at position Y died after two days. (2m)

---



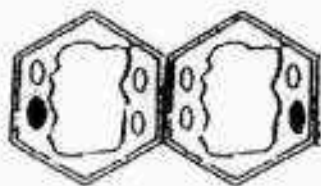
---



---



34. The diagram below shows two different kinds of cells.



Cell A



Cell B

(a) State one similarity in cell parts between the two kinds of cells. (1m)

---

---

(b) Which cell, A or B, is able to make food? Explain your answer. (2m)

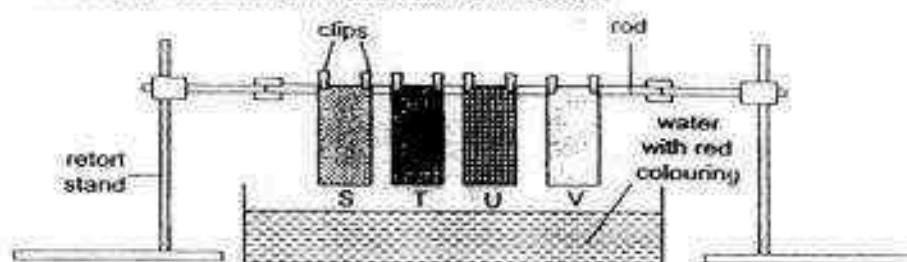
---

---

---



35. Malvin set up the experiment as shown below.



He carried out the following steps:

- Put a few drops of red food colouring into the water.
- Lower the 4 strips of fabric, S, T, U and V, into the water for two minutes.
- Measure the height of the water that was absorbed by the fabric.
- Record the results in the table below.

Fabric	S	T	U	V
Height of water on the fabric (cm)	2.7	0	5.4	1.8

- (a) Why did Malvin put some food colouring into the water? (1m)

---



---

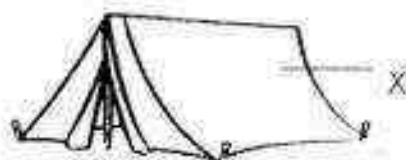
- (b) What property of materials can Malvin infer about fabric T? (1m)

---



---

- (c) What is the disadvantage of using fabric S to make part X of the camping tent shown? Why? (1m)




---



---

- (d) Malvin carried out the experiment three times. Why did he do so? (1m)

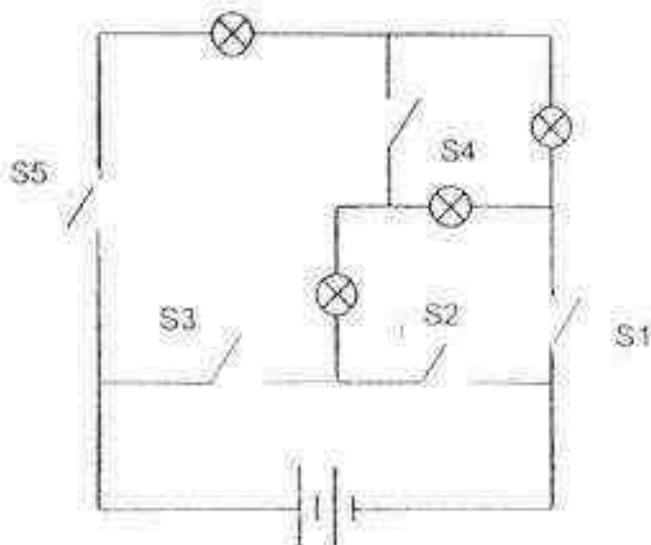
---



---



36. Daniel set up circuit 1 as shown below



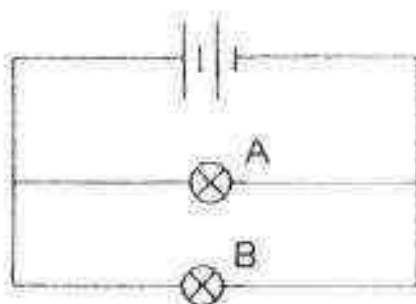
Circuit 1

- (a) What is the minimum number of switches that Daniel should close in order for all the bulbs to light up? Identify the switch(es). (2m)

Minimum number of switches to close: \_\_\_\_\_

Switch(es) to close: \_\_\_\_\_

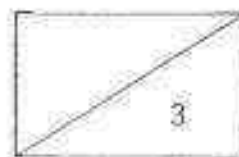
- (b) Daniel set up circuit 2 as shown below.



Circuit 2

He wants to connect two switches in the circuit such that bulb A and B can light up separately.

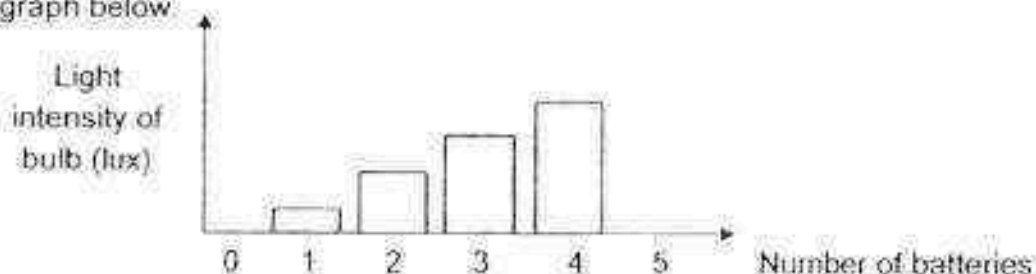
Draw two "X" in the circuit diagram to show where the switches should be placed. (1m)



37(a). Salimah set up an electrical circuit as shown below.



She closed the switch and recorded the light intensity of the bulb. She repeated the experiment with different number of batteries. She recorded her results in the graph below.



- (i) From 0 to 4 batteries, what is the relationship between the brightness of the bulb and the number of batteries used? (1m)

---



---

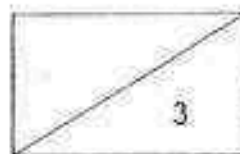
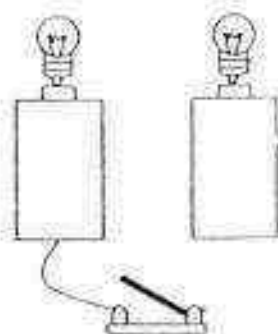
- (ii) Explain what happened to the bulb when five batteries were used in the experiment. (1m)

---

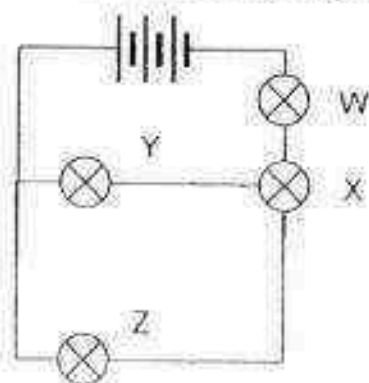


---

37(b). Salimah set up another electrical circuit using a switch, two batteries, two bulbs and some wires. Draw two wires in the diagram below such that both bulbs will be equally bright when the switch is closed. (1m)



38. Edward set up the circuit shown below with some wires, three batteries and four bulbs, W, X, Y and Z. All the bulbs were shining brightly initially.



- (a) If bulb W was removed, what would happen to the brightness of the remaining three bulbs? Why? (2m)

---

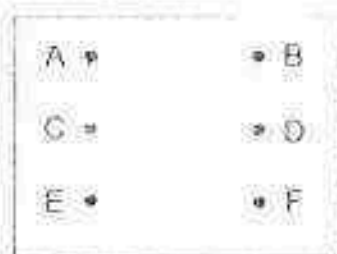


---



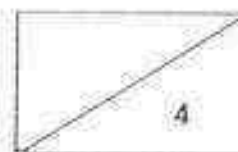
---

Edward made a circuit card using cardboard, metal thumbtacks and wires as shown on the diagram below. He tested the circuit card with a circuit tester.



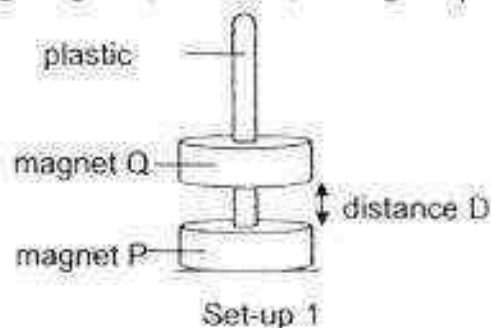
- (b) Predict whether the bulb of the circuit tester will light up when the circuit tester is connected to the following points in the circuit card above. (2m)

Clips tested	Write 'Yes' or 'No' to show whether the bulb in the circuit tester lights up.
A and C	
C and E	
D and E	
C and F	





39. Steffi placed two ring magnets, P and Q, through a plastic pole as shown in the diagram below.



- (a) Steffi observed that magnet Q was suspended in the air. Explain why magnet Q was not touching magnet P. (1m)

---



---

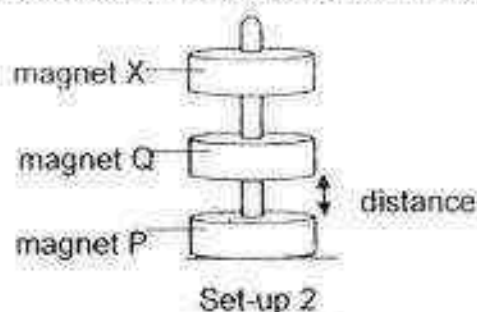
- (b) What can Steffi do to magnet Q in set-up 1 so that the distance D becomes 0 cm? (1m)

---



---

Steffi measured the distance D between magnet P and Q. Then, she placed magnet X, which had more magnetic strength than magnet Q, on top of magnet Q. Magnet Q was still suspended in the air as shown in the diagram below.



- (c) Would distance D be longer or shorter when magnet X was placed on top of magnet Q? Explain your answer. (2m)

---



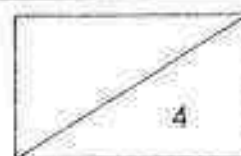
---



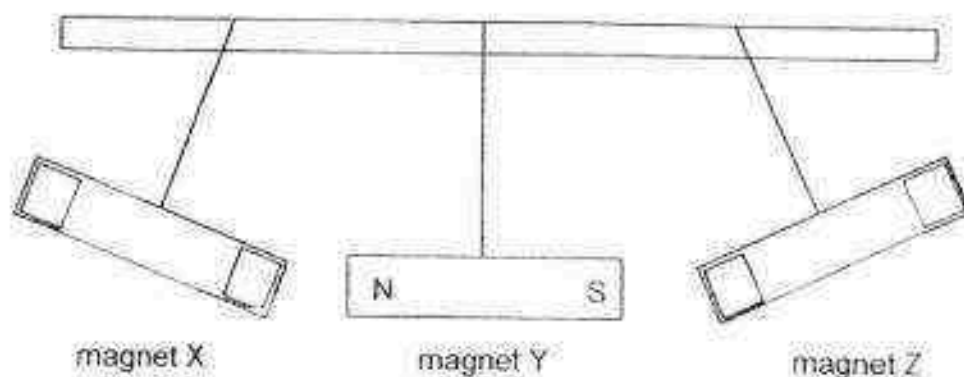
---



---

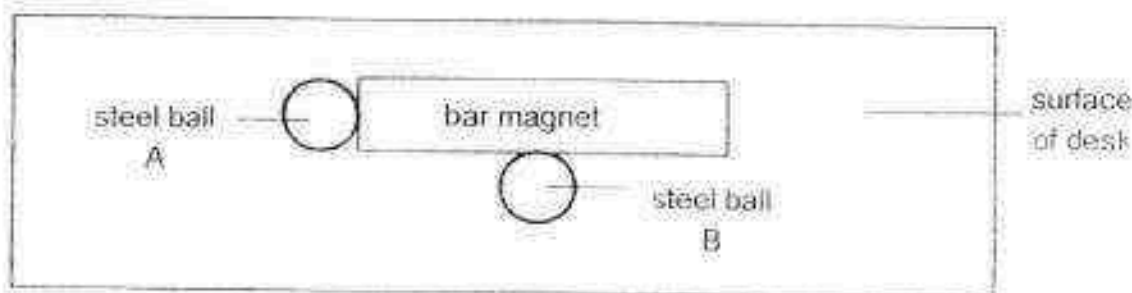


40. Meifeng hung three magnets, X, Y and Z, from a horizontal bar. The diagram below shows the positions of the magnets immediately after she had set up the experiment.



- (a) In the diagram, label the poles of magnet X and Z. Write the letter 'N' to represent the north pole and the letter 'S' to represent the south pole in the boxes provided. (1m)

Meifeng placed another bar magnet on a desk. She then placed two similar steel balls, A and B, next to the bar magnet as shown below.



- (b) When she lifted up the bar magnet, ball A remained attracted to the bar magnet but ball B did not. Explain why ball B did not remain attracted to the bar magnet. (2m)

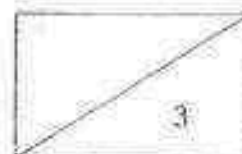
---



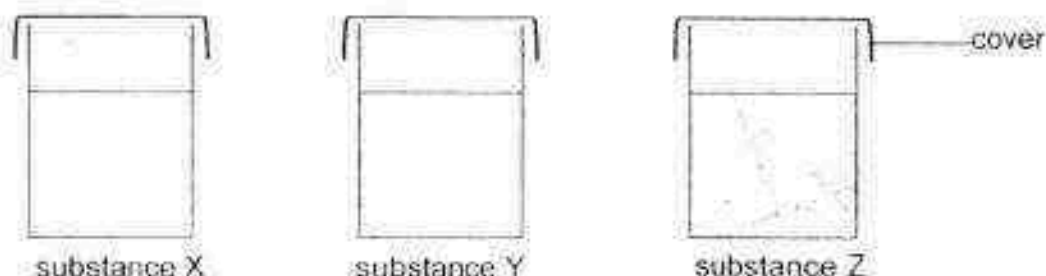
---



---



- 41(a) Deborah filled three similar containers with substances X, Y and Z respectively. She left the containers in the open field on a sunny day for three hours. Then she placed them in the classroom.



The temperature of the three substances was recorded starting from the time the containers were placed in the classroom. The table shows the results.

Time (min)	Temperature ( $^{\circ}\text{C}$ )		
	Substance X	Substance Y	Substance Z
0	43.4	46.2	41.2
2	39.5	41.7	38.3
4	35.1	36.4	35.4
6	31.9	31.0	32.1

- (i) Deborah observed that there were differences in the starting temperatures of the substances when they were placed in the classroom. What can be inferred about the heat conductivity of substances X and Y? (1m)

---



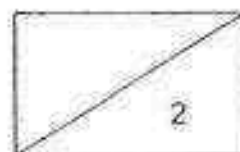
---

- (ii) State one other variable that Deborah must keep constant to ensure that the investigation is a fair one. (1m)

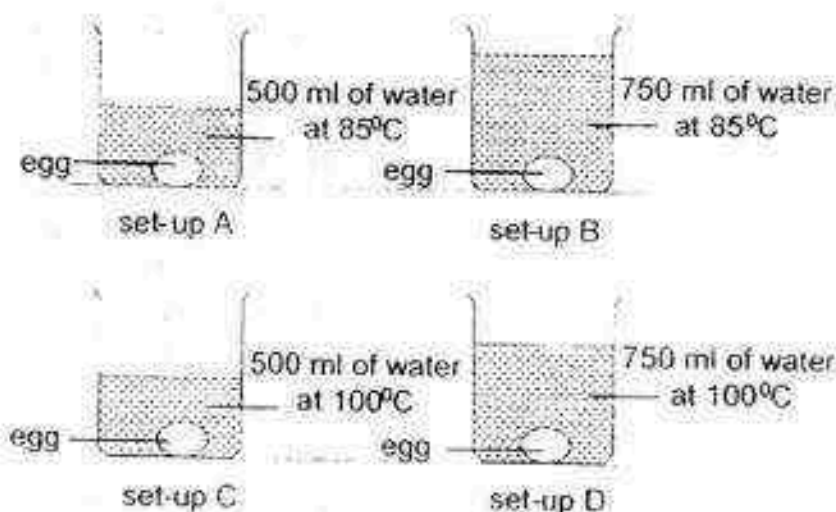
---



---



- 41(b) Deborah placed four similar chicken eggs at room temperature into four different beakers of water, A, B, C and D. The temperature and amount of water in each beaker did not change throughout the experiment.



She recorded the time taken for each egg to be fully cooked in the table below

Beaker	Time taken for the egg to be fully cooked (min)
A	8
B	6.5
C	5
D	3.5

- (i) Why did the egg in beaker D take the shortest time to cook? (2m)

---



---



---

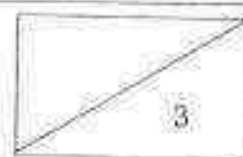
- (ii) The eggs were kept in the refrigerator for one day. If Deborah had used eggs which were just taken from the refrigerator, would the time taken to fully cook the eggs be longer or shorter? (1m)

---



---

**End of Section B**  
Please check your work



EXAM PAPER 2016

LEVEL : PRIMARY 5

SCHOOL : RED SWASTIKA PRIMARY SCHOOL

SUBJECT : SCIENCE

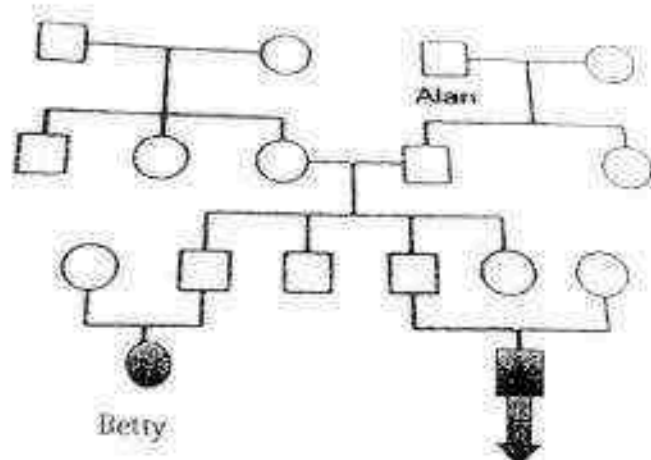
TERM : SA1

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

Q29. a) The mass of the seed leaf decreased over time because the food stored in it was used by the young plant.

b) They have leaves to trap sunlight to make food.

Q30. a)



Betty's cousin  
(shade the square above Betty's cousin on the exam paper)

b) 5 more males in this family has inherited trait 'X'.

c)

	Statement	True	False	Not possible to tell
(i)	Betty's father is the eldest child in the family.			Tick
(ii)	Four generations are represented in this family tree.	Tick		

Q31. a) pollen grains.

b) No, as fertilization takes place in part y, without part y, the pollen grains and the ovules cannot fuse together and if both female and male reproductive cell cannot fuse together, the flower will not be able to develop into a fruit.

Q32. a) A, as the wing-like structure that fruit X has can help the plant to stay longer in the air.

b) There will be overcrowding and the young plants will compete for space, water and nutrients.

Q33. a) Both water-carrying tube and food-carrying tube is most likely removed at part A.

b) The stomata on the leaves are blocked by the oil, hence no gaseous exchange can take place.

Q34. a) Both cells A and B have nucleus in its cell.

b) Cell A is able to make food, as there is chloroplast in cell A. The chloroplast contains some green pigments called the chlorophyll, the chlorophyll helps the plant to trap sunlight to make food for the plant.

35. a) The height of the water absorbed by the fabric can be observed more easily.

b) water proof.

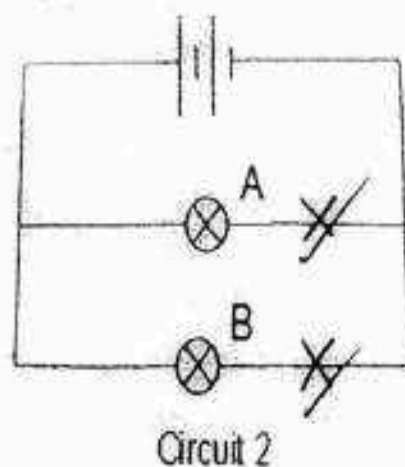
c) Fabric S absorbs water. The things in the tent will get wet when it rains.

d) he needs to take the average results to ensure reliability of the results.

Q36. a) Minimum number of switches to close: 2

Switch(es) to close: S5,S2

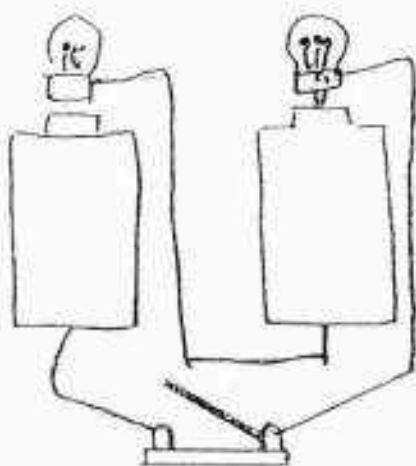
b)



37

- a) i) As the number of batteries increases, the light intensity of both increases.  
 ii) The bulb. There was too much electrical energy in the circuit.

b)



38. a) The remaining bulbs will not light up. When bulb W was removed, there was an open circuit. Electrical energy would not be able to flow to light up the bulbs.

b)

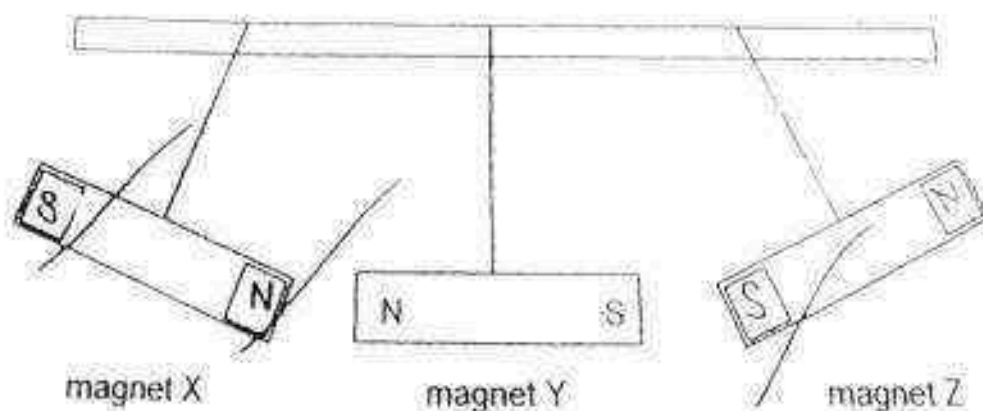
Clips tested	Write 'Yes' or 'No' to show whether the bulb in the circuit tester lights up.
A and C	YES
C and E	NO
D and E	NO
C and F	YES

39.

- Magnet Q repel magnet P as both magnets are facing each other with like poles.
- Turn magnet Q over so that the unlike poles are facing each other.
- Distance D will become shorter. Magnet X has a greater force of repulsion. Hence, magnet X pushes magnet Q closer to magnet P.

40.

a)



- The magnetism was not strong enough to attract ball B as B was not at the poles of the magnet where the magnetism is strongest.

41.

- Substance y is a better conductor of heat than X.
  - Deborah must keep the amount of substance inside the containers the same.



41 b) i) Beaker D had more water at a higher temperature. There was more heat in the water which cooked the egg faster.

ii) Longer

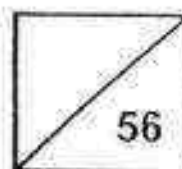
5  
-END-



**Rosyth School**  
**First Semestral Assessment 2016**  
**STANDARD SCIENCE**  
**Primary 5**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 5 \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1 h 45 min

Date: 11 May 2016

Parent's Signature: \_\_\_\_\_

## Booklet A

**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 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 29 to 41, give your answers in the spaces given in the Booklet B.

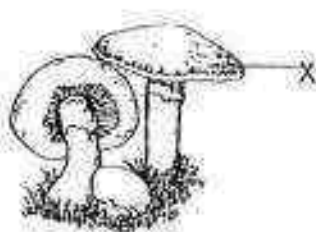
\* This booklet consists of 19 printed pages (including cover page).

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

Part I

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (56 marks)

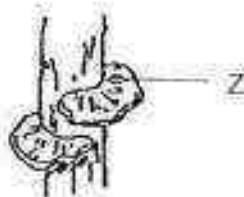
1. What is/are the common characteristic(s) of all the organisms X, Y and Z shown below?



mushrooms



bird's nest fern

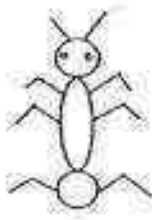


bracket fungus

- A: They reproduce by spores.  
 B: They can make their own food.  
 C: They take in water through their roots.  
 D: They can respond to changes around them.

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

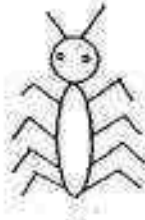
2. Which of the following animals can be grouped as an insect?



A



B



C



D

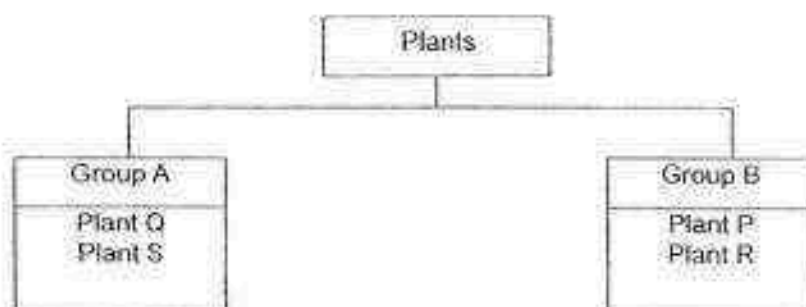
- (1) A only  
 (2) D only  
 (3) A and C only  
 (4) A, B and D only

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

3. The following table shows some characteristics of four plants P, Q, R and S.

Characteristics	Plant			
	P	Q	R	S
It is a land plant.	Yes	No	Yes	No
It bears fruit.	No	Yes	No	Yes
It reproduces by spores.	Yes	No	Yes	No

Using the information above, the plants were classified into two groups as shown below.

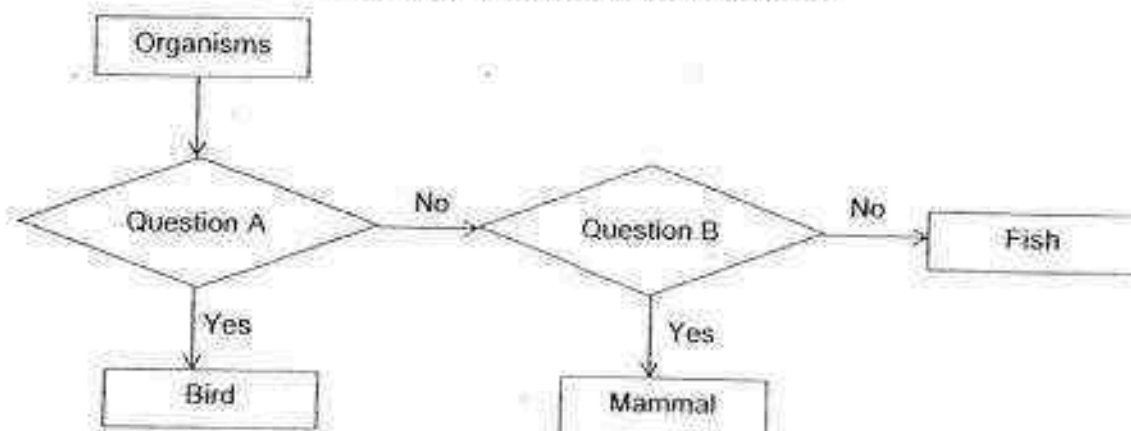


What are the suitable sub-headings for group A and group B?

	Group A	Group B
(1)	Ferns	Land plants
(2)	Land plants	Fungi
(3)	Non-flowering plants	Flowering plants
(4)	Flowering plants	Non-flowering plants

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

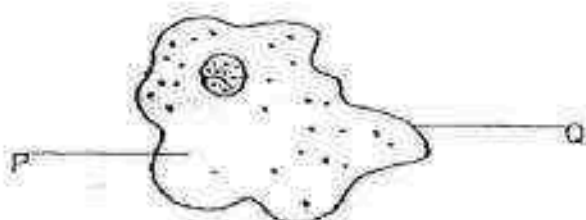
4. The flowchart below shows how some animals are grouped.



Which one of the following correctly identifies questions A and B?

	Question A	Question B
(1)	Does it have feathers?	Does it breathe through lungs?
(2)	Does it have six legs?	Does it lay eggs?
(3)	Does it have wings?	Does it breathe through gills?
(4)	Does it breathe through lungs?	Does it have scales?

5. The diagram below shows a cell.

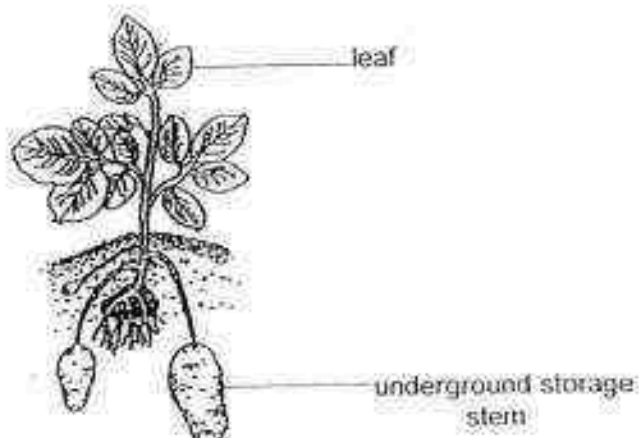


What are the functions of parts P and Q?

	P	Q
(1)	produces chlorophyll	gives the cell a fixed shape
(2)	controls the movement of substances in and out of the cell	controls the activities in the cell
(3)	gives the cell a fixed shape	allows cell activities to take place
(4)	allows cell activities to take place	controls the movement of substances in and out of the cell

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

6. The diagram below shows a sweet potato plant. It is a plant with underground storage stems.



A tick (✓) represents the presence of a cell part.

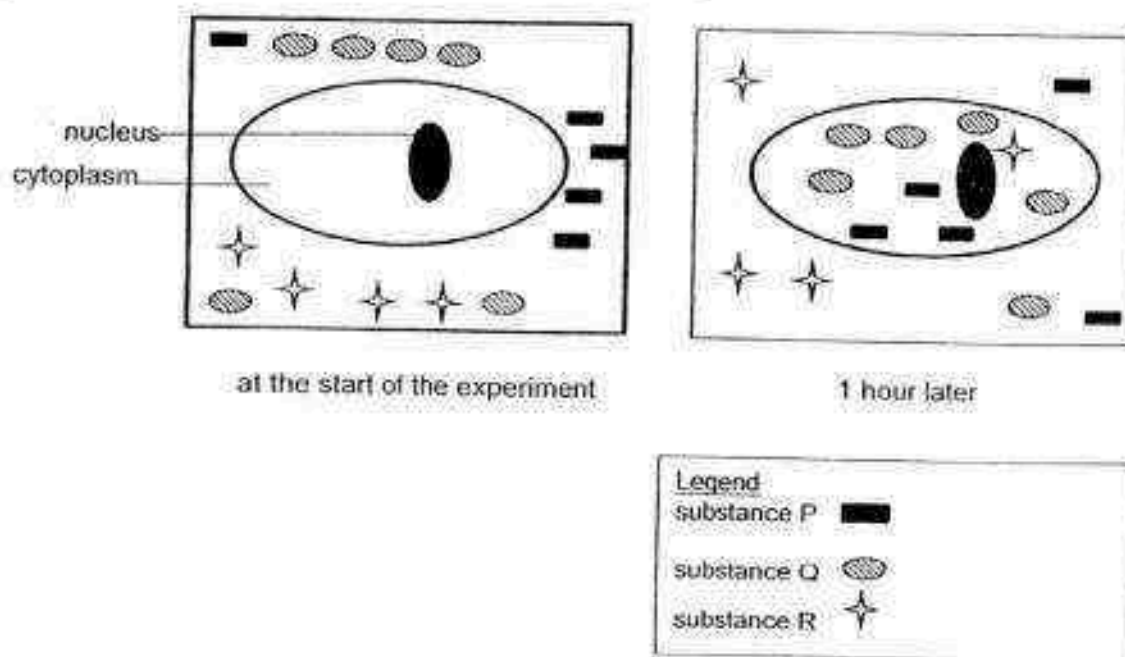
cell	cell wall	chloroplasts	cell membrane
P		✓	✓
Q	✓	✓	
R	✓		✓
S	✓	✓	✓

Which one of the following is correct?

	underground storage stem	leaf
(1)	cell Q	cell P
(2)	cell P	cell S
(3)	cell S	cell Q
(4)	cell R	cell S

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

7. The diagram below shows a plant cell. John wanted to know which substances are able to pass through the cell membrane. He placed the cell in a plate of solution with substances P, Q and R.

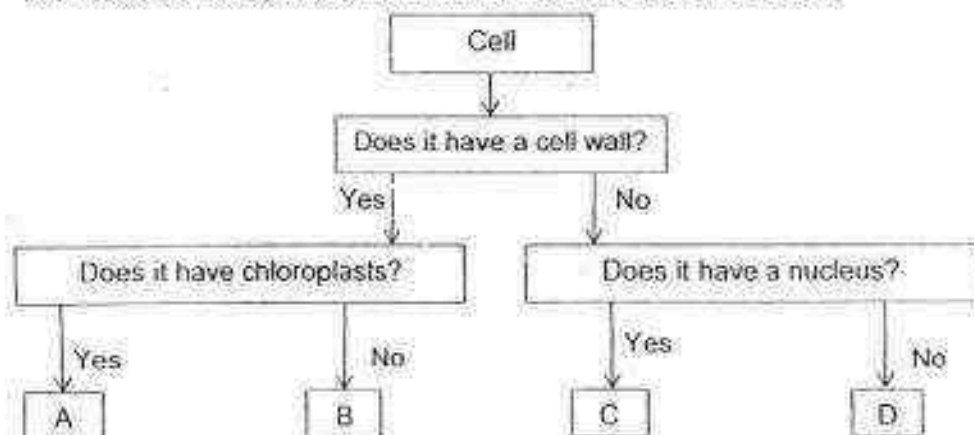


At the end of the experiment, different substances could be found in the cytoplasm. What could John conclude from the experiment?

- A: More of substance P entered the cell than substance R.  
 B: More of substance R moved out of the cell than into the cell.  
 C: The cell membrane allows substance Q to pass through most easily.  
 D: All three substances P, Q and R can pass through the cell membrane.

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

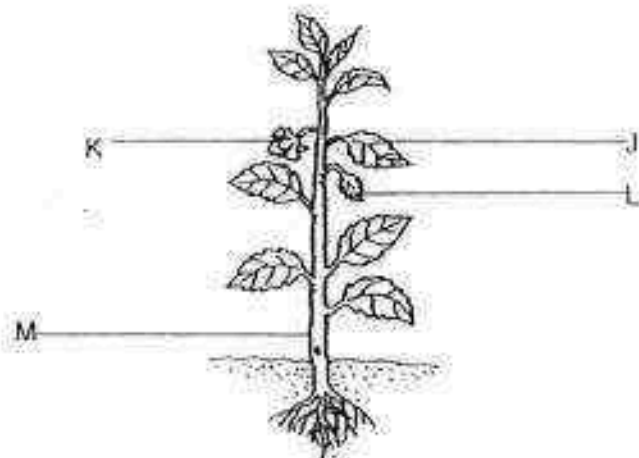
8. Jen observed and grouped four cells according to the chart below.



Based on Jen's grouping, where were the cells A, B, C and D taken from?

	A	B	C	D
(1)	leaf	red blood cell	onion	cheek
(2)	onion	leaf	cheek	red blood cell
(3)	leaf	onion	cheek	red blood cell
(4)	onion	leaf	red blood cell	cheek

9. The diagram below shows a flowering plant.



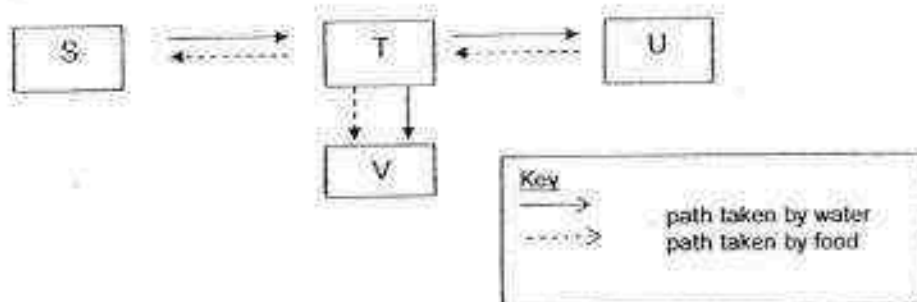
At which parts of the plant can the food-carrying tubes be found?

- |                  |                   |
|------------------|-------------------|
| (1) J and K only | (2) K and M only  |
| (3) J and M only | (4) J, K, L and M |



## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

10. The diagram below shows the different paths taken by water and food in a plant. S, T, U and V represent the various parts of a plant.

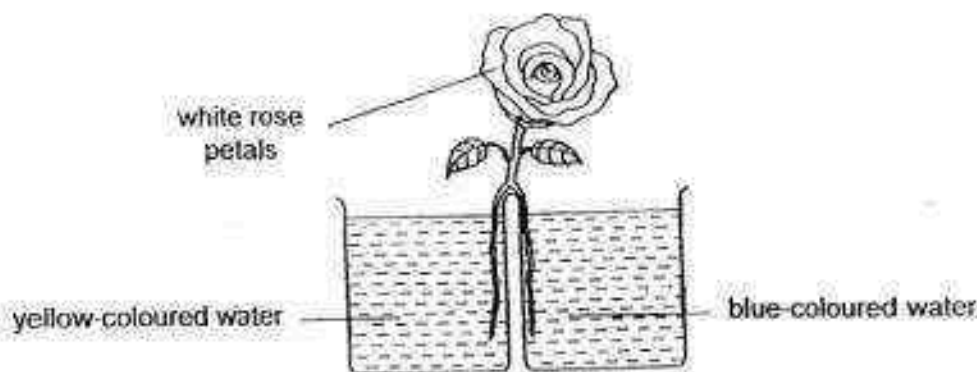


Which one of the following best represents parts S, T, U and V?

	S	T	U	V
(1)	roots	leaves	flowers	stem
(2)	leaves	flowers	stem	roots
(3)	roots	stem	leaves	fruits
(4)	leaves	roots	stem	flowers

11. Ying Zhen mixed some yellow and blue coloured water in a beaker. She observed that the colour of the water had turned green.

Next, she cut the stalk of a white rose and placed it in two separate beakers of yellow-coloured and blue-coloured water as shown below.

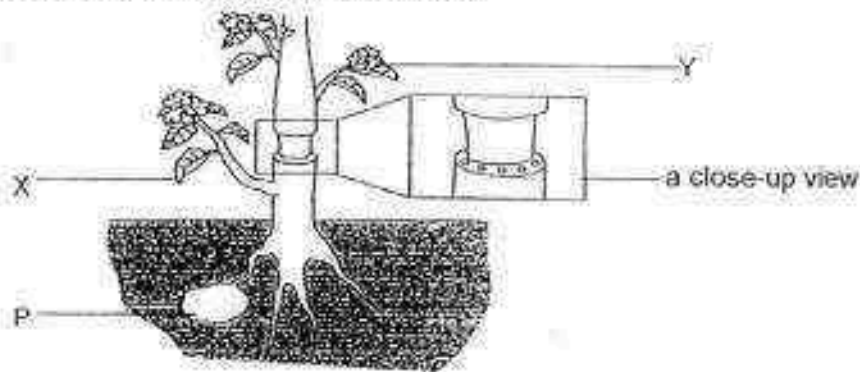


What colour(s) would she observe on the rose petals after a few days?

- (1) green only
- (2) blue and yellow only
- (3) green and yellow only
- (4) blue, yellow and green

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

12. An outer ring of a stem was removed from a plant as shown below. As a result, the tubes carrying food and water were removed.



It was observed that P grew bigger after 5 days. What could be a possible explanation for this?

- (1) P was able to make its own food.
  - (2) Food made at Y was able to reach P.
  - (3) P only needed water to increase in size.
  - (4) The food made by X was transported to P and stored there.
13. Which one of the following is correct?

	Organ involved in digestion of food	Organ involved in absorption of most water
(1)	mouth	small intestine
(2)	stomach	small intestine
(3)	small intestine	large intestine
(4)	large intestine	large intestine

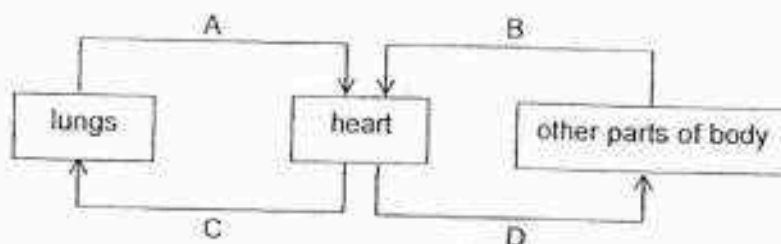
14. Which of the followings are functions of the human digestive system?

- A: To break down food into simpler substances
- B: To absorb digested food into the bloodstream
- C: To remove the undigested food from the body
- D: To absorb water and gases into the bloodstream

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

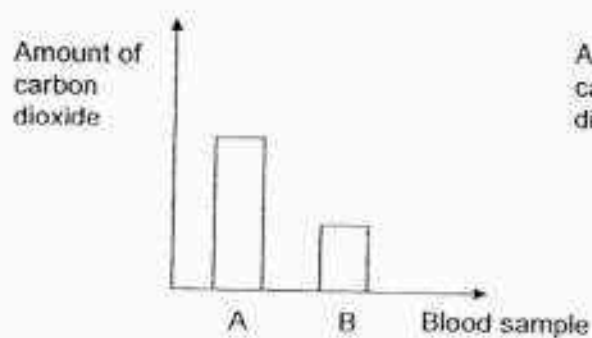
## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

15. The diagram below shows the direction of blood flow in some parts of the body.

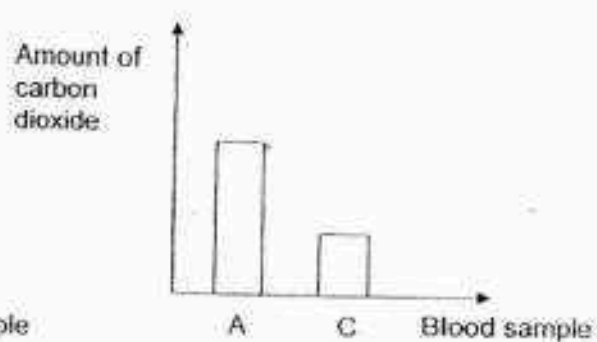


The same amount of blood was taken from A, B, C and D. Which chart shows the correct comparison of the amount of carbon dioxide in the blood samples?

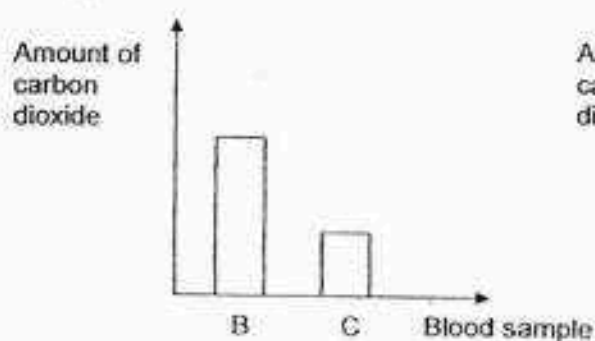
(1)



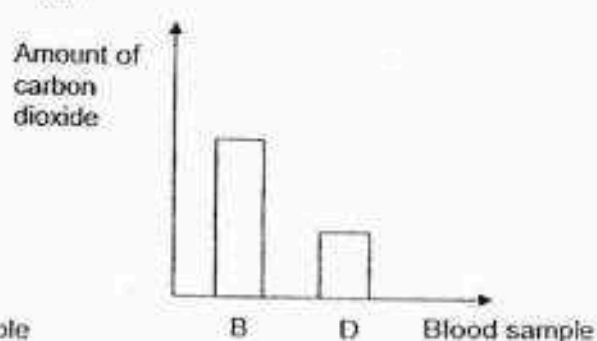
(2)



(3)

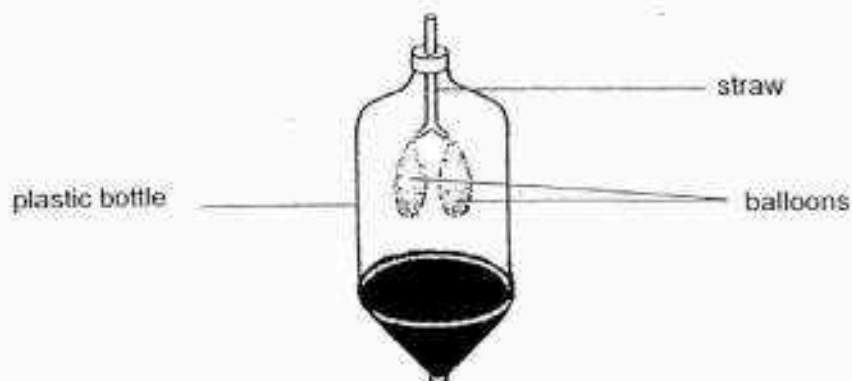


(4)



## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

- 16: The diagram below shows a human respiratory model.



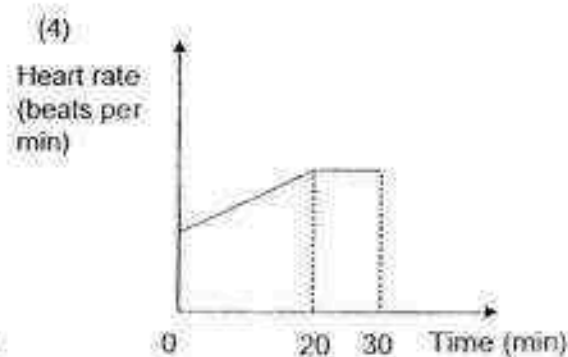
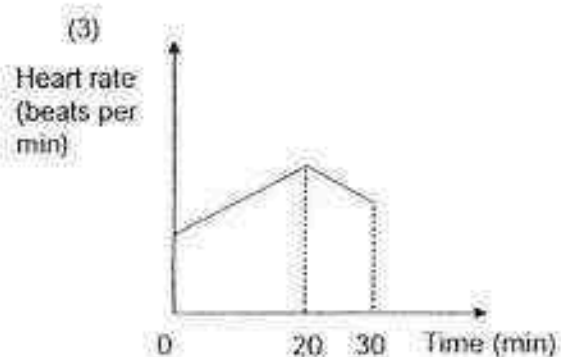
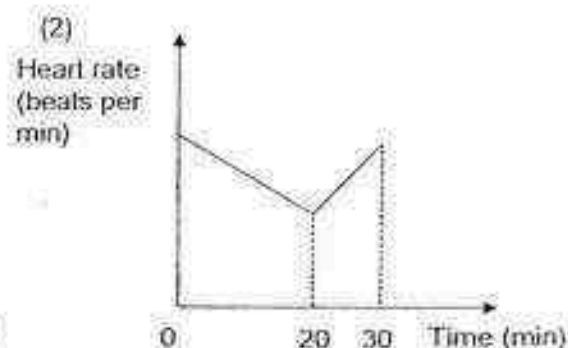
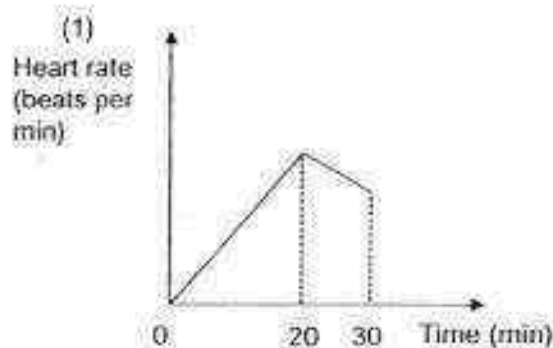
Which parts of the human respiratory system correctly represent the parts of the model?

	parts of the model	parts of the respiratory system
A:	straw	windpipe
B:	balloons	lungs
C:	plastic bottle	nose

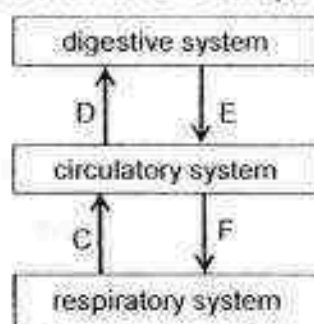
- (1) B only  
 (2) C only  
 (3) A and B only  
 (4) A, B and C

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

17. Ignatius ran continuously for 20 minutes up a hill and then took a short break for 10 minutes. Which graph shows his heart rate during the 30 minutes?



18. Devi drew a flowchart below to show blood is transported in the human body.

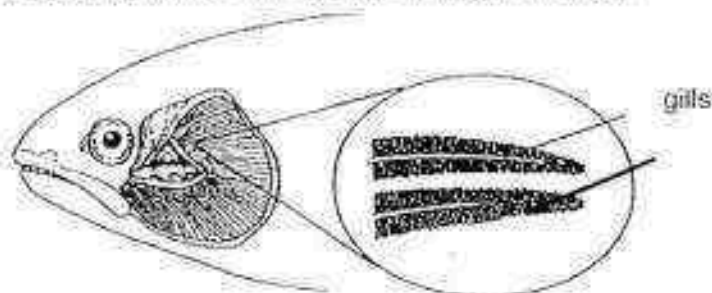


Which two arrows are blood rich in oxygen?

- (1) C and D only
- (2) C and E only
- (3) D and F only
- (4) E and F only

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

19. The picture below shows a close-up view of the gills of a fish.



Which of the following statements is/are true about the gills of the fish?

- A: It allows water containing dissolved oxygen to pass through.
- B: It has a large surface area for gaseous exchange to take place.
- C: It prevents water containing dissolved carbon dioxide to pass through.
- D: It allows oxygen and carbon dioxide to be absorbed into the bloodstream.

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

20. Roshan conducted an experiment to find out how the amount of carbon dioxide in the surrounding air would affect the size of the stomata on a leaf cell. He recorded his observation as shown below.

Temperature of surrounding air ( $^{\circ}\text{C}$ )	28	28	28	28
Amount of carbon dioxide in the surrounding air (units)	1000	1500	2000	2500
Size of stomata (units)	2000	4000	6000	7000

Based on the information provided, which one of the following conclusion is correct?

- (1) As the size of the stomata increases, the temperature of the surrounding air remains the same.
- (2) As the size of the stomata increases, the amount of carbon dioxide in the surrounding air increases.
- (3) As the amount of carbon dioxide in the surrounding air decreases, the size of the stomata decreases.
- (4) As the amount of carbon dioxide in the surrounding air decreases, the temperature of the surrounding air remains the same.

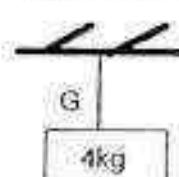
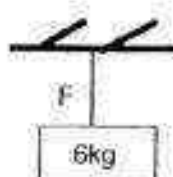
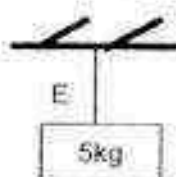
## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

21. The properties of 4 different materials A, B, C and D are shown in the table below. A tick (✓) represents the presence of the property of the material.

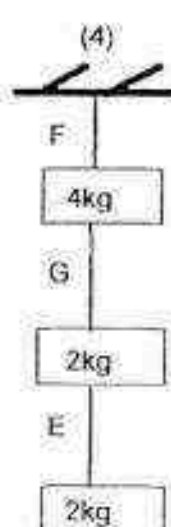
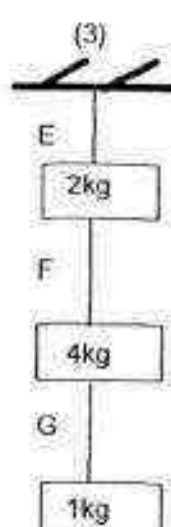
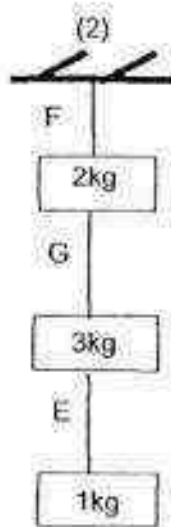
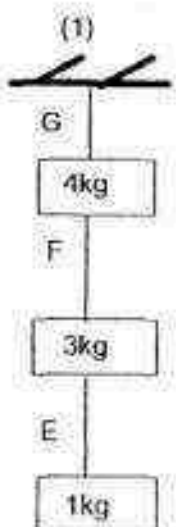
Property	Materials			
	A	B	C	D
Is it light?	✓		✓	
Is it waterproof?	✓		✓	✓
Is it flexible?		✓	✓	✓

Which materials can bend and float in water?

- (1) C only  
 (2) A and C only  
 (3) A, B and D only  
 (4) A, B, C and D only
22. Charmaine tested three types of strings made of materials E, F and G by hanging weights from each material. She increased the weights until the material broke. The maximum weight that the materials could hold before breaking is shown below.



Charmaine then tried a few arrangements of hanging different weights. Which one of the following arrangements would be possible?



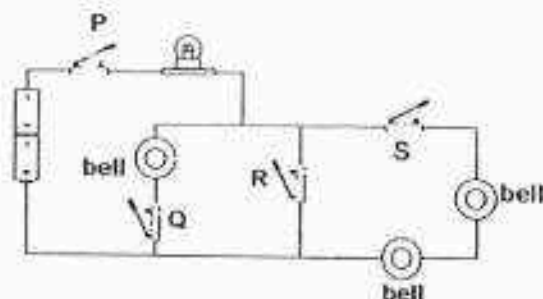
## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

23. The diagram below shows a light bulb.



Which part(s) of the light bulb is/are non-conductor of electricity?

- (1) A only
  - (2) A and B only
  - (3) A, B and C only
  - (4) B, C and D only
24. Jerome set up the circuit as shown below.



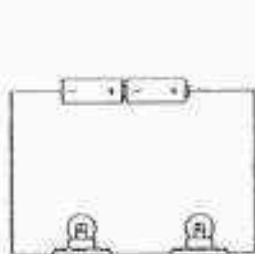
Which two switches must be closed so that the bulb lights up without any of the bells ringing?

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

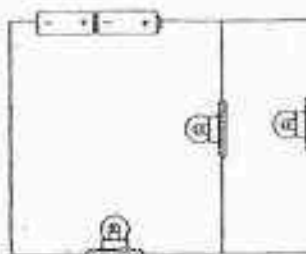


## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

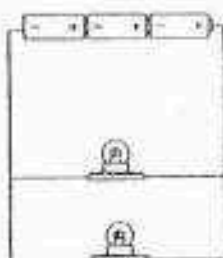
25. Calysta set up four circuits as shown below using identical bulbs and batteries.



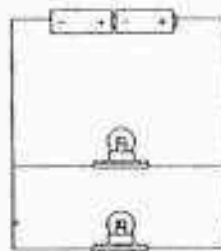
A



B



C



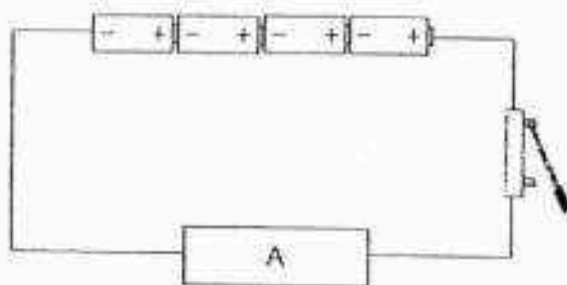
D

She wanted to find out how the arrangement of the bulbs would affect the brightness of the bulbs. Which two set-ups should she use to ensure it was a fair experiment?

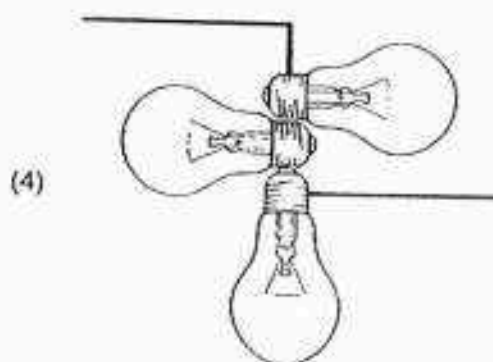
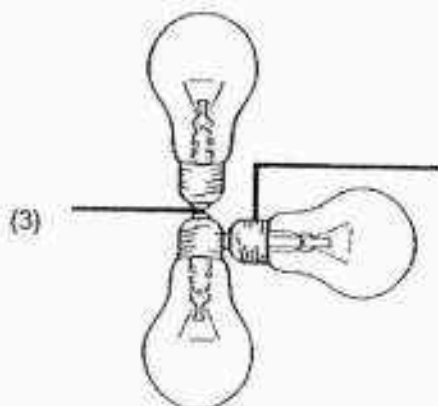
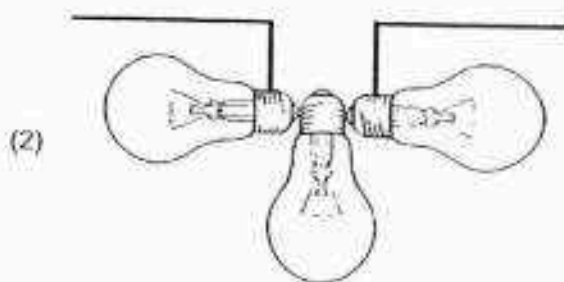
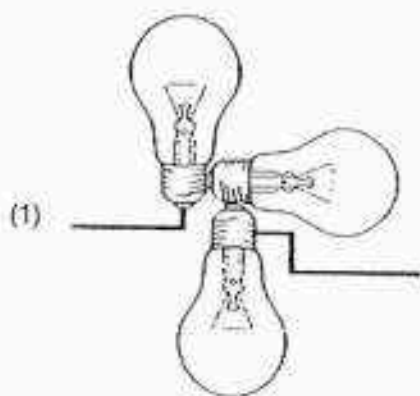
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

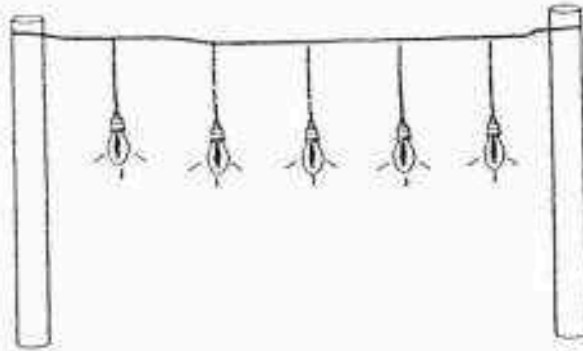
26. Zachary set up the circuit as shown below. He arranged three bulbs in box A and when he closed the circuit, all the bulbs lit up.



Which one of the following arrangements of bulbs could Zachary have made?



27. Alexis had 4 different set-ups, W, X, Y and Z, each with a different number of bulbs connected to a series circuit as shown below.



She recorded the brightness of each bulb as shown in the table below.

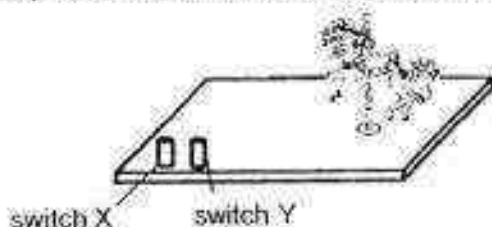
	W	X	Y	Z
Brightness of each bulb (lux)	5	2	3	7

Which one of the following shows the arrangement of the most number of bulbs to the least number of bulbs?

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

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

28. Saira has a toy that works on batteries as shown in the diagram below.

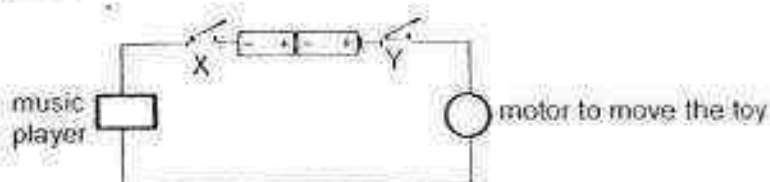


Her observations are shown below. A tick (✓) shows the presence of an observation.

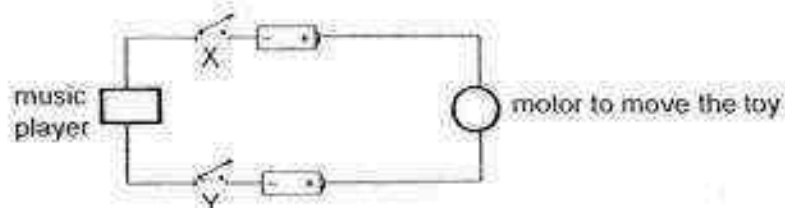
Switches turned on	Observations	
	Toy moved	Music was heard
X and Y	✓	✓
X only		✓
Y only	✓	

Which one of the circuits below is possible for all the observations to occur based on her actions?

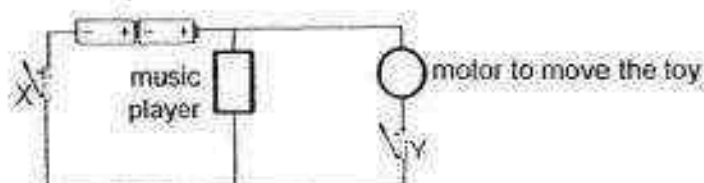
(1)



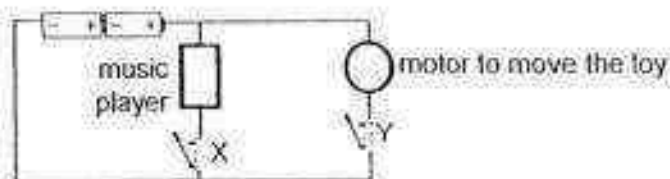
(2)



(3)



(4)

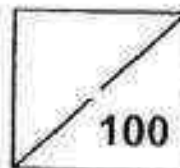




**Rosyth School**  
**First Semestral Assessment 2016**  
**STANDARD SCIENCE**  
**Primary 5**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 5 \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1 h 45 min

Date: 11 May 2016

Parent's Signature: \_\_\_\_\_

## Booklet B

**Instructions to Pupils:**

1. For questions 29 to 41, give your answers in the spaces given in Booklet B.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

\* This booklet consists of 19 printed pages (including cover page).

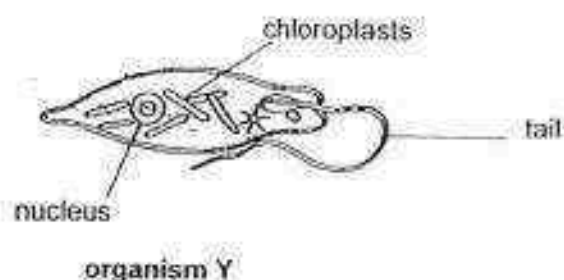
## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

Part II

For questions 29 to 41, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. **(44 marks)**

29. A scientist discovered a single-cell organism, organism Y, in a freshwater pond. The diagram below shows how organism Y looks like under the microscope.



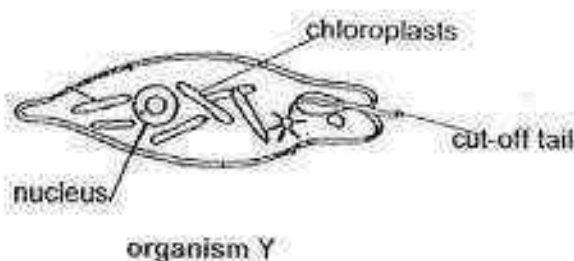
- (a) The scientist concluded that organism Y does not need to feed on other organisms. Do you agree with him? Explain your answer. **[1]**

---



---

When the scientist cut away the tail of organism Y as shown in the diagram below, he observed that a new tail started to form.



- (b) How was it possible for organism Y to form a new tail? **[1]**

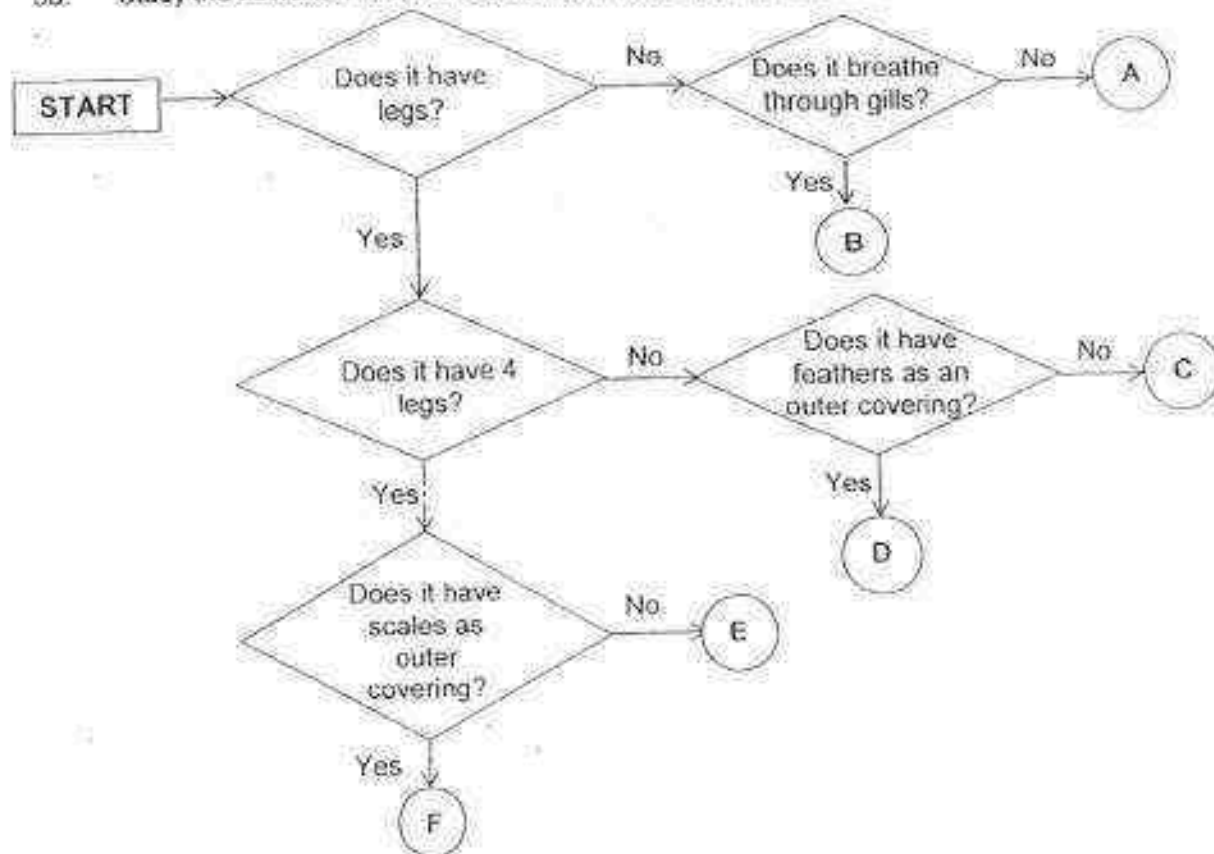
---



---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

30. Study the flowchart below. Letters A to F represent different animals.



- (a) Peter told his teacher that a crocodile could be represented by animal F. Do you agree? Support your answer. [1]

---



---

- (b) Based on the flowchart above, state one difference between animals C and D. [1]

---

Question 30 continues on page 3

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

- (c) Write down the letters (A, B, C, D, E or F) that best represent the animal group in the boxes. [2]

Bird

\_\_\_\_\_

Fish

\_\_\_\_\_

Insect

\_\_\_\_\_

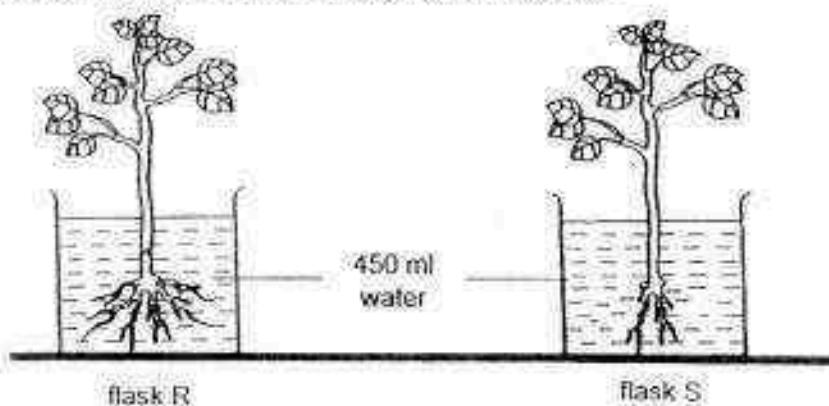
Reptile

\_\_\_\_\_



## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

31. Mei Lin set up an experiment as shown below. Flasks R and S contained 450 ml of water. They were left in the open at the same location and the volume of water was measured at the end of each day.



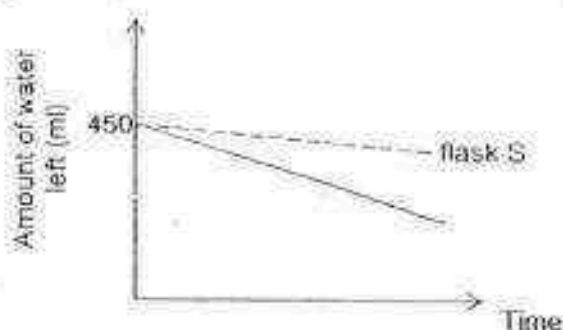
- (a) Based on the experimental set-up, what was the aim of the experiment? [1]

---



---

The graph below shows the change in the volume of water in flask S over a period of 5 days.



- (b) Draw a line in the graph above and label it "flask R" to show the change in the volume of water in flask R. [1]
- (c) If Mei Lin had added a layer of oil in flasks R and S at the beginning of the experiment, will the change in the volume of water be more or less? Explain why. [1]

---

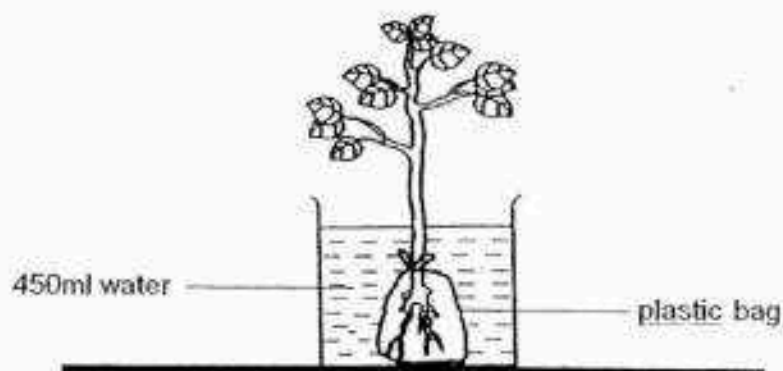


---

Question 31 continues on page 5.

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

Mei Lin set-up another flask as shown below.



(d) What is the purpose of the set-up above?

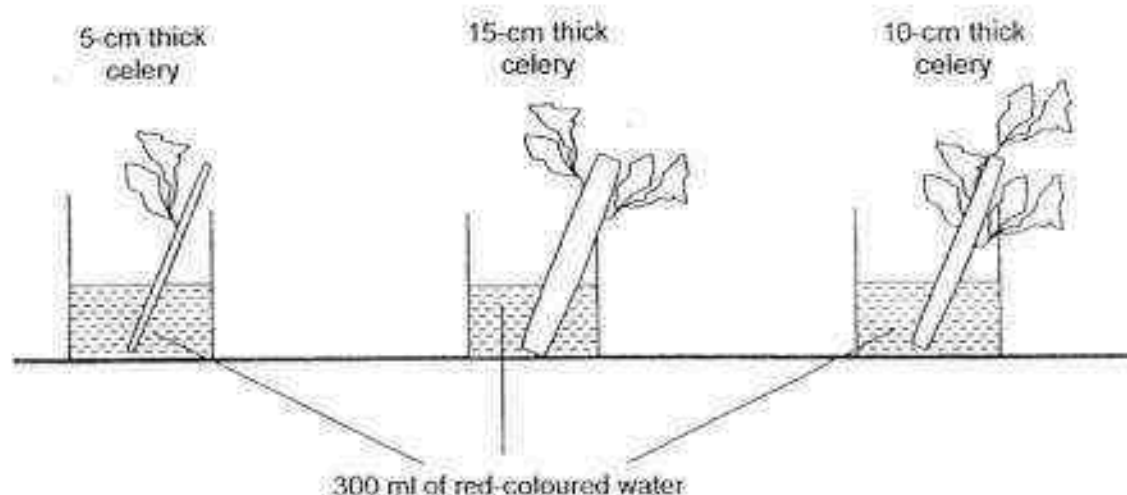
[1]

---

---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

32. Rani wanted to find out if the thickness of the celery stalks affects the time taken for red-coloured water to reach the leaves. She cut out three stalks of celery of different thickness and placed them in 300ml of red-coloured water as shown in the diagram below.



- (a) Why did she use red-coloured water instead of tap water in this experiment? [1]

---



---

- (b) Rani's teacher told her that the experiment was not fair. What could be a possible reason for this? [1]

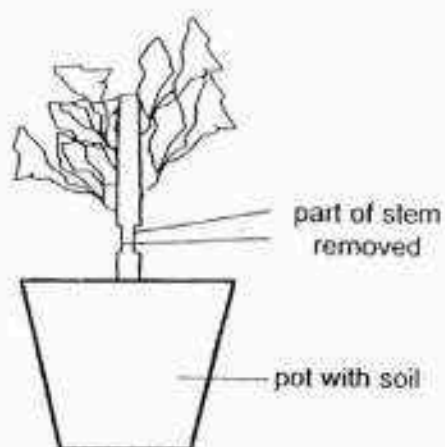
---



---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

Rani conducted another experiment as shown below.



- (c) When Rani removed part of the stem of the celery plant, she observed that the leaves were still green in colour after a few days. Explain why. [1]

---

---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

33. Devi wanted to find out how the temperature of sugar solution affects the rate of cell division. She placed 10 yeast cells in 3 similar containers A, B and C. Each container had the same amount of sugar solution. The table below shows the yeast cell division after 1 hour.

Container	Number of yeast cells at the beginning	Temperature of sugar solution	Number of yeast cells after 1 hour
A	10	10°C	30
B	10	30°C	55
C	10	60°C	82

- (a) State one other variable that Devi should keep the same to ensure a fair experiment.

[1]

---

- (b) Based on the information provided, what can Devi conclude from this experiment?

[1]

---



---

Yeast feeds on sugar in the flour mixture to make little carbon dioxide bubbles that get trapped in the flour mixture and make it rise.

- (c) If Devi wanted to make yeast bread, which container of sugar solution should she use to mix the yeast cells? Explain your answer.

[1]

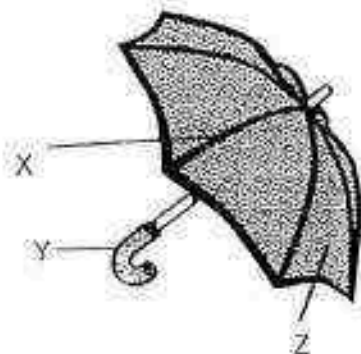
---



---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

34. Grace had an umbrella with its different parts labelled X, Y and Z as shown in the diagram below.



Answer the following questions to complete the table below.

- (a) Suggest suitable material(s) to make parts X and Y. Give a reason for each material selected. [2]

part	material	reason for material used
X		
Y		

Grace needed to choose a suitable material to make part Z of the umbrella. She weighed 4 materials, P, Q, R and S, which were of similar sizes. She placed each of them in a bowl of water which contained 40ml of water for 2 minutes. Then, she removed them from the bowl before weighing them again. She recorded her findings in the table below.

Part	Mass of material before placing into the bowl of water (g)	Mass of material after removing from the bowl of water(g)
P	30	38
Q	30	50
R	30	30
S	30	40

- (b) From the data given, which one of the materials, P, Q, R or S, is most suitable for making part Z of the umbrella? Explain your answer. [1]

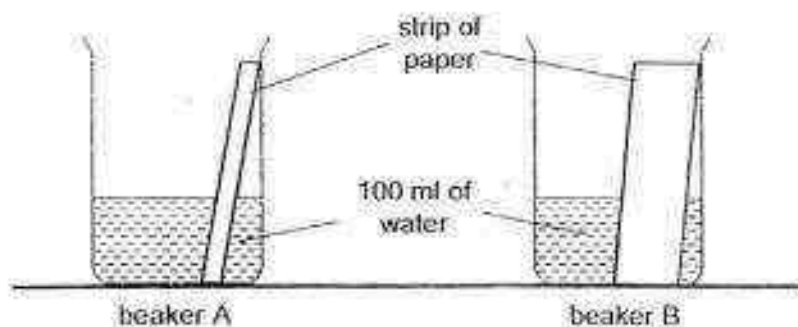
---



---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

35. Henry cut a piece of paper into 2 strips with different surface area. He set up the experiment as shown below using 2 similar beakers.



After 30 minutes, he recorded his results in the table as shown.

	beaker A	beaker B
Amount of water left in the beaker (ml)	95	80

- (a) What is the aim of the Henry's experiment?

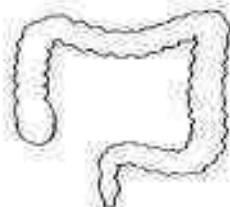
[1]

---



---

The diagram below shows the large intestine of the human digestive system.



- (b) Henry's grandmother had part of her large intestine removed due to disease. Based on the data above, explain how she would be affected?

[2]

---



---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

36. Muthu conducted an experiment to find out how the volume of sound would affect his heart rate. He recorded his results as shown below.

	normal heart rate before listening to loud sound (beats/min)	heart rate after listening to loud sound (beats/min)	normal heart rate before listening to soft sound (beats/min)	heart rate after listening to soft sound (beats/min)
1 <sup>st</sup> attempt	94	104	94	92
2 <sup>nd</sup> attempt	96	108	95	94
3 <sup>rd</sup> attempt	96	107	95	93

- (a) Why did Muthu conduct the same experiment for three attempts? [1]

---



---

- (b) What could Muthu conclude from the above results? [2]

---



---



---



## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

37. Simon carried out different activities and measured his breathing rate and pulse rate for each activity. He recorded his observations in the table below.

Activity	Breathing rate (Number of breaths/ min)	Pulse rate (Number of beats/min)
P	50	?
Q	30	50
R	90	110

- (a) Suggest a possible pulse rate for activity P. [1]

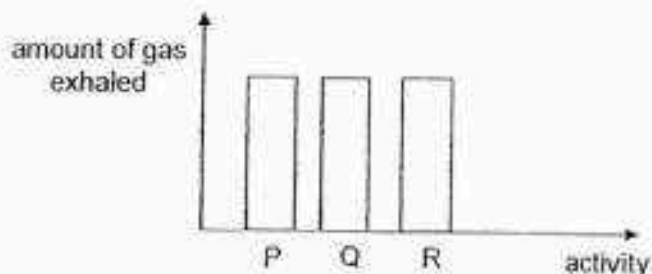
- (b) Simon walked, ran and slept. Complete the table of activities below by writing P, Q, or R to match the activity to the results in the above table. [1]

Actual activities	Represented letter
walking	
running	

Question 37 continues on page 13

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

- (c) Simon measured the amount of gas exhaled and plotted a graph as shown below immediately after each activity he had done for 10 minutes.



- (i) What can you conclude about the amount of gas exhaled for all the activities? [1]

---

- (ii) Name the gas that Simon has measured in part (c). [1]

---

- (d) Explain why Simon's breathing rate decreased when his pulse rate decreased? [1]

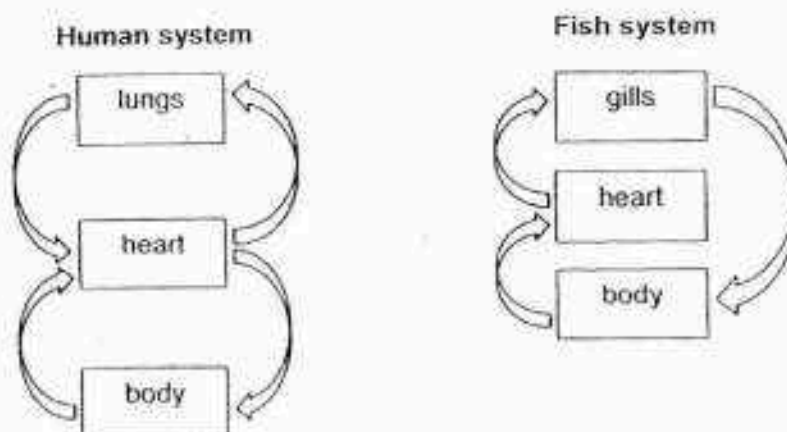
---

---

---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

38. Kassim studied the two systems as shown below.



- (a) State a difference between how the blood flows in the two systems above. [1]

---



---



---



---

- (b) What happens to Kassim's heart rate when he carries a stack of heavy books from level 1 to level 6? Explain why. [2]

---



---

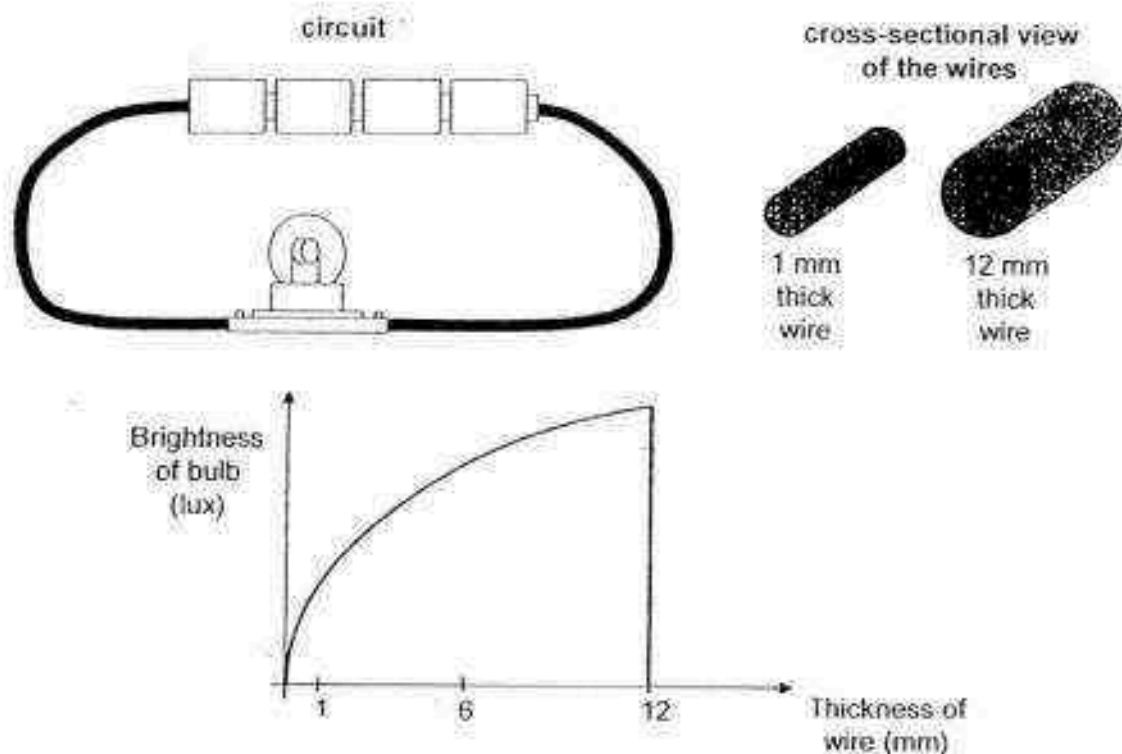


---



---

39. Zhi Wei conducted an experiment to find out how the thickness of wires would affect the brightness of the bulb.



- (a) What was the variable that was measured in this experiment? [1]

\_\_\_\_\_

- (b) What observation could he make based on the results shown in the graph? [1]

\_\_\_\_\_

\_\_\_\_\_

- (c) Explain the observation in part (b). [1]

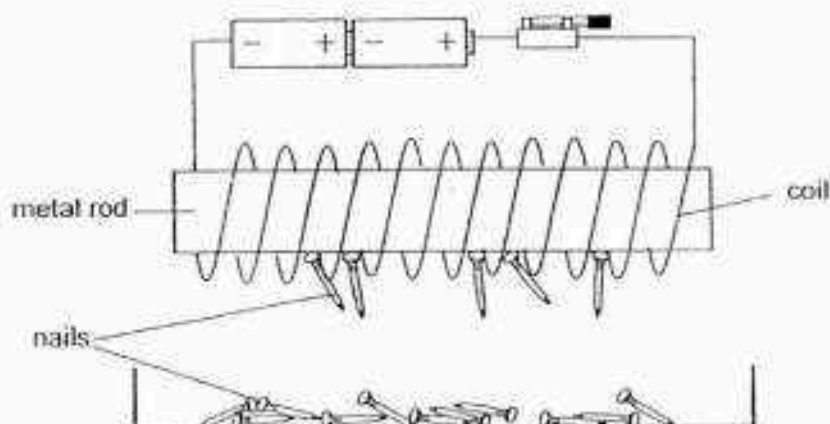
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

40. Lisa conducted an experiment by coiling some wires around a metal rod and connecting it to a circuit as shown below. When the switch was closed, she observed that some nails were attracted to the rod as shown below.

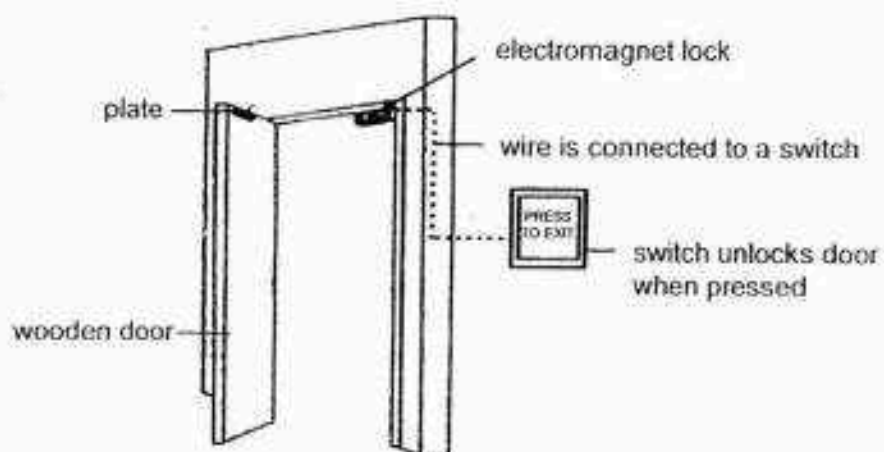


- (a) What would she observe when she open the switch? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) What should she do to the circuit if she wanted to attract more nails to the metal rod? [1]
- \_\_\_\_\_
- \_\_\_\_\_

Question 40 continues on page 17

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

Lisa installed an electromagnetic door-lock system as shown in the diagram below.



When the switch is pressed, the door unlocks.

- (c) Based on Lisa's experiment conducted earlier, explain how pressing the switch allows the door to be unlocked. [2]

---

---

---

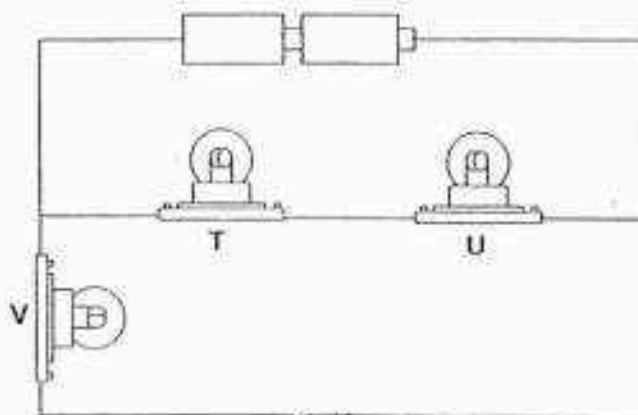
- (d) Suggest one suitable material that can be used to construct the plate.

---

---

## Rosyth School/Semestral Assessment 1/ Standard Science/P5/2016

41. The diagram below shows a circuit with 3 bulbs T, U and V.



- (a) A switch is placed in the circuit so that it controls only bulb V. Mark a cross (X) on the circuit above to show where the switch should be placed. [1]
- (b) What is the advantage of connecting bulbs T and V in the manner shown in the diagram above? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) What will happen to bulbs T and V if bulb U is replaced with an aluminium paper clip? Explain your answer. [1]
- \_\_\_\_\_
- \_\_\_\_\_

End of Paper

# ANSWER KEY

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : ROSYTH  
 SUBJECT : SCIENCE  
 TERM : SA1

## Booklet A

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

## Booklet B

Q29a Yes, organism Y has chloroplasts that can makes food.

Q29b Organism Y has a nucleus which enables it to grow a new tail.

Q30a Yes, crocodile lay eggs, have four legs and have scales as outer covering.

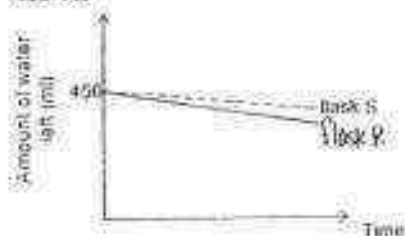
Q30b Animal C does not have feathers but animal D have feathers.

Q30c

Bird	—	D
Fish	—	B
Insect	—	C
Reptile	—	F

Q31a To find out how the number of roots affects the amount of water taken in by the plant.

Q31b



Q31c Less. The layer of oil prevents evaporation.

Q31d To confirm that the presence of roots is the only variable that affect the amount of water absorbed by the plant.



- Q32a To see if the red-coloured water travelled to the celery's leaves.
- Q32b The amount of leaves in each celery was different.
- Q32c The water-carrying tubes were still present so the leaves can still absorb water to make food.
- Q33a Amount of light.
- Q33b As the temperature of sugar solution increases, the number of yeast cells after 1 hour increases.
- Q33c Container C. The number of cells increased the most after 1 hour and this would have made the bread rise the most.

Q34a

part	material	reason for material used
X	Metal	Able to hold the cloth of the umbrella
Y	Rubber	Able to provide a good grip

- Q34b R, it did not absorb water so the material can keep the person dry.
- Q35a To find out how the surface area of the paper affects the amount of water absorbed.
- Q35b There is lesser surface area to absorb water from undigested food.
- Q36a To ensure the result of the experiment is reliable.
- Q36b The higher intensity of sound, the higher the heart rate.

Q37a 70

Q37b

Actual activities	Represented letter
walking	P
running	R

- Q37c (i) They exhale the same amount of gas.  
(ii) Nitrogen
- Q37d Less energy is needed to take in less oxygen.

Q38a The blood flows twice to the heart in human while the blood flows once to the heart in the fish.

Q38b His heart needs to pump blood at a faster rate to provide more oxygen and digested food to the body.

Q39a The brightness of the bulb.

Q39b As the thickness of the wires increases, the brightness of the bulb increases but when the thickness of the wire reaches 12mm, the bulb did not light up.

Q39c More electric current can pass through the thicker wires.

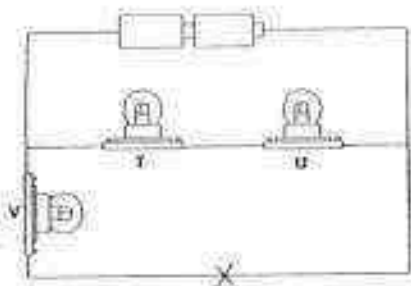
Q40a The nails would drop.

Q40b Add more batteries.

Q40c When the switch is pressed, the circuit is open, hence, electricity cannot pass through the circuit and the electromagnet loses its magnetism and cannot attract the plate.

Q40d Iron or Steel.

Q41a



Q41b If one bulb fuses, the other bulb will still light up.

Q41c Bulb T and V will still light up. Aluminium paper clip is a conductor of electricity so it allows electricity to pass through the circuit.



### PRIMARY 5 MID-YEAR EXAMINATION 2016

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

Date: 12 May 2016

Class : Primary 5 ( )

Time: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_

Marks: \_\_\_\_\_ / 56

## **SCIENCE BOOKLET A**

### INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

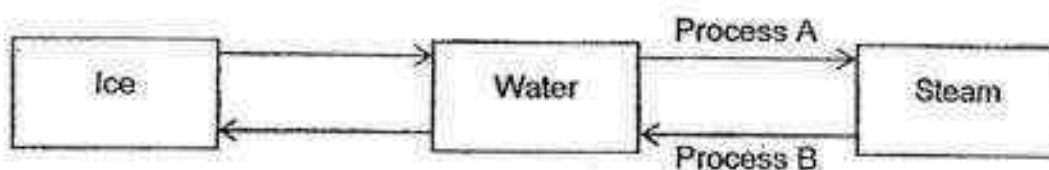
Follow all instructions carefully.

Answer all questions.

### Section A (28 × 2 marks)

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

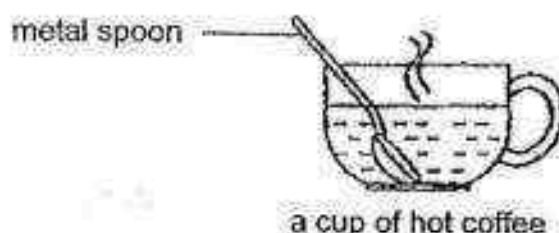
1. The diagram below represents the change of state of water.



Which one of the following are represented by Process A and Process B?

	Process A	Process B
(1)	Boiling	Condensation
(2)	Evaporation	Melting
(3)	Condensation	Freezing
(4)	Boiling	Evaporation

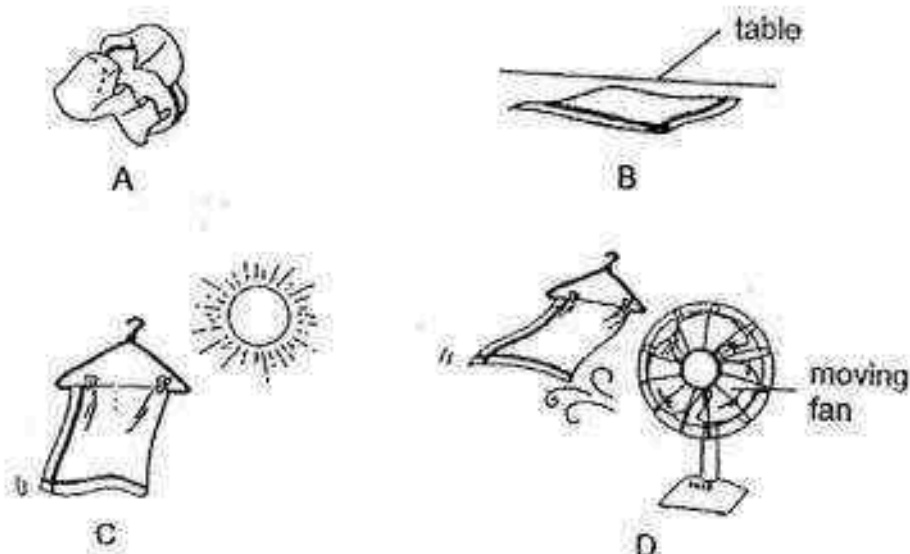
2. Emily placed a metal spoon that was left on a table into a cup of hot coffee.



Which one of the following correctly describes what will happen next?

- (1) The cup loses heat to the hot coffee.
- (2) The spoon loses heat to the hot coffee.
- (3) The hot coffee gains heat from the spoon.
- (4) The spoon gains heat from the hot coffee.

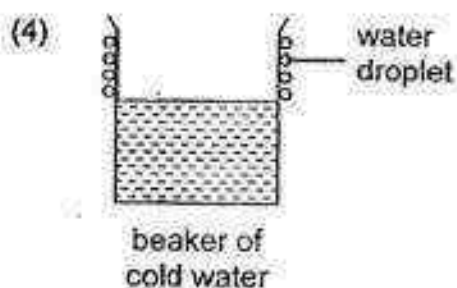
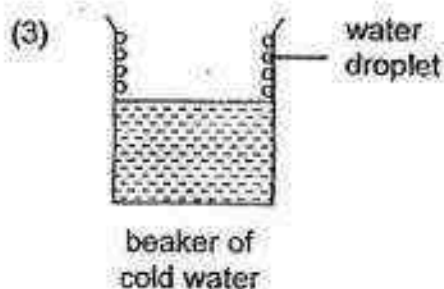
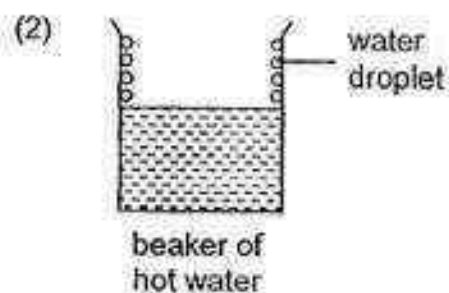
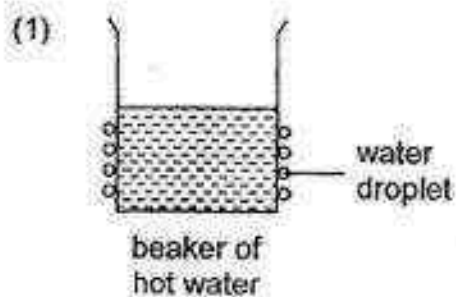
3. Idris conducted an experiment using four identical cloths, A, B, C and D. He poured an equal amount of water onto each cloth and exposed them to different conditions as shown below.



Which cloth, A, B, C or D, will take the longest time to dry?

- (1) A
  - (2) B
  - (3) C
  - (4) D
4. Which one of the following is an example of recycling water?
- (1) Turn waste water into drinkable water.
  - (2) Use water from washing beans to water plants.
  - (3) Wash a car with a pail of water instead of a hose.
  - (4) Wash dishes in a tub of water instead of under a running tap.

5. Which one of the following correctly shows the condensation of water vapour in a room at  $28^{\circ}\text{C}$ ?



6. Ee Heng stepped out of a swimming pool. He was wet and he felt cold.

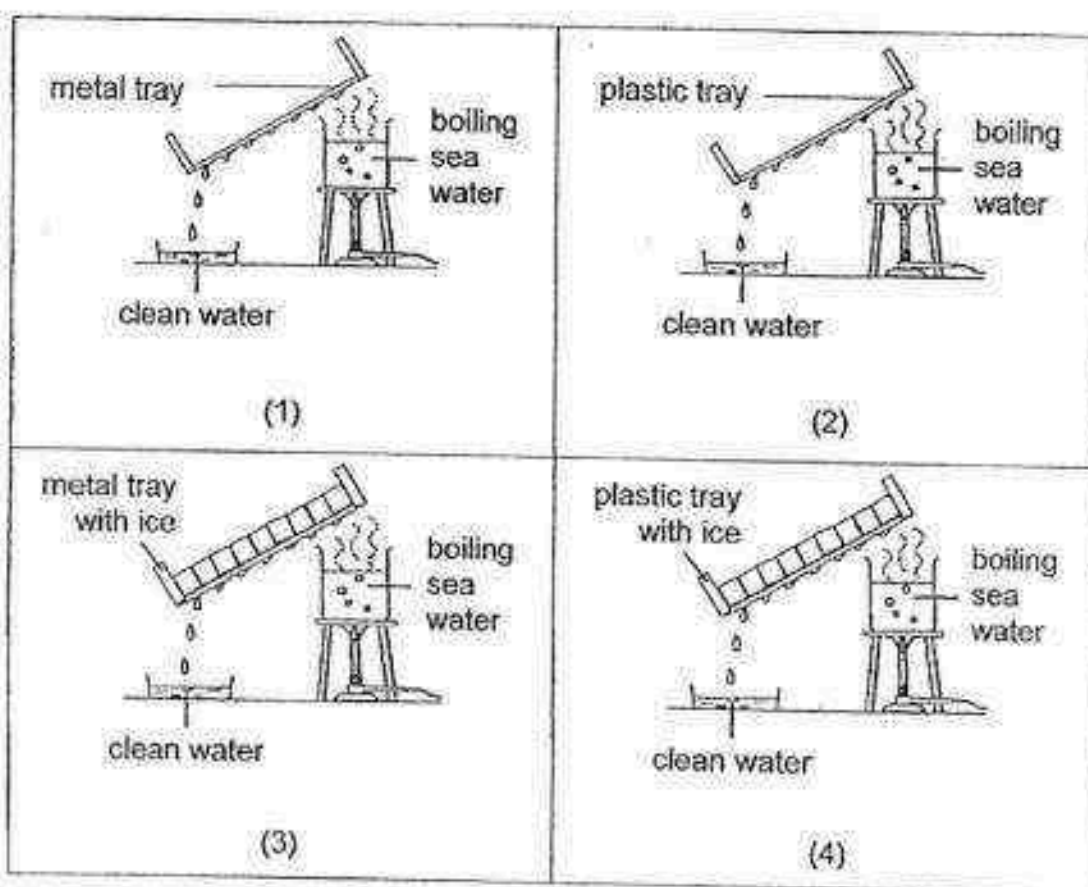


Which of the following correctly explain(s) why Ee Heng felt cold?

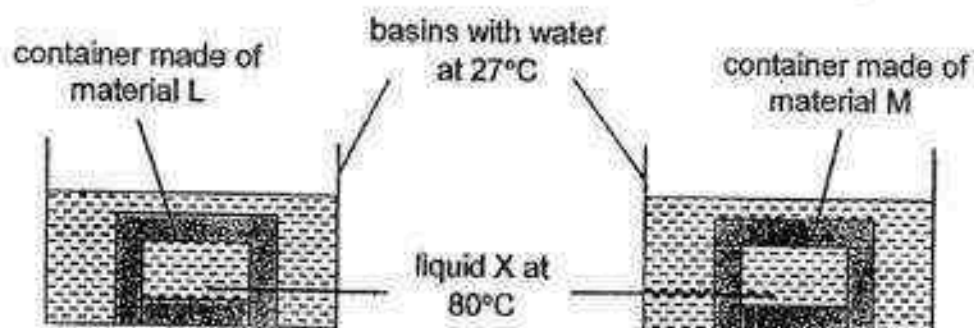
- A: The water on his body evaporated.
- B: The water vapour in the air condensed on his body.
- C: The wind increased the rate of evaporation of water.

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

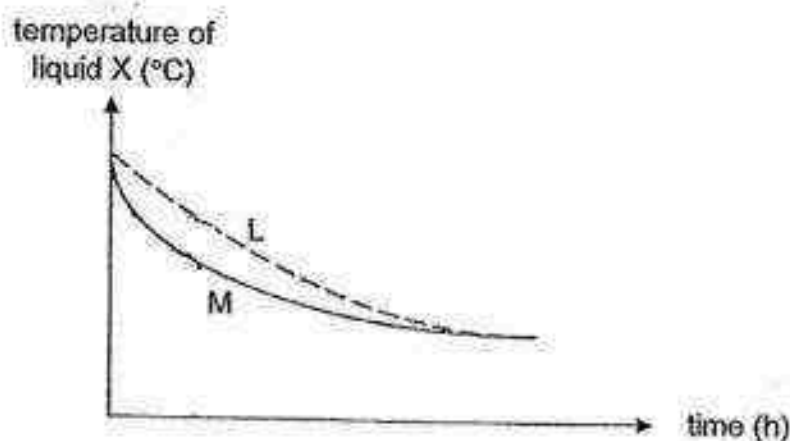
7. Study the diagrams below. Which one of the following set-ups should be used to collect the most amount of clean water within the shortest period of time?



8. Betty conducted an experiment using two identical basins of water at  $27^{\circ}\text{C}$  as shown below. The containers in the basins are identical but made of different materials, L and M. Containers L and M contain liquid X.



She measured the temperature of liquid X in the two containers over a period of time. Her results are shown in the graph below.



Betty planned to go for a picnic and she wanted to bring a large bottle of hot tea and pieces of cold sandwich. If she wants to use either of the two materials, L and/ or M, for the containers to keep her tea hot and her sandwich cold for a longer period of time. Which material(s) should she choose for each container?

	Material for container carrying	
	hot tea	cold sandwich
(1)	L	L
(2)	L	M
(3)	M	L
(4)	M	M



9. Which one of the following organisms reproduces by seeds?

(1) Balsam



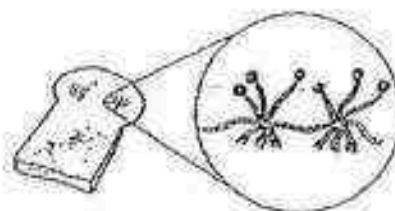
(2) Bird's nest fern



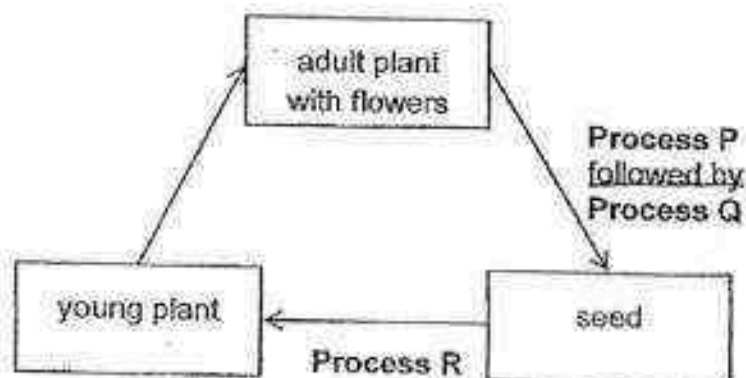
(3) Shiitake mushroom



(4) Bread mould



10. A flowering plant undergoes Process P, Process Q and Process R in its life cycle as shown below.

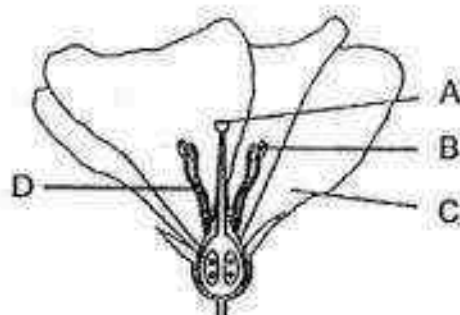


Which of the following correctly represents Process P, Process Q and Process R?

	Process P	Process Q	Process R
(1)	fertilisation	pollination	germination
(2)	germination	pollination	fertilisation
(3)	fertilisation	germination	pollination
(4)	pollination	fertilisation	germination

11. Fatimah conducted an experiment to find out the part of a flower that is needed to form a fruit. She removed 3 out of 4 parts of Flower P as shown below. She then dusted some pollen grains from another flower of the same plant to the remaining part of Flower P.

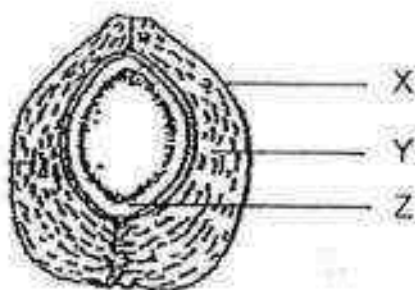
After some time, Flower P turned into a fruit.



Flower P

Which one of the above parts, A, B, C or D, of Flower P was not removed?

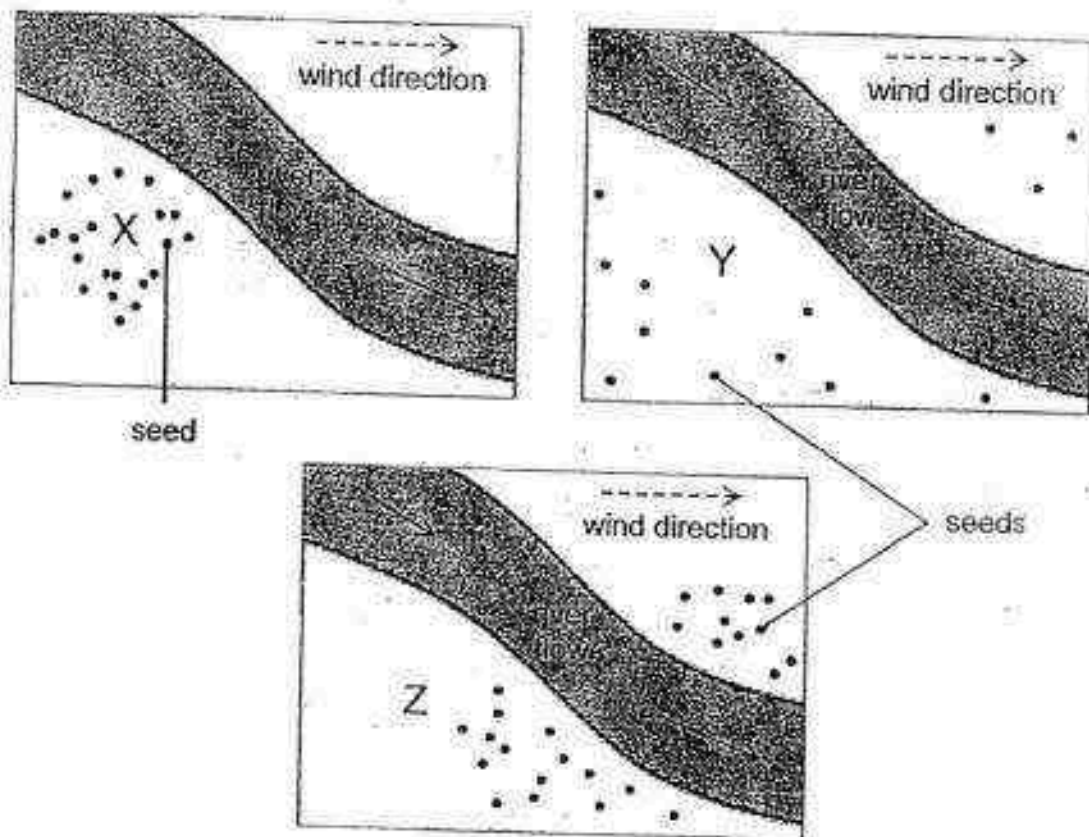
- (1) A  
(2) B  
(3) C  
(4) D
12. The diagram below shows the cross-section of a coconut fruit and its parts, X, Y and Z.



Which of the following characteristic(s) help(s) the coconut to be dispersed by water?

- A: Y is fibrous and it has air spaces.  
B: X is brown when ripe.  
C: Z is sweet and juicy.
- (1) A only  
(2) A and B only  
(3) B and C only  
(4) A, B and C

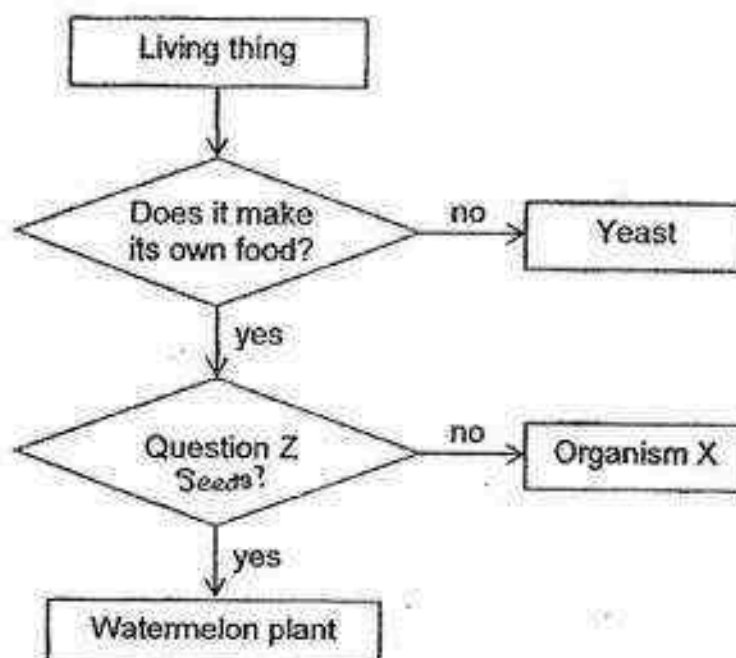
13. Study the seed dispersal by three different parent plants, X, Y and Z.



How are the seeds of X, Y and Z dispersed?

	X	Y	Z
(1)	By animals	By explosive action	By wind
(2)	By explosive action	By animals	By wind
(3)	By animals	By wind	By explosive action
(4)	By wind	By animals	By explosive action

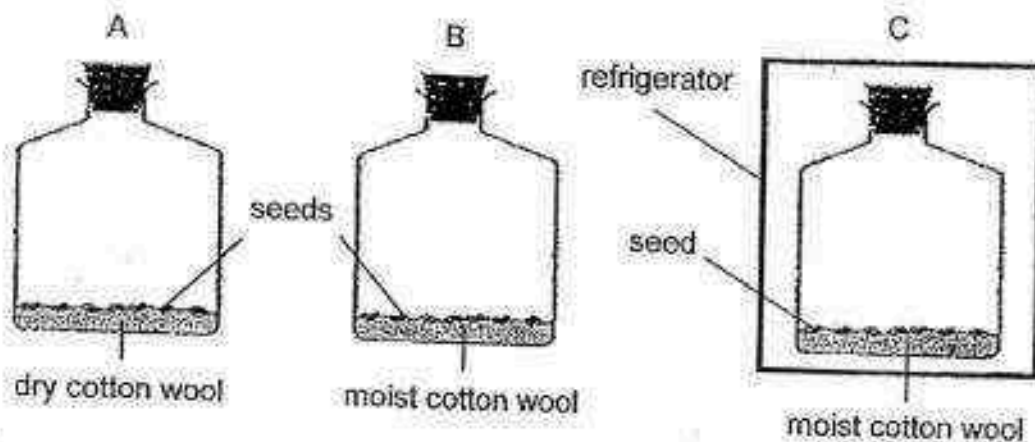
14. Study the flow chart below.



Which of the following represents Question Z and Organism X?

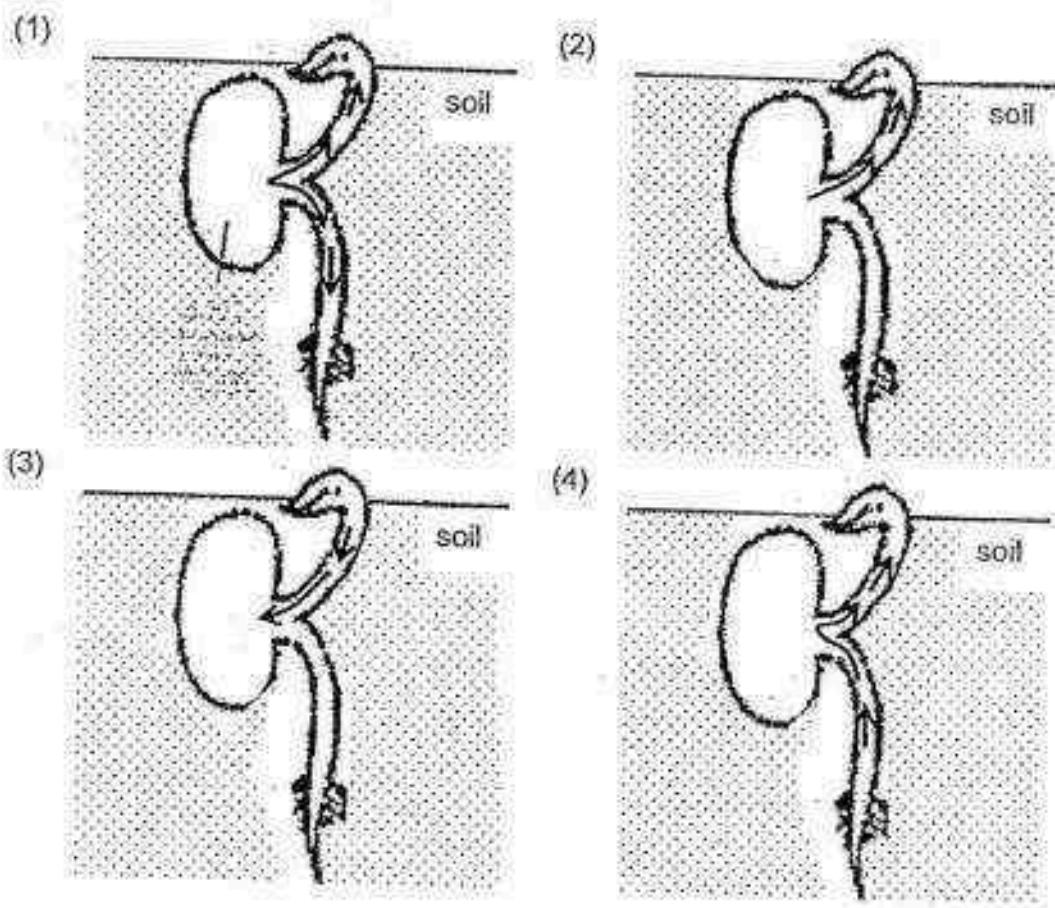
	Question Z	Organism X
(1)	Are the seeds dispersed by water?	Angsana
(2)	Are the seeds dispersed by animals?	Love grass
(3)	Does it produce seeds?	Staghorn fern
(4)	Does it produce spores?	Sunflower plant

15. In a classroom, seeds were placed in three identical bottles as shown in set-ups A, B and C below.



In which of the set-up(s) would the seeds most likely germinate?

- (1) A only
  - (2) B only
  - (3) A and C only
  - (4) B and C only
16. Which one of the following diagrams shows the correct movement of food in a seed that is germinating?



17. The diagrams below show the reproductive systems of a human and a plant.

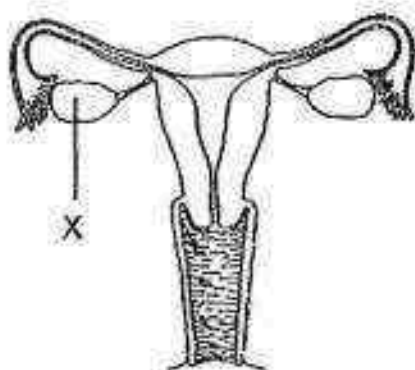


Diagram 1

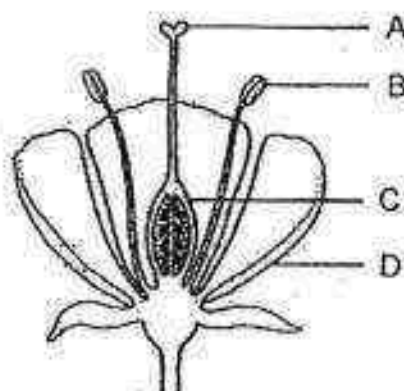
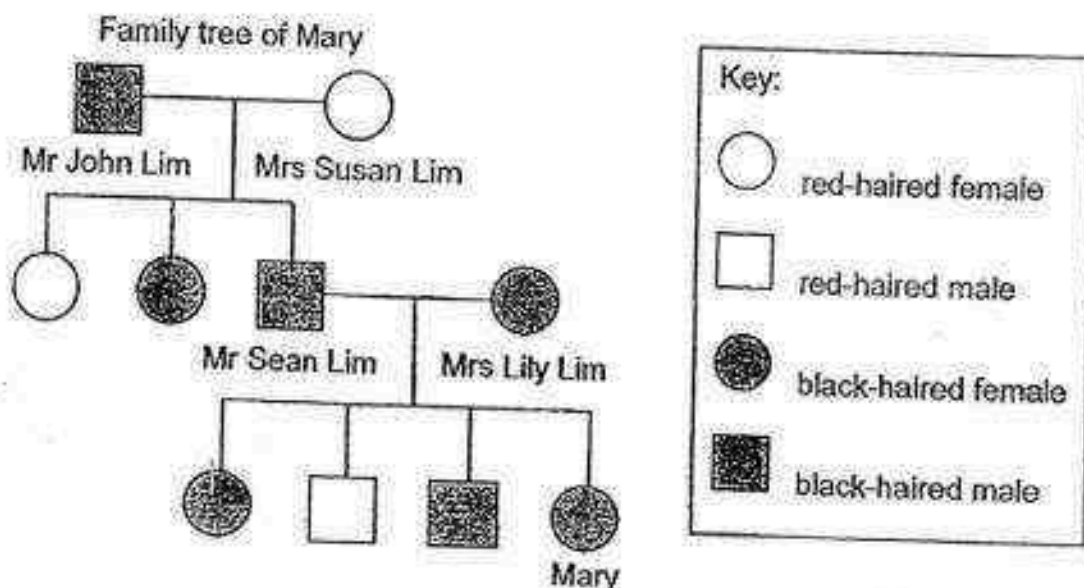


Diagram 2

Which part, A, B, C or D, in diagram 2 has a similar function as part X in diagram 1?

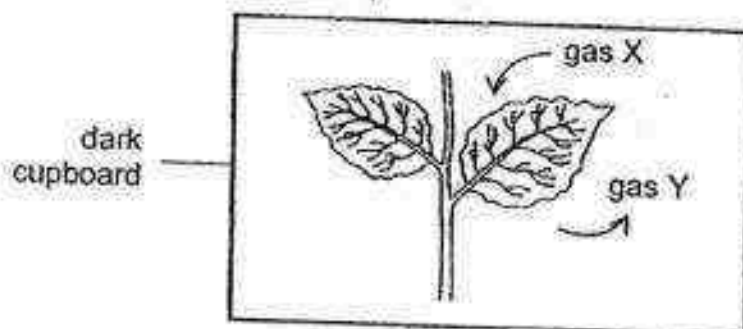
- (1) A
  - (2) B
  - (3) C
  - (4) D
18. Which one of the following is a correct statement in the sexual reproduction of humans?
- (1) The sperm is produced in the penis.
  - (2) The fertilised egg develops in the stomach.
  - (3) The unfertilised egg develops in the womb.
  - (4) The developing baby obtains digested food from the mother.

19. Hair colour is a characteristic that is passed on from parents to their young. The family tree of Mary is shown below.



Which one of the following statements about Mary's family is correct?

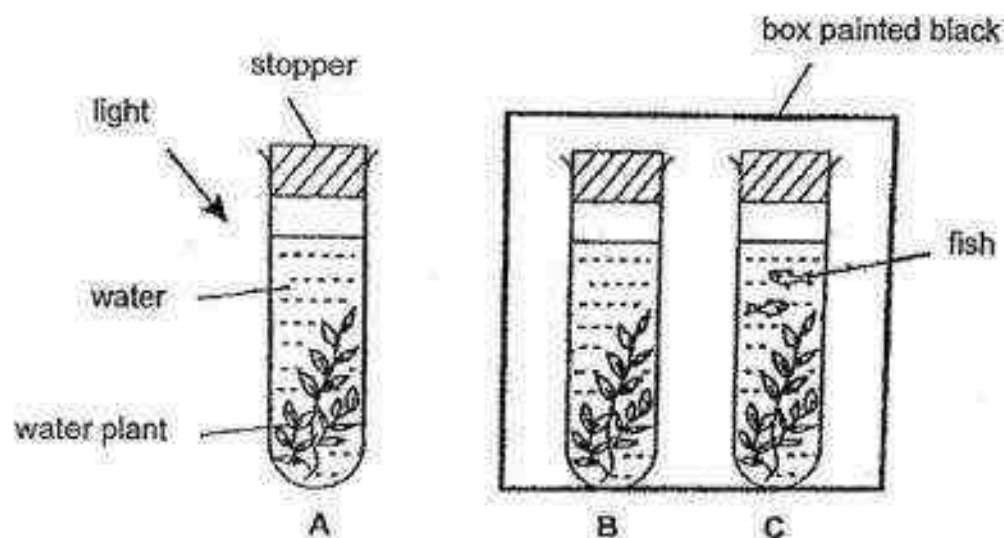
- (1) Mary inherited her hair colour from Mrs Susan Lim.
  - (2) Mary's sister inherited her hair colour from her parents.
  - (3) Mary's father has the same hair colour as his two sisters.
  - (4) Mary's mother has passed on her hair colour to her sons.
20. The diagram below shows the gaseous exchange taking place in the leaves of a plant placed inside a dark cupboard.



Which of the following represents gas X and gas Y?

	Gas X	Gas Y
(1)	Carbon dioxide	Oxygen
(2)	Oxygen	Carbon dioxide
(3)	Carbon dioxide	Water vapour
(4)	Water vapour	Oxygen

21. Keming conducted an experiment in a bright room with the set-ups, A, B and C, as shown below. The amount of carbon dioxide in the water in each of the 3 set-ups was at 40 units at the start of the experiment.

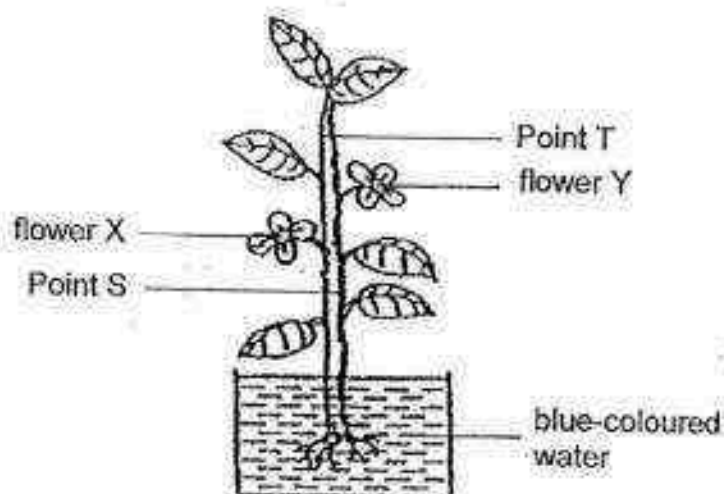


Which of the following is the most possible amount of carbon dioxide found in the water in each set-up after a few hours?

Amount of carbon dioxide in set-up (units)			
	A	B	C
(1)	70	50	30
(2)	30	70	50
(3)	50	70	30
(4)	30	50	70



22. Wei Ming placed a plant with two white flowers, X and Y, into a beaker of blue-coloured water. After three hours, flower X turned blue while flower Y remained white.



He then made two cross-section cuts across the stem at Point S and Point T as shown in the diagram above.

Which of the following diagrams shows what Wei Ming would observe when he looked at the cross-sections of Point S and Point T respectively?

(1)



Point S



Point T

Key: ● coloured  
○ uncoloured

(2)

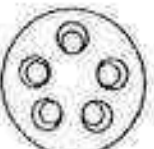


Point S



Point T

(3)

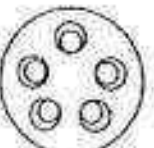


Point S



Point T

(4)

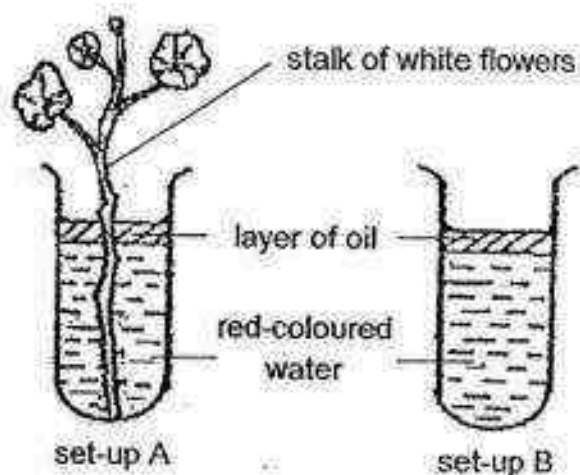


Point S



Point T

23. Devi set up an experiment as shown below to find out how water is transported in a plant. Set-ups A and B contained the same amount of red-coloured water and the same amount of oil.



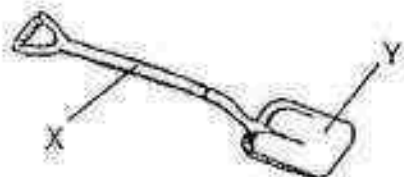
After some time, Devi recorded the amount of water left in each set-up in the table below.

Set-up	Amount of water (ml)	
	Start of experiment	End of experiment
A	100	80
B	100	100

Based on the results in the table, what can Devi conclude?

- (1) Roots absorb water.
- (2) The flower had taken in some water to make food.
- (3) The stalk of white flowers had absorbed some of the water.
- (4) The stalk of white flowers can absorb red-coloured water but not clear water.

24. The shovel shown below is used for digging, lifting and throwing of stones and rocks in a construction site.



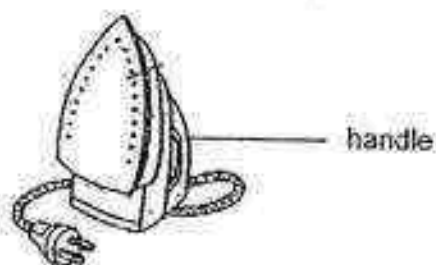
What material(s) is/ are X and Y likely to be made of?

	X	Y
(1)	wood	metal
(2)	glass	paper
(3)	metal	rubber
(4)	wood	plastic

25. The properties of four different materials, P, Q, R and S, are shown in the table below.

Material	Property of material	
	Can bend easily	Can conduct heat easily
P	yes	yes
Q	yes	no
R	no	yes
S	no	no

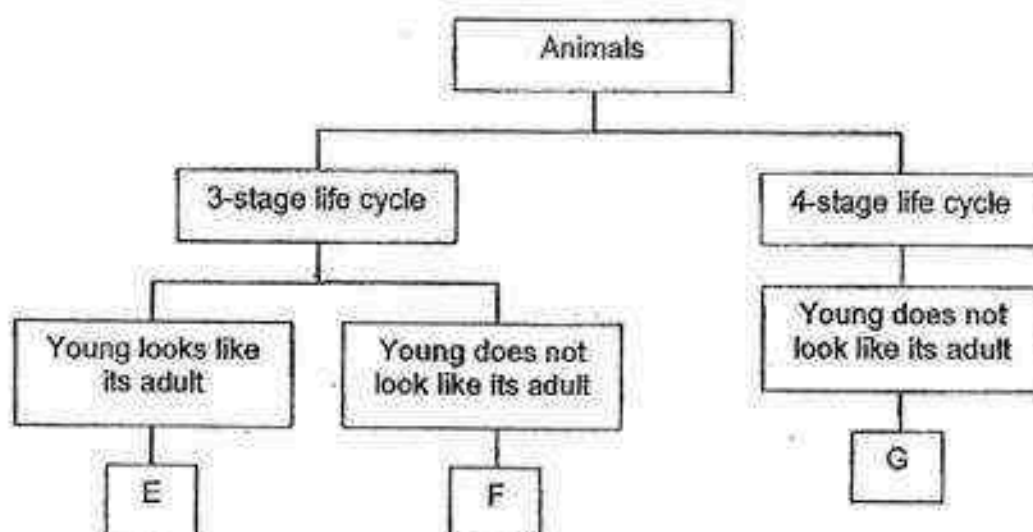
The diagram below shows an iron for the ironing of clothes.



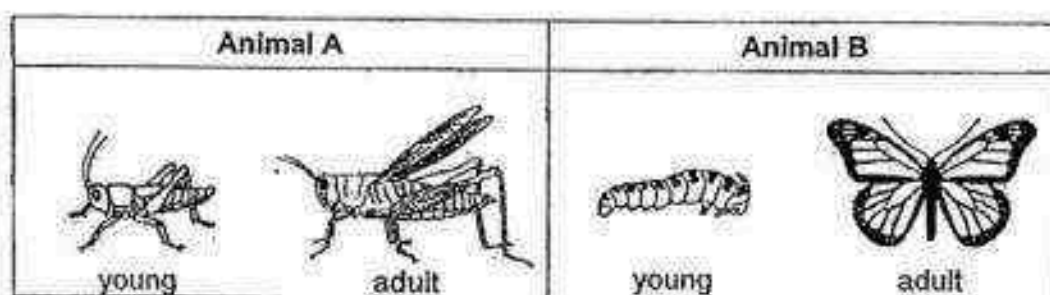
Which material, P, Q, R or S, is most suitable for making the handle of the iron?

- (1) P
- (2) Q
- (3) R
- (4) S

26. Study the classification chart below.



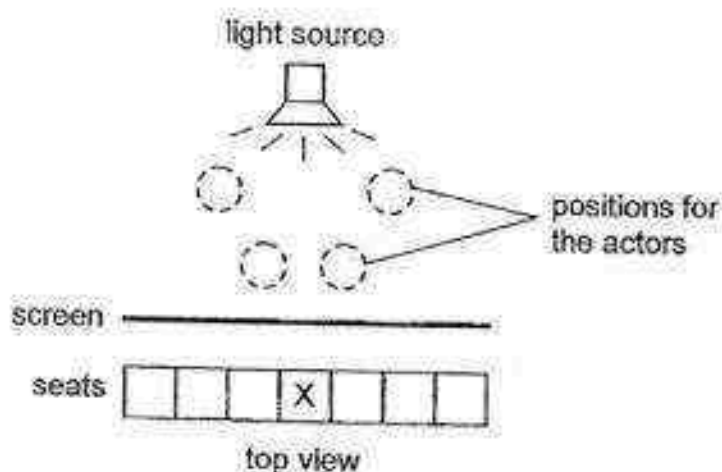
The diagram below shows Animal A and Animal B.



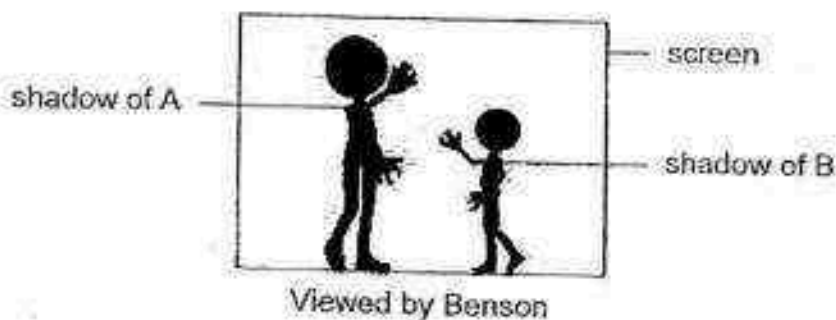
Which group, E, F or G, do Animal A and Animal B belong to?

	Animal A	Animal B
(1)	E	F
(2)	F	G
(3)	E	G
(4)	G	F

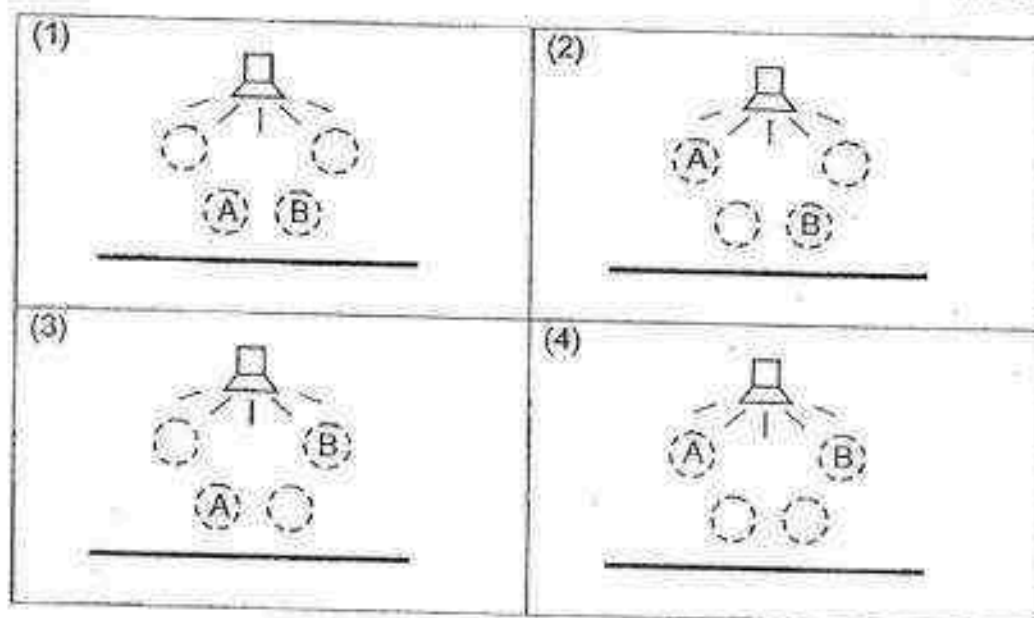
27. Benson was watching a shadow performance. The top view of the layout of the theatre is shown below.



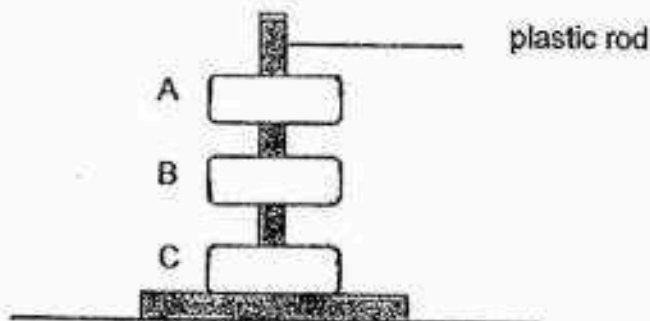
On the stage, there were two actors, A and B, who are of the same height. Benson was seated at X and he saw the shadows of the actors on the screen as shown below.



Which one of the following correctly shows the positions of actors A and B?



28. Janice had 3 rings, A, B and C, which are made of magnetic materials. She inserted them through a smooth plastic rod and pushed them all the way to the base. However, when she released them, the rings sprang up and seemed to "float" as shown below.



Based on the above observations, which one of the following statements is true?

- (1) B is a magnet.
- (2) C is a plastic ring.
- (3) The unlike poles of B and C are facing each other.
- (4) A is made of a magnetic material but it is not a magnet.



# PRIMARY 5 MID-YEAR EXAMINATION 2016

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

Date: 12 May 2016

Class : Primary 5 ( )

Duration: 1 hour 45 minutes

Parent's Signature : \_\_\_\_\_

## SCIENCE BOOKLET B

### INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

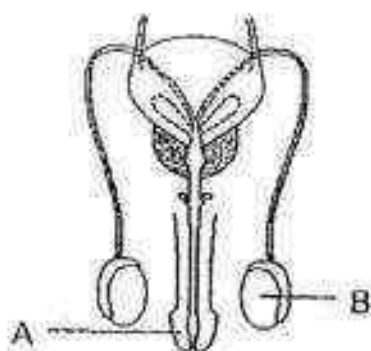
Answer all questions.

Booklet A	56
Booklet B	44
Total	100

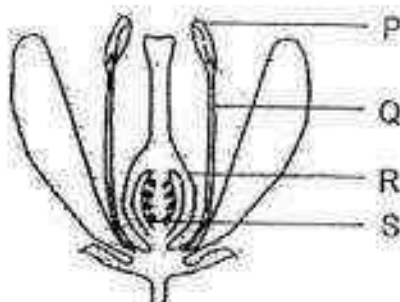
## Section B (44 marks)

For questions 29 to 41, write your answers in the spaces provided.

29. The diagrams below show the reproductive parts of a human and a plant.



Reproductive system  
of a human



Reproductive system  
of a plant

- (a) Name the parts A and B.

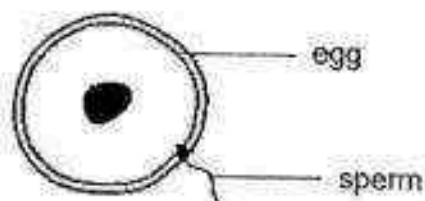
[1]

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

- (b) Which part, P, Q, R or S, in the reproductive system of a plant has a similar function as part B in the reproductive system of a human? [1]

\_\_\_\_\_

Study the diagram of a process shown below.



- (c) Name the process shown above.

[1]

\_\_\_\_\_

- (d) The process in (c) also takes place in a flower. After this process had taken place, state what R and S in the flower shown above would develop into. [1]

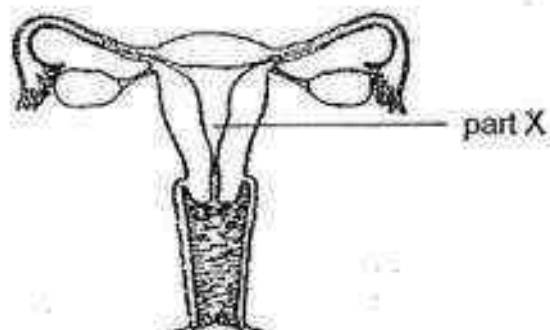
R would develop into a \_\_\_\_\_.

S would develop into a \_\_\_\_\_.





30. The diagram below shows the cross section of the female human reproductive system.



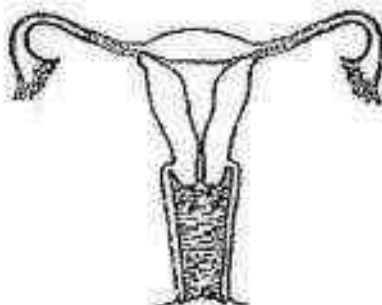
- (a) What is the function of part X in the sexual reproduction in human after fertilisation? [1]

---



---

The diagram below shows a woman's reproductive system with part(s) missing.



- (b) Name the part(s) that is/ are missing. [1]

---

- (c) Based on the diagram above, is this woman able to reproduce naturally? Explain why. [2]

---



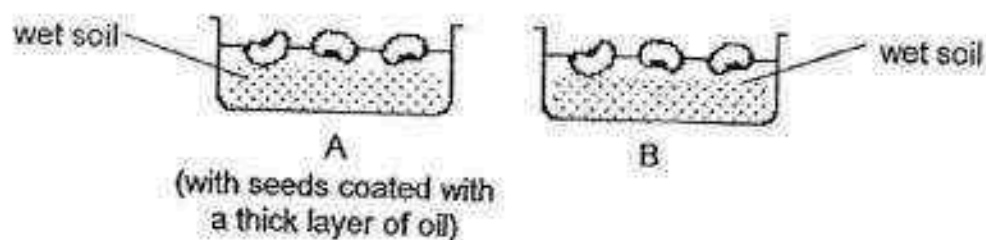
---



---



31. Ravi conducted an experiment using similar type of seeds in set-ups A and B as shown below. He coated the seeds in set-up A with a thick layer of oil and placed both set-ups in a cupboard.



- (a) The seeds in set-up A cannot germinate. Explain why.

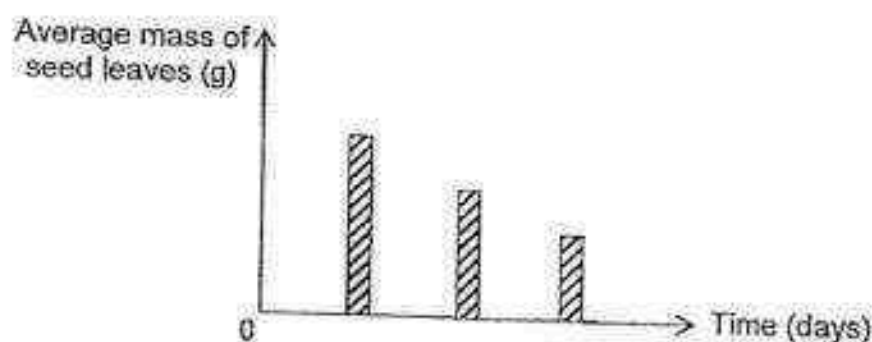
[1]

---



---

The seeds in set-up B germinated. Ravi weighed the average mass of the seed leaves over a few days. The graph below shows his results.



- (b) Explain why the mass of seed leaves decreases with time.

[1]

---



---

- (c) If Ravi had cooked the seeds in set-up B, the seeds would not have germinated. Give a reason why.

[1]

---



---



32. Peter counted the number of two different types of young plants, A and B, found at various distances from their parent plants in a garden. The results are shown below.

Distance from parent plant	1m	1.5m	2m
Number of young Plant A	20	8	5
Number of young Plant B	1	6	13

- (a) Based on the above results, which one of the following is likely to be the fruit of Plant A? Choose your answer and tick (✓) in the correct box.


☐

☐

Explain your answer in (a).

[2]

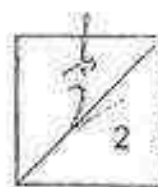
---



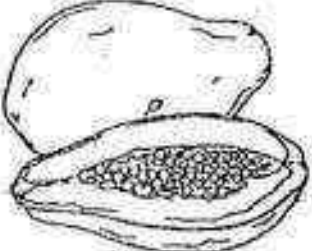


---



---



- (b) In the table below, state the method of dispersal for each fruit and one characteristic of the fruit that helps in its dispersal. [2]

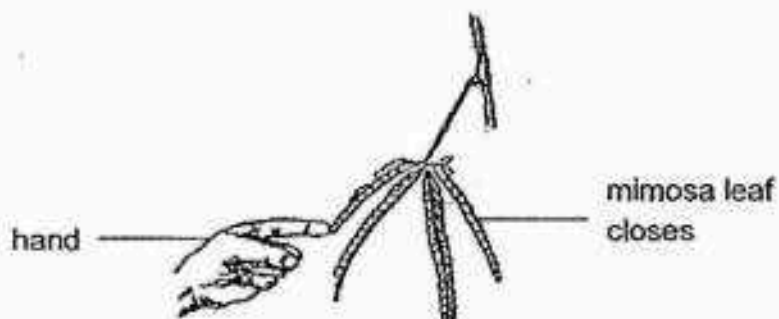
Fruit	Method of dispersal	<u>One</u> characteristic of the fruit
(i)  Papaya	By animals	It is fleshy.
(ii)  Shorea		
(iii)  Fruit of Sandbur grass		



- (c) The diagram below shows the leaves of a mimosa plant.



When its leaves are touched, they close as shown below.

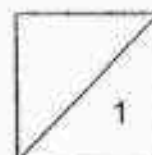


Based on the above, state the characteristic of a living thing.

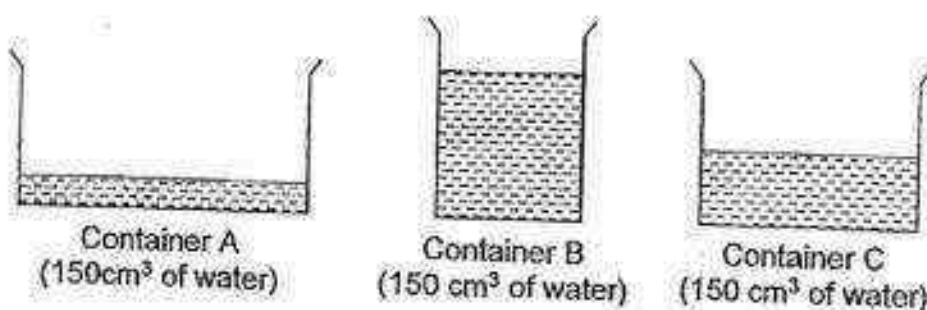
[1]

---

---



33. Rosie used the set-up below to study the rate of evaporation of water. All three containers, A, B and C, had an equal amount of water at first. They were placed in the sun.



- (a) In which container, A, B or C, would the water be the first to dry? Explain why. [2]

---



---



---

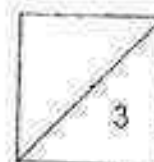
Rosie carried out another experiment to compare the rate of evaporation of three different liquids, X, Y and Z. She poured 150 cm<sup>3</sup> of each liquid into three identical beakers separately.

She placed the beakers in a classroom and measured the time taken for each liquid to evaporate completely. She recorded the results in the table below.

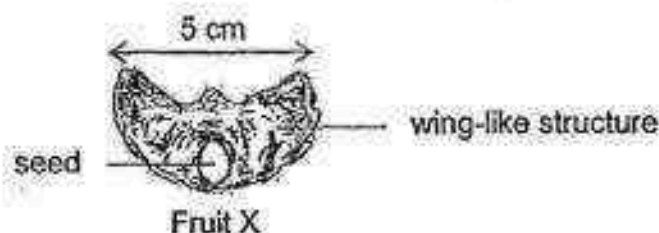
Liquid	X	Y	Z
Time (h)	2	3	1

- (b) Arrange the liquids, X, Y and Z, in the correct order below, beginning with the liquid with the lowest rate of evaporation. [1]

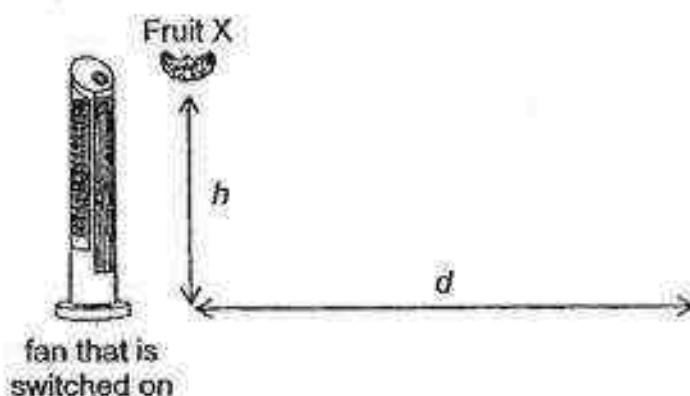
	lowest rate of evaporation $\longleftrightarrow$ highest rate of evaporation		
Liquid			



34. Ann wanted to find out how the height at which Fruit X below is dropped affects the distance it travels. Fruit X has a 5 cm wing-like structure as shown.



She conducted the experiment by dropping Fruit X from a certain height,  $h$ , in front of a fan as shown below. She then measured the distance,  $d$ , travelled by the fruit.



Ann repeated the procedure with different heights,  $h$ . Her results are shown in the table below.

$h$ (cm)	100	80	60
$d$ (cm)	45	30	15

- (a) Based on the results, what is the relationship between distance  $d$  and height  $h$ ? [1]

---



---



- (b) Ann ensured that the experiment is a fair test. Tick '✓' the following which she had kept constant. [1]

	Tick (✓)
(i) Height from which Fruit X is dropped	
(ii) Distance between the fan and where Fruit X is dropped	
(iii) Duration of Fruit X in the air	
(iv) Surface area of Fruit X	

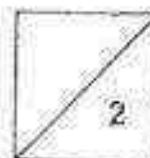
- (c) Ann has two other experiments she wants to carry out. The aim of each experiment is shown below. Draw lines to match each aim to the correct variable she needs to change. [1]

#### Aims

- (i) To find out if the exposed surface area of the wing-like structure affects the distance travelled by the fruit
- (ii) To find out how the speed of wind affects the distance travelled by the fruit

#### Variable to change

- Size of the wing-like structure
- Distance travelled by the fruit
- Time taken for the fruit to reach a distance
- Speed of the fan
- Temperature of the surroundings





35. Ifan carried out an experiment as shown below in Diagram 1.

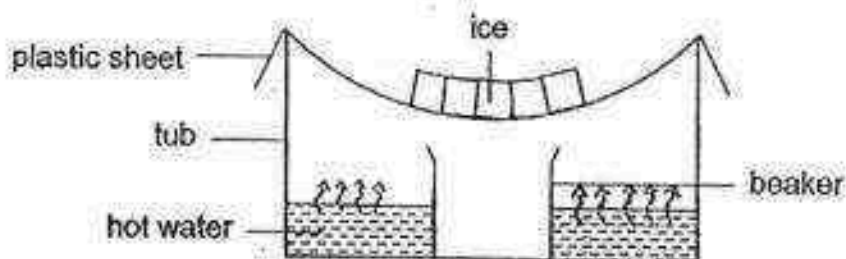


Diagram 1

- (a) After an hour, he found that some water had collected in the beaker. Explain what had happened to the hot water and how clean water was collected in the beaker. [2]

---



---



---



---

Ifan then repeated the experiment using tap water instead of hot water as shown below in Diagram 2.

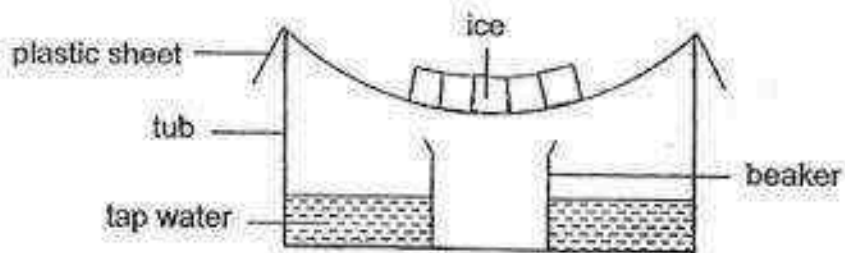


Diagram 2

- (b) What is the difference between the volume of water collected in the beaker in Diagram 1 and that in Diagram 2? [1]

---



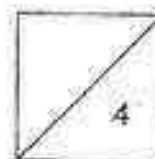
---

- (c) Give a reason for your answer in (b). [1]

---



---

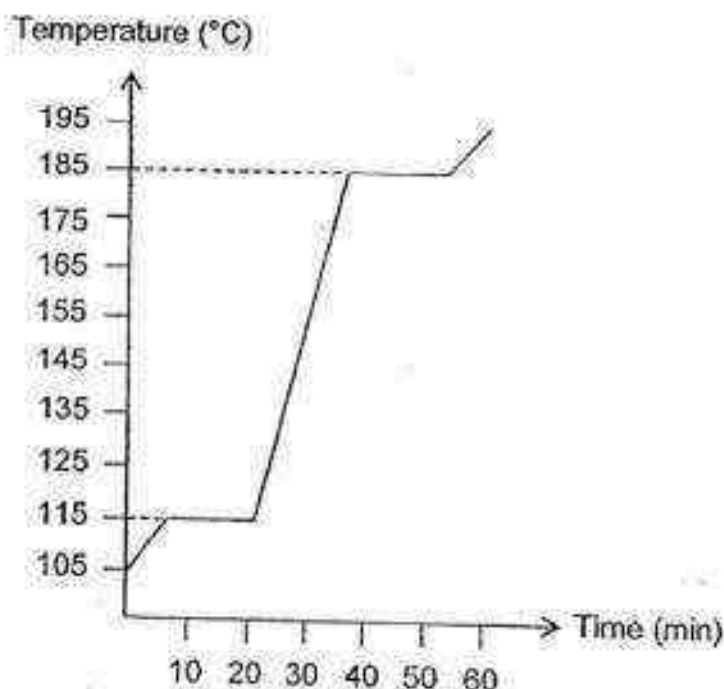


36. Aminah has three different substances, A, B and C. Their melting point and boiling point are shown below.

Substance	Melting point ( $^{\circ}\text{C}$ )	Boiling point ( $^{\circ}\text{C}$ )
A	24	175
B	11	330
C	0	100

- (a) What state of matter are all three substances in at  $80^{\circ}\text{C}$ ? [1]

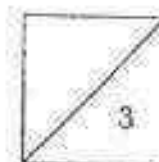
Aminah plotted a graph of another substance, D, showing its change of state at different temperatures as shown below.



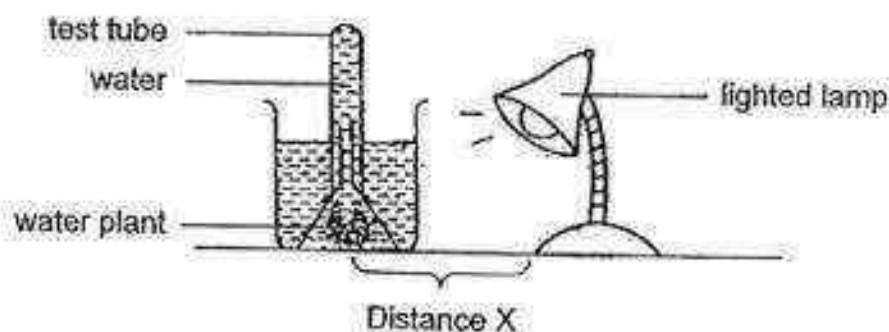
- (b) State the melting point and boiling point of substance D. [2]

Melting point: \_\_\_\_\_  $^{\circ}\text{C}$

Boiling point: \_\_\_\_\_  $^{\circ}\text{C}$



37. Judy set up an experiment as shown below in a dark room.



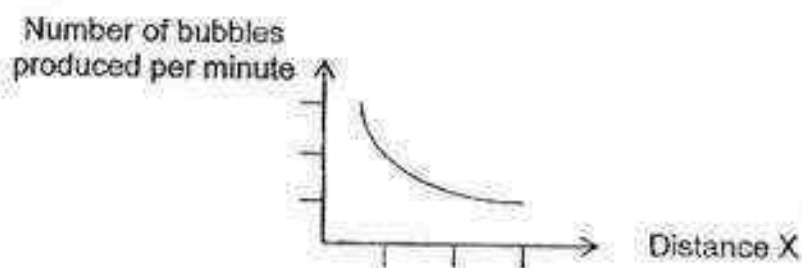
- (a) She noticed the water level in the test tube drop after some time. Explain how the water level dropped. [1]

---



---

Judy noticed that when Distance X was changed, the number of bubbles produced by the plant was affected. She kept other variables constant. Her results are shown in the graph below.



- (b) From the graph, how does Distance X affect the number of bubbles produced per minute? [1]

---



---

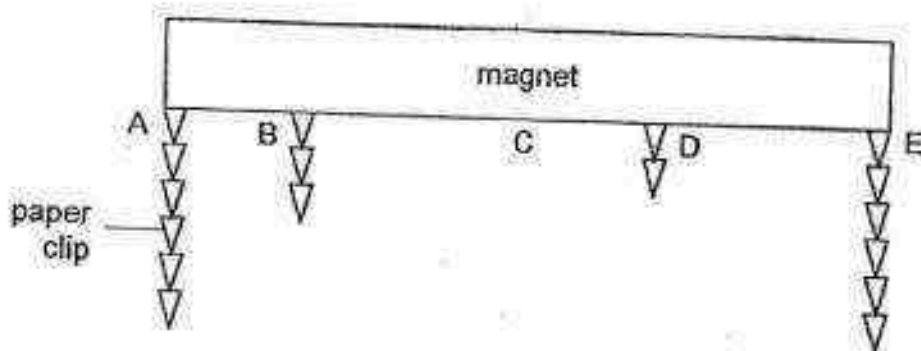
- (c) Judy repeated the experiment by adding some snails onto the plant. The number of bubbles produced by the plant per minute increased. Give a reason why this happened. [2]

---



---

38. Josh wanted to see how many paper clips a magnet can attract at points A, B, C, D and E. He observed the result as shown below.



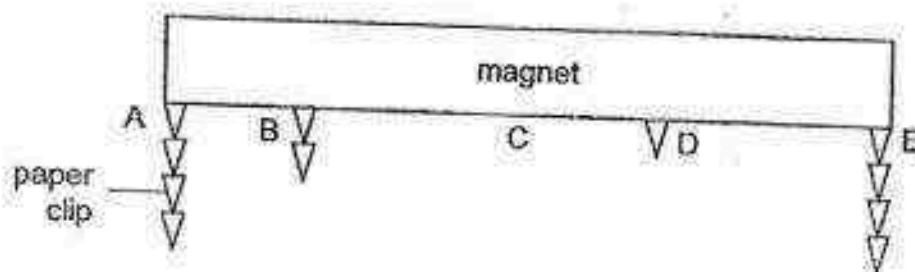
- (a) State the property of the paper clips that allows them to be attracted to the magnet. [1]

---

- (b) Based on Josh's observation, what could he conclude about the ends of the magnet, A and E, and the center, C? [1]

---

Josh dropped the magnet accidentally down a flight of stairs. When he used the magnet to attract the paper clips again, he had a different result as shown in the diagram below.

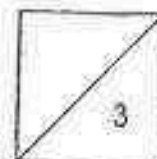


- (c) What had happened to the magnet? [1]

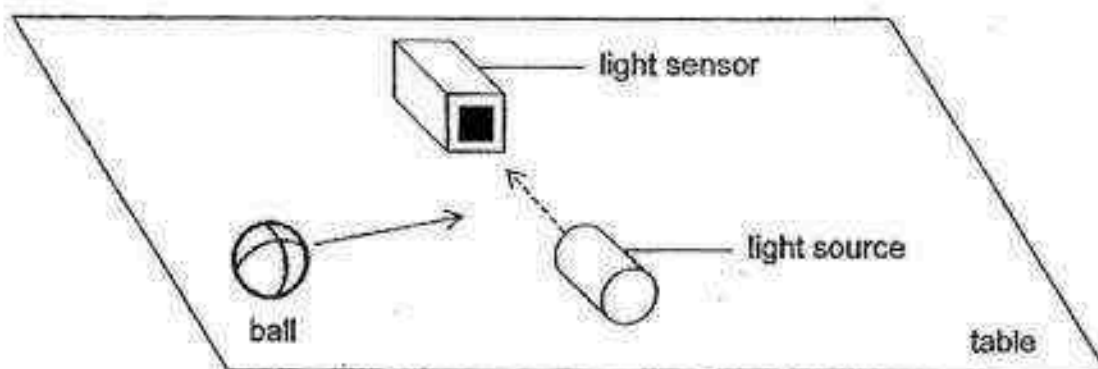
---



---

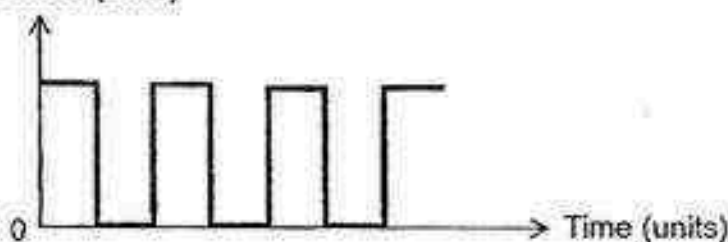


39. Vishnu placed a light sensor opposite a light source. He rolled a ball across the table, passing it between light sensor and the light source several times as shown in the diagram below.



Study the line graph Vishnu had drawn for his results obtained.

Amount of light detected  
by the sensor (units)



- (a) Based on the results above, how many times did the ball pass the light sensor? [1]

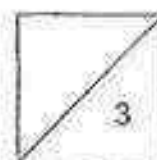
---

- (b) State a property of light that allows this experiment to be carried out. [1]

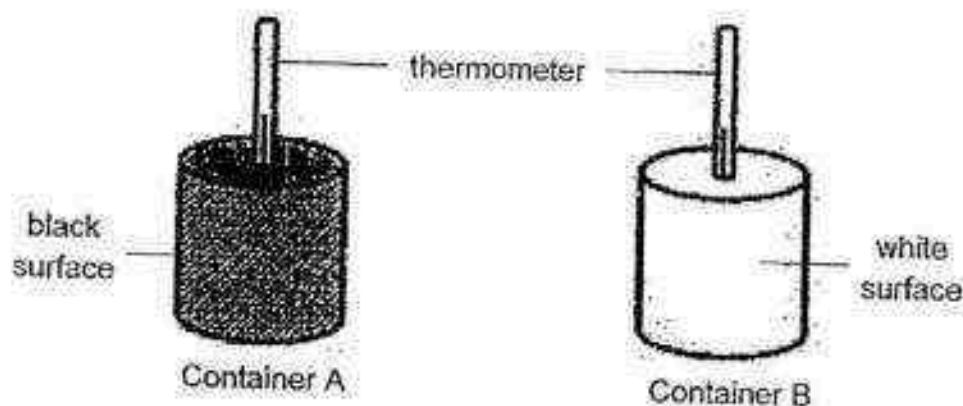
---

- (c) Based on the results above, which one of the following could the ball be made of? Put a tick ✓ in the correct box below. [1]

Type of ball	
Metal ball	
Frosted glass ball	
Clear plastic ball	



40. Dana conducted an experiment using two identical air-tight containers, A and B, filled with air as shown below. Container A had a black surface while container B had a white surface. The temperature in container A is the same as that in container B at the start of the experiment.



After Dana had placed the containers in the Sun for a few hours, she observed that the temperature in container A is higher than that in container B.

- (a) Based on Dana's observation, what can she conclude about black and white surfaces? [1]

---



---

Dana has two shirts that are identical except one is black and the other is white as shown below. The shirts are made of the same material with similar thickness.

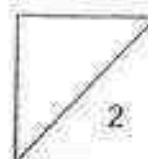


- (b) Dana picks the white shirt instead of the black shirt to wear on a hot day as she feels cooler in it. Give a reason why. [1]

---



---

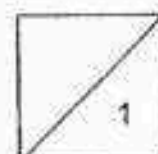
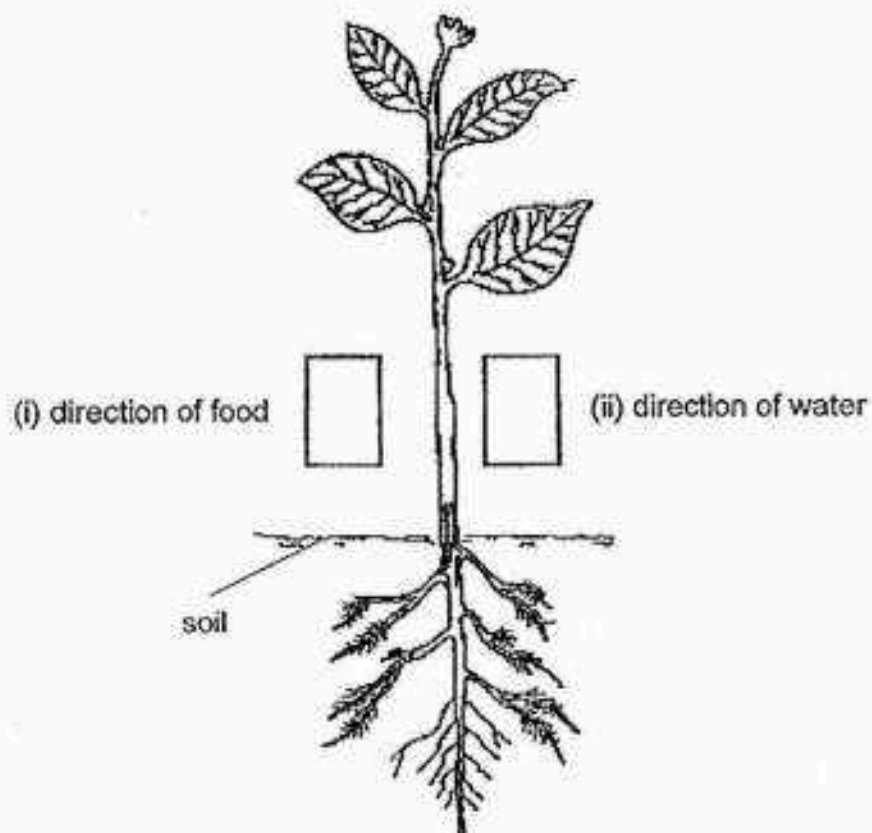


41. Tim has a plant in his garden as shown below.

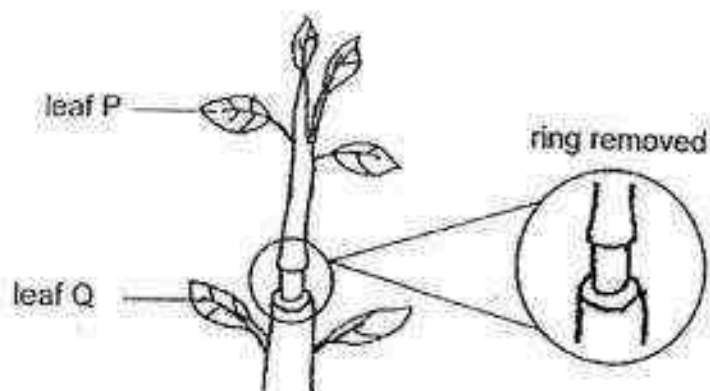
(a) Draw an arrow,  $\uparrow$  or  $\downarrow$ , in each of the boxes below to show:

[1]

- (i) the direction of food transported in the plant and
- (ii) the direction of water transported in the plant

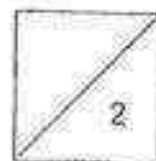


Tim had another plant planted in his garden. He cut a ring around its stem, removing both the water-carrying tubes and the food-carrying tubes.



- (b) Will leaf P and leaf Q be able to carry out photosynthesis? Explain your answer in the table below. [2]

Leaf	Will the leaf be able to carry out photosynthesis? (Yes / No)	Explain your answer.
P		
Q		





EXAM PAPER 2016 (P5)

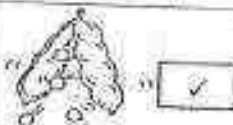
SCHOOL : TAO NAN

SUBJECT : SCIENCE

TERM : SA1

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

## P5 SA1 SCIENCE Answers

Qn.	Answer												
29a	A: Penis      B: Testis												
b	P												
c	Fertilisation												
d	R: Fruit(s)      S: Seed(s)												
30a	It is where the <u>fertilised egg develops</u> into a baby.												
b	Ovaries												
c	No. She <u>cannot produce eggs</u> . Thus, <u>fertilisation cannot occur</u> .												
31a	The seeds cannot absorb <u>water and oxygen</u> .												
b	The germinating seeds has <u>used the food</u> in the seed leaves for germination.												
c	The seeds (embryo) have died.												
32													
a	<p><u>Fruit of Plant A is dispersed by splitting</u> while the <u>fruit of young plant B is dispersed by wind</u>. Hence, seeds of young Plant A are dispersed <u>nearer</u> <del>from</del> <sup>to</sup> the parent plant.</p> <p>(specify which plant for which dispersal and compare the distance of dispersal)</p>												
b	<table border="1"> <thead> <tr> <th>Fruit</th><th>Method of dispersal</th><th>Characteristic</th></tr> </thead> <tbody> <tr> <td>Shorea</td><td>By wind</td><td>• Has wing-like/ Light</td></tr> <tr> <td>Sandbur</td><td>By animals</td><td>• Has <u>stiff hairs</u></td></tr> </tbody> </table>	Fruit	Method of dispersal	Characteristic	Shorea	By wind	• Has wing-like/ Light	Sandbur	By animals	• Has <u>stiff hairs</u>			
Fruit	Method of dispersal	Characteristic											
Shorea	By wind	• Has wing-like/ Light											
Sandbur	By animals	• Has <u>stiff hairs</u>											
c	Living thing <u>responds to changes</u> .												
33a	As height $h$ increases, distance $d$ increases.												
b	<table border="1"> <tbody> <tr> <td>(i)</td><td>Height from which Fruit X is dropped.</td><td></td></tr> <tr> <td>(ii)</td><td>Distance between the fan and where Fruit X is dropped.</td><td>✓</td></tr> <tr> <td>(iii)</td><td>Duration of Fruit X in the air.</td><td></td></tr> <tr> <td>(iv)</td><td>Surface area of Fruit X.</td><td>✓</td></tr> </tbody> </table>	(i)	Height from which Fruit X is dropped.		(ii)	Distance between the fan and where Fruit X is dropped.	✓	(iii)	Duration of Fruit X in the air.		(iv)	Surface area of Fruit X.	✓
(i)	Height from which Fruit X is dropped.												
(ii)	Distance between the fan and where Fruit X is dropped.	✓											
(iii)	Duration of Fruit X in the air.												
(iv)	Surface area of Fruit X.	✓											
c	<p>(i) Size of the wing-like structure</p> <p>(ii) Speed of the fan</p>												
34a	Container A. The <u>exposed surface area of water</u> in container A is the greatest. So, the <u>rate of evaporation</u> is the <u>highest</u> .												
b	YXZ												

35a	The <u>hot water evaporated</u> into water vapour. When the water vapor came into contact with the <u>cooler</u> surface of the plastic sheet, it <u>lost heat</u> and <u>condensed</u> into water droplets. When the <u>water droplets gather</u> and <u>became heavier</u> , they <u>dripped down</u> in the beaker.											
b	The volume of water collected in the beaker is <u>decreased</u> , <u>more than Diagram 2</u> , <u>in Diagram 1 is</u> .											
c	The temperature difference between the water vapour and the plastic sheet is <u>less</u> . Thus, the <u>rate of condensation is lower</u> . <span style="float: right;"><u>In Diagram</u></span>											
36a	Liquid											
b	Melting point: <u>115°C</u> Boiling point: <u>185°C</u>											
37a	The <u>water plant photosynthesises</u> and <u>produces oxygen</u> . The <u>gas occupies the space</u> above the water and so displaces the water.											
b	As Distance X increases, the number of bubbles produced per minute decreases.											
c	As the <u>snails give out carbon dioxide</u> , the <u>plant takes in more carbon dioxide</u> . Thus, the <u>rate of photosynthesis increases</u> .											
38a	The paper clip is a <u>magnetic material</u> .											
b	The magnetic force at A and E is the strongest while that at C is the weakest.											
c	The magnet has lost <u>some</u> of its magnetic force.											
39a	3											
b	Light travels in a straight line. /Light cannot pass through an opaque object.											
c	<table border="1"><tr><td>Type of ball</td><td></td></tr><tr><td>Metal ball</td><td>✓</td></tr></table>			Type of ball		Metal ball	✓					
Type of ball												
Metal ball	✓											
40a	<u>Black surfaces gain more heat</u> than white surfaces.											
b	The white shirt <u>gains less heat from the surroundings</u> so Dana gains less heat from it.											
41a	(i) direction of food <table border="1"><tr><td>↓</td></tr></table> <table border="1"><tr><td>↑</td></tr></table> (ii) direction of water			↓	↑							
↓												
↑												
b	<table border="1"><tr><th>Leaf</th><th>Will the leaf be able to carry out photosynthesis?</th><th>Explain your answer.</th></tr><tr><td>P</td><td>No (no mark)</td><td>It cannot receive water.</td></tr><tr><td>Q</td><td>Yes (no mark)</td><td>It can receive water from the roots / water-carrying tubes.</td></tr></table>			Leaf	Will the leaf be able to carry out photosynthesis?	Explain your answer.	P	No (no mark)	It cannot receive water.	Q	Yes (no mark)	It can receive water from the roots / water-carrying tubes.
Leaf	Will the leaf be able to carry out photosynthesis?	Explain your answer.										
P	No (no mark)	It cannot receive water.										
Q	Yes (no mark)	It can receive water from the roots / water-carrying tubes.										



# Anglo-Chinese School (Junior)



## CONTINUAL ASSESSMENT 2 (2016) PRIMARY 5

### SCIENCE

### BOOKLET A

THURSDAY

25 AUGUST 2016

50 minutes

Name: \_\_\_\_\_ (   )   Class: 5.(   )

### INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 12 questions in this booklet.

Answer **ALL** questions.

### INFORMATION FOR PUPILS

The total marks for this booklet is 24.

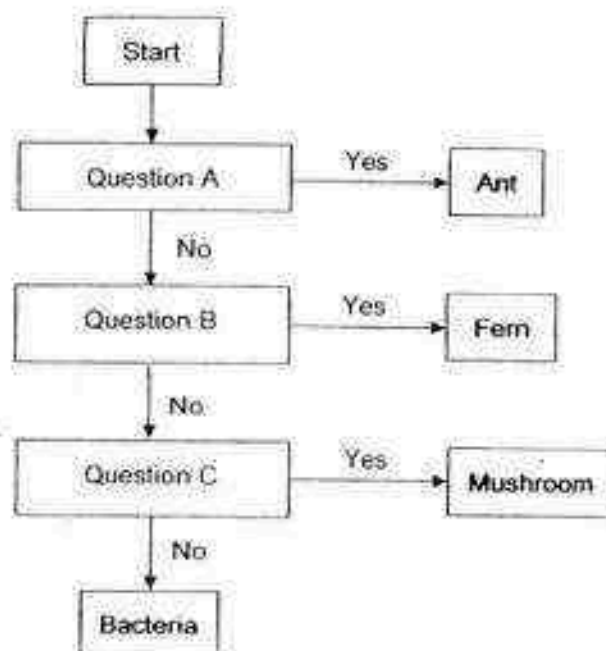
The total time for Booklets A and B is 50 minutes.

This question paper consists of 11 printed pages (inclusive of cover page).

**Booklet A (24 marks)**

For each question from 1 to 12, four options are given. One of them is the correct answer. Choose the correct option (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet (OAS). (12 x 2 marks)

- 1 Study the flowchart below.



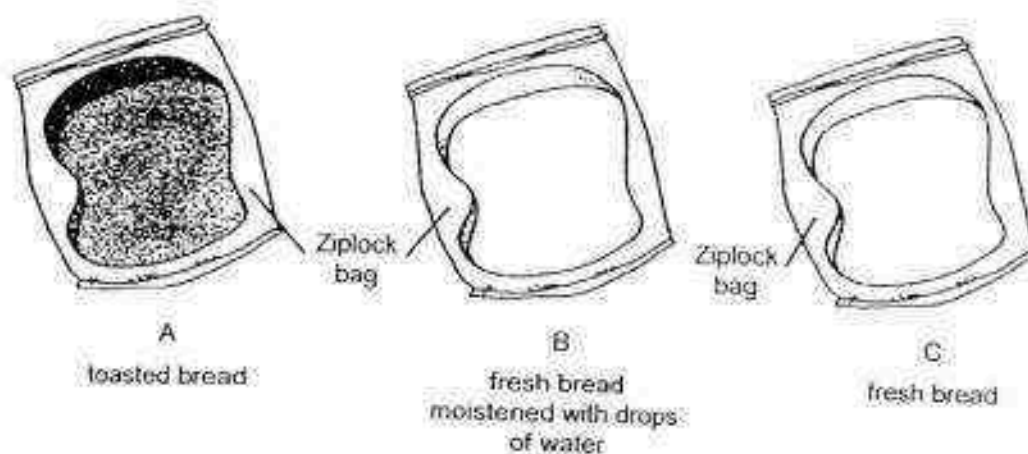
Which of the following can be Questions A, B, and C?

	Question A	Question B	Question C
(1)	Does it make its own food?	Can it be seen without the microscope?	Is it a plant? Is it an animal?
(2)	Is it an animal?	Does it make its own food?	Can it be seen without the microscope?
(3)	Does it make its own food?	Can it be seen without the microscope?	Is it an animal?
(4)	Can it be seen without the microscope?	Is it an animal?	Does it make its own food?

3

2

Tessa conducted an experiment to find out how moisture would affect the growth of bread mould. She took 3 identically-sized slices of fresh bread, A, B and C, and toasted A in an electric oven, moistened B with some drops of water, but left C untouched. She then placed each slice of bread into identical zip-lock plastic bags and sealed them as shown in the diagram below.

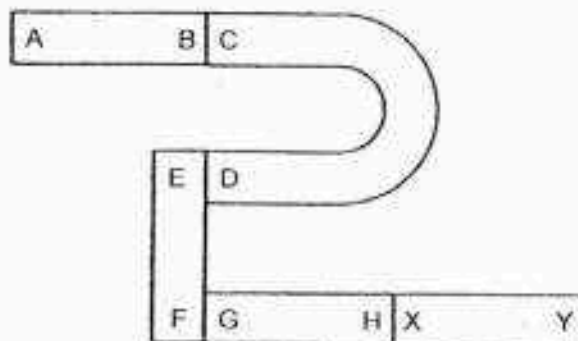


Tessa left the above set-ups in a dark kitchen cupboard for a week. Arrange the set-ups in order, beginning with the one with the least bread mould found at the end of the experiment.

	Least bread mould	Some bread mould	Most bread mould
(1)	A	B	C
(2)	B	C	A
(3)	C	B	A
(4)	A	C	B

4

- 3 The diagram below shows 5 magnets with their ends labelled. The magnets are arranged so that they are attracted to one another.



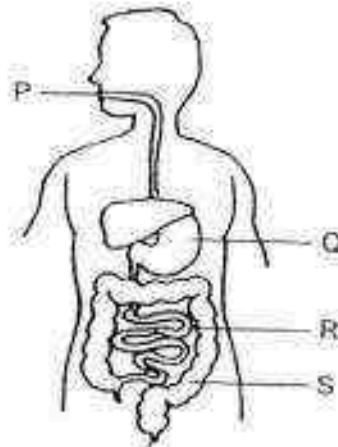
Based on the above diagram, which of the following arrangements of magnets is not possible?

<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>



5

- 4 The diagram below shows the human digestive system.



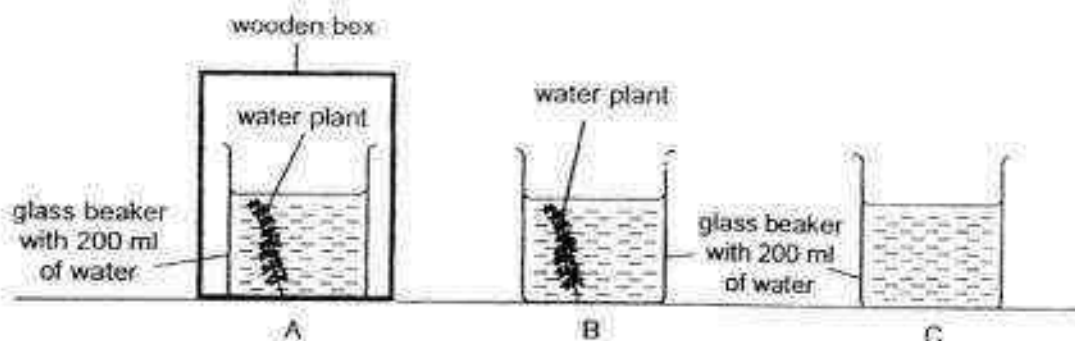
Which of the following correctly represents the functions of the parts P, Q, R and S?

	P	Q	R	S
(1)	Saliva mixes with food and starts the digestion process	Digestion is completed here	Digested food is absorbed and passes into the bloodstream	Water from undigested food is absorbed here
(2)	Food is chewed into smaller pieces	Digested food is absorbed and passes into the bloodstream	Water from undigested food is absorbed here	Undigested food is stored here before it is passed out of the body
(3)	Saliva mixes with food and starts the digestion process	Food is broken down into simpler substances	Digestion is completed here	Water from undigested food is absorbed here
(4)	Food is chewed into smaller pieces	<del>Digested food is absorbed and passes into the bloodstream</del>	Water from undigested food is absorbed here	Undigested food is passed out of the body

Digestion is completed here

6

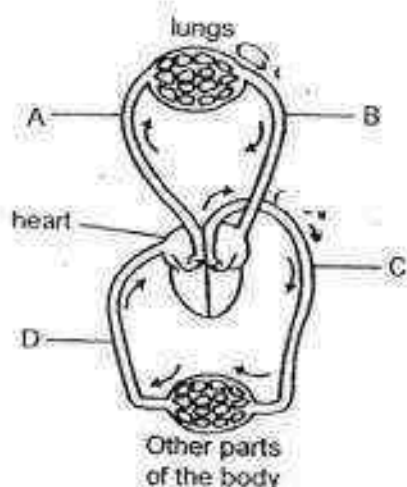
- 5 The diagram below shows 3 set-ups, A, B, and C, using identical glass beakers which are each filled with 200 ml of water. The 3 set-ups are placed in a garden during the day for 8 hours.



Predict the order of the set-ups according to the amount of dissolved carbon dioxide present in the water of the beakers at the end of the experiment, beginning with the one with the least amount of dissolved carbon dioxide present.

	Least Dissolved Carbon Dioxide → Most Dissolved Carbon Dioxide		
(1)	A	B	C
(2)	B	C	A
(3)	B	A	C
(4)	C	B	A

- 6 The diagram below shows the human circulatory system. A, B, C and D represent blood vessels.

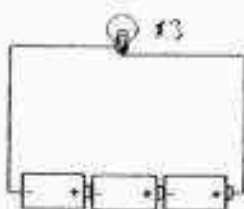


Which blood vessels contain the most amount of oxygen?

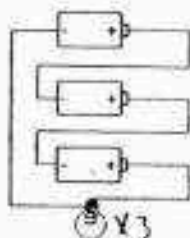
- (1) A and B only  
 (2) B and C only  
 (3) C and D only  
 (4) A and D only

7

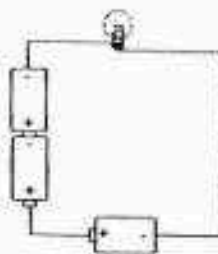
- 7 The diagrams below show some electrical circuits. Which 2 circuits will produce the brightest lit bulbs?



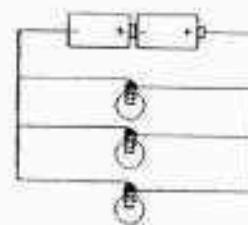
A



B



C



D

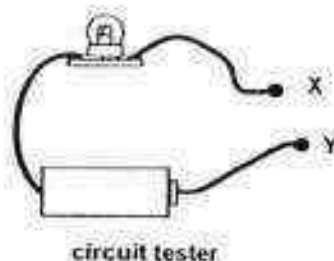
- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) A and D only

8

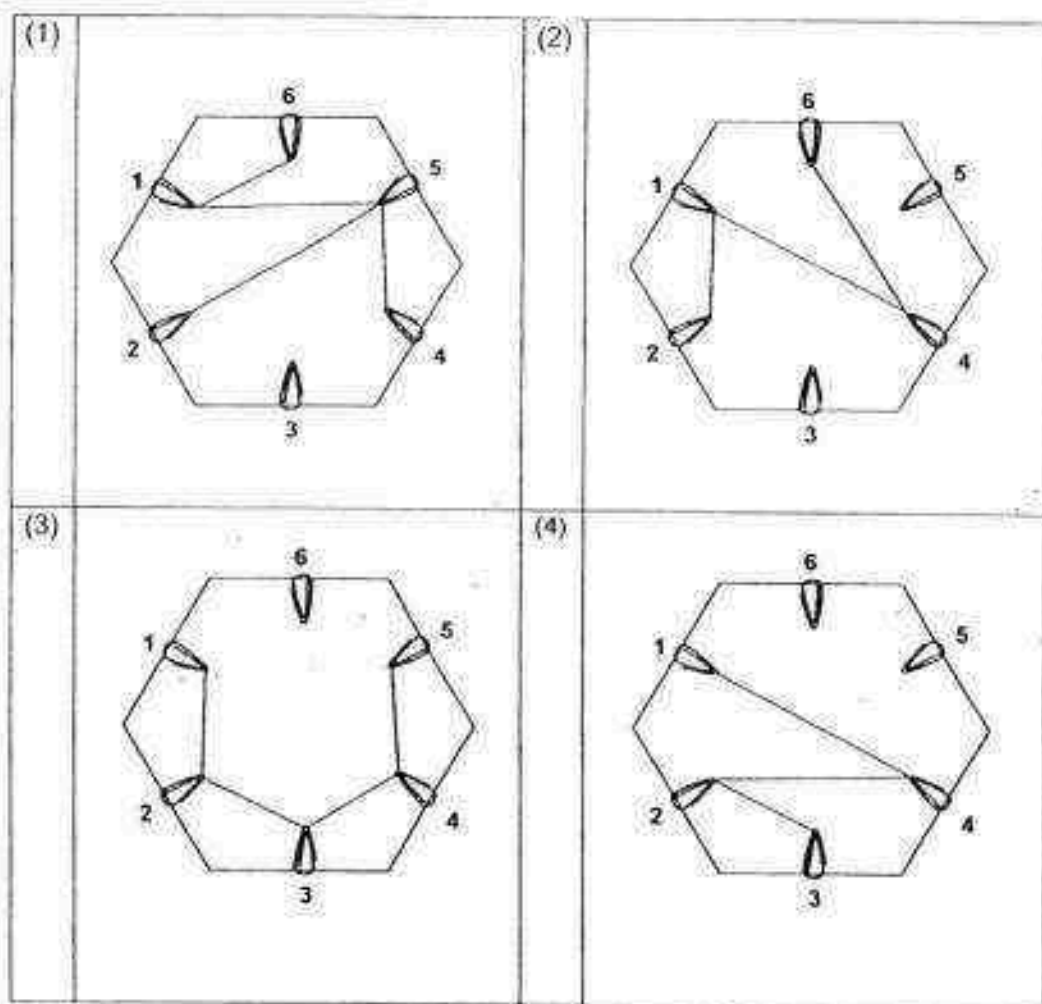
8

Ryan used a circuit tester to test a circuit card. He connected the points X and Y of the circuit tester to the various clips 1, 2, 3, 4, 5 and 6 on a circuit card to see if the bulb would light up. He recorded the results of his experiment in the table below.

Connection tested	Did the bulb light up?
1 and 4	Yes
2 and 4	Yes
3 and 5	No
5 and 6	No
1 and 6	No

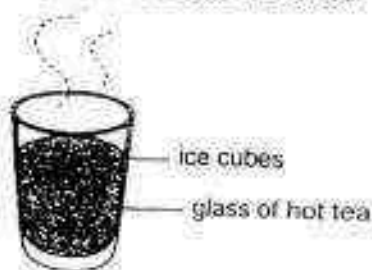


Which of the diagrams represents the circuit card that was tested?



9

- 9 The diagram below shows a glass of hot tea with some ice cubes.

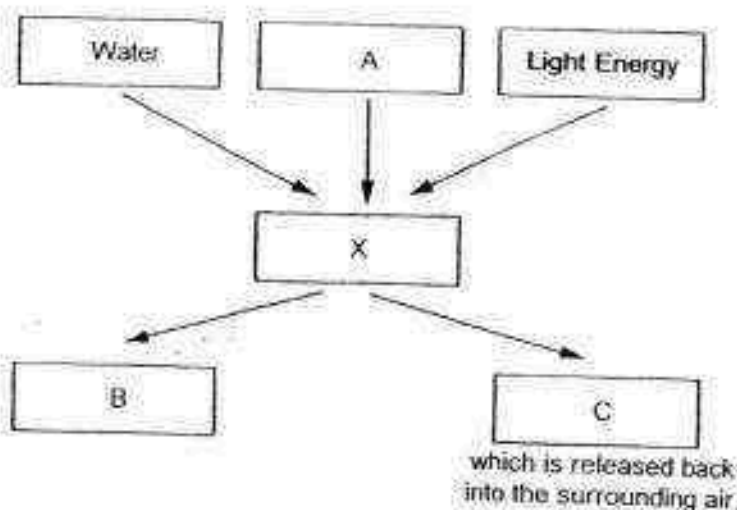


Which of the following statements are correct?

- A The ice cubes will lose heat to the hot tea.
- B The hot tea will lose heat to the ice cubes.
- C The temperature of the hot tea will increase.
- D The ice cubes will undergo a change of state.

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

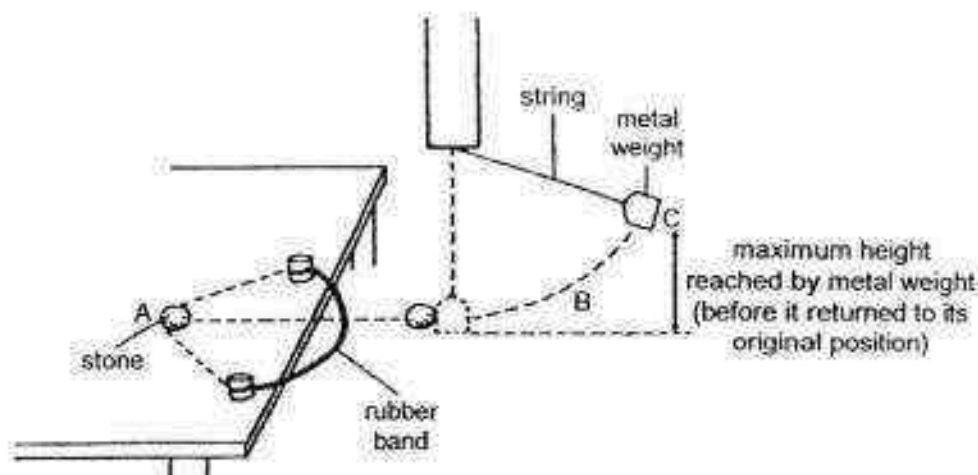
- 10 Below is a concept map of process X.



Which of the following correctly represents process X and substances A, B and C?

	X	A	B	C
(1)	Respiration	Oxygen	Glucose	Carbon Dioxide
(2)	Photosynthesis	Oxygen	Glucose	Carbon Dioxide
(3)	Respiration	Carbon Dioxide	Glucose	Oxygen
(4)	Photosynthesis	Carbon Dioxide	Glucose	Oxygen

- 11 Ryan carried out an experiment as shown in the diagram below.



Ryan first pulled the rubber band together with the stone backwards to Point A. When he released the rubber band with the stone, the stone moved forward and flew off the table, striking the metal weight which was suspended on a string. The metal weight moved upwards through Point B and stopped moving when it reached its maximum height at Point C, before returning to its original position.

Which of the following shows the correct form(s) of energy at Points A, B and C?

	A	B	C
(1)	kinetic energy	gravitational potential energy	gravitational potential energy
(2)	kinetic energy	kinetic energy	kinetic and gravitational potential energy
(3)	elastic potential energy	kinetic and gravitational potential energy	gravitational potential energy
(4)	elastic potential energy	kinetic and gravitational potential energy	kinetic energy

- 12 The diagram below shows a glass marble in a curved container. When the marble is released at Point X, it moves down the ramp and up to Point Z before rolling back down.

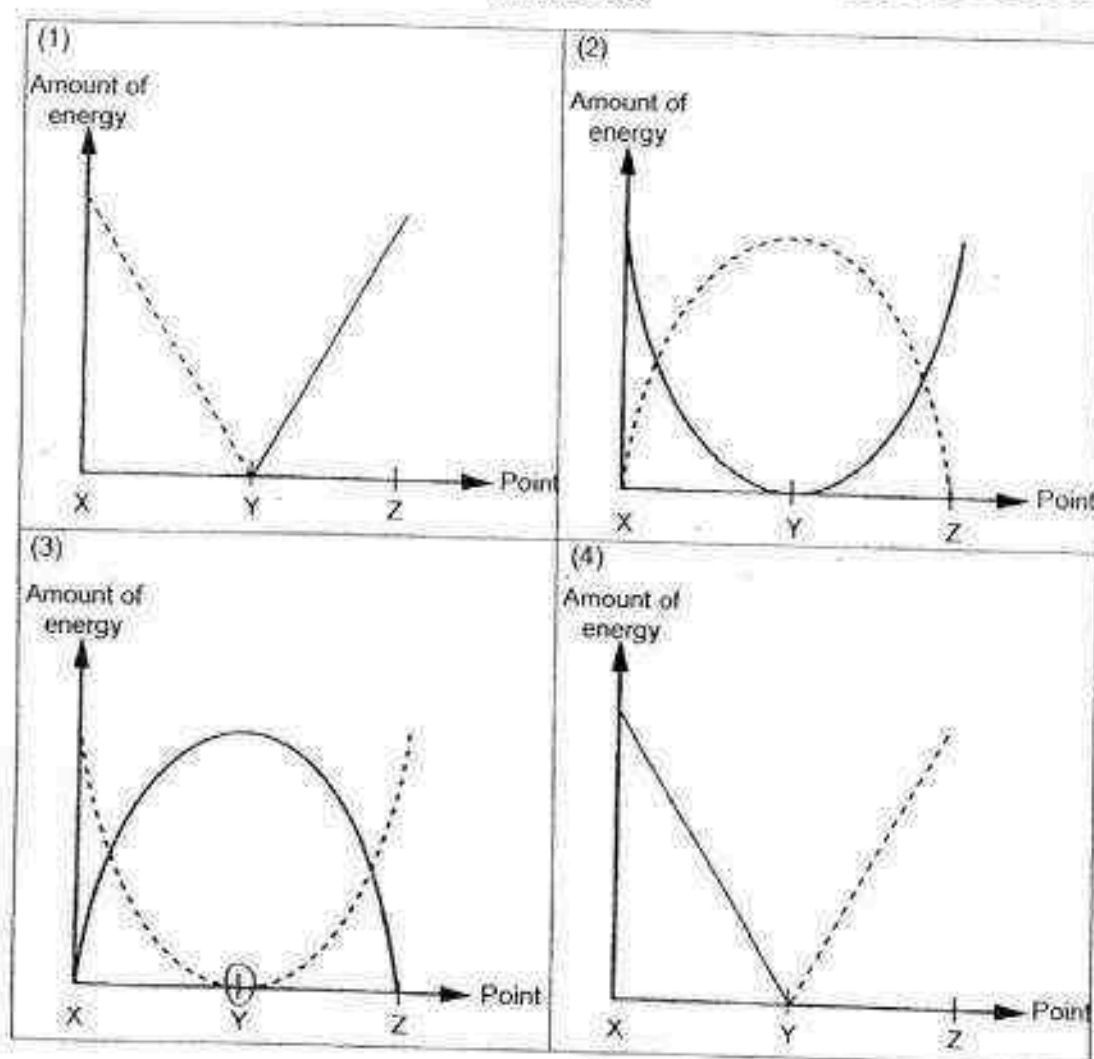


Which of the following graphs correctly shows the amounts of gravitational potential energy and kinetic energy of the glass marble as it moves from Point X to Point Z?

Key:

Gravitational potential energy —————

Kinetic energy - - - - -



## Anglo-Chinese School (Junior)

CONTINUAL ASSESSMENT 2 (2016)  
PRIMARY 5

## SCIENCE

## BOOKLET B

THURSDAY

25 AUGUST 2016

50 minutes

Name: \_\_\_\_\_ ( ) Class: 5. ( ) Parent's Signature: \_\_\_\_\_

**INSTRUCTIONS TO PUPILS****DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO**

Follow all instructions carefully.

There are 6 questions in this booklet.

Answer **ALL** questions.**INFORMATION FOR PUPILS**

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

The total marks for this booklet is 16.

The total time for Booklets A and B is 50 minutes.

**This question paper consists of 7 printed pages (inclusive of cover page).**

Booklet	Possible Marks	Marks Obtained
Practical	10	
A	24	
B	16	
<b>Total</b>	<b>50</b>	

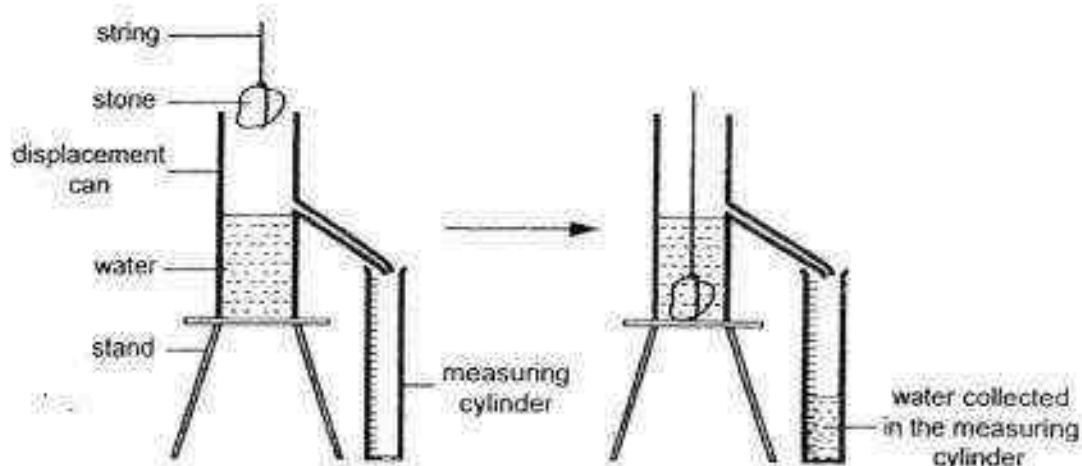


**Booklet B (16 marks)**

For questions 13 to 18, write your answers in this booklet.

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

- 13 Calvin carried out the experiment shown below. He tied a string to a stone and lowered it into a displacement can until it was completely submerged in the water.



He repeated the experiment several times using the same set-up and found that the water collected in the measuring cylinder was always the same.

- (a) What does the water collected in the measuring cylinder represent? [1]

\_\_\_\_\_

- (b) What property of a solid can you infer when the water collected in the measuring cylinder was always the same? [1]

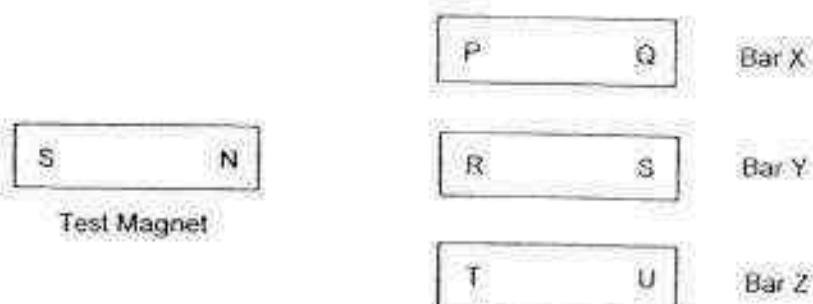
\_\_\_\_\_

\_\_\_\_\_

(Go on to the next page)

SCORE	
	2

- 14 Tom used a test magnet to find out the properties of 3 bars X, Y and Z, which are each made of a different material.



He brought the test magnet close to each bar and recorded the results of his experiment in the table below.

Bar	Observations
X	Both P and Q were attracted by the N-pole of the magnet when it was brought close to them.
Y	R was attracted to the N-pole of the magnet but S was repelled by the N-pole of the magnet when it was brought close to them.
Z	Neither T nor U was attracted by the N-pole of the magnet when it was brought close to them.

- (a) Which bar(s) is / are made of magnetic material? [1]

\_\_\_\_\_

- (b) Which bar(s) is / are a magnet? Explain clearly the reason for your choice. [1]

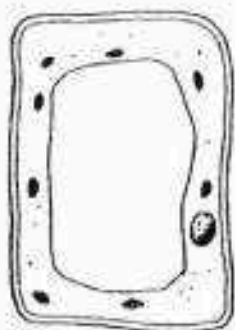
\_\_\_\_\_

\_\_\_\_\_

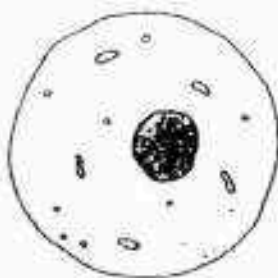
(Go on to the next page)

SCORE	
	2

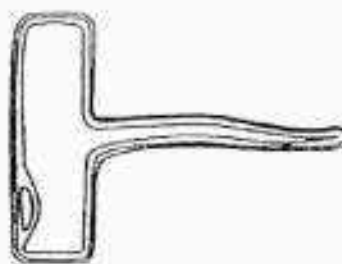
- 15 The diagrams below show some cells.



Cell A



Cell B



Cell C

- (a) Which of the cell(s) above is / are taken from a plant? Explain clearly the reason for your choice. [1]

---



---

- (b) What cell part is found in the cytoplasm of Cell A but not in that of Cell C? [1]

---



---

- (c) What is the function of the cell part mentioned in (b)? [1]

---

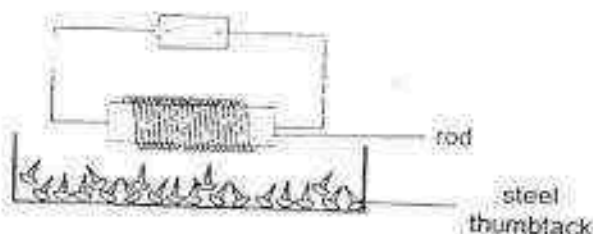


---

(Go on to the next page)

SCORE	
	3

- 16 Nathan wanted to find out if the type of material used to make an electromagnet affects the number of steel thumbtacks attracted to it in a closed circuit. He set up the experiment as shown below.



He kept a record of changed and unchanged variables in the table below. A tick (✓) indicates the variable that was changed / unchanged.

Variable	Variable Changed	Variable Unchanged
Material of the rod		✓
Thickness of the rod	✓	
Number of batteries		✓
Number of coils of wire around the rod		✓

- (a) Explain why Nathan could not test the aim of his experiment.

[1]

---



---

- (b) If he corrected his experimental set-up and conducted the test again, how would using the same number of coils of wire around the rod ensure a fair test?

[1]

---



---

Nathan carried out the experiment using rods of different materials A, B, C and D in the same set-up and recorded the results in the table below.

Rod	Number of steel thumbtacks attracted to the electromagnet
A	9
B	15
C	0
D	4

- (c) Nathan observed that Rod C did not attract any steel thumbtacks in a closed circuit. What can he conclude about the property of material for Rod C?

[1]

---



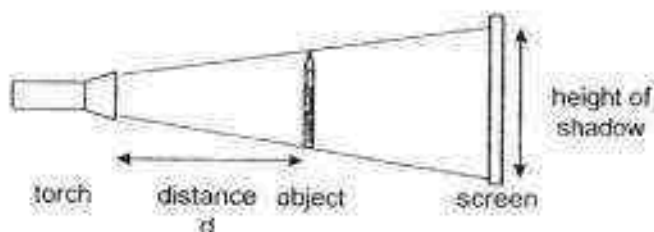
---

(Go on to the next page)

SCORE	
	3

6

- 17 Jack set up an experiment as shown below



He shone the torch on the object and observed the height of the shadow that was formed on the screen. Keeping the distance between the torch and the screen the same, he changed the distance between the object and the torch and recorded the height of the shadow formed on the screen in the table below.

Distance d (cm)	Height of shadow (cm)
X	8
Y	4
Z	10

- (a) Arrange X, Y and Z from the shortest to the longest distance d [1]

\_\_\_\_\_

- (b) What are 2 properties of light which Jack can infer from the above experiment? [1]

\_\_\_\_\_

\_\_\_\_\_

- (c) What are 2 variables that Jack must keep constant so that the above experiment is a fair test? [1]

\_\_\_\_\_

\_\_\_\_\_

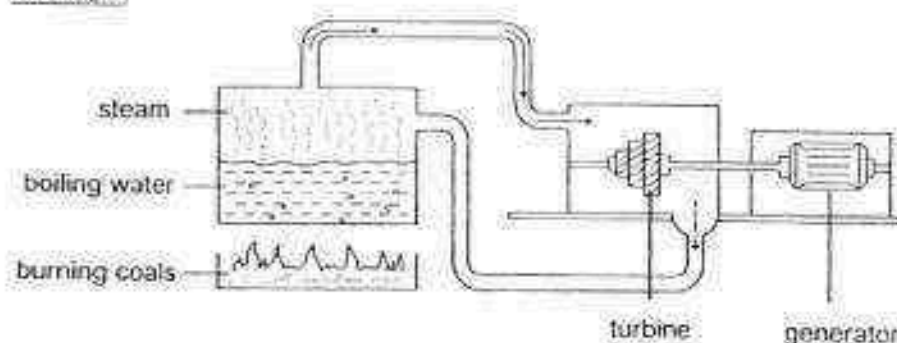
(Go on to the next page)

SCORE	
	3

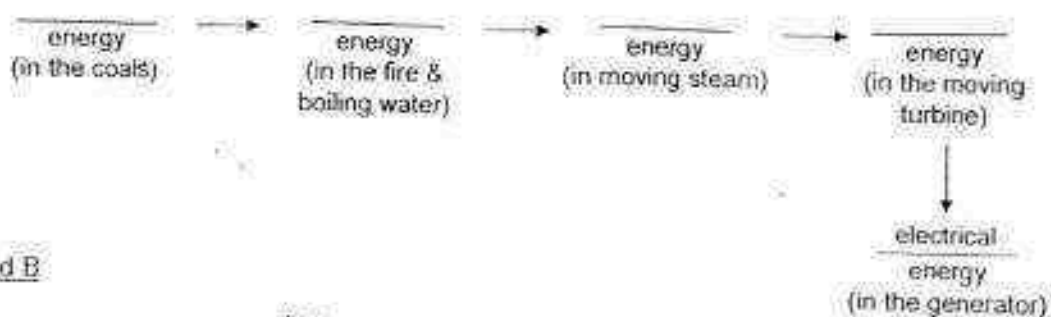
7

18. The diagrams below show 2 methods in which electricity can be generated.

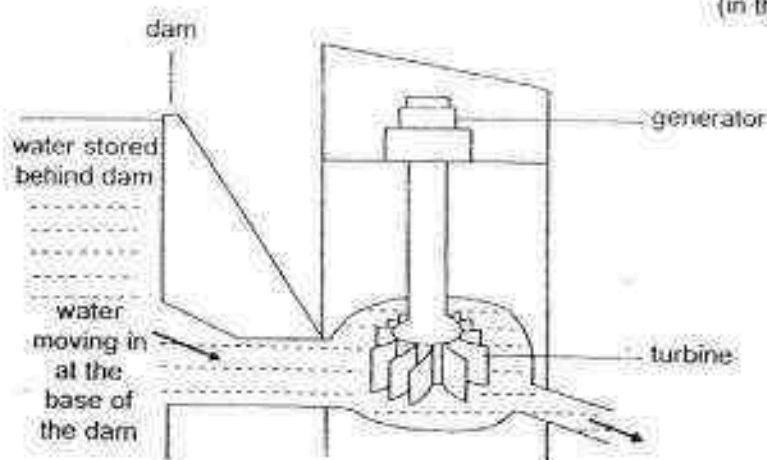
Method A



- (a) Fill in the blanks to show the correct energy conversions for Method A of electricity generation. [1]



Method B



- (b) What are 2 advantages of using Method B to generate electricity? [2]

---



---

End of paper

(Go on to the next page)

SCORE	
	3

**SEMESTRAL ASSESSMENT EXAM PAPER 2016**

**SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)**  
**SUBJECT : SCIENCE**  
**TERM : CA2**

**BOOKLET A**

Q1	Q2	Q3	Q4	Q5	Q6	Q7
2	4	4	3	2	2	1
Q8	Q9	Q10	Q11	Q12		
4	3	4	3	2		

**BOOKLET B**

Q13(a) The water collected in the measuring cylinder represents the value of the stone.

(b) I can infer that a solid has a constant volume.

Q14(a) Bars X and Y are made of multiple of magnetic materials.

(b) It repelled the test magnet and only a magnet can repel another magnet.

Q15(a) Cell A and Cell C are taken from a plant. Only plants have a cell wall and cells A and C have cell walls.

(b) There is chloroplast in cell A but no chloroplast in cell C.

(c) They trap light and make food for the plant.

Q16(a) Nathan could not test the aim as he should change the material of the rod and not the thickness of the rod.

(b) It ensures that the results obtained will only be due to the material attracted.

(c) Nathan can conclude that rod C is made of a non-magnetic material.

Q17(a) Z, X and Y.

(b) Light travels in straight lines and light cannot pass through an opaque object.

(c) Jack must keep the number of batteries in the object and the object the same.

Q18(a) Potential → Heat → Kinetic → Kinetic → Electrical

(b) Method B does not require the burning of coals which will release toxic fumes and will never run out of water to generate electricity.

Z  
is not.

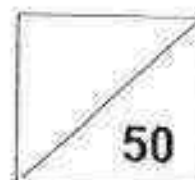




**Rosyth School**  
**Continual Assessment 2 2016**  
**SCIENCE**  
**Primary 5**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 5 \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1h 15min

Date: 25 August 2016

Parent's Signature: \_\_\_\_\_

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 sections, Part I and Part II.
4. For questions 1 to 14, shade your answers in the OAS provided.
5. For questions 15 to 21, write your answers in the spaces provided in Part II.

	<b>Maximum</b>	<b>Marks Obtained</b>
<b>Part I</b>	<b>28 marks</b>	
<b>Part II</b>	<b>22 marks</b>	
<b>Total</b>	<b>50 marks</b>	

\* This booklet consists of 18 printed pages. (including the cover page)

This paper is not to be reproduced in part or whole without the permission of the Principal.

<b>Practical Test</b>		
	<b>Maximum</b>	<b>Marks Obtained</b>
<b>Total</b>	<b>7 15 marks</b>	

**Part I (28 marks)**

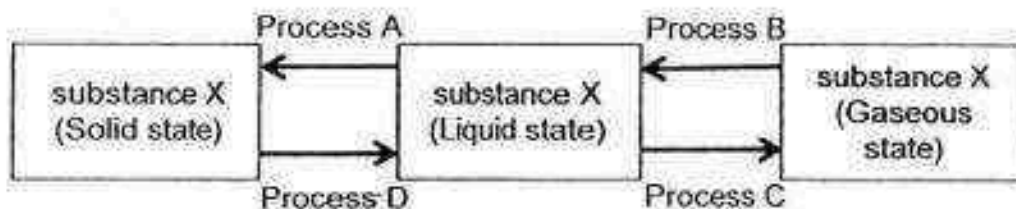
For each question from 1 to 14, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Which of the following shows water losing heat as it changes from one state to another?

- A: A cube of ice melting.  
 B: A puddle of rainwater drying up.  
 C: Water droplets forming on the side of a glass.

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

2. The diagram below shows the changes in the states of substance X.

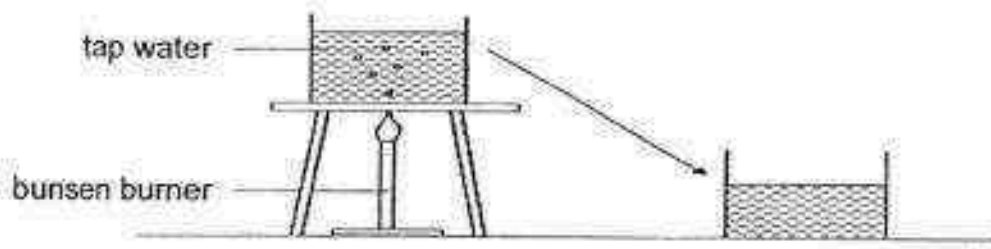


Which of the processes shown below is correct?

	A	B	C	D
(1)	freezing	condensation	melting	boiling
(2)	boiling	melting	freezing	condensation
(3)	boiling	freezing	condensation	melting
(4)	freezing	condensation	boiling	me

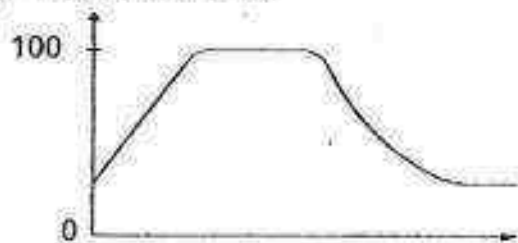


5. Mike heated a beaker of tap water and left the water to boil for 5 minutes. He then placed the beaker of water on the table for some time.

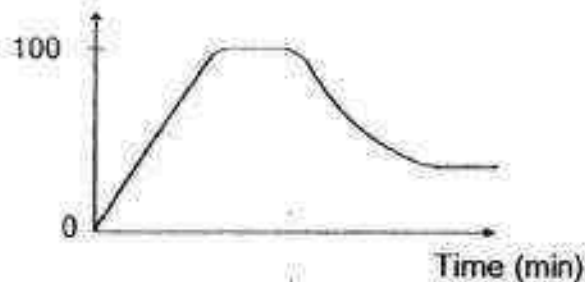


Which one of the graphs below best describes the changes in temperature of the water from the start till the end of the experiment?

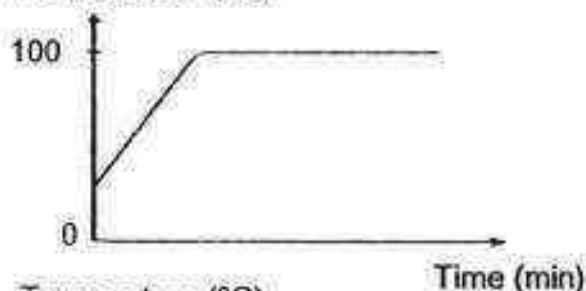
- (1) Temperature ( $^{\circ}\text{C}$ )



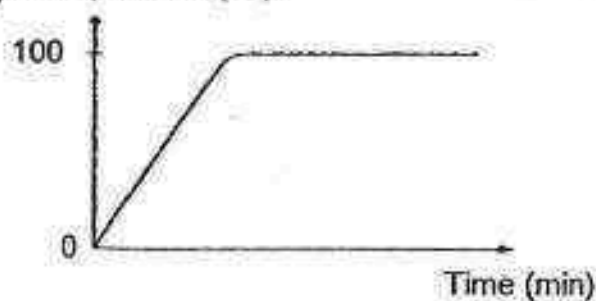
- (2) Temperature ( $^{\circ}\text{C}$ )



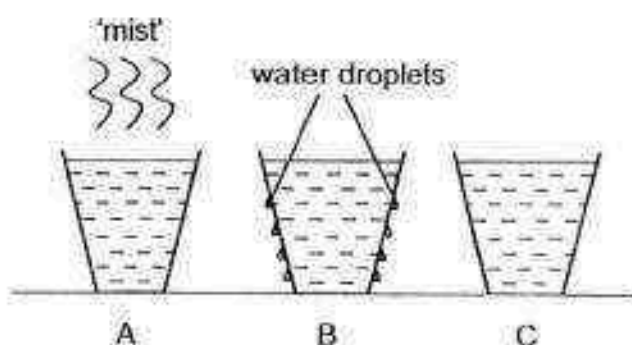
- (3) Temperature ( $^{\circ}\text{C}$ )



- (4) Temperature ( $^{\circ}\text{C}$ )



6. John poured water at different temperatures into 3 similar cups A, B and C and placed the cups on the table at room temperature. The diagram below showed how the cups looked like after 5 minutes.



Arrange the cups according to the temperature of the water in the cups, from the highest temperature to the lowest temperature.

- (1) A, B, C  
(2) A, C, B  
(3) B, C, A  
(4) C, B, A
7. Which of the following statement(s) about the female reproductive cell is/are true?

A: It has a nucleus.  
B: It is fertilised by a sperm.  
C: It is released from the ovary.

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

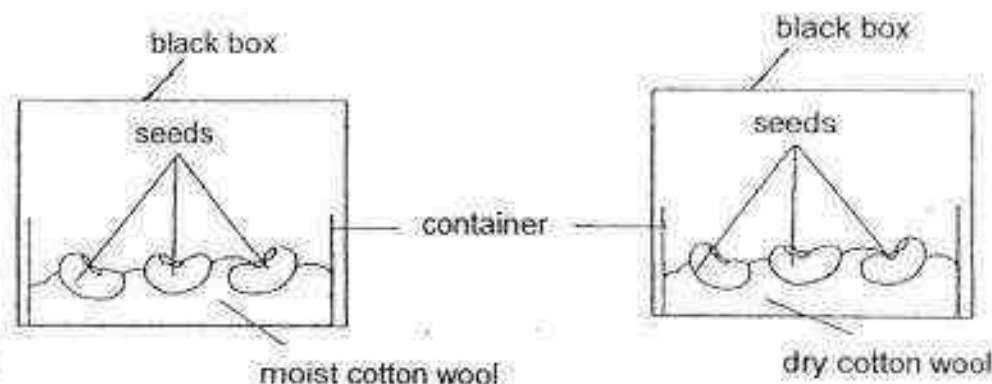


10. Malcolm wanted to find out the effect of overcrowding on the germination of seeds of plant Y. He conducted an experiment and recorded his results in the table below.

Pot	Number of seeds of plant Y	Size of pot	Number of seeds germinated
X	12	medium	6
Y	12	big	10
Z	12	small	4

Based on the results above, what can Malcolm infer on the effect of the size of the pot on the number of seeds germinated?

- (1) The size of the pot does not affect the number of seeds germinated.
  - (2) The bigger the size of the pot, the more the number of seeds germinated.
  - (3) The bigger the size of the pot, the lesser the number of seeds germinated.
  - (4) The smaller the size of the pot, the more the number of seeds germinated.
11. Danny set-up an experiment as shown below.



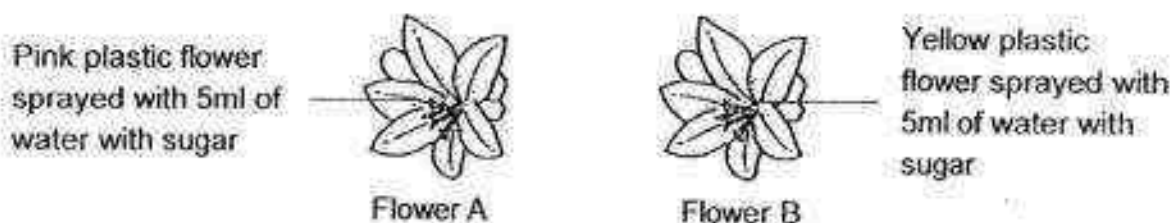
What is the aim for Danny's experiment?

- (1) To find out if air is needed for germination.
- (2) To find out if light is needed for germination.
- (3) To find out if water is needed for germination.
- (4) To find out if warmth is needed for germination.

12. Ravi carried out an experiment to find out if bees are attracted to water with sugar.

He used two similar plastic flowers of different colours and sprayed each of them with 5 ml of water with sugar as shown below.

The plastic flowers were left in an open garden for five hours. The number of bees visiting each flower was counted.



However, his teacher, Mrs Tan, told him that his experiment was not a fair one.

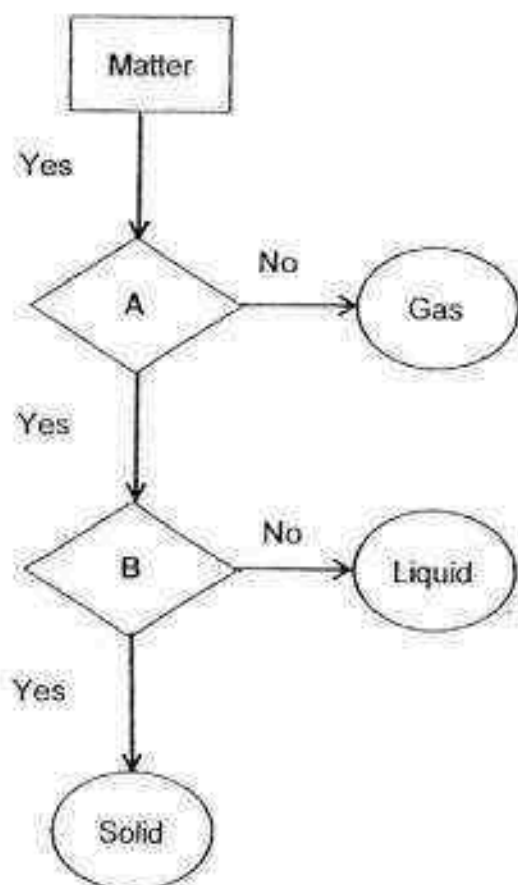
Which of the following changes must Ravi make for the experiment to be a fair one?

- A: The colour of the flower should be made the same.
- B: The water with sugar should only be sprayed on one flower.
- C: More water with sugar should be sprayed on one of the flowers.

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



13. Study the flowchart below.



Which of the following questions are likely to represent A and B?

	A	B
(1)	Does it have fixed shape?	Does it have fixed volume?
(2)	Does it have fixed volume?	Does it have fixed shape?
(3)	Does it have fixed mass?	Does it have fixed shape?
(4)	Does it have fixed volume?	Does it have fixed mass?

14. Paul observed an organism over 19 days until it changed into an adult. He counted the number of leaves that the organism ate over the 19 days. He recorded the results in the table below.

Day	Number of leaves eaten
1	3
4	6
7	10
10	7
13	3
16	0
19	8

On which day was the organism in the pupa stage?

- (1) Day 4                                      (2) Day 7  
(3) Day 13                                    (4) Day 16

**Part II (22 marks)**

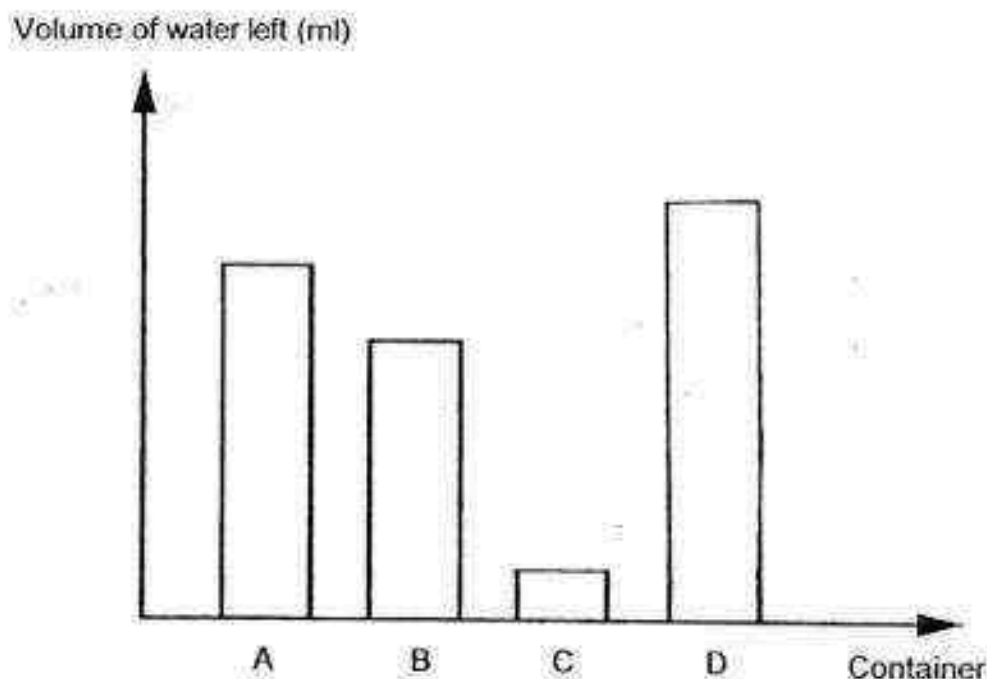
For questions 15 and 21, write your answers in the space provided.

15. Sandy filled four identical containers A, B, C and D with 250ml of water. The containers were then left in four places with different weather conditions for six hours as shown in the table below.

Container	A	B	C	D
Conditions	Cloudy Windy	Sunny Not windy	Sunny Windy	Cloudy Not windy

- (a) In the graph below, complete bars C and D to show the volume of water left in containers C and D after six hours. Bars A and B have been drawn for you.

[2]



- (b) What conclusion can Sandy make from the experiment?

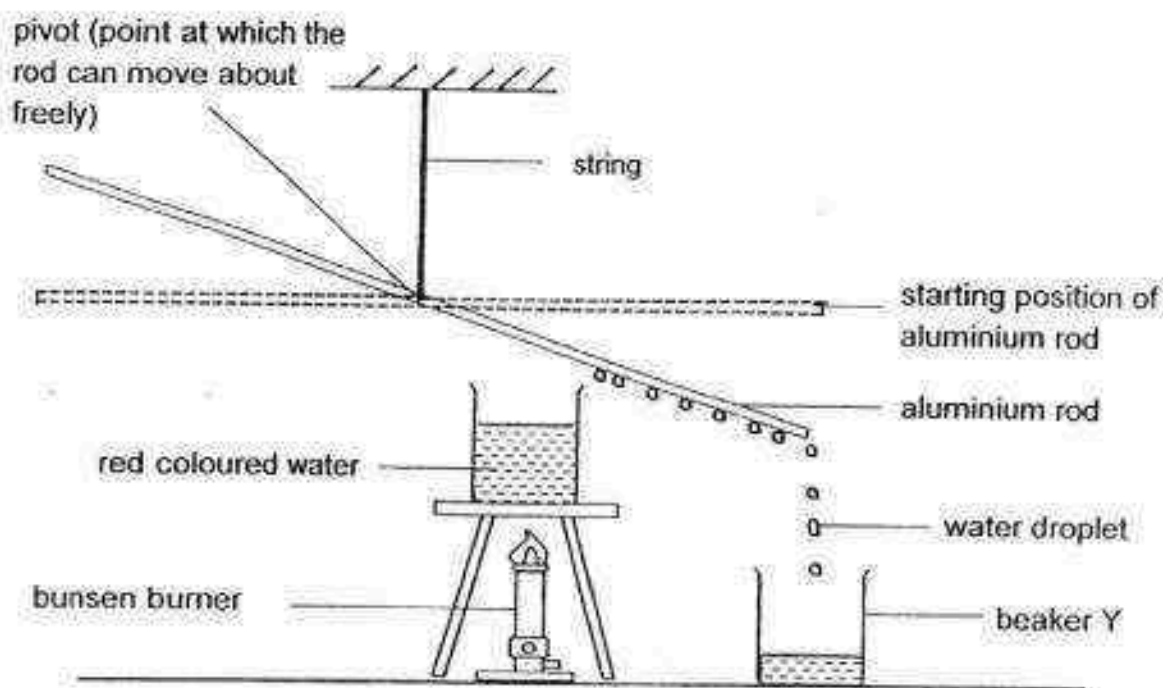
[1]

---



---

16. Anthony conducted an experiment to obtain water by using the set-up as shown below.



- (a) What will be the colour of the water collected in beaker Y? [1]

---



---

- (b) Explain why the aluminium rod tilted downwards? [2]

---



---



---

- (c) Without changing the set-up, suggest one way that Anthony can increase the amount of water collected in beaker Y. [1]

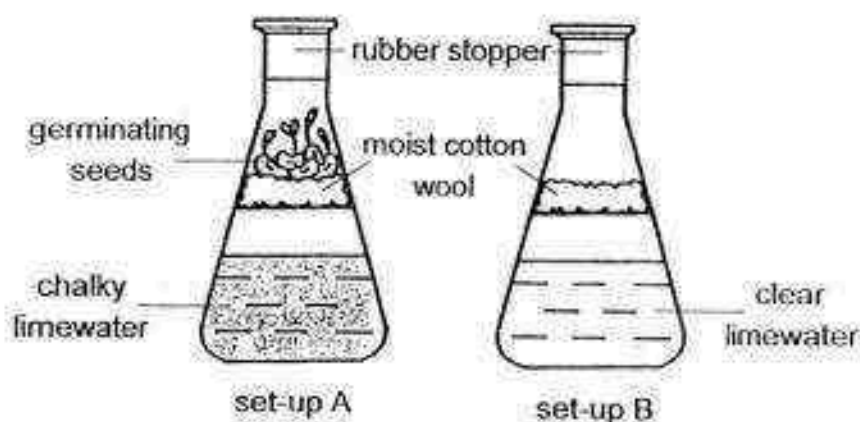
---



---

17. Randy prepared two set-ups A and B for his investigation. He put 5 seeds in set-up A and left both set-ups in a warm and dark place for 2 days.

He observed that the seeds in set-up A germinated and the limewater turned chalky in the presence of carbon dioxide. The limewater in set-up B remained clear.



- (a) What can Randy conclude based on his observations from the set-ups above? [1]

---



---

- (b) What is the purpose of set-up B? [1]

---



---

Randy then conducted another experiment to investigate the effect of the temperature of the surrounding air on the number of days it takes for the seeds to germinate. He recorded his results in the table below.

Set-up	Temperature of the surrounding air (°C)
C	24
D	35
E	28

- (c) What would he measure for his experiment? [1]

---



---

Question 17 continues on page 13

- (d) He used the same type of seeds for his experiment. Explain why this is important. [1]

---

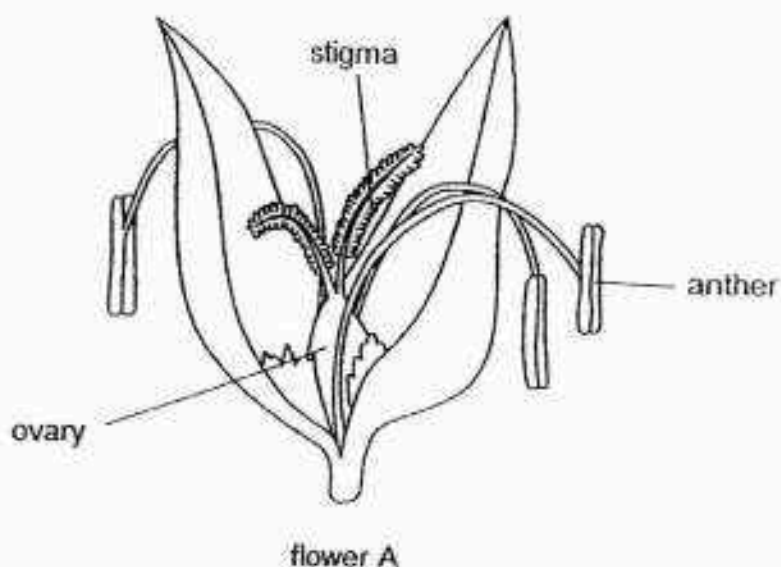
---

- (e) Other than warmth, name one other factor needed for seeds to germinate. [1]

---

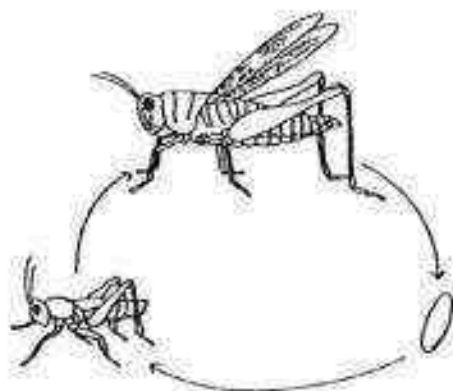
---

18. The diagram below shows flower A with both male and female parts.

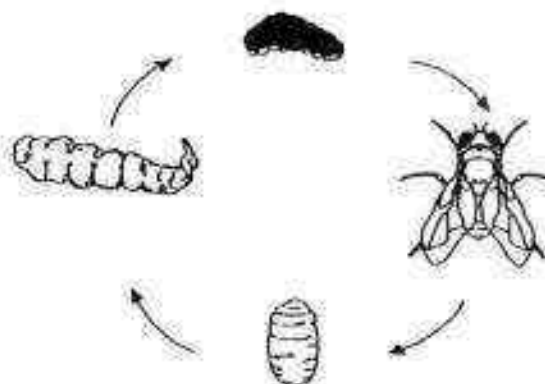


- (a) If the anther was removed from flower A, would the flower still be able to undergo the process of fertilisation? Explain your answer. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) What would happen to the ovary after the process of fertilisation? [1]
- \_\_\_\_\_
- \_\_\_\_\_

19. The diagrams below show the life cycles of animal X and Y.



Life cycle of animal X



Life cycle of animal Y

Based on the diagrams above, state one similarity and one difference between the life cycles of animal X and Y.

[2]

(a) Similarity: \_\_\_\_\_

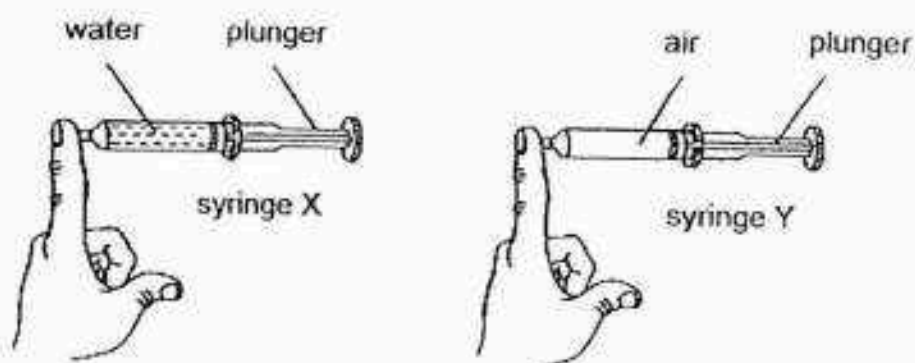
\_\_\_\_\_

(b) Difference: \_\_\_\_\_

\_\_\_\_\_



20. Irman filled two similar syringes, X and Y, with the same volume of water and air as shown below. He covered each syringe with one finger.



- (a) Which of the syringes (X or Y) would Irman be able to push the plunger in? Explain your choice. [2]

---

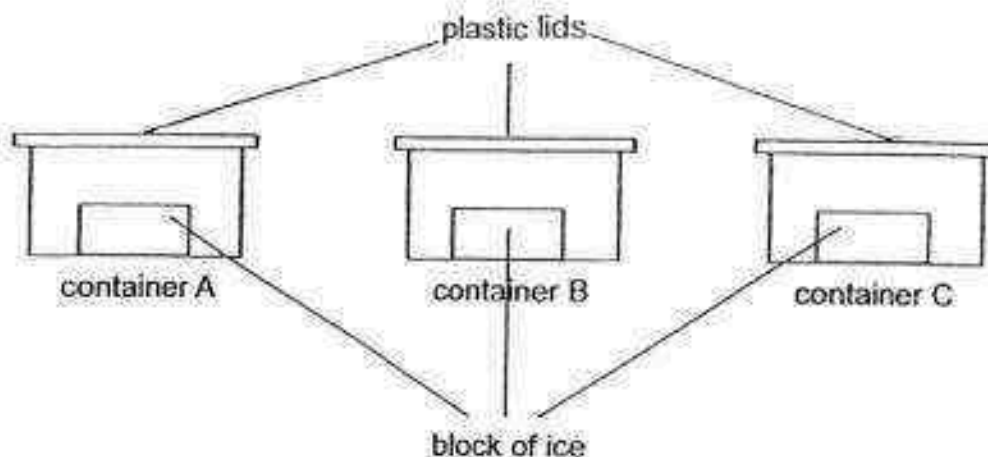
---

- (b) What property of water can Irman infer from the above experiment? [1]

---

---

21. Brenda set up the experiment below. She put blocks of ice into containers A, B and C and covered them using plastic lids. The containers were made from different materials. The containers were then placed in the same room.



After 30 minutes, she measured the amount of water collected in each container. She recorded her findings below.

Container	Amount of water collected (ml)
A	20
B	35
C	40

- (a) Name one other variable that Brenda must keep the same in order to ensure that her experiment is a fair one. [1]

---



---

- (b) Which of these containers (A, B or C) would be the most suitable for making an ice cream container to prevent the ice cream from melting? Explain your choice. [2]

---



---

End of Paper

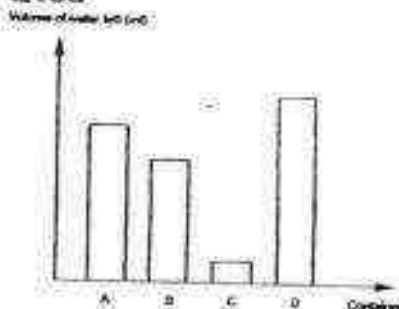
YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : ROSYTH  
 SUBJECT : SCIENCE  
 TERM : CA2

**PART I**

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

**PART II**

**Q15a**



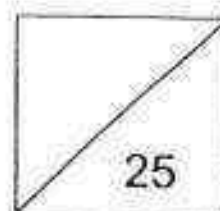
- Q15b** The more sunlight and wind, the lesser the volume of water left.
- Q16a** Colourless
- Q16b** Since there are water droplets on one side of the rod and water has mass.
- Q16c** Increase the amount of heat.
- Q17a** As the germinating seeds increase, carbon dioxide increases.
- Q17b** To confirm that germinating seeds are the only variable that affects the presence of carbon dioxide.
- Q17c** Number of days it takes for the seeds to germinate.
- Q17d** The different seeds have different rate of germination.
- Q17e** Water

- Q18a** Yes, the stigma will still receive the pollen grains from the wind, as this is a wind-pollinated plant.
- Q18b** The ovary will become a fruit.
- Q19a** Similarity: Both life cycle starts with an egg.
- Q19b** Difference: Animal X's life cycle has 3 stages but animal Y's life cycle has 4 stages.
- Q20a** Syringe Y as it contains air which can be compressed.
- Q20b** Water has a definite volume.
- Q21a** Amount of water collected.
- Q21b** A, it is the poorest conductor of heat as the amount of water collected is the least amount.

**End**



**HENRY PARK PRIMARY SCHOOL  
PRIMARY 5  
SCIENCE TERM REVIEW 2**



NAME: \_\_\_\_\_ (    ) CLASS: PRIMARY 5 \_\_\_\_\_

DATE: 25 August 2016

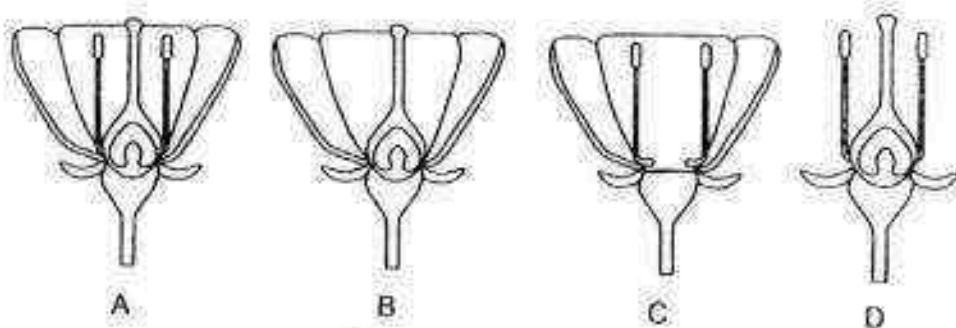
Duration of paper: 40 min

Parent's Signature: \_\_\_\_\_

**Section A (8 x 2m = 16m)**

For each question from 1 to 8, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write the number in the brackets provided.

1. The diagrams below show flowers A, B, C and D. Pollen grains from flowers of the same type were dusted over each flower.

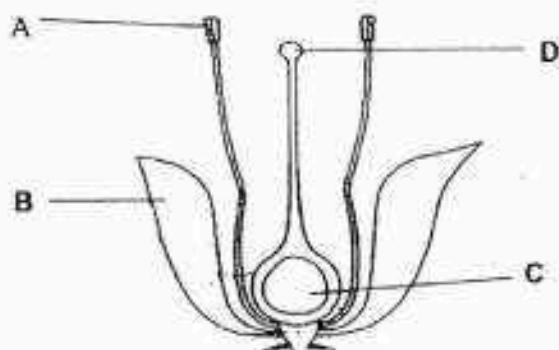


Which of the above flower(s) would most likely develop into a fruit?

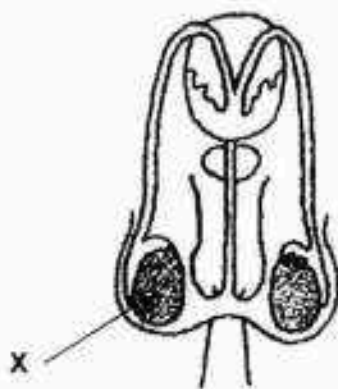
- (1) C only
- (2) A and D only
- (3) B and C only
- (4) A, B and D only

(    )

2. The diagrams below show parts of the reproductive systems of a flowering plant and a human.



**Reproductive parts of a flower**



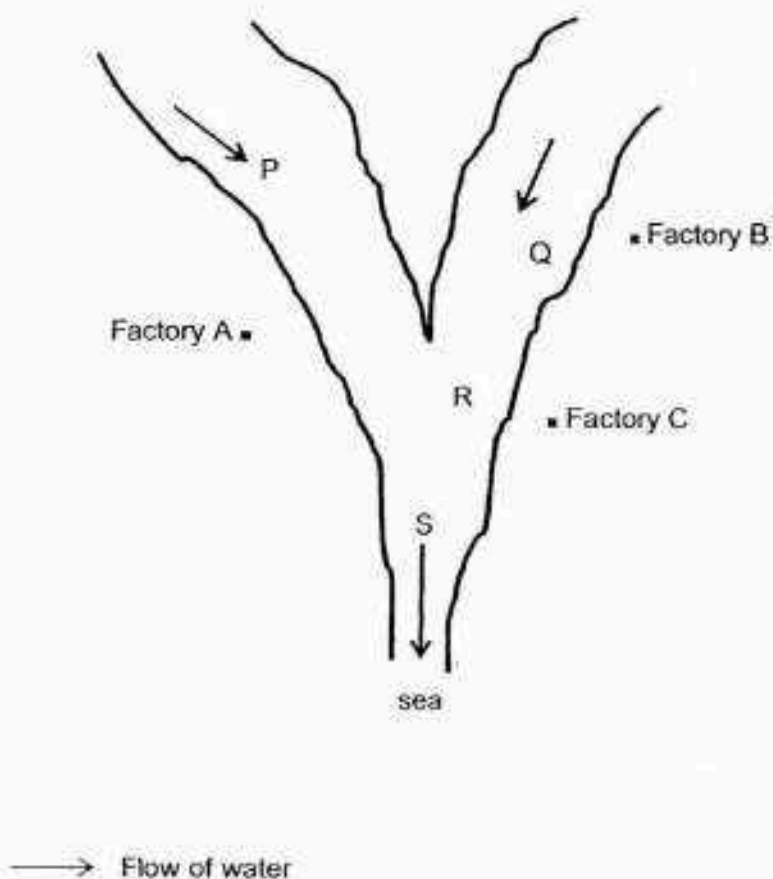
**Male reproductive parts in human**

Based on the diagrams above, which part of the flower, A, B, C or D, has a similar function as part X?

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

( )

3. The diagram below shows two rivers joining together flowing downstream towards the sea. Factories A, B and C discharge the same amount of Substance X into the river daily.



Which one of the following parts of the water would be the least polluted by Substance X?

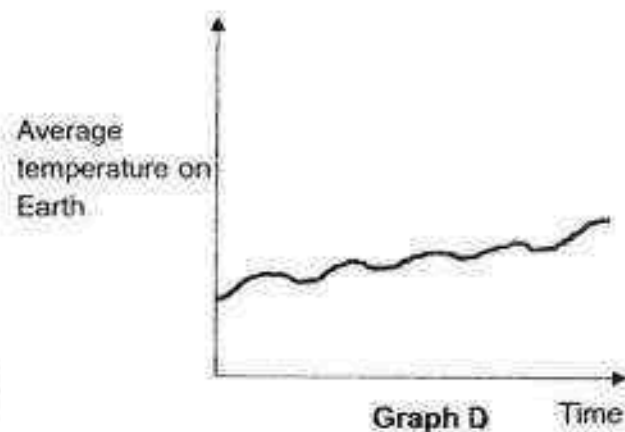
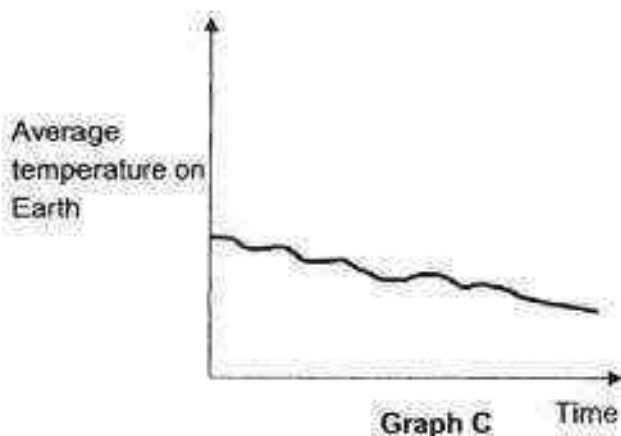
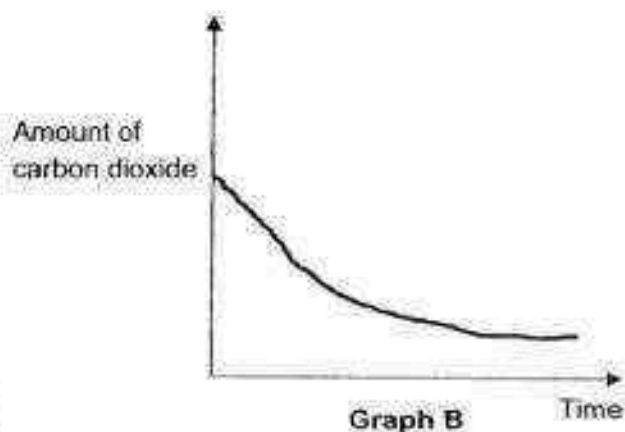
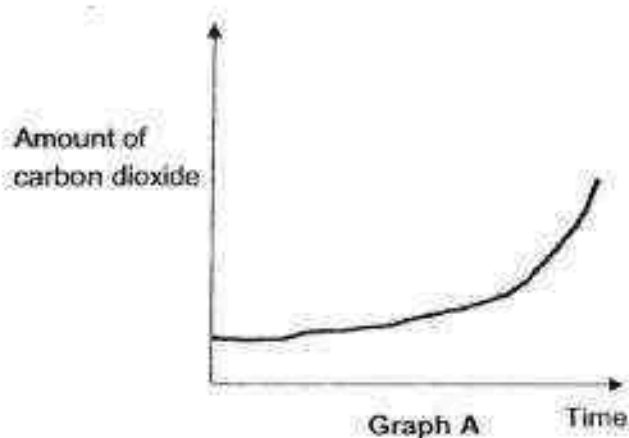
- (1) P
- (2) Q
- (3) R
- (4) S

( )

4. The following activities were carried out:

- Clearing of forests through burning
- Using petrol and diesels in vehicles
- Smoke being released from factories

Which of the following graphs show how the conditions on Earth will change over time if these activities were carried out for a long period of time and at a high level?

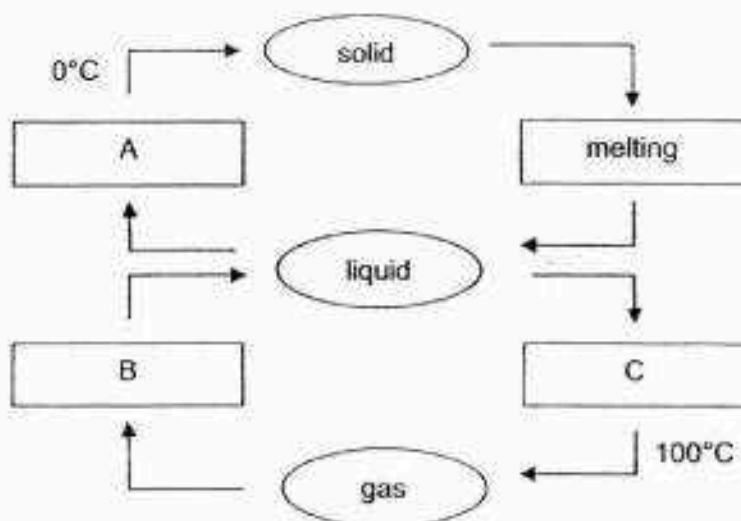


- (1) A and C only
- (2) A and D only
- (3) B and C only
- (4) B and D only

( )



5. The diagram below shows the changes of state of water.

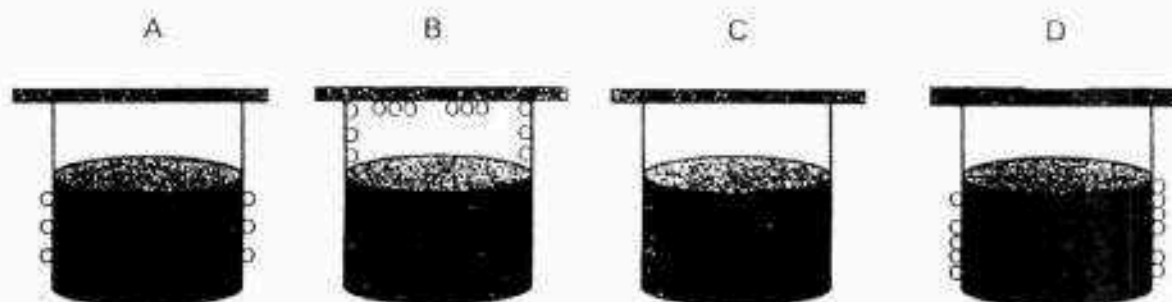


Which one of the following correctly describes the processes A, B, and C?

	A	B	C
(1)	freezing	evaporation	condensation
(2)	condensation	freezing	evaporation
(3)	freezing	condensation	boiling
(4)	condensation	evaporation	boiling

(     )

6. Four identical containers, A, B, C and D, containing the same volume of water at different temperatures are placed on the same table as shown below.



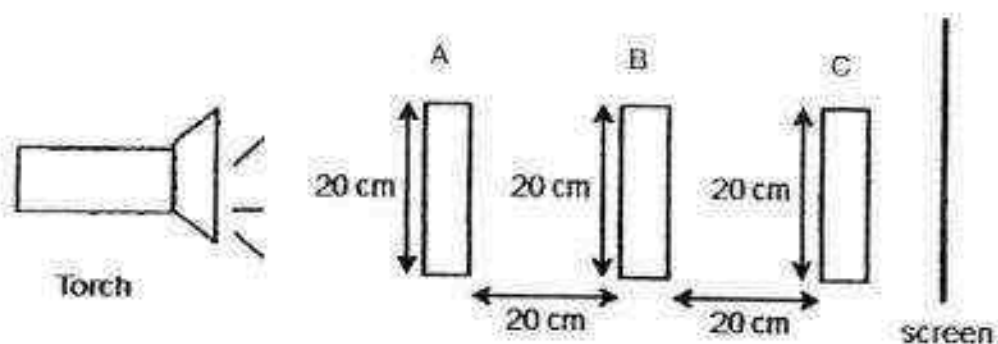
○ - Water droplets

Which of the following shows the temperature of the water in the beakers from the highest to the lowest?

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

( )

7. Three objects were placed at positions A, B and C between a torch and a screen as shown in the diagram below.



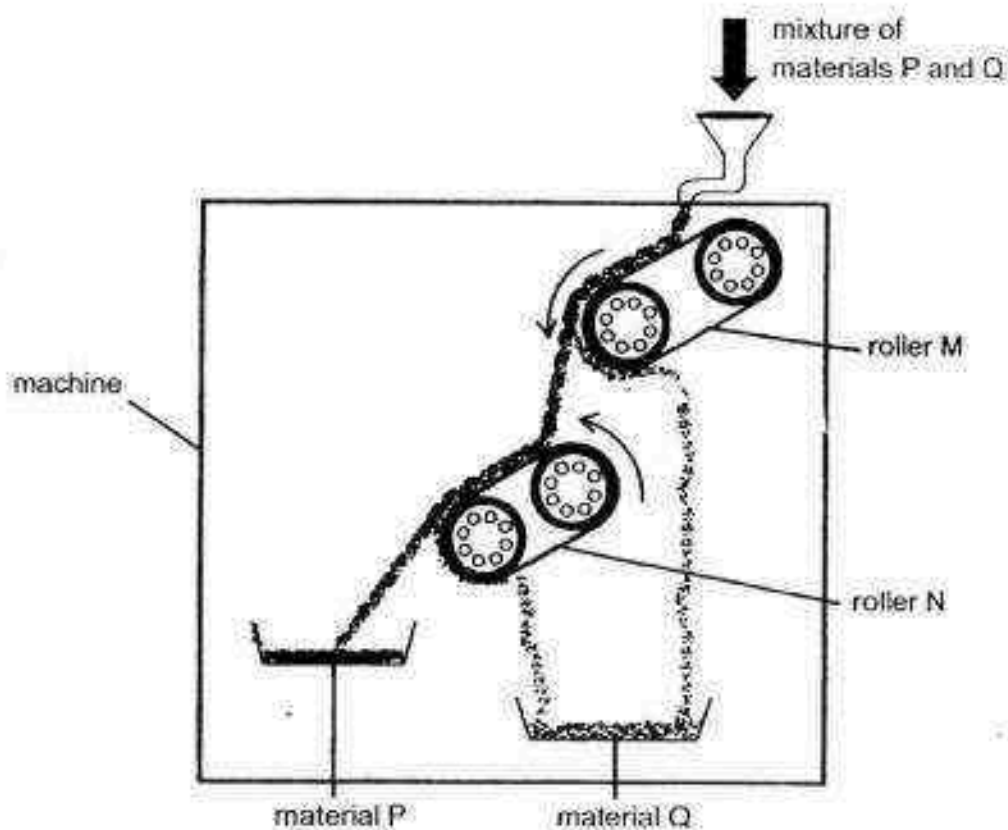
The diagram below shows the shadow formed on the screen.



Which of the following shows correctly the objects at positions A, B and C?

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

8. A mixture of materials P and Q is poured into a machine that can separate materials based on their magnetic properties.



Based on the diagram above, which of the following conclusions are correct?

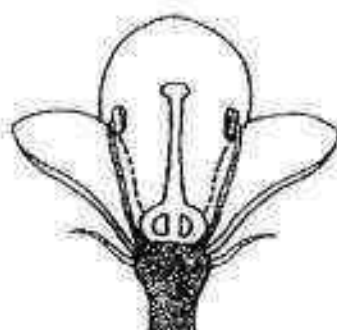
- A Only roller M is a magnet.
- B Material P is a magnetic material.
- C Material Q is a magnetic material.
- D Both rollers M and N are magnets.

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

**Section B (9 marks)**

For questions 9 to 12, write your answers in the spaces provided.  
The number of marks available is shown in [ ] at the end of each question or part question.

9. Ken observed the flower of Plant A in his school garden. He found out that the flower was pollinated by bees.

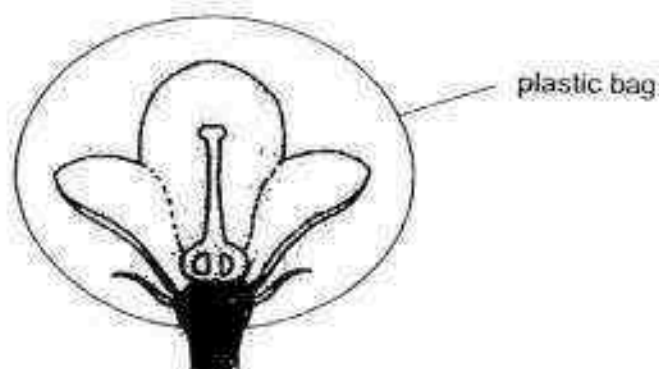


- (a) State two characteristics of the flower that enable it to be pollinated by bees. [1]

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

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

Ken conducted an experiment on the flower of Plant A. He removed a certain part of the flower and tied a plastic bag over it as shown in set-up X. He observed that some parts of the flower dried up and developed into a fruit after some time.

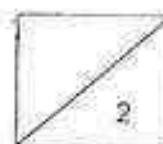


set-up X

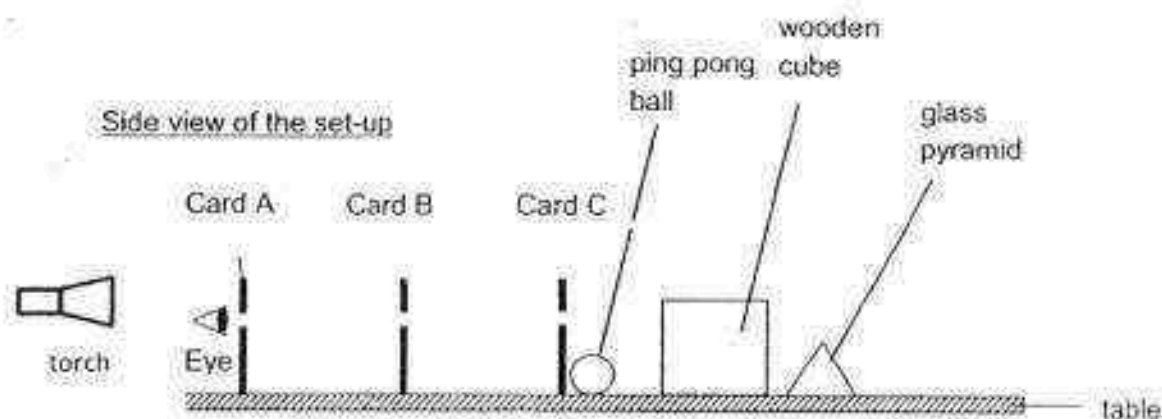
- (b) Explain why the flower could still develop into a fruit. [1]

\_\_\_\_\_

\_\_\_\_\_

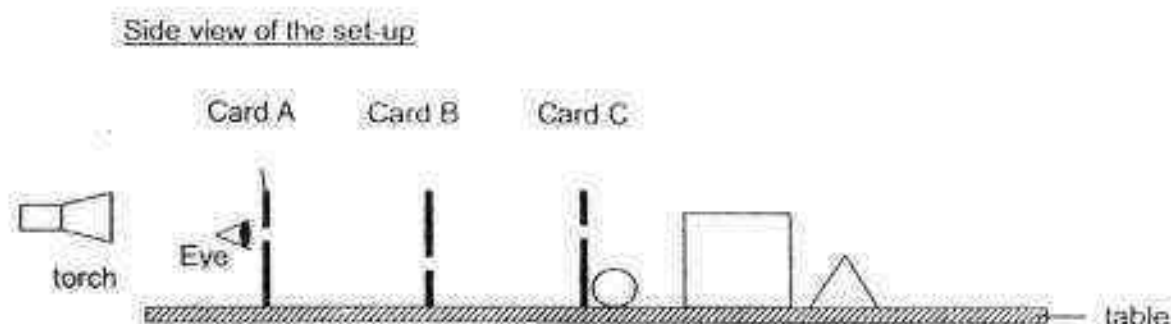


10. Sharon conducted an experiment with three opaque cards, A, B and C. The holes on the cards were in a straight line. Three objects, a ping pong ball, a wooden cube and a glass pyramid, were placed in the positions as shown below. Sharon then looked through the hole of Card A.

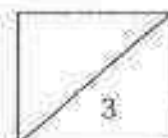


- (a) State the object(s) she could see. [1]

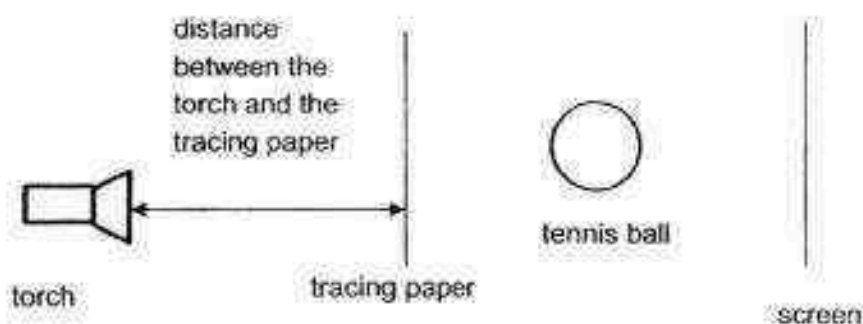
Sharon turned Card B upside down as shown in the diagram below.



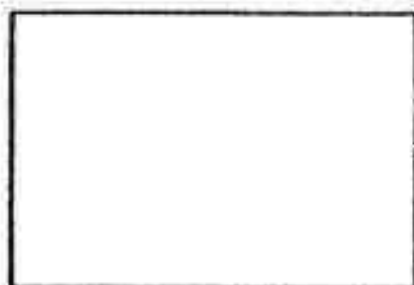
- (b) Could Sharon see any object when she looked through the hole of Card A again?  
Give a reason for your answer. [2]



11. An experiment has been set up as shown in the diagram below.



- (a) Draw and shade the shadow formed on the screen in the box below. [1]



The position of the tracing paper and tennis ball remains unchanged. Sean measured the height of the shadow when he moved the torch to shine at different distance away from the tracing paper. The result was shown in the table below.

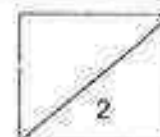
Distance between the torch and the tracing paper (cm)	Height of the shadow (cm)
5	20
10	16
15	12
20	8
25	4

- (b) State the relationship to show how the distance between the torch and the tracing paper affects the height of the shadow. [1]

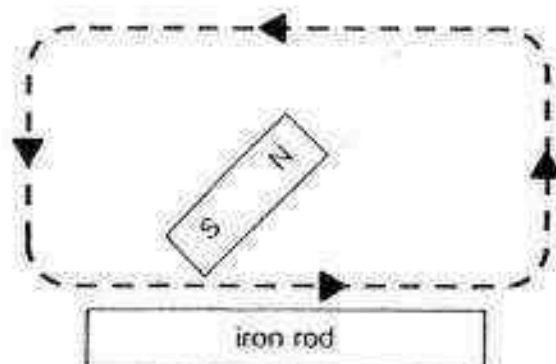
---



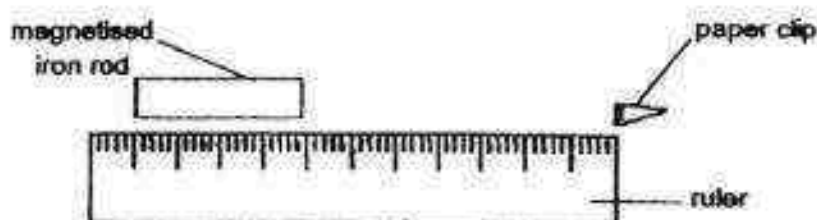
---



12. Darren used the "stroke" method to magnetise 4 identical iron rods, P, Q, R and S, as shown below.



He then used the set-up as shown below to find out the magnetic strength of each of the magnetised iron rods.



Darren placed the paper clip and magnetised iron rod beside the ruler as shown above. Next, he pushed the iron rod slowly towards the paper clip until the paper clip is attracted to it and recorded the distance. He repeated the above steps with the other 3 magnetised iron rods.

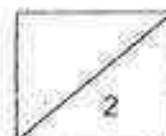
Iron rods	Distance the paper clip is attracted to the magnetised iron rod (cm)
P	6
Q	10
R	14
S	9

Based on the information in the table above, which one of the 4 iron rods, P, Q, R or S, did Darren stroke the most number of times with a magnet? Explain your answer. [2]

---



---




END OF PAPER



**Primary 5 Science Term Review 2 (2016)**  
**Answer Key**

Question	Answer	Question	Answer
1	4	5	3
2	1	6	3
3	1	7	4
4	2	8	4

Qn no.	Answers
9	<p>(a) (i) Colourful petals (ii) Sweet smelling nectar</p> <p>(b) The flower was <b>already pollinated</b> (1m) before the plastic bag was tied over it.</p>
10	<p>(a) Wooden cube</p> <p>(b) Light reflected off the objects cannot pass through card B to reach her eyes.</p>
11	<p>(a) </p> <p>(b) The <b>further</b> the distance between the lorch and the tracing paper, the <b>shorter</b> the height of the shadow.</p>
12	<p>Rod R. (<b>Claim</b>) It is able to attract the paper clip from the furthest distance. (<b>Evidence</b>) Thus it has the most magnetism. (<b>Reason</b>)</p>

# Anglo-Chinese School (Junior)



## SEMESTRAL ASSESSMENT 2 (2016)

PRIMARY 5

SCIENCE

BOOKLET A

Thursday

3 November 2016

1 hr 30 min

Name: \_\_\_\_\_ (    )    Class: 5.(    )

### INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

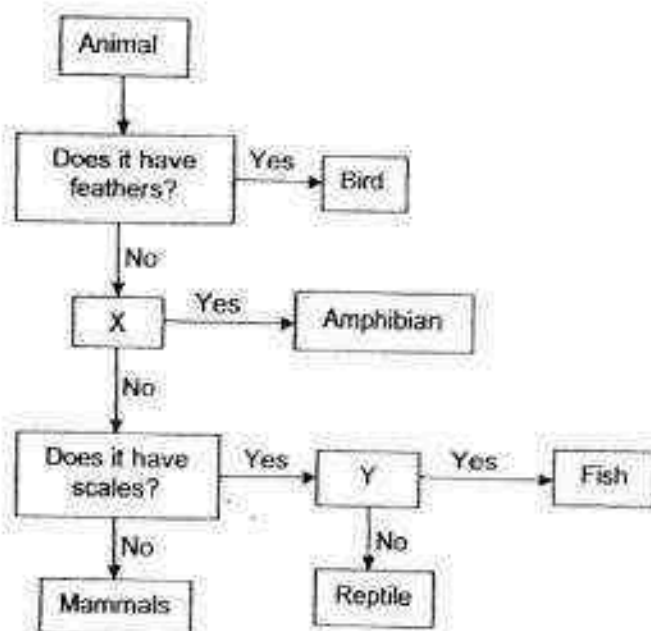
---

This question paper consists of 16 printed pages (inclusive of cover page).

**Booklet A (50 marks)**

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (25 x 2 marks)

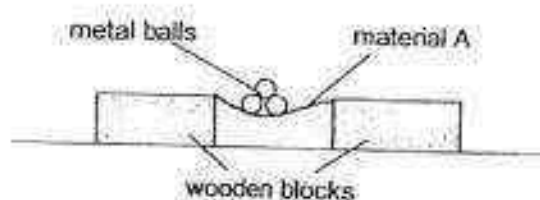
1. Study the flowchart below.



The letters X and Y represent questions that are used to classify animals in the flowchart above. Which of the following best represents X and Y?

	X	Y
(1)	Does it breathe through lungs?	Does it have dry skin?
(2)	Does it live on land?	Does it breathe through gills?
(3)	Does it breathe through moist skin?	Does it have fins?
(4)	Does it live in water?	Does it live on land?

2. Anna set up the experiment below. She secured material A to two wooden blocks and added identical metal balls onto the sheet until the sheet broke.



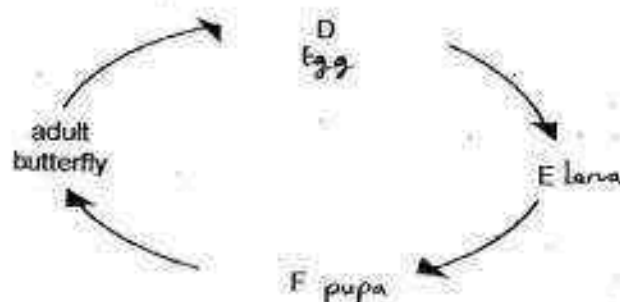
She repeated the experiment using material B which was made of a different material. She recorded her observation in the table below.

	Number of metal balls added before the material broke
Material A	18
Material B	5

Anna wants a bag to carry heavy books to school. Based on her experiment, which material would be more suitable to make the bag?

	Material	Reason
(1)	A	A is stronger than B
(2)	A	A is more flexible than B
(3)	B	B is stronger than A
(4)	B	B is able to break more easily than A

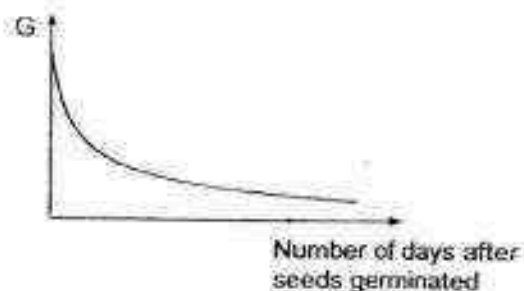
3. The diagram below shows the life cycle of a butterfly.



At which stage of the life cycle is the butterfly considered a pest to farmers?

- (1) D only
- (2) E only
- (3) F only
- (4) E and F only

4. Study the graph below on the germination of seeds.



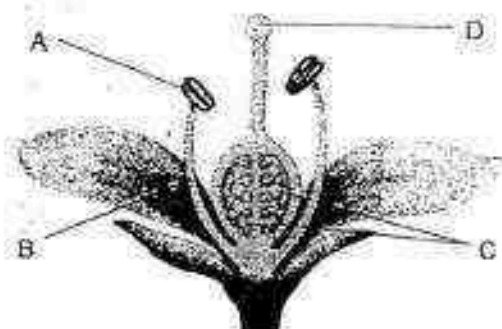
What could G represent?

- (1) Average mass of the seedlings
  - (2) Average height of the seedlings
  - (3) Average mass of the seed leaves
  - (4) Average length of the roots of the seedlings
5. Alan carries out the following procedure for an experiment.
- A. He weighed the soccer ball at first.
  - B. He then pumped more air into the ball and observed that the size of the ball did not change.
  - C. He weighed it again and recorded the mass.

Which of the following is most likely the results and conclusion of his experiment?

	Mass of ball at the start of the experiment	Mass of ball at the end of the experiment	Conclusion
(1)	500 g	480 g	Air takes up space and has no mass.
(2)	500 g	500 g	Air has no mass.
(3)	500 g	520 g	Air has mass and can be compressed.
(4)	500 g	600 g	Air has a definite volume.

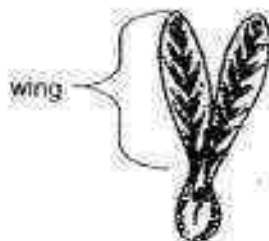
6. The diagram below shows the cross-section of a flower.



Which part is not matched to its function?

	Part	Function
(1)	A	Produces pollen grains
(2)	B	Holds up the anther
(3)	C	Contains the egg cells
(4)	D	Develops into a fruit

7. Sam wants to find out whether the length of the wing of the fruit affects the distance it is dispersed.



He has 4 set-ups as shown:

Set-ups	Length of wing (cm)	Mass of fruit (g)	Presence of wind
A	5	8	Yes
B	5	14	No
C	10	8	Yes
D	10	14	Yes

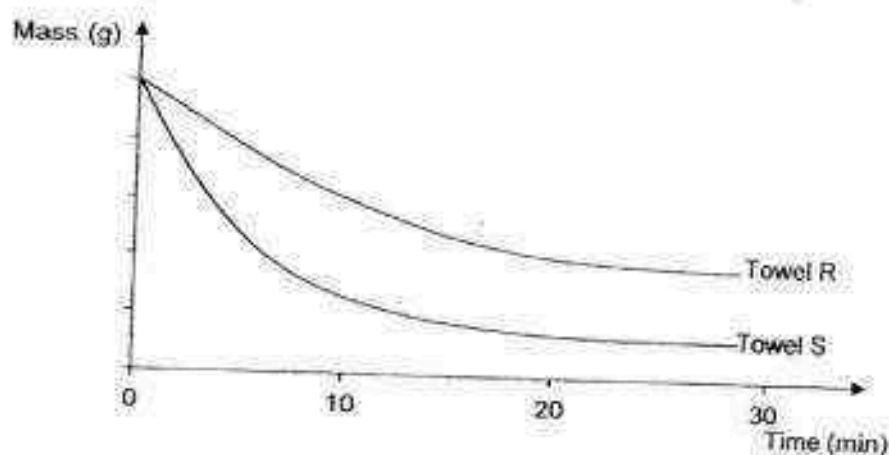
Which 2 set-ups should Sam use to conduct a fair test?

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

8. Which part of the male and female human reproductive system produces the male sex cells and female sex cells?

	Produces Male Sex Cells	Produces Female Sex Cells
(1)	Penis	Womb
(2)	Penis	Vagina
(3)	Testes	Ovaries
(4)	Testes	Fallopian tube

9. Two identical towels wet with the same amount of water, R and S, were hung outside a house to dry. The graph below shows the mass of the wet towels as they dried up.

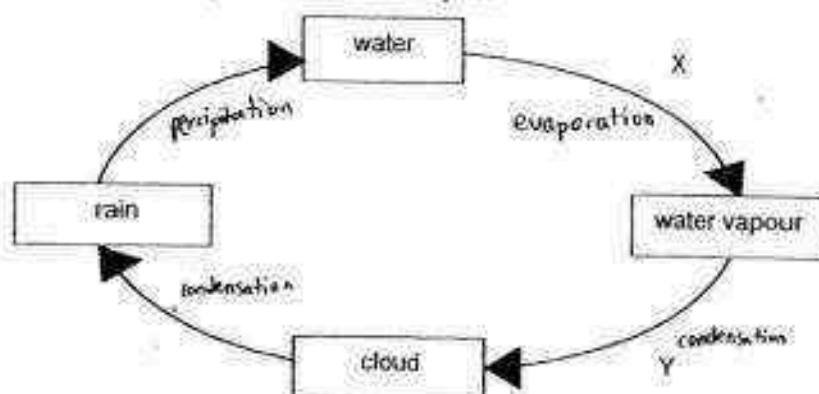


Based on the above results, which of the following two conclusions are correct?

- A R was folded in half, while S was spread out to dry.
- B S was folded in half, while R was spread out to dry.
- C R was hung in the shade and S was hung in the Sun.
- D S was hung in the shade and R was hung in the Sun.

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

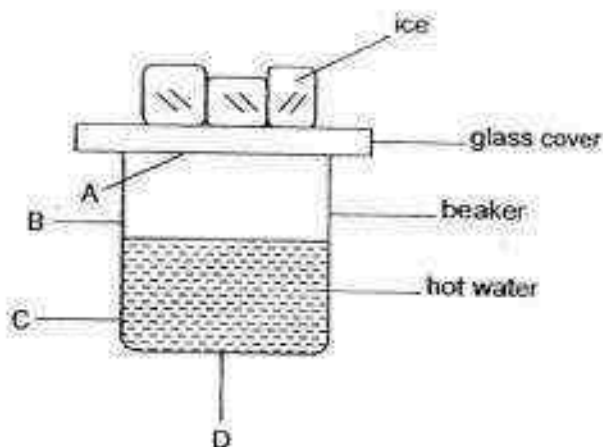
10. The diagram below represents the water cycle.



Which of the following is correct?

	Condensation occurs at	Evaporation occurs at
(1)	X	Y
(2)	Y	X
(3)	Y	Y
(4)	X	X

11. Vicky sets up an experiment as shown in the diagram below.

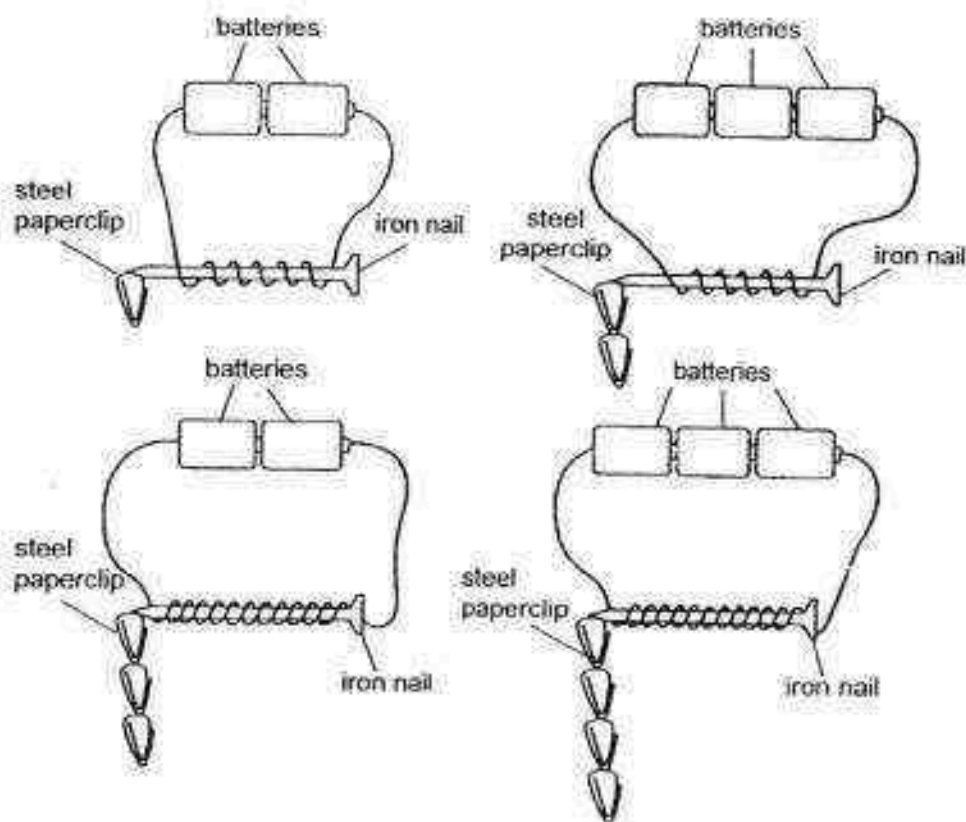


After a while, she noticed that some water droplets formed. At which part of the diagram, A, B, C or D, did the water droplets form?

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



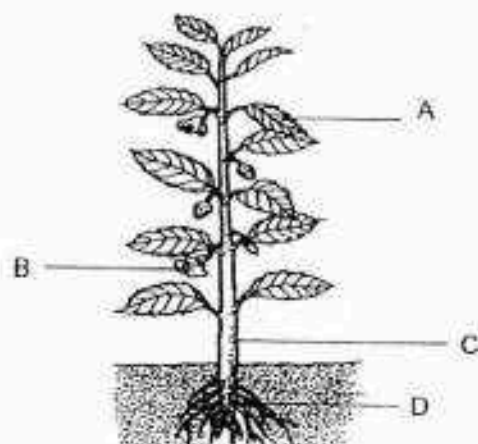
12. Jim uses four identical iron nails to make electromagnets to conduct an experiment to attract steel paperclips as shown in the diagram below.



What can Jim conclude from the above results?

- (1) The number of batteries does not affect the strength of the electromagnet.
- (2) The number of turns of coils of wire around the iron nail does not affect the strength of the electromagnet.
- (3) The strength of the electromagnet depends only on the number of coils of wire around the iron nail.
- (4) The strength of the electromagnet depends on both the number of batteries and the number of coils of wire around the iron nail.

13. The diagram below shows a plant.

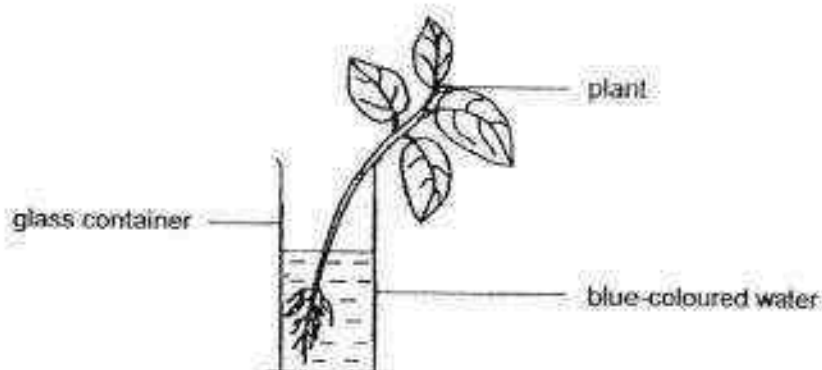


Which of the following statements describe correctly the functions of the plant parts labelled A, B, C and D?

Parts	Functions
A	Trap the light energy from the Sun.
B	Develop into fruit for reproduction.
C	Transport food from the roots to the leaves.
D	Absorb dissolved mineral salts and nutrients.

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

14. Nathaniel placed a plant in a glass container filled with blue-coloured water. Two days later, he noticed that the leaves and stem had turned blue.



Based on his observation, he made the following statements.

- A Roots absorb the water.
- B Leaves use water to make food.
- C Water is transported through the stem.
- D Water is transported from the leaves to the stem and roots.

Which of his above statements are correct?

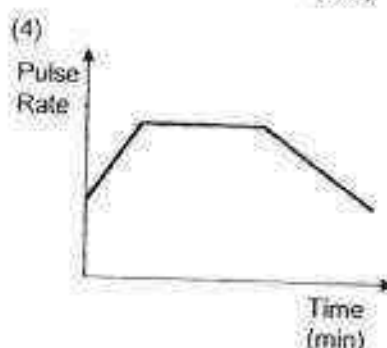
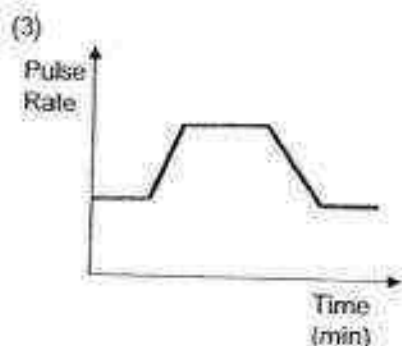
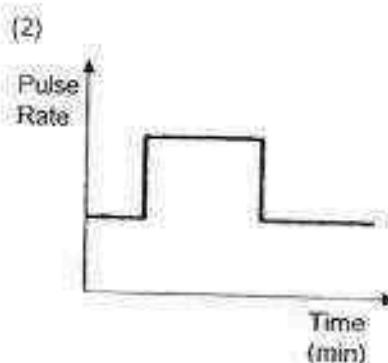
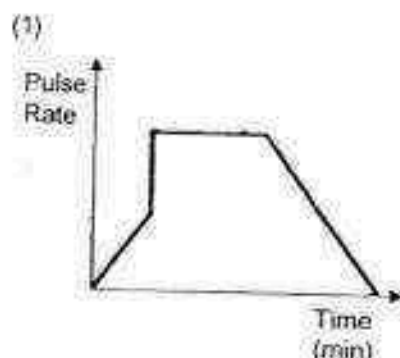
- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) A, B, C and D

15. Which of the following substance(s) pass(es) through the stomata of the leaves?

- A oxygen
- B water vapour
- C carbon dioxide

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

16. Benjamin ran for 10 minutes. Which one of the following graphs correctly shows his pulse rate from 5 minutes before his run to 10 minutes after his run?



17. Cayden observed three cells, X, Y and Z, and completed the table below. A tick (✓) indicates that the part was observed in the cell.

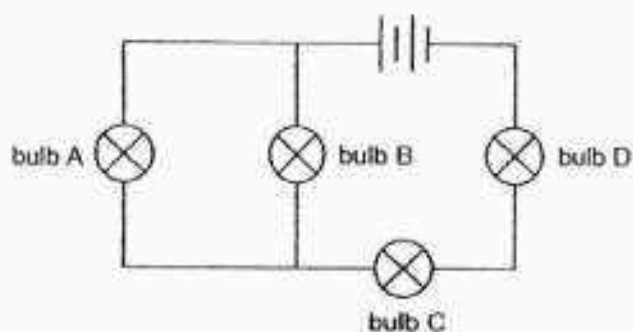
Parts of Cell	Cell X	Cell Y	Cell Z
Cytoplasm	✓	✓	✓
Cell wall	✓		✓
Cell membrane	✓	✓	✓
Chloroplasts			✓
Nucleus	✓	✓	✓

Based on what he had observed, he classified the three cells, X, Y and Z, into two groups.

Which of the following shows the correct classification?

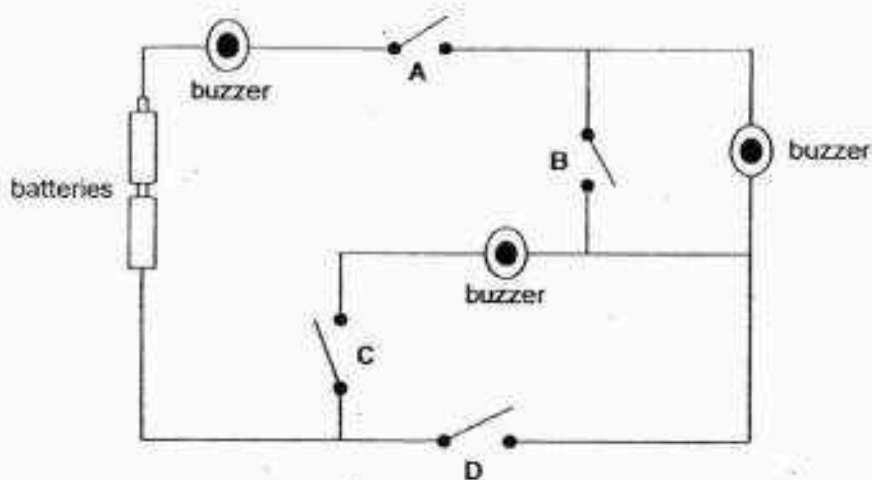
	Animal Cells	Plant Cells
(1)	Y	X, Z
(2)	X, Z	Y
(3)	X, Y	Z
(4)	Z	X, Y

18. The diagram below shows four bulbs connected to two batteries.



If bulb D fuses, how many bulbs will still light up?

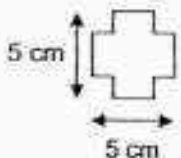
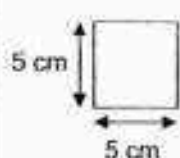

- (1) 0
  - (2) 1
  - (3) 2
  - (4) 3
19. Russell connected 3 buzzers as show in the circuit below.



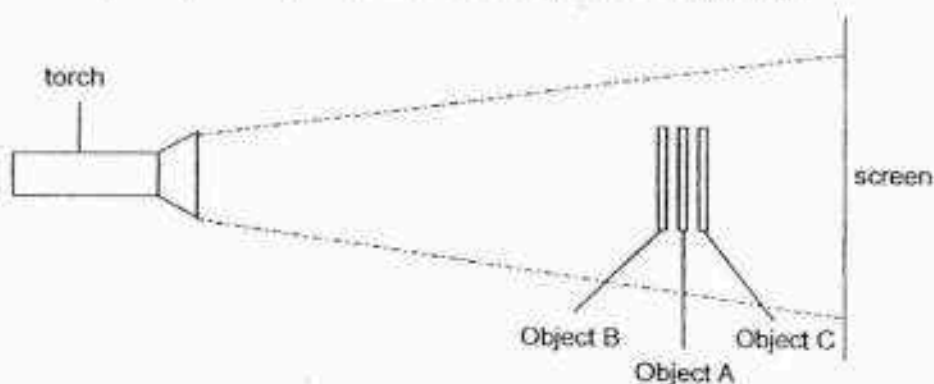
In order to sound all the buzzers in the set-up, what is the least number of switches that he needs to close?

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





20. Christopher used 3 flat objects, A, B and C, below to conduct an experiment on light and shadows. The specifications and properties of the objects are stated below.

Object A	Object B	Object C
		
Opaque	Transparent	Translucent

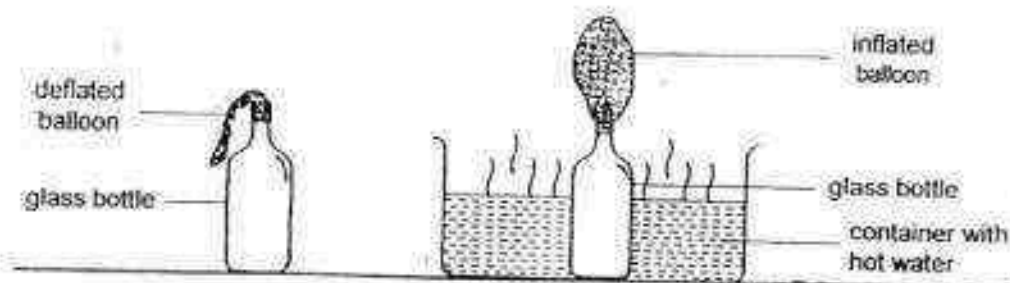
During the experiment, he positioned the 3 objects as shown below.



From the experiment above, which of the following will be the image shown on the screen?

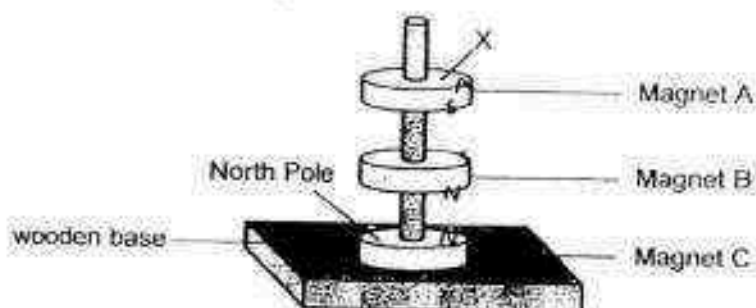
- (1) 
- (2) 
- (3) 
- (4) 

21. Calvin stretched the mouth of a balloon over the mouth of a thin glass bottle. He then placed the glass bottle into a container of hot water. After a short while, he noticed that the balloon was inflated.



How did the balloon get inflated?

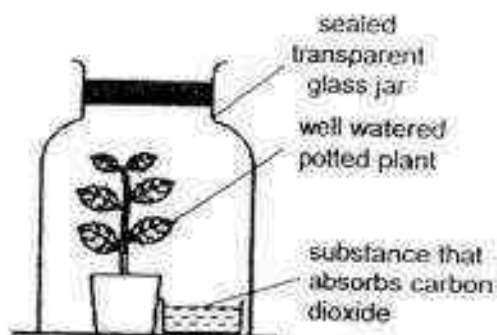
- (1) The air in the balloon lost heat and contracted.
  - (2) The air in the bottle gained heat and expanded.
  - (3) The surrounding air gained heat and entered the balloon.
  - (4) The warm water vapour from the hot water entered the balloon.
22. Study the diagram below.



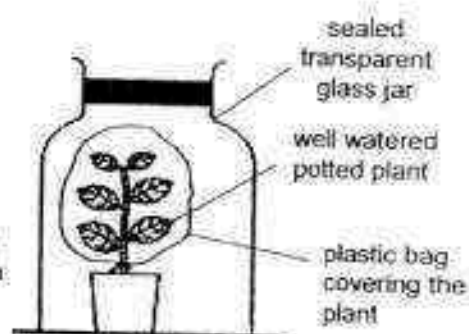
Which of the following is correct based on the diagram?

	Pole at X	Explanation
(1)	South	Magnet A is repelling magnet B
(2)	South	Magnet A is attracting magnet B
(3)	North	Magnet A is repelling magnet C
(4)	North	Magnet A is repelling magnet B

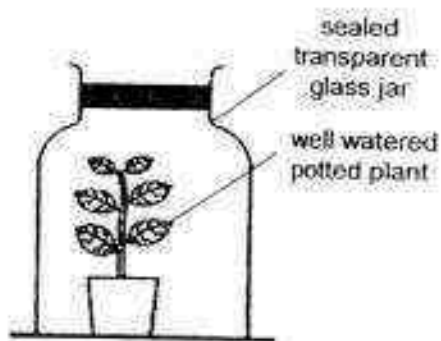
23. Dillon wanted to find out if carbon dioxide is needed for photosynthesis.



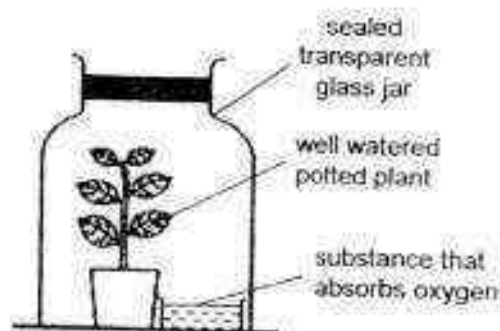
Set-up A



Set-up B



Set-up C



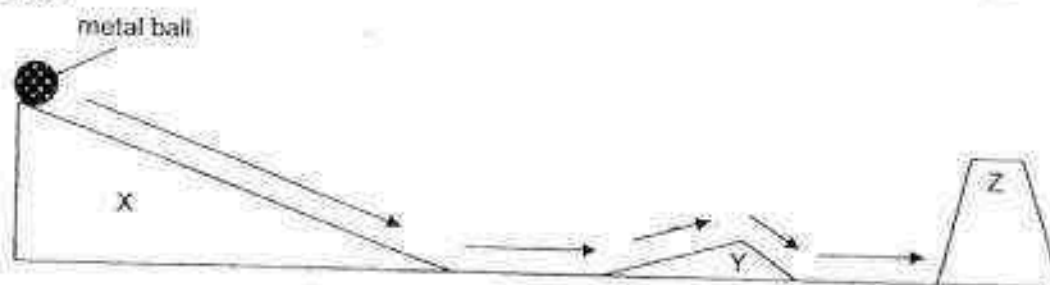
Set-up D

Which 2 set-ups, when placed in a sunny location, will help him conclude that carbon dioxide is necessary for photosynthesis to take place?

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

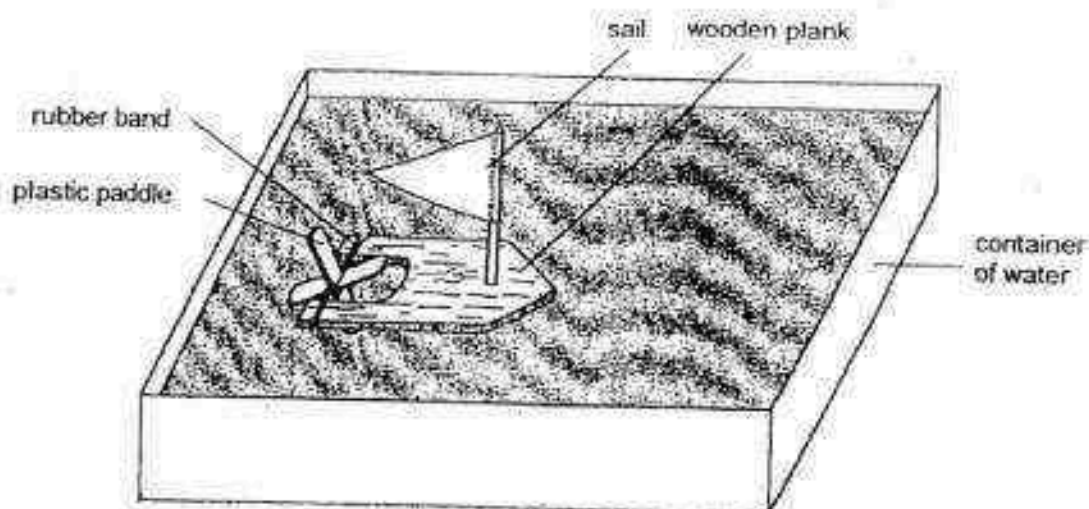


24. Oliver released a metal ball from the top of slope X. The ball rolled down the slope, along the floor, up and down ramp Y and was blocked by tower Z, before it came to a stop.



Based on the experiment, Oliver made the following statements.  
Which one of the following statement(s) is/are correct?

- A The ball had the most potential energy at the top of slope X.
  - B The ball stopped at tower Z as it had the most kinetic energy.
  - C The potential energy of the ball increased as it rolled down ramp Y.
  - D The kinetic energy of the ball was the highest at the foot of slope X.
- (1) A only  
(2) A and D only  
(3) B and C only  
(4) A, B, C and D
25. Marc made a simple toy boat using a rubber band that is wound round a paddle as shown.



If he wants the boat to travel further across the water, what should he do?

- (1) Use a smaller sail made of a different material.
- (2) Increase the width and thickness of the wooden plank.
- (3) Change the material of the paddle from plastic to wood.
- (4) Increase the number of times the rubber band is wound round the paddle.

End of Booklet A

## Anglo-Chinese School (Junior)



## SEMESTRAL ASSESSMENT 2 (2016)

PRIMARY 5

SCIENCE

BOOKLET B

Thursday

3 November 2016

1 hr 30 min

Name: \_\_\_\_\_ ( ) Class: 5 ( ) Parent's Signature: \_\_\_\_\_

## INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 14 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [ ] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	50	
B	40	
PBA	10	
Total	100	

---

This question paper consists of 16 printed pages (inclusive of cover page).

**Booklet B (40 marks)**

For questions 26 to 39, write your answers in this booklet.

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

26. Reuben sets up the experiment shown below. He watered the plant before leaving it in a sealed cardboard box.

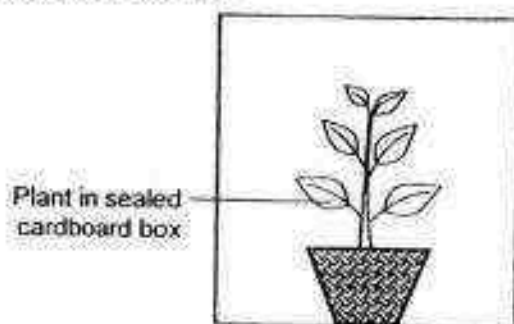


Diagram 1

Reuben cut a hole in the cardboard box and left it in the sun for a week. Diagram 2 shows how the plant looked at the end of the week.

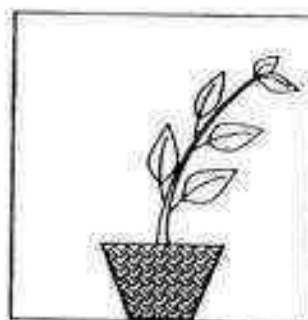


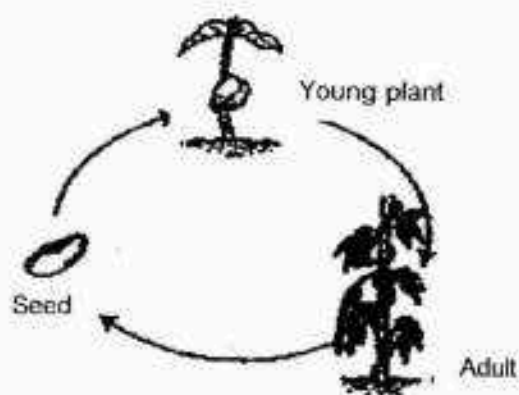
Diagram 2

- (a) Draw an X on the cardboard box in diagram 2 to show the most likely position of the hole made by Reuben. [1]
- (b) Explain why the plant bent to one side after one week. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) If Reuben was to repeat the experiment with a similar plant placed in a clear glass box, would his observation be the same? Explain your answer. [1]
- \_\_\_\_\_
- \_\_\_\_\_

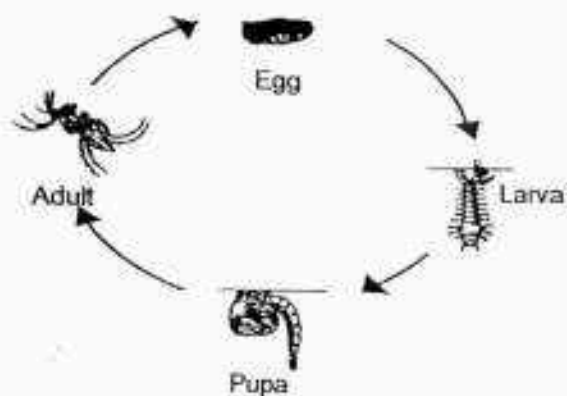
(Go on to the next page)

SCORE	
	3

27. The diagrams below show the life cycle of a plant and a mosquito.



Life cycle of a plant



Life cycle of a mosquito

Based on the above diagrams, state two differences between the life cycle of the plant and the mosquito.

[2]

---



---



---

(Go on to the next page)

SCORE	
	2

- 28 The diagram below shows a love grass and the cross section of a coconut.



love grass



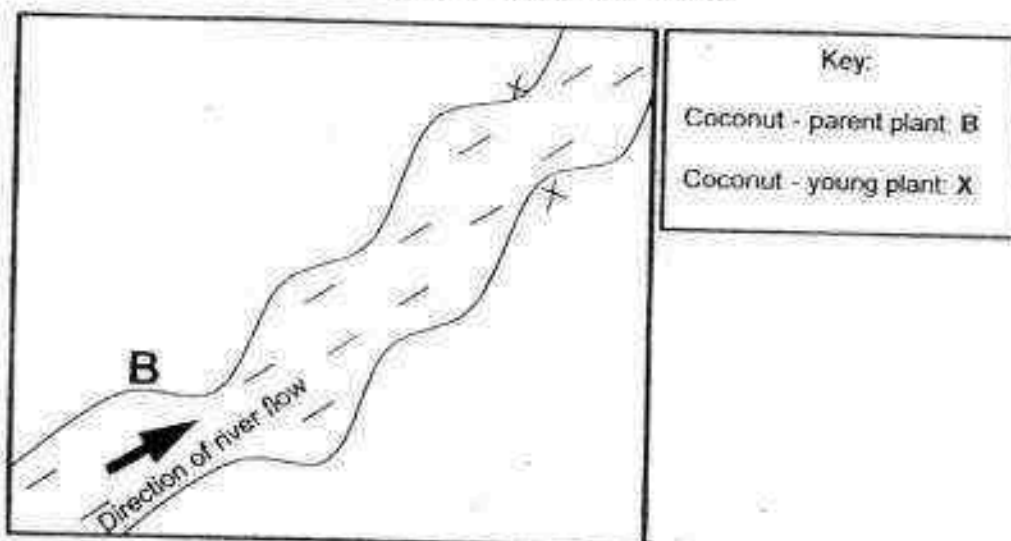
coconut

- (a) State a characteristic of each fruit that helps in their dispersal. [1]

Love grass: \_\_\_\_\_

Coconut: \_\_\_\_\_

- (b) B is an adult coconut tree on a piece of land as shown below.



Using the key provided, indicate the likely locations of two young coconut plants based on how the fruits would be dispersed. [1]

(Go on to the next page)

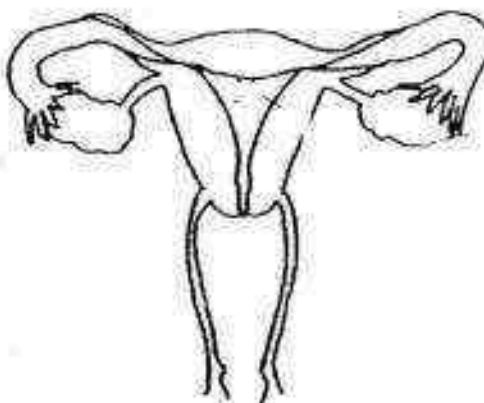
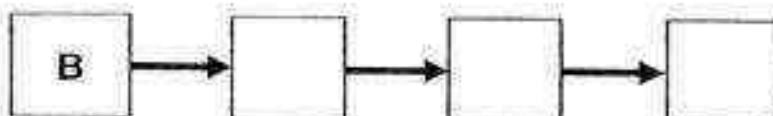
SCORE	
	2

29. The statements below describe the different stages in the process of fertilisation.

- A: The nucleus of the sperm fuses with the nucleus of the egg.
- B: Many sperms try to penetrate the egg.
- C: The fertilised egg divides.
- D: One sperm enters the egg successfully.

(a) Arrange the above stages of fertilisation in the correct order in the boxes below.

[1]



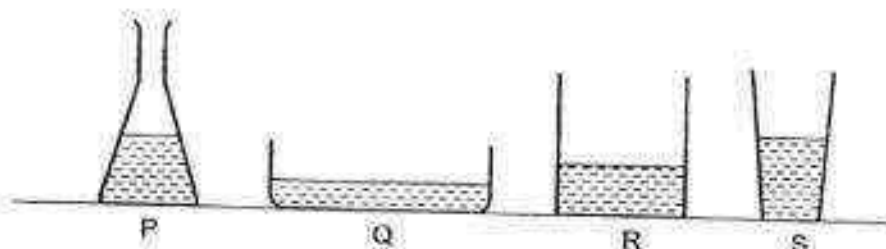
(b) The diagram above shows the human female reproductive system. Label and name the part where the fertilised egg develops.

[1]

(Go on to the next page)

SCORE	
	2

30. (a) John conducted an experiment with four containers, P, Q, R and S, as shown in the diagram below. He poured equal amounts of water into the containers and placed them at the school field.

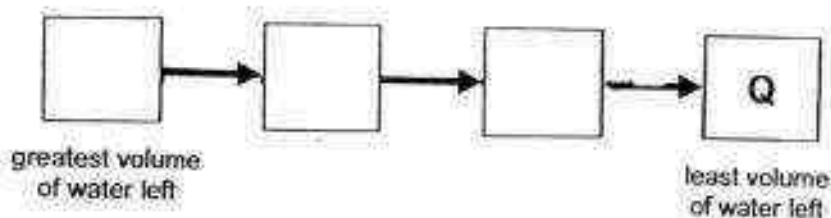


- (i) After several hours, John noticed that the amount of water in all four containers had decreased. State the process that resulted in this change.

[1]

- (ii) John measured the volume of water left in each container. He noted that the volume of water left in container Q was the least. Arrange the remaining containers in order of the volume of water left in the boxes below.

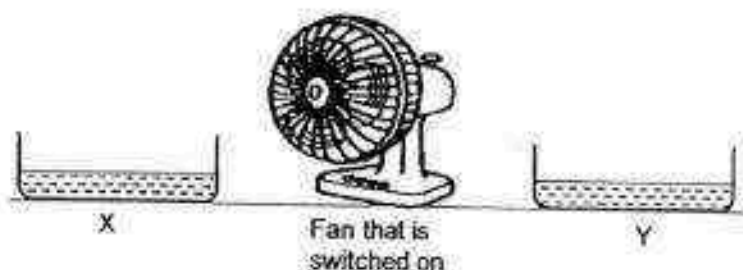
[1]



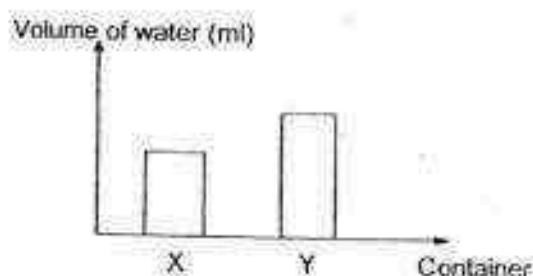
- (iii) Explain why the volume of water left in container Q is the least.

[1]

- (b) John conducted another experiment to find out how the presence of wind affects the rate of evaporation of water. He filled 2 identical containers, X and Y, with equal amount of water and placed them in the classroom as shown in the diagram below.



The graph below shows the volume of water left in each container after some time.



- (i) State the relationship between the presence of wind and the volume of water left in the container. [1]

---



---

- (ii) Explain why the volume of water in container X is lower than in container Y. [1]

---



---

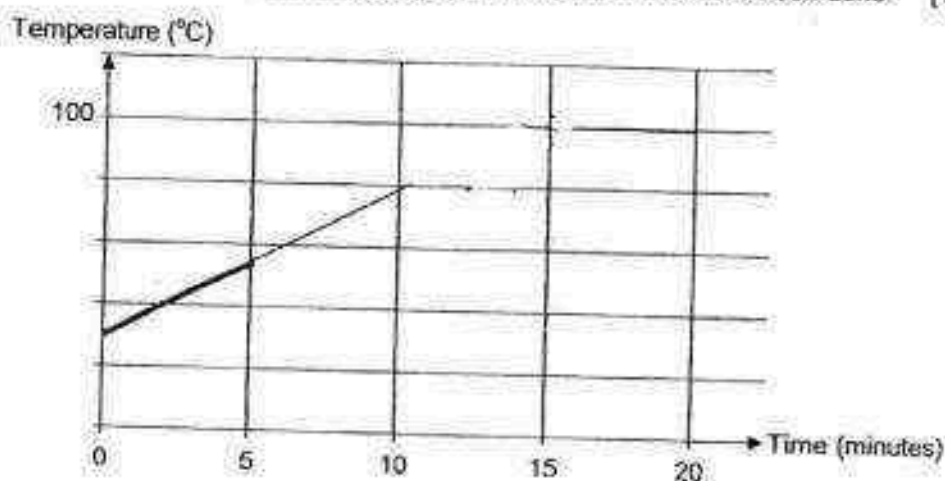
(Go on to the next page)

SCORE	5
-------	---

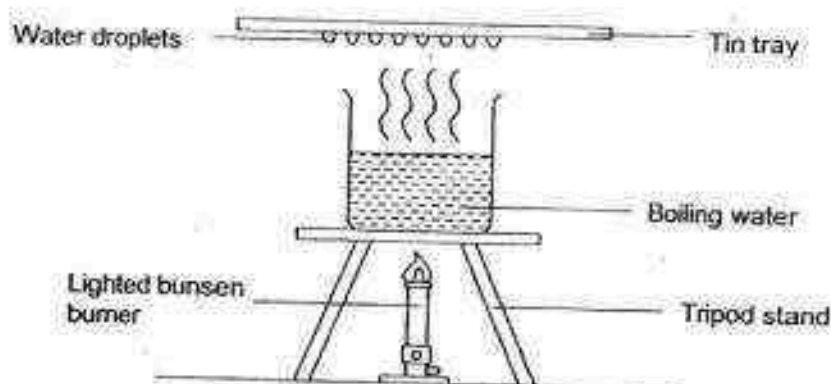


31. Alice heated 500 ml of water at  $27^{\circ}\text{C}$  for 15 minutes before it started to boil. She continued heating the water for another 5 minutes.

- (a) Complete the graph below to show the change in temperature of water with time for the first 20 minutes. The graph for the first 5 minutes has been done. [1]



As the water was boiling, Alice placed a tin tray above the beaker of water as shown in the diagram below.



- (b) Alice noticed water droplets forming on the underside of the tin tray. Explain how these water droplets formed. [1]

\_\_\_\_\_

\_\_\_\_\_

- (c) What can Alice do so that more water droplets form on the underside of the tin tray in a shorter time? [1]

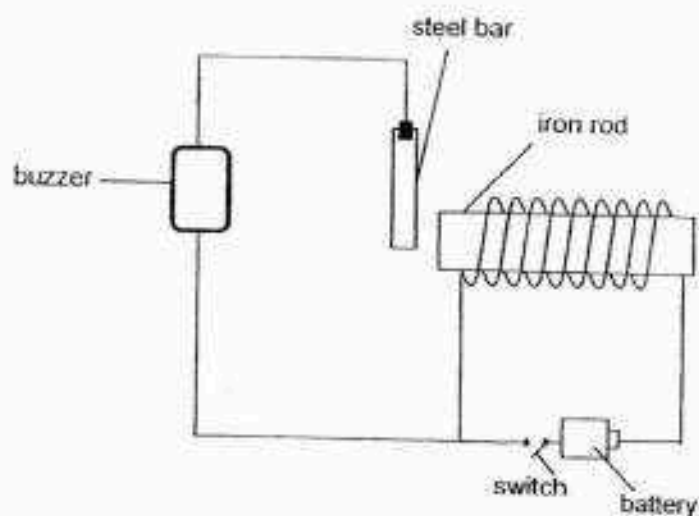
\_\_\_\_\_

\_\_\_\_\_

(Go on to the next page)

SCORE	
	3

32. Jonathan set up the circuit below.



- (a) When the switch in the circuit is closed, the buzzer produces a sound. Explain how this happens.

[2]

---

---

---

- (b) If the iron rod is replaced with a copper rod, will the circuit still perform its function? Explain your answer.

[1]

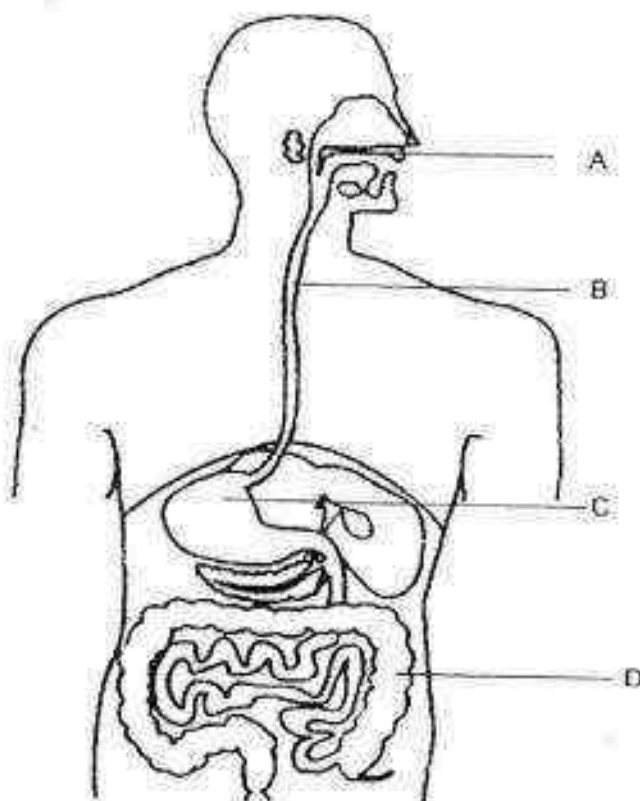
---

---

(Go on to the next page)

SCORE	
	3

33. The picture below shows the human digestive system.



- (a) Name the parts labelled B and D.

[1]

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

D : \_\_\_\_\_

- (b) Name the substance that is produced in the parts labelled A and C.

[1]

\_\_\_\_\_

- (c) What is the function of the substance mentioned in (b)?

[1]

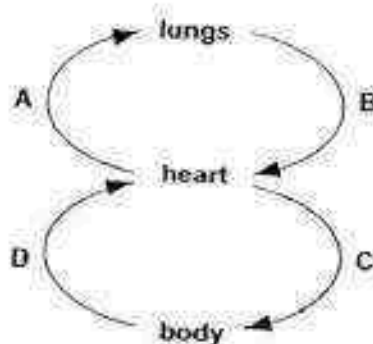
\_\_\_\_\_

\_\_\_\_\_

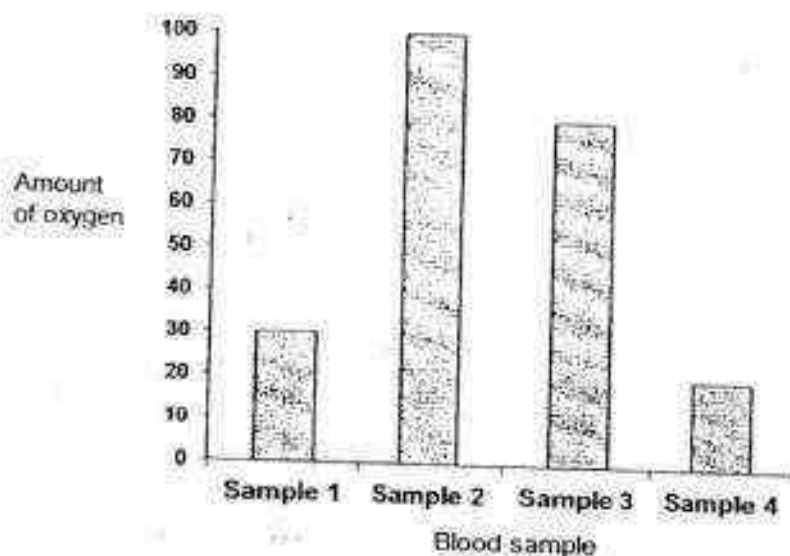
(Go on to the next page)

SCORE	3
-------	---

34. The diagram below shows the movement of blood in the circulatory system.



Blood samples were taken at points A, B, C and D as shown above. The amount of oxygen in each blood sample was then measured and tabulated in the graph below.



- (a) Based on the graph, match the blood samples to the points, A, B, C and D, where they were taken from.

[2]

Blood samples	Points where blood samples were taken from
1	D
2	B
3	C
4	A

- (b) Explain why Sample 2 has the highest amount of oxygen.

[1]

---

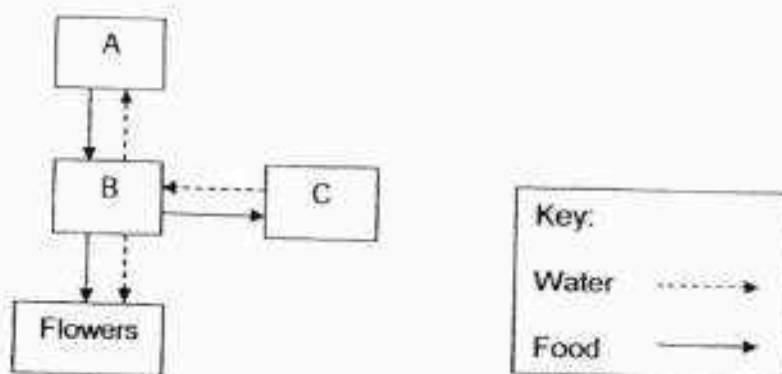


---

(Go on to the next page)

SCORE	3
-------	---

35. The diagram below shows how water and food are transported in a plant.



- (a) Identify parts A and C of the plant.

[1]

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

C: \_\_\_\_\_

- (b) What is part B? State a function of part B.

[1]

\_\_\_\_\_

\_\_\_\_\_

- (c) When a red-coloured food dye was added into the water, the plant's white flowers had red-coloured stains after about 5 hours.

Why did the flowers have red-coloured stains?

[1]

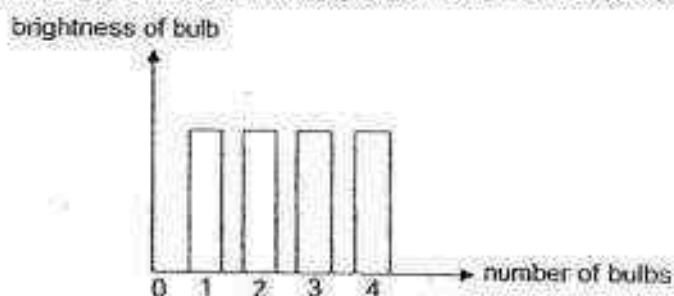
\_\_\_\_\_

\_\_\_\_\_

(Go on to the next page)

SCORE	
	3

36. The graph below shows how the number of bulbs in a circuit affects the brightness of a bulb, when the number of batteries used in the circuit remains the same.



- (a) Based on the graph above, answer the following questions.

- (i) How did the number of bulbs connected in the circuit affect the brightness of the bulbs? [1]

---



---

- (ii) Is the arrangement of the bulbs in series or parallel? [½]

---

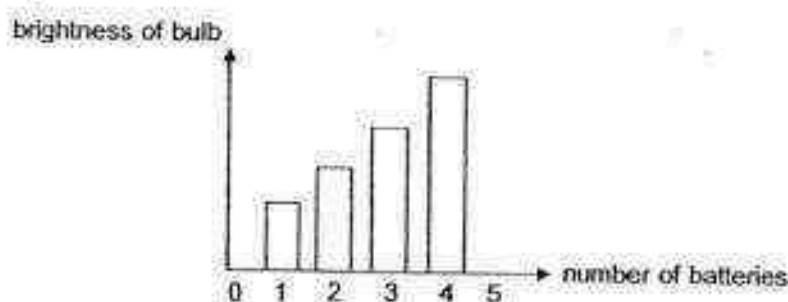
- (iii) State an advantage of the bulb arrangement mentioned in (a)(ii). [½]

---



---

The graph below shows the relationship between the number of batteries, up to 5 batteries, in a circuit and the brightness of the bulb in the circuit. Study the graph carefully.



- (b) What happened to the brightness of the bulb when the fifth battery was added? Explain why. [1]

---

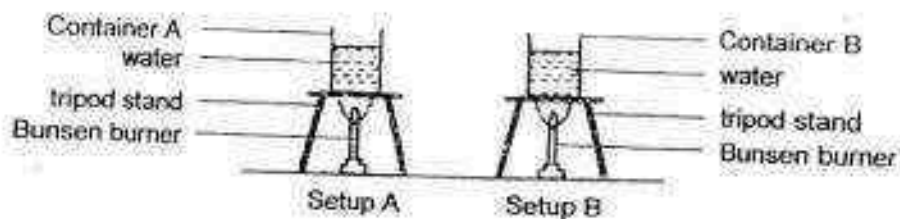


---

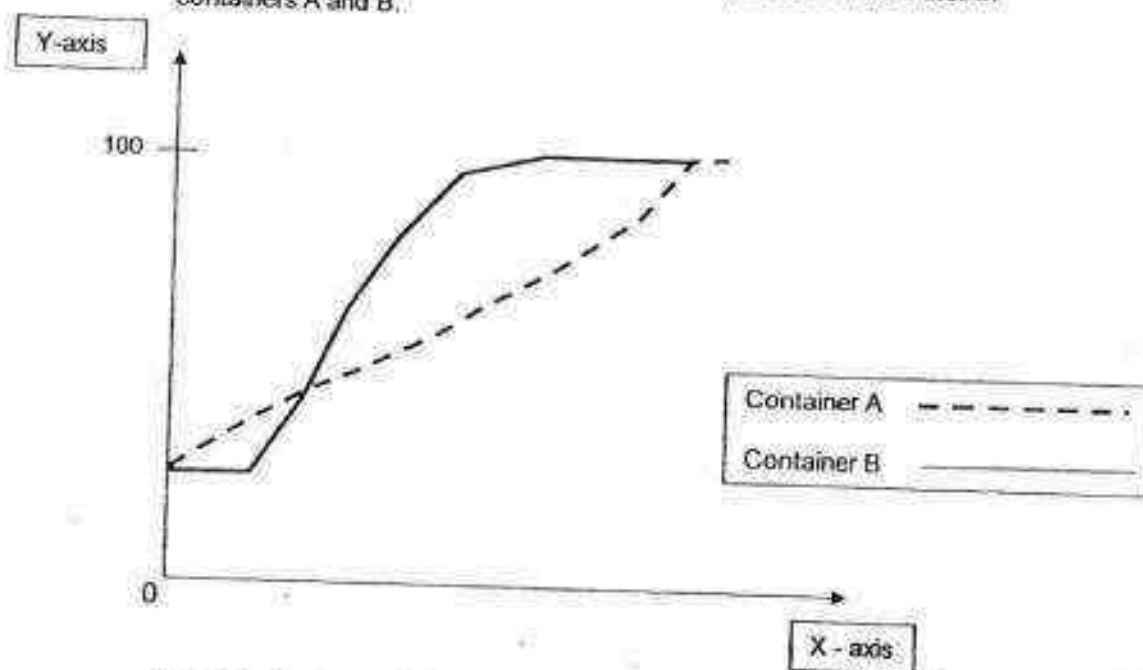
(Go on to the next page)

SCORE	
	3

37. Two identical containers of different materials containing 300 ml of water of the same temperature each were heated over two identical Bunsen burners set to the same heat intensity as shown in the diagram below. The flame of the Bunsen burner for Setup B was lit 5 minutes after the flame of the Bunsen burner in Setup A was lit.



- (a) The graph below shows the changes in the temperature of the water in containers A and B.



Label the X-axis and Y-axis of the graph.

[2]

X - axis: \_\_\_\_\_

Y - axis: \_\_\_\_\_

- (b) Explain why the water in container B reached boiling point first.

[1]

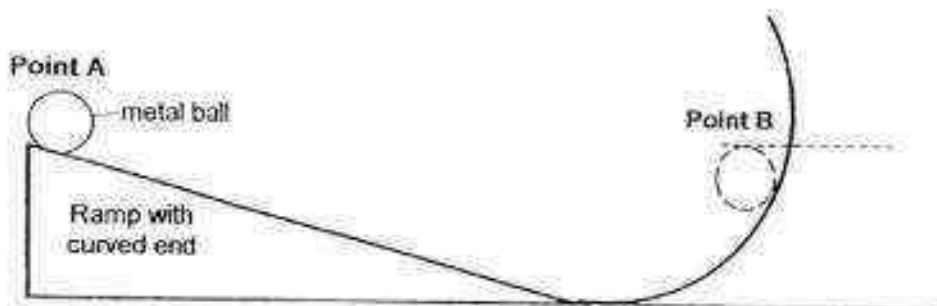
\_\_\_\_\_

\_\_\_\_\_

(Go on to the next page)

SCORE	
	3

38. The diagram below shows a ramp with a curved end. Jayden released a metal ball from Point A. It reached Point B after it rolled up the curved end.



- (a) Jayden then changed the metal ball to a heavier metal ball and repeated the experiment. Will the heavier metal ball reach point B, higher than Point B or lower than Point B? Explain your answer.

[1]

---



---

- (b) What is the relationship between the mass of the metal ball and the height reached by the metal ball?

[1]

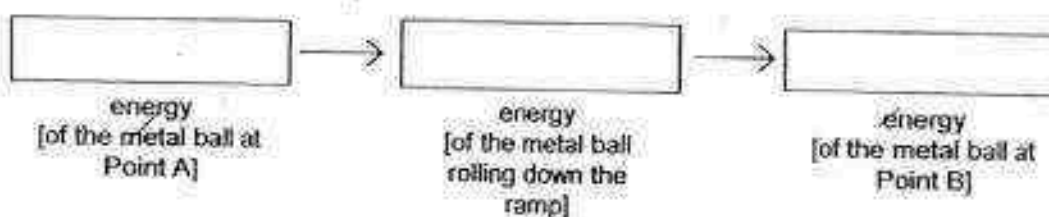
---



---

- (c) Fill in the main forms of energy in the boxes below to show the conversion of energy that takes place when the metal ball rolled from Point A to Point B.

[1]

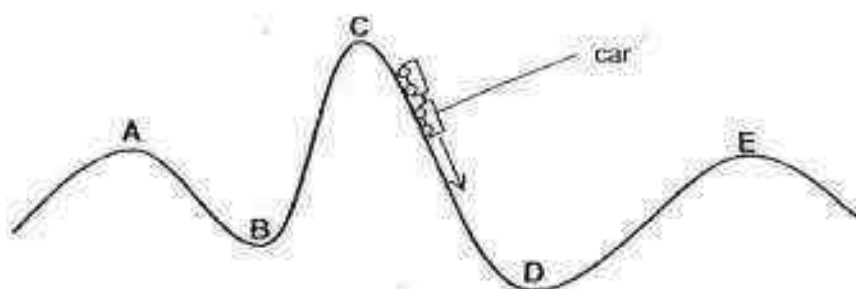


(Go on to the next page)

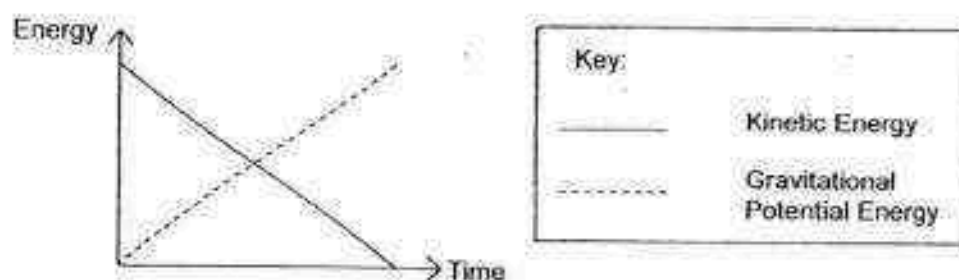
SCORE	
	3



39. The diagram below shows parts, A, B, C, D and E, on a roller coaster track. The arrow ( $\rightarrow$ ) represents the direction of movement of the car.



The graph below represents the changes in the energy of the car as it went past two parts of the roller coaster track, between A to E.



- (a) Which two parts of the roller coaster track did the car travel past as represented by the graph? Tick ( $\checkmark$ ) the correct answers. [1]

Parts of the roller coaster track	Tick ( $\checkmark$ )
A to B	
B to C	
C to D	
D to E	

- (b) Explain your answer in (a). [1]

---



---

End of Paper

SCORE	2
-------	---

## SEMESTRAL ASSESSMENT EXAM PAPER 2016

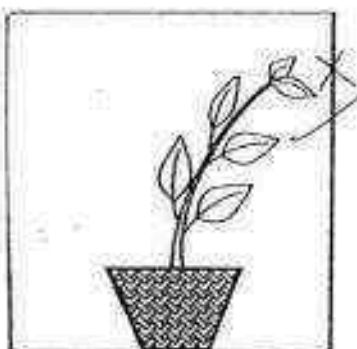
SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)  
 SUBJECT : SCIENCE  
 TERM : SA2

BOOKLET A

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

BOOKLET B

Q26(a)



(b) The plant bend to one side as light needed for photosynthesis was coming from there.

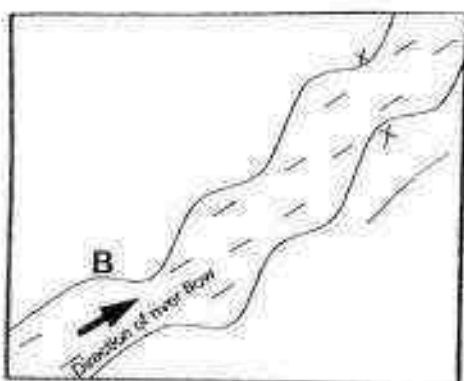
(c) No. The clear glass would allow sunlight will enter and the plant would bend to one side.

Q27. The life of a mosquito has four stages while the life of a plant has only three stages. Part of the life cycle of a mosquito is in water but the life cycle of a plant is entire on land.

Q28. (a) Love grass: It is light

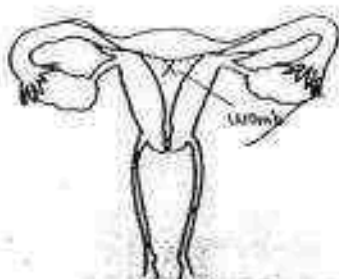
Coconut: It is waterproof

(b)



Q29(a)  $B \rightarrow D \rightarrow A \rightarrow C$

(b)



Q30(a)(i) The process is evaporation.

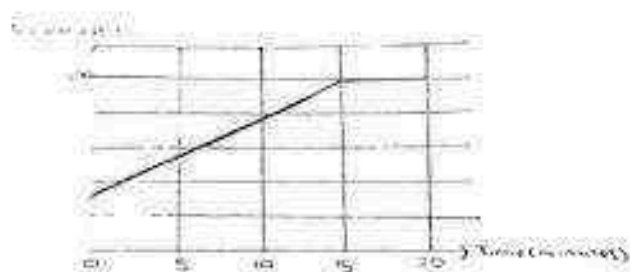
(ii)  $P \rightarrow S \rightarrow R \rightarrow Q$

(iii) As had the most exposed surface area, the water would evaporate quicker than the other containers.

(b)(i) When there is wind, the water left would be less.

(ii) It is because more water evaporated from container X compared to container Y as there was the presence of wind.

Q31(a)



(b) The water droplets are water evaporated into water vapour which then condensed on the cool tin tray to form water droplets.

(c) Alice can add ice onto the tray.

Q32(a) When the switch is closed the iron rod becomes an electromagnet and attract the steel bar closing the circuit.

(b) The circuit will not perform its function as copper is a non-magnetic material and will not attract the steel bar.

Q33(a) B: Gullet

D: Large intestine

(b) Digestive juices are produced there.

(c) To soften/break the food into simpler substances.

Q34(a) 1-D

2-B

3-C

4-A

(b) Sample 2 has the highest amount of oxygen as it has just taken oxygen from the lungs and has not used it up yet.

Q35(a) A: Leaves

C: Roots

(b) Part B is the stem. It helps in the transportation of food and water in the plant.

(c) The flowers had red-coloured stains as the roots of the plant absorbed the water, transported it through the stem to the flowers.

Q36(a)(i) Even when there is more bulbs, the brightness of each bulb remains the same.

(ii) The arrangement is in parallel.

(iii) If one bulb fuses, the other bulbs will still work.

(b) The brightness was zero. This is because the bulbs fused as there was too much electricity in the circuit.

Q37(a) X-axis: Temperature of water ( $^{\circ}\text{C}$ )

Y-axis: Time (minutes)

(b) It was because container B was a better conductor of heat than container A. It gains heat faster.

Q38(a) The heavier the ball will higher than point B as it had more potential energy which converted to kinetic energy than the lighter metal ball.

(b) The heavier the metal ball, the greater the height reacted by it.

(c) Potential  $\rightarrow$  Kinetic  $\rightarrow$  Potential

Q39(a) A to B & D to E

(b) As the amount of potential energy increase as something goes higher, it can be seen that the section has to be uphill like that of B to C and D to E but the kinetic energy decreases.

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

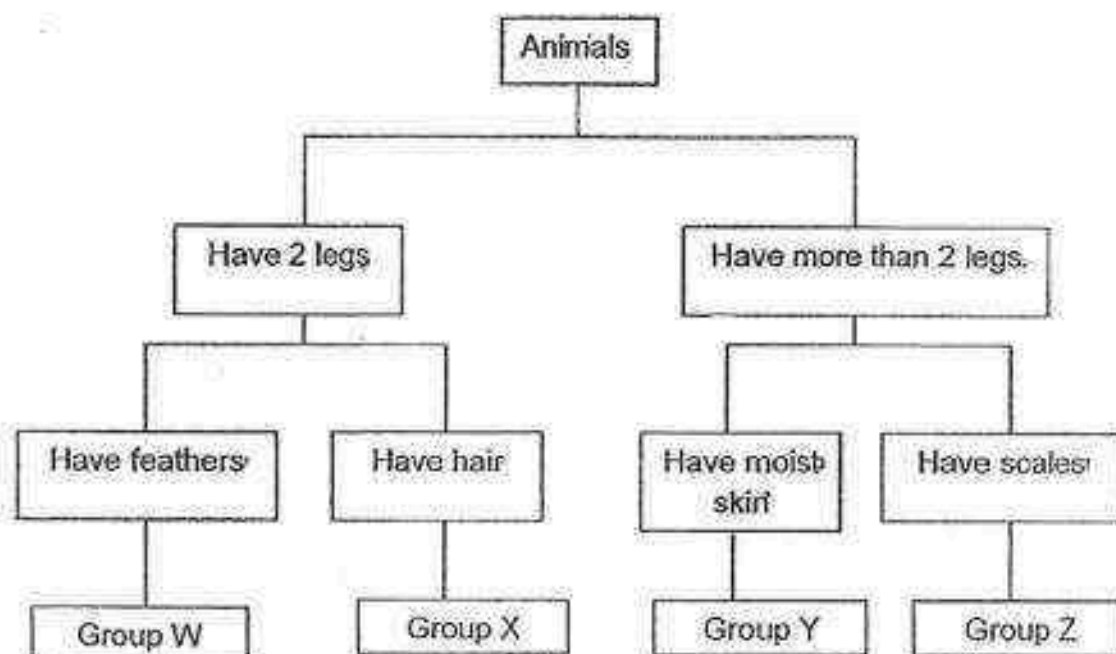
Class: Primary 5 \_\_\_\_\_

**CHIJ ST NICHOLAS GIRLS' SCHOOL****Primary 5****Semestral Assessment 2 – 2016****SCIENCE****BOOKLET A****27 October 2016****Total Time for Booklets A and B: 1 hour 45 minutes****28 questions****56 marks****Do not open this booklet until you are told to do so.  
Follow all instructions carefully.****Answer all questions.*****This booklet consists of 20 printed pages.***

**Section A (28 x 2 marks = 56 marks)**

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

1. The diagram below shows how some animal groups are classified.



Which of the following statements about the animal groups shown above is definitely **true**?

- (1) Animals in Group W and Group X can fly.
- (2) Animals in Group Y and Group Z can live on land and in water.
- (3) Animals in Group W and Group Z have the same breathing method.
- (4) Animals in Group X and Group Y have the same reproduction method.

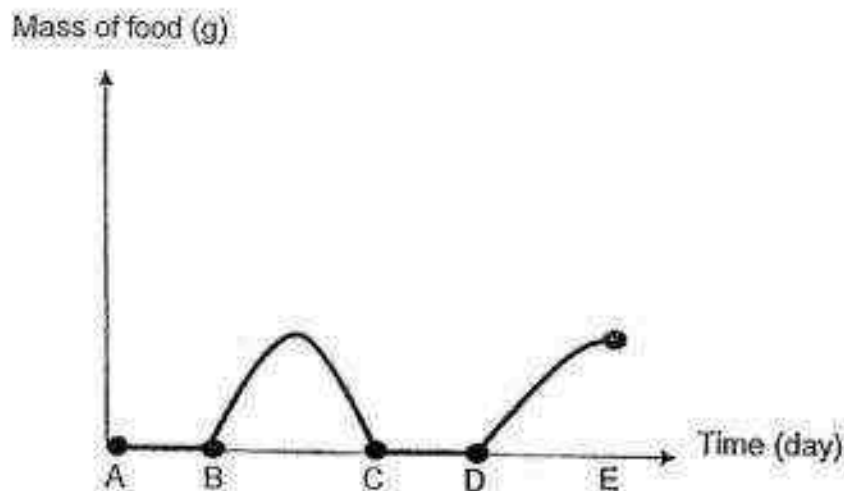
2. John studied animals, X and Y, and drew a checklist for his observations as shown below.

Observations	Animal X	Animal Y
Lays eggs in water	✓	✓
Has a 3-stage life cycle	✓	X
Its young looks like its adult.	X	X
Has 3 pairs of legs	X	✓

Which of the following most likely represents Animal X and Animal Y?

	Animal X	Animal Y
(1)	Beetle	Frog
(2)	Toad	Mosquito
(3)	Chicken	Guppy
(4)	Cockroach	Grasshopper

3. The graph below shows the mass of food eaten at different stages of the life cycle of a butterfly.

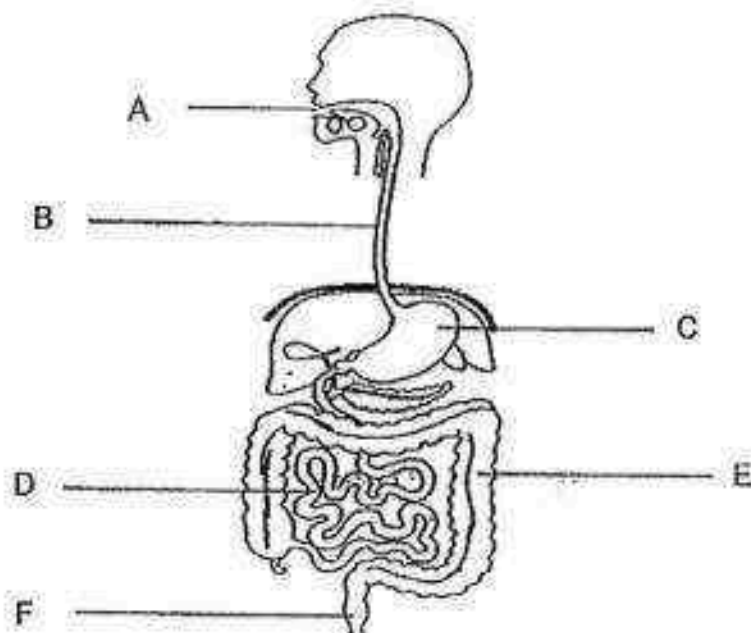


Which phase of the graph is the butterfly in its pupa stage?

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



4. Study the diagram below.



Which one of the following shows how food travels through the digestive system before the digested food enters the blood?

- (1) A → B → C → D
  - (2) A → B → C → E
  - (3) C → E → D → F
  - (4) C → D → E → F
5. The diagrams below show the reproductive parts of a plant and a human respectively.

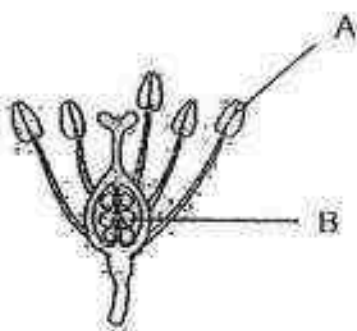


Diagram 1

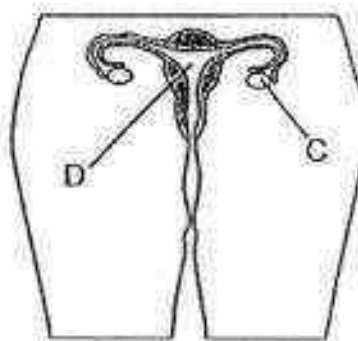
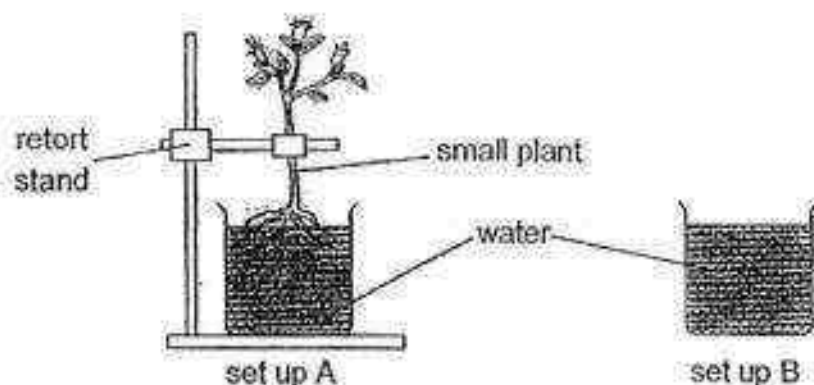


Diagram 2

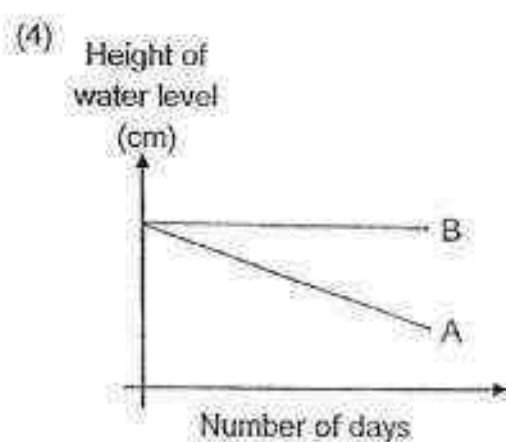
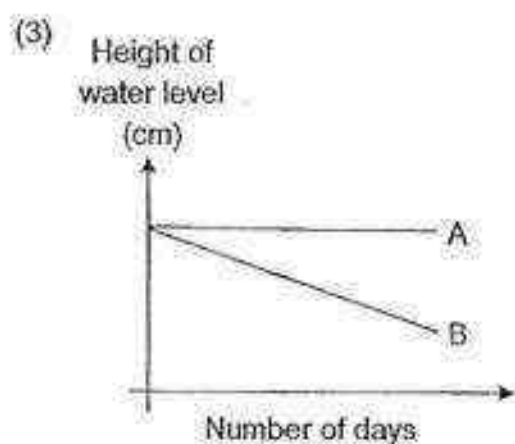
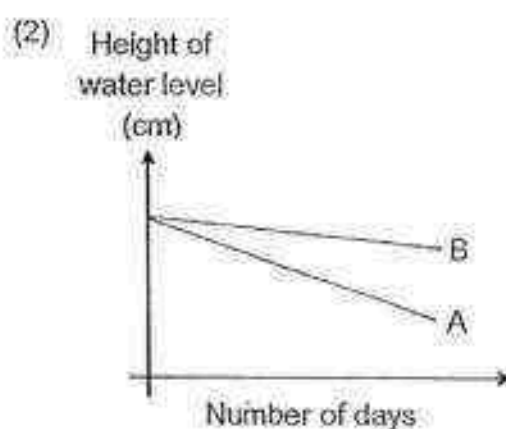
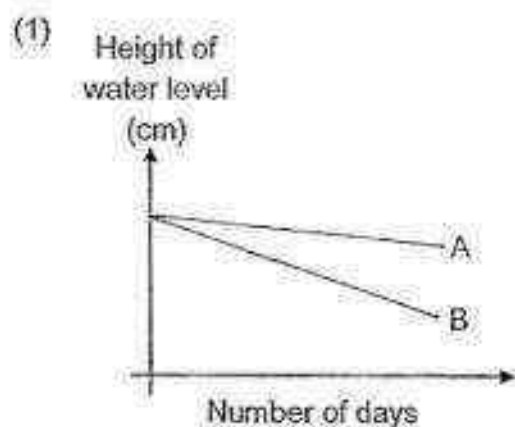
Which of the parts contain female reproductive cells?

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

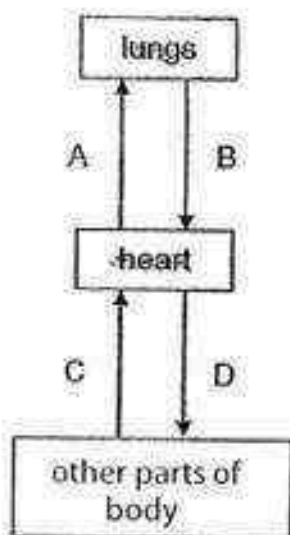
6. Raymond set up an experiment as shown in the diagram below to find out if plants take in water through their roots.



He left set up A and set up B in an open space next to each other. He then observed the water level in beakers A and B over 3 days. Which one of the following graphs correctly represents his observations?

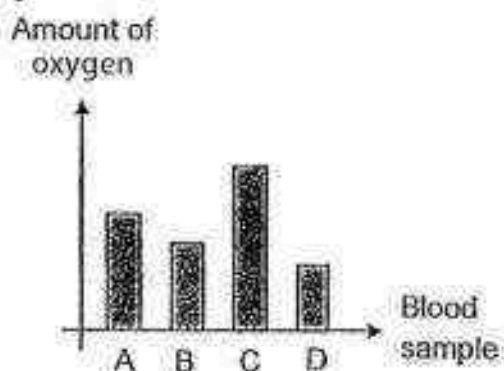


7. The diagram below shows the directions of blood flow in some parts of the body.

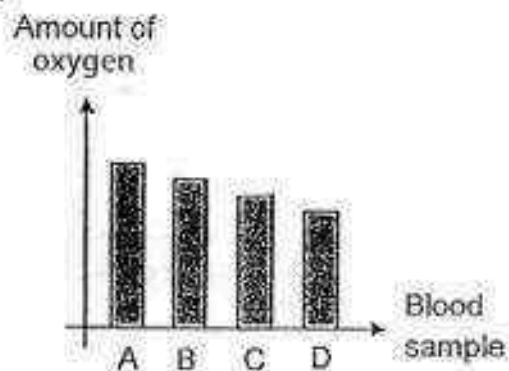


The same amount of blood was taken from A, B, C and D. Which chart shows the correct comparison of the amount of oxygen in the blood samples?

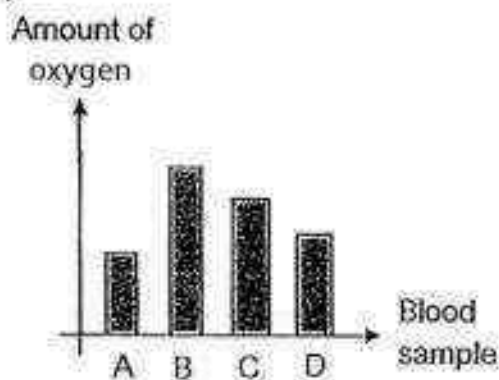
(1)



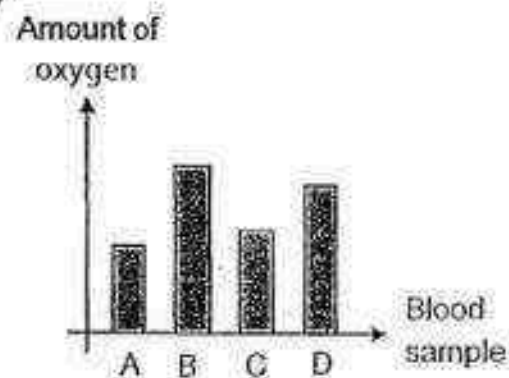
(2)



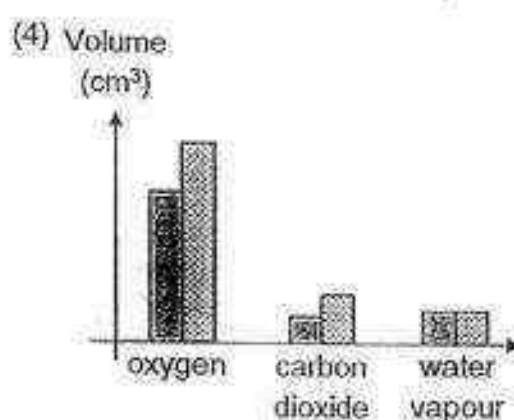
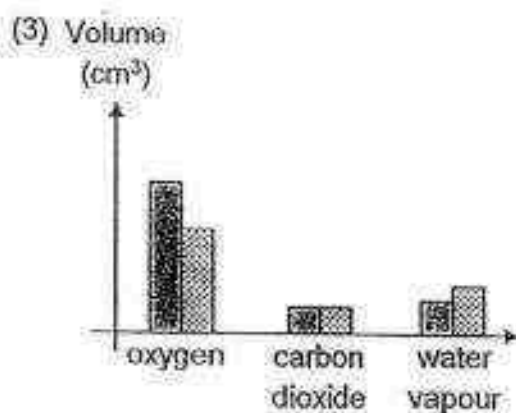
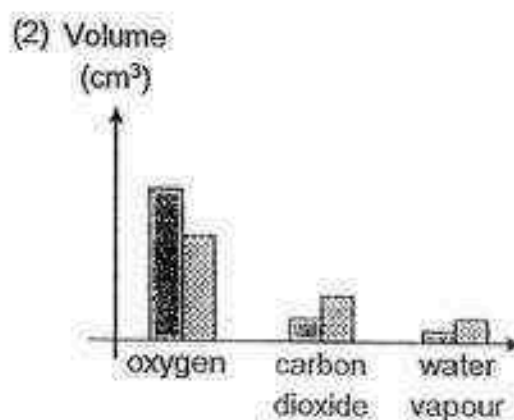
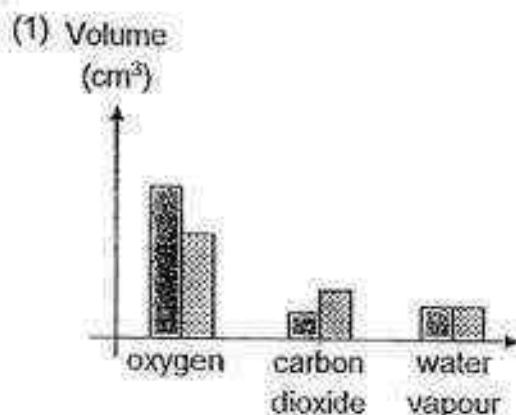
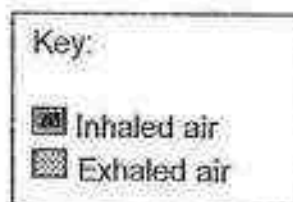
(3)



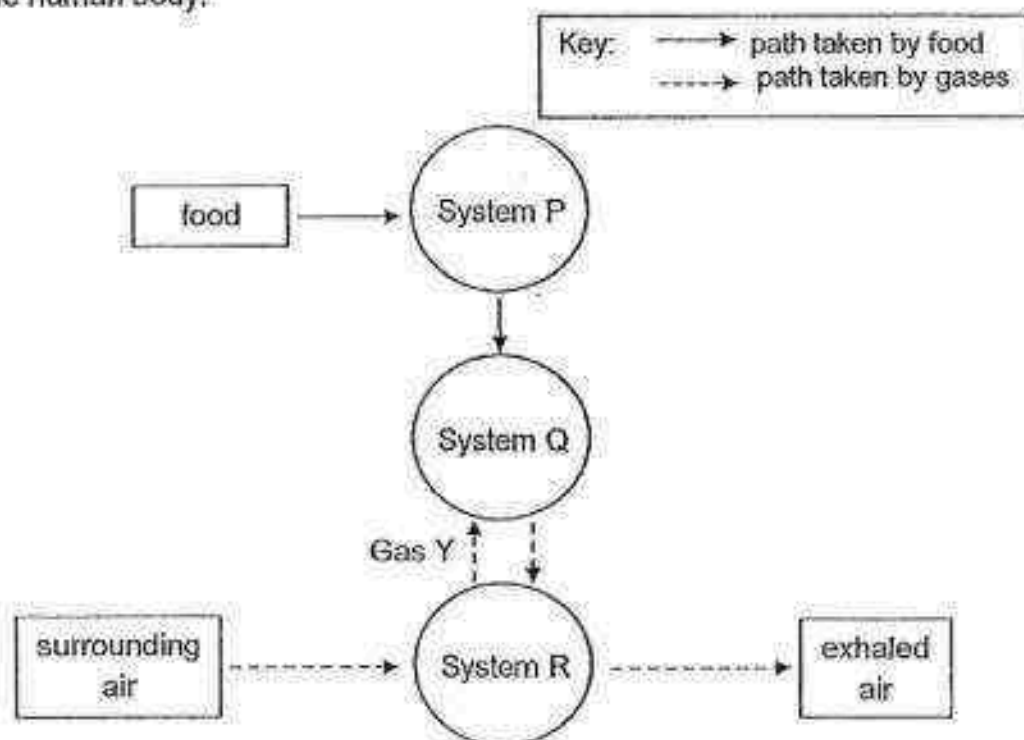
(4)



8. Which of the following bar graphs best represents the composition of oxygen, carbon dioxide and water vapour in inhaled and exhaled air?



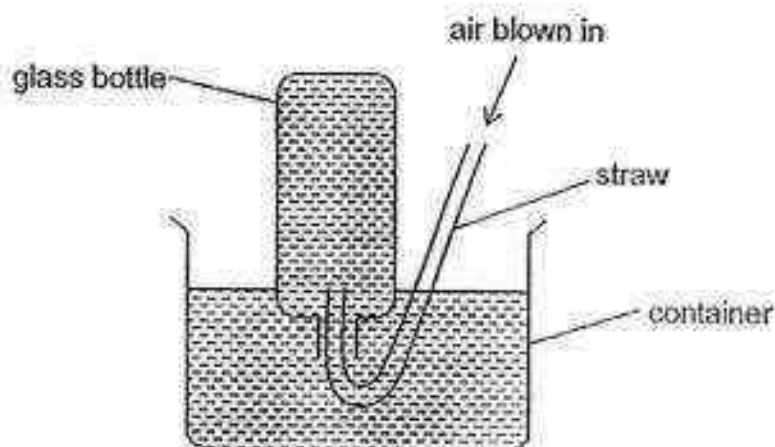
9. The diagram below shows how food and various gases are transported in the human body.



Which systems do P, Q and R represent and what is gas Y?

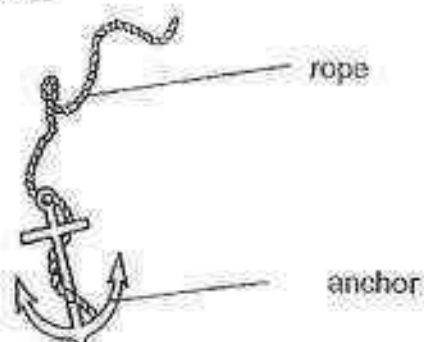
	System P	System Q	System R	Gas Y
(1)	circulatory	respiratory	digestive	carbon dioxide
(2)	digestive	respiratory	circulatory	carbon dioxide
(3)	circulatory	digestive	respiratory	oxygen
(4)	digestive	circulatory	respiratory	oxygen

10. Donna set up a device to measure the lung capacity of a person as shown below. Lung capacity is the maximum amount of air the lung can take in a breath. When the bottle was completely filled with water, she asked her friend to take a deep breath and blow into the glass bottle using a straw.



Which one of the following will indicate the lung capacity of her friend?

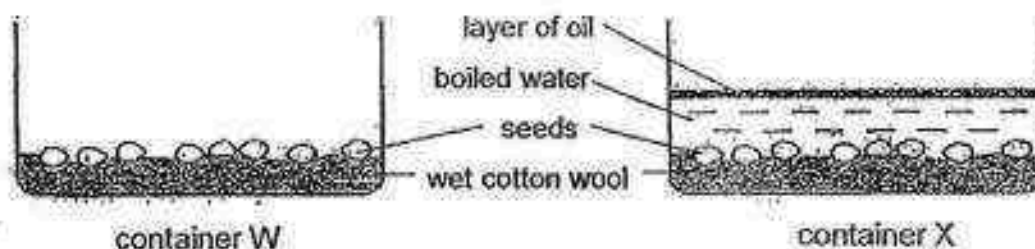
- (1) The volume of air in the straw.
  - (2) The volume of air in the glass bottle.
  - (3) The volume of water in the container.
  - (4) The volume of water left in the glass bottle.
11. The device shown below is attached to a ship with a rope and thrown into the water to hold a boat in position.



Which of the following shows the most suitable material required to make the anchor and the rope respectively?

	Anchor	Rope
(1)	Wood	Fabric
(2)	Metal	Nylon
(3)	Metal	Cotton
(4)	Plastic	Fabric

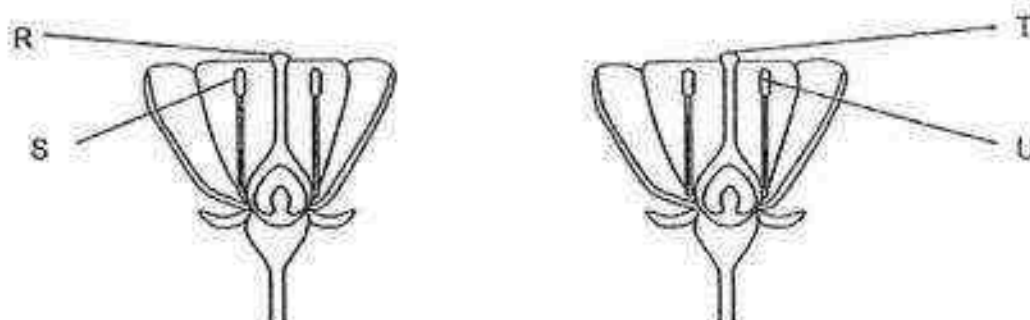
12. Selvi carried out an experiment to investigate about germination of seeds using the following set ups. She placed both set ups next to each other in the same room.



Which of the following shows the most likely observation for her experiment and the reason for her observation?

	Container W	Container X	Reason
(1)	Seeds germinated	Seeds did not germinate	The seeds in container X did not receive any light for germination.
(2)	Seeds did not germinate	Seeds germinated	The seeds in container W did not have enough water for germination.
(3)	Seeds germinated	Seeds did not germinate	The seeds in container X did not have any air for germination.
(4)	Seeds did not germinate	Seeds germinated	The seeds in container W did not receive enough warmth for germination.

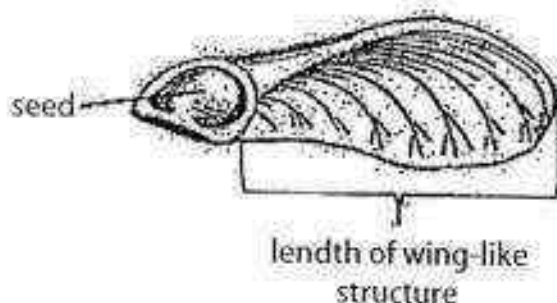
13. The diagram below shows two flowers from the same plant.



Pollination occurs when the pollen grains are transferred from \_\_\_\_\_.

- (1) R to T
- (2) R to U
- (3) S to U
- (4) S to T

14. Qingyi wanted to find out how the length of the wing-like structure would affect the distance travelled by a wind-dispersed seed when dropped from a certain height.



Which of the following should she keep constant in order to ensure a fair test?

- A Mass of seed
- B Location of the experiment
- C Length of wing-like structure
- D Strength of wind blowing at the seed
- E Height from which seeds were dropped

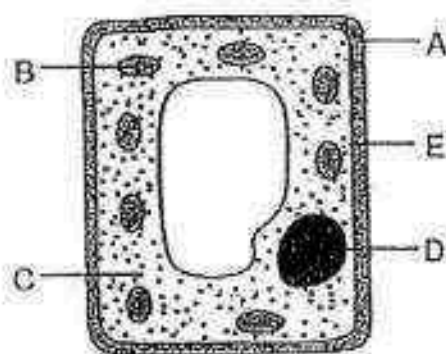
- (1) C only
- (2) B, C and E only
- (3) A, C and D only
- (4) A, B, D and E only

15. Which one of the following correctly matches the structure of a cell to its function?

	Cell structure	Function
(1)	Cell membrane	It gives the cell its shape.
(2)	Nucleus	It gives the cell energy to function.
(3)	Cytoplasm	It allows substances to move around within the cell.
(4)	Cell wall	It controls the substances that can enter or leave the cell.



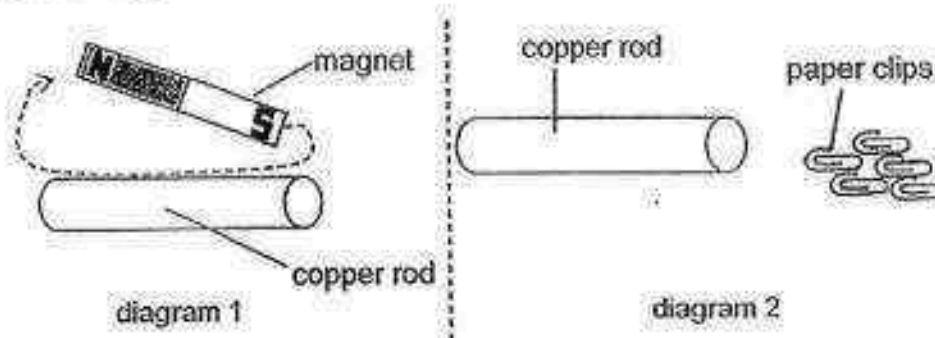
16. The diagram below shows the parts of a plant cell.



Based on the diagram above, which one of the following is correct?

	Parts found only in a plant cell	Parts found in both plant and animal cells
(1)	A, B	C, D, E
(2)	B, D	A, C, E
(3)	A, D	B, C, E
(4)	D, E	A, B, C

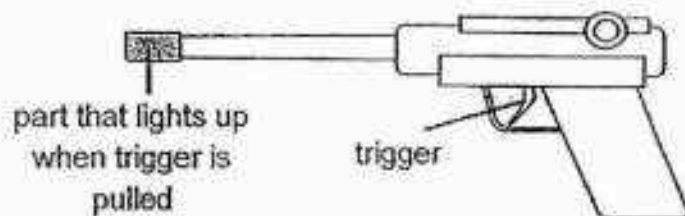
17. Melissa used a magnet to stroke a copper rod several times in the direction as shown in diagram 1. She then placed the copper rod next to some paper clips as shown in diagram 2.



She observed that the paper clips were not attracted to the copper rod. State a reason for this observation.

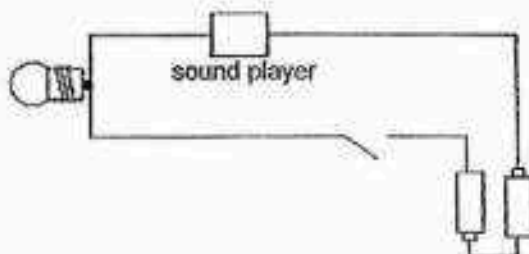
- (1) The copper rod is not a magnetic material.
- (2) Melissa did not stroke the copper rod enough to magnetise it.
- (3) The magnet was not strong enough to magnetise the copper rod.
- (4) Melissa did not use the same pole of the magnet to stroke the copper rod.

18. The diagram below shows a battery powered toy gun. When the trigger is pulled, the toy gun makes a sound and the tip of the gun lights up.

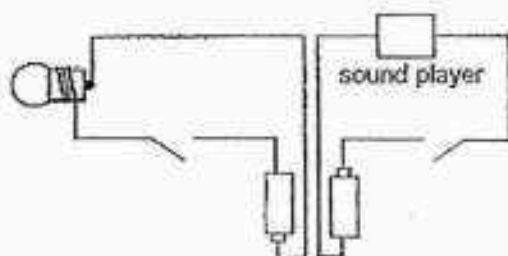


Which one of the following could be a possible circuit of the toy gun?

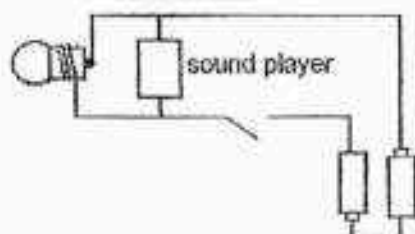
(1)



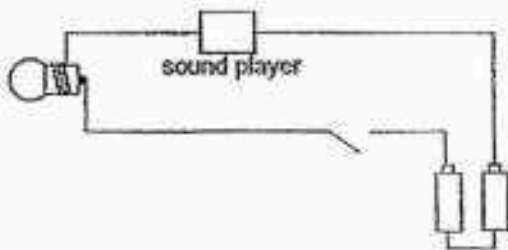
(2)



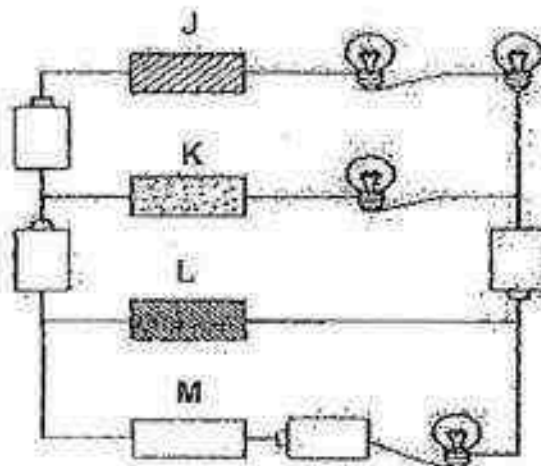
(3)



(4)



19. Four different materials, J, K, L and M, were connected in an electrical circuit as shown below.



Which one of the following represents the materials, J, K, L and M, in the electrical circuit such that only two of the bulbs will light up?

	Material J	Material K	Material L	Material M
(1)	Copper	Glass	Ceramic	Steel
(2)	Iron	Porcelain	Glass	Aluminium
(3)	Plastic	Rubber	Wood	Gold
(4)	Graphite	Plastic	Steel	Ceramic

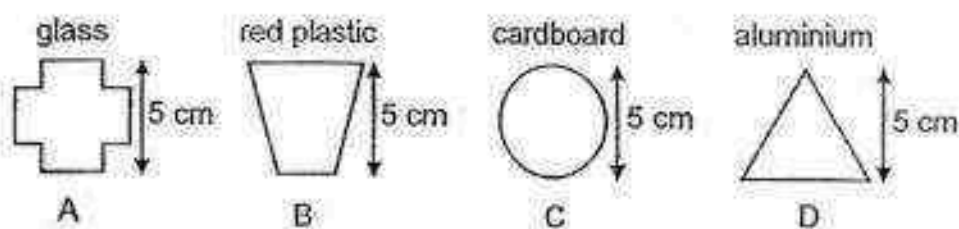
20. A crow uses stones to raise the water level in the pitcher shown below so that it can reach the water to quench its thirst.



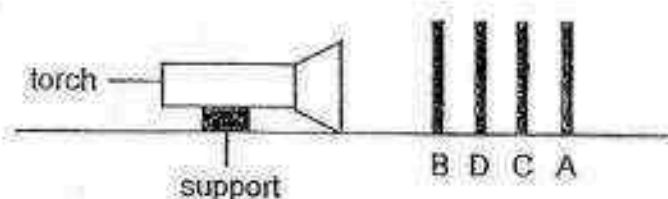
What property of the stone allow the crow to use the method shown above?

- (1) The stone has mass.
- (2) The stone occupies space.
- (3) The stone has a definite shape.
- (4) The stone cannot be compressed.

21. A, B, C and D are shapes that are cut out from different materials as shown in the diagram below.



Megan carried out an experiment in a dark room using shapes, A, B, C and D. She placed all the 4 shapes in a straight line in front of the torch as shown in the diagram below.



Which of the following shows the possible shadow that would be seen on shape C?

(1)



(2)



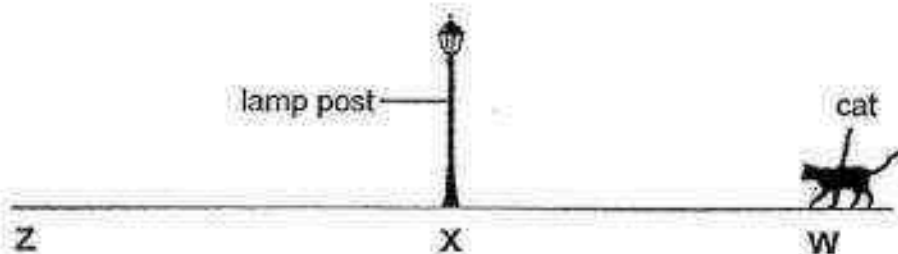
(3)



(4)

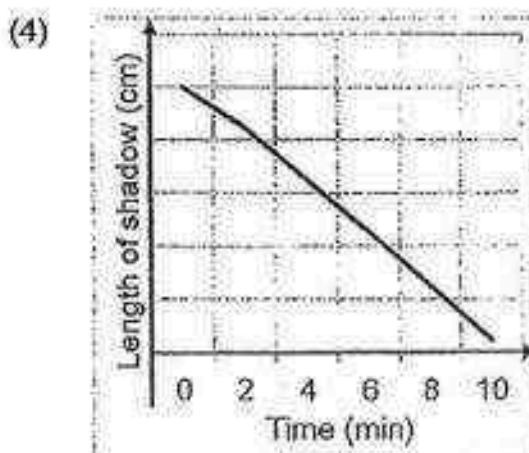
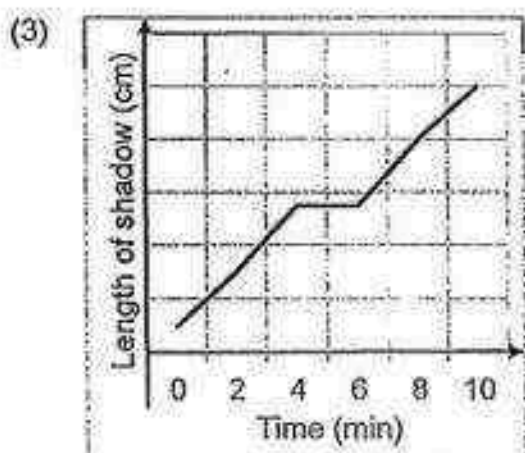
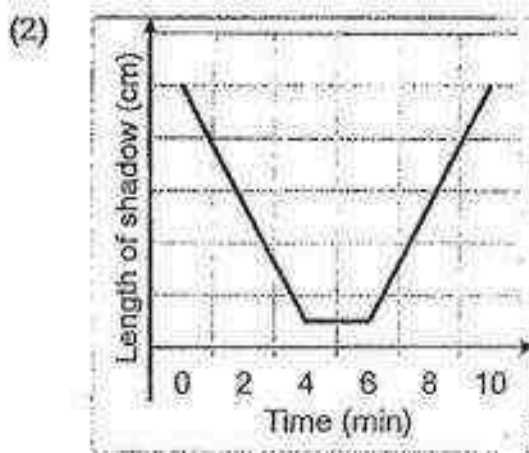
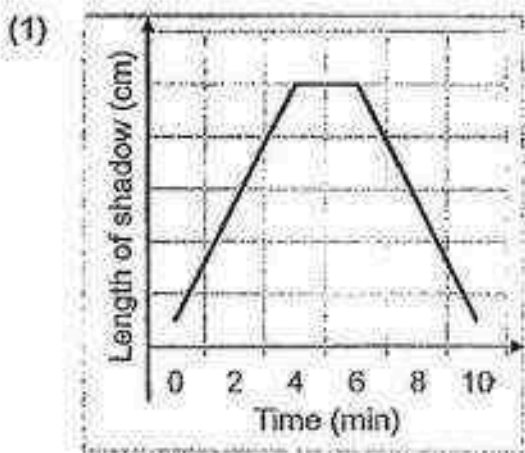


22. The diagram below shows a cat walking from point W to point Z, passing a brightly lit lamp post at point X.



The cat took 10 minutes to walk from point W to point Z. Along the way, it sat down under the lamp post for about 2 minutes to rest.

Which one of the following graphs shows correctly how the length of the cat's shadow would change as it walked from point W to point Z?



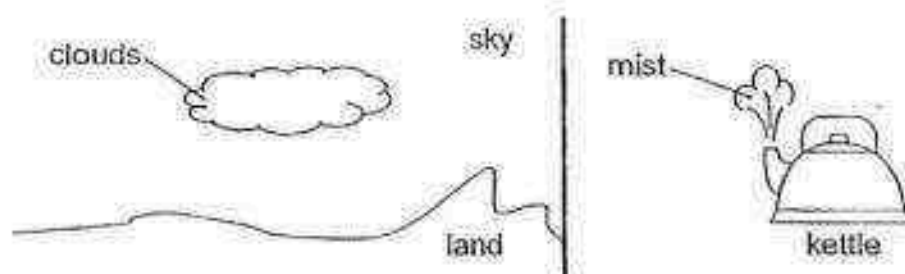
23. The table shows the melting points and boiling points of two substances, X and Y.

Substance	Melting point ( $^{\circ}\text{C}$ )	Boiling point ( $^{\circ}\text{C}$ )
X	140	180
Y	55	360

Which one of the following shows the correct states of X and Y at  $100^{\circ}\text{C}$ ?

	X	Y
(1)	solid	liquid
(2)	liquid	liquid
(3)	solid	solid
(4)	liquid	solid

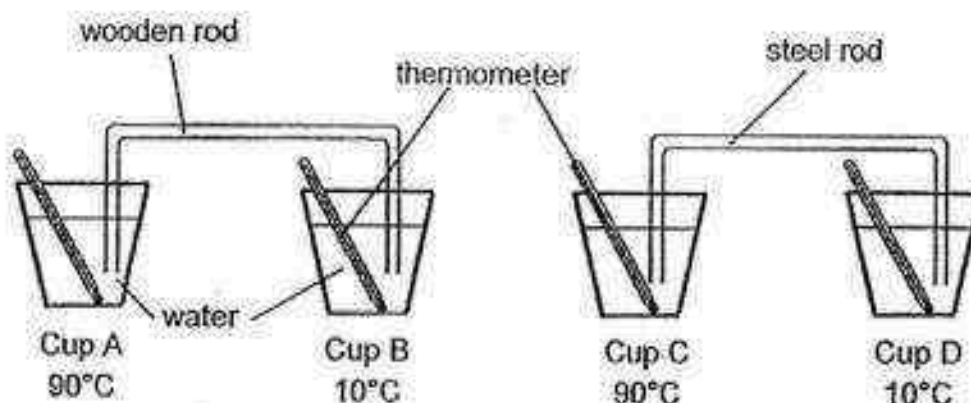
24. Study the diagram below.



How are the clouds in the sky and the mist from a kettle of boiling water similar?

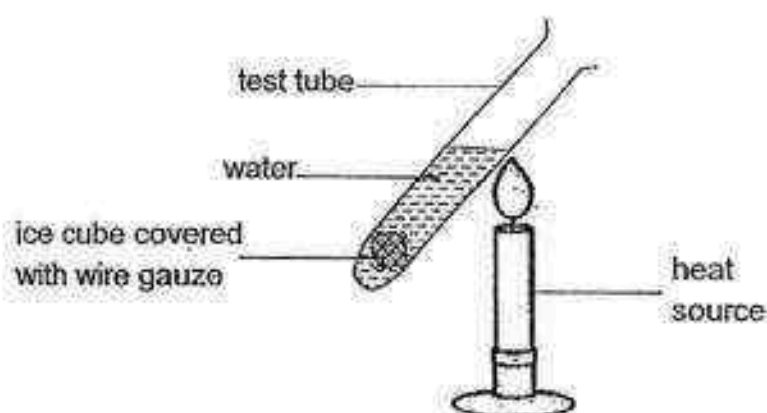
- A Both are made up of water vapour.
  - B Both are made up of water droplets.
  - C Both are formed due to heat loss to the surrounding air.
  - D Both are formed due to heat gain from the surrounding air.
- (1) A and C only
  - (2) A and D only
  - (3) B and C only
  - (4) B and D only

25. Rhea set up an experiment using four identical styrofoam cups with equal amount of water. The temperatures of the water in each cup are shown below.



After five minutes, she measured and recorded the temperatures of the water in each cup. Arrange the cups according to the temperature of the water in them, from the lowest to the highest.

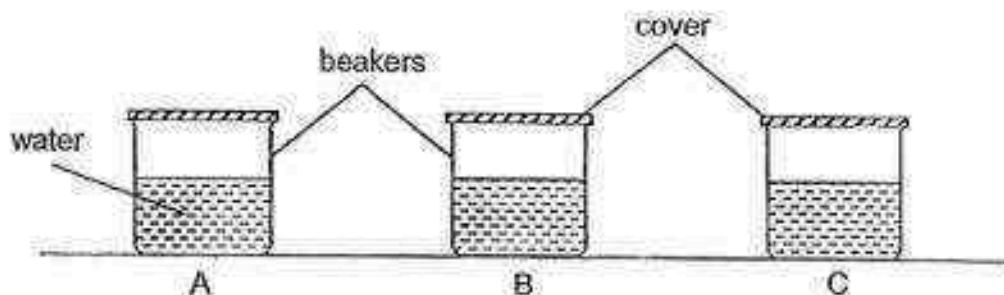
- (1) D, B, C, A
  - (2) A, C, D, B
  - (3) D, C, B, A
  - (4) B, D, C, A
26. A piece of ice cube is wrapped in wire gauze to make it sink to the bottom of the test tube filled with water. The water surface is heated till it boils.



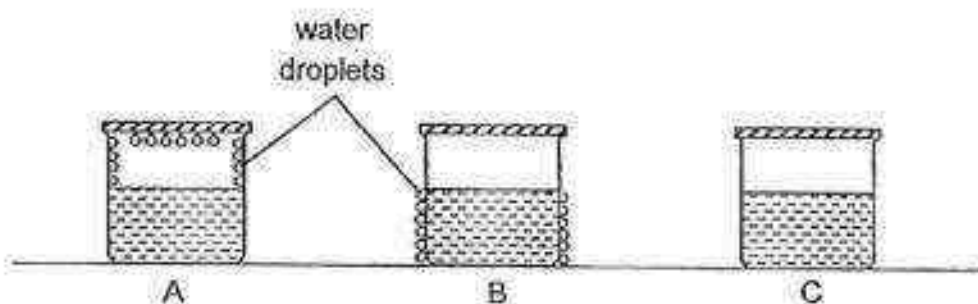
When the water on the surface boiled, the ice cube did not melt completely. What can be concluded from this experiment?

- (1) Water is a poor conductor of heat.
- (2) The wire gauze is a poor conductor of heat.
- (3) The heat source was not strong enough to melt the ice cube.
- (4) The wire gauze conducts heat from the heat source to the ice cube slowly.

27. 3 identical beakers, A, B and C, contain water at different temperatures. They are placed in the same location with a room temperature of  $28^{\circ}\text{C}$ .



The diagram below shows what happened after some time.

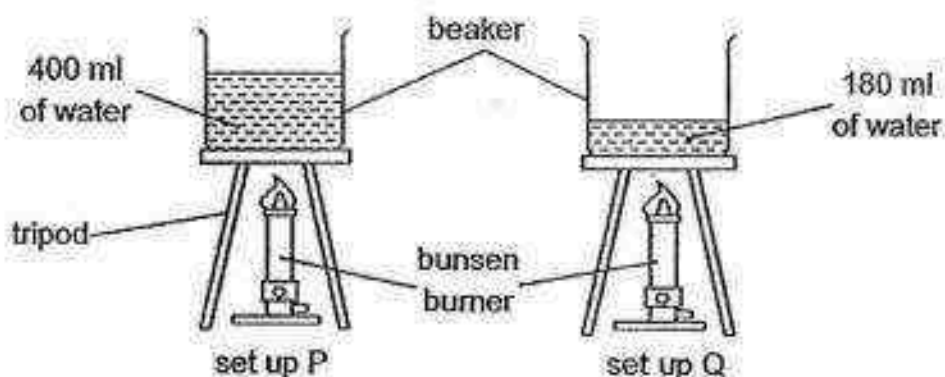


Which of the following shows the temperature of the water in each beaker at the start of the experiment?

	Beaker A	Beaker B	Beaker C
(1)	$80^{\circ}\text{C}$	$10^{\circ}\text{C}$	$30^{\circ}\text{C}$
(2)	$80^{\circ}\text{C}$	$30^{\circ}\text{C}$	$10^{\circ}\text{C}$
(3)	$10^{\circ}\text{C}$	$80^{\circ}\text{C}$	$30^{\circ}\text{C}$
(4)	$30^{\circ}\text{C}$	$10^{\circ}\text{C}$	$80^{\circ}\text{C}$



28. Cassandra heated two beakers of water at room temperature until they boiled as shown in the diagram below.



Which of the statements about the two beakers of water are true?

- A Both beakers of water boiled at the same time.
  - B Both beakers of water have the same temperature when they boiled.
  - C The temperature of boiling water in P is higher than temperature of boiling water in Q.
  - D The boiling water in set up P would have more amount of heat than the boiling water in set up Q.
- (1) A and C only  
(2) B and C only  
(3) B and D only  
(4) A and D only

End of Booklet A

Name : \_\_\_\_\_ (      )

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

**CHIJ ST NICHOLAS GIRLS' SCHOOL****Primary 5****Semestral Assessment 2 – 2016  
SCIENCE****BOOKLET B****27 October 2016**

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

13 questions  
44 marksDo not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.This paper consists of 15 printed pages.

Booklet A	56
Booklet B	44
Total	100

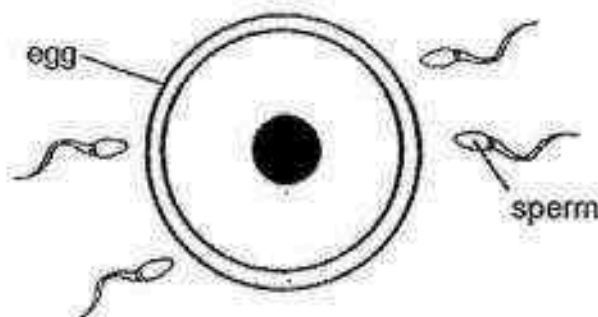
\_\_\_\_\_  
Parent's Signature

**Section B (44 marks)**

For questions 29 to 41, write your answers in this booklet.

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

29. The diagram below shows the male and female reproductive cells in humans.



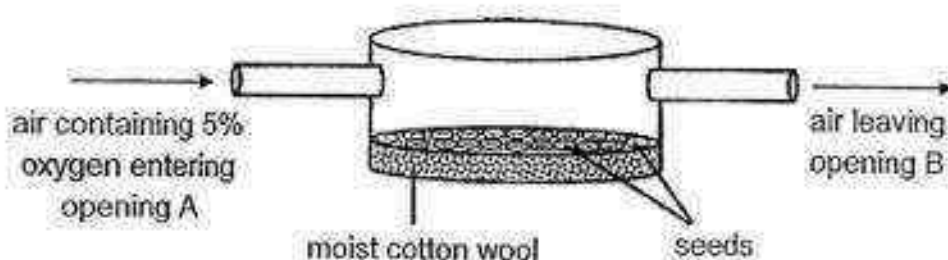
State whether each of the following statements is True (T) or False (F).

[2]

	Statements	True or False
(a)	Fertilisation takes place outside the female's body.	
(b)	Fertilisation takes place when the nucleus of the sperm fuses with the nucleus of the egg.	
(c)	The egg will move towards the sperms in order for fertilisation to take place.	
(d)	All the nuclei of the four sperms will be able to fuse with the nucleus of the egg.	



30. Lenny wanted to find out if the amount of oxygen in the air would affect the number of seeds that would germinate. He planted 50 seeds of plant P on a layer of cotton wool moistened with 80ml of water in a large container with two openings, A and B, as shown below. Air containing 5% oxygen was continuously pumped in from one end of the container. After 1 week, he recorded the number of seeds that had germinated.



He repeated the experiment with air containing 0%, 10%, 15% and 20% oxygen and recorded the number of seeds that germinated.

The table below shows his results.

Amount of oxygen in container (%)	0	5	10	15	20
No. of seeds germinated	0	9	20	31	40

- a) Based on Lenny's results, what is the relationship between the amount of oxygen and the number of the seeds germinated? [1]

---



---

- b) Why did Lenny use 50 seeds instead of 5 for each of the experiment? [1]

---

- c) Why are openings, A and B, important to the experiment? [1]

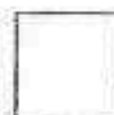
---



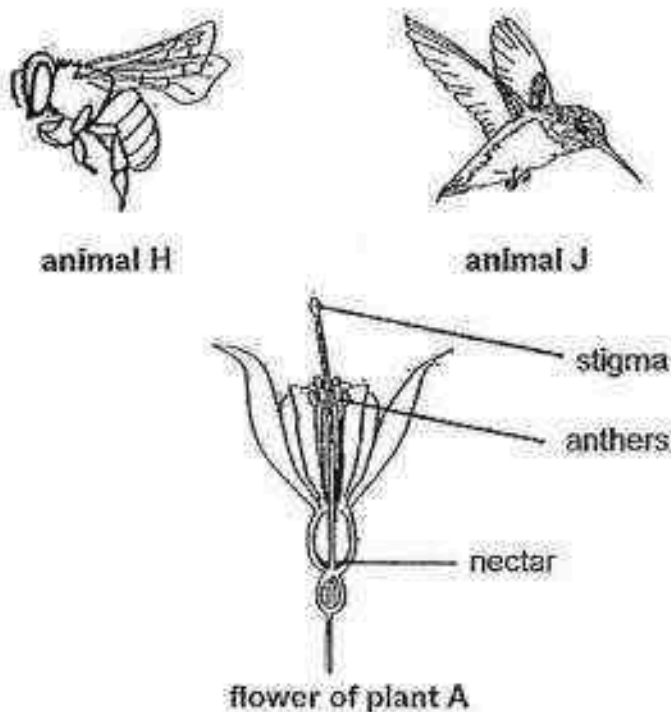
---

- d) Based on Lenny's experiment, state one other variable that he has to keep constant in order for this experiment to be a fair one. [1]

---



31. The diagram below shows two animals, H and J, and plant A.



- a) Which of the animal, H or J, is more likely to feed on the nectar of flower A? Give a reason for your answer.

[1]

---



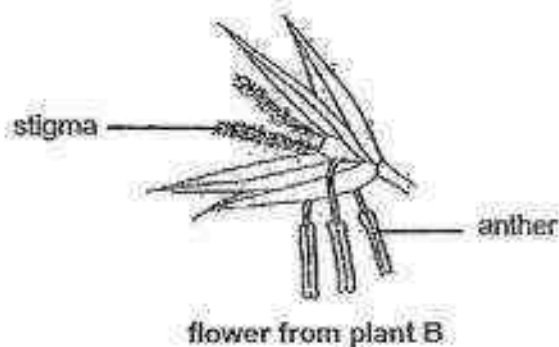
---

- b) How do animals, H and J, help the plants in their reproduction process?

[1]

---

- c) The diagram below shows a flower from another plant B.



Explain how the flowers of plant B are pollinated.

[1]

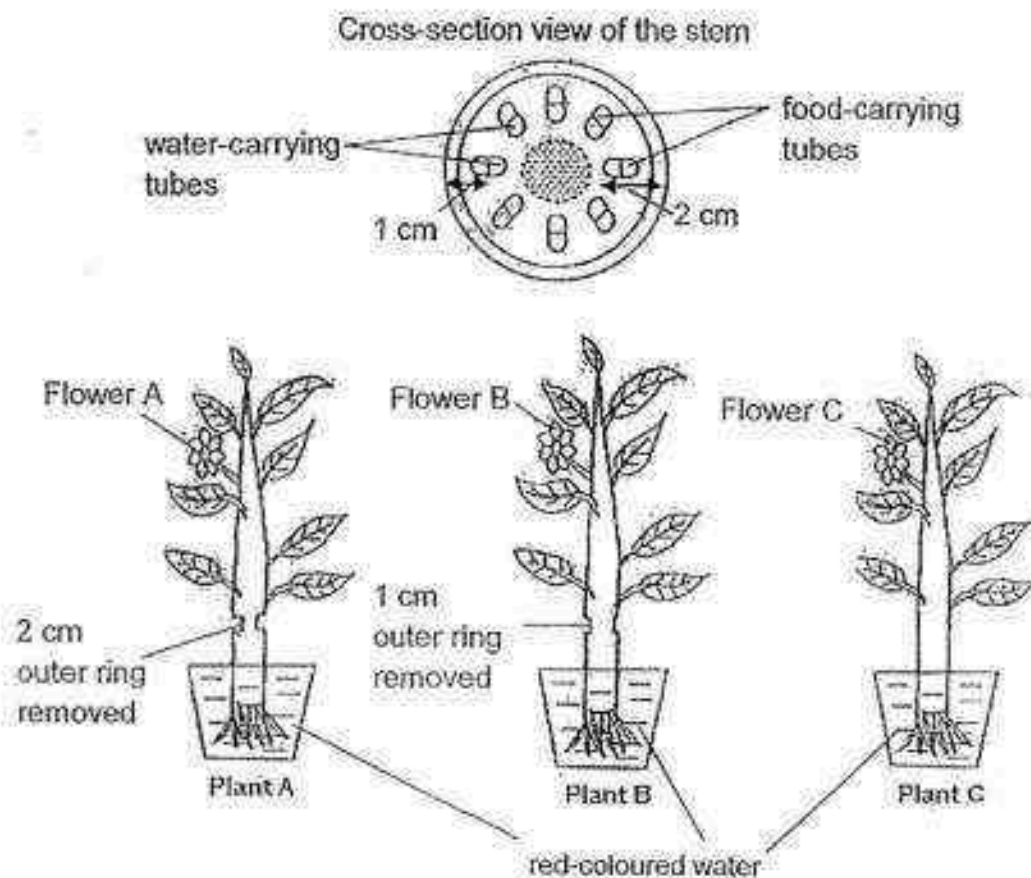
---



---



32. In an experiment, Mazlan placed three similar plants, A, B and C, in three identical pots containing the same amount of red-coloured water. He made a 2 cm cut to the stem of plant A and a 1 cm cut to the stem of plant B.



A day later, he noticed that flower A remained white while flowers B and C had turned red.

- (a) Give a reason why flower A remained white. [1]

---



---

- (b) Mazlan also found that the stem below the cut section of plant A and B shrivelled after a few days. Explain why this is so. [1]

---



---

- (c) What is the purpose of having plant C? [1]

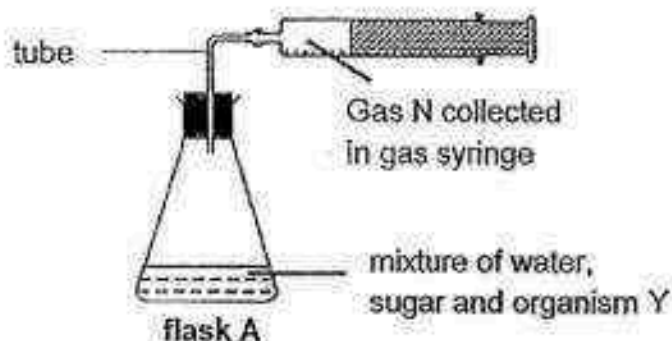
---



---



33. Study the set up below. flask A contains a mixture of 150 ml of water, 2g of sugar and a teaspoon of organism Y. Flask A is attached to a gas syringe and gas N is collected in the syringe.



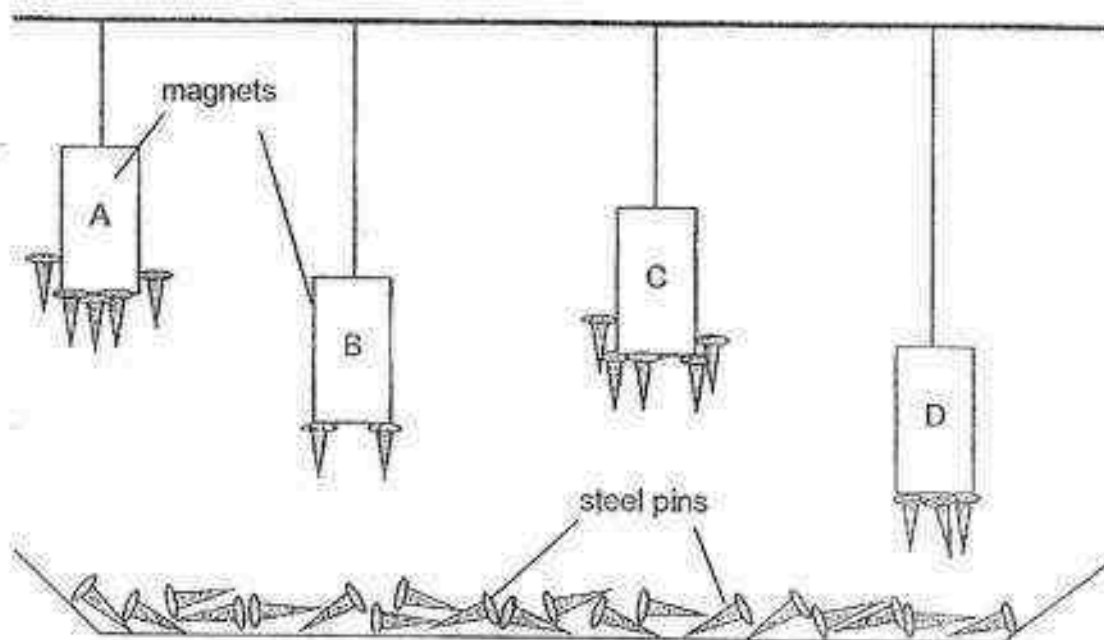
Four similar set ups were used, each containing a different amount of sugar. The amount of gas N collected in each of the gas syringe after 15 minutes was recorded as shown below.

Flask	Mass of sugar used (g)	Amount of gas collected after 15 mins (cm <sup>3</sup> )
A	2	5
B	8	12
C	14	25
D	20	30
E	24	22

- a) What is the aim of the experiment? [1]
- \_\_\_\_\_
- b) Based on the results above, what is the most favourable mass of sugar required to obtain the maximum amount of gas N? [1]
- \_\_\_\_\_
- c) Suggest a control set up for the experiment. [1]
- \_\_\_\_\_
- \_\_\_\_\_



34. Chelsea hung 4 magnets, A, B, C and D, above a tray of identical steel pins. Her observation is shown below.



- (a) Based on her observation, name the strongest magnet. Explain how you arrived at your answer. [1]

---



---

- (b) Based on her observation, can you tell which magnet is the weakest? Explain why. [2]

---



---



---



---

- (c) Using the same set up shown in the diagram above, Chelsea replaced magnet A with another magnet Y of the same size. State one possible observation that Chelsea would make if magnet Y is a much stronger magnet than magnet A. [1]

---

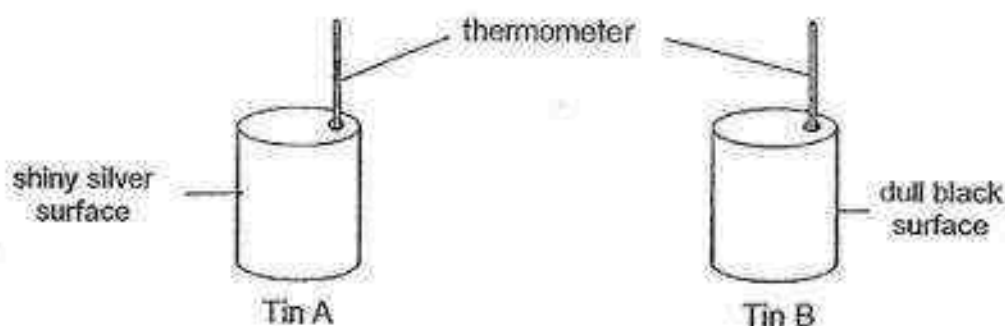


---





35. Two similar empty tins, A and B, were placed under the hot sun. The surface of tin A was shiny silver while the surface of tin B was dull black. A thermometer was placed in each tin as shown in the diagram below.



Temperature of the air in each tin was recorded every two minutes. The results are shown in the table below.

Time (min)	0	2	4	6	8	10
Temperature in tin A ( $^{\circ}\text{C}$ )	24	25	26	27	28	29
Temperature in tin B ( $^{\circ}\text{C}$ )	24	26	28	30	32	34

- (a) What is the relationship between the temperature of the air in the tins and the duration the tins are placed in the sun? [1]

---



---

- (b) Which tin had gained more heat after 10 minutes? Explain your answer. [1]

---



---

- (c) Based on the results shown above, what can you conclude about the type of surface and the amount of heat gained by the tins? [1]

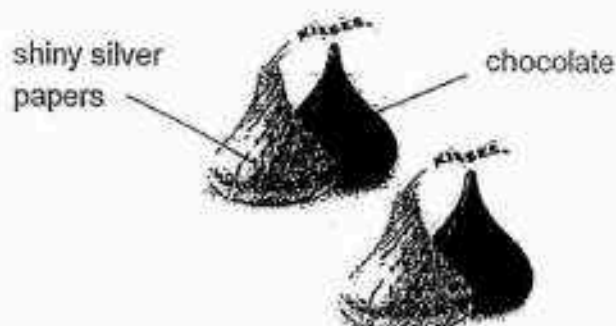
---



---



Most chocolates are wrapped in thin shiny silver papers as shown in the diagram below. The shiny silver paper helps to prolong the freshness of the chocolates.



- (d) Explain how wrapping the chocolate with shiny silver paper helps the chocolate to stay fresh longer. [2]

---

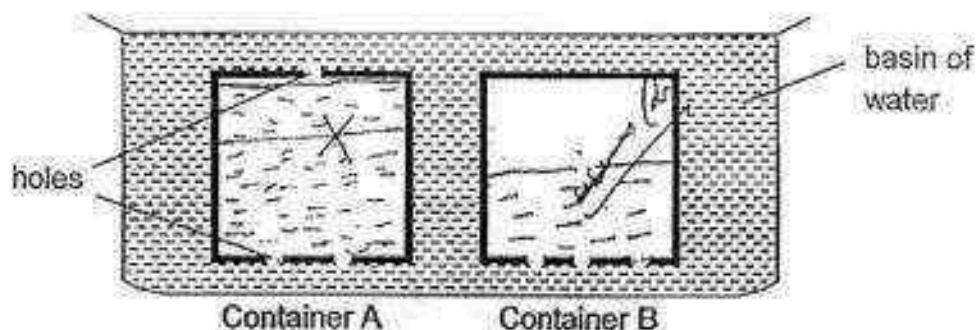
---

---

---



36. Shawn was given two identical containers, A and B. There were holes of the same size at the sides of each of the containers. He pushed both containers into a basin of water as shown in the diagram below.



- (a) Draw the water level in each of the containers, A and B, shown above. [1]
- (b) Explain your answer for container A in part (a) above. [2]

Container A:

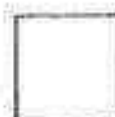
---



---

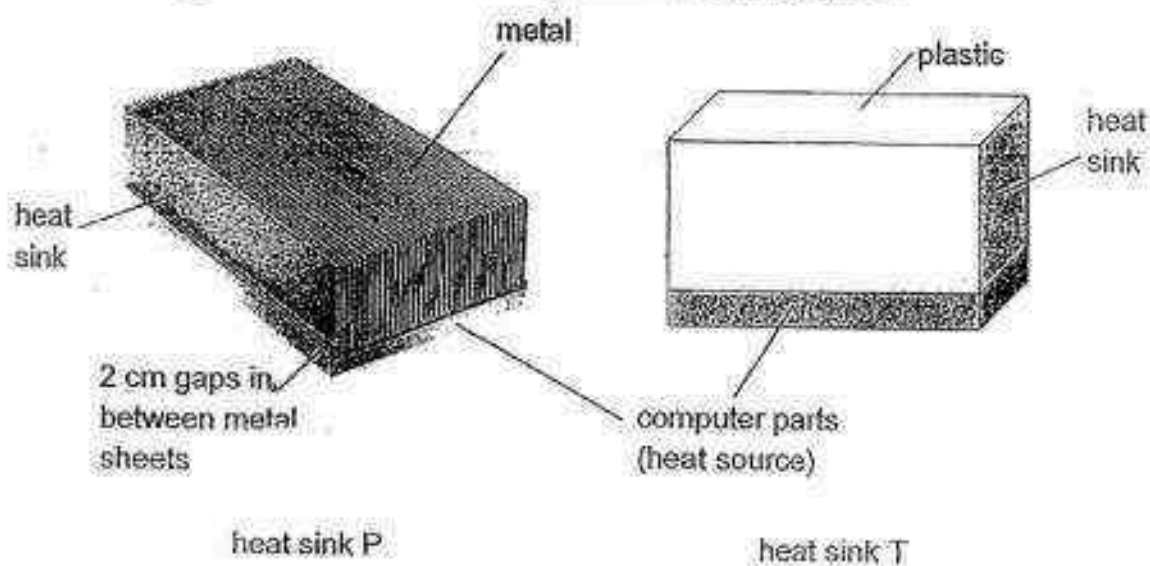


---



37. Heat sinks are used in computers to prevent the parts inside the computers from overheating.

The diagram below show two designs of heat sinks, P and T.



Which heat sink, P or T, would be more efficient in preventing the parts inside the computers from overheating? Explain your answer. [2]

---



---



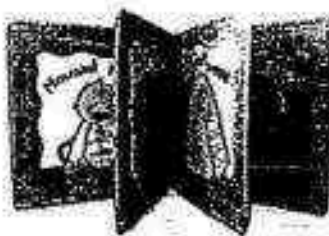
---



---



38. Li En wants to find out which material is suitable for making a bath book for babies as shown below.



bath book for babies

She tested four different materials, A, B, C and D, and recorded her observations as shown below.

Materials	Is it waterproof?	Does it break easily?	Can it float on water?	Does it bend easily without breaking?
A	No	Yes	No	Yes
B	Yes	No	No	No
C	Yes	Yes	Yes	No
D	Yes	No	Yes	Yes

- (a) Based on her observations, which is the best material to make a bath book for a baby? Give two reasons to explain your choice. [2]

---



---



---

- (b) The diagram below shows a baby bathtub seat.



Part X

Based on Li En's observations, she chose Material C as the best material to make Part X of the bathtub. Do you agree with her choice? Give a reason for your answer. [1]

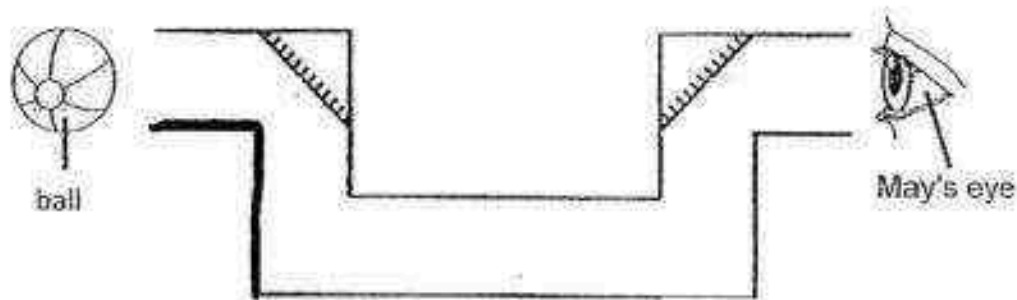
---



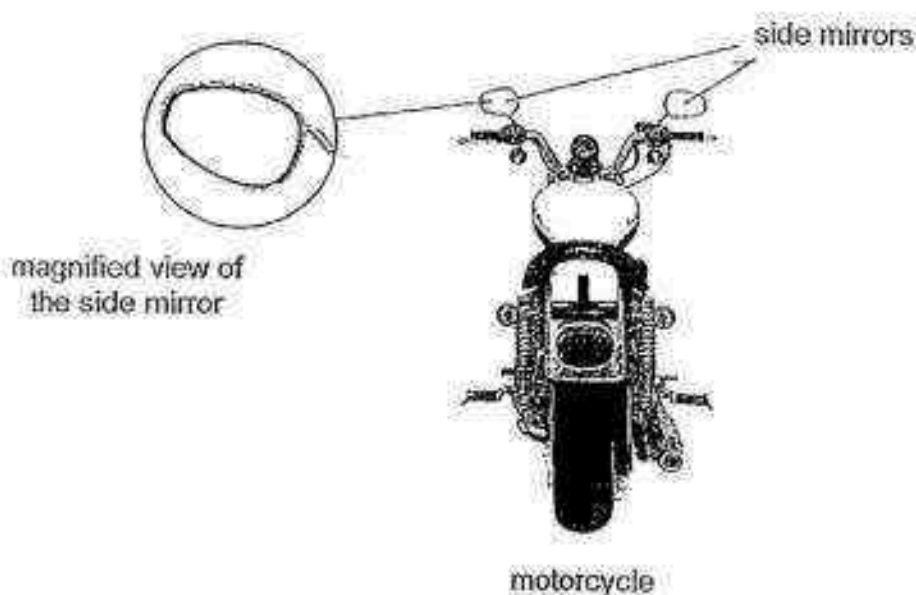
---



39. An experiment was set up as shown below.



- Draw 2 more mirrors in the set up above so that May can see the ball at the other end of the tube. [1]
- Draw arrows to show the path of light that enables May to see the ball. [1]
- The diagram below shows a motorcycle.



Based on the diagram above, explain how the side mirror would enable a motorist driving the motorcycle to see a car behind him. [2]

---



---



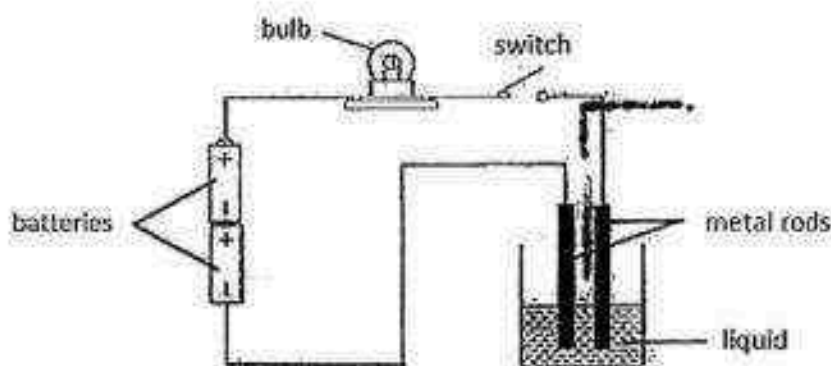
---



---



40. Ali used the following set up to conduct an experiment.



He poured different liquids, D, E, F and G, one at a time, into the beaker and closed the switch to observe the brightness of the bulb. He then recorded his results in a table below.

Liquid	Brightness of bulb			
	Very dim	Dim	Bright	Very bright
D			✓	
E	✓			
F		✓		
G				✓

- a) State the property of the rods used above that allows the above observations to be made. [1]

---



---

- b) Using the results above, if liquid G is seawater, give a reason why it is dangerous to swim in the sea during a lightning storm. [2]

---



---



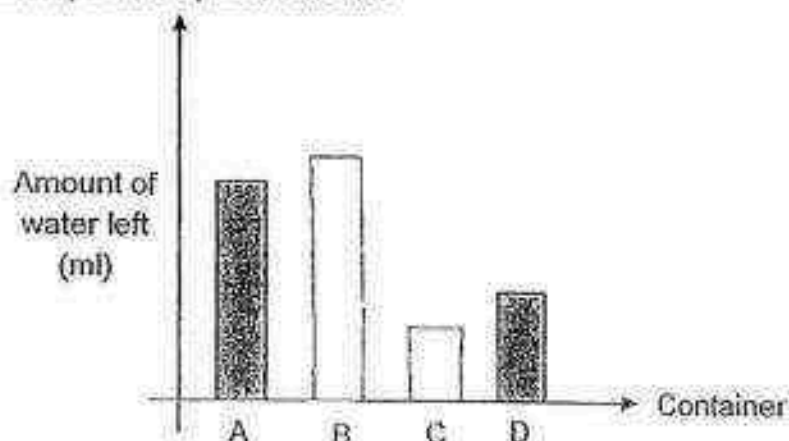
---



41. Four identical containers, A, B, C and D, were filled with same volume of water. They were placed in four different places with different conditions for 3 hours as shown in the table below.

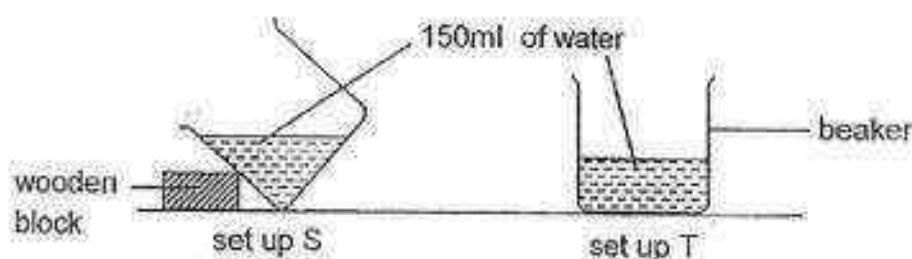
Container	A	B	C	D
Conditions	No wind Sunny	No wind Cloudy	Windy Sunny	Windy Cloudy

- (a) Complete the bar graph below to show the volume of water left in containers, B and C, after 3 hours. [2]



- (b) List one other variable that must be kept constant in this experiment. [1]

- (c) James set up an experiment as shown below to find out how the exposed surface area of water affect the rate of evaporation.



- (c) Explain why the experiment was not a fair test. [2]

---



---



---

End of Paper







EXAM PAPER 2016 (P5)

SCHOOL : CHIJ

SUBJECT : SCINECE

TERM : SA2

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

29)a)False    b)True    c)False    d)False

30)a)The more the amount of oxygen in the container, the more number of seeds that germinated.

b)If too few seeds are used, the results will not be reliable.

c)Openings A and B control the gaseous exchange in and out of the container so the amount of oxygen in the container can be controlled.

d)Temperature of the water.

31)a)Animal J. It has a long and thin beak so its beak can reach the nectar in the bottom of flower A.

b)They help to carry pollen grains from an anther of a flower to a stigma of the same flower or another flower of the same kind.

31)c)The anthers of plant B are hanging out of the flower. When the wind blows, the pollen grains from the anther will be carried by the wind to the stigmas of other flowers of the same type of plant.

32)a)As plant A's water-carrying tubes were cut off, the red water absorbed by the roots of the plant could not be transported to the stem, leaves and flower above the 2cm cut.

b)Food made by the leaves above the cuts could not be transported to the parts below the cuts as the food-carrying tubes were being cut off.

c)Plant C is a control set-up to show that the change in the colour of the flowers is solely due to the stem that was removed.

33)a)To find out how the mass of sugar used affects the amount of Gas N collected after 15 minutes.

b)20g.

c)An identical conical flask, 150ml of water, a teaspoon of Y and a gas syringe.

34)a)A. It could attract the most amount of steel nails at the furthest distance from the steel pins.

b)Magnet D is the weakest. Even though at a nearer distance from the steel pins, not the least. As compared to the other magnets, D is the weakest to the pins and should attract more pins than the rest. Therefore D is the weakest.

c)Magnet Y would attract more steel pins than magnet A.

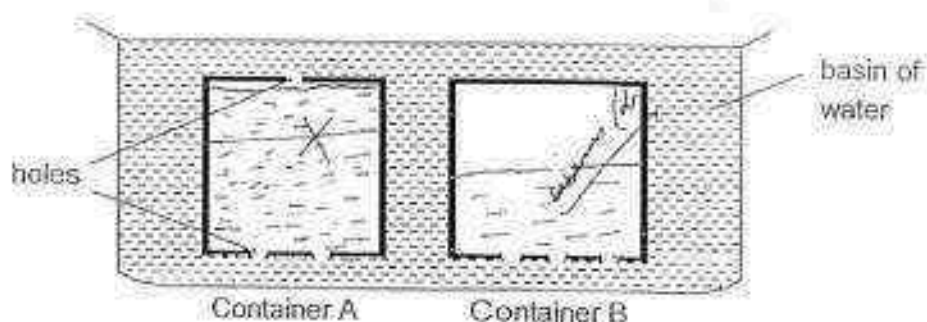
35)a)The longer the duration the tins are placed in the sun, the hotter the temperature of the air in the tins.

b)Tin B. The temperature of Tin B was higher than Tin A after 10 minutes.

c)Dull colours absorb more heat than shiny colours.

d)The shiny silver wrapper will slow down the heat gained by the dark-coloured chocolate from the surrounding. Chocolates will not melt easily.

36)a)



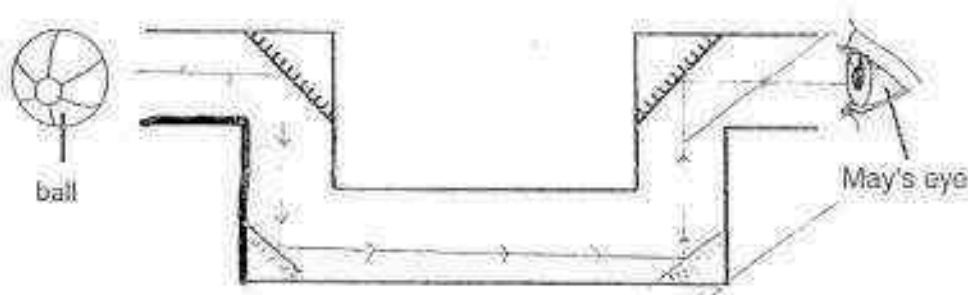
b) There was a hole on the top of A and it allowed the air previously trapped in the container, allowing more water to displace the air.

37) P. Metal is a better conductor of heat and P also has a greater exposed surface area which allows heat to be conducted away from the computer parts at a faster rate compared to plastic.

38)a) Material D. D is the best material to make the book as it is water proof and will not be damaged by water.

b) No. C breaks easily and would hurt the baby and cannot withstand the weight of the body.

39)a)b)

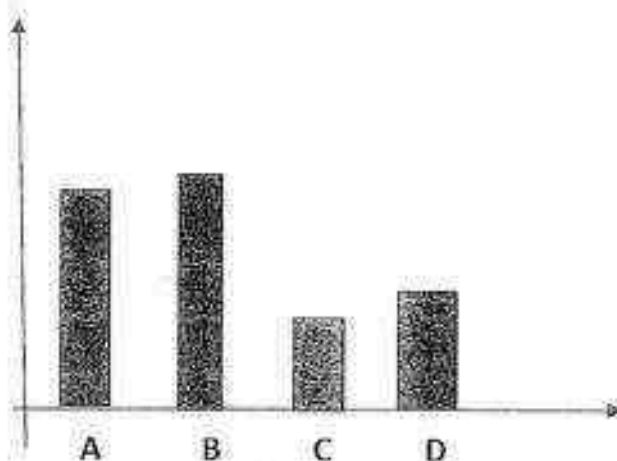


c) Light reflected off the car behind reaches the side mirror of the motorcycle and if reflected off the side mirror into the eyes of the motorist.

40)a) They must be conductor of electricity .

b) From the result when G was used the bulb shone the brightest, showing that it is the best conductor of electricity. Hence, during a lightning storm, a person could be easily electrocuted if lightning strikes the water.

41)a)



b) The temperature.

c) The amount of exposed surface area was not equal with each other in the set-up. Hence the rate of evaporation will not be constant, Since there is more one changed variable, the experiment was not a fair test.



**HENRY PARK PRIMARY SCHOOL**  
**SECOND SEMESTRAL ASSESSMENT 2016**  
**PRIMARY 5**  
**SCIENCE**  
**SECTION A (56 MARKS)**

**INSTRUCTIONS TO CANDIDATES**

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

Name: \_\_\_\_\_ (      )

Class: Primary 5 (      )

Date: 2 November 2016

Total Time for Sections A and B: 1 h 45 min

Section	Marks
A	/ 56
B	/ 44
Total	/ 100

Parent's Signature: \_\_\_\_\_

**Section A (56 marks)**

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

1. Which of the following characteristics helps us to tell the difference between insects and birds?

A : Number of legs  
 B : Presence of wings  
 C : Type of body covering

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

2. The diagram below shows organism X



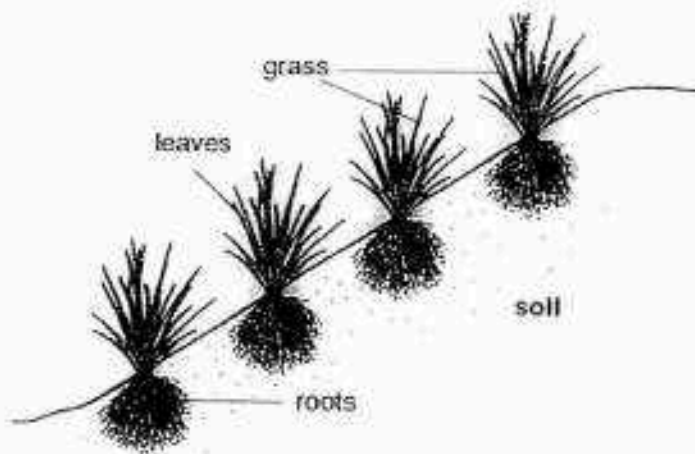
Organism X

Which of the following statements is/are correct about organism X?

A: It reproduces from seeds.  
 B: It reproduces from spores.  
 C: It feeds on the remains of dead organisms.

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

3. Ian planted some grass on a slope as shown below.



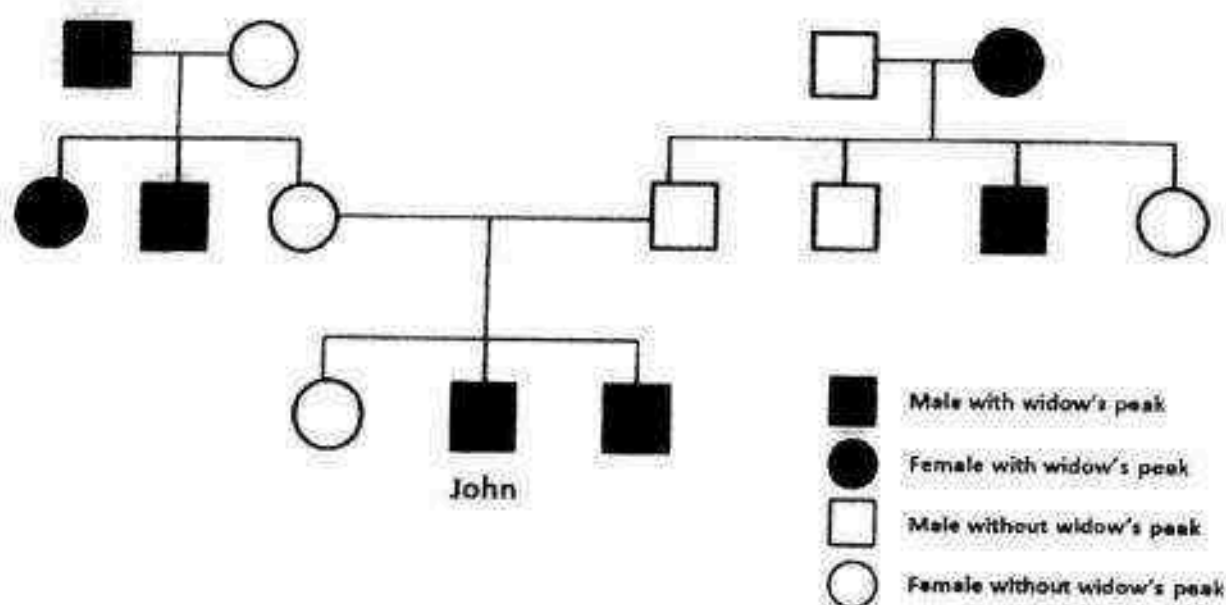
How does the grass help to prevent soil from being washed away by rain?

- A: Its roots absorb the rain water.
  - B: Its roots hold the soil together.
  - C: Its roots absorb the nutrients from the soil.
  - D: Its leaves reduce the impact of rainwater that hits the soil.
- (1) A only
  - (2) A and B only
  - (3) B and C only
  - (4) B and D only





4. Study the family tree of John below. It shows the type of hair line that his family members have.



Which one of the following statements is correct about John's family tree?

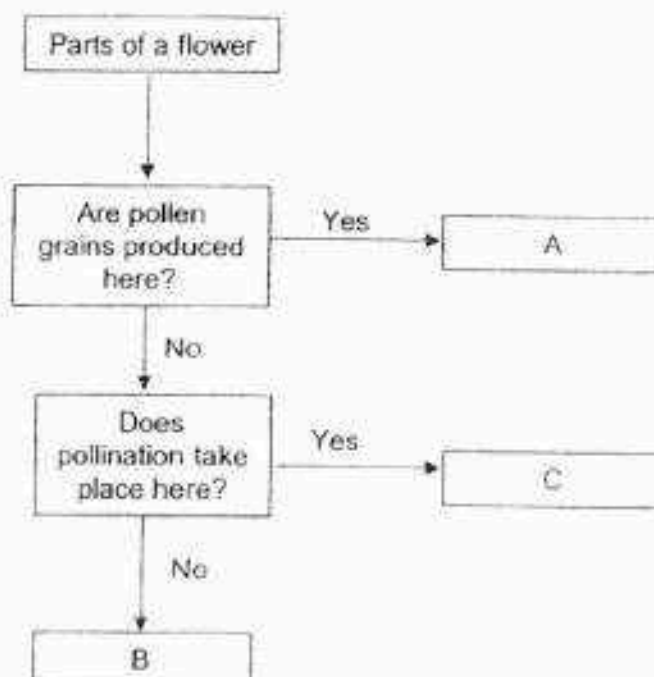
- (1) John's parents have widow's peaks.
- (2) John and his brother do not have widow's peaks.
- (3) John's father has a brother who has widow's peak.
- (4) Both John's grandfathers have widow's peaks.

5. Which of the following parts of a cell is/are **not** found in animal cells?

A: cell wall  
 B: cytoplasm  
 C: cell membrane

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

6. Study the flow chart shown below carefully.

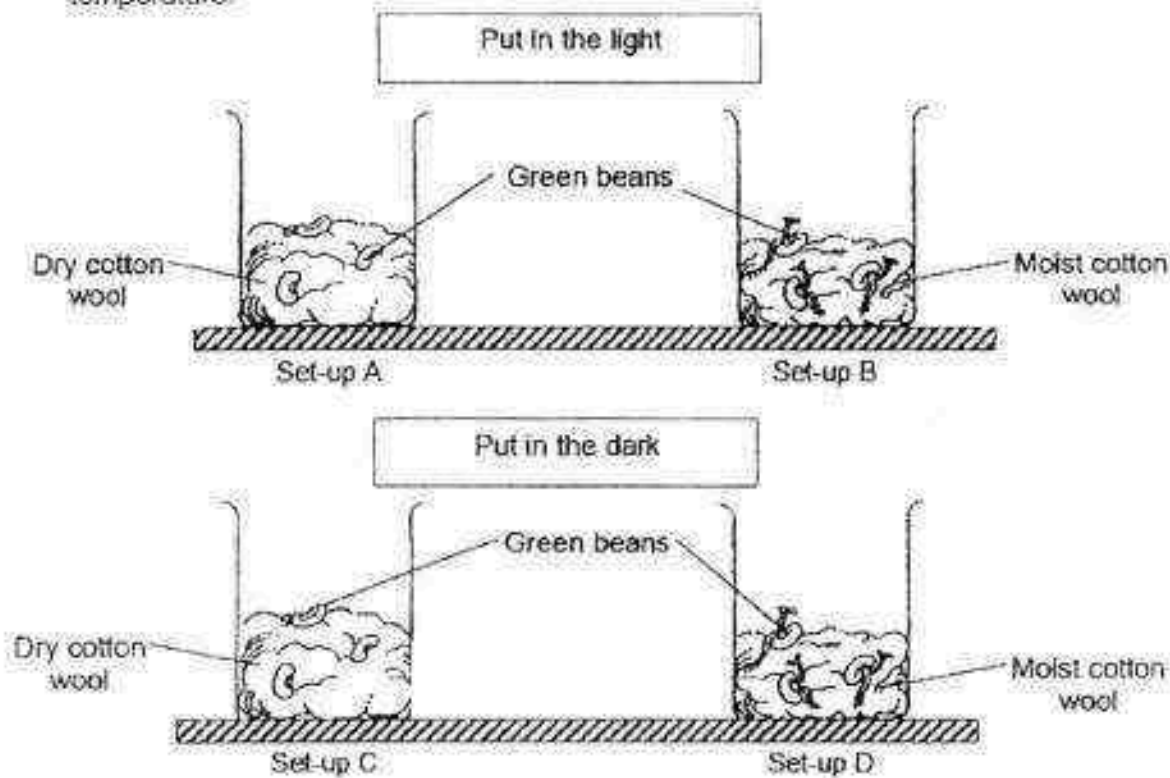


Which of the following could A, B and C be?

	A	B	C
(1)	Anther	Ovary	Stigma
(2)	Anther	Stigma	Ovary
(3)	Stigma	Anther	Ovary
(4)	Stigma	Ovary	Anther

7. Ahmad wanted to find out about the conditions necessary for germination.

He used the same amount of cotton wool and water and similar containers for his experimental set-ups. All the set-ups shown below were placed in room temperature.



He found that only bean seeds in set-ups B and D germinated after three days as shown in the diagram above.

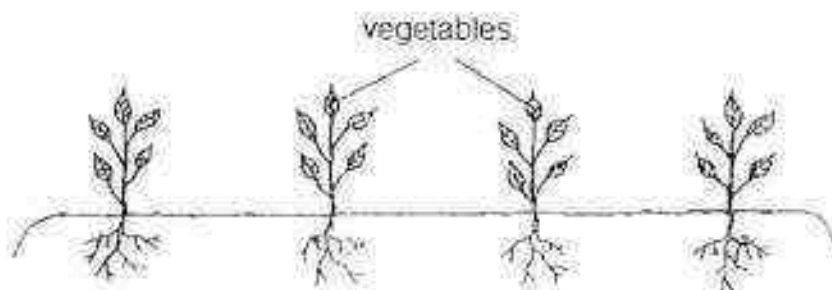
Which one of the following could Ahmad conclude from his experiment?

- (1) Seeds can germinate without light.
- (2) Seeds can germinate without water.
- (3) Seeds can germinate without warmth.
- (4) Seeds can germinate without light and water.

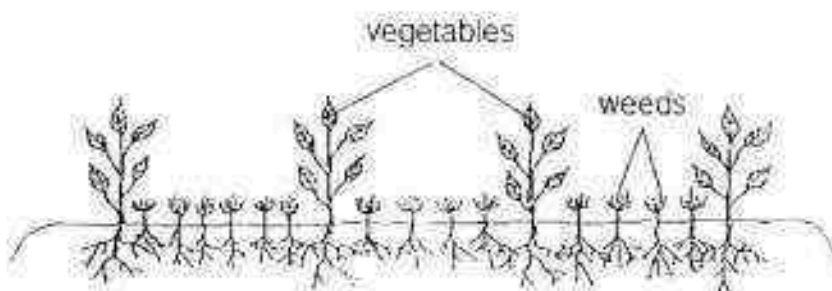


8. Farmer Lee planted some vegetables in Plot A as shown below. Two weeks later, he found some weeds in the plot.

**Plot A: At the start**



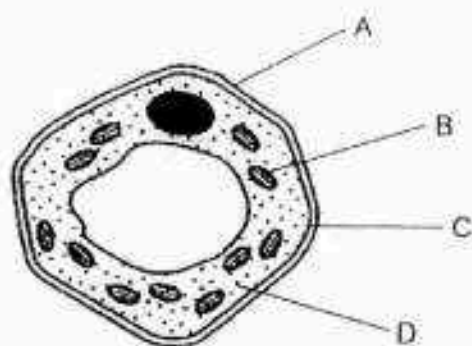
**Plot A: Two Weeks later**



Which one of the following is the likely reason for the weeds to grow in the plot of land over the two weeks?

- (1) The weeds can fertilise the soil.
- (2) The weeds only grow with vegetables.
- (3) The weeds are planted by Farmer Lee.
- (4) The seeds of the weeds were dispersed onto the plot by wind.

9. The diagram below shows a cell from the leaf of a plant.

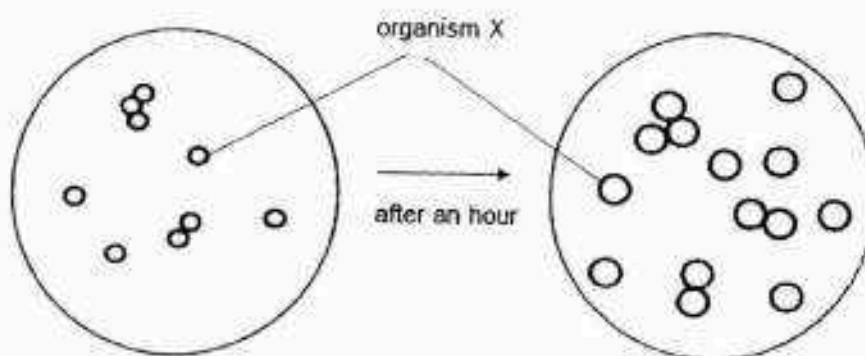


Which of the parts, A, B, C and D, of the cell are labelled correctly?

Parts of the Cell				
	A	B	C	D
(1)	chloroplast	cell membrane	cell wall	cytoplasm
(2)	cytoplasm	chloroplast	cell wall	cell membrane
(3)	cell wall	chloroplast	cell membrane	cytoplasm
(4)	cell membrane	cytoplasm	cell wall	chloroplast



10. Justin observed some single-celled organism X under a microscope using the same magnification as shown below.



Which of the following processes is/are these single-celled organisms undergoing?

- A : growth
- B : dispersal
- C : reproduction

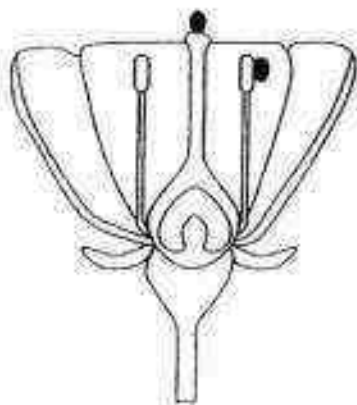
- (1) A only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

11. The diagrams below show the cross-section of a flower.

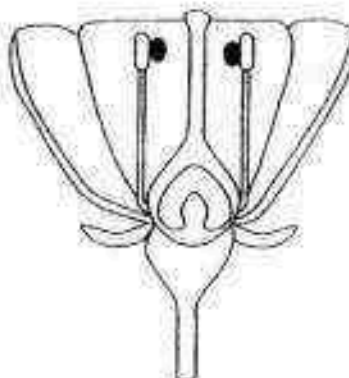
The black dots in the diagrams represent pollen grains.

Which of the following diagrams show that pollination has taken place?

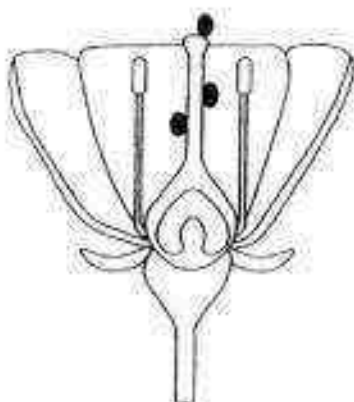
(A)



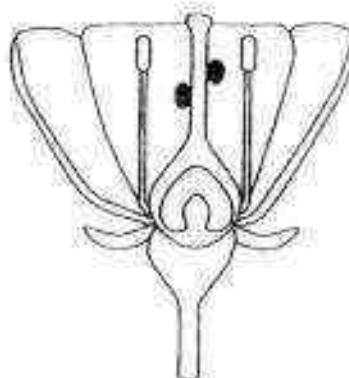
(B)



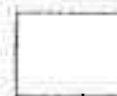
(C)



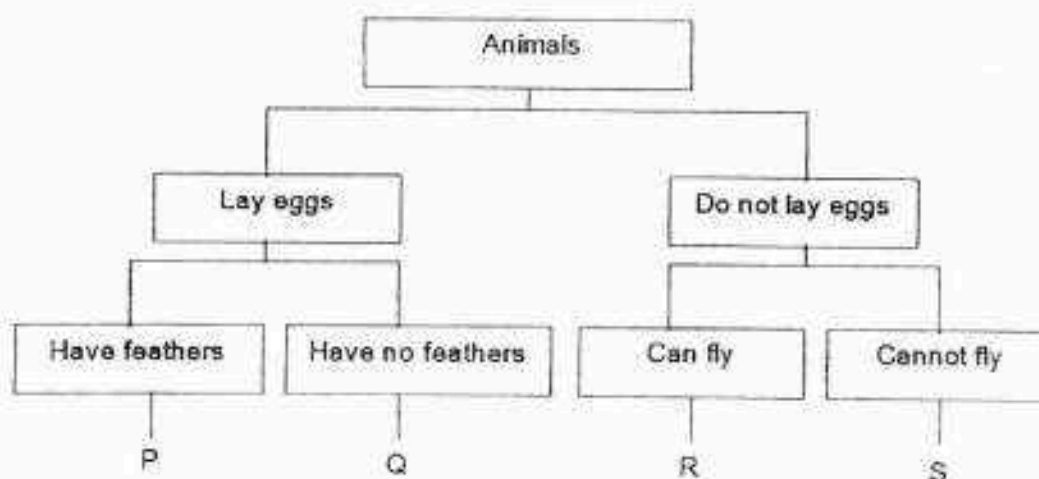
(D)



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



12. The table below shows how some animals can be classified into four groups, P, Q, R and S.



Based on the above classification chart, which of the following statements are correct?

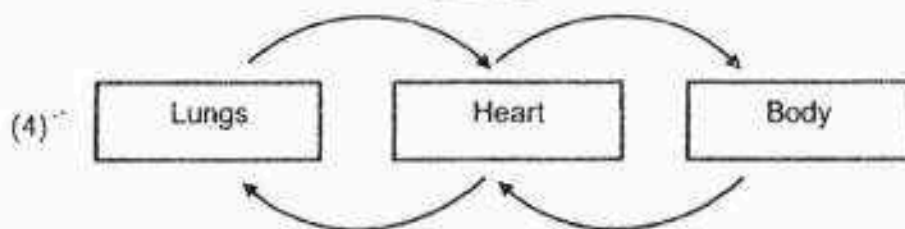
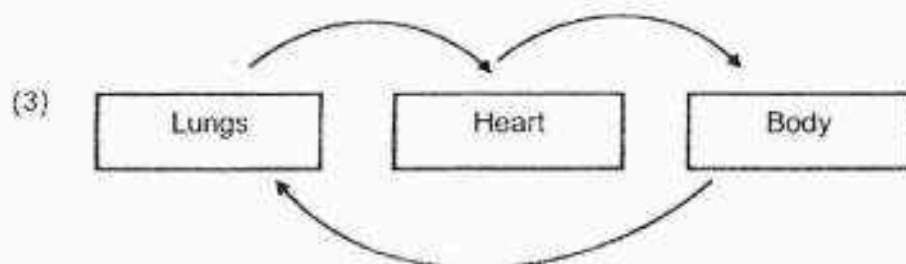
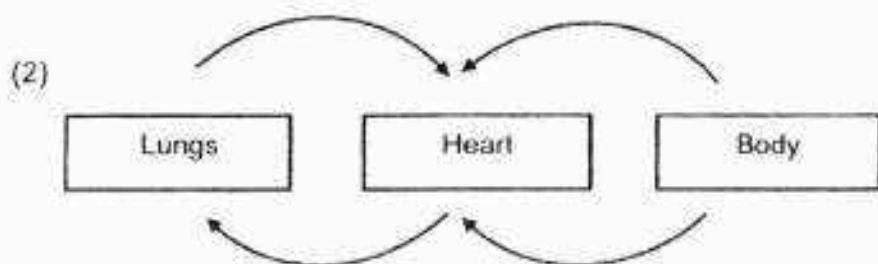
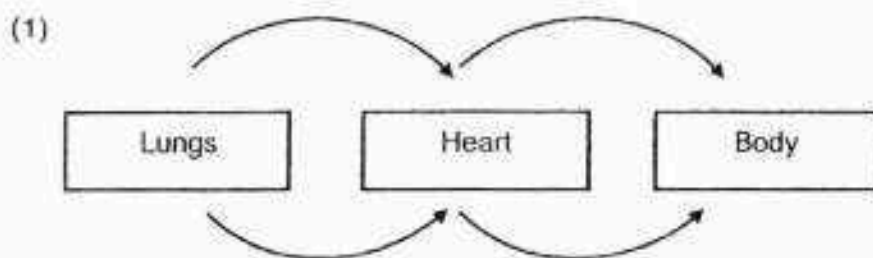
- A Only fish can be placed in group Q.
- B Birds are classified under group P.
- C Animals in groups R and S may have the same outer covering.

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

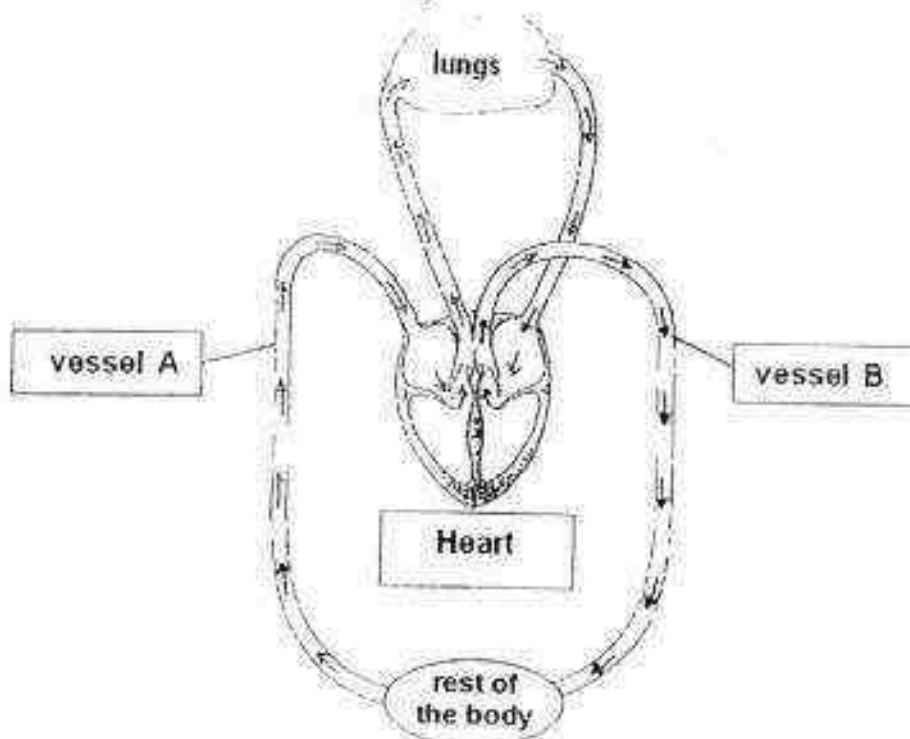




13. Which one of the following diagrams correctly shows how blood circulates in a human body?



14. The diagram below shows the flow of blood in the blood vessels among the lungs, heart and the rest of the body.



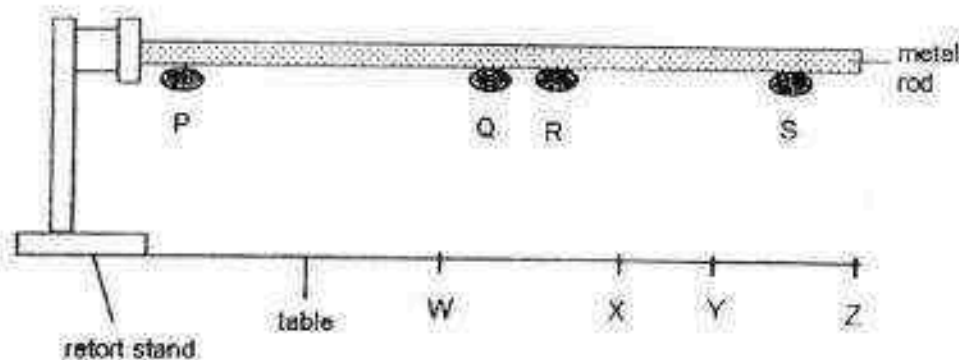
Which one of the following statements is correct?

- (1) Blood flowing in vessel B carries only oxygen.
  - (2) Blood flowing in vessel A carries more oxygen than blood in vessel B.
  - (3) Blood flowing in vessel B carries more oxygen than blood in vessel A.
  - (4) Blood flowing in vessel A carries only carbon dioxide.
15. Joe poured some hot water into a glass.
- What could be done to keep the water hot for a very long time?

- (1) Put ice into the glass of hot water.
- (2) Stir the glass of hot water with a spoon.
- (3) Cover the glass of hot water with a metal lid.
- (4) Cover the glass of hot water with a plastic lid.



16. The diagram below shows a metal rod with four similar pieces of wax, P, Q, R and S attached to it.



The metal rod was heated by a heat source placed on the table. The wax melted in the following order:



Where was the heat source placed on the table?

- (1) W  
 (2) X  
 (3) Y  
 (4) Z
17. The table below shows the melting point and boiling point of two substances, A and B.

Substance	Melting Point ( $^{\circ}\text{C}$ )	Boiling Point ( $^{\circ}\text{C}$ )
A	16	117
B	39	688

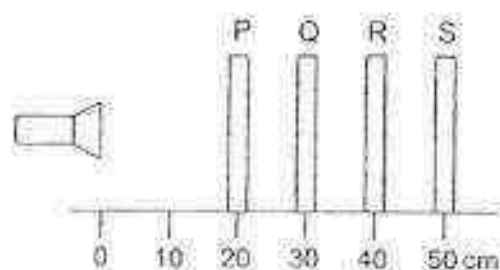
Which of the following shows the correct state of substances A and B at  $500^{\circ}\text{C}$ ?

State of substances at $500^{\circ}\text{C}$	
A	B
(1) liquid	liquid
(2) gas	gas
(3) gas	liquid
(4) liquid	gas

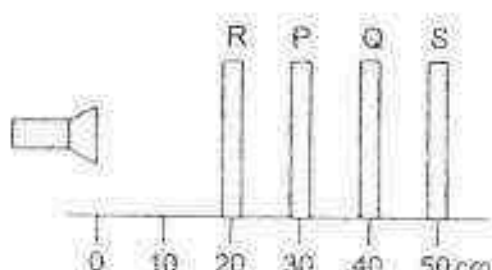


18. An experiment was conducted to investigate whether light can pass through four sheets, P, Q, R and S. Each sheet is of the same size but made of different materials.

The sheets were arranged in two set-ups, X and Y, as shown below.



Set-up X



Set-up Y

The distance travelled by light for each set-up was measured and recorded in the table below.

Set-up	Distance travelled by the light (cm)
X	30
Y	40

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

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	Q	P, R	S
(2)	S	Q	P, R
(3)	P, R	S	Q
(4)	P, R	Q	S

19. Which of the following correctly explains why perspiration helps to keep our body cool on a hot day?

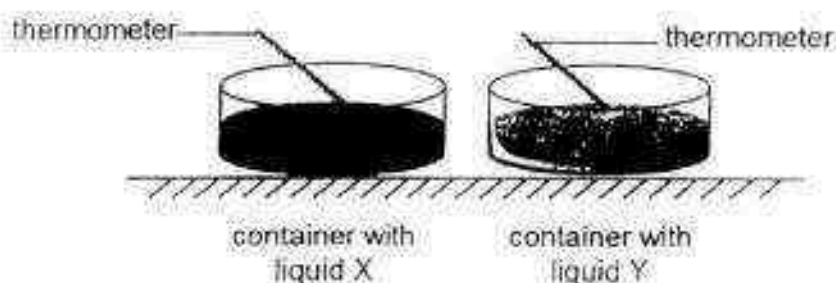
A: Body loses water through perspiration.  
 B: The perspiration on the skin evaporates.  
 C: Body loses heat to the perspiration on the skin.

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



20. Max wanted to find out how quickly liquids X and Y heat up and cool down.

He used similar containers and thermometers for his experimental set-ups. Max used a light bulb as a source of heat placed at the same distance from each set-up. The light bulb was switched on for 10 minutes and then switched off.



He recorded the results in the table below.

Time (min)	Temperature ( $^{\circ}\text{C}$ )	
	Liquid X	Liquid Y
0	20	20
3	22	24
6	24	28
9	26	32
12	25	29
15	24	26

What can Max conclude from his experiment about liquids X and Y?

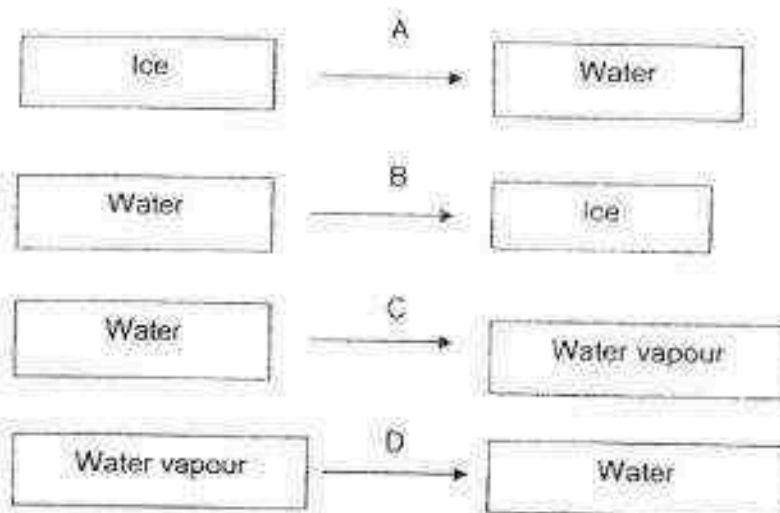
- (1) X heats up more slowly and cools down more slowly than Y.
- (2) X heats up more slowly and cools down more quickly than Y.
- (3) X heats up more quickly and cools down more slowly than Y.
- (4) X heats up more quickly and cools down more quickly than Y.

21. The diagram below shows a girl looking at her hand under a lamp.



Which one of the following explains why the girl is able to see her hand?

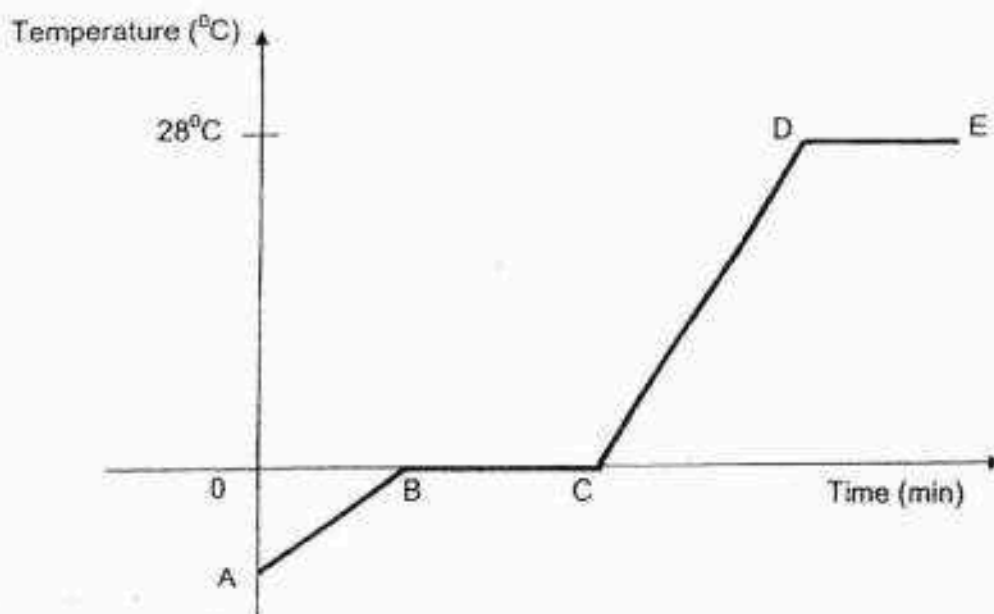
- (1) Light from the girl's eyes shines onto her hand and is reflected into the lamp.
  - (2) Light from her hand shines onto the girl's eyes and is reflected into the lamp.
  - (3) Light from the lamp shines onto her hand and is reflected into the girl's eyes.
  - (4) Light from her hand shines onto the lamp and is reflected into the girl's eyes.
22. The diagram below shows changes in the states of water through process A, B, C and D.



The processes that involve heat loss are \_\_\_\_\_.

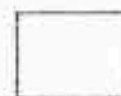
- (1) A and D
- (2) B and C
- (3) B and D
- (4) C and D

23. The graph below shows a beaker of ice cubes gaining heat over a period of time.

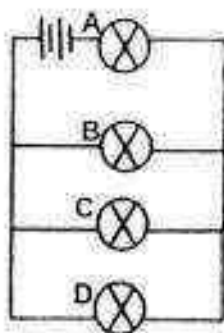


Based on the graph above, which of the following statements are correct?

- A: Ice is melting at BC.
  - B: Water is in solid state at AB.
  - C: Water starts evaporating at DE.
  - D: Ice has melted completely at point B.
- (1) A and B only  
(2) B and C only  
(3) A, C and D only  
(4) B, C and D only



24. Bulbs A, B, C and D all light up in the circuit shown below.

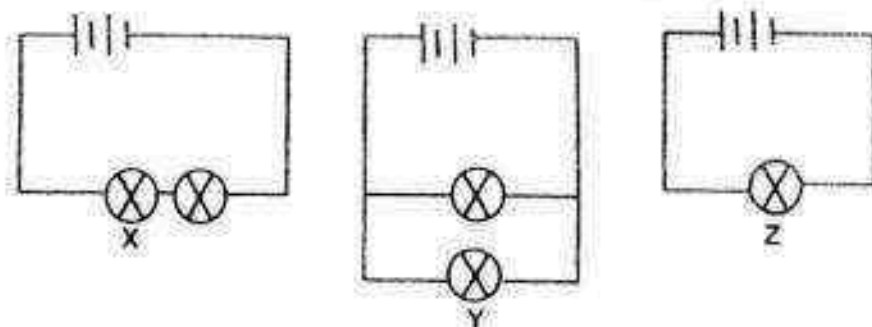


When one of the bulbs fuses, all the other three bulbs will not light up.

Which one of the following bulbs will cause the other three bulbs not to light up when it fuses?

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

25. The diagram below shows three circuits with different arrangements of identical batteries and bulbs. The bulbs in all three circuits light up.



Which of the following statements about the brightness of Bulbs X, Y and Z are correct?

- A: Bulb Y is dimmer than Bulb X.  
B: Bulb Z is brighter than Bulb X.  
C: Bulbs Y and Z are of the same brightness.

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



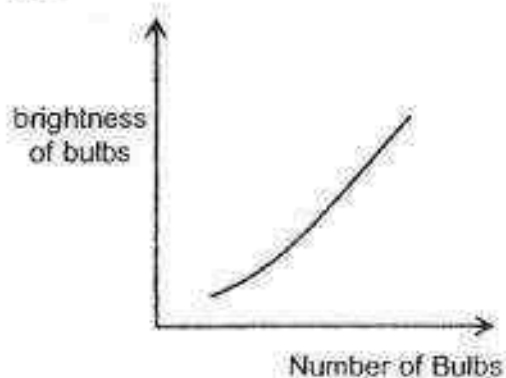
26. Ms Wong carried out an experiment to find out how the number of bulbs added in series will affect the brightness of the bulbs in a circuit.

The table below shows the results of her experiment.

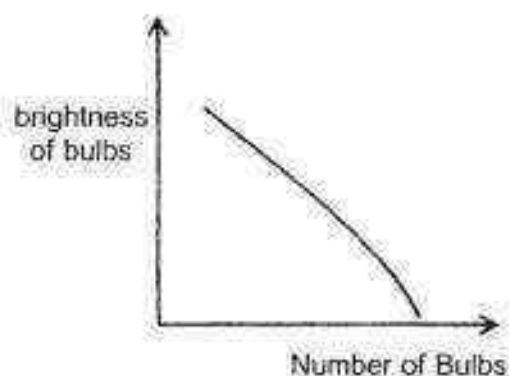
Number of Batteries	Number of bulbs added in series	Brightness of bulbs
1	1	Bright
1	2	Dim
1	3	Dimmer

Based on the table, which one of the graphs shows the results correctly?

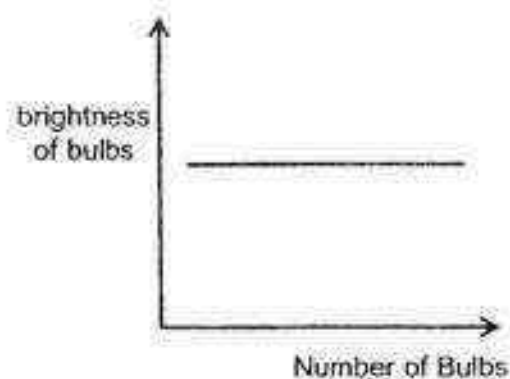
(1)



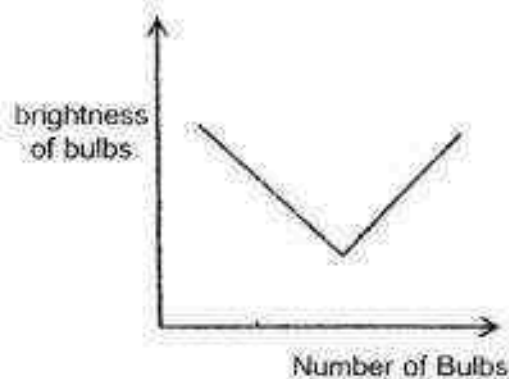
(2)



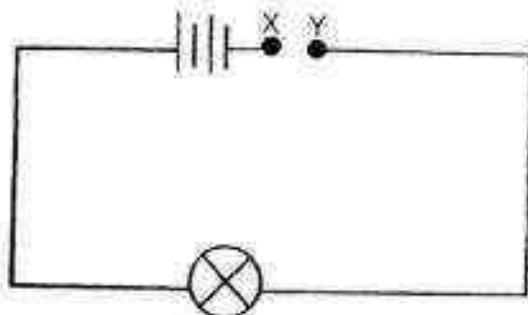
(3)



(4)



27. The diagram below shows an electric circuit with ends X and Y.



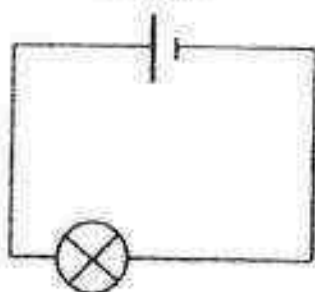
Which of the following objects when connected completely to ends X and Y will cause the bulb to light up?

- A: An iron bar
- B: An aluminium foil
- C: A plastic ruler

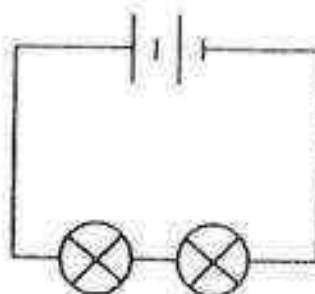
- (1) A only
- (2) A and B only
- (3) C only
- (4) A, B and C

28. Macy wants to find out how the number of bulbs arranged in series will affect the brightness of the bulb. Which of the following pairs of circuits should she use for her experiment?

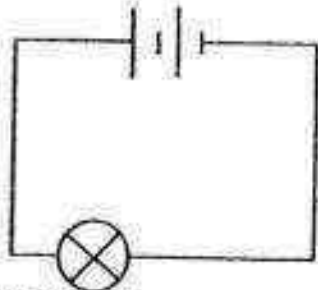
Circuit P



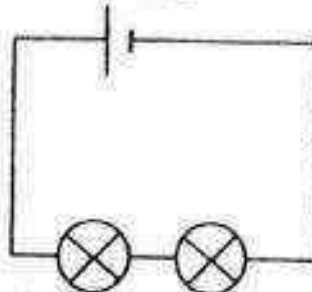
Circuit Q



Circuit R

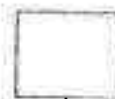


Circuit S



- (1) Circuits P and Q
- (2) Circuits R and S
- (3) Circuits P and R
- (4) Circuits P and S

End of Section A





**HENRY PARK PRIMARY SCHOOL**  
**SECOND SEMESTRAL ASSESSMENT 2016**  
**PRIMARY 5**  
**SCIENCE**  
**SECTION B (44 MARKS)**

**INSTRUCTIONS TO CANDIDATES**

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

Name: \_\_\_\_\_ (     )

Class: Primary 5 (     )

Date: 2 November 2016

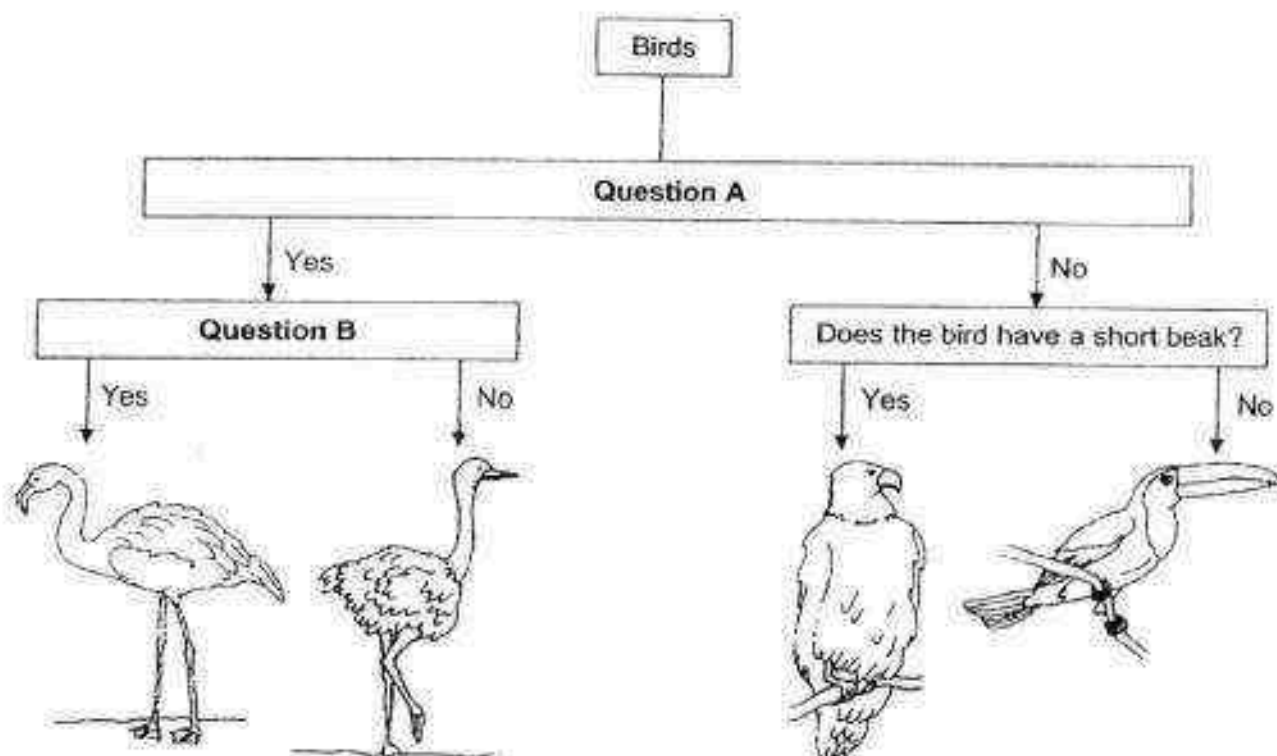
Total Time for Sections A and B: 1 h 45 min

Marks for Section B: \_\_\_\_\_

## Section B (44 marks)

Write your answers to questions 29 to 41 in the spaces given.

29. Siew Wei grouped some birds as shown in the diagram below.



- a) State one common characteristic of birds that is not found in the other animals.

[1]

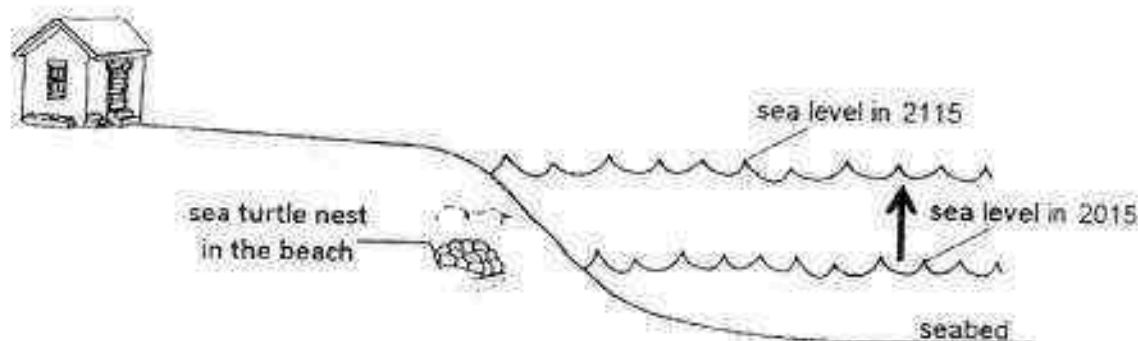
- b) What could Questions A and B be?

[2]

Write 'A' for Question A and 'B' for Question B in the correct boxes below.

Does the bird have a long beak?	
Does the bird have a long neck?	
Does the bird have a curved beak?	
Does the bird have a straight beak?	

30. The diagram below shows how sea level will change over time.



- (a) Explain why the temperature of surrounding air can cause a rise in the sea level.

[2]

---



---



---

Sea turtles lay eggs on the shore of beaches. Rising sea level reduces the surface area of the beaches.

- (b) State if the number of sea turtles will increase, decrease or remain the same as the sea level increases.

[1]

Tick (✓) the correct answer below.

☐ increase      ☐ decrease      ☐ remain the same

- (c) Give a reason for your answer in (b).

[1]

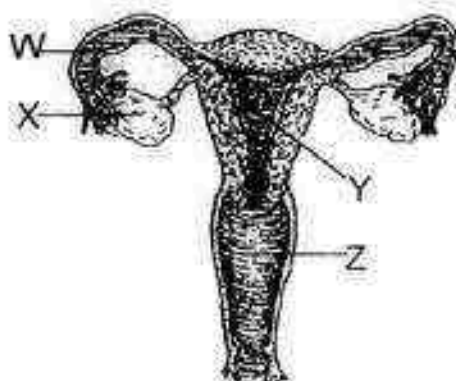
---



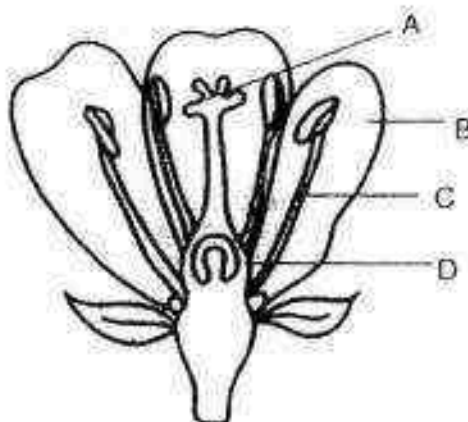
---



31. The diagrams below show the female reproductive system of a human and a flowering plant.



Female reproductive system (Human)



Reproductive system (Flowering plant)

- a) Based on the diagrams above, write the letters that represent the ovary in each system shown above. [1]

\_\_\_\_\_

- b) State the main function of part B. [1]

\_\_\_\_\_

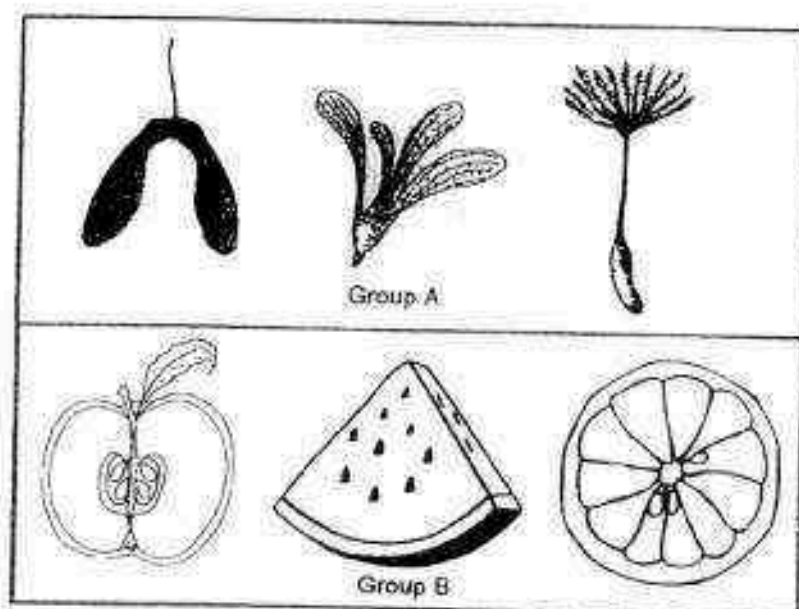
\_\_\_\_\_

- c) Give a reason why part A is sticky. [1]

\_\_\_\_\_

\_\_\_\_\_

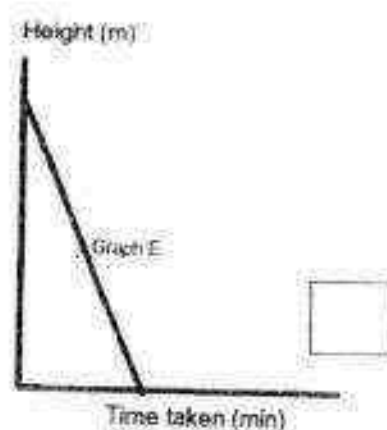
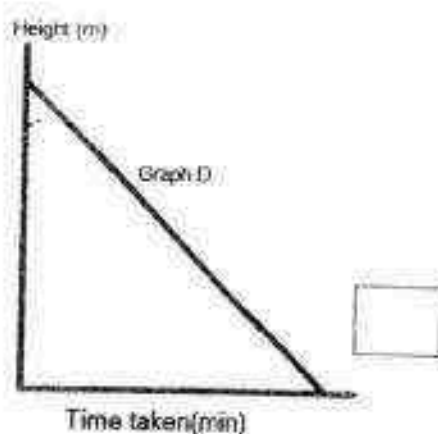
32. Peter conducted an experiment to find out how seeds are dispersed from their parent plants. Seeds from two groups, A and B, were dropped 10 metres from the ground.



- a) On a windy day, which group of seeds, A or B, has a greater advantage in dispersal? Explain your answer.

[1]

Peter then plotted two graphs, D and E, to show the time taken for the seeds to fall to the ground.

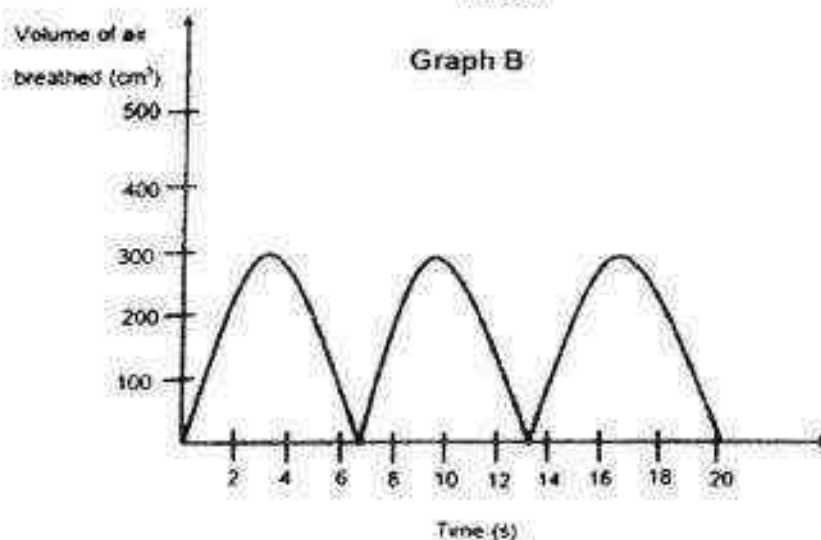
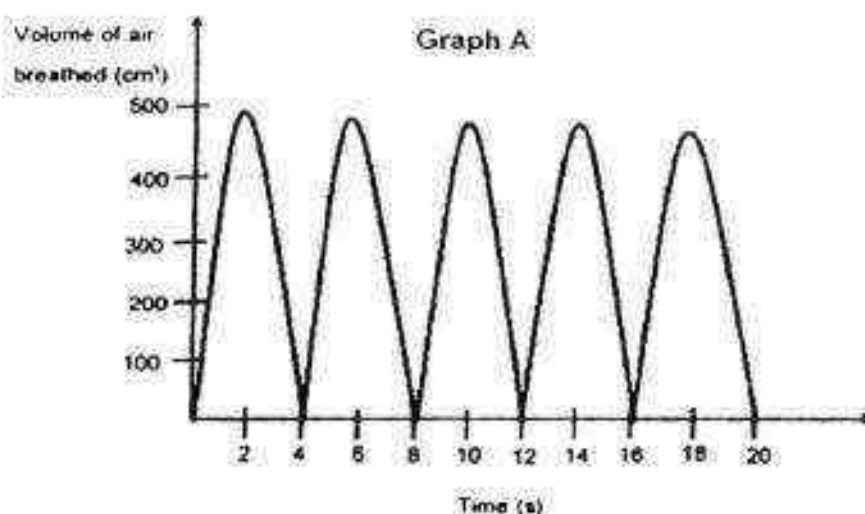


- b) In the boxes above, indicate the group of seeds (A or B) that each graph represents.
- c) State a characteristic of the seeds from Group B. Explain how this characteristic helps to disperse the seeds away from their parent plants.

[1]

[1]

33. The graphs below show the volume of air Wei Li breathed in and out before and during exercise.



- a) Which of the graphs, A or B, shows Wei Li's breathing rate during exercise?

[1]

---

- b) Explain your answer in (a).

[2]

---

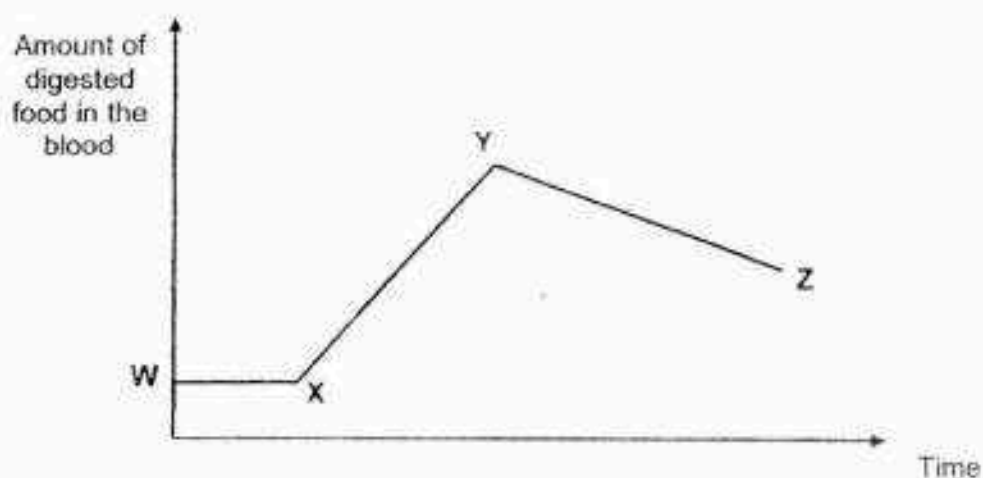


---





34. The graph below shows the amount of digested food in the blood after a meal.



- a) What is happening to the amount of digested food in the blood at XY? Give a reason for your answer. [2]

---

---

---

- b) At which point in the graph, W, X, Y or Z does the digested food first enter the bloodstream? [1]

---

35. The table below provides some information about three cells, P, Q and R.

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

Parts of a cell	Cell P	Cell Q	Cell R
nucleus	✓	✓	✓
cell wall	✓	✓	
chloroplast		✓	
cell membrane	✓	✓	✓

- a) Based on the table, name the common parts found in the cells, P, Q and R. [1]

---

- b) Which cell, P, Q or R, can make food for a plant? [2]

Explain your answer.

---



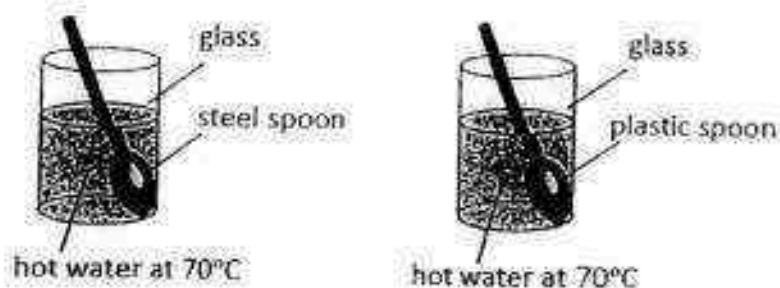
---



---



36. Balu wanted to find out how the type of material affects the amount of heat gained. He carried out the experiment as shown below.



Both spoons were placed into identical containers with equal amount of water at 70°C at the same time. Balu measured and recorded the temperature of each spoon during the experiment in the table shown below.

	Temperature of spoon at the start (°C)	Temperature of spoon after 15 minutes (°C)
Plastic spoon	28	30
Steel spoon	28	36

- (a) Based on the results, what can Balu conclude about plastic and steel?

[1]

---



---



---

(Question 36 continues on the next page)



(Question 36 continues on the this page)

Balu found it difficult to cut a frozen ice cream cake.  
He found the following idea on a website to help solve this problem.

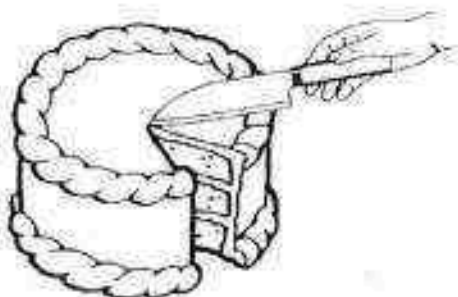
#### How to slice a frozen ice cream cake

Just out of the freezer, an ice cream cake is solid hard and can be very difficult to cut.



#### Step 1:

Rather than waiting for the ice cream cake to melt, put a knife in a glass of hot water for a few minutes. Then use the knife to slice the frozen cake.



#### Step 2:

Start slicing. The knife will slice through the ice cream cake easily. Dip the knife back into the hot water to make it warm.

- (b) Explain clearly how the method explained above will help Balu cut a frozen ice cream cake easily. [2]

---



---



---

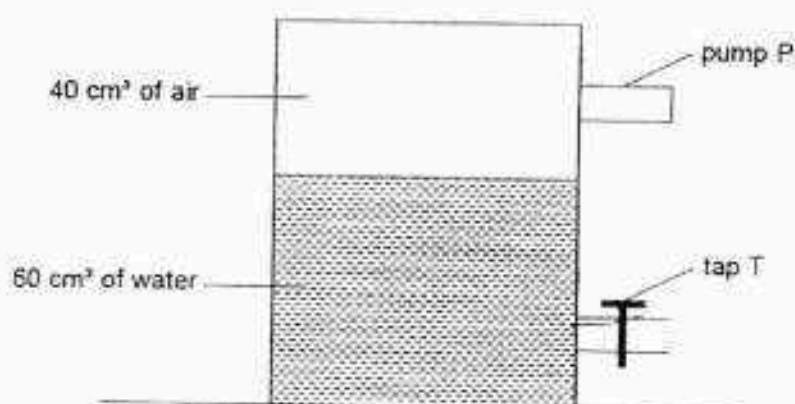
- (c) Balu wants to try out the method above. He has two similar knives, a plastic knife and a steel knife. [1]

Based on the results from Balu's earlier experiment, state which knife, **plastic** or **steel**, is more suitable for slicing the frozen cake.

---

37. In an experiment, a sealed metal container, as shown below, holds  $60 \text{ cm}^3$  of water and  $40 \text{ cm}^3$  of air.

$10 \text{ cm}^3$  of water was released through tap T and  $30 \text{ cm}^3$  of air was pumped in through pump P.



- a) State the final volume of the air and water in the metal container. [1]

Final volume of air : \_\_\_\_\_  $\text{cm}^3$

Final volume of water : \_\_\_\_\_  $\text{cm}^3$

- b) Explain your answer in (a). [1]

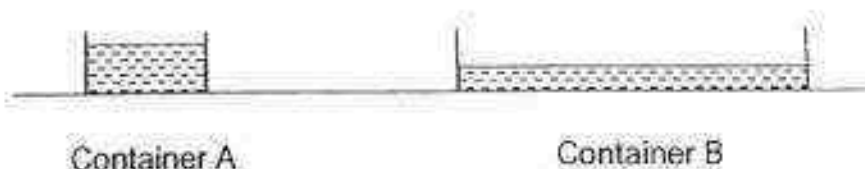
---



---



38. Mr. Tan placed two containers of water, A and B, each of different size on a table as shown in the diagram below.



The containers are made of the same material and the amount of water in each container is the same.

	Temperature of water in the container at the start ( $^{\circ}\text{C}$ )	Temperature of water in the container after 10 minutes ( $^{\circ}\text{C}$ )
Container A	70	61
Container B	70	53

- (a) Using the results from the table, state in which container, A or B, water loses more heat. Give a reason for your answer. [2]

---



---



---

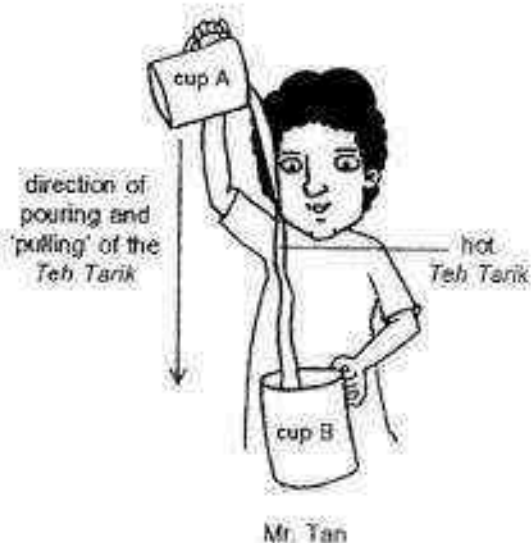
(Question 38 continues on the next page)



(Question 38 continues on the this page)

Mr. Tan decided to make himself a glass of hot *Teh Tarik*.

*Teh Tarik* refers to hot tea that goes through a process of pouring and 'pulling' several times between two cups.



After making the hot *Teh Tarik*, he poured it from cup A into cup B and then back to cup A as shown in the diagram above. He did this several times.

(b) Based on Mr. Tan's earlier experiment, how does the action of pouring and 'pulling' cool the hot *Teh Tarik* faster?

[2]

---

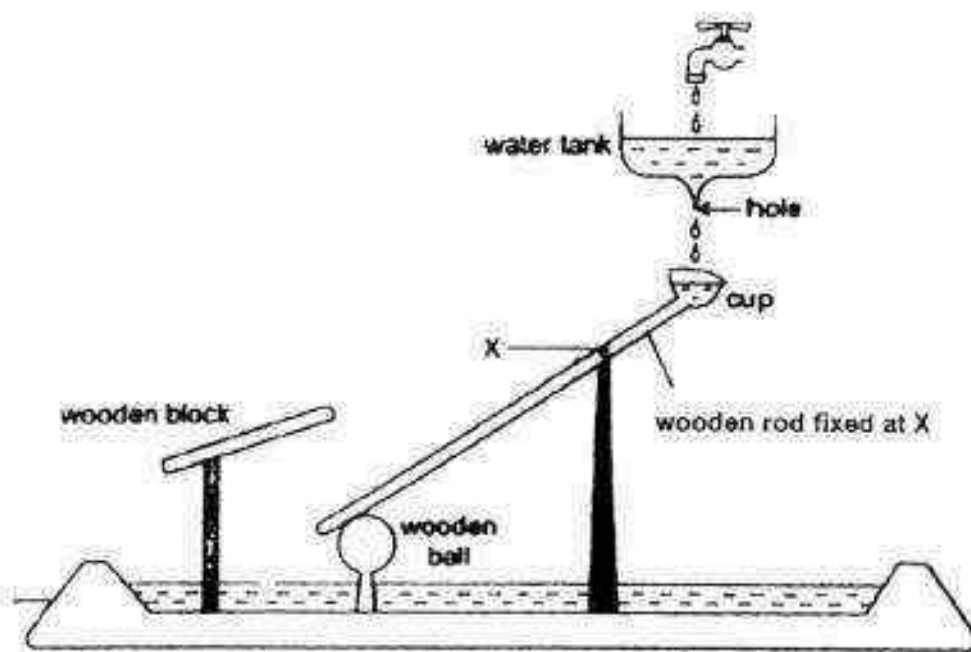


---



---

39. Lijun designed a toy as shown in the set-up below.



Water from the tank drips into the cup fixed to a wooden rod.  
When the cup is full, the wooden rod moves down and the cup is emptied.

When the cup moves down, the other end of the wooden rod moves up and hits the wooden block. A 'click' sound could be heard when the rod hits the wooden block.

When the cup is emptied, it moves up again. The action is then repeated.

- (a) The cup was able to move up and down repeatedly in the toy above.  
Explain why.

[2]

---



---



---

Lijun decided to make the hole in the tank bigger.

- (b) Would the number of 'click' sound heard in one minute **increase**, **decrease** or **remain the same**? Explain your answer.

[2]

---



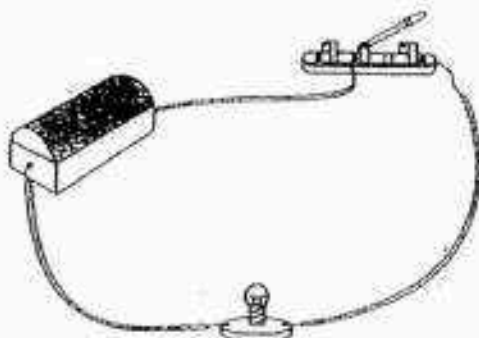
---



---



40. John set up an electric circuit using a bulb, a switch, a battery and some wires as shown below.



- a) Draw a circuit diagram of the electric circuit in the box below.

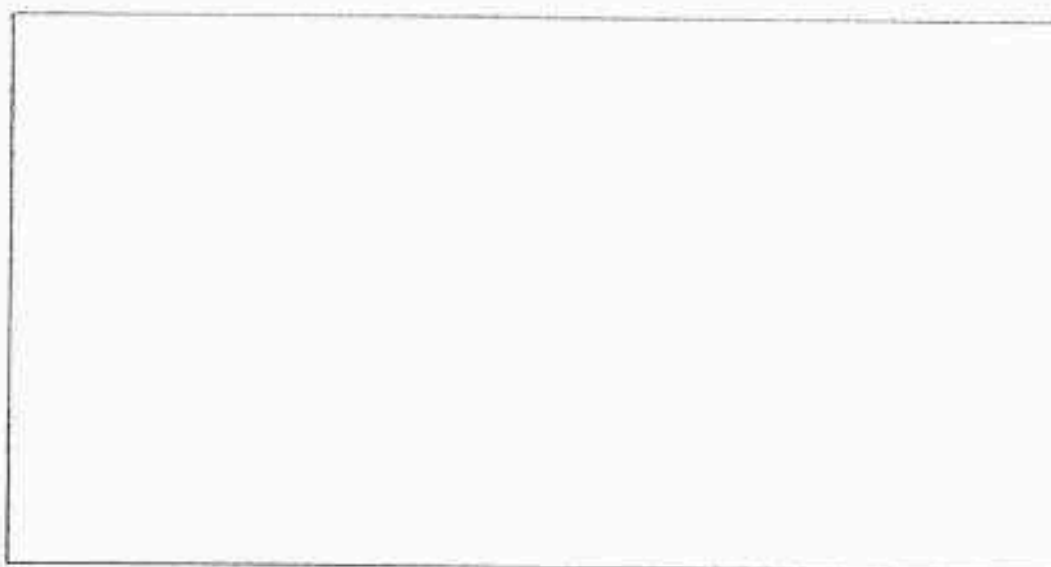
[1]



- b) John added one more bulb in the above circuit.

[1]

Without changing the components above, draw a circuit diagram so that both bulbs have the same brightness in the box below.

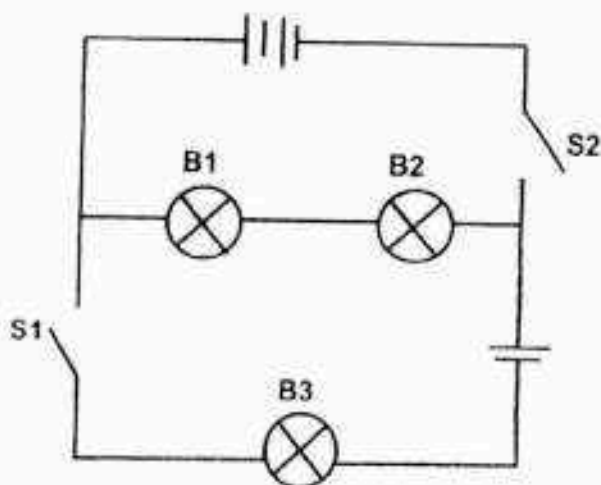


(Question 40 continues on the next page)



(Question 40 continues on this page)

- c) Identical bulbs and batteries were used in the circuit diagram shown below.



The switches are then closed.

- (i) What happens to bulbs B2 and B3 when bulb B1 fuses? [1]

---



---

- (ii) Explain your answer in c (i). [1]

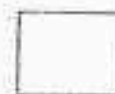
---



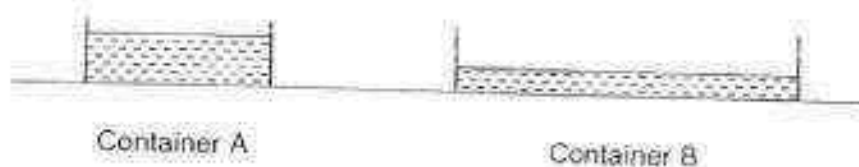
---



---



- 41 Dylan placed two containers of water, A and B, each of different size on a table as shown in the diagram below.



The containers are made of the same material and the amount of water in each container is the same.

- a) In which container, A or B, would the amount of water left be more after two hours? Give a reason for your answer. [2]

---

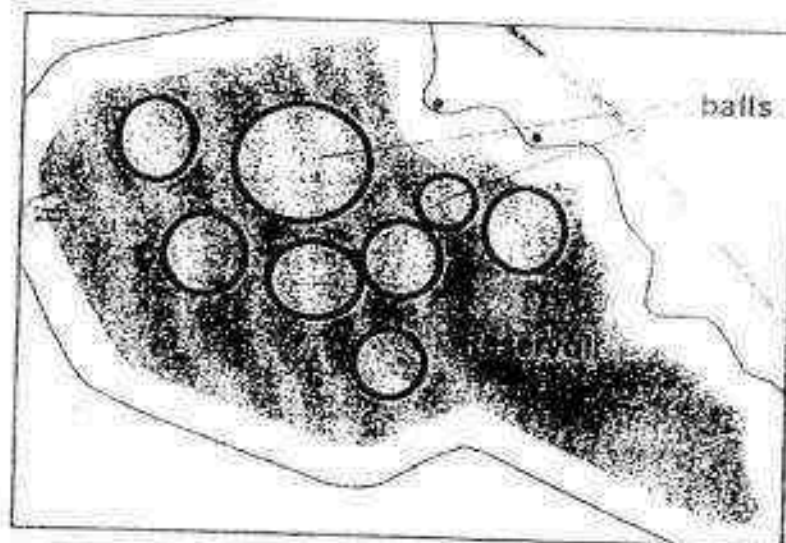


---

Reservoirs are built to supply humans with fresh water for their basic needs.

When surrounding temperatures are high for a period of time, the water in the reservoirs reduces quickly.

The diagram below shows a reservoir covered with floating plastic balls in order to prevent this water problem.



- b) How do the balls on the reservoir help to solve the water problem? [2]

---



---

Setters:  
Mr Tan Joo Nam  
Mrs Priscilla Heng  
Mdm Cecilia Quah

End of Booklet B

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : HENRY PARK PRIMARY  
 SUBJECT : SCIENCE  
 TERM : SA2

#### Section A

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

#### Section B

Q29a All birds have feathers.

Q29b

Does the bird have a long beak?	
Does the bird have a long neck?	A
Does the bird have a curved beak?	B
Does the bird have a straight beak?	

Q30a As increase in the temperature of the surrounding air causes polar ice caps to melt and increase sea level.

Q30b (✓) decrease

Q30c When the parent turtle goes to the beach and lay their eggs now, few years later, if the sea level rises and covers up the beach where the eggs were buried, the turtles inside the egg will die.

Q31a X and D

Q31b It is brightly coloured to attract insects and help to pollinate the flower.

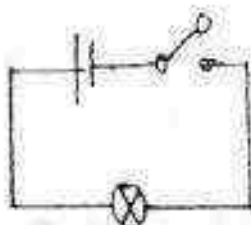
Q31c So that when the pollen grains from the anther lands on part A, the pollen grains will not fall off and so pollination can occur.

- Q32a Group A, as the seeds have wing-like structure to stay in the wind longer and travel greater distances.
- Q32b Graph D :  Graph E :
- Q32c Seeds cannot be digested and will pass out with the waste.
- Q33a Graph A
- Q33b She was breathing faster to take in more oxygen and give out more carbon dioxide during exercise.
- Q34a Amount of digested food is increasing as more digested food is absorbed into the bloodstream from the small intestine.
- Q34b X
- Q35a The nucleus and the cell membrane.
- Q35b Cell Q. It has the chloroplast that contains chlorophyll that traps sunlight to make food for the plant during photosynthesis, hence only cell Q has the chloroplast and so only cell Q can make food.
- Q36a Steel gains heat faster than plastic and is a better conductor of heat than plastic.
- Q36b The ice cream cake will gained heat from the warm knife and melt.
- Q36c Steel knife.
- Q37a Final volume of air :
- Q37b Air can be compressed but water cannot be compressed.
- Q38a Container B More water in container B is exposed to

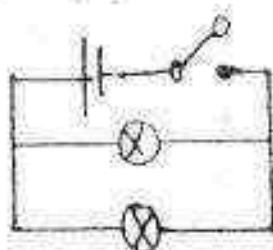
Q39a The cup filled with water moves down as it becomes heavier, emptying the water. When water is emptied, cup becomes lighter and moves up to refill.

Q39b Increase. Water will fill the cup more quickly.

Q40a



Q40b



Q40c (i) Bulb 2 will not light up but bulb 3 will light up.

(ii) The electricity can still flow through bulb 3 and return back, travelling in a circle.

Q41a Container A as its exposed surface is lesser than container B, therefore the amount of water evaporated inside it was not as much as container B.

Q41b Floating balls reduce exposed surface area of water, thus water



NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 2

2016

**BOOKLET A**

Date : 24 Oct 2016

Duration : 1 h 45 min

Name : \_\_\_\_\_ (      )

Class: Primary 5 (      )

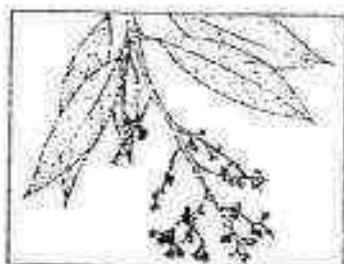
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet A consists of 18 printed pages including this cover page.**

**Section A (28 x 2 marks = 56 marks)**

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

1. The diagrams below show the same plant which has a life cycle of four years, before and after three months.



before



after

Which processes have taken place in the plant shown above?

- A dispersal
- B pollination
- C fertilisation
- D germination

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

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

2. The diagrams below show parents X and Y.



X



Y

Based on the characteristics shown, which of the following could likely be their offspring(s)?



A



B



C



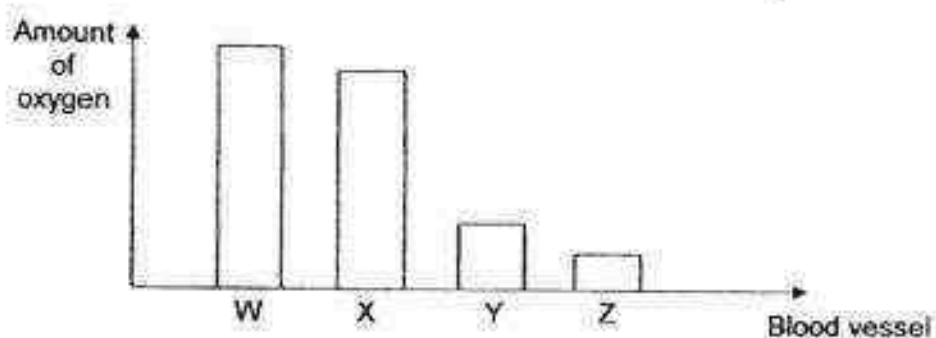
D

- (1) D only  
(3) B and D only

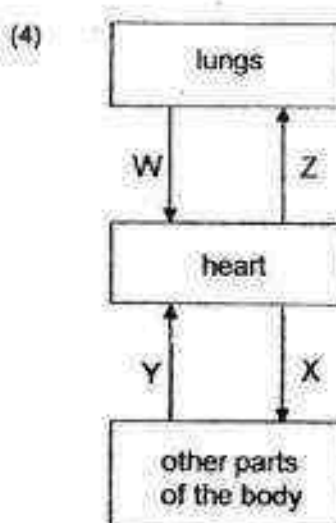
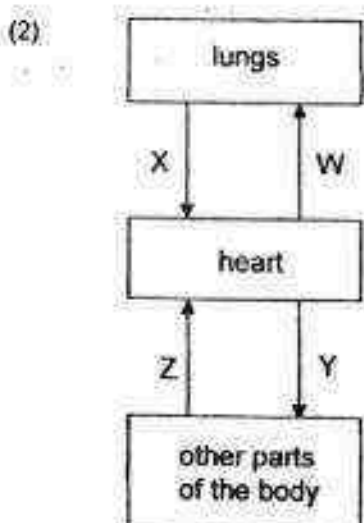
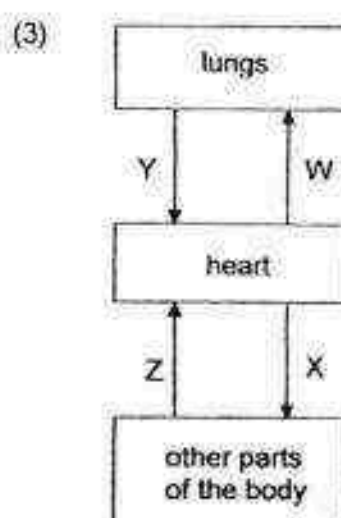
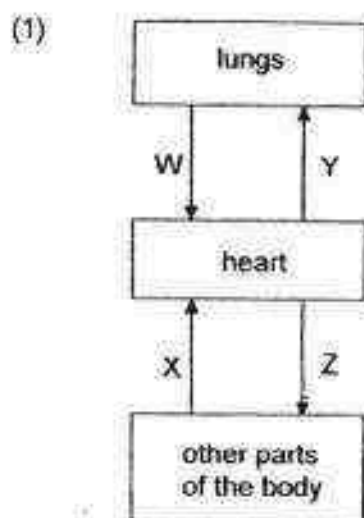
- (2) A and C only  
(4) A, C and D only



3. The graph below shows the amount of oxygen found in blood samples taken from 4 blood vessels W, X, Y and Z in the human body.



Which one of the following diagrams shows the correct movement of blood that matches the blood vessels?



4. Fishes take in and give out air in the water using gills.

Which of the following statements are correct?

- A Blood flowing from the gills to the heart is rich in oxygen.
- B Gills have a small surface area and they are rich in blood.
- C Water containing dissolved air enters the fish from under the gill covers.
- D Carbon dioxide is removed from the blood in the gills and flows out in the water under the gill covers.

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

5. Siti observed three cells, P, Q and R, and recorded her observations of each cell in the table below.

A tick (✓) shows that the cell part is present.

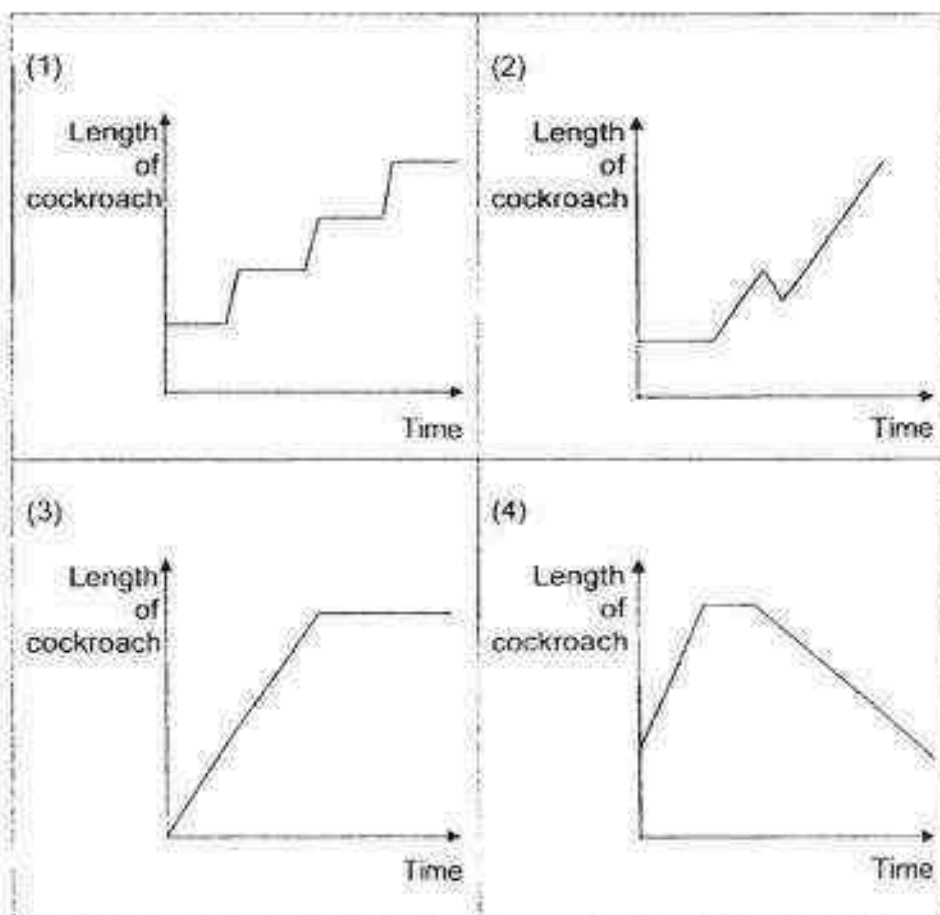
Cell Part	Cell P	Cell Q	Cell R
Nucleus	✓		✓
Cell wall	✓		✓
Chloroplast			✓
Cell membrane	✓	✓	✓

Based on the information given in the table, which of the following conclusions can Siti **correctly** draw?

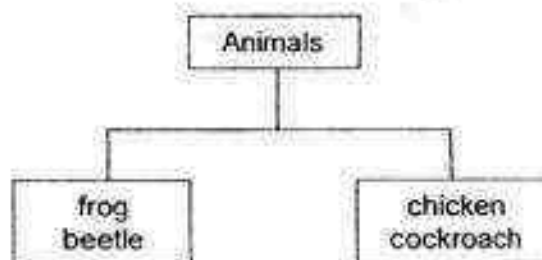
- A Only cell Q cannot divide.
- B Only cell R can photosynthesise.
- C Only cells P and Q are animal cells.
- D Only cells P and R can control the substances moving in and out of them.

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

6. Benny recorded the length of a young cockroach until it reached the adult stage. Which one of the graphs shows its changes in length?



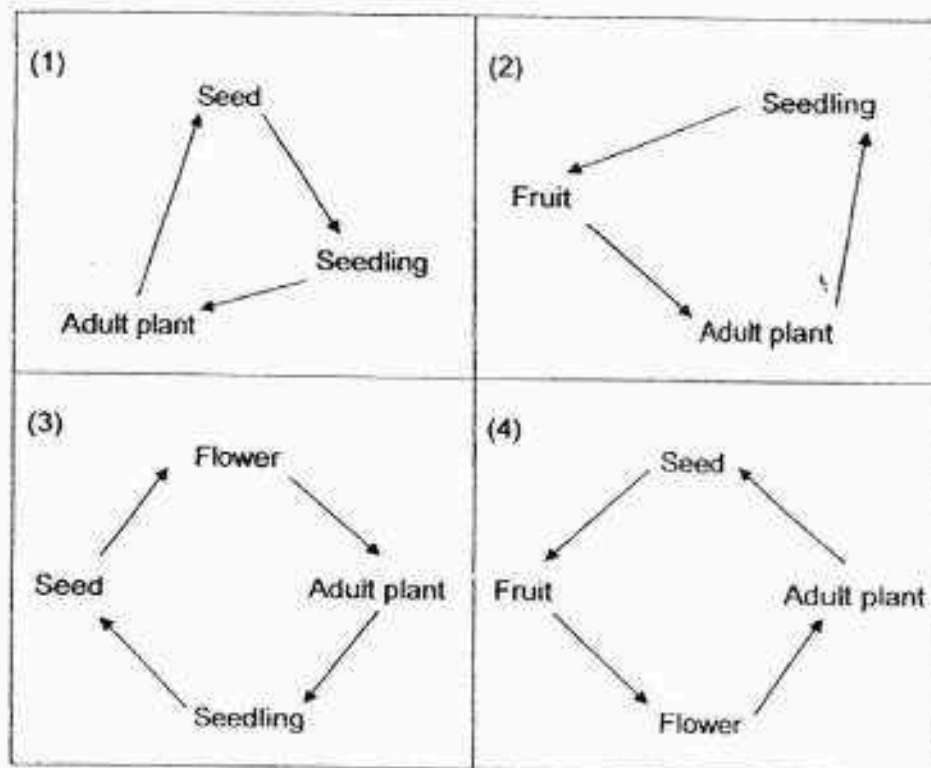
7. The classification chart below shows how some animals are being grouped.



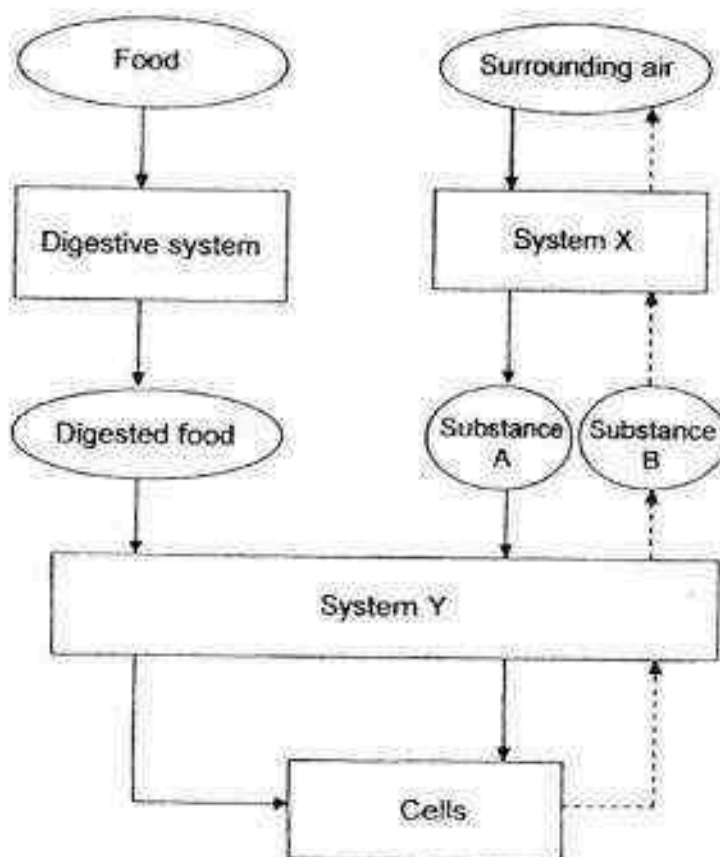
How are these animals grouped?

- (1) animal's body covering
- (2) animal's ability to moult
- (3) resemblance of young to adult
- (4) number of stages in their life cycle

8. Which one of the following shows the life cycle of a flowering plant?



9. The flow chart below shows the movement of different substances as three systems of the human body work together.



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

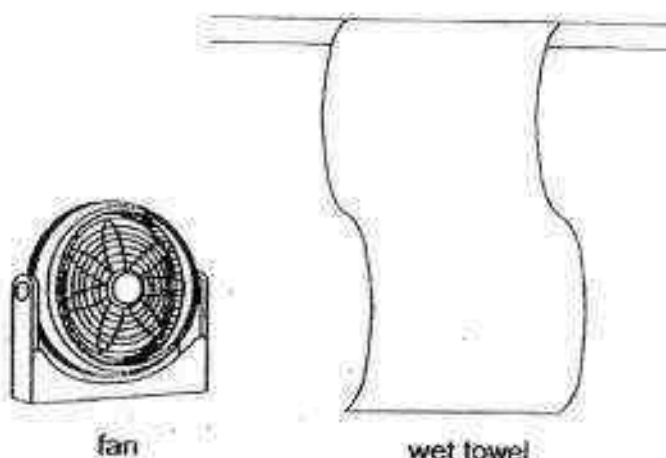
	A	B	X	Y
(1)	oxygen	carbon dioxide	respiratory	circulatory
(2)	oxygen	carbon dioxide	circulatory	respiratory
(3)	carbon dioxide	oxygen	respiratory	circulatory
(4)	carbon dioxide	oxygen	circulatory	respiratory

10. Four children, Ariel, Bree, Caili and Dinah each made a statement about the way the human digestive system works.

Ariel : Water from the food is absorbed in the large intestine.  
 Bree : Only undigested food moves into the stomach from the gullet.  
 Caili : Digested food in the small intestine is absorbed into the bloodstream.  
 Dinah : Undigested food from the small intestine moves into the large intestine to be digested

Which of the following children have made **correct** statements about how the digestive system works?

- |                                |                                  |
|--------------------------------|----------------------------------|
| (1) Ariel and Caili only       | (2) Bree and Dinah only          |
| (3) Ariel, Bree and Caili only | (4) Ariel, Bree, Caili and Dinah |
11. On very hot days, Mrs Tan would turn on her fan and place it directly in front of her wet towel to cool down the room.



How does this arrangement help to cool down the room?

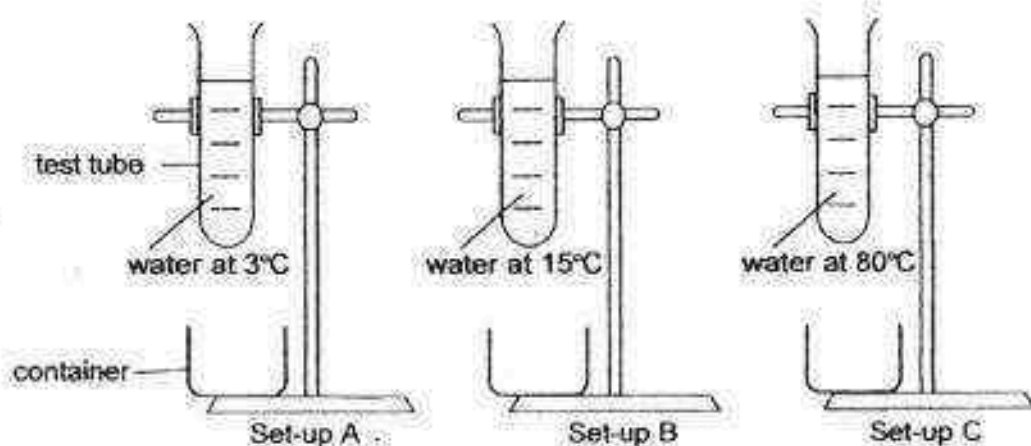
- (1) The surrounding water vapour condenses slower, causing the wet towel to dry faster.
- (2) The wet towel dries faster because the surrounding water vapour condenses faster.
- (3) The water from the wet towel evaporates faster by gaining heat from the surrounding air faster.
- (4) The water from the wet towel evaporates faster by allowing the surrounding air to gain more heat.

12. Bryan came out from a hot shower and found that the mirror in the bathroom was fogged up.

Which one of these substances had formed on the mirror?

- (1) steam
- (2) dry ice
- (3) water vapour
- (4) water droplets

13. Mdm Chia clamped 3 test tubes filled with the same amount of water at different temperatures. She placed a container below each boiling tube at room temperature as shown in the diagram below.

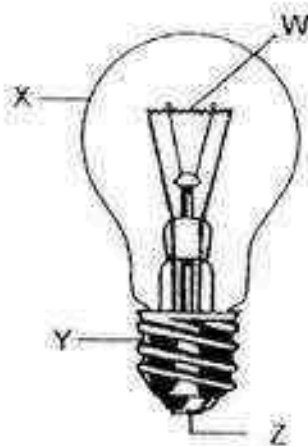


After 20 minutes, she measured the amount of water collected in each container.

In which set-up did she collect the most water?

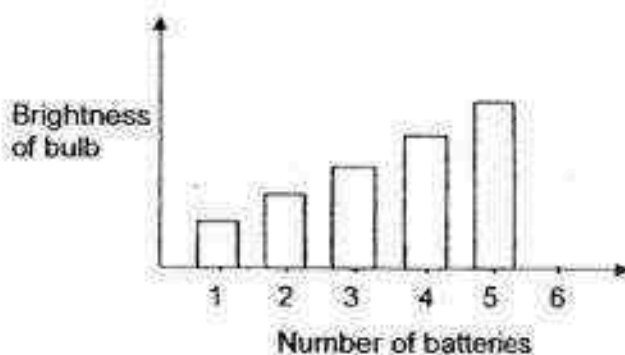
- (1) Set-up A
- (2) Set-up B
- (3) Set-up C
- (4) None of the above

14. Look at the diagram below.



Which parts of the bulb, W, X, Y or Z conduct electricity?

- (1) W and Y only
  - (2) X and Z only
  - (3) Y and Z only
  - (4) W, Y and Z only
15. Sheryl used 6 identical batteries to find out how the number of batteries affects the brightness of a bulb. The graph below shows the results of her experiment.

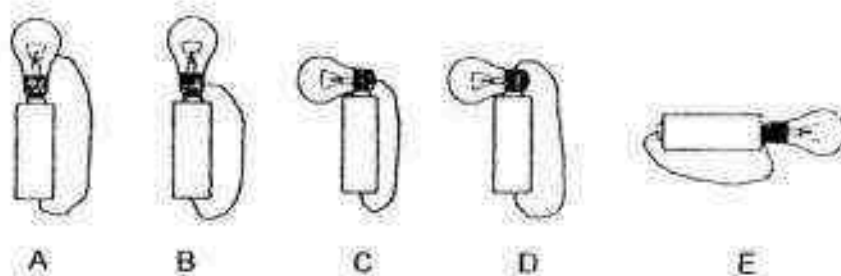


Which one of the following is a **correct** conclusion?

- (1) The bulb becomes less bright when more batteries are added.
- (2) As the number of batteries increases, the bulb become brighter.
- (3) The number of batteries has no effect on the brightness of the bulb.
- (4) The greater the number of batteries, the brighter the bulb up to a maximum of 5 batteries.

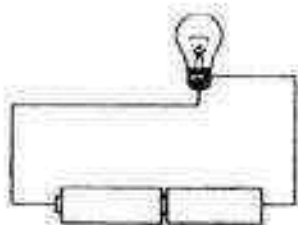


16. Nelson was given a battery, a bulb and wire. All the electrical components were working properly. He was asked to connect the three electrical parts in different ways for the bulb to light up. He set up 5 different arrangements, (A – E) as shown below.



In which of the arrangements would the bulb light up?

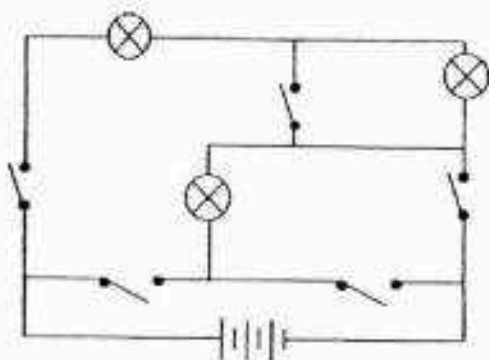
- (1) A and B only
  - (2) B and C only
  - (3) C and D only
  - (4) A, B, D and E only
17. Mr Pang set up an electrical circuit as shown in the diagram below. However, the bulb remained unlit.



Which of the following could explain why the bulb did not light up?

- A It is a closed circuit.
  - B The bulb has fused.
  - C The batteries are drained.
  - D The components in the circuit are connected wrongly.
- (1) A and D only
  - (2) B and C only
  - (3) A, B and C only
  - (4) B, C and D only

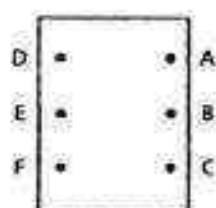
18. Study the circuit diagram shown below.



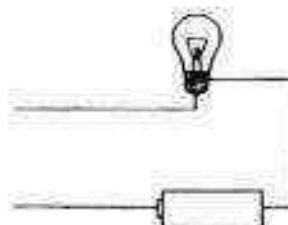
What is the least number of switches that must be closed for **all** the bulbs to light up?

- (1) 1 switch only
- (2) 2 switches only
- (3) 3 switches only
- (4) 4 switches only

19. Elliot made a circuit card with 6 fasteners, A, B, C, D, E and F which are connected on the underside. He connected a circuit tester to 2 of the fasteners at a time and placed a tick whenever the pair of fasteners allowed the bulb to light up.



circuit card

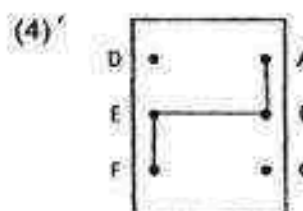
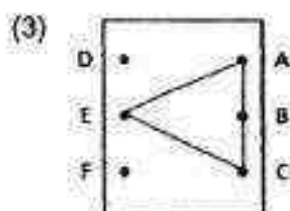
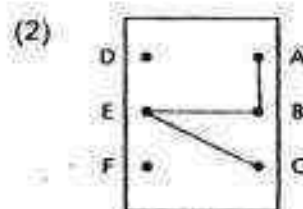
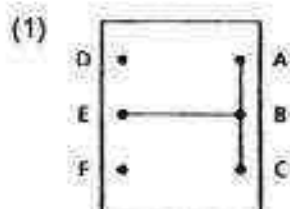


circuit tester

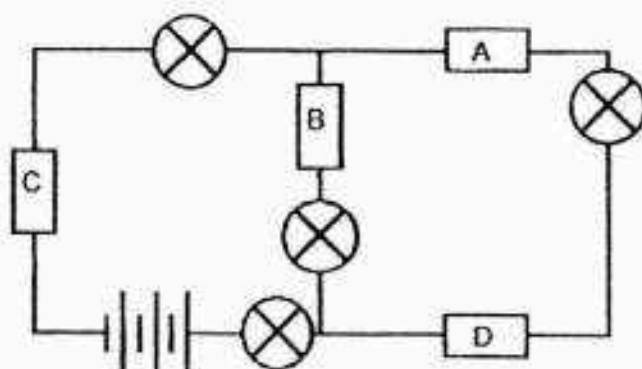
He obtained the following results.

Fasteners	A	B	C	D	E	F
A		✓	✓		✓	
B			✓		✓	
C					✓	

Based on his results, which one of the following connections is not possible?



20. Ennie used batteries, bulbs and some wire in an electrical circuit as shown below. All the electrical components were working properly. She placed four materials, rubber, steel, copper and iron, at positions A, B, C and D.

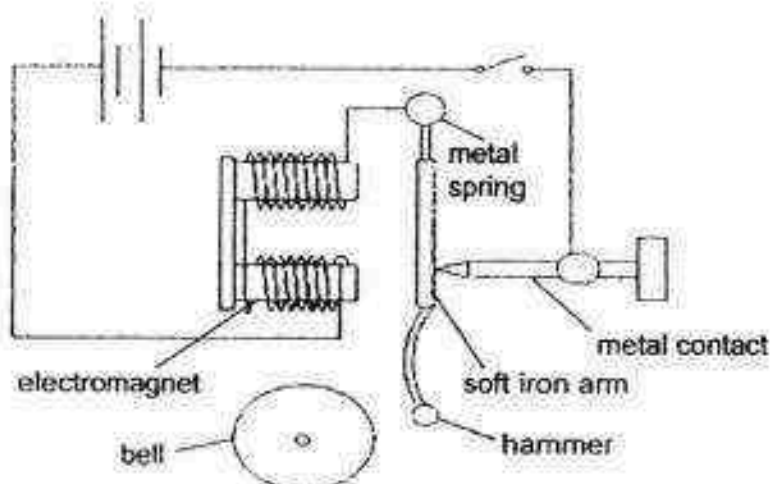


She found that none of the bulbs lit up.

How did Ennie arrange the four materials?

		Materials			
		Rubber	Steel	Copper	Iron
(1)	Position	B	C	D	A
(2)		C	A	B	D
(3)		A	D	B	C
(4)		D	C	A	B

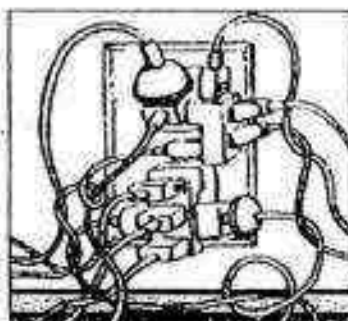
21. The diagram below shows the setup of an electrical doorbell.



Which one of the following statements is false?

- (1) When the switch is closed, a closed circuit is formed.
- (2) When the hammer hits the bell, the circuit is already open.
- (3) In a closed circuit, the electromagnet will pull the soft iron arm towards it.
- (4) The hammer will only return to its original position when the switch is open.

22. The diagram below shows a socket in Ginny's house.



What is/are the disadvantage(s) of connecting multiple plugs to the socket?

- A She may trip over the wires.
- B The plugs may get too hot and start a fire.
- C Less electricity will be used when she connects the plugs to only one socket.

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

23. Which of the following actions involve **both** a push and a pull?

- A sweeping the floor
- B twisting a towel dry
- C shaking a bottle of drink
- D opening the refrigerator door

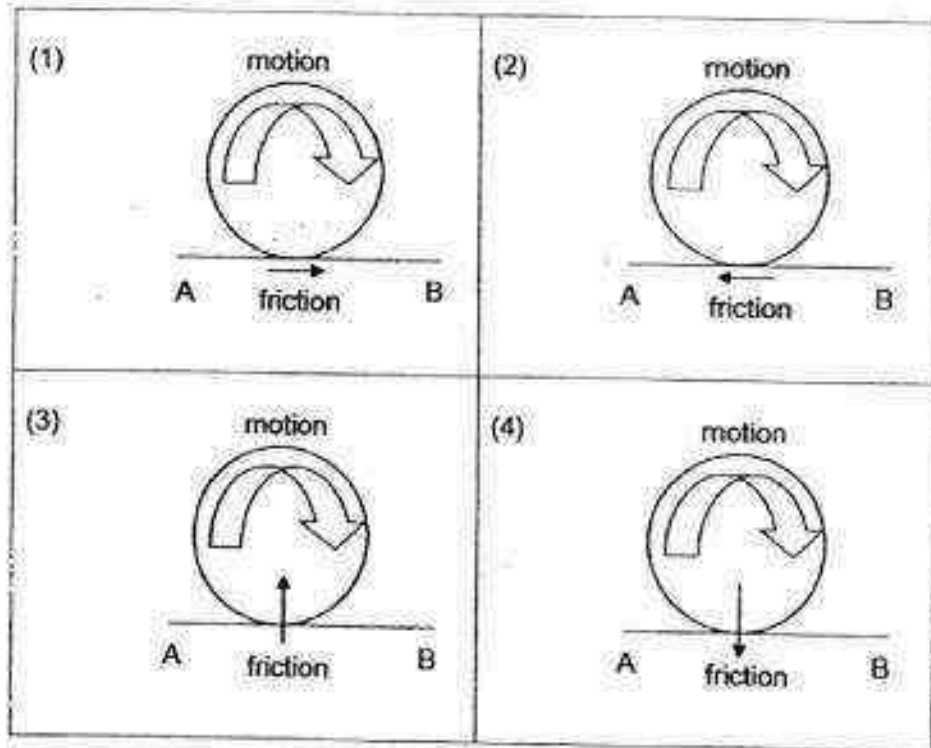
- |                     |                   |
|---------------------|-------------------|
| (1) C only          | (2) B and D only  |
| (3) A, B and C only | (4) A, B, C and D |

24. Which one of the following does not show the effects of forces?

- (1) a pail holding water
- (2) a leaf falling onto the ground
- (3) a caterpillar feeding on a leaf
- (4) a car screeching to a stop at the junction

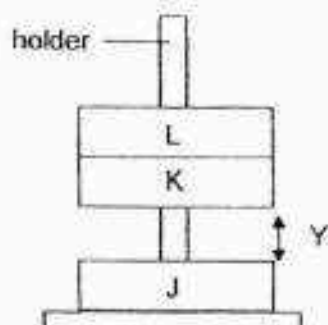
25. A wheel was rolled from point A to point B in the direction shown by the arrow.

Which one of the following shows the direction of friction acting on the wheel **correctly**?





28. Lenny placed two ring magnets, J and K, into the holder at first. He observed distance Y, the gap between the magnets. What would he notice about distance Y if he adds another magnet L to the holder as shown below?



- (1) Y would increase because magnet L is attracted to magnet K.
- (2) Y would remain the same because magnet L is not repelling magnet K.
- (3) Y would decrease because the magnetic forces of repulsion between J and K has to overcome the weight of K and L.
- (4) Y would decrease because the magnetic forces of attraction between K and L is more than the magnetic forces of repulsion between J and K.





**NANYANG PRIMARY SCHOOL**

**PRIMARY 5 SCIENCE**

**SEMESTRAL ASSESSMENT 2**

**2016**

**BOOKLET B**

**Date : 24 Oct 2016**

**Duration : 1 h 45 min**

**Name :** \_\_\_\_\_ (      )

**Class: Primary 5 (      )**

**Marks Scored:**

<b>Booklet A:</b>		<b>56</b>
<b>Booklet B :</b>		<b>44</b>
<b>Total :</b>		<b>100</b>

**Any query on marks awarded should be raised by 4 Nov 2016. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.**

**Parent's signature: .....**

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

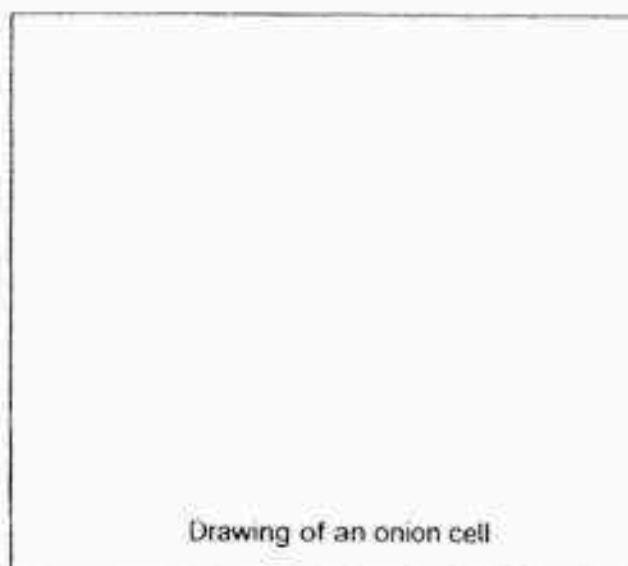
**Booklet B consists of 14 printed pages including this cover page.**

**Section B (44 marks)**

Write your answers to questions 29 to 41 in the spaces provided.

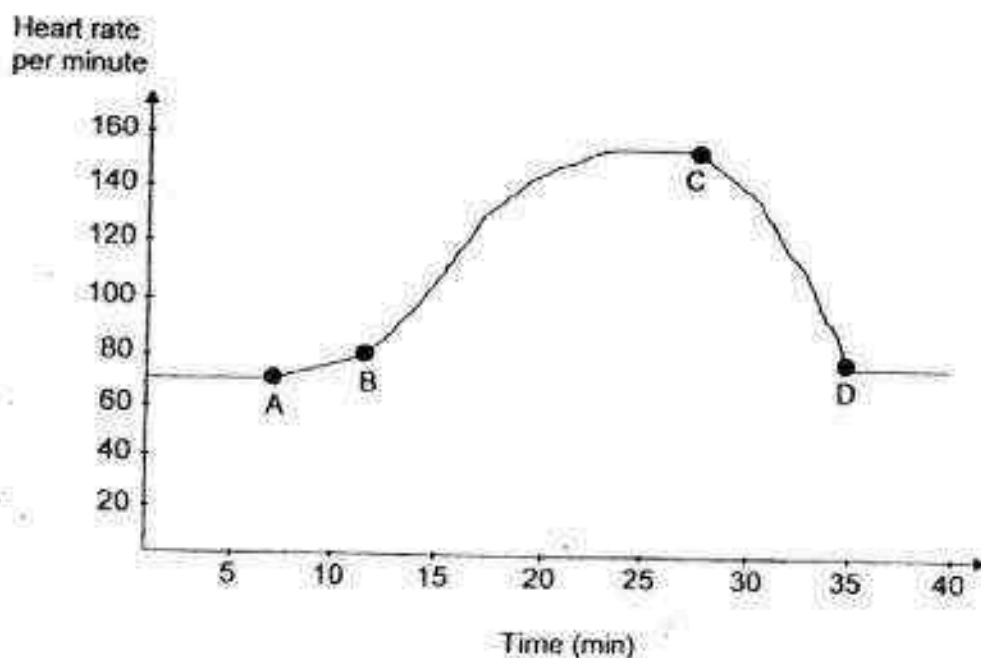
29. Mr Lin instructed his pupils to mount some onion cells on a microscope slide.

- (a) Draw one complete cell that should be observed in the box provided below. [1]



- (b) In your diagram above, **label** the two cell parts (i) and (ii) using X and Y. [2]
- (i) X : a jelly-like substance where cell activities take place
  - (ii) Y : controls the movement of substances in and out of the cell

30. The graph below shows the heart rate of Marvin for 40 minutes. He started exercising with a few minutes of warm-up stretches followed by a run around the park.



- (a) Based on the graph above, at which point, A, B, C or D did Marvin start running? [1]
- \_\_\_\_\_
- (b) Explain your answer to (a). [2]
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- (c) Marvin's brother runs more regularly than him and is fitter. If he also ran around the park with Marvin at the same speed, would his heart rate be higher or lower? Why? [1]
- \_\_\_\_\_
- \_\_\_\_\_

31. Samy conducted an experiment on seed dispersal using a toy he made. He went to the field and released it from where he stood. Next, he measured the distance,  $d$ , as shown in the diagram below. He repeated the experiment at the same time for the next two days.



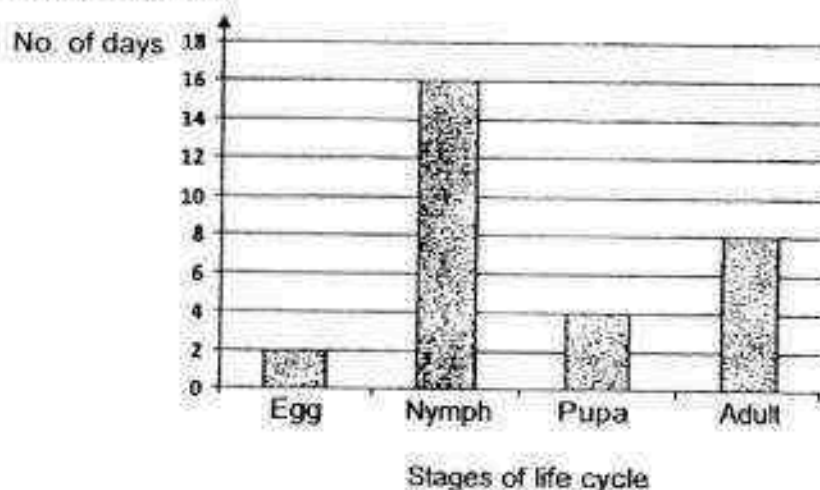
The table below shows the results he recorded.

Day	$d$ (metre)
1	2.6
2	1.8
3	4.2

- (a) Based on the results, describe the most likely characteristic of the toy dispersed. [1]
- \_\_\_\_\_
- (b) Samy concluded that the seeds of a particular tree have similar characteristics as the toy that he had made. How does this characteristic help the tree ensure continuity of their own kind? [2]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) Give a possible reason why the result for Day 3 is very different from Day 2. [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (d) Samy picked up two other seeds, observed them and concluded on their methods of dispersal. State one characteristic of each seed that correctly led him to his conclusions. [1]

Method of Dispersal	Characteristic of Seed
(i) Water	
(ii) Explosive action	

32. Lucy studied the life cycle of insect X. She recorded the number of days spent for the four stages of its life cycle. Her results are shown in the graph below.



- (a) Lucy's teacher said that she had written the name of one of the stages wrongly. Which is it and what should it be? [1]

The stage that Lucy had written wrongly: \_\_\_\_\_

The correct name for that stage: \_\_\_\_\_

- (b) How many days does it take for the young of insect X to grow into an adult from the time it hatches? [1]

\_\_\_\_\_

- (c) State one difference between the young of an insect with a 3-stage life cycle and the young of another insect with a 4 stage life cycle.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

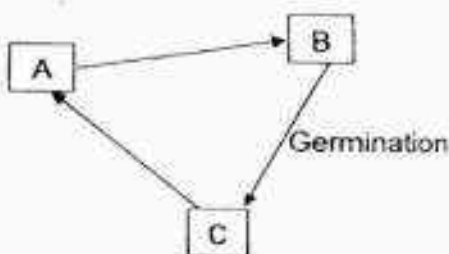
33. The diagram below shows plant K.



- (a) Xiao Long stated that it was an adult plant. Identify one part of the plant that supports his statement. [1]

---

The diagram below shows the stages in the life cycle of plant K.



- (b) Which letter represents the stage plant K is at as shown in the diagram above? [1]

Stage \_\_\_\_\_

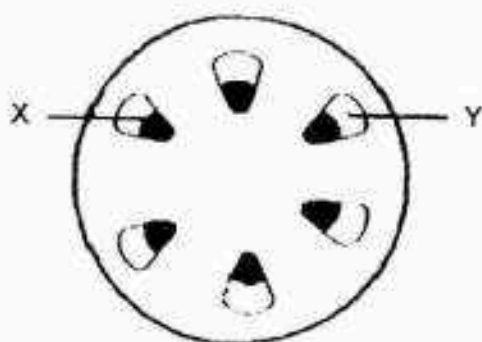
The diagram below shows plant K at one of its stages.



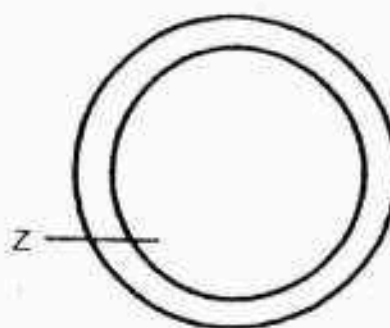
- (c) At this stage, how does plant K get its food? [1]

---

34. The diagrams below show the cross-section of a plant stem and part of a human blood vessel. X, Y and Z are tubes that carry out the function of transportation in the organisms.



cross-section of a stem



cross-section of a blood vessel

- (a) How are tubes Y and Z similar in the substance(s) that they transport? [1]

---



---

- (b) Describe one way in which tubes X and Y are different in the transportation of substances. [1]

---



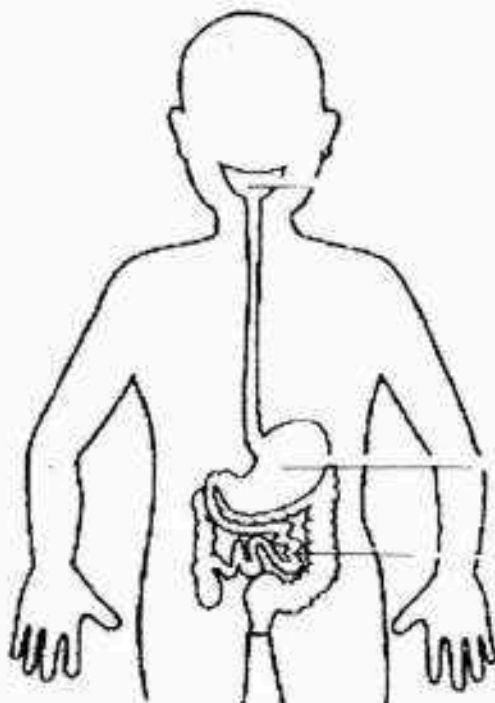
---



---

35. The diagram below shows the human digestive system.

- (a) Label and name the three parts where digestive juices are released. [1]



- (b) Digestion is complete in the small intestines.  
How does the digestive system work together with the circulatory system in the human body? [2]

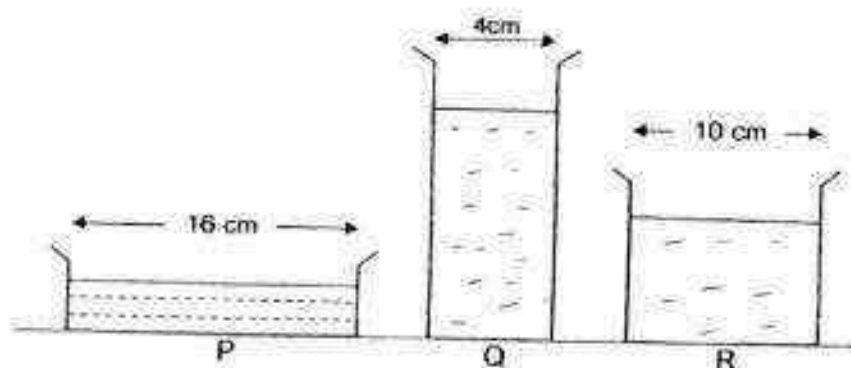
---

---

---



36. Judy carried out an experiment using 3 plastic containers, P, Q and R, of different diameters. She poured 500ml of water into each container and left them near the window as shown in the diagram below.



- (a) Draw in the water levels for containers Q and R at the start of the experiment. [1]
- (b) After 12 hours, Judy measured the amount of water left in each container. Based on the set-ups, what was the aim of her experiment? [1]

---



---

- (c) Fill in a possible result for container Q after 12 hours. [1]

Container	P	Q	R
Volume of water (ml)	200		350

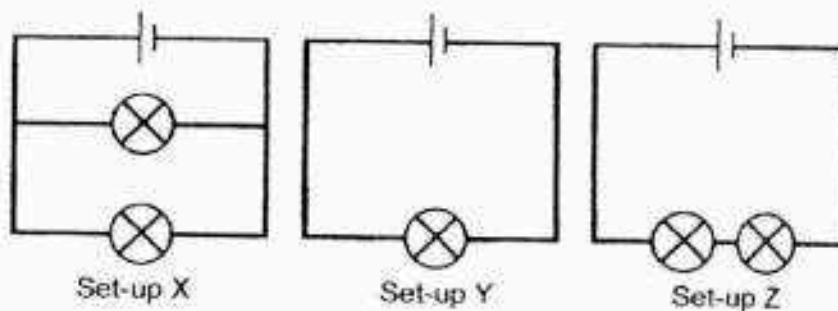
- (d) Judy commented that if all the containers were placed in a room at 20°C, the water would not evaporate at all. Did Judy make a correct statement? Explain your answer. [1]

---



---

37. Siti used batteries, bulbs and some wire to form the circuits X, Y and Z as shown in the diagrams below. All the electrical components were working properly.



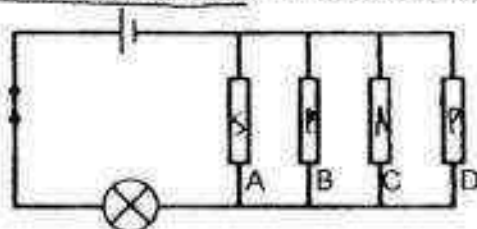
- (a) Which set-up(s) will have the brightest bulb(s)? [1]

\_\_\_\_\_

- (b) What are two disadvantages of set-up Z compared to set-up X? [2]

- (i) \_\_\_\_\_  
 \_\_\_\_\_
- (ii) \_\_\_\_\_  
 \_\_\_\_\_

38. Barry wanted to investigate whether 4 rods, A, B, C and D were electrical conductors or insulators. He used the circuit shown below.



The table below shows what happened when the switch was closed and certain rod(s) was/were removed.

Rod(s) removed from circuit	Did the bulb light up?
B	Yes
C and D	Yes
A, B and D	No
B, C and D	No

- (a) Classify the rods by putting a tick (✓) in the correct column below. [2]

Rod	Electrical Conductors	Electrical Insulators
A		
B		
C		
D		

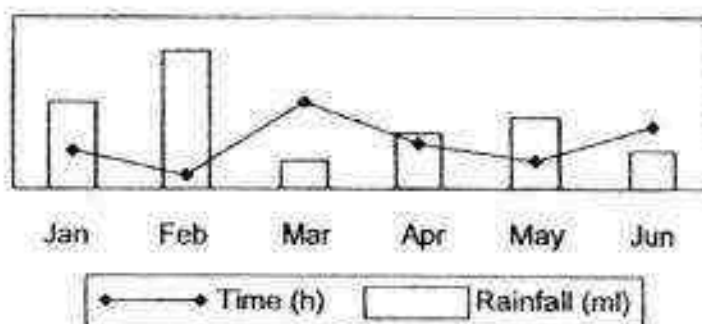
Barry replaced the 4 rods with different materials as shown below.

Rod	Material
A	Silver
B	Plastic
C	Aluminium
D	Paper

- (b) Fill in the new results obtained in the table below. [1]

Rod(s) removed from circuit	Did the bulb light up? (Yes/No)
B	
C and D	
A, B and D	
B, C and D	

39. The graph below shows the amount of rainfall in Singapore and the amount of time the air-conditioning unit in Tommy's house was switched on over 6 months.



- (a) Based on the graph above, what is the relationship between the amount of rainfall and the number of hours that the air-conditioning unit was switched on? [1]

---



---

- (b) Based on the graph above, explain why Tommy's usage of electricity for March was the highest. [2]

---



---

- (c) Besides switching off the air-conditioning unit, suggest two other methods he could use to lower his electrical bill. [2]

(i) 

---

---

(ii) 

---

---

40. Mrs Lam bought a new pair of shoes and when she brought them home, she immediately stuck an additional rough sole at the bottom of the shoes as shown below.



- (a) Explain using the concept of forces, why Mrs Lam used an additional sole. [2]

---

---

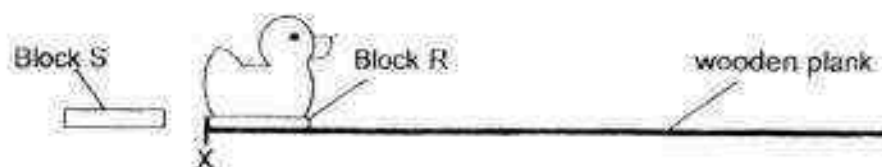
---

- (b) Give a disadvantage of the force mentioned above. [1]

---

---

41. Sally attached a rubber duck to a Block R and placed it at one end of a wooden plank as shown below. She then placed Block S 5cm behind Block R.



When she moved Block S to point X, the duck would move forward too.

- (a) Explain why the duck is able to move forward even though Block S did not touch Block R. [2]

---

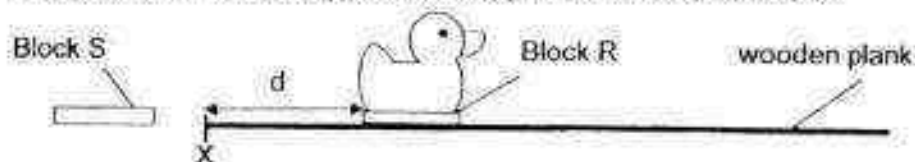


---



---

Sally then placed Blocks R and S at the same starting points again. She measured and recorded  $d$ , the distance the duck moved across the plank when she brought Block S to point X, in the table below.



Next, she applied a layer of oil onto the surface of the plank and repeated the experiment.

- (b) Fill in the box below to give a possible distance the duck moved across the plank when oil was applied. [1]

	Original surface	Oil applied to surface
$d$ , the distance moved by the duck across the plank (cm)	4	_____

- (c) Give a reason for your answer in (b) [1]

---



---

**YEAR** : 2016  
**LEVEL** : PRIMARY 5  
**SCHOOL** : NANYANG PRIMARY  
**SUBJECT** : SCIENCE  
**TERM** : SA2

**Booklet A**

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

**Booklet B**

**Q29a & b**



**Q30a** B

**Q30b** His heart rate increased the most from point B. More energy is needed when Marvin exercised harder and his heart beat faster to transport more oxygen and digested food to yield more oxygen energy. More carbon dioxide and waste materials had to be removed from the body.

**Q30c** His heart rate would be lower. Being more fit, his heart can pump blood more efficiently each time as compared to Marvin.

**Q31a** Wing-like structure.

**Q31b** They will not be overcrowded and will reduce competition for water, sunlight, space and minerals salts.

**Q31c** There is more wind blowing the toy in Day 3 than in Day 2.

**Q31d**

Method of Dispersal	Characteristic of Seed
(i) Water	Fibrous husk which traps air
(ii) Explosive action	Dry pod

**Q32a** The stage that Lucy had written wrongly: Nymph  
The correct name for that stage: Larva

**Q32b** 20 days

**Q32c** The young of an insect from a 3-stage life cycle resembles the adult but the young of the insect from a 4-stage life cycle does not.

**Q33a** It has flowers.

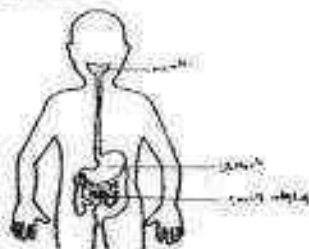
**Q33b** Stage : A

**Q33c** Seed leaves.

**Q34a** Tube Y transports food to all parts of the plant and tube Z transports food to all parts of the body.

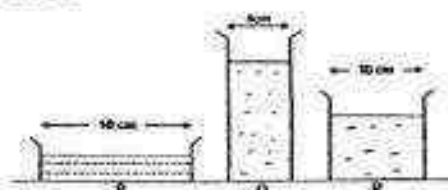
**Q34b** Tube X transports water and minerals from the roots to the rest of the plant while tube Y transports food from the leaves to the rest of the plant.

**Q35a**



**Q35b** After digestion is completed in the small intestine, the digested food from the digestive system would be absorbed by the bloodstream and transported to all parts of the body by the circulatory system.

**Q36a**



**Q36b** To find out how the exposed surface area of the water affects the rate of evaporation.

**Q36c** Q : 400



**Q36d** No. Water evaporates at any temperature.

**Q37a** Set-ups X and Y.

- Q37b** (i) If one bulb fuses, the other bulb would not light up.  
(ii) The light is dimmer for each bulb.

**Q38a**

Rod	Electrical Conductors	Electrical Insulators
A		✓
B	✓	
C		✓
D	✓	

**Q38b**

Rod(s) removed from circuit	Did the bulb light up? (Yes/No)
B	Yes
C and D	Yes
A, B and D	Yes
B, C and D	Yes

**Q39a** The higher the amount of rainfall, the lesser the number of hours that the air-conditioning unit was switched on.

**Q39b** March has the lowest rainfall so the temperature is the hottest. He used most electricity when he turned on the aircon.

- Q39c** (i) Use a fan instead of an air-conditioner.  
(ii) Turn off lights when not in use.

**Q40a** So she would prevent herself from slipping on wet days as there is greater frictional force between the rough sole and the ground.

**Q40b** It causes things to wear out.

**Q41a** Both block save magnets and the like poles are facing each other so blocks will repel block R which results in the duck moving.

**Q41b** Oil applied to surface : 6

**Q41c** Oil reduces the friction between block R and the plank, so it is able to move further.

End



PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
SEMESTRAL EXAMINATIONS 2

PRIMARY 5  
SCIENCE  
(BOOKLET A)

27 OCT 2016

Name: \_\_\_\_\_ (    )

Class: Loyalty \_\_\_\_\_

Total time for Booklets A and B: 1 h 45 min

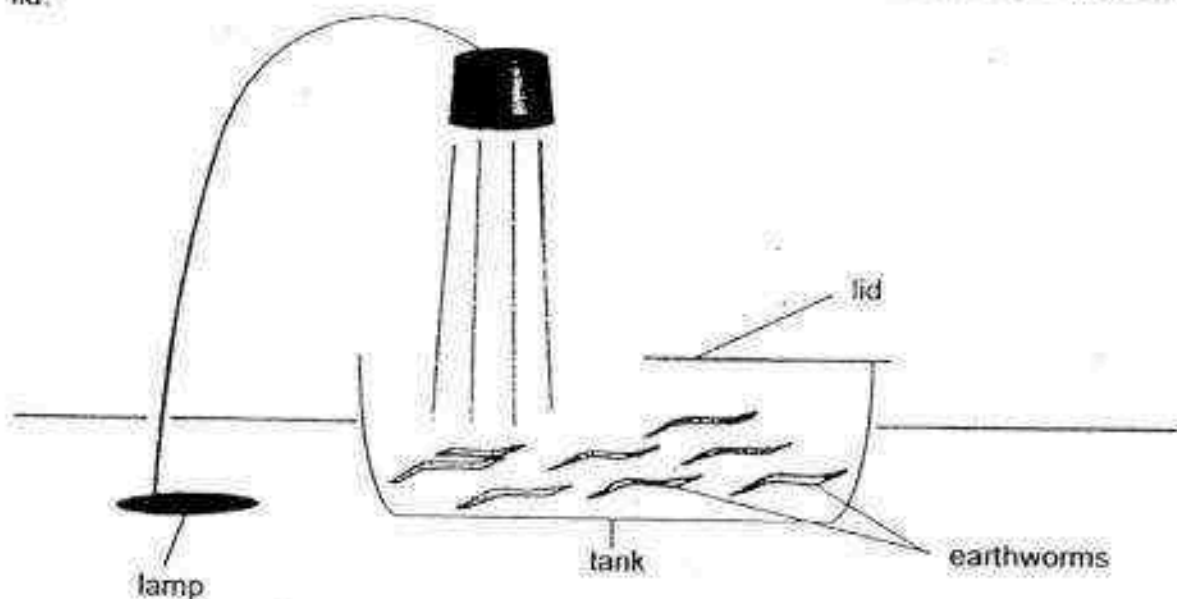
**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

This booklet consists of 19 printed pages, excluding the cover page.

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet provided. [56 marks]

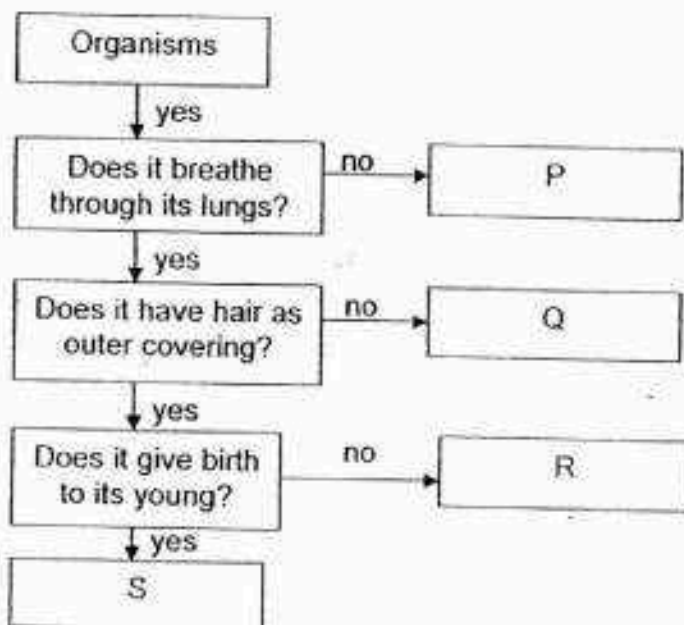
1. Jaslyn placed a table lamp beside a tank of earthworms and turned on the lamp. After 15 minutes, she observed that most of the earthworms moved to the area under the lid.



What did the experiment show?

- (1) Animals can reproduce.
- (2) Animals respond to changes.
- (3) Animals need light to survive.
- (4) Animals need warmth to survive.

2. Study the flow chart below.



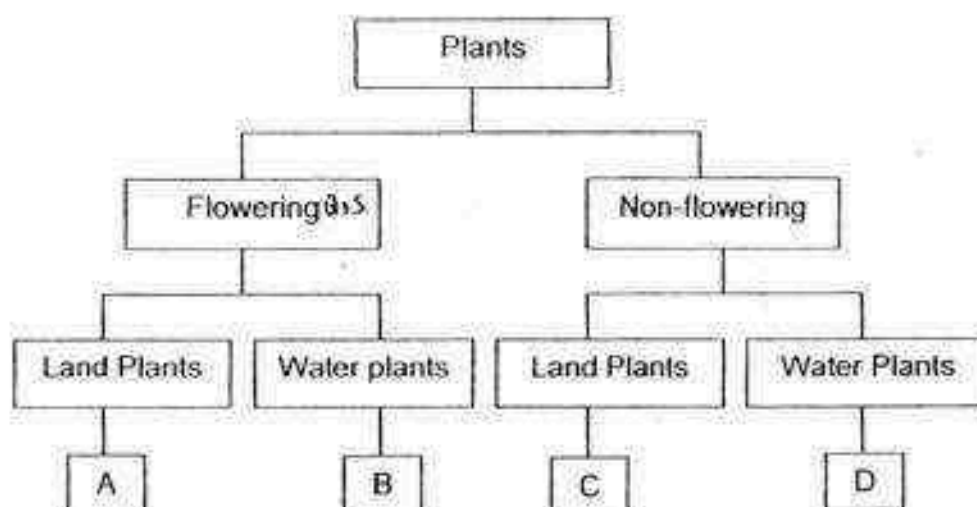
Which letter would represent a "cat"?

- (1) P
- (2) Q
- (3) R
- (4) S

3. The following table gives some information on 4 plants, P, Q, R and S. A tick (✓) shows that the plant has the characteristic.

Plants	Characteristics		
	It has seeds	It has spores	It takes in dissolved oxygen
P		✓	
Q	✓		✓
R		✓	✓
S	✓		

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



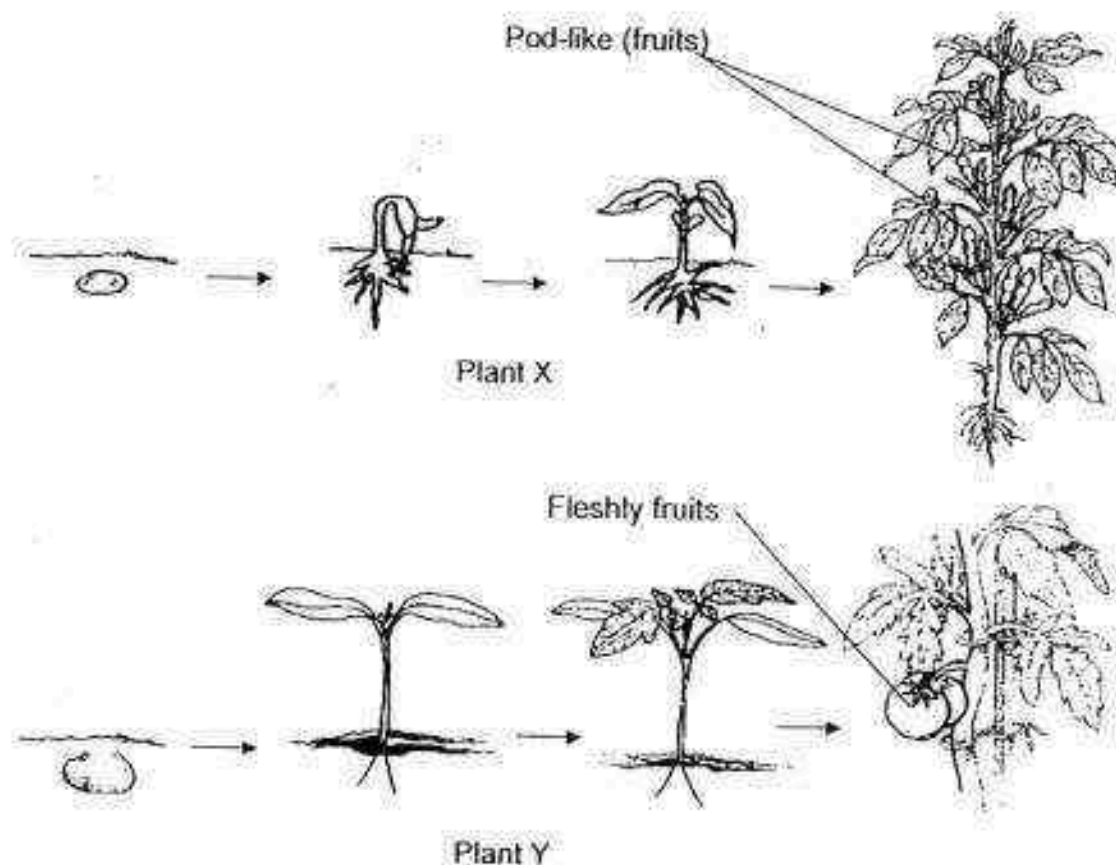
	Plant P	Plant Q	Plant R	Plant S
(1)	A	B	C	D
(2)	B	C	A	D
(3)	C	B	D	A
(4)	D	A	C	B

4. Gary listed 4 statements about the life cycle of animals in his Science journal.
- A All living things have similar stages in their cycles.
  - B A life cycle shows the order of the different stages.
  - C The life cycle of a bird consists of the egg, young and adult stages.
  - D A life cycle is a pattern that repeats itself in the lives of living things.

Which of the following statements about life cycle are correct?

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

5. The diagram below shows the life stages of a plant X and plant Y.



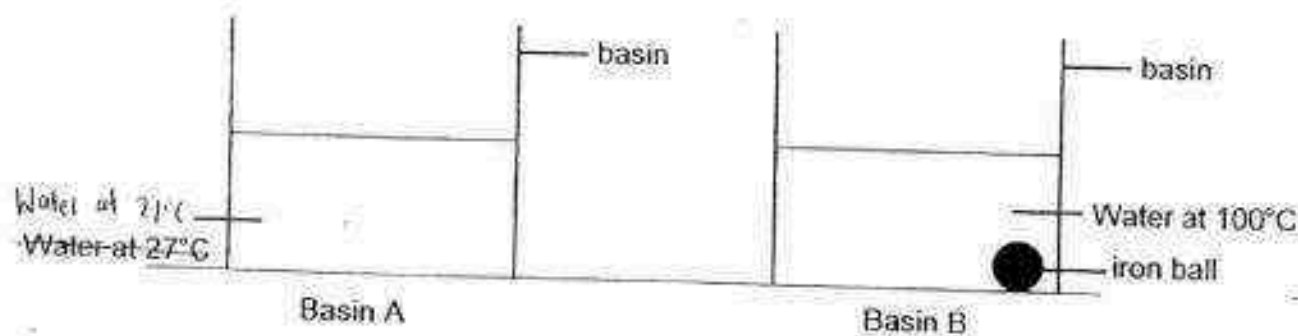
Ali made the following statements

- A Both plants are flowering plants.
- B Both plants contain more than one fruit
- C Both plants have the same number of stages in their life cycle.
- D Both plants take the same amount of time to complete their cycle.

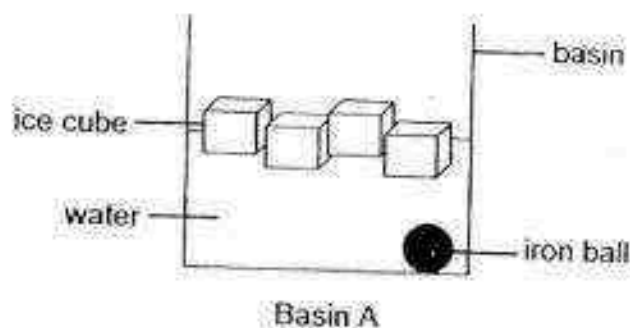
Which of the statements that Ali made about both plants are definitely true?

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

6. Susan carried out the following experiment at room temperature. Basin A is filled with water at  $27^{\circ}\text{C}$  and Basin B is filled with boiling water at  $100^{\circ}\text{C}$ . She placed an iron ball in Basin B for 10 minutes.



After 10 minutes, the iron ball and some ice-cubes were placed into Basin A.



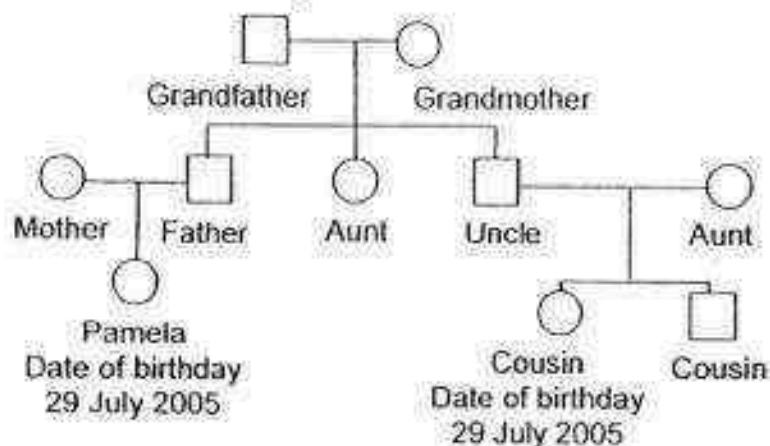
Which of the following will happen?

- A The water in Basin A will lose heat to the iron ball.
- B The iron ball will lose heat to the water in Basin A.
- C The water in Basin A will lose heat to the ice-cubes.
- D The ice cubes will gain heat from the water in Basin A and surrounding air.

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

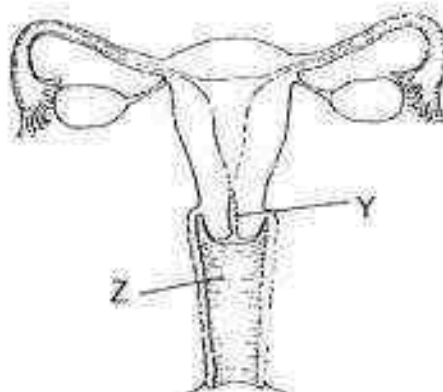


7. The diagram below shows a family tree of Pamela.



Pamela has some physical characteristics that resemble her cousin. Why is this so?

- (1) They have the same set of parents.
  - (2) They were both born on 29 July 2005.
  - (3) They were produced from the same egg.
  - (4) They have the same set of grandparents.
8. The diagram below shows the female reproductive system of a human.



When a woman removed both her ovaries, her doctor informed her that she will not be able to get pregnant.

Which one of the following statements explains why she will not be able to get pregnant?

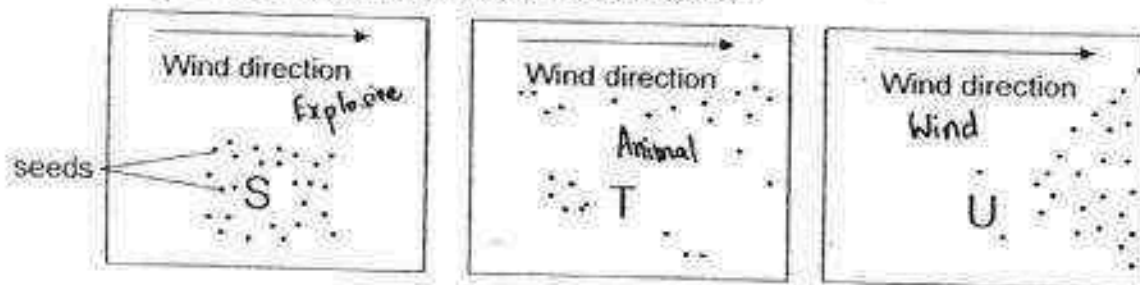
- (1) The sperm cells entering Z will die.
- (2) The sperm cells will not be able to enter Y.
- (3) The woman will not be able to produce egg cells for fertilisation.
- (4) The ovary will not be able to meet the sperm cell for fertilisation.

9. Which of the following statements are true?

- A All flowers have male and female parts
- B Some grasses are wind pollinated flowering plants
- C Flower petals are dull coloured to attract insects for pollination
- D The male parts of a flower consist of the filament and the anther

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

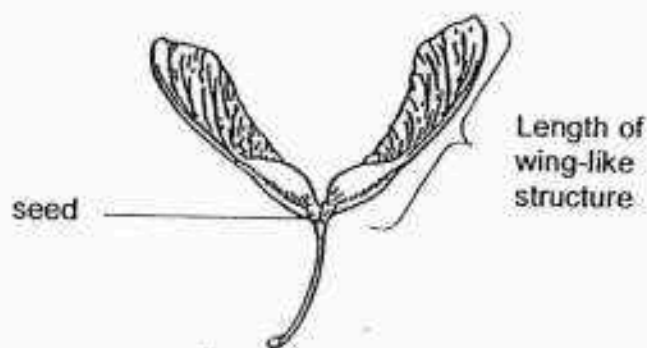
10. Study the dispersal of seeds by plants S, T and U.



How were the seeds of plants S, T and U dispersed?

	S	T	U
(1)	animal	explosive action	wind
(2)	explosive action	animal	wind
(3)	animal	wind	explosive action
(4)	wind	animal	explosive action

11. Joshua wanted to find out how the length of the wing-like structure of the seed affects the time taken for the seed to reach the ground.



Which of the following should be kept constant for a fair test?

- A Number of wing-like structure.
  - B Length of wing-like structure of seeds.
  - C Height from which the seeds are dropped.
  - D Location of where the experiment was carried out.
- (1) A and D only  
(2) B and C only  
(3) A, C and D only  
(4) B, C and D only

12. Razak poured 150ml of water into each of the four different containers P, Q, R and S. He then left them in the open field for a day. The table below which shows the amount of water left in the four containers at the end of the day.

Container	Amount of water left at the end of the day (ml)
P	130
Q	80
R	100
S	80

Based on the results above, which of the following are true?

- A The water in P evaporates the fastest.
- B The water in Q and S evaporate at the same rate.
- C The rate of evaporation of water in R is faster than that in P.
- D The rate of evaporation of water in P is slower than that in Q.

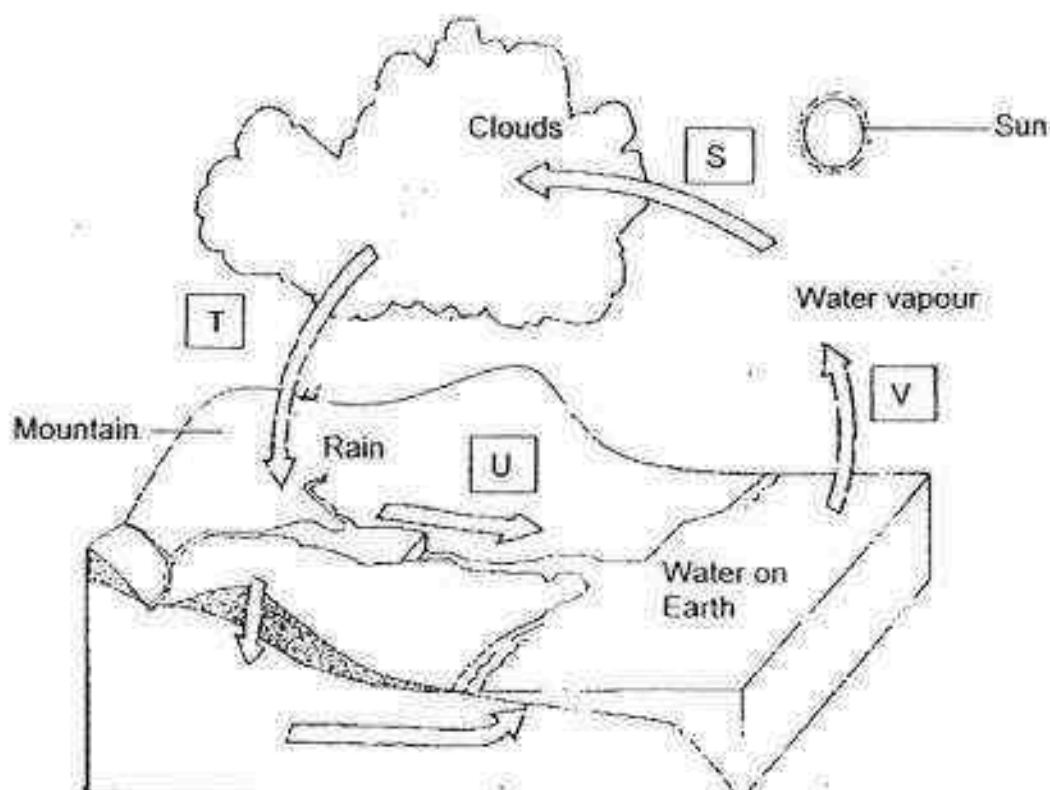
- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) B, C and D only

13. Substance H is a solid at 30°C and a liquid at 200°C.

Which one of the following is the melting and boiling point of H?

	Melting point of H (°C)	Boiling point of H (°C)
(1)	20	100
(2)	20	300
(3)	40	100
(4)	40	300

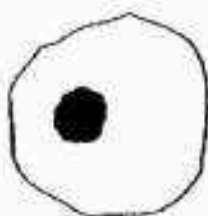
14. Study the water cycle below.



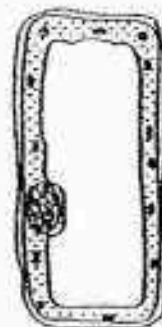
Which of the following shows the changes in the states of water and the heat transfer at S, T, U and V correctly?

		Change in state	Heat transfer
(1)	S	Gas to Liquid	Heat loss
(2)	T	Gas to Liquid	Heat gain
(3)	U	Gas to Liquid	Heat gain
(4)	V	Liquid to Gas	Heat loss

15. The diagram shows an animal cell and a plant cell.



Cell A



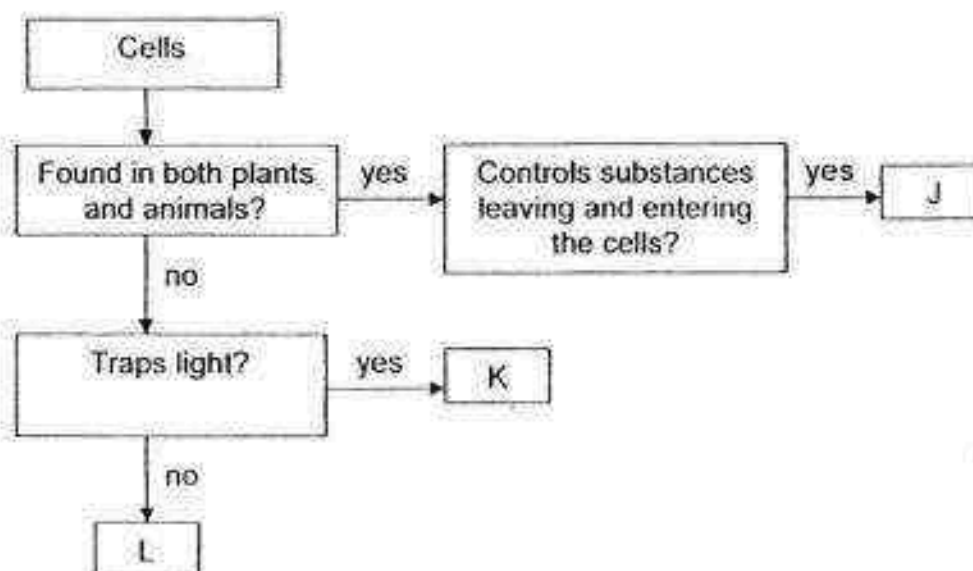
Cell B

Which statements about cell A and cell B are true?

- A Cell A is plant cell.
- B Both cells have a nucleus.
- C Only cell B has cytoplasm.
- D Only cell B has a cell wall.
- E Both cells cannot make food.

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

16. Study the flow chart carefully.



Which one of the following correctly represents J, K and L?

	J	K	L
(1)	Cell wall	Chloroplast	Cell membrane
(2)	Cell membrane	Chloroplast	Cell wall
(3)	Cell membrane	Nucleus	Cell wall
(4)	Cytoplasm	Chloroplast	Nucleus

17. Why do our cells have to undergo cell division?

- A To replace cells that die
- B To help repair damaged parts of our bodies
- C To use up the food that is found in the cells
- D To increase the number of cells to form tissues

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

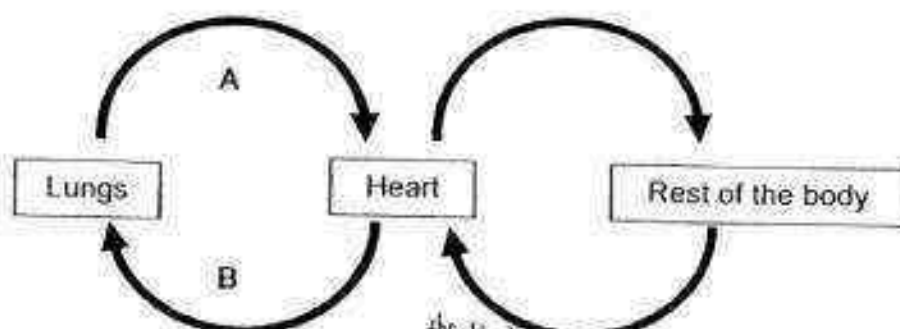
18. Natasha is doing the incline pull-ups.



Her breathing rate increase and her heart beats very fast. Her lungs take in more \_\_\_\_\_ (X) \_\_\_\_\_ and her heart pumps more \_\_\_\_\_ (Y) \_\_\_\_\_ to various parts of body.

	X	Y
(1)	air	oxygen
(2)	oxygen	oxygen
(3)	oxygen	blood
(4)	air	blood

19. The diagram below shows the blood flow between the heart, the lungs and the rest of the body.



Which one of the following best describe <sup>the blood</sup> at A and B?

	A	B
(1)	Rich in oxygen, poor in carbon dioxide	Rich in carbon dioxide and oxygen
(2)	Rich in carbon dioxide, poor in oxygen	Poor in carbon dioxide and oxygen
(3)	Rich in oxygen, poor in carbon dioxide	Rich in carbon dioxide, poor in oxygen
(4)	Rich in carbon dioxide, poor in oxygen	Rich in carbon dioxide and oxygen

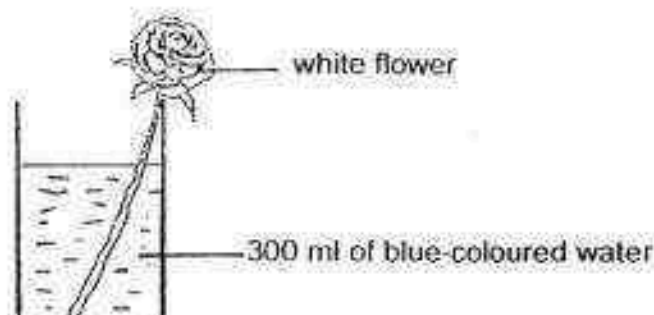


20. Claris used a sensor to measure the amount of oxygen taken in by a plant over a 24-hour period. She observed that the plant took in oxygen both during the day and at night. What can she infer from the experiment?

A Plants do not take in carbon dioxide.  
 B Plants need carbon dioxide for photosynthesis.  
 C Plants require oxygen during the day and at night.  
 D Plants photosynthesise during the day and at night.

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

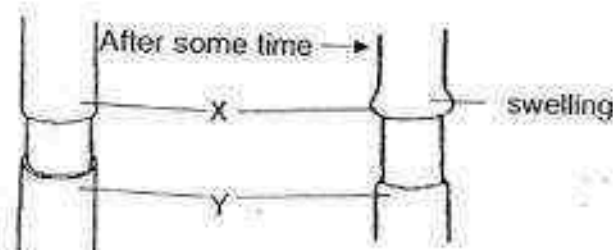
21. Lina set up the experiment shown below. She placed a white flower in a beaker with 300 ml of blue coloured water at the start of the experiment.



What will she observe after 8 hours?

	Amount of water left in beaker	Colour of flower
(1)	300 ml	White
(2)	300 ml	Blue
(3)	280 ml	White
(4)	280 ml	Blue

22. The diagram shows part of a plant with the outer layer of its stem between X and Y removed.



There are leaves above X only, and it was observed that Part X swelled after some time.

Which of the following explain the observation?

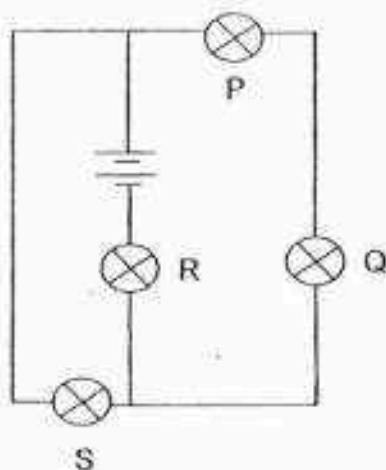
- (1) The leaves were not able to make food.
  - (2) The roots were not able to absorb water.
  - (3) The food made by leaves was stored in X.
  - (4) The water absorbed by the roots was stored in X.
23. The table compares the plant transport system and the human circulatory system.

		Plant Transport System	Human Circulatory System
A	Consist of tubes that transport substances in the system	Yes	Yes
B	Consist of pumps to transport substances in the system	Yes	Yes
C	Transports substances in the opposite direction in different tubes	No	No
D	Carry waste materials to other systems	No	No

Which of the above comparisons between the plant transport system and human circulatory system is/are correct?

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

24. Study the electrical circuit below.



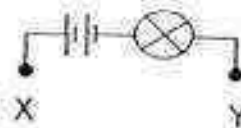
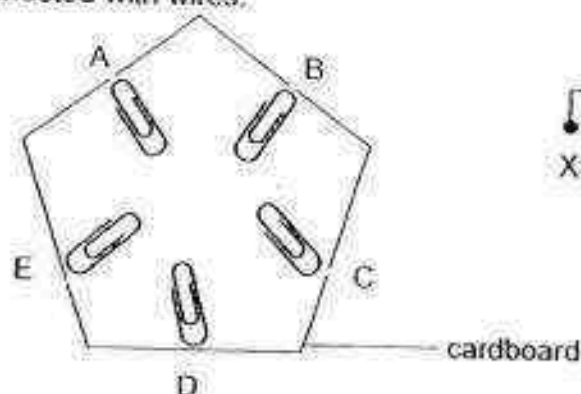
One of the bulbs has fused, however the three other bulbs remain lit. Which is the fused bulb?

- (1) P
  - (2) Q
  - (3) R
  - (4) S
25. Simon wanted to carry out an experiment to find out how the arrangement of bulbs will affect the brightness of the bulbs in the circuit. Which of the following variable(s) must he keep the same to ensure a fair experiment?

- A Type of batteries
- B Number of batteries
- C Arrangement of the bulbs

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

26. There are five clips A, B, C, D and E on a cardboard as shown below. Some of the clips are connected with wires.

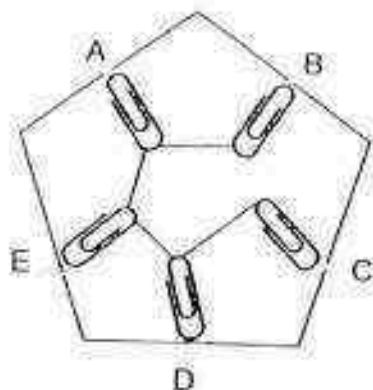


Hisham connected a circuit tester to two clips at a time to find out which clips are connected. He recorded his results in the table below.

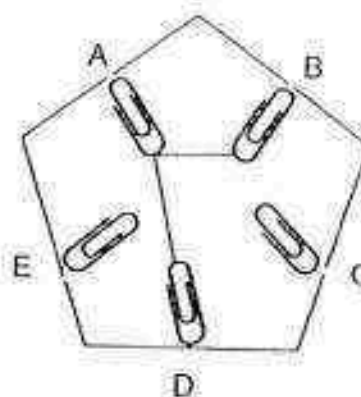
Clips that are connected	Does the bulb light up?
A and B	Yes
D and E	No
C and D	No
A and D	Yes
B and C	No

Which one of the following correctly shows the clips that are connected with wires?

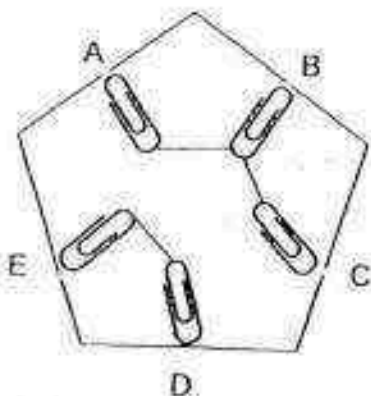
(1)



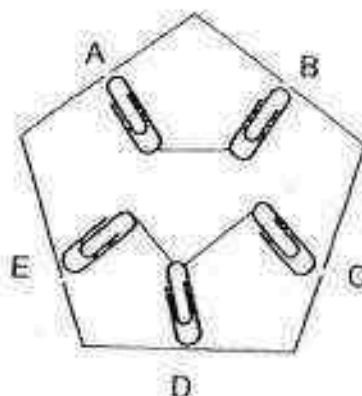
(2)



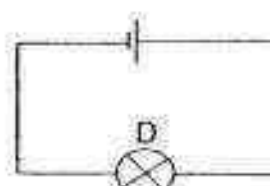
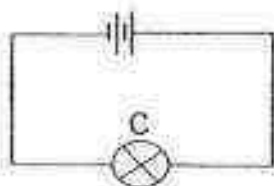
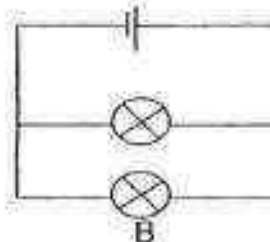
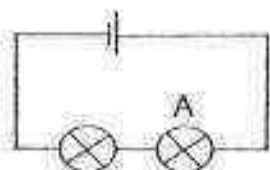
(3)



(4)



27. Which two light bulbs are of the same brightness?



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

28. Which of the following statements are correct about electrical usage?

- A Electrical appliances with worn out cables should not be used.
- B Putting hot food in the refrigerator will not affect the amount of electricity used.
- C It is safe to touch switches with wet hands because the switches are made of insulating material.
- D To save electricity, we should use the fan more than the air-conditioner, as the fan uses less electricity.

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



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL  
SEMESTRAL EXAMINATIONS 2**

**PRIMARY 5  
SCIENCE  
(BOOKLET B)**

27 OCT 2016

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

Class: Loyalty \_\_\_\_\_

Parent's Signature

Total time for Booklets A and B: 1 h 45 min

**INSTRUCTIONS TO CANDIDATES**

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Marks (Booklet A) :	56
Marks (Booklet B) :	44
Total Marks (Booklets A & B) :	100

This booklet consists of 14 printed pages, excluding the cover page.

Write your answers to the questions 29 to 41 in the spaces provided.

The number of marks available is shown in brackets [ ] at the end of each question or part question. (44 marks)

29. Study the following table carefully and answer the questions that follow.

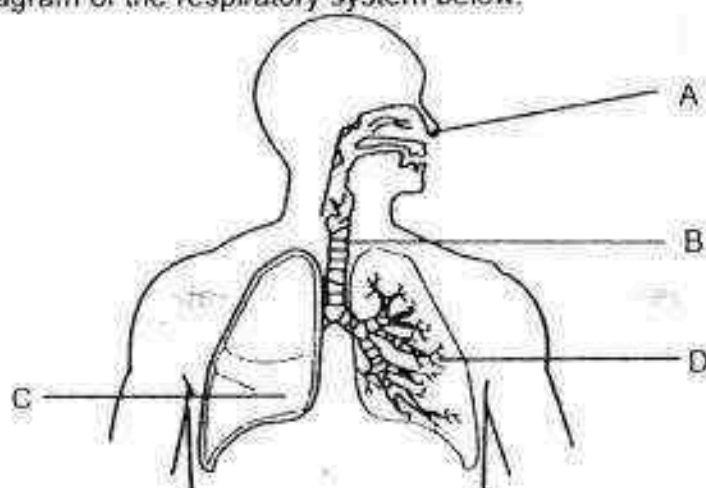
Group X	Group Y
Spectacle lens	Wooden Table
Car windscreen	Metal Can
Glass bulb	Red Brick

- (a) What would be a suitable heading for each group? [2]

Group X: \_\_\_\_\_

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

30. Study the diagram of the respiratory system below.



- (a) What does each of the letters represent? [2]

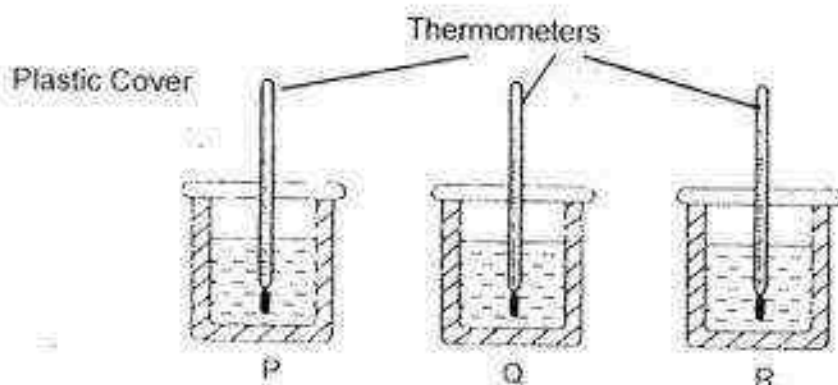
A: \_\_\_\_\_

C: \_\_\_\_\_

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

D: \_\_\_\_\_

31. Constance set up an experiment using three similar beakers made of different materials P, Q and R as shown in the diagram below. She filled each beaker with 500ml of water at 90 °C.



After 20 minutes, she recorded the temperature of water in each beaker as shown in the table below.

Material	Temperature of water (°C) after 20 minutes
P	45
Q	40
R	55

- (a) Based on the table above, which material, P, Q or R kept the water warm for the longest possible period of time? Explain why. [1]

---



---

- (b) Constance cooled down the beakers to room temperature. She poured away the water and placed one ice cube into each of the beakers. In which beaker will the ice melts the fastest? Explain why. [1]

---



---

- (c) Explain how Constance can check for reliability in her results. [1]

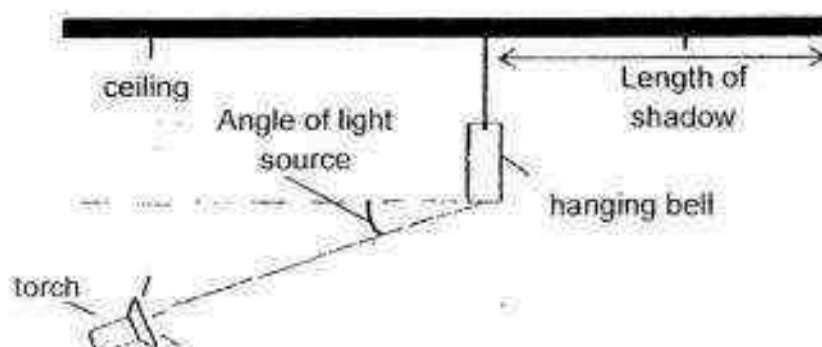
---



---



32. Fiona carried out an experiment on light energy. Keeping the distance between the hanging bell and the torch the same, she shone her torch at the bell from different angles as shown.



Fiona then measured the length of each shadow formed. The table below shows her results.

Angle of light source (degree)	Length of shadow (cm)
40	35
50	30
60	25
70	20

- (a) Put a tick (✓) in the correct box to indicate whether the variables stated below is a changed variable or result variable in Fiona's experiment. [1]

	Changed Variable	Results
Angle of light source		
Length of shadow		

- (b) Explain why the hanging bell cast a shadow. [1]

---



---

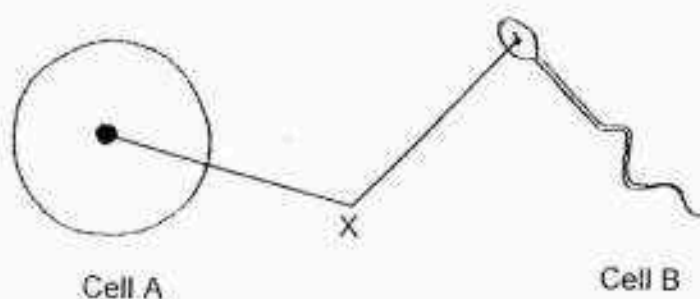
- (c) What can Jeremy conclude from his experiment? [1]

---



---

33. The diagram below shows two types of cells found in humans which play an important role during reproduction.



- (a) What is cell A and where is it produced? [1]

---

---

- (b) State the two functions of part 'X'. [1]

---

---

- (c) Explain how part 'X' plays an important role in reproduction? [1]

---

---

34. Lina found 3 plants, A, B and C with almost riped fruits. The fruits have pod-like structure, which when riped will split to disperse the seeds. Each plant was placed in different rooms. Her results are shown in the table below.

Plant	A	B	C
Temperature of the room ( $^{\circ}\text{C}$ )	25	30	35
Time taken for the fruit to split (min)	240	120	60

- (a) What is the aim of Lina's experiment? [1]

---



---

- (b) State one other variable that needs to be kept constant. [1]

---



---

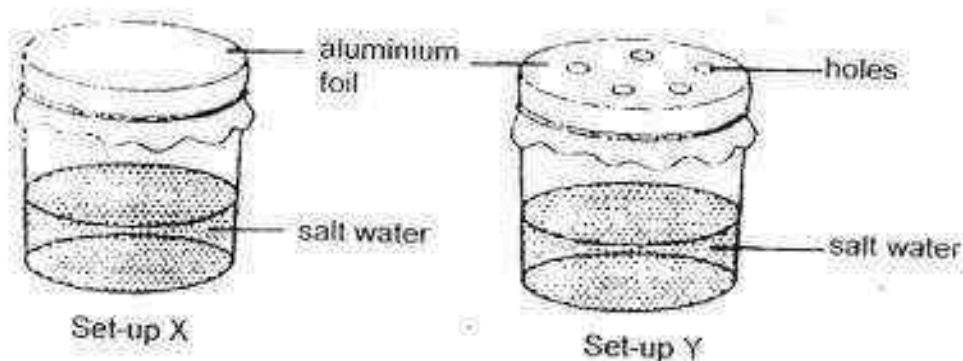
- (c) Explain why it is important for plants to disperse their seeds. [1]

---



---

35. Juliana set up two plastic containers, X and Y, each containing the same amount of salt water, as shown below to demonstrate water cycle. She then left the set-ups at the same location under the sun.



She checked the set-ups an hour later and found that different amounts of water droplets were formed on the underside of the aluminium foil of set-ups X and Y.

- (a) Which set-up would have less water droplets formed on the underside of the aluminium foil? Explain your answer. [1]

---



---

- (b) Suggest what Juliana could do to further increase the rate of condensation in set-up X without replacing any parts of the set-up. [1]

---



---

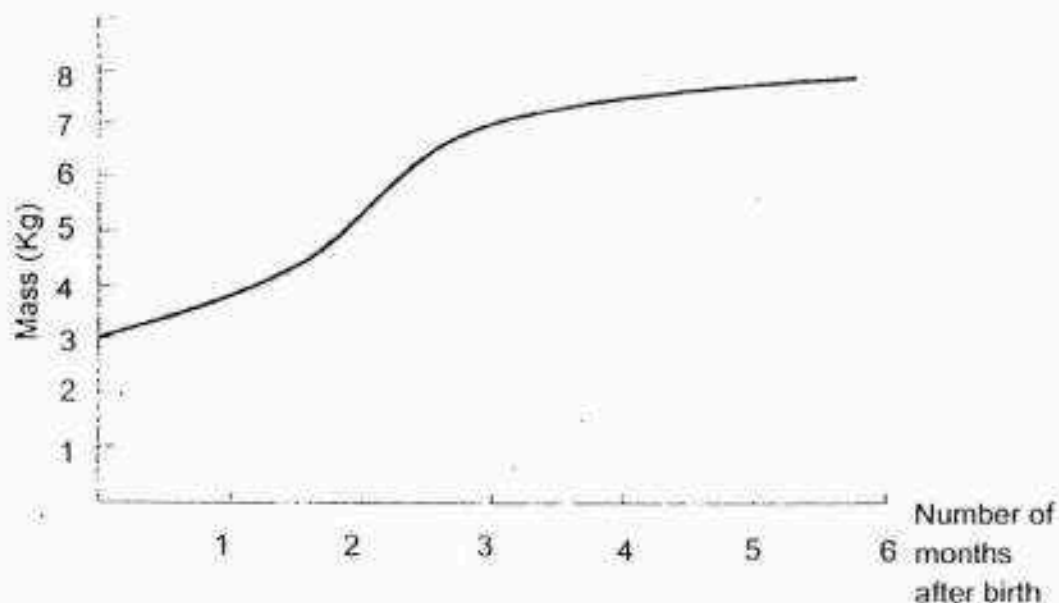
- (c) Juliana left set-up Y at the location for a few weeks and observed that there are white solid particles left in the container. Explain her observation. [1]

---



---

36. The graph shows John's mass in the first six months of his life.



- (a) What was John's mass at birth? [1]

---

- (b) What is the relationship between John's mass and the number of months after birth? [1]

---

- (c) What can you say about the cells in his body as he grows bigger? [1]

---

37. Peter caught two fish and kept them in a fish bowl as shown below. He feeds the fishes daily.



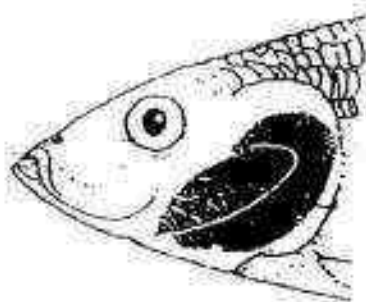
- (a) After 4 days, both fishes died. Explain how both fishes died. [1]

---

- (b) How could Peter increase the possibility of both fishes surviving? [1]

---

- (c) In the diagram below, draw 2 arrows (← →) to show how the fish inhale and exhale. [1]



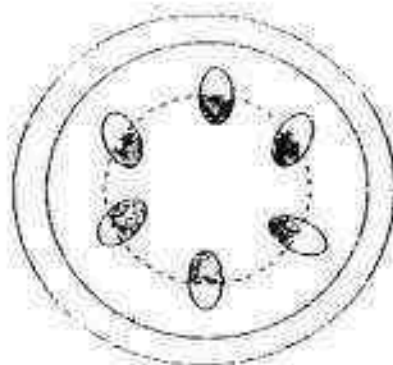
- (d) What is the function of the gills? [1]

---



---

38. A rubber tapper sprays too much pesticide on a rubber plant. The pesticide enters the soil and gets absorbed by the plant.



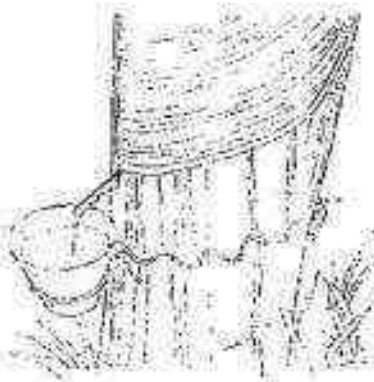
- (a) The diagram above shows the cross section of a rubber tree stem. Shade the parts of the stem where you would find pesticide. [1]
- (b) Explain how pesticide is found in the parts of the stem you have shaded in (a)? [1]

---



---

Every morning, rubber tappers go around making shallow cuts on the stem of the rubber tree. The white liquid flows slowly out of the cuts.



- (c) A rubber tapper accidentally cut all the food carrying tubes. The tree died after a period of time. Explain what happened. [2]

---



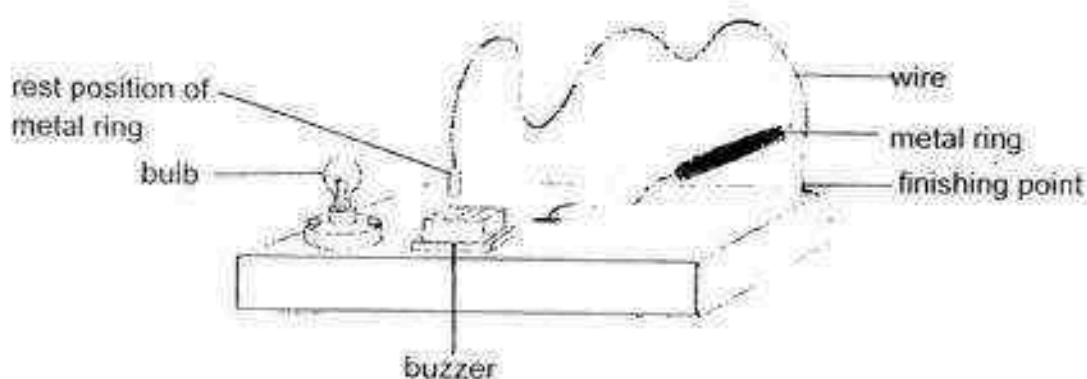
---



---

39. The diagram below shows the setup of a game. At the rest position, the wire is covered with a material such that when the ring is resting there, the bulb does not light up and the buzzer does not sound.

When playing the game, the player has to move the metal ring along the piece of wire from the rest position to the finishing point. When the metal ring touches the wire, the buzzer sounds and the bulb lights up, resulting to the player being disqualified.



- (a) Explain how both the buzzer and the bulb work. [1]

---



---

- (b) Suggest 2 changes to the set-up to make the game more challenging. [2]

---



---



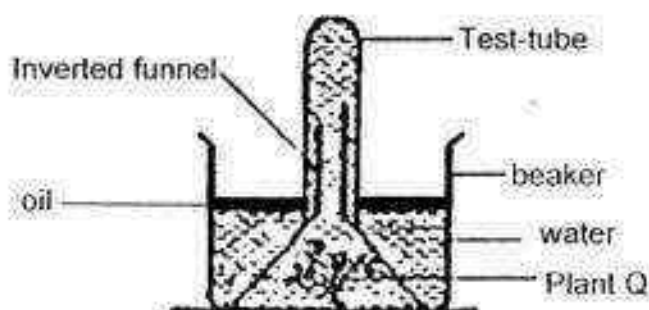
---

- (c) What is the property of the material used to cover the wire at the resting position? [1]

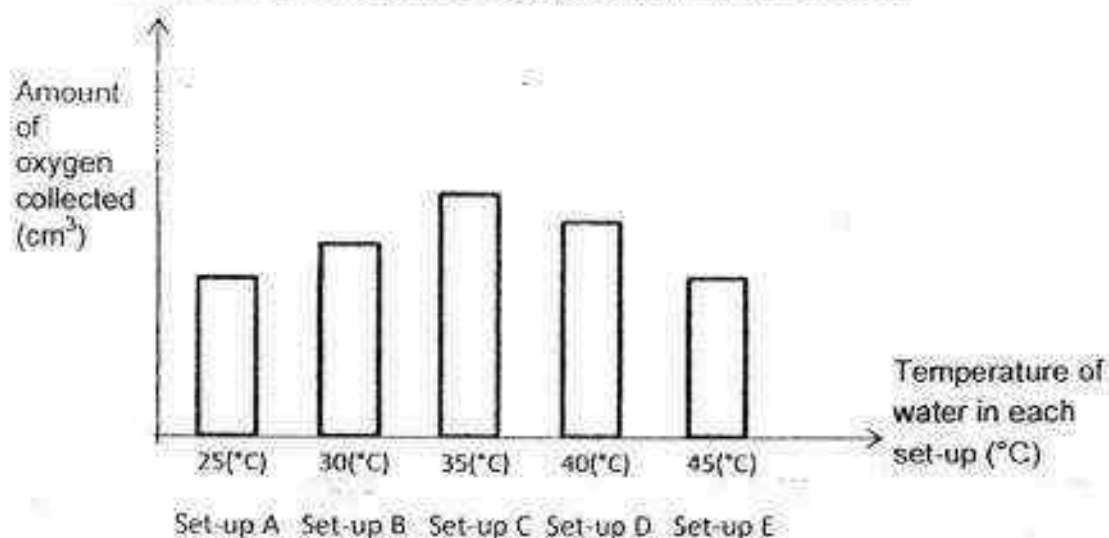
---



40. Suzie wanted to find out how the temperature affects the rate of photosynthesis of plant Q. She repeated the set-up below five times with water in each set-up maintained at different temperature throughout the experiment. The set-ups were exposed to light source for two hours in a dark room.



Suzie then measured the amount of oxygen collected in each set-up, A, B, C, D and E after two hours. She plotted a graph with the data collected.



- (a) Based on the graph, what is the effect of temperature on the rate of [1]  
photosynthesis of the plant Q?

---

---

- (b) The light source was brought closer to the set-up and the experiment was [1]  
repeated at 30°C. Would the amount of oxygen increase or decrease?

---

---

- (c) Explain why placing the set-ups in a dark room help to make the results of [1]  
the experiment more accurate.

---

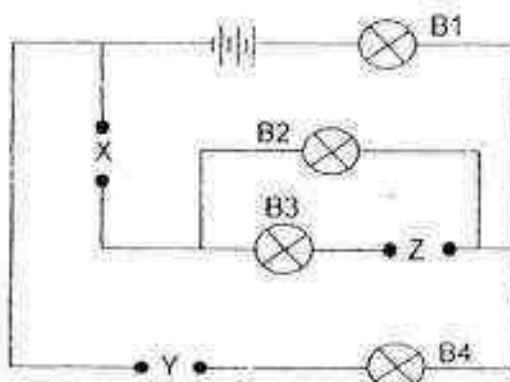
---

- (d) John told Suzie that the volume of water in the set-ups needs to be the [2]  
same and distance of the light source to be fixed. Explain how keeping  
these variables constant would make his experiment fair.

---

---

41. Haryati placed three rods, P, Q and R, in various positions, X, Y and Z, in the circuit shown below.



She tabulated the results of the experiment in the table below. When any of the bulbs, B1, B2, B3 or B4, lit up during the experiment, a tick (✓) indicate a bulb lighting up in the experiment.

Positions where rods were placed			Bulb			
X	Y	Z	B1	B2	B3	B4
P	Q	R	✓	✓		✓

- (a) Haryati then rearranged the positions of the rods as shown in the table below. Put a tick (✓) in the correct boxes to show if B1, B2, B3 and B4 lights up in each of the arrangements. [2]

Positions where rods were placed			Bulb			
X	Y	Z	B1	B2	B3	B4
R	P	Q				
Q	R	P				

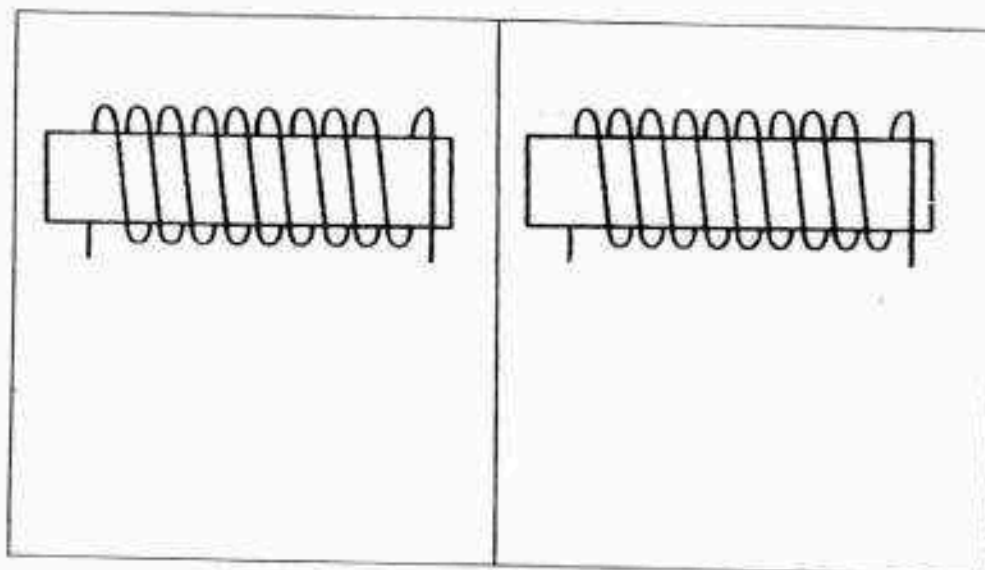
- (b) Electricity is useful to us but it can also be harmful. Give an example how we can use electricity safely. [1]

---



---

- (c) Sam wanted to find out how the number of batteries would affect the magnetic strength of his electromagnet. Part of the diagram has been drawn. Complete the circuit diagrams to show how he should set-up his experiment to test for his aim. [1]



- (d) Explain what results Sam can collect to conclude the aim of his experiment. [1]

---

---

- End of paper -

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : PEI HWA PRESBYTERIAN PRIMARY  
 SUBJECT : SCIENCE  
 TERM : SA2

**Booklet A**

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

**Booklet B**

Q29      Group X: Allows light to pass through.  
             Group Y: Does not allow light to pass through.

Q30      A: Nose                      C: Lung  
             B: Windpipe          D: Air sacs

Q31a      Material R. The temperature of the water in beaker R is the highest after 20 minutes so it shows that it conducts heat away the slowest.

Q31b      Ice in beaker Q. It will melt the fastest as heat is able to pass through the material the fastest allowing the ice to gain heat fastest.

Q31c      She would need to repeat her experiment at least three times and check that her results are consistent.

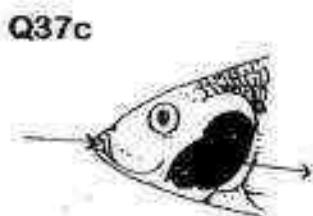
Q32a

	Changed Variable	Results
Angle of light source	✓	
Length of shadow		✓

Q32b      When the light shone on it, it blocks the light and forms a shadow.

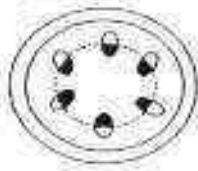
Q32c      The larger the angle of the light source, the length of the shadow would be shorter.

- Q33a** Egg. It is produced in the ovary.
- Q33b** It carries genetic information of both parents and controls everything in the cell.
- Q33c** They contain information about the characteristics of the parents which are passed down to the children during reproduction.
- Q34a** To find out if the temperature of the room affects the time taken for the fruit to split.
- Q34b** The size of the fruit.
- Q34c** It is to prevent overcrowding and the plants do not have to fight for space, sunlight, water and nutrients.
- Q35a** Set-up Y. Some water vapour escaped through the holes on the aluminium foil. Hence there would be lesser water vapour condensed on the underside of the aluminium foil in Y compared to X.
- Q35b** She should place some ice cubes on top of the aluminium foil.
- Q35c** The white solid particles are the salt in the water. Only pure water evaporates and impurities would be left inside the container.
- Q36a** 3 kg
- Q36b** The greater his age, the greater the mass.
- Q36c** The number of cells in his body will increase as he grows bigger.
- Q37a** There were not enough dissolved oxygen in the tank, the fishes could not breathe.
- Q37b** Put an air pump.



- Q37d** The gills absorb the dissolved oxygen in the water and release carbon dioxide into the water.

Q38a



Q38b

The roots of the plant absorbed the pesticide in the soil and it goes up into the water-carrying tubes.

Q38c

The food made by the leaves could not get transported to the rest of the plant as the food carrying tubes were being cut off, causing the plant to have no food.

Q39a

When the metal wire touches the metal ring, there will be a closed circuit, current will flow, the buzzer will ring and the bulb will light up.

Q39b

Make the wire longer and the metal ring smaller.

Q39c

It must be an insulator of electricity.

Q40a

As temperature increases to  $35^{\circ}\text{C}$ , the rate of photosynthesis also increases but when the temperature becomes higher than  $35^{\circ}\text{C}$  the rate of photosynthesis decreases.

Q40b

The amount of oxygen would increase.

Q40c

It will be the only light source received by the plant.

Q40d

The same volume of water will ensure the same amount of carbon dioxide absorbed by the plant.

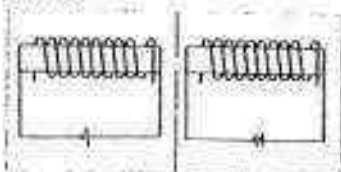
Q41a

Bulb			
B1	B2	B3	B4
✓			✓
✓	✓	✓	

Q41b

Touch switches with only dry hands.

Q41c



Q41d

The electromagnet that can pick the greater number of paper clips is the stronger magnet.



# RAFFLES GIRLS' PRIMARY SCHOOL

## SEMESTRAL ASSESSMENT (2) 2016

Name : \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P5 \_\_\_\_\_

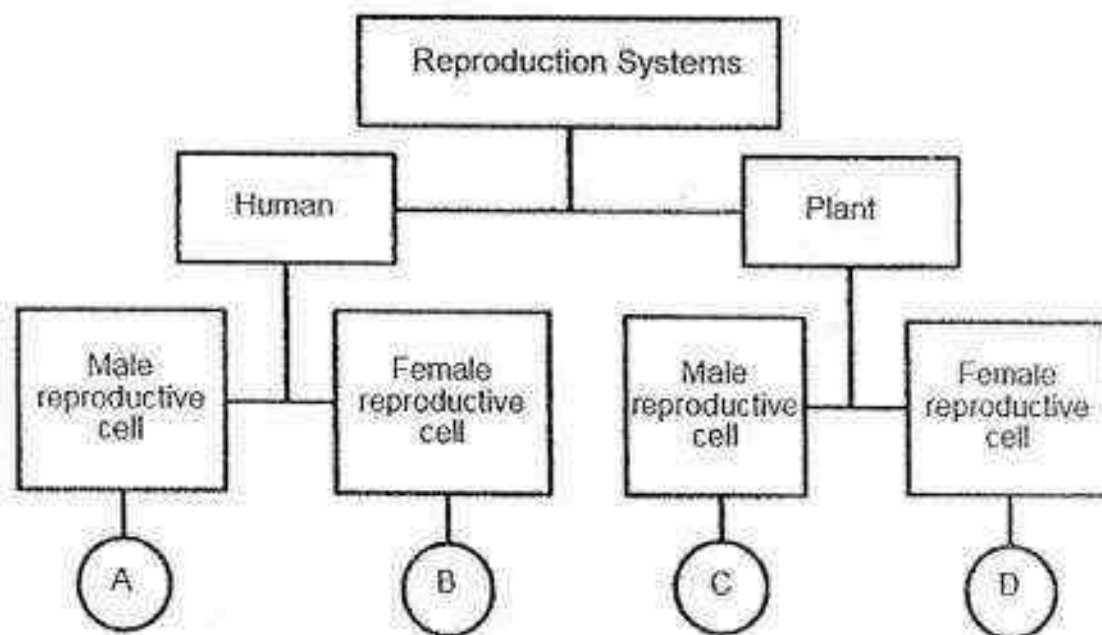
27 Oct 2016 **SCIENCE** Attn: 1 h 30 min

Section A	50
Section B	40
Your score out of 100	90
Parent's signature	

### SECTION A (25 X 2 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet.

The diagram below shows the classification of the plant and human reproduction systems.

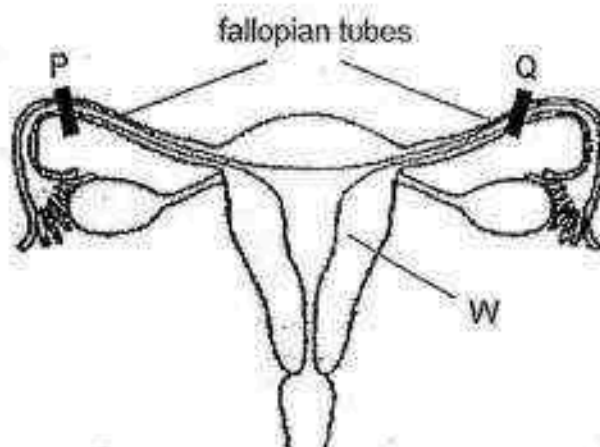


Which one of the following best represents A, B, C and D?

	A	B	C	D
(1)	sperm	egg	pollen grain	egg
(2)	penis	stigma	anther	ovule
(3)	anther	egg	penis	womb
(4)	penis	ovule	stigma	ovary



2. The diagram below shows the female reproductive system.

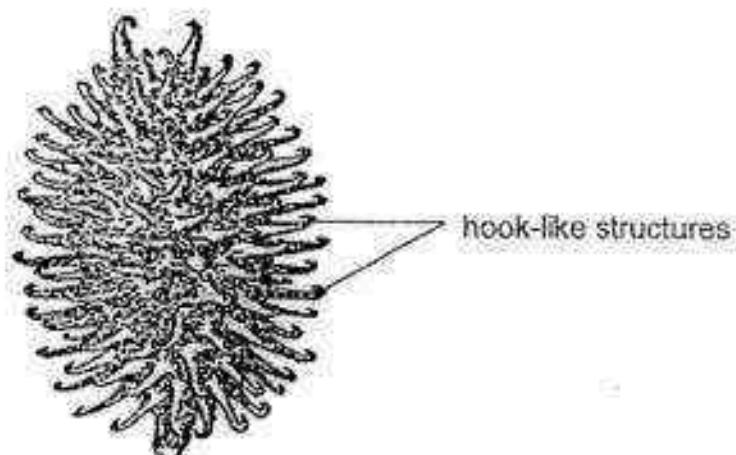


Fallopian tubes are tubes along which egg cells travel.

Which of the following statement(s) is/are true after the fallopian tubes are clipped at positions P and Q during a surgery?

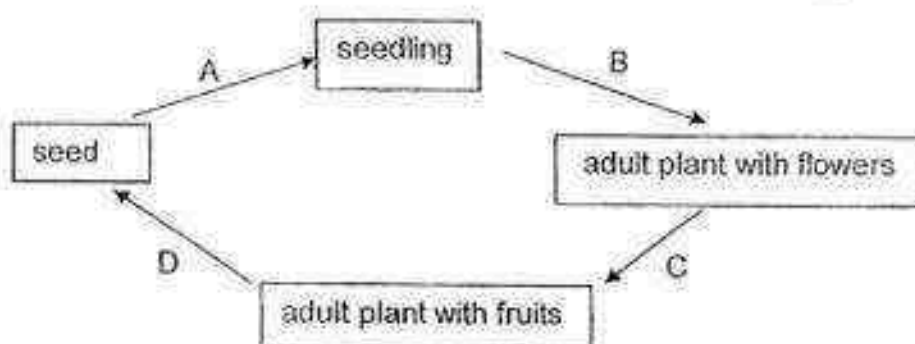
- A Fertilisation cannot take place in this reproductive system.
  - B The female will not be able to produce any reproductive cells.
  - C The male reproductive cells can only reach the female reproductive cell at part W.
- (1) A only
  - (2) B only
  - (3) C only
  - (4) A and B only

3. The diagram below shows a fruit.



Based on the diagram above, which one of the following is the method of dispersal of the fruit?

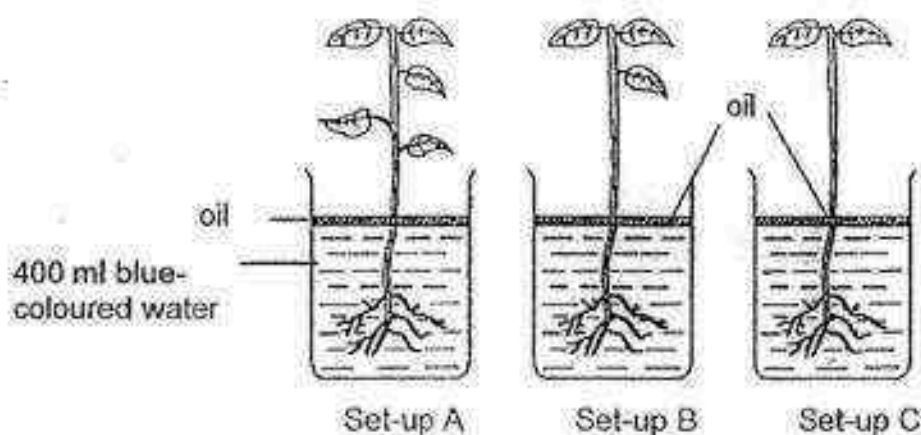
- (1) By wind
  - (2) By water
  - (3) By animal
  - (4) By splitting
4. The diagram below shows the stages in the life cycle of a flowering plant.



Which of the following correctly represent the processes of pollination and germination respectively?

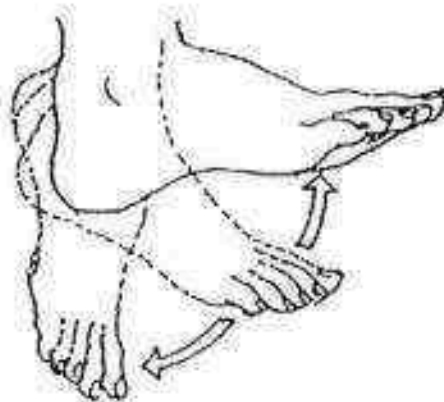
	Pollination	Germination
(1)	B	C
(2)	B	D
(3)	C	A
(4)	C	D

5. Adam prepared three set-ups, A, B and C, using plants of the same type but with different number of leaves as shown below. The plants were placed in beakers containing 400 ml of blue-coloured water with a layer of oil on the water surface.



Which one of the following statements is correct?

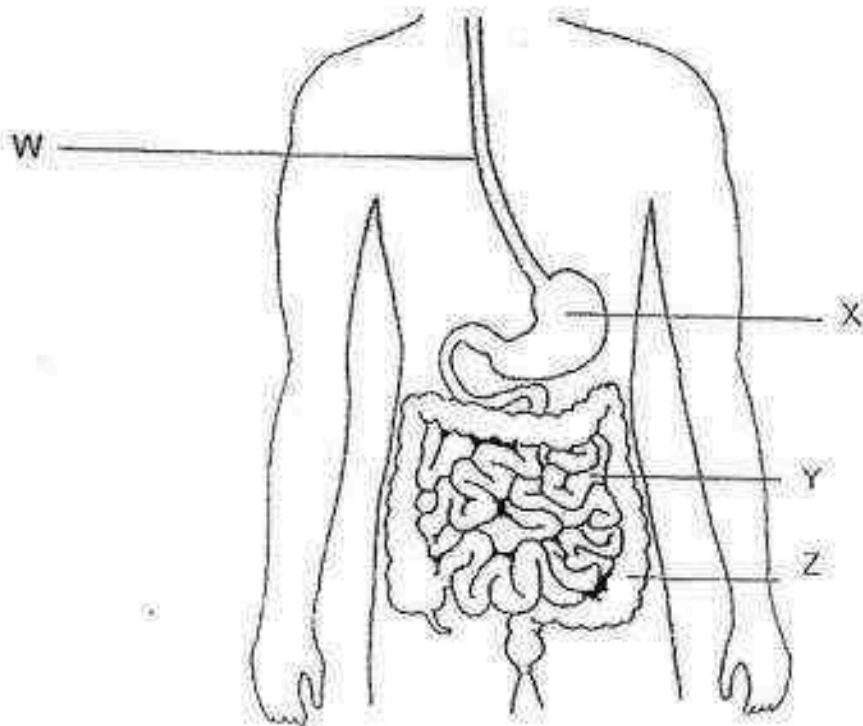
- (1) The plants in all the set-ups would wilt.
  - (2) The leaves of the plants in all the set-ups would turn blue.
  - (3) The oil prevents the water from being taken in by the plant.
  - (4) The water level in set-up B would be the lowest at the end of the experiment.
6. The diagram below shows movement of a foot.



Which of the following pairs of systems need to work together to allow the foot to move?

- (1) Muscular and skeletal systems
- (2) Circulatory and skeletal systems
- (3) Respiratory and skeletal systems
- (4) Circulatory and muscular systems

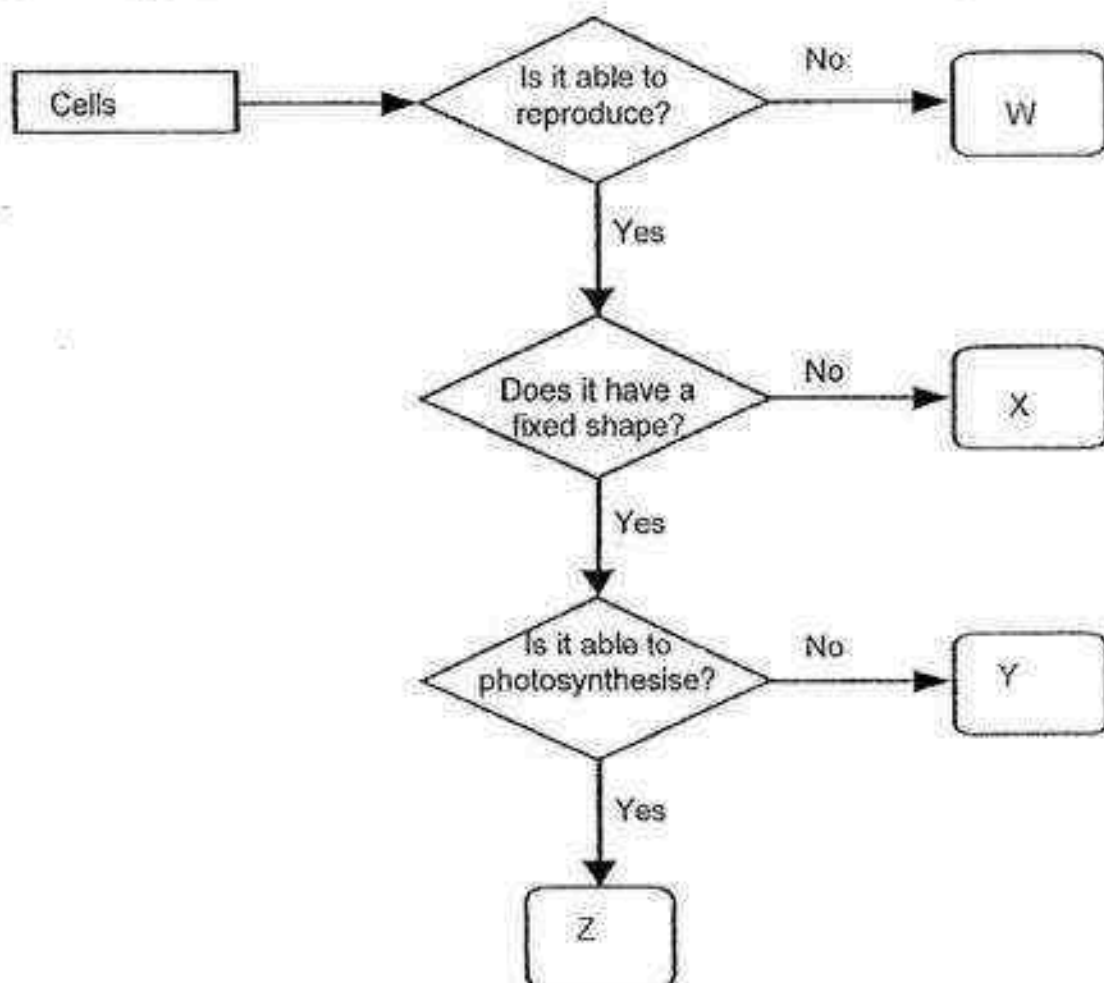
7. The diagram below shows parts of a digestive system.



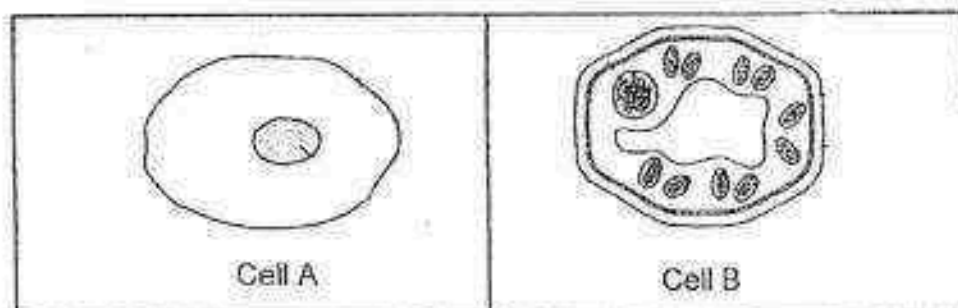
Which of the following statement(s) is/are correct about parts W, X, Y and Z?

- A Digestive juices are produced in W, X and Y
  - B Water is removed from the undigested food at Z.
  - C Digested food is absorbed into the bloodstream at Y.
- (1) A only
  - (2) A and B only
  - (3) B and C only
  - (4) A, B, and C

8. Study the flowchart below.



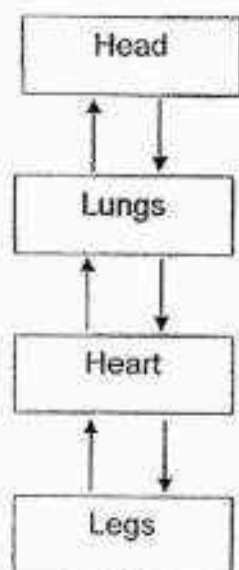
Which one of the following identifies Cells A and B correctly?



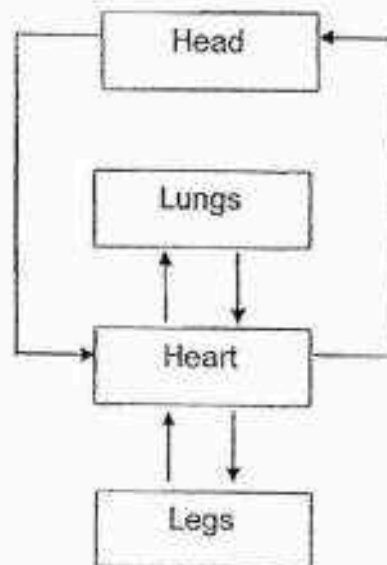
	Cell A	Cell B
(1)	W	Z
(2)	X	Y
(3)	X	Z
(4)	Y	Z

9. Which of the following correctly shows the direction of blood flow in certain parts of the human body?

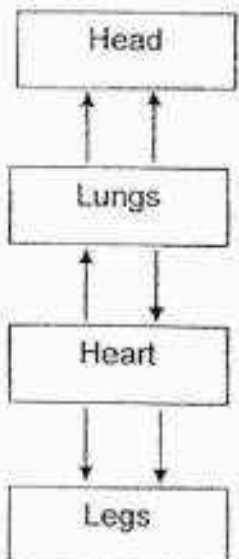
(1)



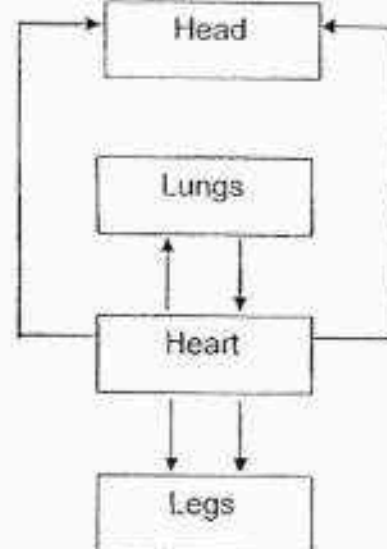
(2)



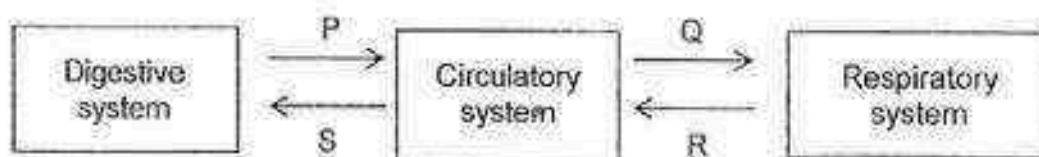
(3)



(4)



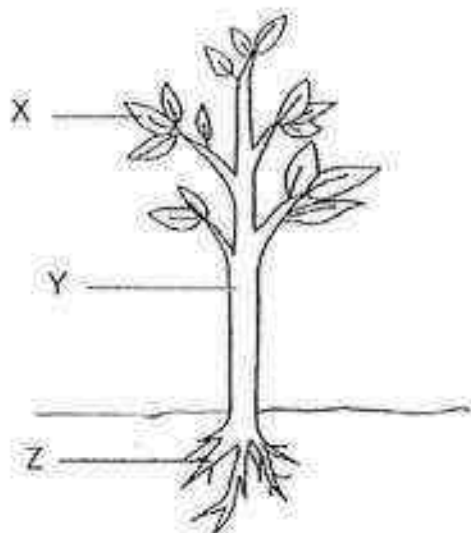
10. The diagram below shows how some substances, P, Q, R and S, are transported in the human body.



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

	P	Q	R	S
(1)	Oxygen	Oxygen	Carbon dioxide	Digested food
(2)	Carbon dioxide	Carbon dioxide	Oxygen	Digested food
(3)	Digested food	Oxygen	Carbon dioxide	Water
(4)	Digested food	Carbon dioxide	Oxygen	Oxygen

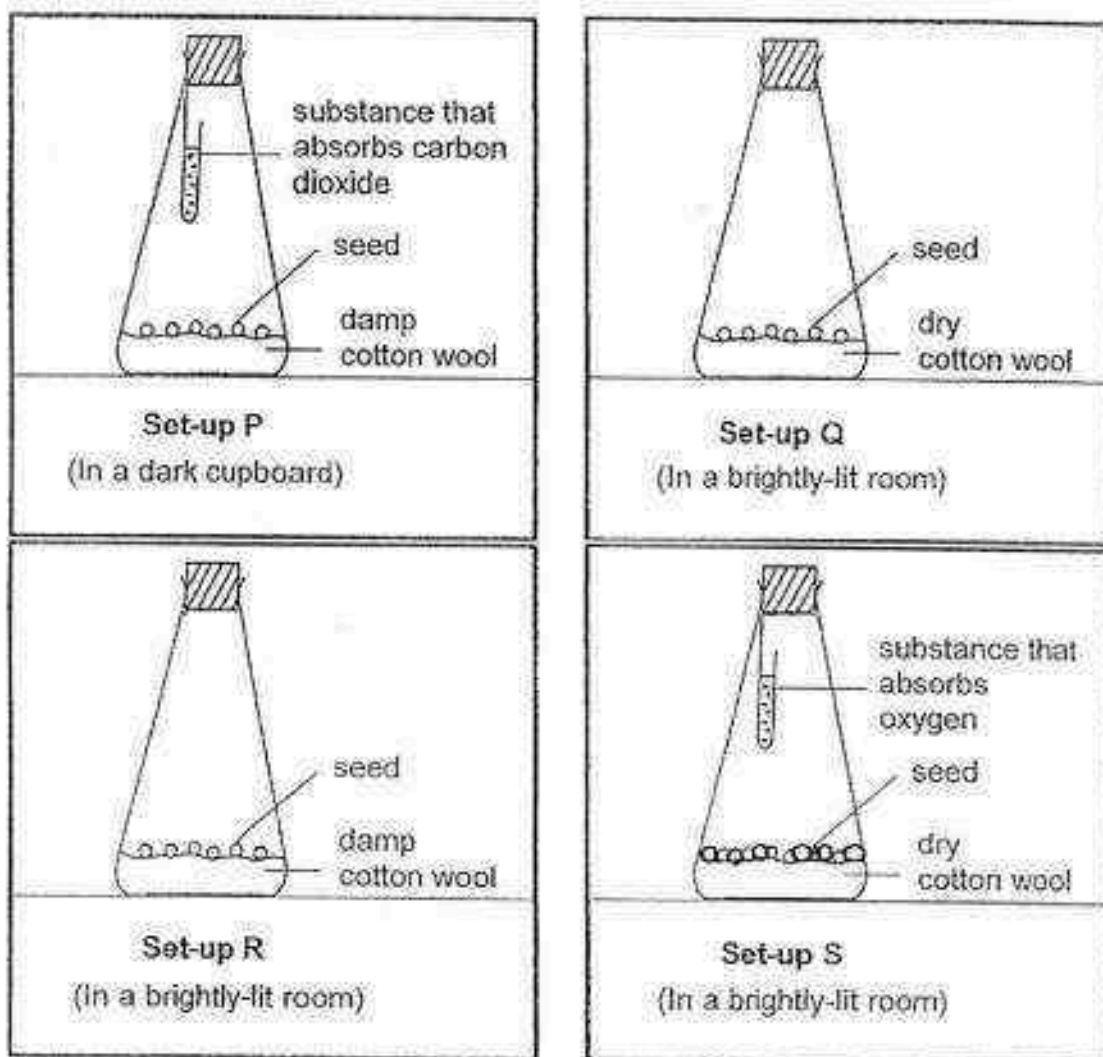
11. The following diagram shows a plant.



At which part(s), X, Y and/or Z, can the tubes that transport water be found?

- (1) X only
- (2) Z only
- (3) X and Y only
- (4) X, Y and Z

12. Sam wanted to investigate the conditions affecting the germination of seeds. Sam prepared four set-ups using the same type of seeds as shown below.

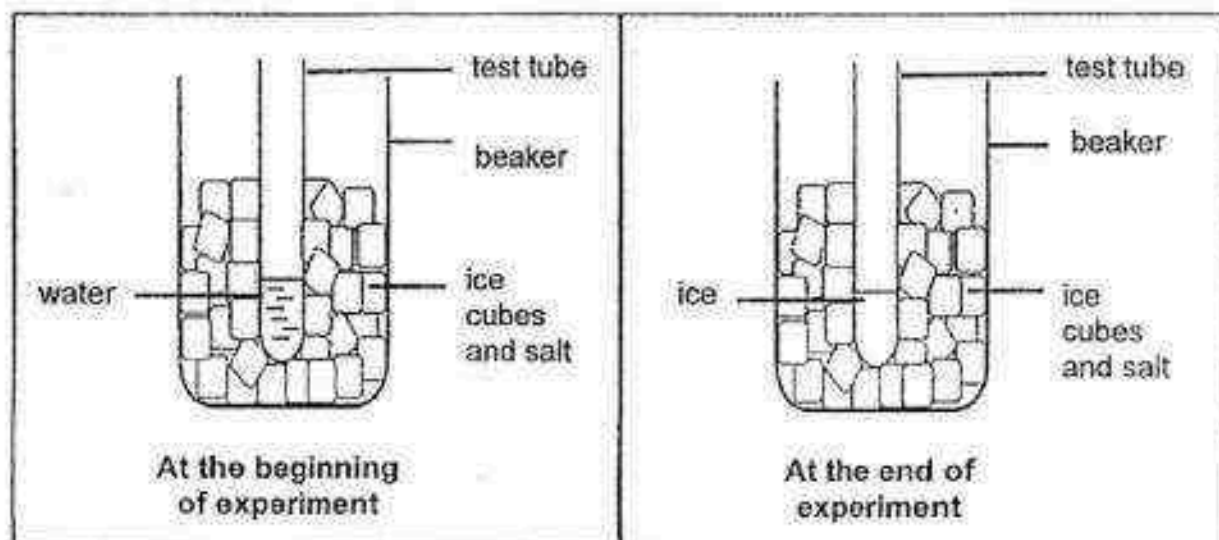


Which one of the following pair of set-ups should Sam use to investigate the respective aim?

	Aim	Set-ups
(1)	To find out if light is needed for germination of seeds.	P and R
(2)	To find out if water is needed for germination of seeds.	Q and R
(3)	To find out if oxygen is needed for germination of seeds.	Q and S
(4)	To find out if overcrowding affects germination of seeds.	P and S



13. Theresa placed a test tube containing some water into a beaker of ice and salt mixture. The diagrams below show the set-up at the beginning and at the end of the experiment.



She observed that the water became ice after a while.

Which one of the following statements best explains her observation?

- (1) The water lost heat to the surrounding air.
- (2) The water lost heat to the ice and salt mixture.
- (3) The ice and salt mixture lost heat to the water.
- (4) The ice and salt mixture lost heat to the surrounding air.

14. Yanni prepared a set-up as shown in the diagram below.

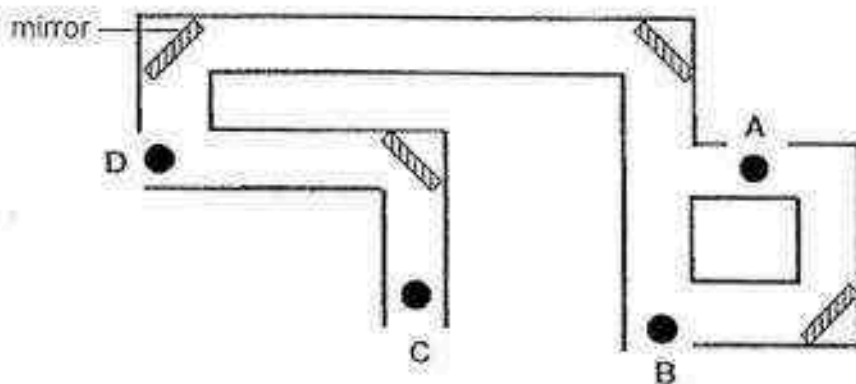


Which of the following statements are true?

- A Water droplets would form at the bottom of the flask.
- B Water droplets would form on the inner surface of the flask.
- C Water droplets would form on the outer surface of the glass beaker.
- D Water droplets would form on the inner surface of the glass beaker.

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

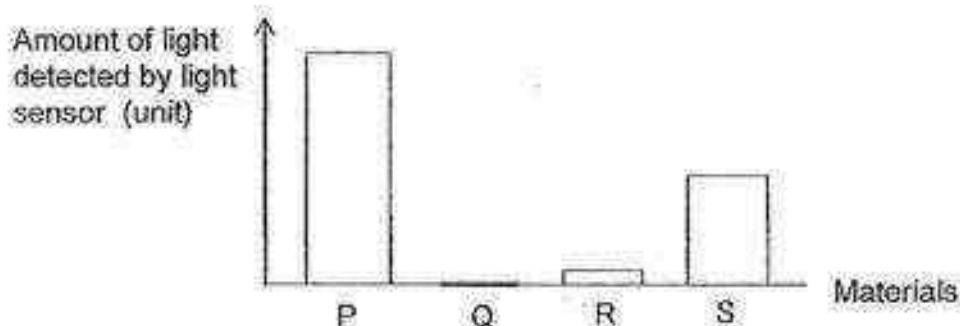
15. The letters, A, B, C and D, represent four students standing at different positions in a tunnel. Four mirrors were placed in the tunnel as shown below.



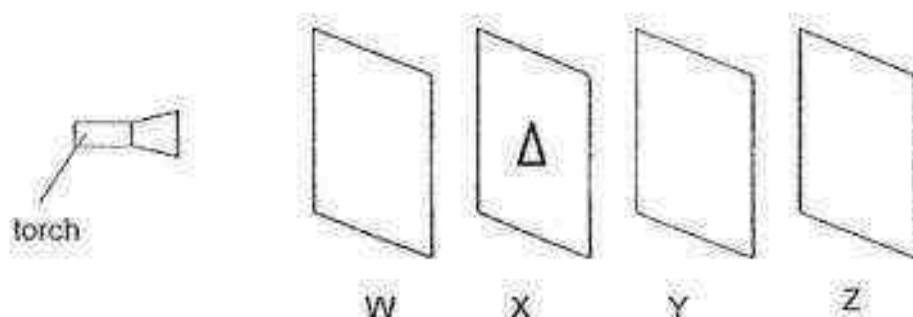
Which student, A, B, C or D, will be able to see the most number of students in the above tunnel?

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

16. A light sensor was used to determine the amount of light passing through four sheets, P, Q, R and S, made of different materials. The results were shown in the graph below.



The materials were then arranged in a straight line at four positions, W, X, Y and Z. A triangular hole was cut out from one of the cards, as shown in the diagram below.

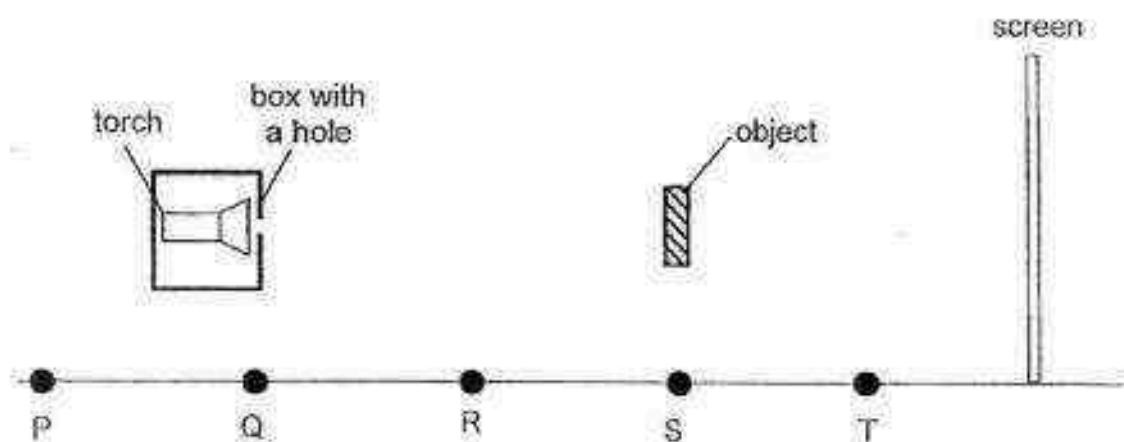


When the torch was switched on, a bright triangular patch of light was observed on the card at position Y.

Based on the information above, which of the following most likely shows the correct arrangement of the four materials?

	W	X	Y	Z
(1)	P	Q	R	S
(2)	Q	S	R	P
(3)	R	P	S	Q
(4)	S	R	P	Q

17. Susan placed a light source at position Q and an object at position S as shown below. The light source is a torch placed inside a box with a hole.



When the torch was switched on, Susan observed a shadow cast on the screen.

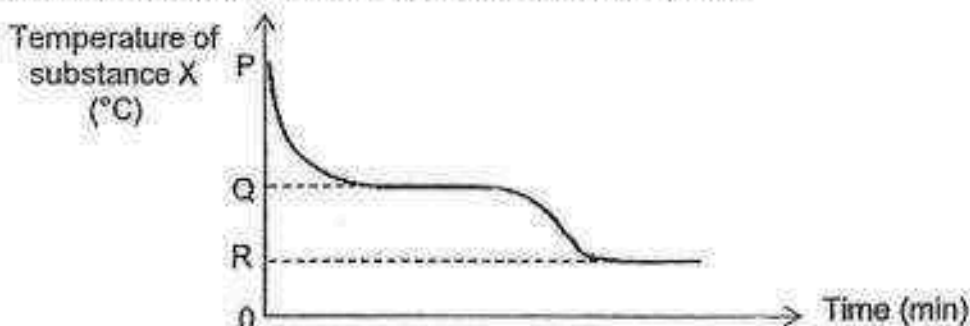
Which of the following shows the positions of the torch and object respectively such that a smaller shadow would be cast on the screen than the one cast above?

	Position of torch	Position of object
A	P	T
B	Q	R
C	Q	T
D	R	S

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

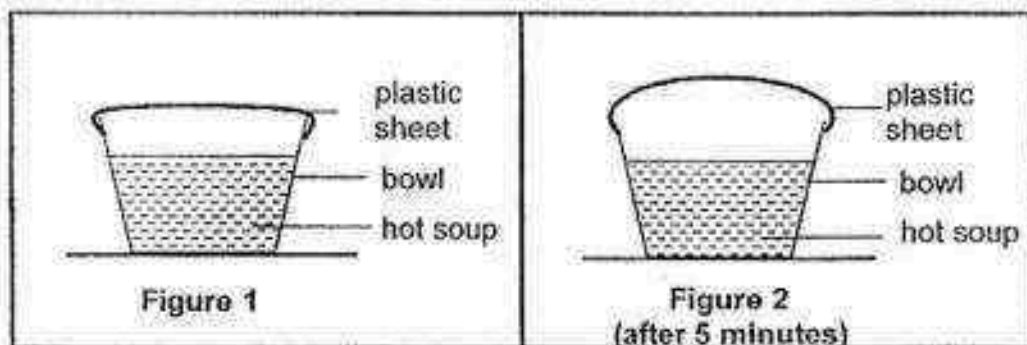
18. Substance X is a solid at room temperature. Substance X was placed in a test tube over a flame to melt. Then, it was left to cool in a room.

The graph below shows the change in the temperature of heated Substance X when it was left to cool in a room over a period of time.



Which one of the following statements is correct?

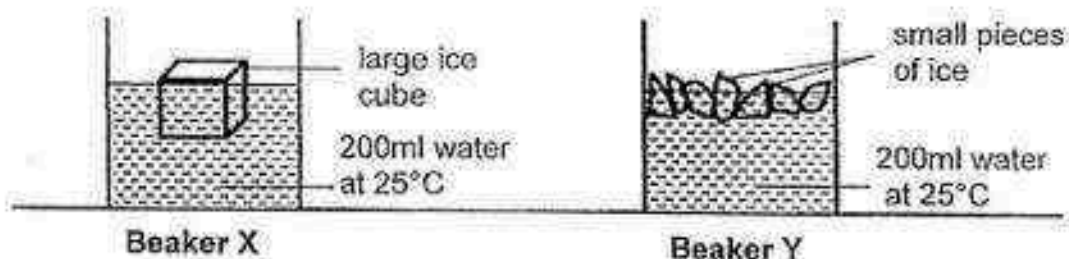
- (1) At R, Substance X is a solid.  
 (2) Q is the temperature of the room.  
 (3) R is the melting point of Substance X.  
 (4) At P, Substance X gains heat from the surrounding.
19. Rachel poured some hot soup into a bowl and wrap a plastic sheet around the opening as shown in Figure 1. Figure 2 shows the bowl of soup observed after 5 minutes.



Rachel wanted to reduce the 'bulging' of the plastic sheet as shown in Figure 2. Which of the following show the correct action and corresponding explanation?

	Action	Explanation
(1)	Add ice to the hot soup.	The ice will lose heat and contract more slowly.
(2)	Poke a hole in the plastic sheet.	The hot air in the bowl will escape into the surrounding air.
(3)	Pour soup at a higher temperature into the bowl.	The soup in the bowl will gain heat and expand more quickly.
(4)	Place the set-up under the hot sun	The air in the bowl will gain heat and expand.

20. Lily had two identical large ice cubes. She smashed one of the ice cubes into smaller pieces. Then she placed the large ice cube into beaker X and all the small pieces of ice into beaker Y as shown below.

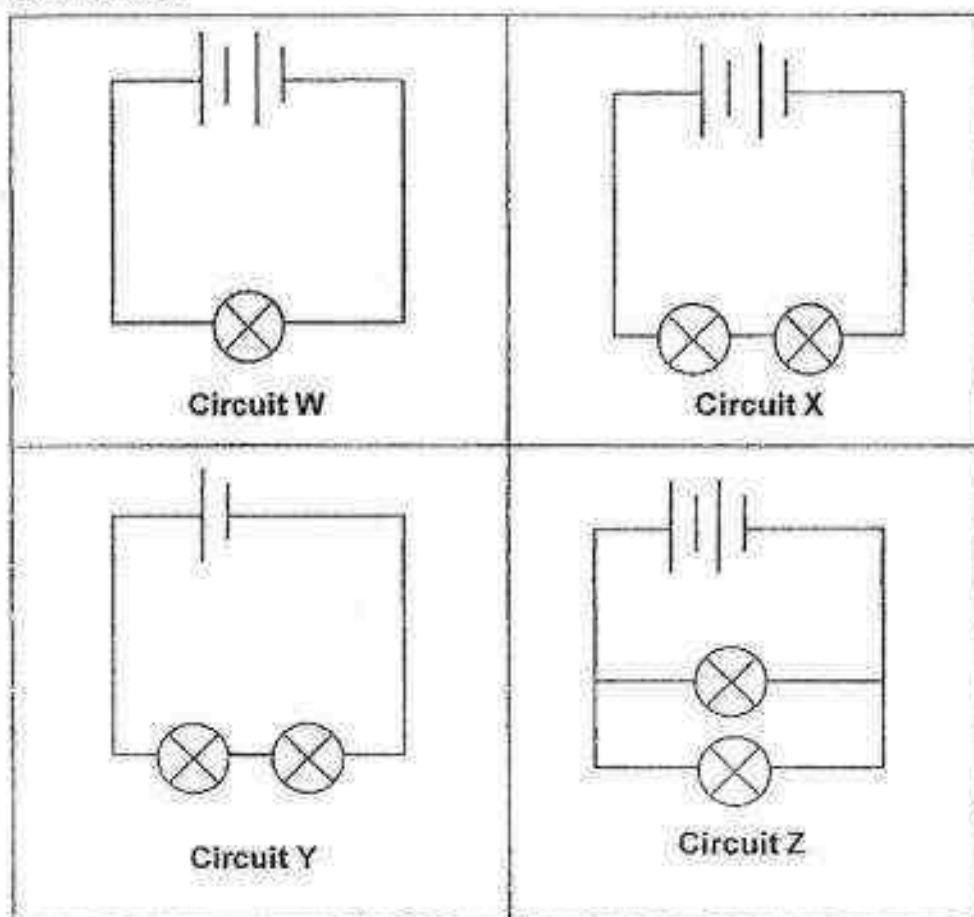


She observed that the ice in beaker X took a longer time to melt completely than the ice in beaker Y.

Which of the following statements are correct?

- A There is more ice in beaker Y than in beaker X.
  - B The temperature of the ice in beaker X is higher than the ice in beaker Y.
  - C The ice in beaker X loses heat to the water more slowly than the ice in beaker Y.
  - D The surface area of the ice exposed to water in beaker X is less than the total surface area of the ice exposed to water in beaker Y.
- (1) A and B only  
 (2) B and C only  
 (3) C and D only  
 (4) A, C and D only

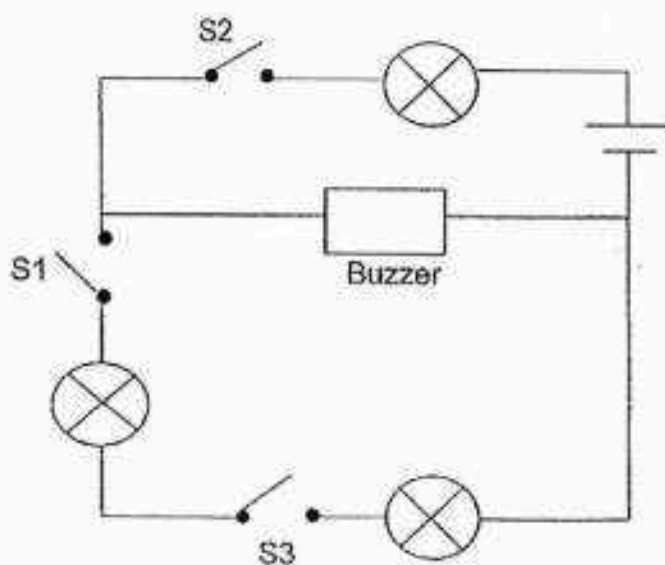
21. Kelly wanted to find out if the arrangement of bulbs in a circuit affects the brightness of the bulbs. She set up four circuits using identical components as shown below.



Which two circuits should Kelly use to carry out a fair test?

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

22. Study the circuit diagram below.



Which of the following switch(es) should be closed so that the buzzer will ring and only one of the bulbs will light up?

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

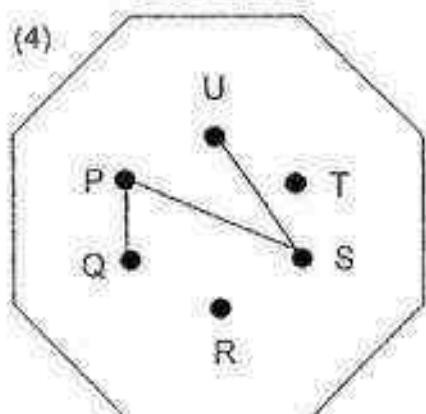
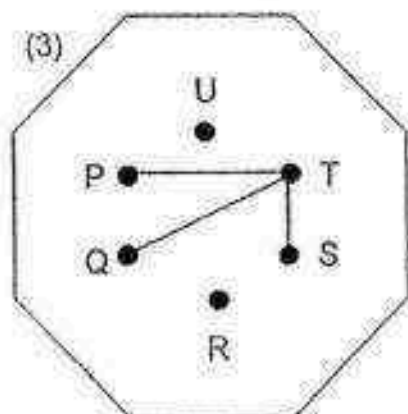
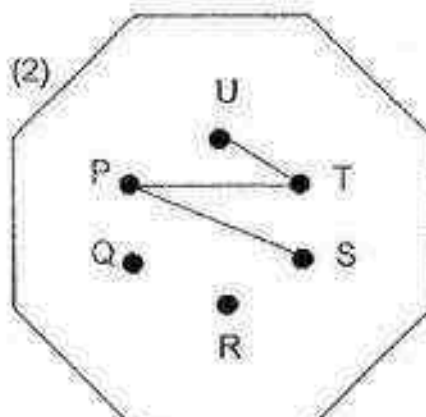
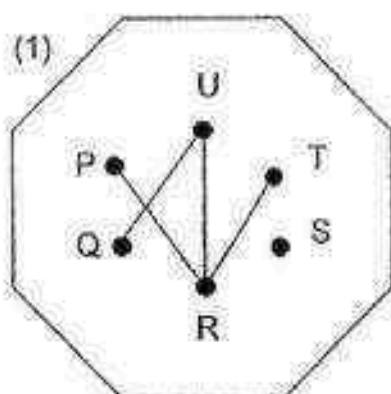


23. Samuel made a circuit card and the clips of his circuit card were tested with a circuit tester.

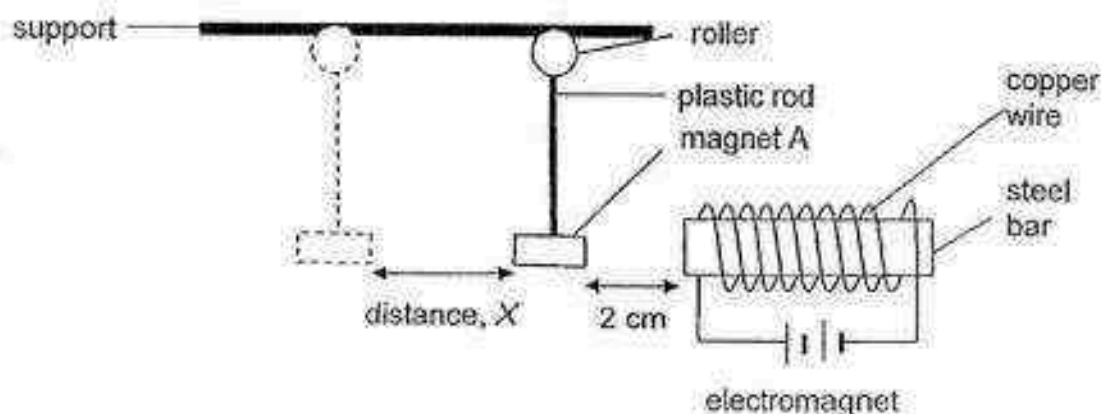
The results of his test is shown below.

Clips tester	Bulb of circuit tester
P and Q	Lights up
P and U	Does not light up
Q and S	Lights up
R and T	Does not light up

Which one of the following shows the correct arrangement of Samuel's circuit card?



24. Joan attached magnet A to a plastic rod and a roller. The roller was hung onto a support which allowed the roller to move freely on it. Then she placed an electromagnet at a distance of 2 cm away from magnet A, as shown in the diagram below.



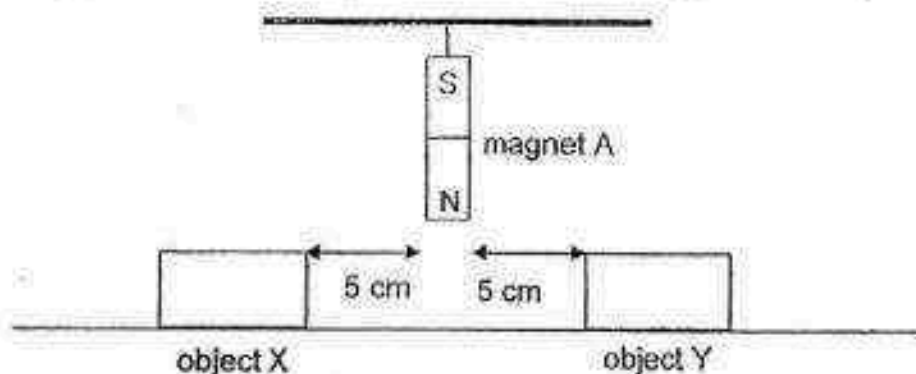
Joan observed that the iron nail moved by a distance,  $X$ .

Which of the following actions would cause the distance,  $X$ , to increase?

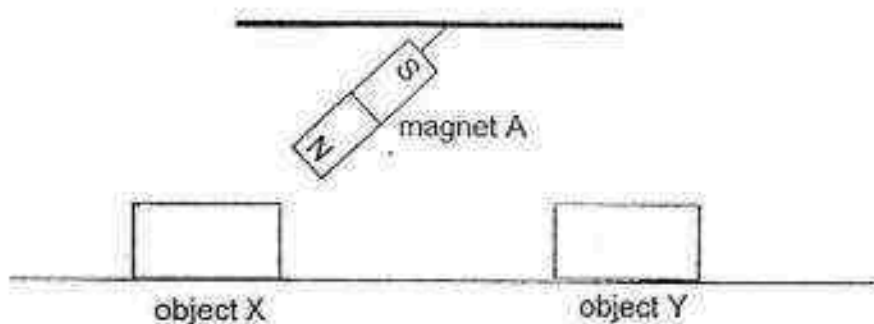
- A Decrease the number of coils around the steel bar.
- B Add another battery in series arrangement to the circuit for the electromagnet.
- C Place the electromagnet at a distance of 1 cm away from magnet A, instead of 2 cm.

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

25. Tom held magnet A, 5 cm away from object X and object Y, as shown in the diagram below. Both objects X and Y are not magnets.



After he released the magnet A, he found that it moved towards object X, as shown below.

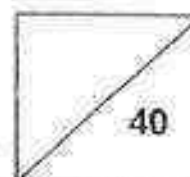


Which of the following statements(s) is/are correct?

- A Object X is a magnetic material.
- B Object Y is a non-magnetic material.
- C Unlike poles of object X and magnet A are facing each other.

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

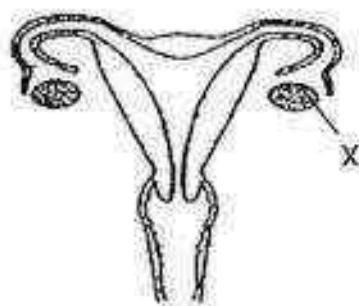
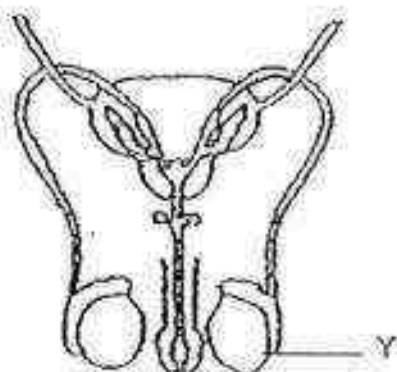
Name: \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P5 \_\_\_\_\_

**SECTION B (40 marks)**

For questions 26 to 38, write your answers clearly in the spaces provided.

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

26. The diagrams below show the male and female reproductive systems in humans.

**Female****Male**

- (a) Identify the parts labelled X and Y. [2]

X : \_\_\_\_\_

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

- (b) State the common function performed by Part X and Part Y. [1]

---



---

SCORE	3
-------	---

27. The classification table below shows how some living things are grouped.

P	Q
fern	papaya
mushroom	rose plant

(a) Give a suitable heading for P and Q.

P: \_\_\_\_\_

Q: \_\_\_\_\_

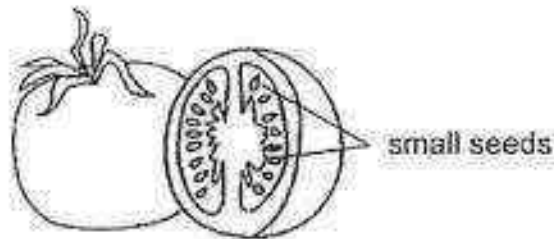
(b) State one difference between a fern and a mushroom. [1]

---



---

The diagram below shows an edible juicy and fleshy fruit containing small seeds.



(c) Explain clearly how the seeds are dispersed. [2]

---



---

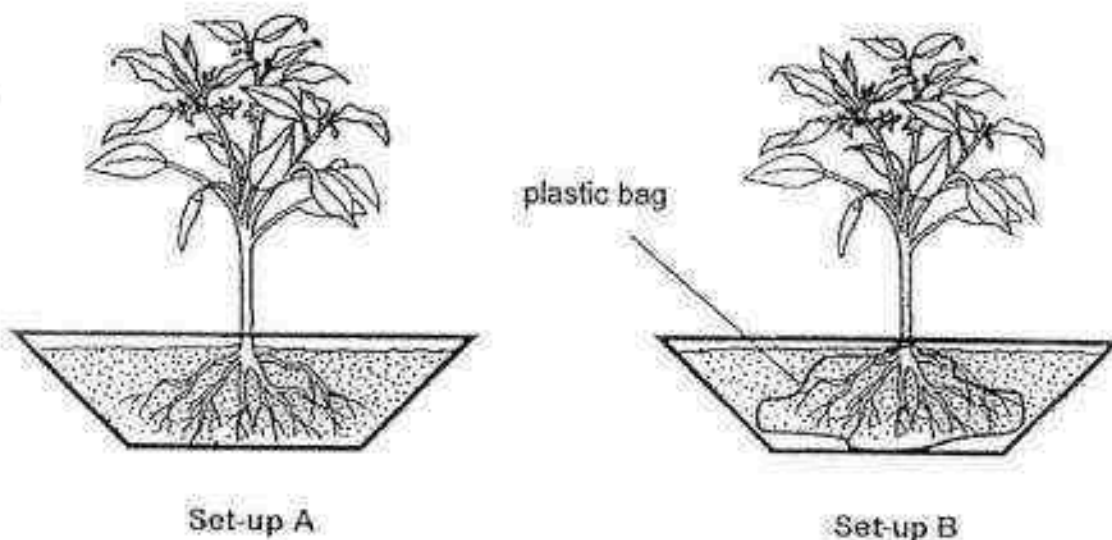


---

SCORE	3
-------	---

28. Adam placed two similar plants in two identical pots. The pots are filled with the same amount of soil of the same type as shown in the diagrams below.

He wrapped roots of the plant in Set-up B with a plastic bag. He placed both set-ups in the garden for 3 weeks. He watered both plants daily with the same amount of water.



- (a) At the end of the experiment, he observed that the plant in Set-up A has grown taller, but the plant in Set-up B has died. Explain his observations clearly.

[2]

---



---



---

- (b) Adam placed both set-ups at the same location in the garden. How does this ensure a fair test?

[1]

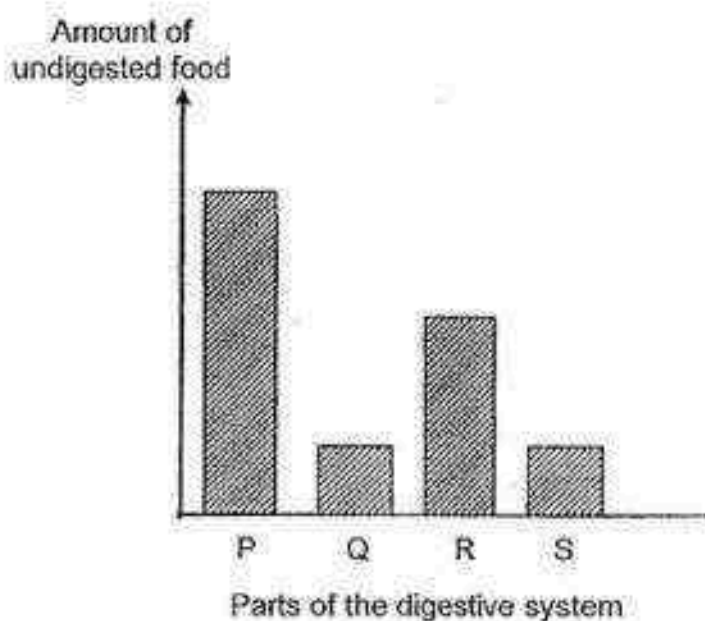
---



---

SCORE	3
-------	---

29. The graph below shows the amount of undigested food as it leaves the different parts of the digestive system.



- (a) Based on the graph above, match parts P, Q, R and S in the graph to the parts of the digestive system in the table below. [2]

Parts of the digestive system			
mouth	stomach	small intestine	large intestine

- (b) Which part of the digestive system, P, Q, R or S, has the same amount of undigested food as the gullet? Give a reason for your answer. [1]

---



---

SCORE	3
-------	---

30. The table below shows the parts found in different types of cells. A tick (✓) indicates the presence of the cell part.

Cell parts	Cell A	Cell B	Cell C
cell wall	✓	✓	
nucleus	✓	✓	
cell membrane	✓	✓	✓
chloroplast	✓		

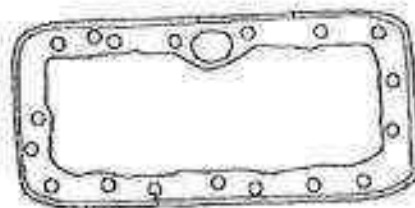
- (a) Based on the table above, which of the following cell(s) is/are able to reproduce? Give a reason for your answer. [1]

---



---

- (b) The diagram below shows a cell.



Peter identify the above cell as Cell B. Do you agree with Peter? Give a reason for your answer. [1]

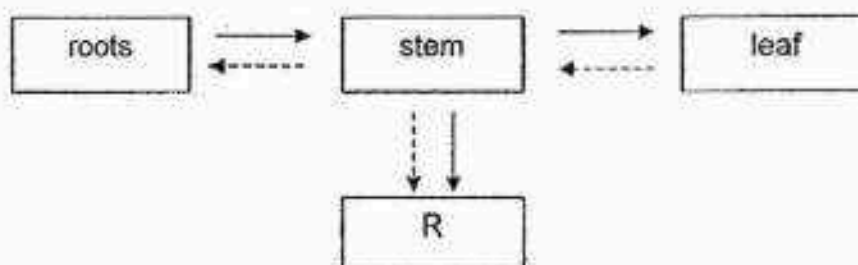
---



---



- 31 The diagram below shows how different substances are transported in a plant. The different arrows represent the transport of different substances in a plant and R represents a plant part.



- (a) Identify one substance that is being transported by each of the arrow.[1]

(i)  $\longrightarrow$  : \_\_\_\_\_

(ii)  $\dashrightarrow$  : \_\_\_\_\_

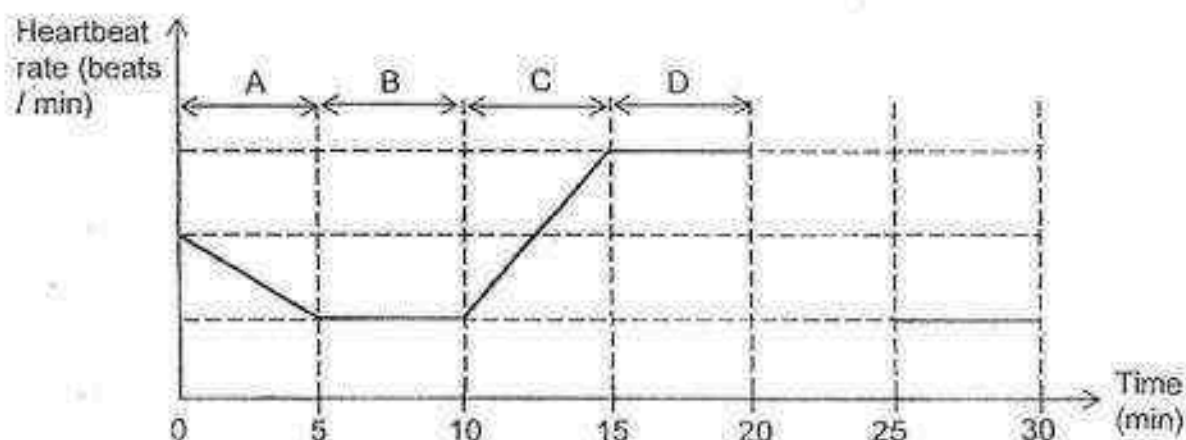
- (b) Identify plant part R.

[1]

---

SCORE	2
-------	---

32. The graph below shows how Mandy's heartbeat rate changed over a period of time.



- (a) Based on the graph, during which period, A, B, C or D, was the greatest amount of carbon dioxide given out by Mandy? Explain your answer. [1]

---



---

- (b) Suggest an activity Mandy was doing during period B. [1]

---

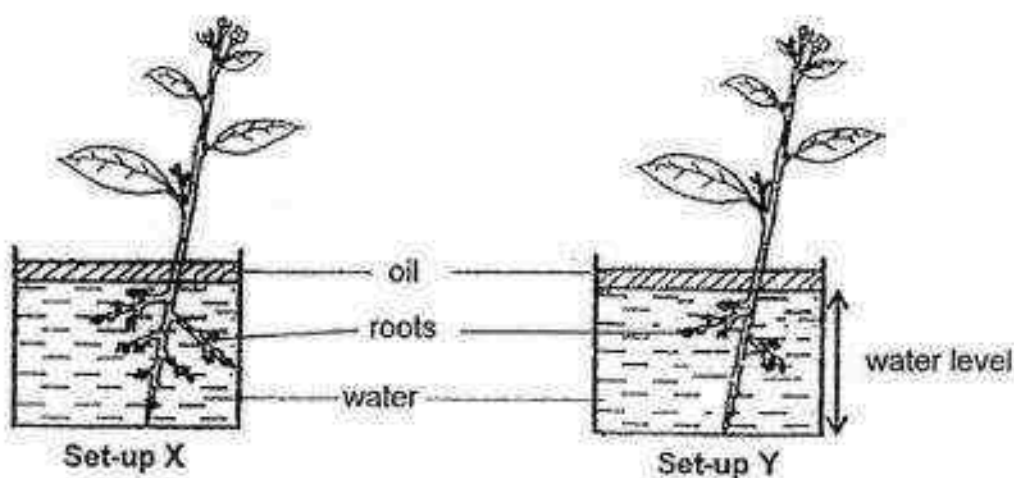
- (c) Complete the above line graph to show Mandy's heartbeat rate returning to resting heartbeat rate 10 minutes after the activity had been carried out at period D. [1]

---



---

33. Desmond prepared two set-ups, X and Y, using two identical plants as shown below. He removed some roots from the plant in set-up X and most of the roots from the plant in set-up Y.



He recorded the water level of both set-ups at regular intervals shown below.

Set-up	Water level (cm)			
	Day 1	Day 5	Day 10	Day 15
(i) _____	30	25	18	11
(ii) _____	30	20	12	4

- (a) Fill in the correct blanks with X and Y in the above table which represent the correct water levels. [1]
- (b) Explain your answer in (a)(i) clearly. [2]

---



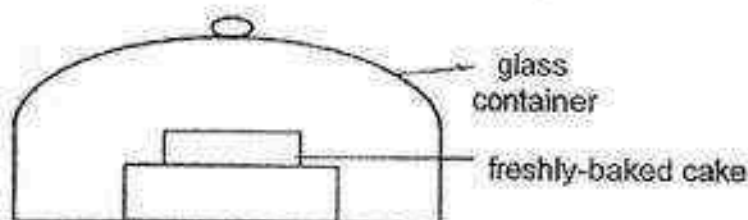
---



---

SCORE	3
-------	---

34. Mrs Lim took a freshly-baked cake out of the hot oven, and immediately placed it in a glass container as shown in the diagram below.



Some water droplets were observed on the inner surface of the glass container ten minutes after the cake has been placed in the glass container.

- (a) Explain how the droplets of water were formed. [2]

---



---



---

Mrs Lim baked another cake and left it to cool in the kitchen for half an hour before putting it in another glass container.

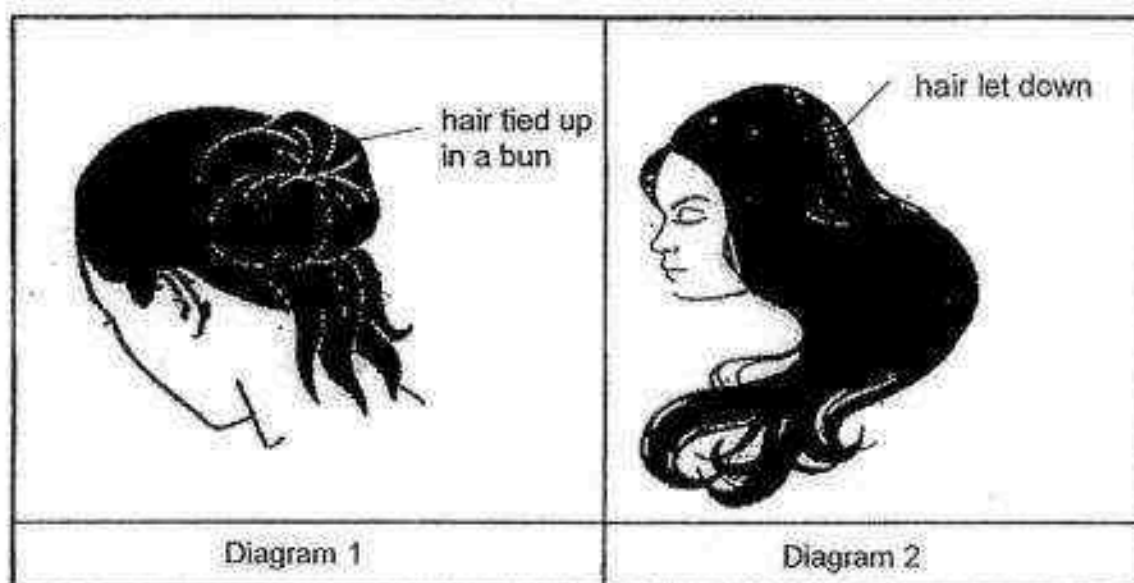
- (b) Comparing with the first set-up, would the amount of water droplets observed on the inner surface of the glass container increase, decrease or remain the same ten minutes after the cake has been placed in the glass container? Explain your answer. [1]

---



---

35. Grace tied her wet hair in a bun as shown in diagram 1 below. Her mother told her to let her hair down as shown in diagram 2.



- (a) Her mother told her that her hair would dry faster if she lets it down. Do you agree with her mother? Explain your answer clearly. [2]

---



---



---

- (b) State another way that would help Grace dry her hair faster. [1]

---



---

SCORE	3
-------	---

36. Jane had three rods, X, Y and Z, made of different materials. When she touched the rods with her hands, X was the coldest, followed by Z and then Y.

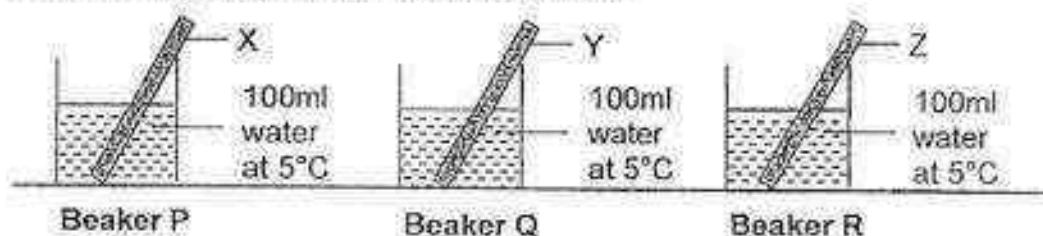
(a) Explain why Jane's hand felt cold when she touched the rods. [1]

---

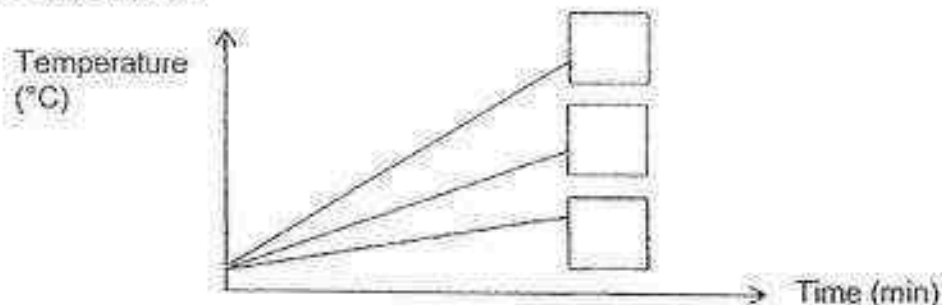


---

Then Jane heated the rods, X, Y and Z, to  $85^{\circ}\text{C}$ . She then placed each of them into a beaker of water as shown below.



She left the beakers in her room and measured the temperature of water in each beaker over a period of time. The line graphs below show the results of her experiment.



(b) Label the above line graphs by writing 'P', 'Q' and 'R' in the correct boxes. [1]

(c) Rods X, Y and Z were left in the freezer overnight. Based on the above information, which rod should be placed in a cup of hot tea for the tea to cool in the shortest period of time? Explain your answer clearly. [2]

---



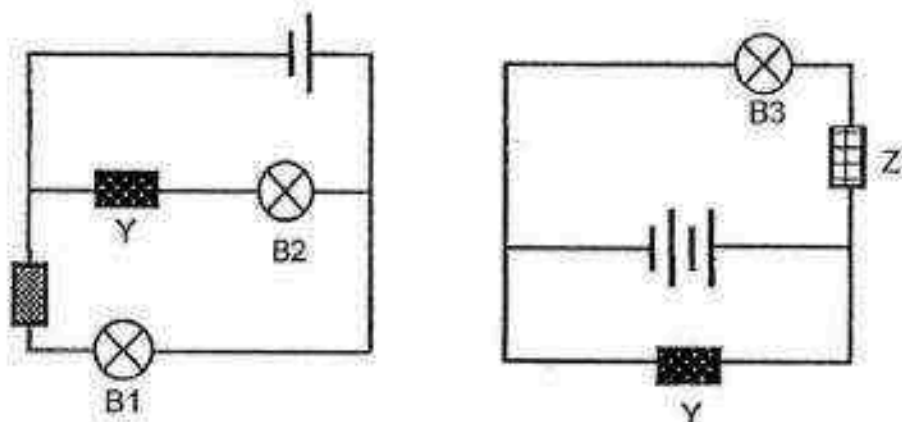
---



---

SCORE	4
-------	---

37. Justin wanted to find out if rods, X, Y and Z, are conductors of electricity. He placed the rods in two electrical circuits as shown below.



He observed that B1 and B3 lit up but B2 did not.

- (a) Based on Justin's observations above, classify rods, X, Y and Z, based on their electrical conductivity in the table below. [1]

Conductors of electricity	Insulators of electricity

- (b) Suggest a material that rod X could be made of. [1]

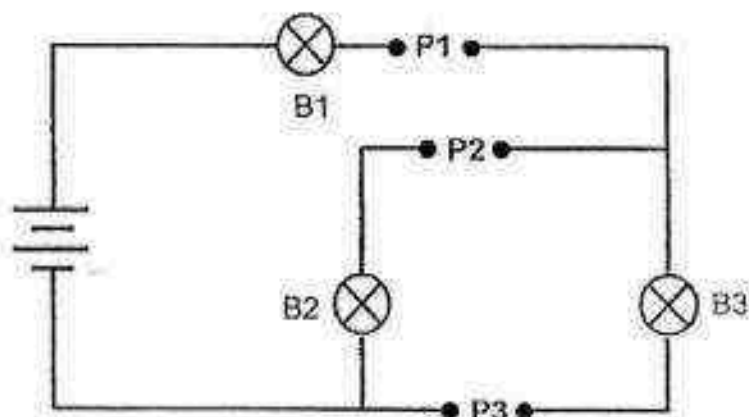
---

(continued on next page)

SCORE	2
-------	---

(continued from previous page)

Justin then placed rods X, Y and Z in another electrical circuit as shown below.



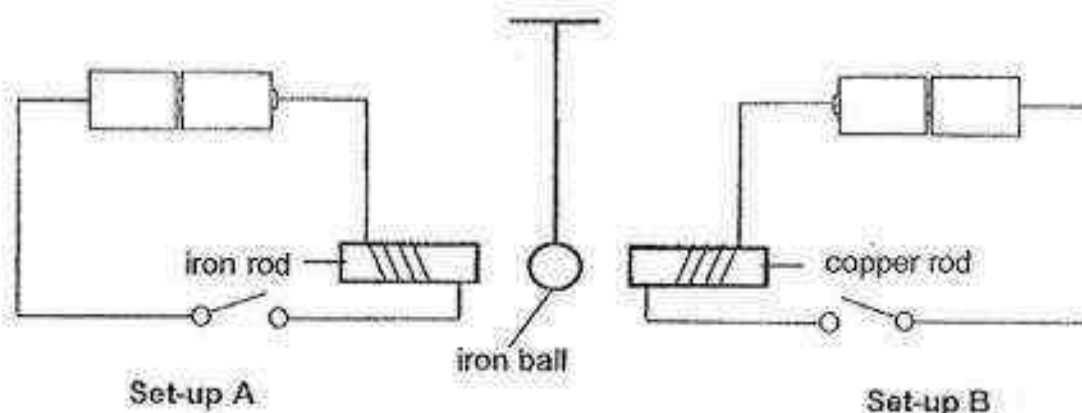
- (b) In the table below, put a tick (✓) in the correct box(es) to show the bulb(s) that would light up when the three rods were placed at the different positions P1, P2 and P3. [2]

	Positions where rods were placed			Bulb		
	P1	P2	P3	B1	B2	B3
(i)	X	Y	Z			
(ii)	Z	X	Y			

SCORE	2
-------	---



38. The diagram below shows an iron ball hung at an equal distance between the two set-ups, A and B. Both set-ups, A and B, were constructed using similar batteries and wires.



- (a) What will happen to the iron ball when the switches in set-ups, A and B, are closed at the same time? Explain your answer. [2]

---



---



---

- (b) What would happen if the iron rod is replaced with an aluminium rod and the switches in both set-ups are closed at the same time? Explain your answer. [2]

---



---



---

- End of Paper -

SCORE	4
-------	---

EXAM PAPER 2016 (P5)

SCHOOL : RAFFLES GIRLS'

SUBJECT : SCIENCE

TERM : SA2

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

26)a)X: ovary

Y: testis

b)Both part X and produce reproductive cells.

27)a)P: reproduce by spores.

Q: reproduce by seeds.

b)Ferns can make its own food but mushroom cannot make its own.

c)Animals will eat the fruit and the seeds and the seeds will get passed out through its droppings.

28)a)The roots in set-up B was wrapped with a plastic bag so it could not take in any water and nutrice from the soil to survive but the roots in set-up A is not wrapped with a plastic bag so it will be able to take in water and nutrice to survive therefore the plant in set-up A has grown taller but the plant in set-up B died.

b)Both plants would be able to receive the same amount of light.

29)a)P R Q S

b)Part P. There is no digestion taking place at the gullet and there should be the same amount of undigested food leaving the gullet as the mouth.

30)a)Cells A and B. Both cells have a nucleus to reproduce.

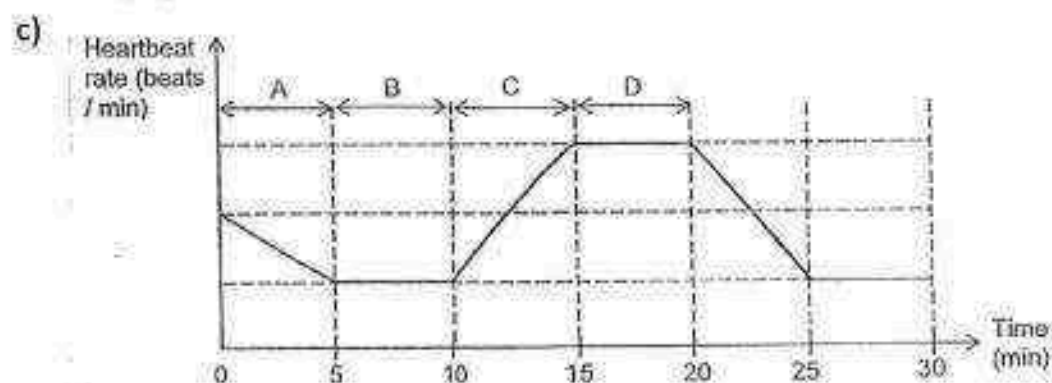
b)I do not agree with Peter. Cell B does not have chloroplast but the cell above has chloroplast.

31)a)i)water ii)food

b)Flowers.

32)a)The heart pumped most amount of oxygenated blood to all Part of the body to release most amount of energy and remove more carbon dioxide produced.

b)Sleeping.



33)a)i)Y ii)X

b)The plant in set-up X has more roots taking in more water but as for the plant in set-up Y has lesser roots taking in lesser water.

34)a)The water vapour in the air within the container gained heat from the cake. The warmer water vapour lost heat to the cooler inner surface of glass container and condensed into water droplets.

b)Decrease. The temperature of difference between the warmer water vapour in the container and cooler glass container is smaller thus reduced the rate of condensation was slowed down.

35)a)The expose surface area of the water on the untied wet hair is greater so the water on the wet hair can gain heat and evaporate faster from the surrounding air.

b)She could dry her hair over a heat source.

36)a)Jane's hand loss heat to the rods thus her hand felt colder when she touched it.

b)P , R , Q

c)Rod X. There is greatest increase in the temperature of water in beaker with rod X shows that X is the best conductor of heat. It conducted the most amount of heat away from the hot tea to the surrounding air.

37)a) Conductors of electricity

Insulators of electricity

Z, X

Y

b)Steel (any metals/copper/iron)

b)i)B1 , B3 ii)B1, B2

38)a)The iron ball would move towards the iron rod only iron rod would get magnetised and attract the iron ball as it is a magnetic material but the copper rod would not get magnetised as it is not a magnetic material.

b)The iron ball will not be attracted to the aluminium and copper rods. The aluminium and copper rods are not magnetic therefore cannot be magnetised.



# RED SWASTIKA SCHOOL

## SCIENCE 2016 SEMESTRAL EXAMINATION 2 PRIMARY 5

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

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

Date : 27 October 2016

### BOOKLET A

Total time for Booklets A & B: 1h 45 min

Booklet A: 28 questions (56 marks)

**Note:**

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
  - a. Page 1 to Page 24
  - b. Questions 1 to 28

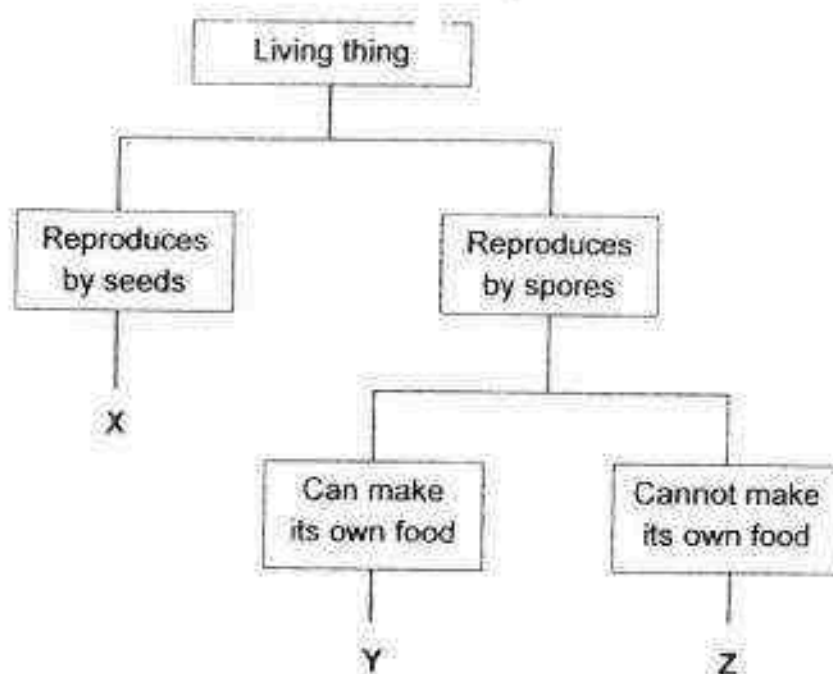
**Section A**

For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

1. Siti saw animal P at the park and she thought it was a bird. Which of the following characteristics should Siti look out for in order to determine that animal P is a bird?

- (1) It can fly.
- (2) It lays eggs.
- (3) It has wings.
- (4) It has feathers.

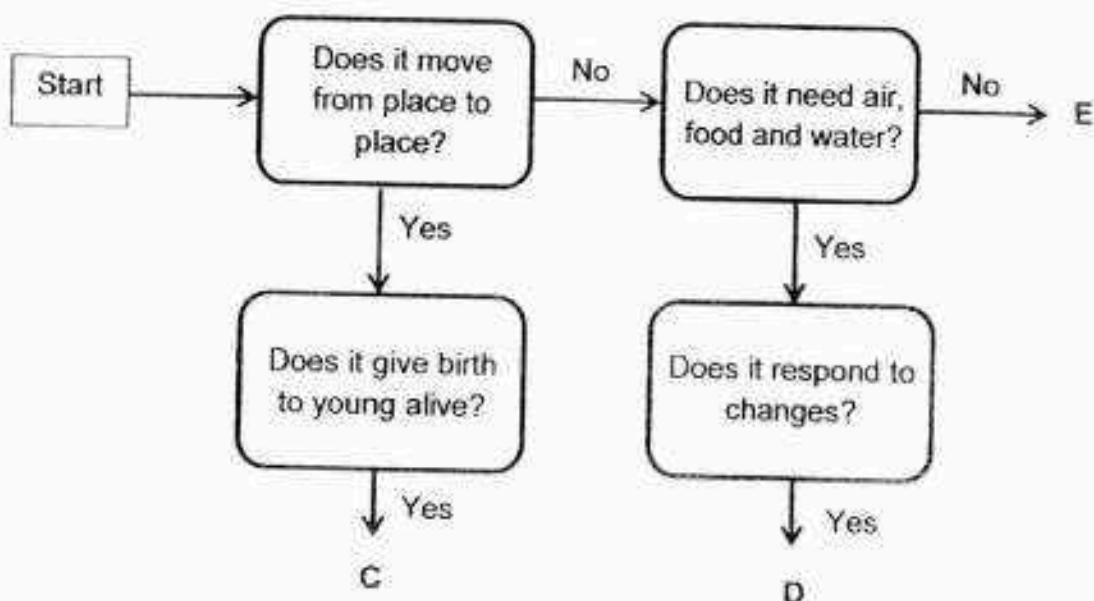
2. Study the classification chart below carefully.



From the information above, which of the following is correct?

	X	Y	Z
(1)	flowering plant	fern	fungi
(2)	flowering & non-flowering plants	fungi	fern
(3)	non-flowering plants	fern	fungi
(4)	flowering plants	fungi	fern

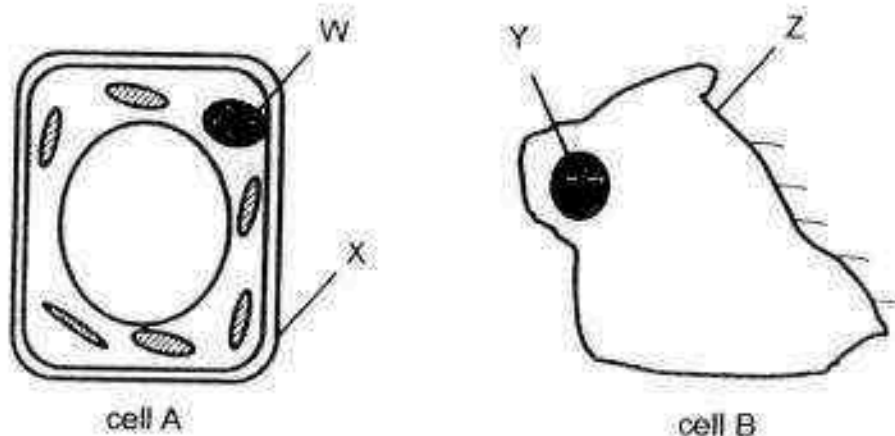
3. Study the flowchart below carefully.



Which of the following correctly matches C, D and E?

	C	D	E
(1)	molly	rabbit	water
(2)	parrot	rose plant	table cloth
(3)	guppy	cactus	book
(4)	housefly	money plant	paper

4. Jia Le studied cell A and cell B under a microscope as shown below.



Her friends made the following statement(s):

- Alice: Part Y contains hereditary information.  
 Ben: Part W contains chlorophyll for the cell to make food.  
 Cindy: Part Z controls all the activities that take place in the cell.  
 Dora: Part X has the same function as part Z.

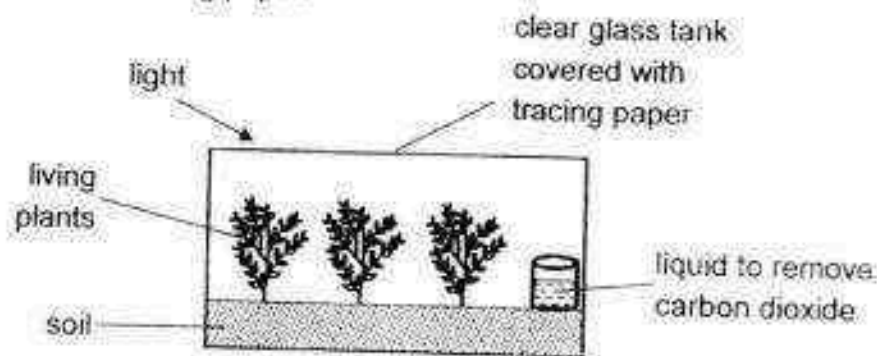
Who made the correct statement?

- (1) Alice only  
 (2) Ben only  
 (3) Ben and Cindy only  
 (4) Alice, Cindy and Dora only
5. Which of the following is the basic unit of life for a human baby?

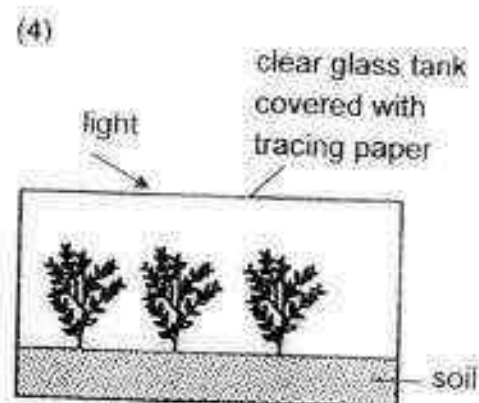
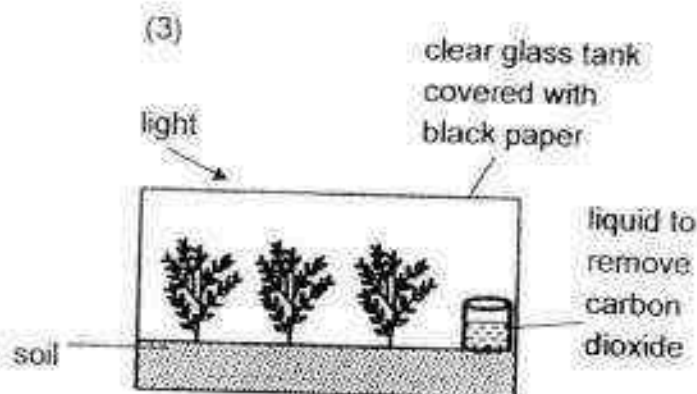
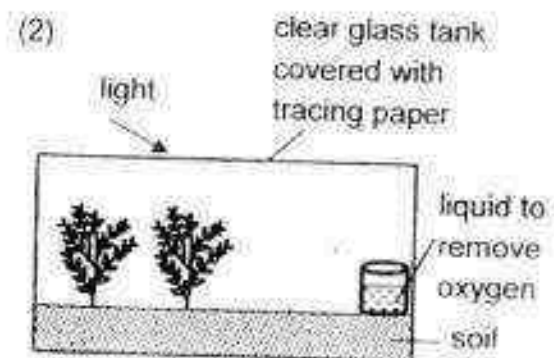
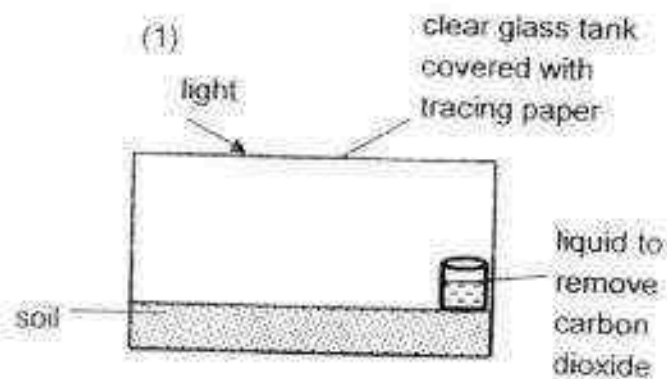
- (1) egg  
 (2) ovary  
 (3) womb  
 (4) testes



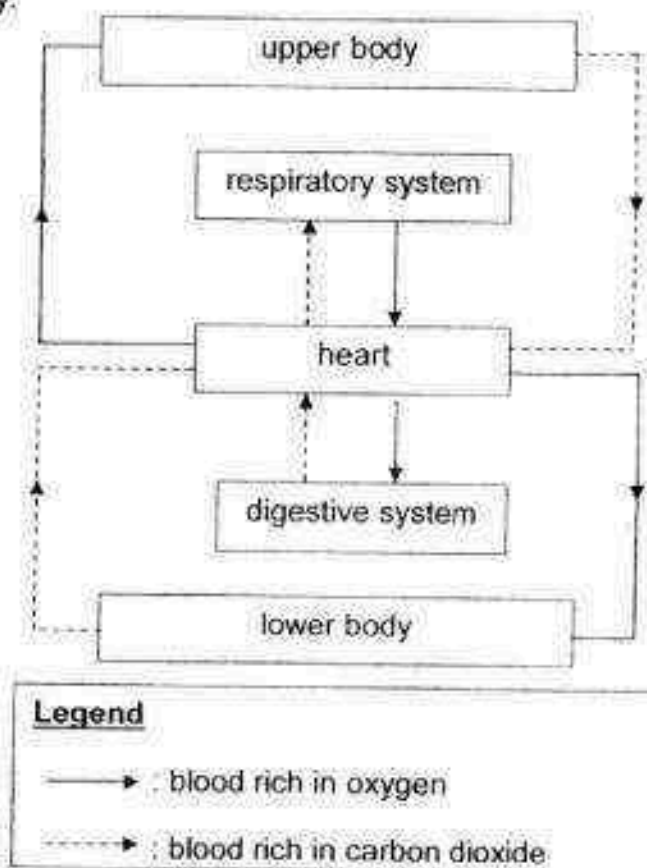
6. Ramesh wants to investigate how the presence of carbon dioxide affects the growth of a type of plant. The diagram below shows his set-up in a clear glass tank covered with tracing paper.



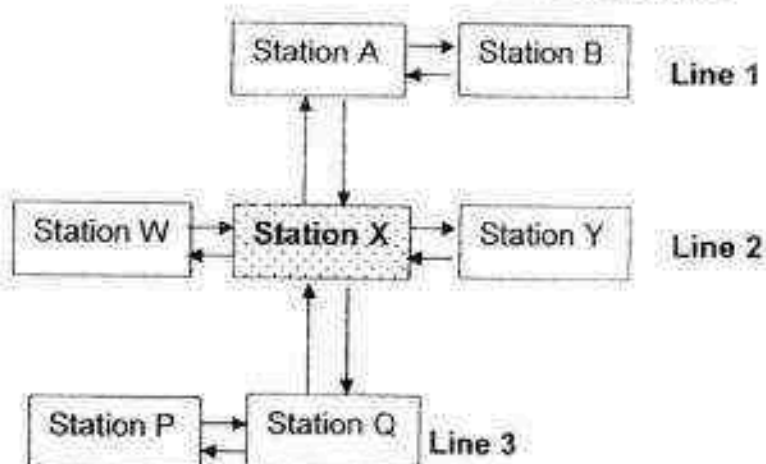
Using the same type of plants, which one of the following could be used as a control for his experiment?



7. David drew the diagram below to show the blood flow in some parts of the human body.



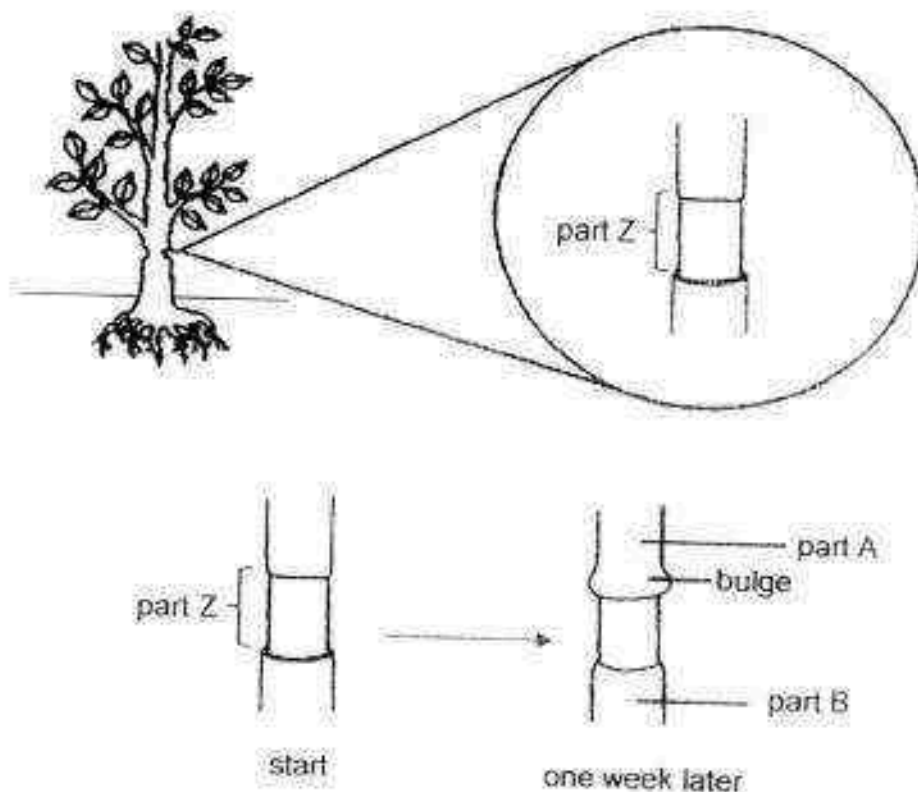
He also studied the map of a railway system as shown below. Passengers will alight at station X in order to transfer from one line to another.



Which of the following shows the human organ that is represented by station X and the system that it belongs to?

	human organ	human system
(1)	heart	circulatory
(2)	muscles	muscular
(3)	heart	digestive
(4)	lungs	respiratory

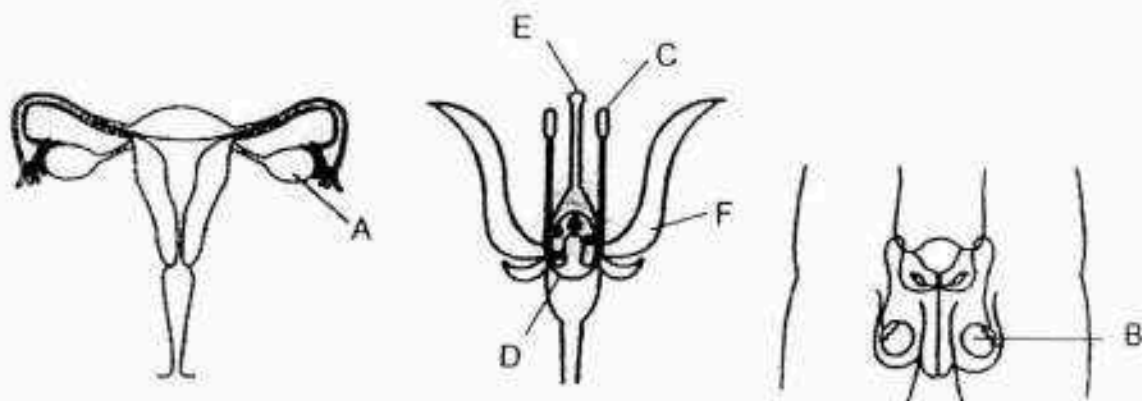
8. Lily removed the outer ring of a plant at part Z. After one week, she observed a bulge above part Z.



Which tube was removed and what was the correct explanation for her observation?

	tube removed	explanation
(1)	food-carrying tube	Food from the leaves was able to go to part A only.
(2)	food-carrying tube	Food from the leaves was able to go to part B only.
(3)	water-carrying tube	Water from the soil was able to go to part A only.
(4)	water-carrying tube	Water from the soil was able to go to part B only.

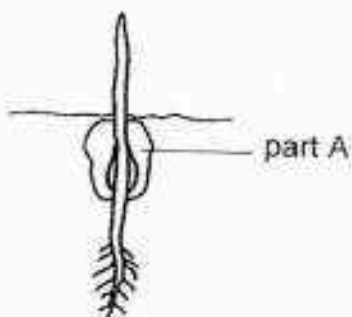
9. Chin Lee studied the parts of three reproductive systems shown below.



Which parts of the plant reproductive system have functions that are similar to parts A and B respectively?

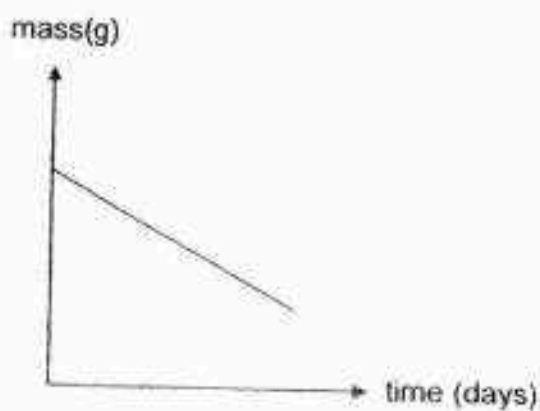
	similar to A	similar to B
(1)	C	D
(2)	D	C
(3)	E	F
(4)	F	E

10. The diagram below shows a seed growing into a young plant.

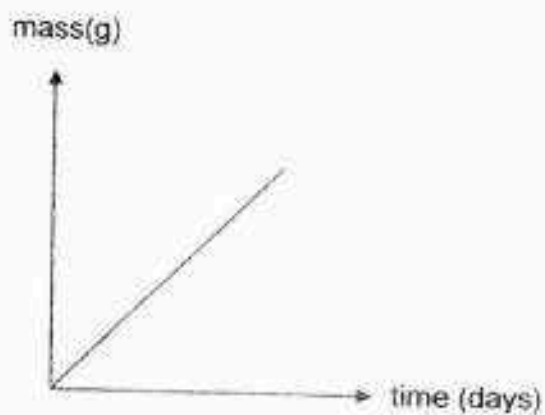


Which one of the following graphs represents the mass of part A over time?

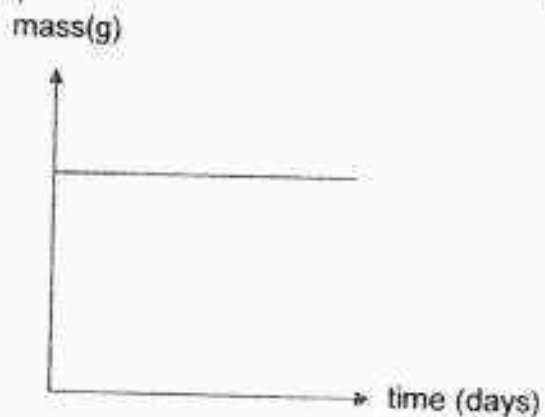
(1)



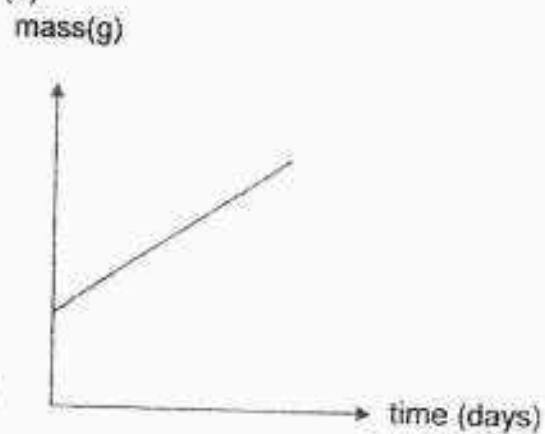
(2)



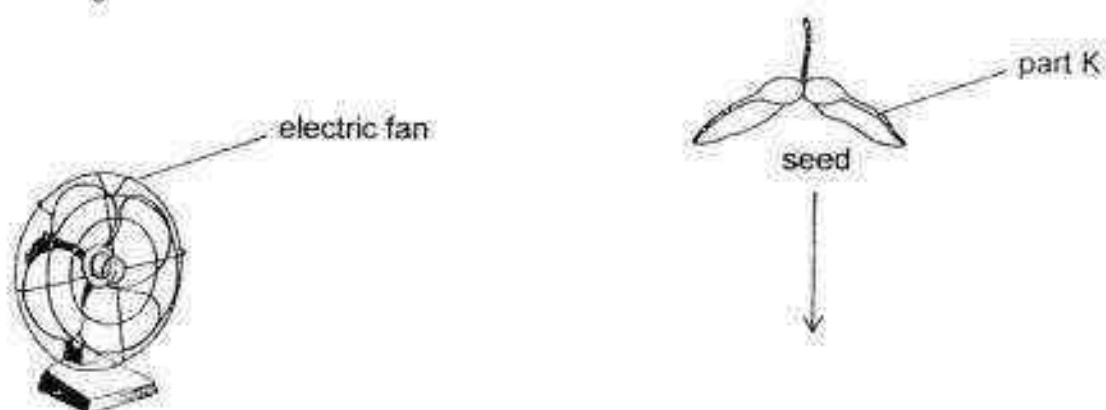
(3)



(4)



11. May Lee conducted an experiment by dropping a seed in front of a blowing fan and observing the time taken by the seed to stay afloat in the air before landing on the ground.



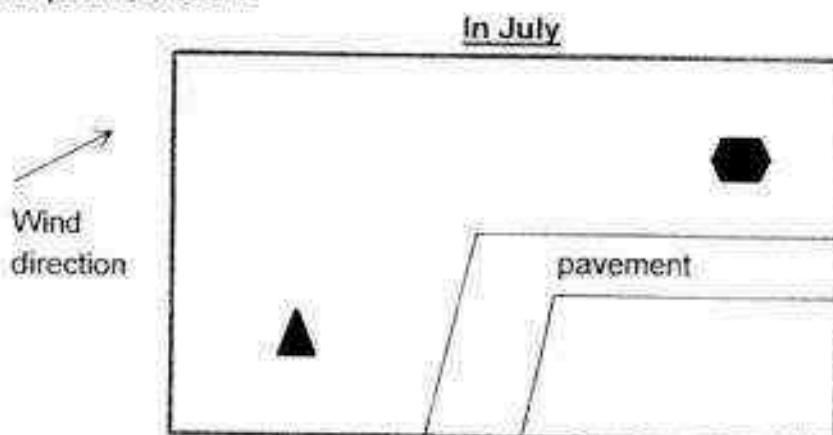
After three tries, she removed part K and repeated the same experiment. She recorded all her findings in the table shown below.

	<b>with part K</b>	<b>without part K</b>
1 <sup>st</sup> try	4 seconds	2.3 seconds
2 <sup>nd</sup> try	3.7 seconds	1.9 seconds
3 <sup>rd</sup> try	4.2 seconds	2.1 seconds

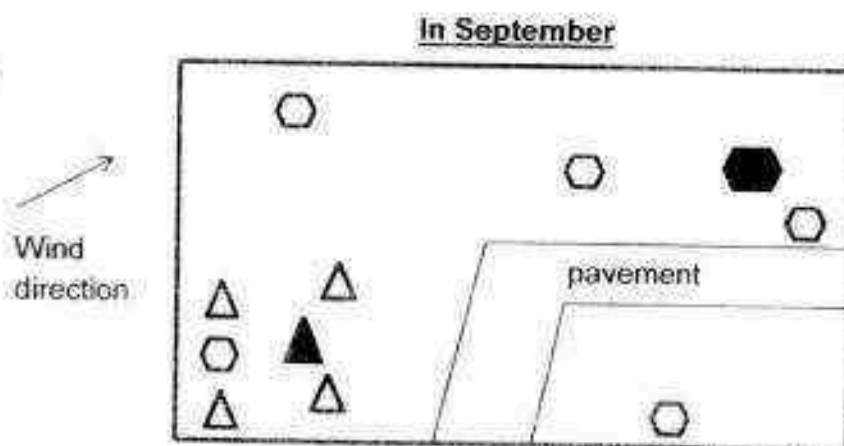
Which of the following can she best conclude from the above experiment?





- (1) The seed will stay in the air longer without part K.
- (2) Part K helps the seed to stay afloat in the air longer.
- (3) Part K is not necessary for seed dispersal and germination.
- (4) Removing part K will enable the seed to land on the ground and reproduce more slowly.

12. Susan visited a park in July and she drew a map to show where she found two plants, X and Y.



She went to the park again in September and found that there were more new plants of X and Y. She drew another map as shown below.

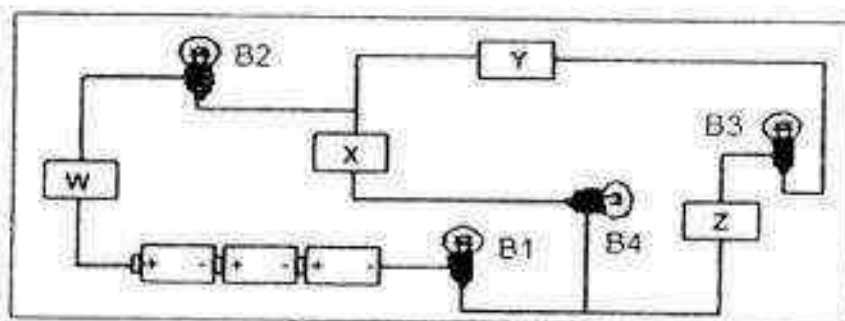


<u>Legend</u>			
parent plant X:		new plant X:	
parent plant Y:		new plant Y:	

Which of the following correctly matches the parent plants X and Y to their dispersal methods?

	plant X	plant Y
(1)	by animals	by splitting open forcefully
(2)	by wind	by water
(3)	by water	by wind
(4)	by splitting open forcefully	by animals

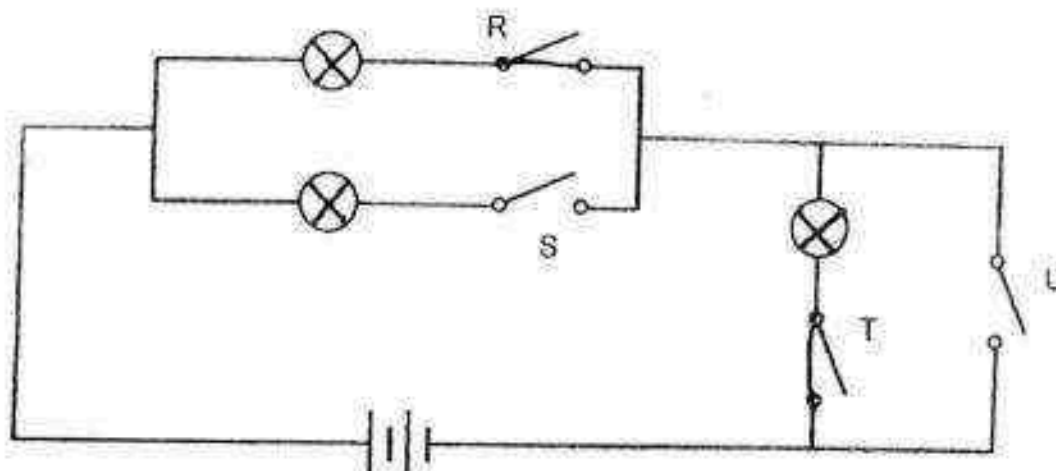
13. Study the diagram below carefully.



What can W, X, Y and Z be if only bulbs B1, B2 and B3 light up?

	W	X	Y	Z
(1)	handkerchief	woollen glove	paper clip	iron nail
(2)	plastic fork	pencil lead	silver spoon	metal ball
(3)	tungsten wire	copper rod	aluminium foil	metal ball
(4)	steel ruler	tissue paper	magnet	copper wire

14. Study the electrical circuit below carefully.

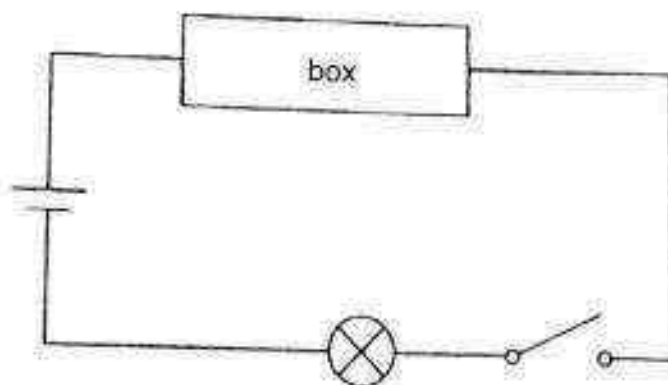


In the circuit diagram above, which switch(es) must be closed for only two bulbs to light up?

- (1) switch T only
- (2) switches R and S only
- (3) switches R and T only
- (4) switches U and T only

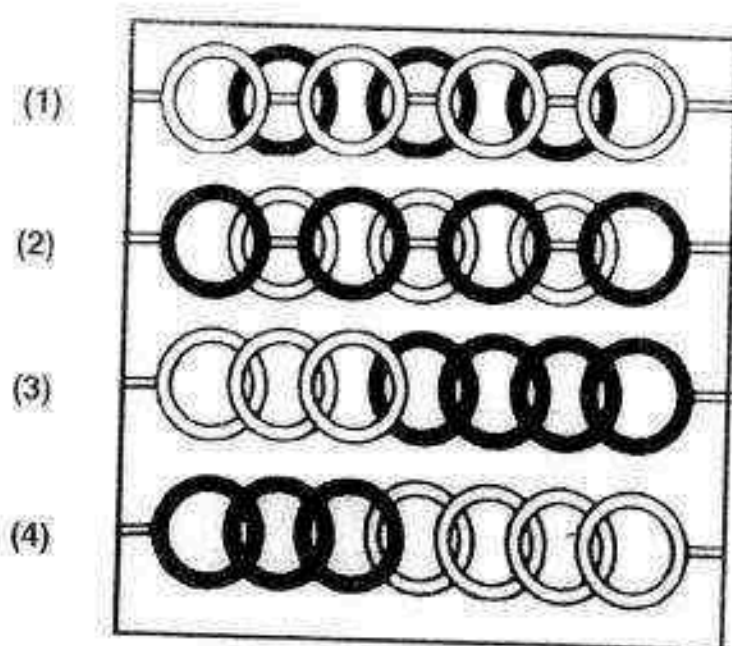


15. A box is connected to a circuit tester as shown below.

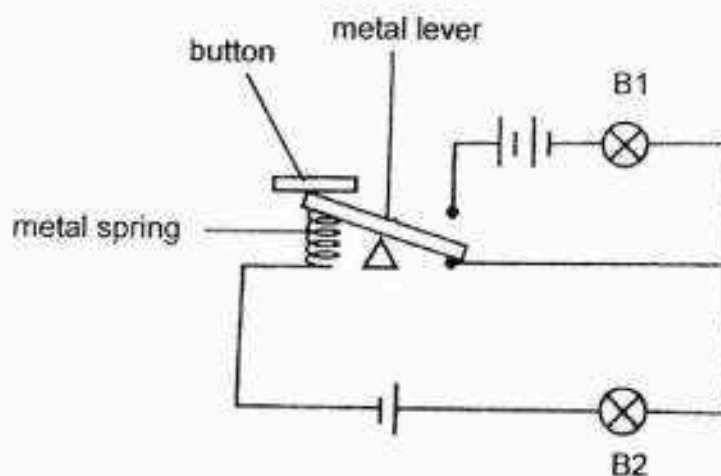


When the switch is closed, the bulb lights up. Which one of the following correctly shows what is in the box?

Key:	
	Plastic ring
	Iron ring
	Straight wire



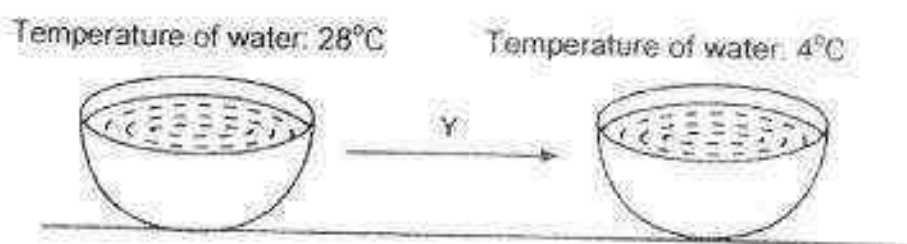
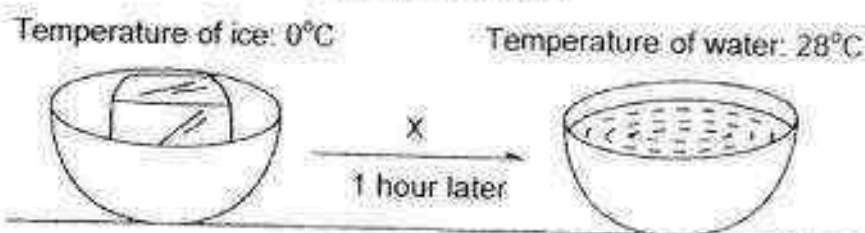
16. In the following circuit, two identical bulbs, B1 and B2, and three identical batteries are used. The metal lever is movable. At first, bulb B1 is unlit while bulb B2 is lit with a brightness of 5 units.



If the button is pressed and held down, what would happen to bulbs B1 and B2?

	Bulb B1	Bulb B2
(1)	as bright as 5 units	unlit
(2)	brighter than 5 units	unlit
(3)	as bright as 5 units	brighter than 5 units
(4)	brighter than 5 units	brighter than 5 units

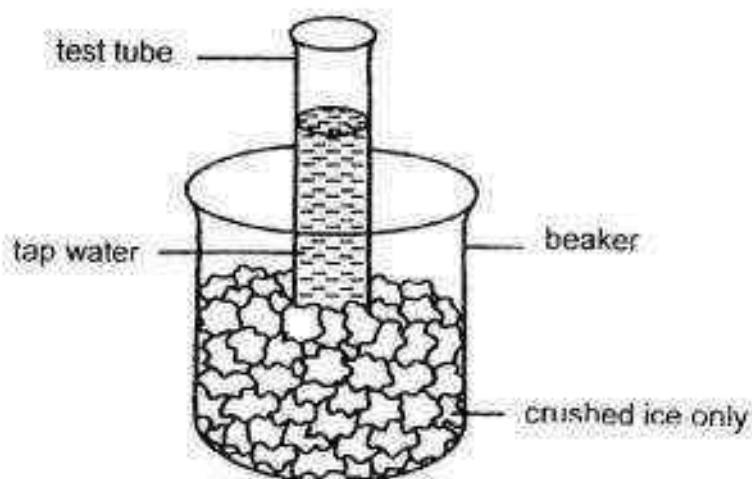
17. Billy takes an ice cube from the freezer and puts it in a bowl on the table for an hour. After that, he puts the bowl of water into the refrigerator. The temperature of the ice and water are recorded.



Which one of the following correctly describes what happens during X and Y?

	X	Y
(1)	The ice cube gains heat from the surroundings and melts.	Water loses heat to the surroundings, causing the temperature of the water to drop.
(2)	The ice cube loses heat to the surroundings and melts.	Water gains heat from the surroundings, causing the temperature of the water to drop.
(3)	The ice cube gains heat from the surroundings and melts.	Water gains heat from the surroundings, causing the temperature of the water to drop.
(4)	The ice cube loses heat to the surroundings and melts.	Water loses heat to the surroundings, causing the temperature of the water to drop.

18. Jimmy carried out an experiment as shown below in the Science room. He observed the experiment carefully.

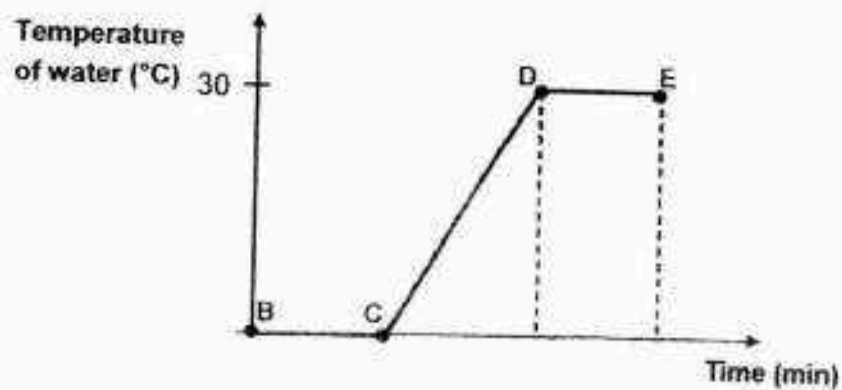


What would he observe after five minutes?

- A: The beaker became warmer.
- B: The ice in the beaker melted.
- C: The water inside the test tube became cooler.
- D: Water droplets were found on the outer surface of the beaker.

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

19. Susan put a bottle of water in a freezer. After 12 hours, she took out the bottle of frozen water and its temperature was measured at regular intervals. She plotted a graph using the data collected.



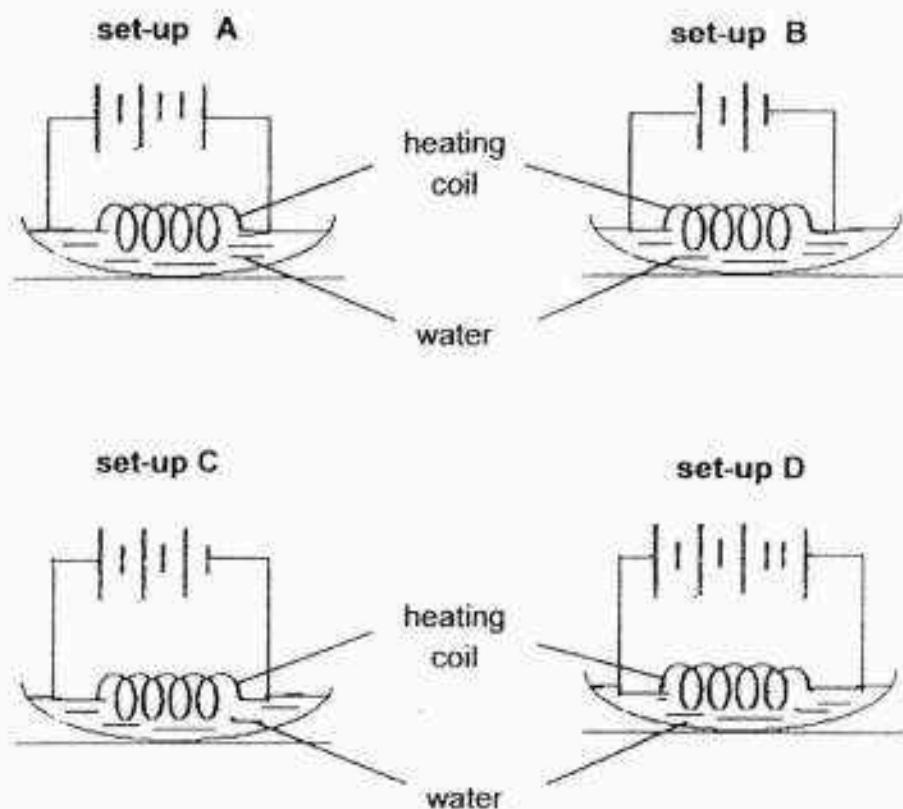
Her friends made the following statements based on the graph.

- Andrew: Evaporation is occurring at CD only  
 Bobby: There is a change in state from B to C.  
 Cindy: The water is boiling at DE.

Who has/ have made the correct statement(s)?

- (1) Andrew only
- (2) Bobby only
- (3) Andrew and Bobby only
- (4) Andrew, Bobby and Cindy

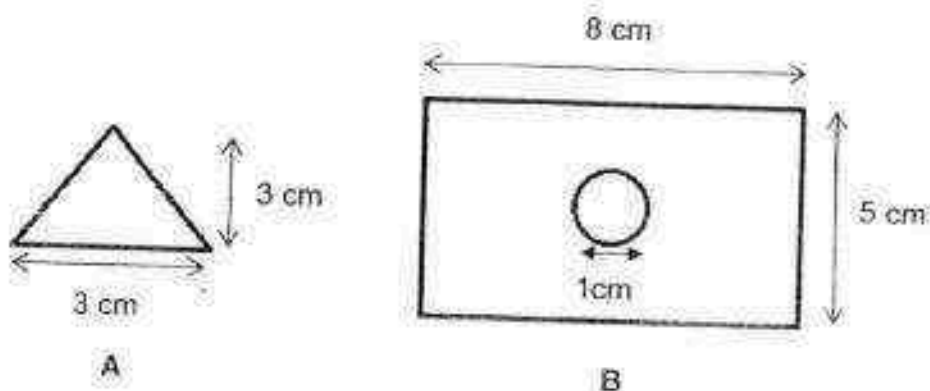
20. Robin prepares four set-ups as shown below. Each set-up has a circuit connected to a heating coil. Each heating coil is dipped into 15ml of water contained in a dish.



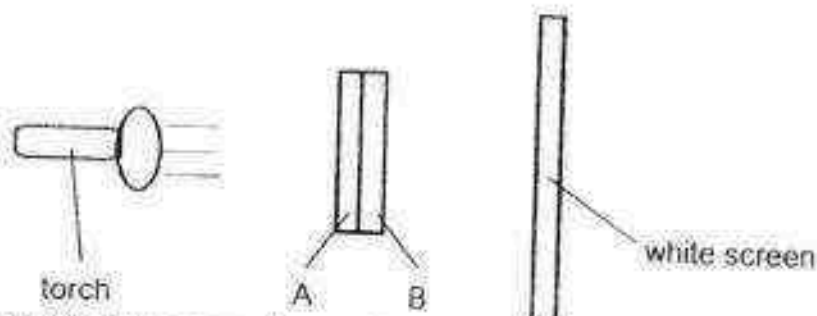
Which set-up will have the least amount of water after 20 minutes?

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

21. Jonah cut out two shapes from different materials. He pasted the two shapes together and shone a torch at them onto a white screen. Shape A was cut from a translucent sheet and shape B was cut from a piece of cardboard with a hole cut out in the centre.

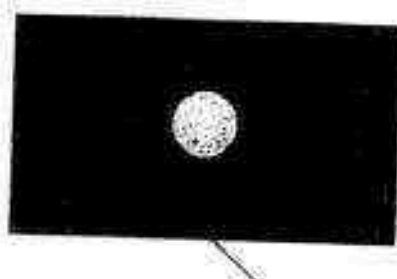


He placed the two cutouts between the torch and the white screen as shown below.



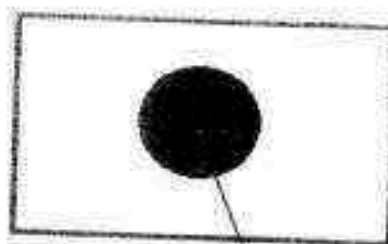
Which one of the following diagrams shows what could be observed on the white screen?

(1)



shadow

(2)



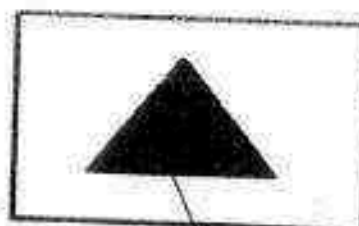
shadow

(3)



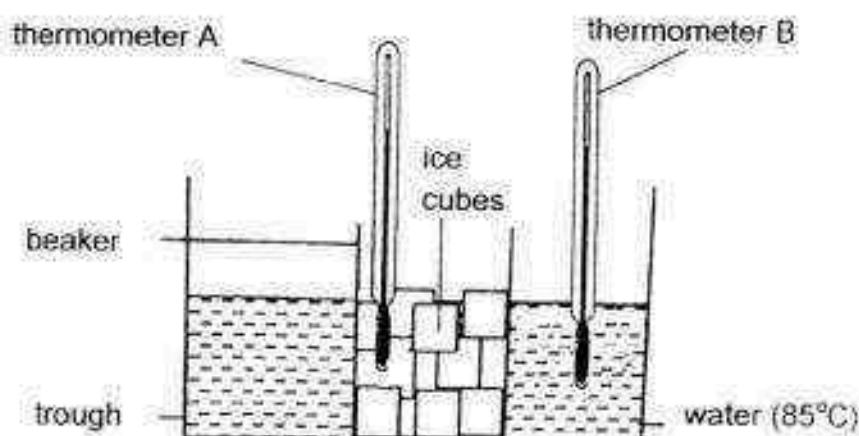
shadow

(4)



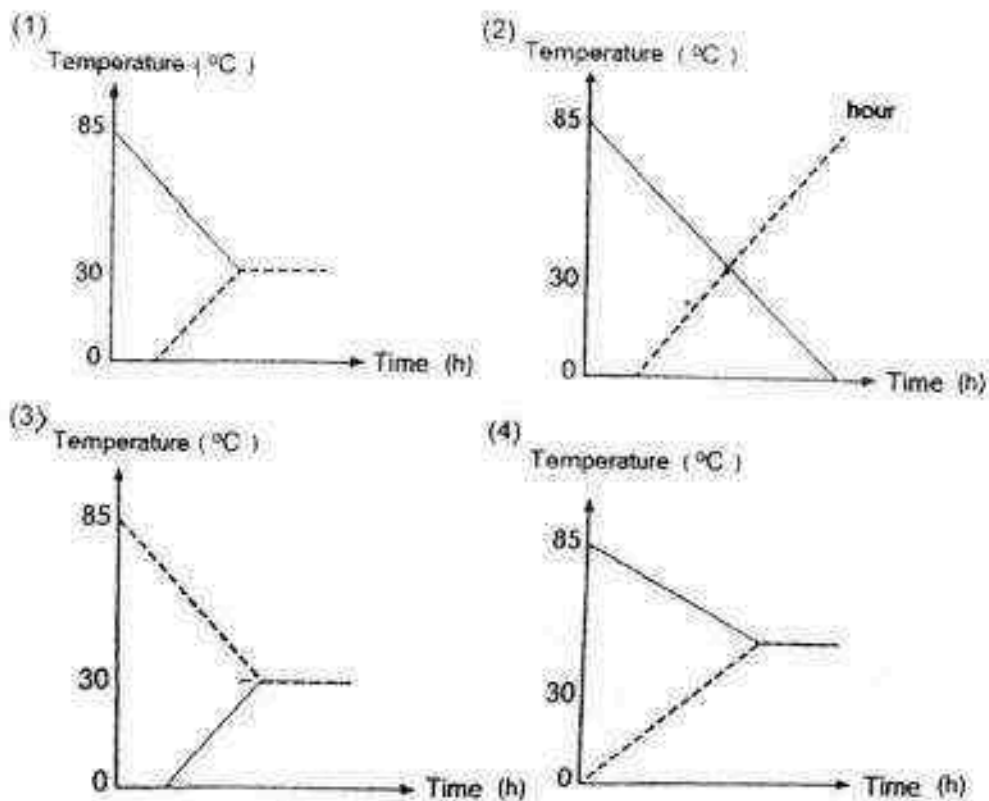
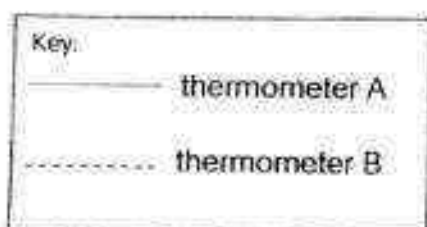
shadow

22. Samantha conducted an experiment using a set-up as shown below.



The set-up was left on a table for two hours. The readings on the thermometers, A and B, were recorded throughout the experiment.

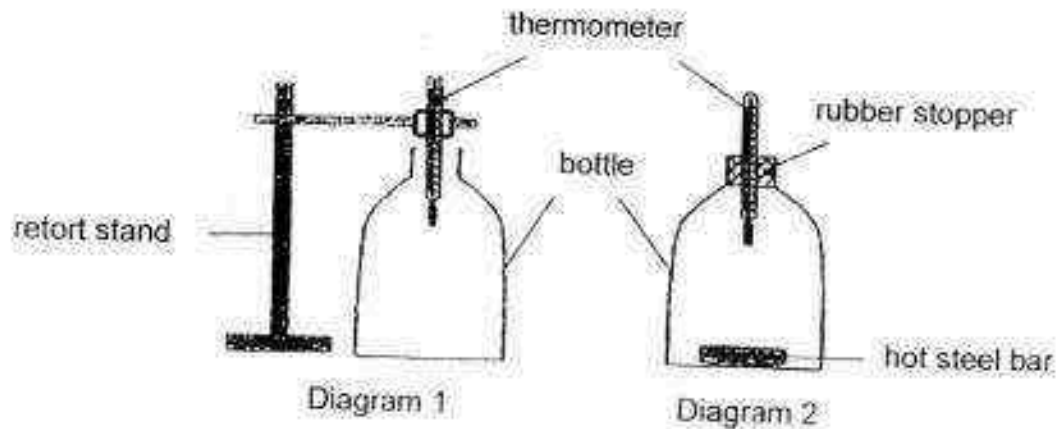
Which one of the following graphs correctly shows the readings on the two thermometers throughout the experiment?





23.

Kay wanted to conduct an experiment on heat. He first measured the temperature of the air inside a bottle as shown in diagram 1. Next, he placed a heated steel bar into the bottle and sealed the bottle with a rubber stopper as shown diagram 2.



After 3 minutes, Kay observed that the temperature of the air in the bottle has increased.

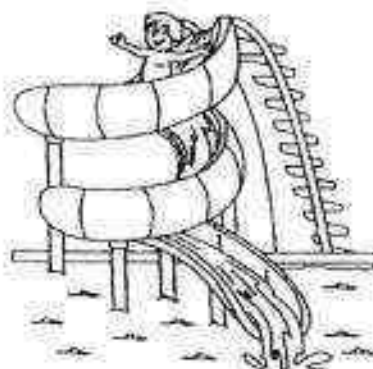
Which of the following can Kay conclude from his experiment?

- (1) Air is a good conductor of heat.
- (2) Steel is a poor conductor of heat.
- (3) The air in the bottle gained heat from the hot steel bar.
- (4) The air in the bottle gained heat from the surrounding air.

24. Aden wanted to try sliding down a water slide. As he was too early, the water flowing down the slide had not been turned on. He noted the time taken for him to reach the bottom of the slide from the top. He went down the slide again when the water was turned on. The time taken for him to reach the bottom of the slide was shorter on his second try.



Time taken: 5.6s

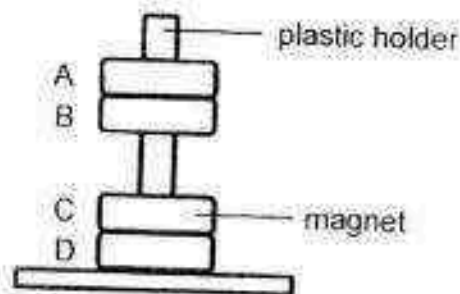


Time taken: 3.2s

Which of the following explain(s) why the time taken by Aden on his second try was shorter?

- A: The water caused Aden's weight to reduce.
  - B: The water increased the gravitational force acting on Aden.
  - C: The water reduced the frictional force between Aden and the slide.
- (1) A only
  - (2) C only
  - (3) A and B only
  - (4) B and C only

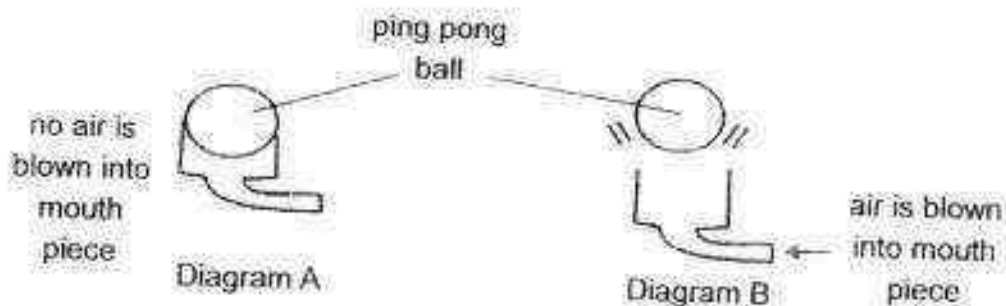
25. In the set-up below, A, B, C and D are four rings which pass through a smooth plastic holder, C is a magnet.



Which one of the following is not possible?

	A	B	
(1)	wooden	magnet	wooden
(2)	iron	magnet	Iron
(3)	wooden	iron	iron
(4)	wooden	magnet	magnet

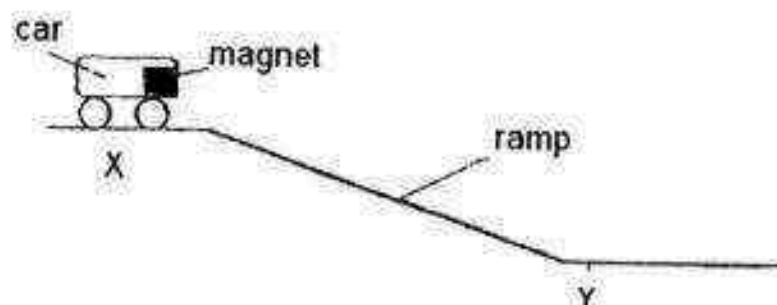
26. Which of the following statements explains why the ping pong ball is able to hover in mid-air when air is blown into the mouth piece as shown in diagram B?



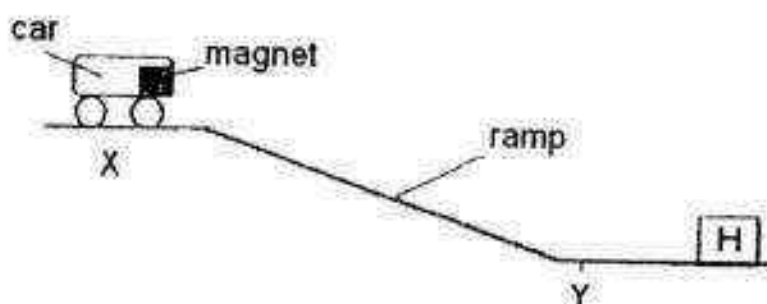
- A: The warm air exhaled from the mouth heats up the ping pong ball and causes it to rise.  
 B: The force exerted by the moving air is able to overcome the weight of the ping pong ball.  
 C: The gravitational force acting on the ping pong ball is greater than the force exerted by the moving air.

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

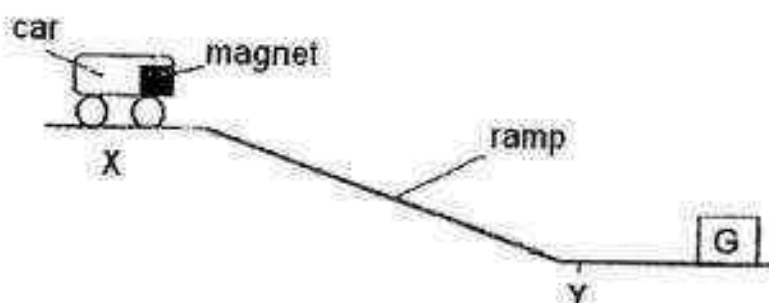
27. Jamie set up an experiment as shown below. When she pushed the car from X, the car moved down the ramp and moved a distance after point Y before coming to a stop.



She repeated the experiment with object H placed near Y as shown below. She pushed the car from X and the car moved down the ramp and stopped at Y. The car did not touch object H.



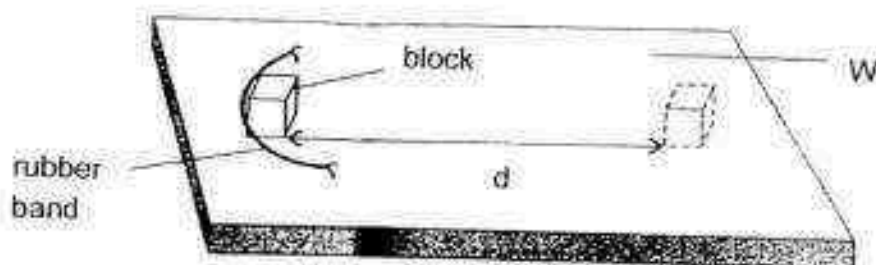
When she replaced object H with object G and pushed the car from X with the same force, the car moved towards object G and was stuck to it.



What could objects H and G possibly be?

	<u>H</u>	<u>G</u>
(1)	iron block	glass block
(2)	magnet	iron block
(3)	wooden block	steel box
(4)	electromagnet	copper box

28. A block was placed on a board, W, and was pulled to a fixed distance before it was released as shown in the diagram below.



The distance (d) moved by the block after it was released was recorded. The experiment was repeated using identical blocks released on different surfaces X, Y and Z.

The results were as shown below.

Type of surface	Distance (d) in cm
W	12
X	17
Y	25
Z	5

Which surface would be most suitable for making a slide?

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

End of booklet A



# RED SWASTIKA SCHOOL

## SCIENCE 2016 SEMESTRAL EXAMINATION 2 PRIMARY 5

Name : \_\_\_\_\_ (      )

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

Date : 27 October 2016

### BOOKLET B

13 Questions  
44 Marks

In this booklet, you should have the following:

- Page 25 to Page 42
- Questions 29 to 41

### MARKS

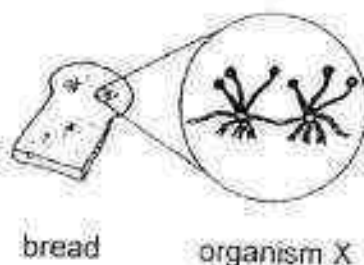
	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Parent's Signature : \_\_\_\_\_

**SECTION B**

Answer all the questions in the spaces provided.

29. Mrs Tan placed a fresh piece of bread on a table. Organism X was observed on it at the end of one week.



- a) What is organism X? (1m)

---

- b) How did organism X manage to grow on the bread? (1m)

---



---

- c) Mrs Tan said that keeping the bread in a cupboard would prevent organism X from growing. Explain whether she was correct. (1m)

---



---

Mrs Tan had a leather bag and she found a patch of fungus on it.



Her husband advised her to keep the bag in a dark place to prevent the fungus from making food.

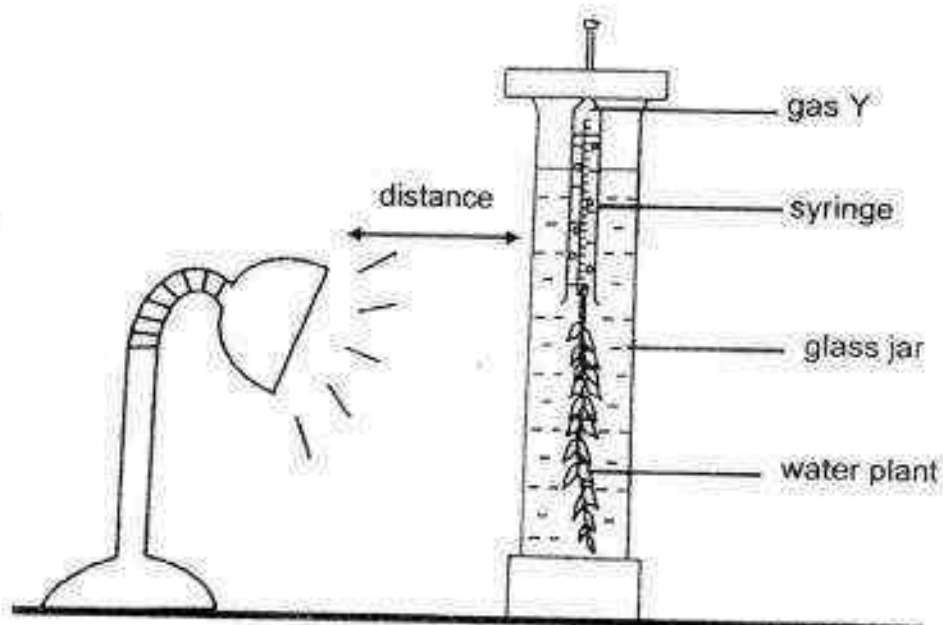
- d) Explain whether her husband's advice was correct. (1m)

---



---

30. Michael placed a plant in a glass jar and set up the experiment as shown below in a dark room. He measured the amount of gas Y given out in 20 minutes.



He repeated the experiment a few times by changing the distance between the lamp and the glass jar. He measured the amount of gas Y given out.

- a) What was the aim of his experiment? (1m)

---



---

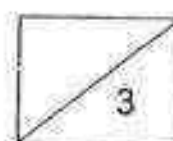
He conducted a similar experiment and he added three guppies in the glass jar.

- b) Explain why switching off the lamp would cause the guppies to die faster than when the switch is on. (2m)

---

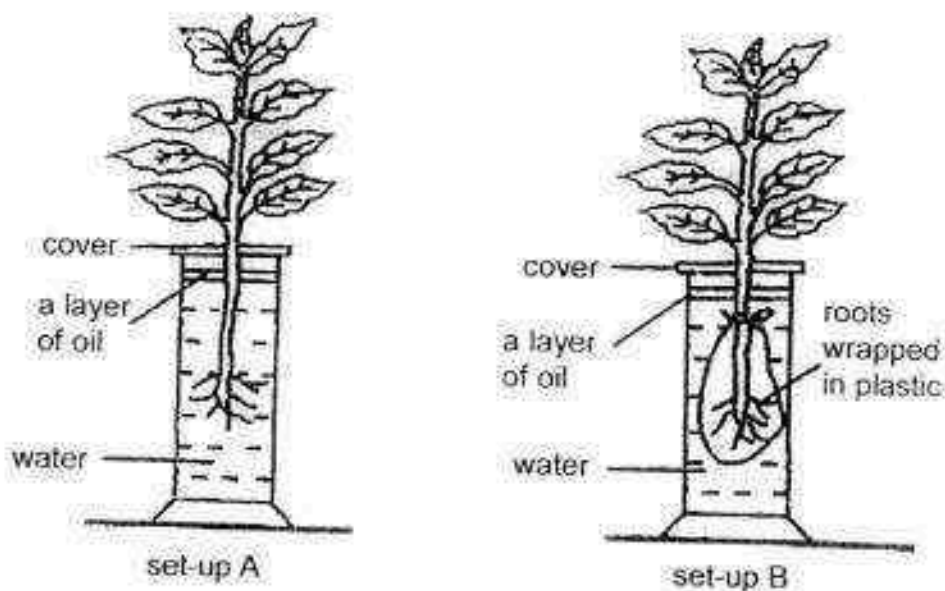


---





31. Sam conducted an experiment as shown below. He used similar plants and placed both set-ups in a dark room for three days.



- a) State the change in the water level for both set-ups on the third day. Explain your answer. (1m)

---



---

- b) Tick (✓) the gas(es) that is/are produced by the plants during the experiment. (1m)

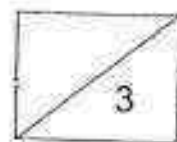
	Set-up A	Set-up B
Oxygen		
Carbon dioxide		

- c) What would happen to both plants after two weeks? Explain your answer. (1m)

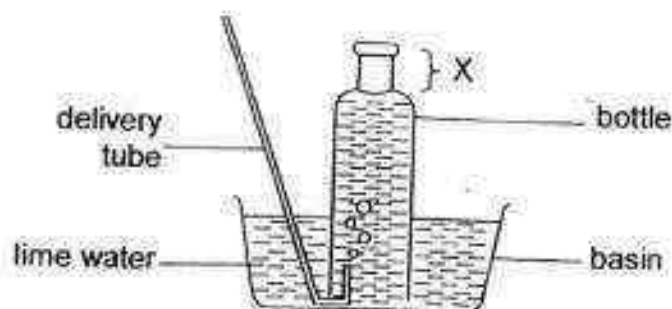
---



---



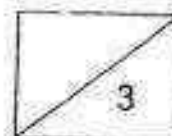
32. Kayne created a set-up as shown below. He blew into the delivery tube and recorded the height of the space (X) in the bottle after each blow.



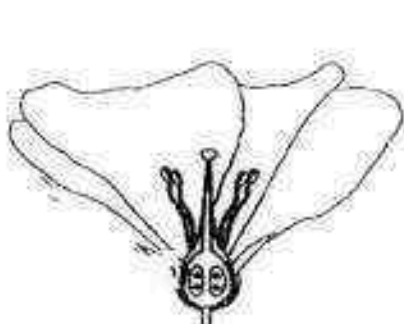
Ken created another similar set-up and carried out the same experiment. The results of their experiments were recorded as shown below.

	height of space (X) in Kayne's set-up	height of space (X) in Ken's set-up
1 <sup>st</sup> blow	2cm	2.7cm
2 <sup>nd</sup> blow	2.2cm	2.9cm
3 <sup>rd</sup> blow	2.8cm	2.6cm

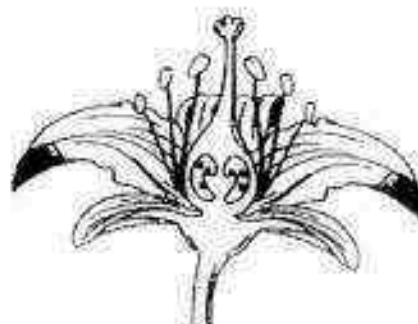
- a) Whose limewater would be more chalky after the first blow? Explain your answer (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- b) It was observed that when they blew into the delivery tube, the water level in the basin increased. Why? (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- c) Why did they repeat the experiment? (1m)
- \_\_\_\_\_
- \_\_\_\_\_



33. The diagrams below show two flowers, A and B. Flower A contains nectar but flower B does not. Once pollinated, both flowers will take the same time to turn into a fruit.



flower A

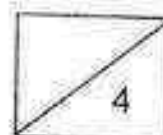


flower B

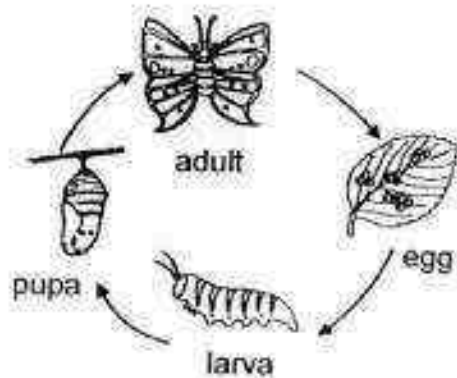
Joan observed the trees of flower A and flower B and recorded the number of fruits produced by each tree over three weeks. Both trees had no fruits at the beginning of her observation.

	Number of fruits produced	
	Flower A	Flower B
End of week 1	0	7
End of week 2	0	8
End of week 3	1	10

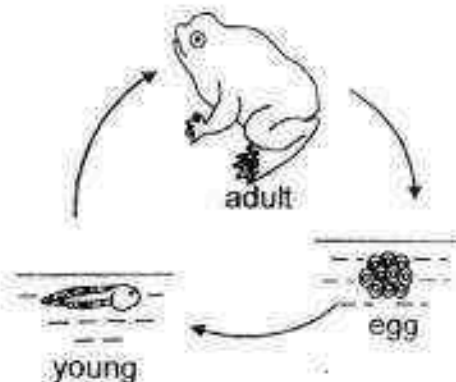
- a) State the most possible method of pollination for flower A. (1m)
- \_\_\_\_\_
- b) Explain how the pollination method in (a) takes place. (2m)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- c) Which tree was more likely to be pollinated and fertilised more frequently during the three weeks of Joan's observation? Explain your answer. (1m)
- \_\_\_\_\_
- \_\_\_\_\_



34. The diagrams below show the life cycles of two organisms.



organism A



organism B

- a) Both organisms lay many eggs at a time. State an advantage for doing so. (1m)

---



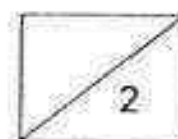
---

- b) The larva of organism A feeds on leaves of plants but the adult feeds on the nectar of flowers. How is this helpful for the organism to survive? (1m)

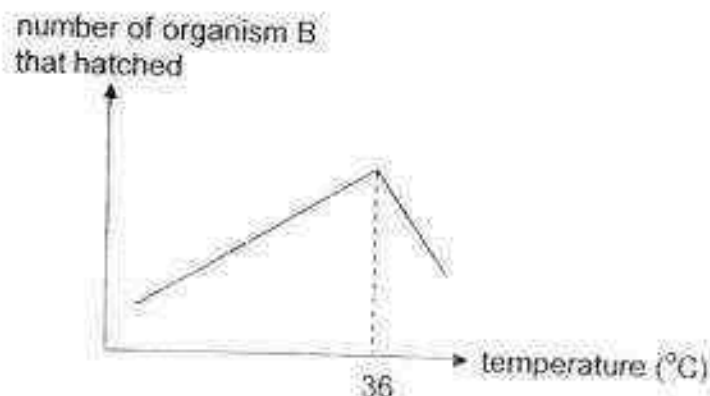
---



---



34. The graph below shows the number of organism B that hatched over different temperatures of water in a pond.



- c) Based on the above diagram, how does the temperature of the water affect the number of eggs hatched? (1m)

---



---

The temperature of water and the amount of oxygen present in the pond where organism B lives were measured and the results were shown in the table below.

temperature of water (°C)	amount of oxygen (units)
25	100
30	95
35	89
40	77

- d) It was observed that the breathing rate of the young of organism B increased when the temperature of the water increased. Explain this observation. (2m)

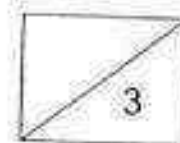
---



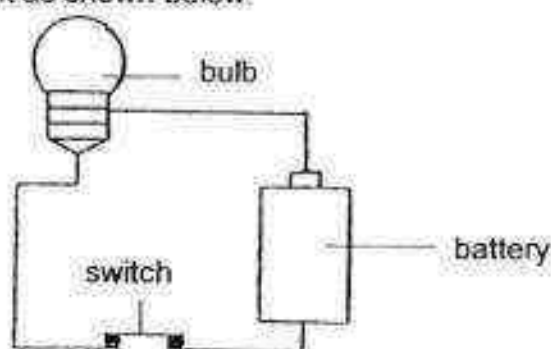
---



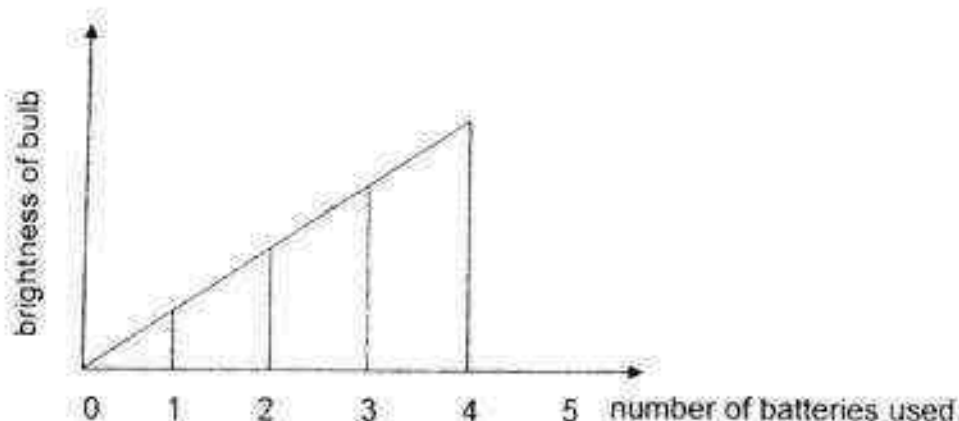
---



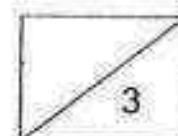
35. Jasper set up an experiment as shown below.



He repeated the experiment with different number of batteries. The results of this experiment are represented by the graph shown below.



- a) What was Jasper trying to find out from the above experiment? (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- b) What can Jasper conclude about the brightness of the bulb when the number of batteries was increased from 1 to 3? (1m)
- \_\_\_\_\_
- \_\_\_\_\_
- c) What happened to the bulb when the 4<sup>th</sup> battery was added to the closed circuit above? (1m)
- \_\_\_\_\_
- \_\_\_\_\_



36. Megan was at the beach with her family, playing with sand. She filled a bucket to the brim with sand. After that, she continued to pour sand into the bucket but the sand kept flowing out of the bucket.



- a) What can you conclude about the property of matter for sand from the above observation? (1m)

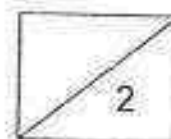
---

---

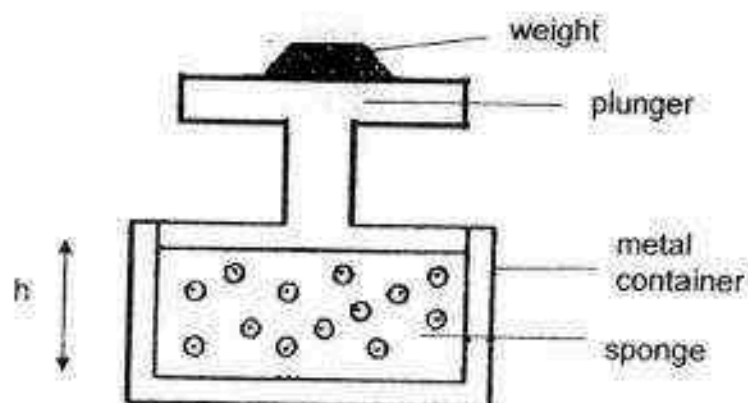
- b) Megan says that sand is a liquid as it took up the shape of the bucket when it was poured into the bucket. Do you agree with Megan? Explain your answer. (1m)

---

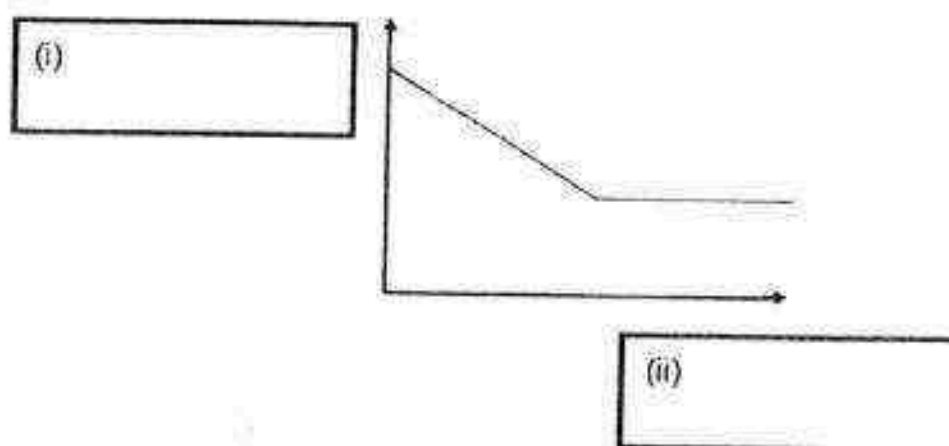
---



36. David put a sponge into a metal container as shown below. He then put a weight on the plunger and measured the height ( $h$ ) of the sponge when the plunger stopped moving upwards. He repeated the experiment by adding more weights.



- c) David recorded his results and draw a graph as shown below. Label the axis (i) and (ii) of the graph. (1m)

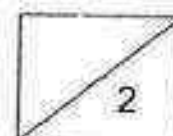


- d) The height ( $h$ ) of the sponge decreased as weights were placed on the plunger. Explain why this was possible. (1m)

---

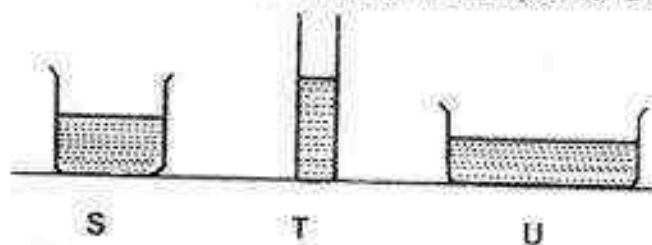


---





37. Alan set up an experiment as shown below to study the rate of evaporation of water in three different containers S, T and U. He poured different amount of water into each of the containers and left them in the open for a day.



- a) His teacher told him that his experiment is not a fair test. Suggest what Alan should do to make this experiment a fair test. (1m)

---



---

Alan then improved on his experiment to make it a fair test.

- b) What should he measure to determine which container has the highest rate of evaporation? (1m)

---



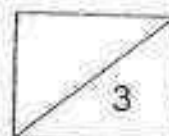
---

- c) Which container of water has the highest rate of evaporation? Explain your answer. (1m)

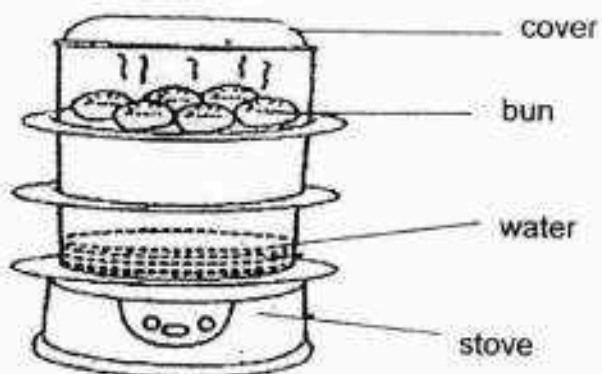
---



---



37. Mother used a steamer shown below to steam some buns.

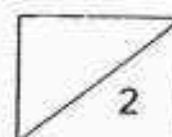


Mother observed some water droplets on the underside of the cover after some time.

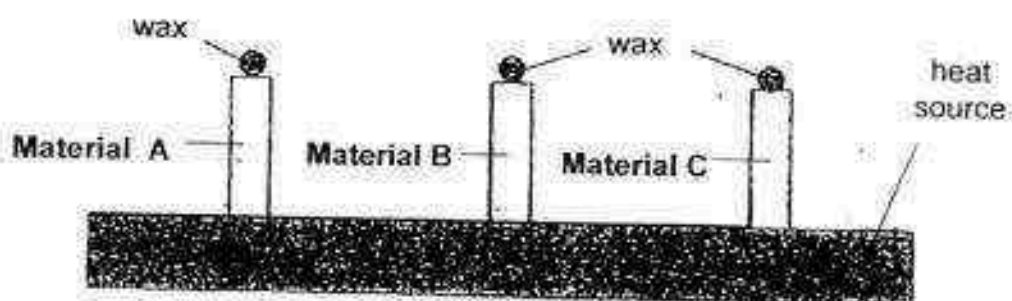
- d) Explain clearly how the water droplets were formed. (2m)

---

---



38. Jerick conducted an experiment to find out how fast different materials conduct heat. He placed some wax at the top end of 3 rods made of different materials A, B and C. The three rods were then placed on top of a heat source as shown below.



He recorded the time taken for the wax to melt completely, as shown in the table below.

Materials	A	B	C
Time taken (minutes)	7	9	4

- a) Based on the results, which material is most suitable for making a frying pan? Explain your answer. (2m)

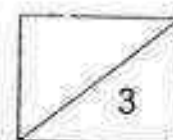
\_\_\_\_\_

\_\_\_\_\_

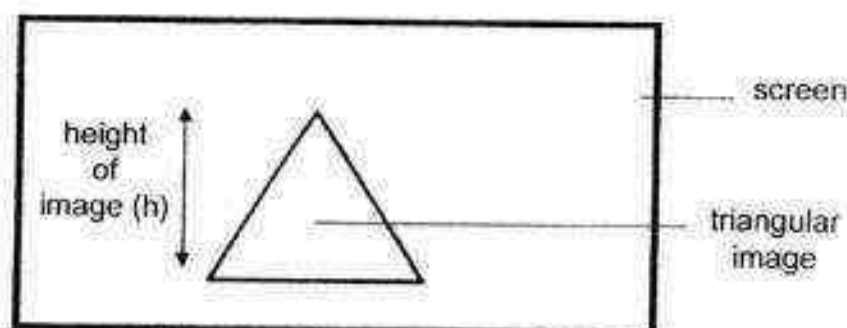
- b) List two variables that Jerick needs to keep constant to ensure that the experiment is fair. (1m)

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

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



39. David wants to have a movie room in his new house where he intends to install a projector to project movies onto a large screen. He placed the projector at different distance from the screen and recorded the height of a triangular image on the screen.



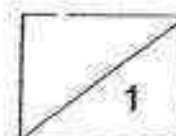
Distance of the projector from the screen, in metres	Height of the image on the screen (h), in metres
10.0	2.0
12.5	2.5
15.0	3.0
17.5	3.5

- a) Based on the table, what is the relationship between the distance of the projector from the screen and the height of the image on the screen? (1m)

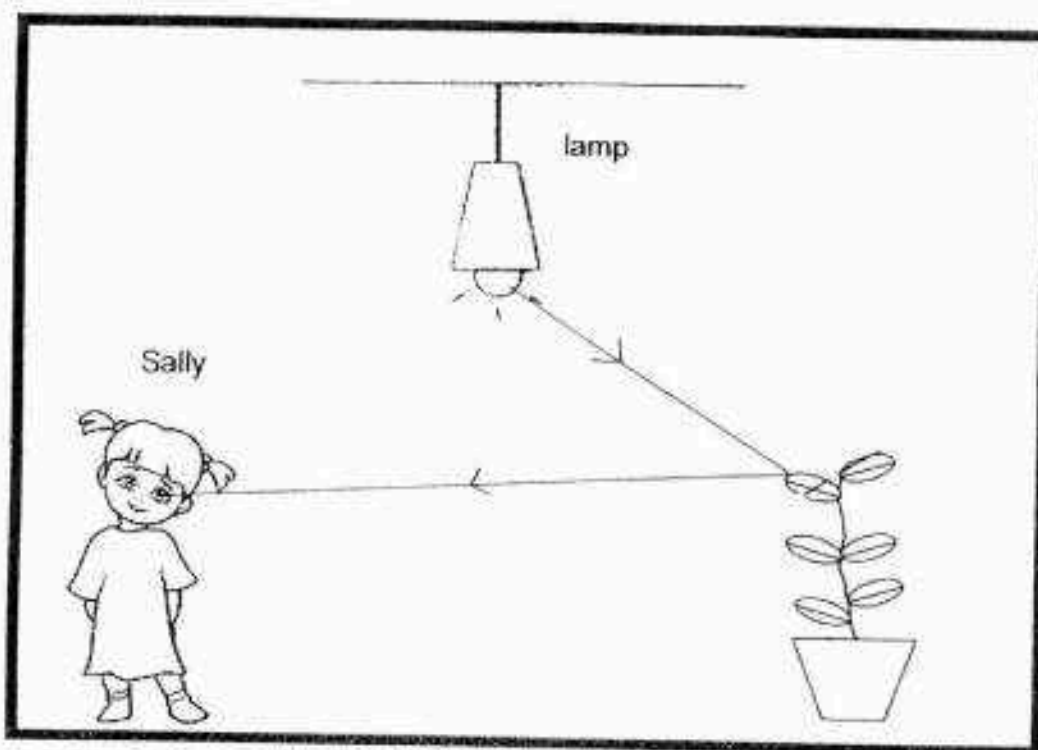
---



---



- b) Sally could see the pot of plant as shown below. Draw arrows to show how light travels such that Sally could see the pot of plant. (1m)



40. The diagram shows a boy riding up a slope on a bicycle.



- a) Besides friction that the boy would encounter, identify one other force that is acting on the boy as he goes up the slope. (1m)

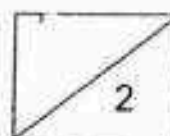
---

---

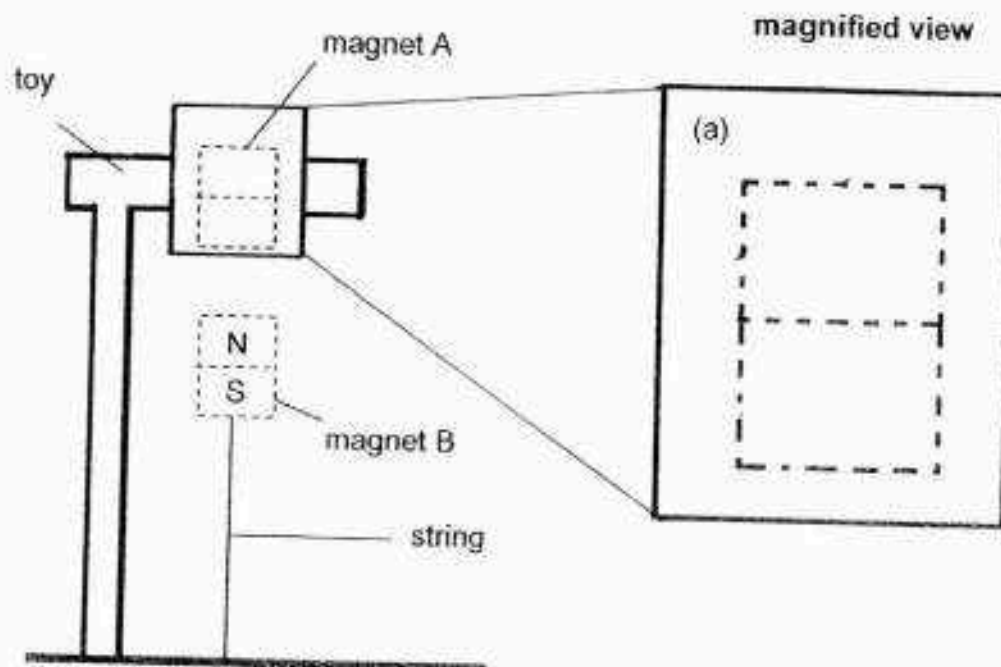
- b) He found that he has to apply a greater force on the pedals when he moves up the slope. Explain why this is so. (1m)

---

---



41. The diagram below shows a picture of a toy. The toy has a magnet in it.

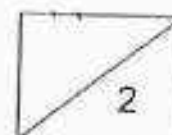


- a) Label the poles of magnet A in the toy so that magnet B is able to 'float' in the air. (1m)
- b) It is observed that when the toy is removed, magnet B drops to the ground. Explain why. (1m)

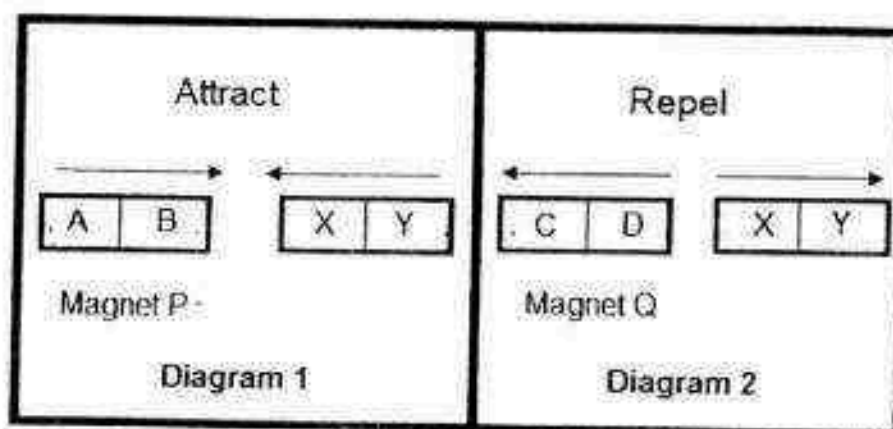
---



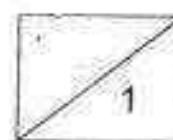
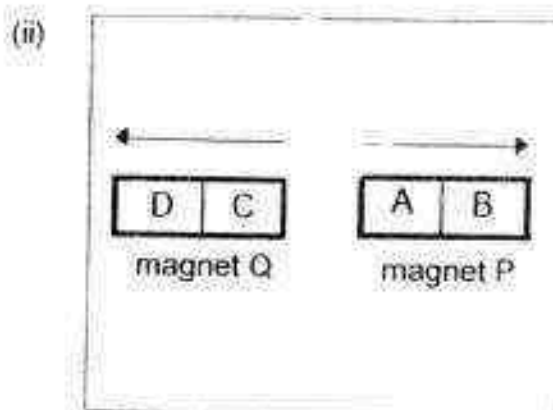
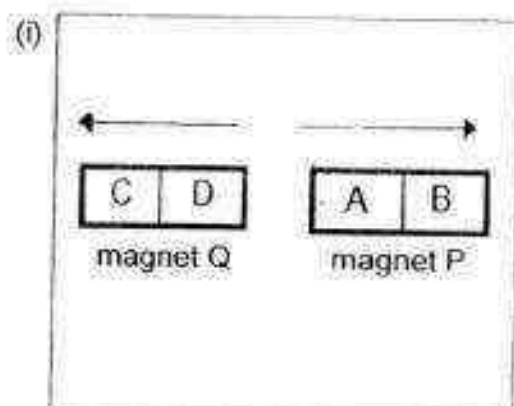
---



- c) The diagrams below show what happens when magnet P and magnet Q are placed close to a magnet, one at a time.



Magnet P and magnet Q were then placed close to each other. Draw arrows in the boxes below to show the force of repulsion or the force of attraction between the two magnets. (1m)



END OF SECTION B  
PLEASE CHECK YOUR WORK



YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : RED SWASTIKA  
 SUBJECT : SCIENCE  
 TERM : SA2

**Booklet A**

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

**Booklet B**

Q29a Fungi

Q29b Mould spores landed on the bread and with water they grew into moulds.

Q29c She was wrong. Placing the bread in the cupboard will continue to allow the bread mould to grow because there is warmth, water and oxygen in the cupboard.

Q29d His advice was not correct. The fungus is not a plant so it does not need sunlight to make food.

Q30a To find out if the amount of light affects the rate of photosynthesis of the plant.

Q30b When the lamp is switched off, there is no light for the plants to photosynthesise and give out oxygen. The guppies will die faster as there is less/insufficient oxygen for them.

Q31a Set-up A's water will be decreased as the roots are absorbing it, however set-up B water remain constant as the roots are unable to absorb it as there is a plastic wrapping it.

Q31b

	Set-up A	Set-up B
Oxygen		
Carbon dioxide	✓	✓

Q31c Both plants will die, as there is no light to make food.

- Q32a Ken's. He blew more air into the limewater and thus there is more carbon dioxide.
- Q32b The air that is exhaled takes up the space previously occupied by the water in the water in the bottle and pushes the water out of the bottle into the basin.
- Q32c To make sure that the experiment is reliable.
- Q33a Insect – pollinated.
- Q33b Insects are attracted to flower A by its nectar. Pollen grain get stuck to the insect's body and take to the stigma.
- Q33c Flower B. It had more fruits than flower A.
- Q34a By doing so, it would avoid extinction.
- Q34b Both organisms would not compete for food.
- Q34c The higher the temperature of the water, the more the number of eggs hatched, until 36° when the number of eggs hatched starts to reduce with further increase in temperature.
- Q34d The amount of oxygen in the pond decreases as the temperature of the water increases. Thus, at higher temperature, there is less oxygen for the young to breathe in so the young needs to breathe faster to take enough oxygen for survival.
- Q35a He was trying to find out if the number of batteries, would the brightness of the bulb increase or not.
- Q35b As the amount of batteries was being increased, the brightness of the bulb would also be increased.
- Q35c The bulb will be fused as there is too much electrical energy.
- Q36a Sand has a definite volume and occupies space.
- Q36b No. Each sand particle has a definite shape, so sand is a solid.
- Q36c  
(i) Height of the sponge.  
(ii) Amount of force used.
- Q36d As weights were placed the air in the sponge was forced out or compressed.
- Q37a He should ensure an equal amount of water into each container.
- Q37b The amount of water left.

Q37c Container U. It has the largest exposed surface area of water.

Q37d The water gets heated and evaporated to form hot water vapour. The hot water vapour touches the cooler inner surface of the cover. The water vapour then loses heat and condenses to form water droplets.

Q38a C. Time taken for the wax to melt is shortest. This shows that C conducts heat the fastest.

Q38b (i) The height of the rods.  
(ii) The amount of wax.

Q39a As the distance of projector from the screen increases, the height of the image on the screen increases.

Q39b



Q40a Gravitational force.

Q40b Gravitational force is pulling him down and as by applying a great force would allow him to overcome the frictional and gravitational force.

Q41a

N
S

Q41b There is no magnetic force of attraction to hold magnet B in the air and gravity pull it down to the ground.

Q41c (i)   
(ii) 

End



**Rosyth School**  
**Second Semestral Examination for 2016**  
**STANDARD SCIENCE**  
**Primary 5**

Name: \_\_\_\_\_

Class: Pr 5 - \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1 h 45 min

Date: 1<sup>st</sup> Nov 2016

Parent's Signature: \_\_\_\_\_

---

## Booklet A

Instructions to Pupils:

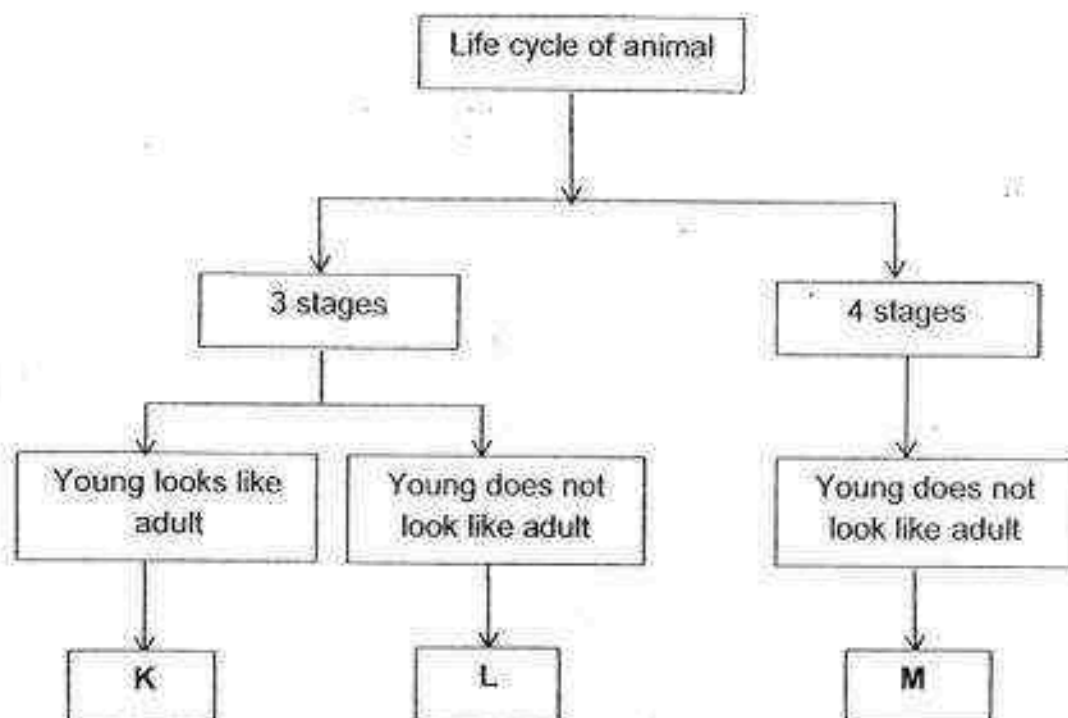
1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

\* This booklet consists of 19 printed pages (including cover page).

**Part I**

For each question from 1 to 28, 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. (56 marks)

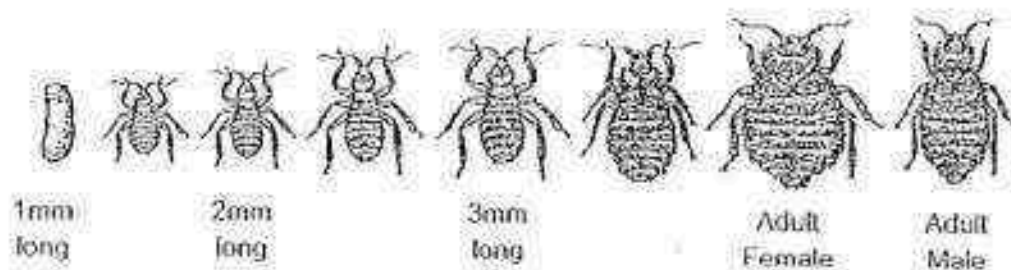
1. Study the diagram below.



Which one of the following represents K, L and M?

	K	L	M
(1)	frog	butterfly	grasshopper
(2)	grasshopper	frog	butterfly
(3)	butterfly	grasshopper	frog
(4)	grasshopper	butterfly	frog

2. The diagram below shows the development of a bed bug from an egg to an adult.



Based on the development shown above, how many stages is the lifecycle of the bed bug?

- (1) seven-stage lifecycle      (2) two-stage lifecycle  
 (3) three-stage lifecycle      (4) four-stage lifecycle
3. Why is the cell wall in a plant cell important?

- A: It protects the cell from damage.  
 B: It helps to keep the cell its cell shape.  
 C: It controls the movement of substances in and out of the cell.

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

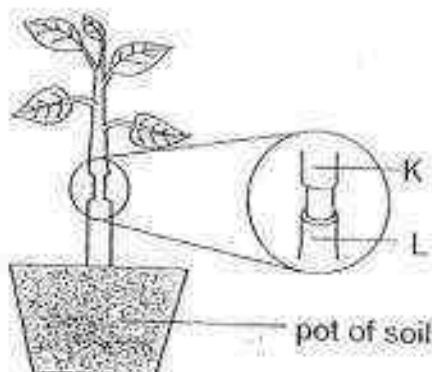
- 
- A diagram of a plant cell with a rectangular shape and rounded corners. The cell has a thick outer boundary. Inside, there is a large, clear central area. A small, circular structure is located near the top center. The outer boundary is marked with small circles. Labels with leader lines point to specific parts: 'D' points to the small circular structure; 'E' points to the outer boundary; 'F' points to the inner boundary of the large central area; and 'G' points to one of the small circles on the outer boundary.

(1) D                      (2) E  
 (3) F                      (4) G

- |                               | Beaker Q | Beaker R | Beaker S | Beaker T |
|-------------------------------|----------|----------|----------|----------|
| Amount of sugar solution      | 100ml    | 50ml     | 100ml    | 25ml     |
| Temperature of sugar solution | 30°C     | 30°C     | 50°C     | 30°C     |

(1) Q and R                      (2) R and T  
(3) Q and S                      (4) Q and T

6. Jerome cut an outer ring of the stem between positions K and L of a plant as shown below. The food-carrying tubes between positions K and L were removed while the water-carrying tubes remained in the stem.

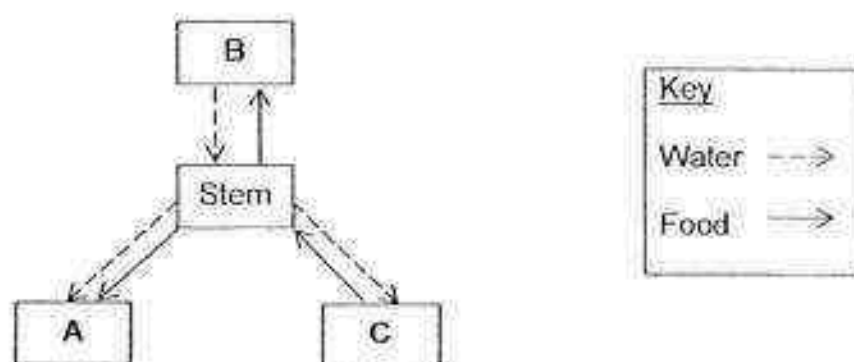


After some time, he observed that one part of the stem was swollen. Which part of the stem, K or L, was swollen and what would be the reason?

	Swollen part	Reason
(1)	K	Water absorbed by the roots had travelled upwards and stored at K.
(2)	K	Food made by the leaves was unable to travel downwards and stored at K.
(3)	L	Water absorbed by the roots was unable to travel upwards and stored at L.
(4)	L	Food made by the leaves had travelled downwards and stored at L.



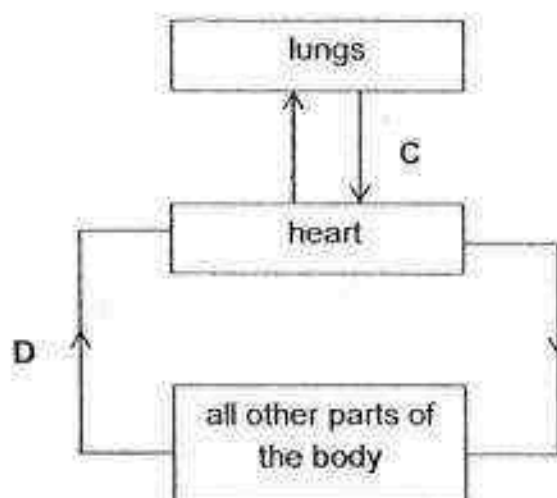
7. The diagram below shows how water and food are transported in a plant.



Which one of the following shows the parts of the plants correctly?

	A	B	C
(1)	leaves	roots	flowers
(2)	roots	flowers	leaves
(3)	flowers	leaves	roots
(4)	flowers	roots	leaves

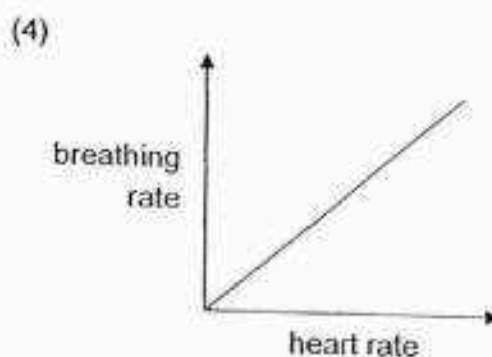
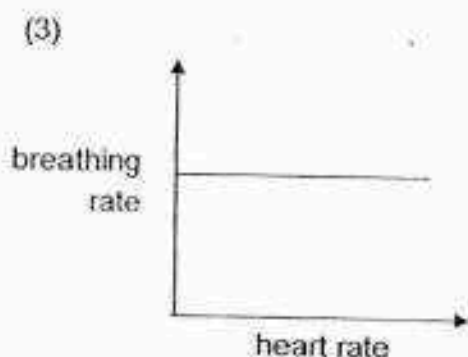
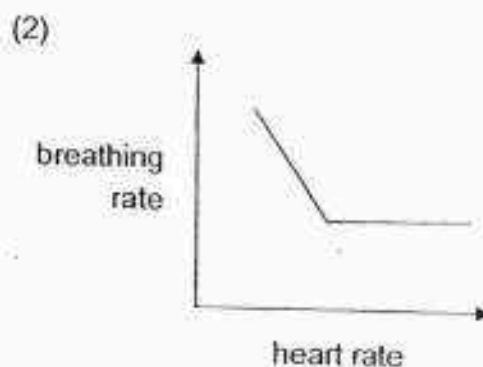
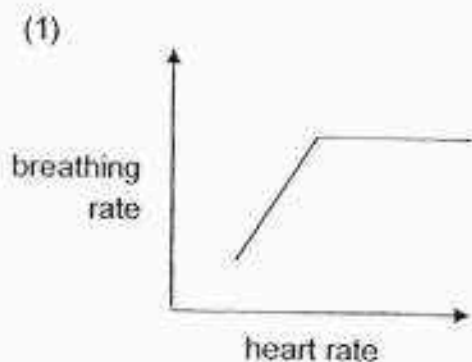
8. The diagram below represents how blood flows in certain parts of the body.



Which one of the following is true?

	Blood in C	Blood in D
(1)	rich in carbon dioxide	rich in oxygen
(2)	rich in carbon dioxide	poor in oxygen
(3)	poor in carbon dioxide	poor in oxygen
(4)	poor in carbon dioxide	rich in oxygen

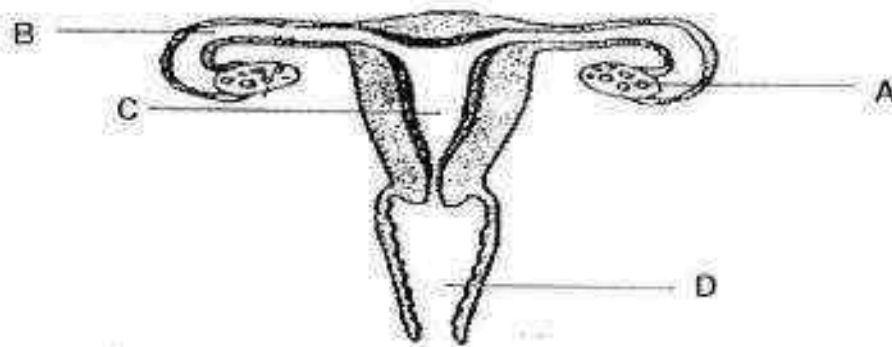
9. Which one of the following graphs shows the relationship between heart rate and breathing rate of a man who is exercising?



10. Exhaled air has \_\_\_\_\_ than inhaled air.

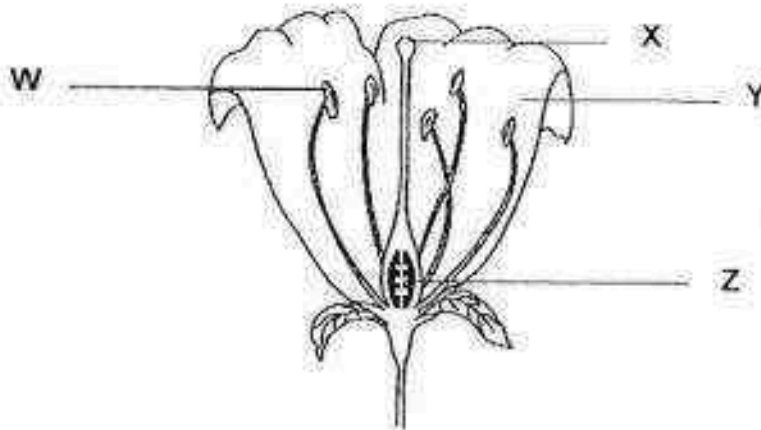
- (1) more heat
- (2) more oxygen
- (3) less nitrogen
- (4) less carbon dioxide

11. The diagram below shows the female reproductive system.



Where does the development of a fertilised egg take place?

- (1) A  
(2) B  
(3) C  
(4) D
12. The diagram below shows different parts of a flower.



Which parts of the flower, when removed, would still allow fertilisation to take place?

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

- 
- soft hair

hooks

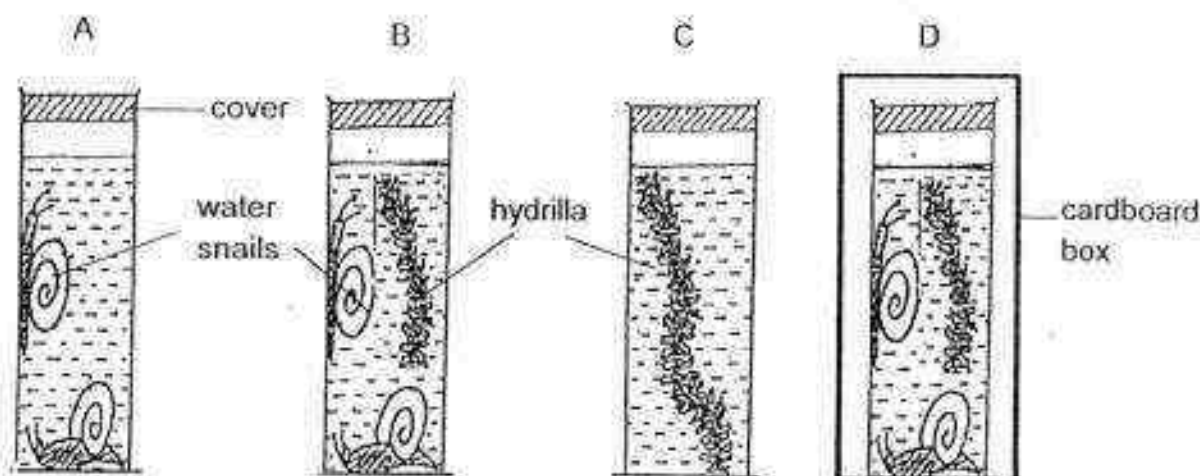
How are fruits A and B most likely dispersed?

14. Jamie conducted an experiment and concluded that light is not needed for seed germination. She recorded her results in the table below.

Which of the following set-ups will support Jamie's conclusion?

- [illegible]

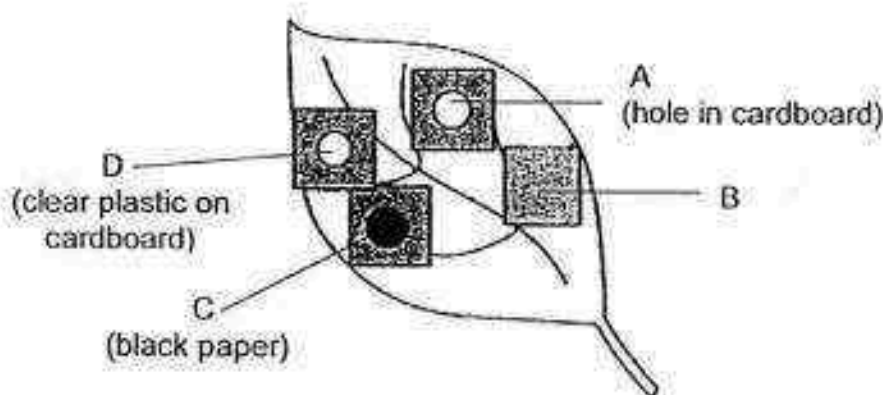
15. James conducted an experiment by placing four similar measuring cylinders, A, B, C and D, as shown below under sunlight for eight hours.



Arrange the cylinders starting from the least amount of carbon dioxide to the most amount of carbon dioxide at the end of the experiment.

- (1) A, B, C, D                      (2) B, C, A, D  
(3) C, B, A, D                      (4) D, A, B, C
16. Travis wanted to conduct an experiment on a leaf of a potted plant. The potted plant was left in a dark cupboard for a few days before the experiment.

Cardboard A had a hole in the middle, cardboard B had no hole, cardboard C had black paper in the middle and cardboard D had clear plastic in the middle.



The plant was then placed under the sun for a few hours. The leaf was then plucked off and tested for starch. Which part(s) of the leaf would starch be present?

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

17. Mrs Ong wanted to find out if adding fertiliser to plants would affect the rate of photosynthesis. For her experimental set-up, she added 10g of fertiliser to a plant with 70ml of water daily and put it in a well-lit place. Which one of the following plants is a suitable control for Mrs Ong's experiment?

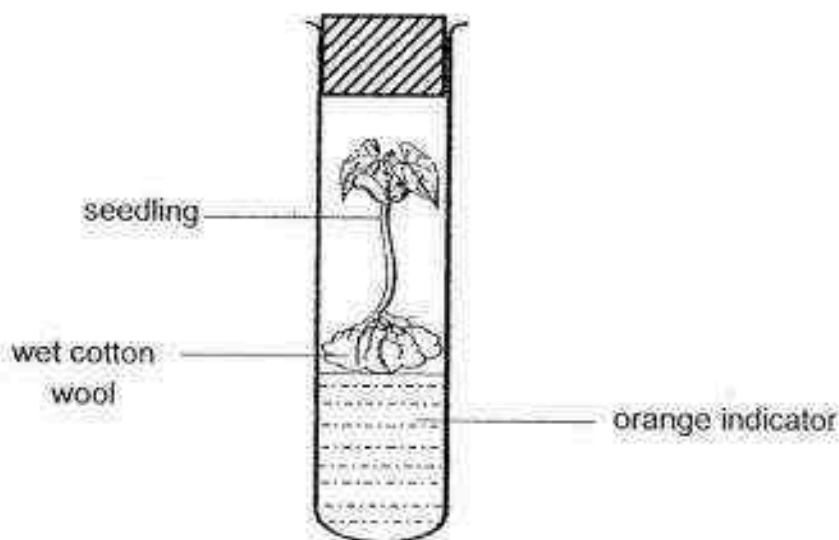
	Plant P	Plant Q	Plant R	Plant S
Amount of light (lux)	0	5000	5000	3000
Amount of water (ml)	70	70	70	0
Amount of fertilizer (g)	10	0	5	0

- (1) Plant P  
(2) Plant Q  
(3) Plant R  
(4) Plant S

18. The table shows how an orange indicator changes colour when the concentration of carbon dioxide in it changes.

Concentration of carbon dioxide	Change in colour
increases	orange to yellow
decreases	orange to purple

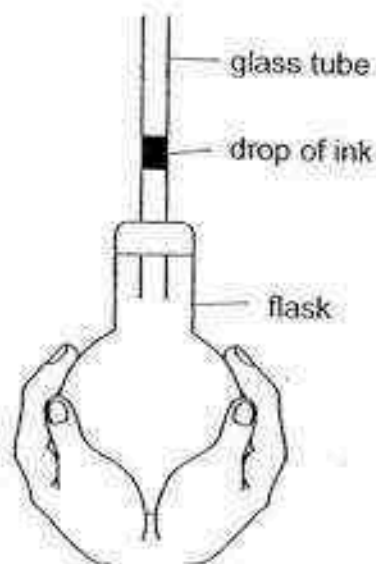
Adam set up an experiment shown below and placed the tube in a garden on a sunny day for a few hours.



What would be the change in colour shown by the orange indicator after a few hours and what was the process that caused this change?

	Change in colour	Process
(1)	orange to yellow	respiration
(2)	orange to yellow	photosynthesis
(3)	orange to purple	photosynthesis
(4)	orange to purple	respiration

19. Ray fitted a flask with a glass tube that contained a drop of ink.



When Ray wrapped his hands around the flask, he noticed that the drop of ink moved upwards slightly.

Which of the following is the correct explanation for his observation?

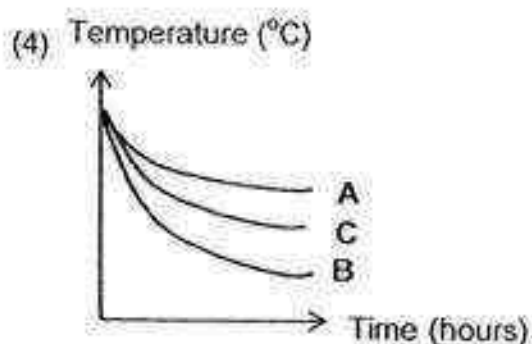
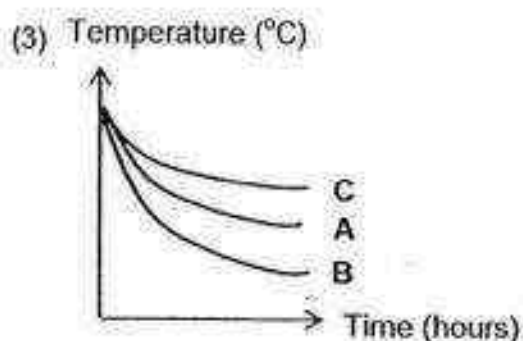
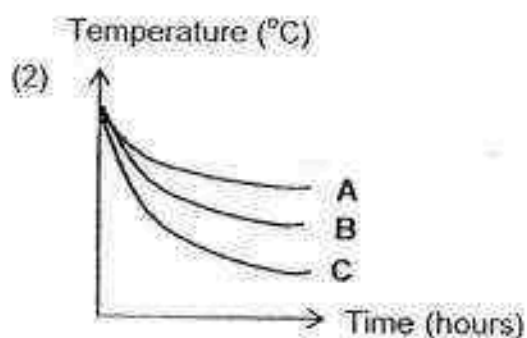
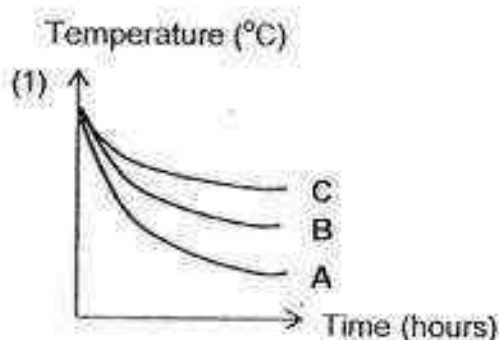
- (1) The heat from his hand caused the flask to expand.
- (2) The heat from his hand caused the glass tube to expand.
- (3) The heat from his hand caused the drop of ink to expand.
- (4) The heat from his hand caused the air in the flask to expand.



20. Sam went for a picnic with 3 identical boxes, A, B and C, made of different materials. The table below shows the conductivity of heat of the three materials.

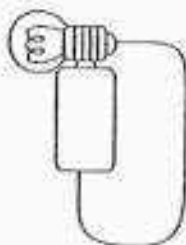
Box	Conductivity of heat
A	best conductor of heat
B	good conductor of heat
C	poor conductor of heat

If Sam was carrying hot pizzas in all 3 boxes, which of the following graphs would most likely represent the temperature change of the hot pizza in the 3 boxes after a few hours?

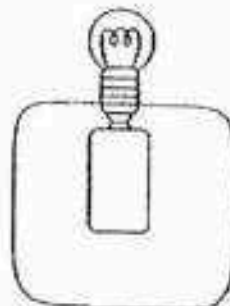


21. The diagrams below show four circuits. In which of the following circuits will the bulb light up?

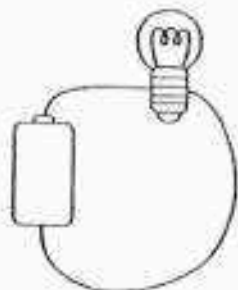
(1)



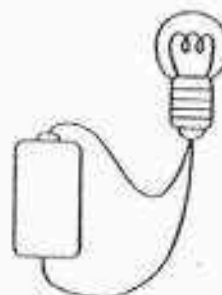
(2)



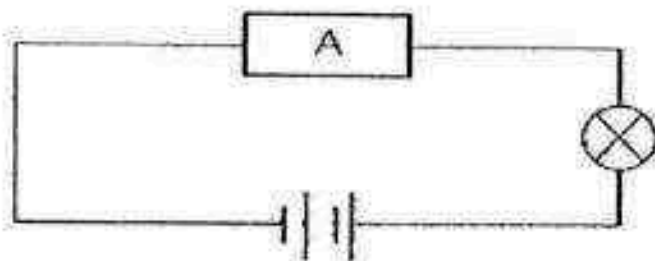
(3)



(4)

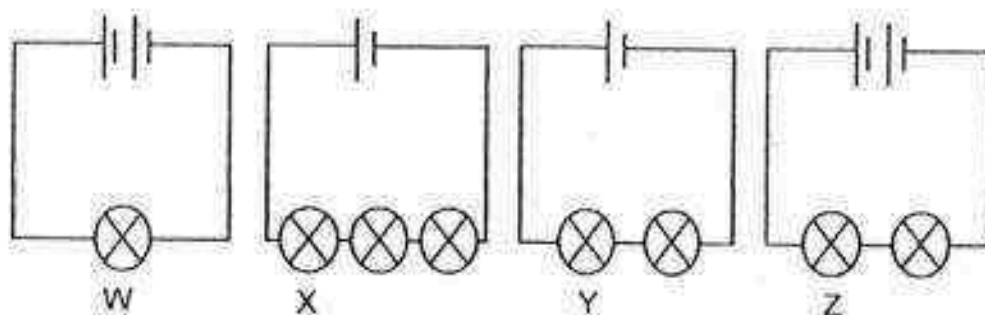


22. Study the electric circuit shown below.



Melvin wants the light bulb to light up. Which one of the following materials would he use to make object A?

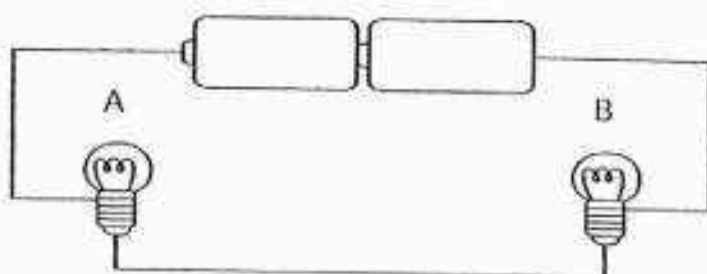
- |            |             |
|------------|-------------|
| (1) iron   | (2) wood    |
| (3) rubber | (4) ceramic |
23. Study the 4 circuit diagrams below.



Arrange the bulbs W, X, Y and Z in each circuit from the dimmest to the brightest.

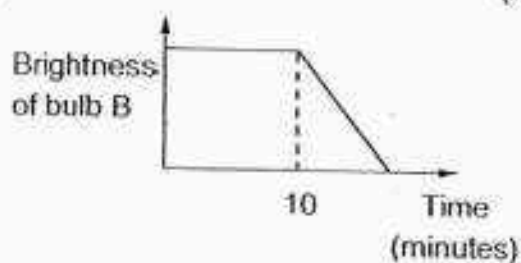
- |                   |                   |
|-------------------|-------------------|
| (1) X, Z, W and Y | (2) X, Y, Z and W |
| (3) W, Z, Y and X | (4) W, Y, Z and X |

24. Study the circuit below.

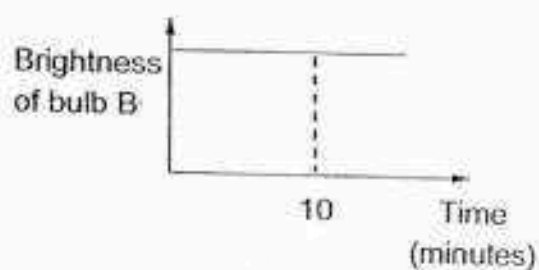


After 10 minutes, bulb A fused. Which of the following graphs will best represent the brightness of bulb B?

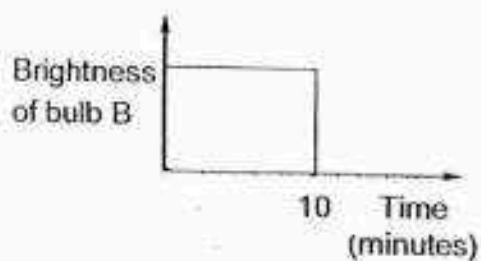
(1)



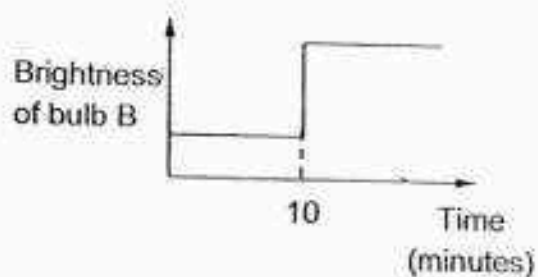
(2)



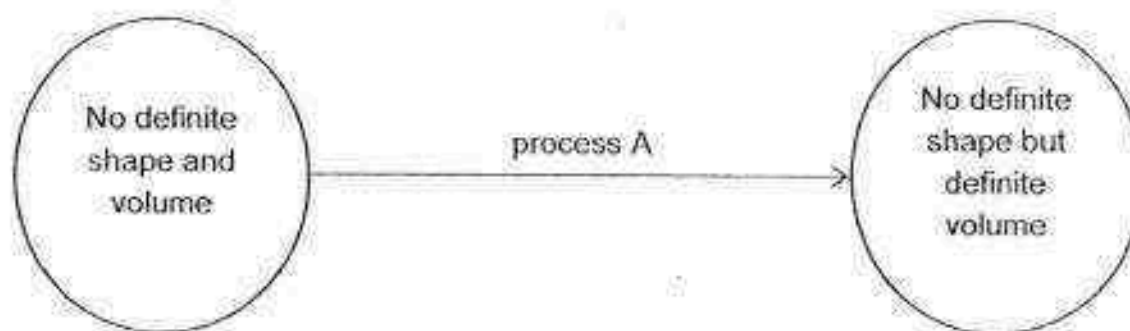
(3)



(4)



25. The diagram below shows the changes in the state of water.



Which one of the following represents process A?

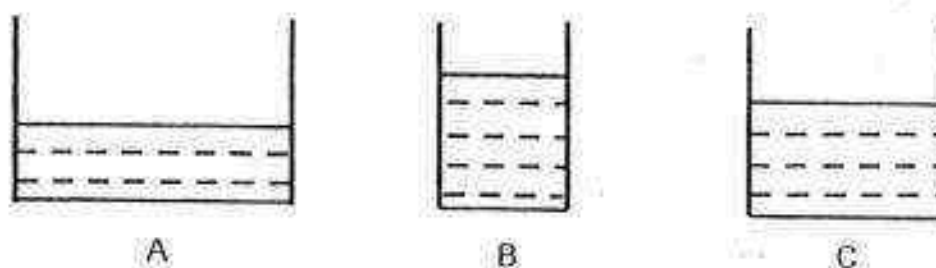
- (1) boiling (2) melting  
(3) evaporation (4) condensation
26. Jerome wanted to carry out an experiment to find out if the temperature of the water would affect the rate of evaporation of water in two containers. Which of the following variable(s) must he keep the same at the start of the experiment in order to ensure that his experiment is fair?

A: temperature of water  
B: size of the containers  
C: amount of water in each container

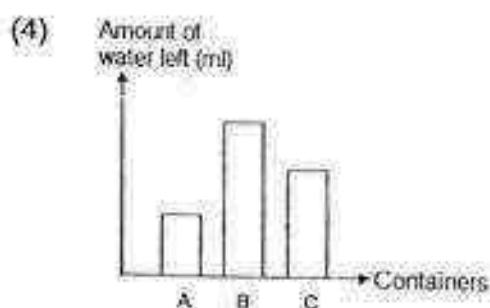
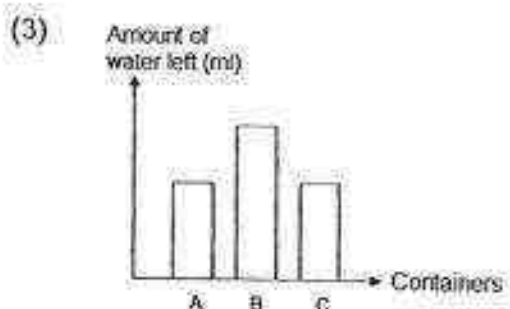
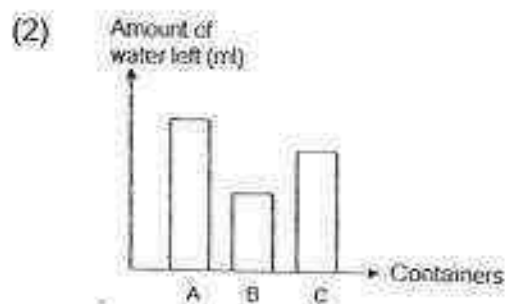
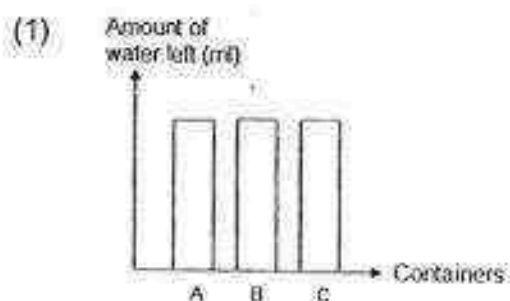
- (1) A only (2) A and B only  
(3) B and C only (4) A, B and C
27. Winona felt cold when she got out of the swimming pool. Why?

(1) The water on her body evaporated into the surrounding air.  
(2) The water in the swimming pool gained heat from her body.  
(3) The water vapour from the surrounding air condensed onto her body.  
(4) The water from the swimming pool evaporated into the surrounding air.

28. The diagram below shows three plastic containers A, B and C. An equal amount of water of the same temperature was poured into each container and kept at the same location.



Which graph shows the amount of water left in the containers A, B and C after one day?

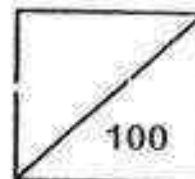




**Rosyth School**  
**Second Semestral Examination for 2016**  
**STANDARD SCIENCE**  
**Primary 5**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 5 - \_\_\_\_\_ Register No. \_\_\_\_\_ Duration: 1 h 45 min

Date: 1<sup>st</sup> Nov 2016 Parent's Signature: \_\_\_\_\_

## Booklet B

**Instructions to Pupils:**

1. For questions 29 to 41, write your answers in the spaces given in this booklet.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

\* This booklet consists of 17 printed pages (including cover page).

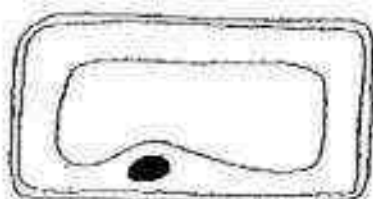
**Part II**

For questions 29 to 41, write your answers in this booklet.

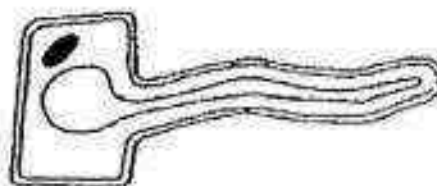
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(44 mark)

29. The diagram below shows two plant cells.



Cell A



Cell B

- (a) Based on your observation above, state a similarity between Cell A and Cell B. (Do not compare shape and size) [1]

---

---

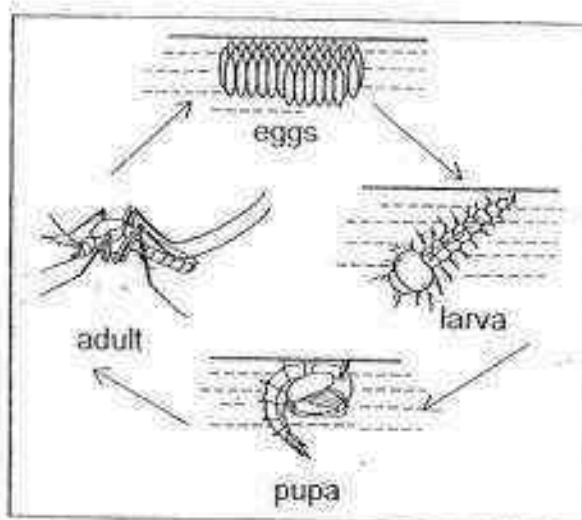
- (b) How are cells A and B different from a leaf cell? Explain your answer. [1]

---

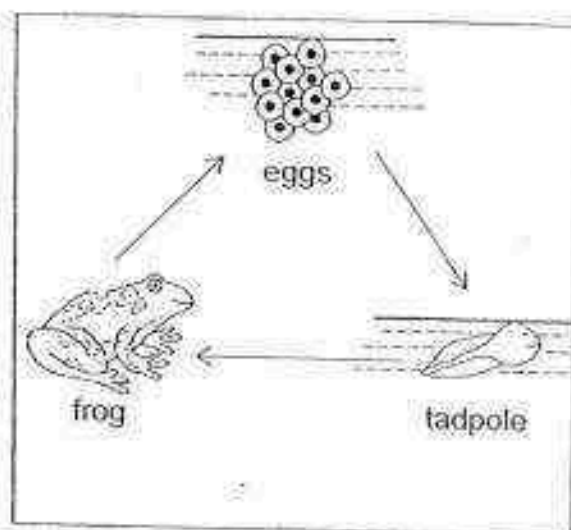
---



30. The diagrams below show the life cycles of a frog and a mosquito.



Life cycle of a mosquito



Life cycle of a frog

- (a) State a difference between the two life cycles.

[1]

---



---

- (b) Why do frogs and mosquitoes lay many eggs at a time?

[1]

---



---

Both the young of the frog and mosquito live in water while the adult lives on land.

- (c) Suggest an advantage for the young and the adult to live in different places.

[1]

---



---

- (d) Will the life cycle of the mosquito and the frog be affected when the pond dries up due hot weather? Explain your answer.

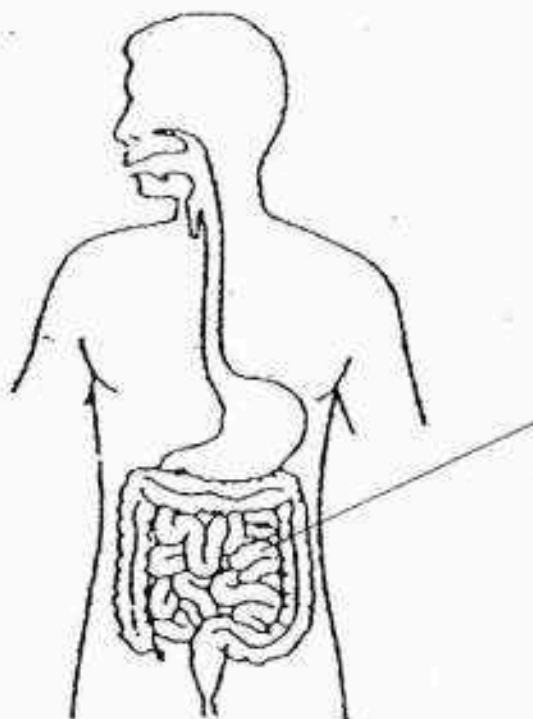
[1]

---



---

31. The diagram below shows the human digestive system.



- (a) Draw a line and label the part of the system where most of the digested food is absorbed into the body. [1]

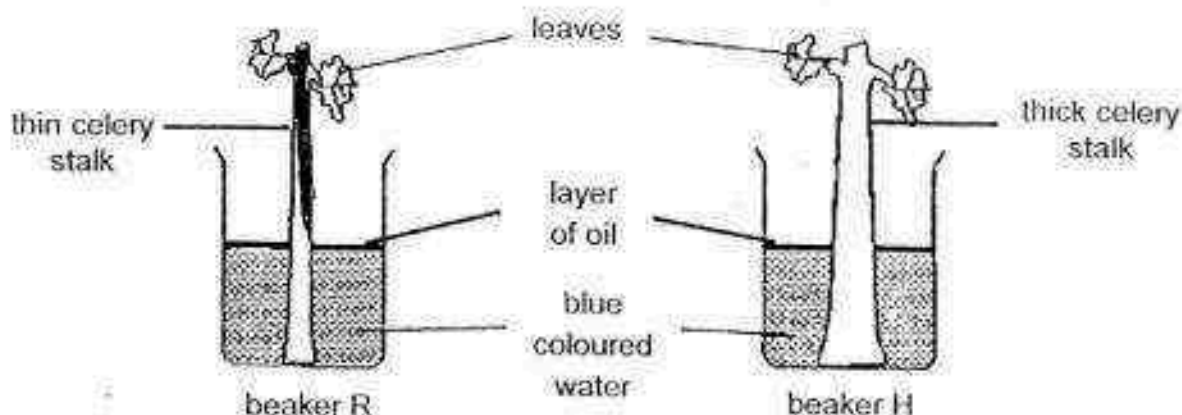
- (b) Describe how our digestive system and circulatory system work together to supply digested food to our body parts. [2]

---

---

---

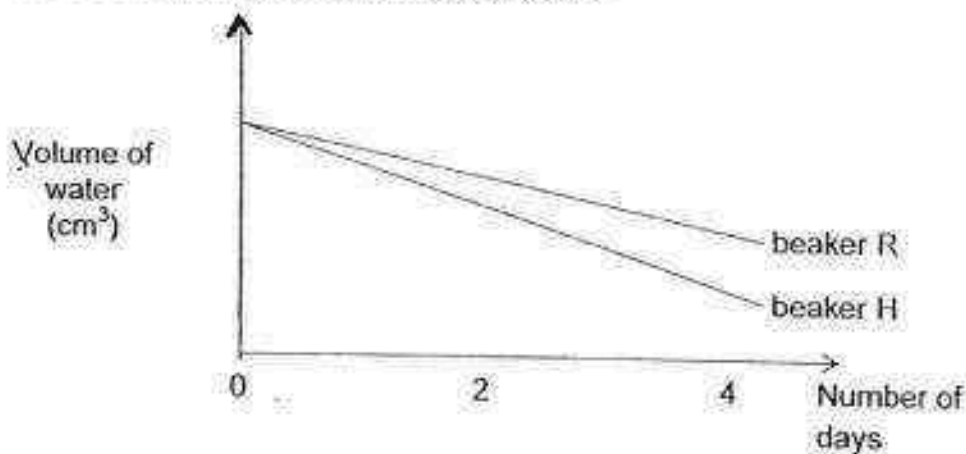
32. Misha set up an experiment as shown below. She placed a stalk of celery in each jar. She poured an equal amount of blue-coloured water and oil into similar beakers R and H. She then placed the two beakers near a window.



- (a) What is the purpose of putting a layer of oil in both beakers?

[1]

The volume of water was observed and recorded daily over a period of 4 days and the results were drawn in the graph below.

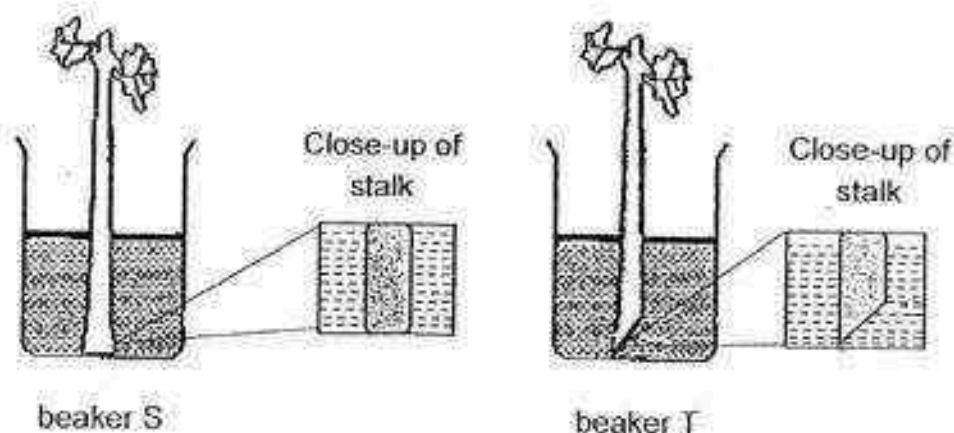


- (b) What was the aim of Misha's experiment?

[1]

Question 32 continues on  
page 5

Misha decided to conduct another experiment using two similar thin celery stalks and placed each into similar beakers S and T as shown in the diagram below. The stem of the celery in beaker S was left uncut while the stem of the plant in beaker T was cut at a slanted angle before they were put in the respective beakers as shown.

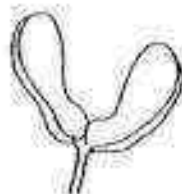


- (c) Would the decrease in volume of water in beaker T be larger or smaller than that obtained in beaker S? Explain your answer. [2]

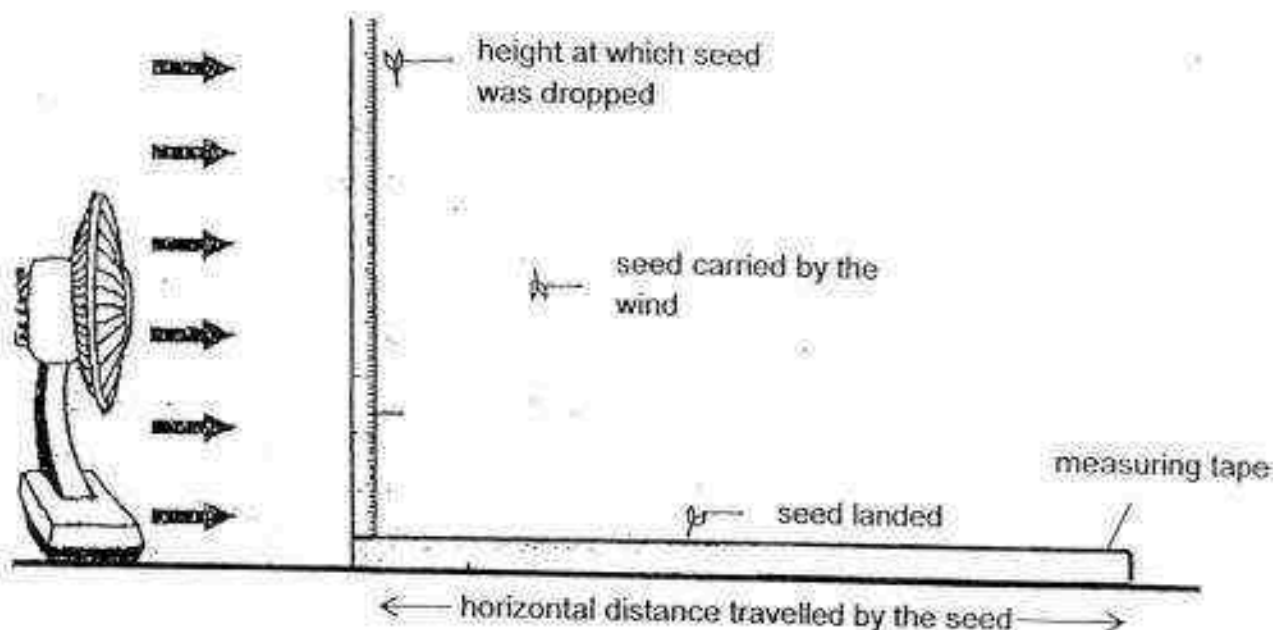
---

---

33. Wendy carried out an experiment with a seed dispersed by wind in an enclosed room. She dropped the seed from various heights in front of a fan. She dropped the seed from various heights in front of a fan.



seed dispersed by wind



She recorded the horizontal distance travelled by the seed in a table as shown below.

Height at which seed was dropped (cm)	Horizontal distance travelled by seed (cm)			Average horizontal distance travelled by seed (cm)
	1 <sup>st</sup> reading	2 <sup>nd</sup> reading	3 <sup>rd</sup> reading	
5	7	12	11	10
15	27	29	34	30
25	49	54	47	50

Question 33 continues on page 7

- (a) Based on the results, what is the relationship between the height at which the seed was dropped and the average horizontal distance travelled by the seed? [1]

---

---

- (b) Why did Wendy take three readings of the horizontal distance travelled by the seed? [1]

---

---

- (c) State a feature of the seed that has helped it to be dispersed by wind. [1]

---

---

- (d) State a variable that Wendy has to keep the same to ensure that her experiment is a fair one. [1]

---

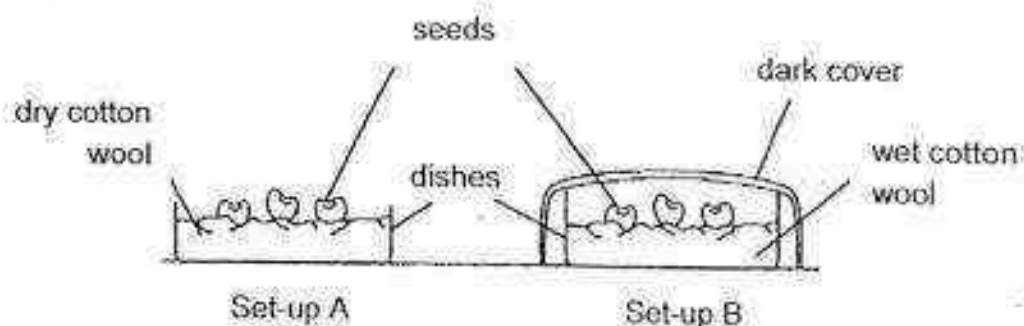
---

- (e) What is the advantage for plants to disperse their seeds as far away as possible from their parent plants? [1]

---

---

34. Kelly wanted to find out if light is needed for the germination of seeds. In set-up A, he placed three seeds on dry cotton wool. In set-up B, he placed three seeds on wet cotton wool and covered the dish with a dark cover. Both set-ups were put on a table.



- (a) Kelly was told that her experiment was an unfair one. Suggest one change that Kelly can make to ensure that her experiment is a fair one. [1]

---



---

- (b) In which of the set-ups above would the seeds be able to germinate? Explain your answer. [1]

---



---

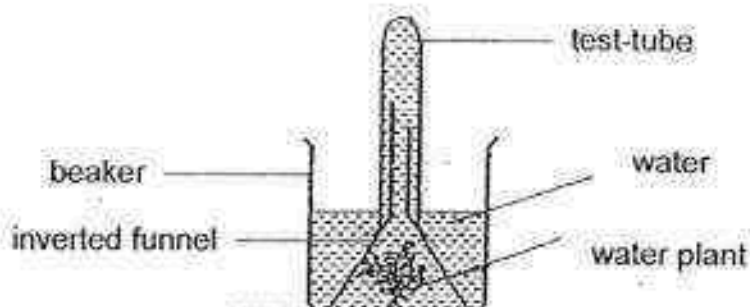
- (c) If Kelly wanted to find out if water is needed for the germination of seeds, what changes can she make to the set-up above? [1]

---



---

35. John conducted an experiment to find out how temperature affects the rate of photosynthesis of a water plant. He prepared several identical set-ups and placed each of them in rooms of different temperatures. All set-ups were exposed to the same amount of light.

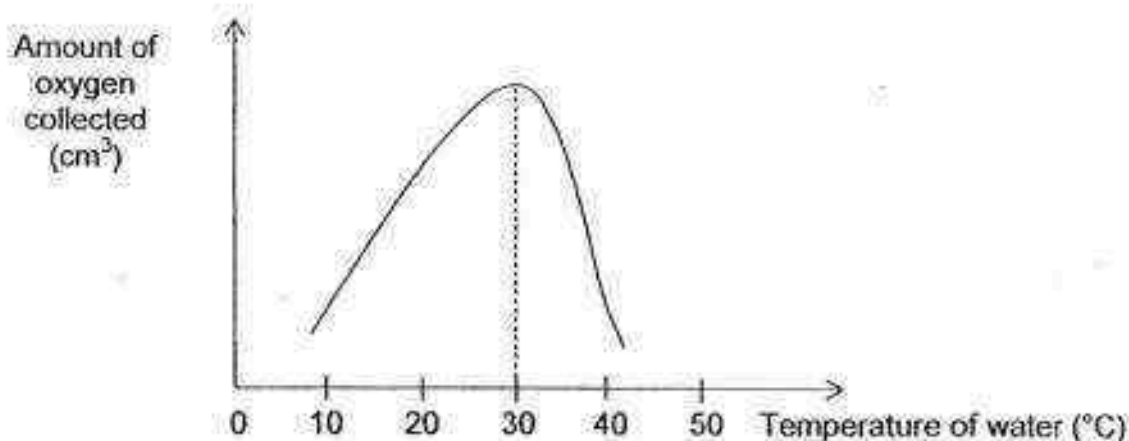


- (a) Tick the variable(s) to be kept constant in this experiment.

[1]

Amount of water	<input type="checkbox"/>
Type of water plant	<input type="checkbox"/>
Temperature of water	<input type="checkbox"/>
Number of bubbles formed	<input type="checkbox"/>

At the end of the experiment, John recorded the amount of oxygen collected in the test-tube for each set-up. He plotted the following graph based on his results.



- (b) Based on the information above, what can John conclude about the effect of temperature of the water on the rate of photosynthesis of the water plant? [2]

---



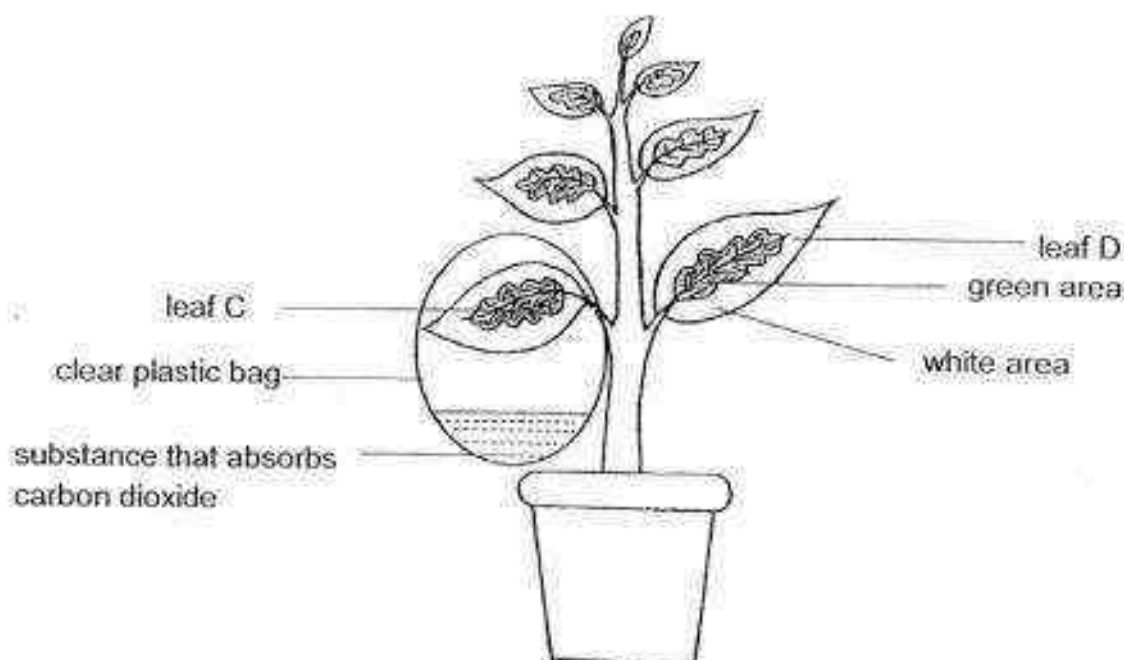
---



---



36. Shanise set up an experiment to investigate the process of photosynthesis. She used a plant which had leaves with green areas in the middle and white areas around the edge as shown below. Before the experiment, the plant had been placed in the dark for three days. A plastic bag containing a substance that absorbs carbon dioxide was tied around leaf C.



The experimental set-up was placed in the open area for a few days. Leaves C and D from the plant were then removed, prepared and tested with iodine solution. Iodine is a yellowish-brown liquid that turns dark blue in the presence of starch.

- (a) Complete the following table with the results you would expect to obtain for leaf C and D. [2]

Results (Colour of iodine on leaf)			
	Leaf	Green area of leaf	White area of leaf
(i)	C		
(ii)	D		

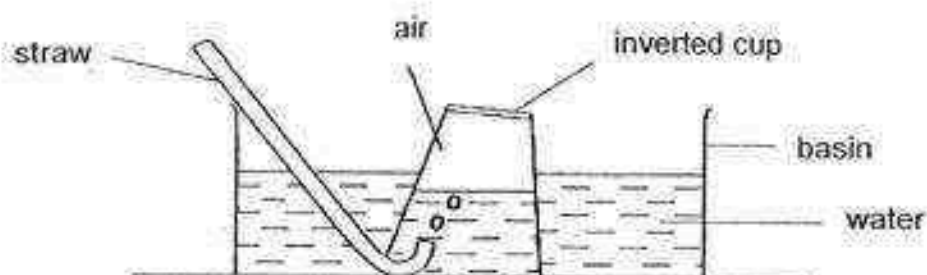
- (b) Explain the results of the iodine colour on leaf D. [2]

---



---

37. Kumar set up an experiment as shown below. He used a straw to blow air into an inverted cup which was partially filled with water.



- (a) What would happen to the water level in the cup? [1]

---



---

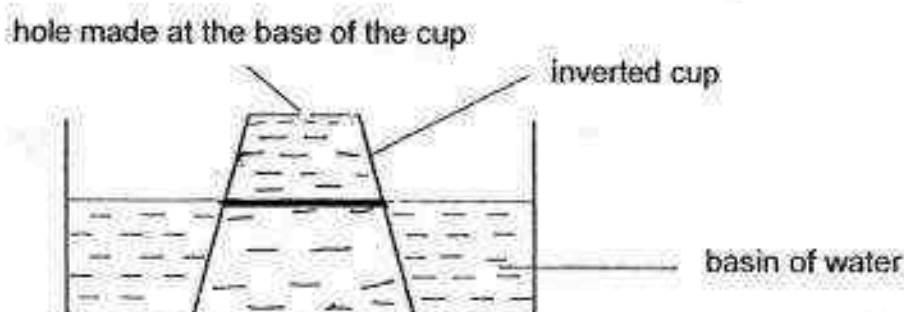
- (b) Explain your answer in (a). [1]

---



---

Kumar used the same apparatus as above to carry out a second experiment. He removed the straw and made a hole at the base of the cup.



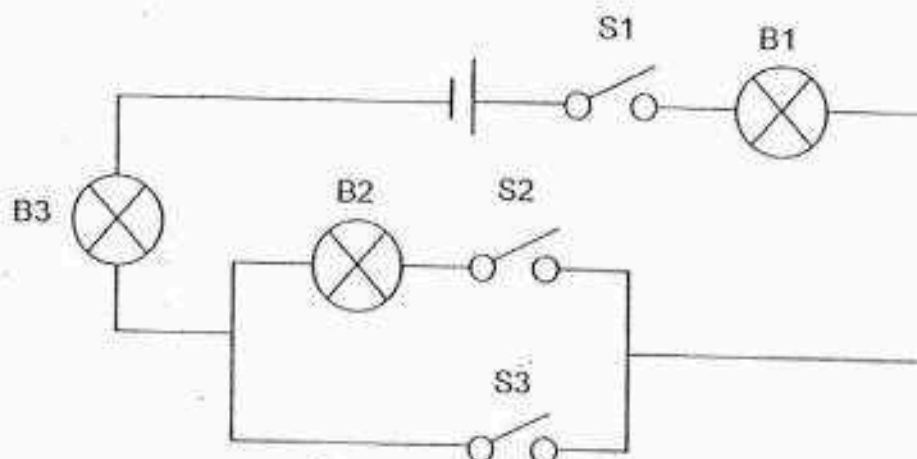
- (c) Draw the new water level in the inverted cup above. Explain why this happened. [2]

---



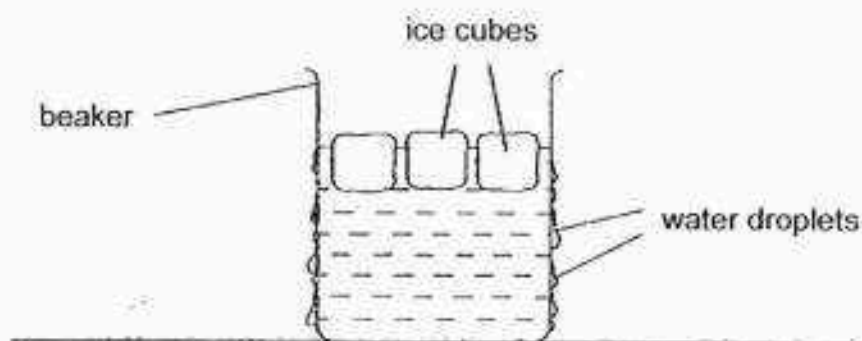
---

38. May set up a circuit as shown in the diagram below.



- (a) Which two switches must May close to ensure that all three light bulbs (B1, B2 and B3) would light up? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) May closed switches S1 and S3. Would bulb B3 still light up if bulb B1 fused? Explain your answer. [1]
- \_\_\_\_\_
- \_\_\_\_\_

39. Sue left a beaker of water with some ice cubes on the table. After a while, she noticed some water droplets on the outer surface of the beaker as shown in the diagram below.



Explain why the water droplets are formed on the outer surface of the beaker.

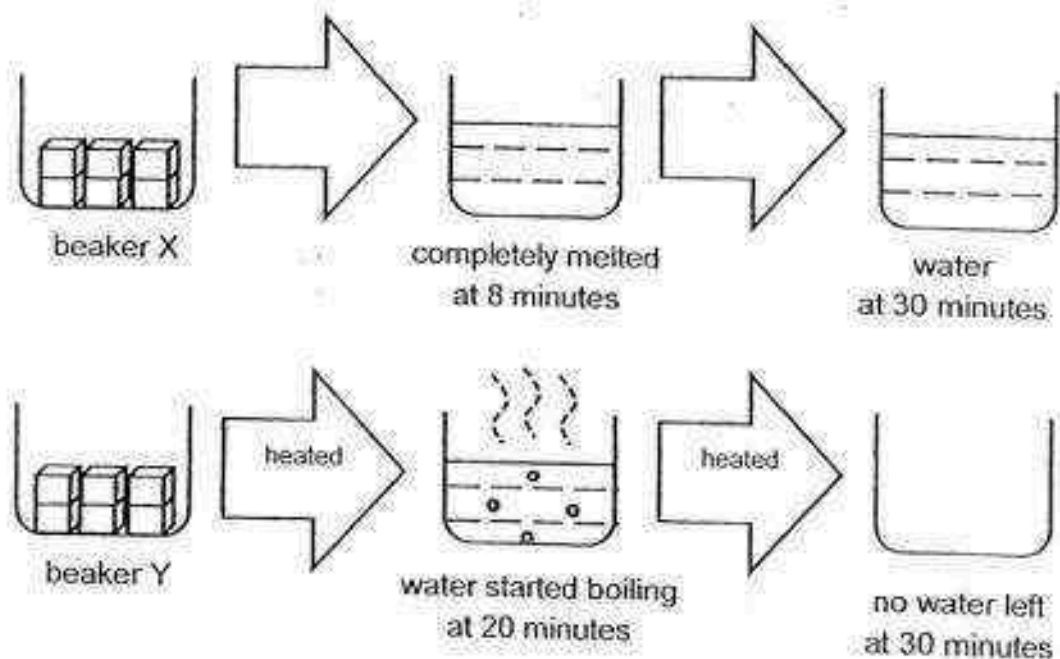
[2]

---

---

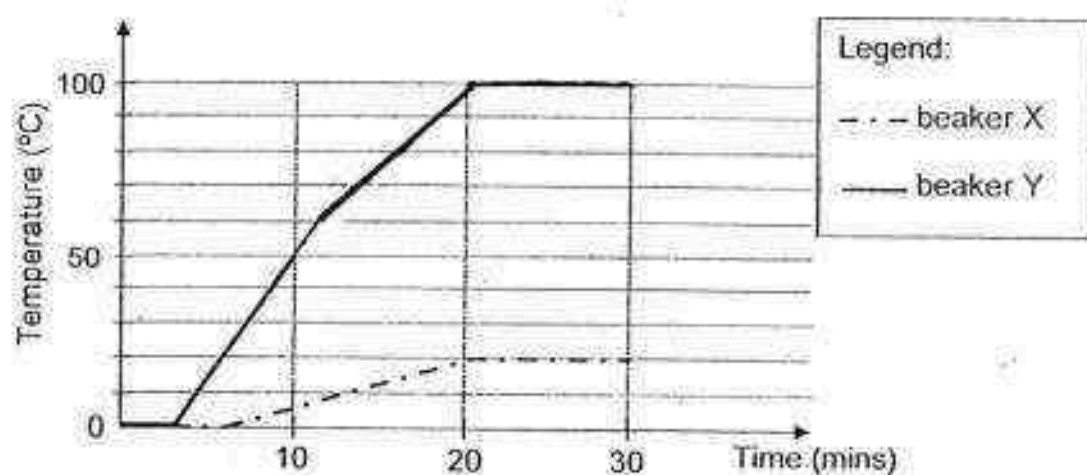
40. Suzie wanted to investigate how the amount of heat gained would affect the state of water. She prepared two beakers, X and Y, and placed an equal number of ice cubes in each beaker.

She left beaker X in a room for 30 minutes. She left beaker Y on a stove until it reached the boiling point at the 20<sup>th</sup> minute. She continued to heat the water in Beaker Y until the 30<sup>th</sup> minute.



40  
Question ~~44~~ continues on  
page 15

The graph below shows the temperature of the contents in beakers X and Y over 30 minutes.



- (a) In the graph above, complete the line for beaker Y to show the temperature change of the water till 30 minutes. [2]

- (b) Based on the graph for beaker X, what is the room temperature? [1]

\_\_\_\_\_ °C

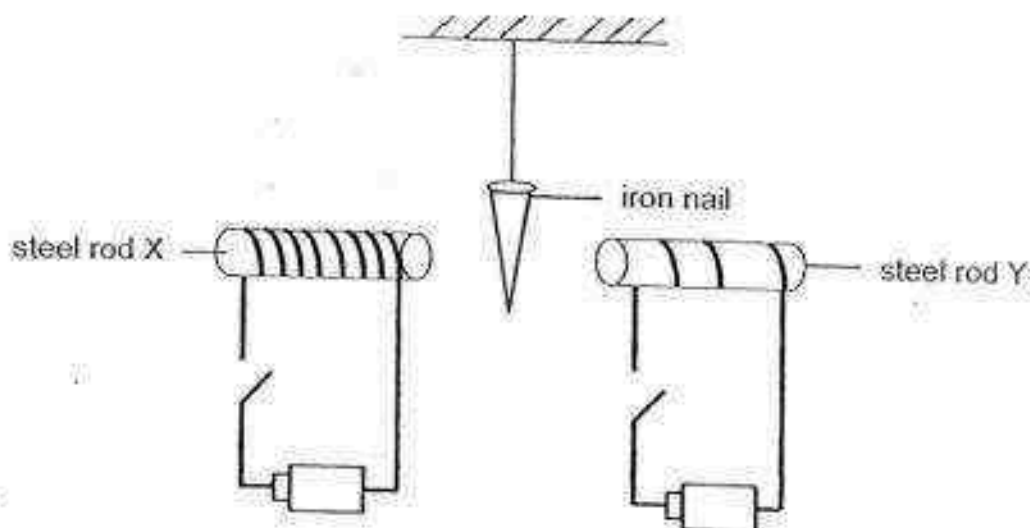
- (c) Explain your answer in (b). [1]

\_\_\_\_\_  
\_\_\_\_\_

- (d) Why was there no more water left in beaker Y at the 30<sup>th</sup> minute? [1]

\_\_\_\_\_  
\_\_\_\_\_

41. Andy conducted an experiment using the set-up as shown below. He suspended an iron nail freely midway between steel rod X and Y. He used identical steel rods and identical new batteries for both circuits.



- (a) What will happen to the iron nail when both circuits are closed at the same time? [1]

---



---

- (b) Explain your answer in (a). [1]

---



---

- (c) Andy kept the distance between the iron nail and steel rods X and Y the same. Why does he have to do this in order to ensure a fair experiment? [1]

---



---

**-End of Paper-**

YEAR : 2016  
 LEVEL : PRIMARY 5  
 SCHOOL : ROSYTH  
 SUBJECT : SCIENCE  
 TERM : SA2

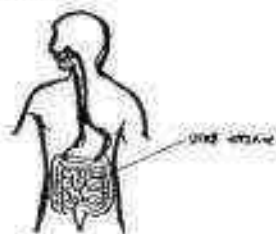
**Booklet A**

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

**Booklet B**

- Q29a Both have a nucleus.
- Q29b Both cells do not contain chloroplast as they do not need to make food.
- Q30a The life cycle of the frog has 3 stages but the life cycle of a mosquito has 4 stages.
- Q30b To increase the chances of survival.
- Q30c They do not have to compete for food.
- Q30d Yes, the eggs of both organisms cannot survive, causing fewer adults to continue the life cycle.

Q31a



- Q31b The digestive system digests the food and the small intestine absorbs the digested food into the blood stream. The circulatory system then transports the digested food to all parts of our body.



- Q32a** To prevent the water from evaporating.
- Q32b** To find out how the thickness of the celery stalk affects the amount of water taken in by the plant.
- Q32c** The decrease in volume of water in beaker T would be larger than S as stalk T has a larger exposed surface area in contact with water.
- Q33a** As the height at which the seed was dropped increases, the average horizontal distance travelled by seed increases.
- Q33b** To ensure that the results are reliable.
- Q33c** It is light.
- Q33d** Amount of wind.
- Q33e** To prevent overcrowding so that they will have less competition for space, nutrients, water and sunlight.
- Q34a** Wet the cotton wool of set-up A.
- Q34b** B, it has air, water and warmth. Seeds need air, water and warmth to germinate.
- Q34c** Remove the dark cover of set-up B.

**Q35a**

Amount of water	✓
Type of water plant	✓
Temperature of water	
Number of bubbles formed	

- Q35b** As the temperature of water increases until 30°C, the rate of photosynthesis increases. As the temperature of water increases from 30°C onwards, the rate of photosynthesis decreases.

**Q36a**

Results (Colour of Iodine on leaf)			
	Leaf	Green area of leaf	White area of leaf
(i)	C	Yellowish-brown	Yellowish-brown
(ii)	D	Dark blue	Yellowish-brown

- Q36b** Leaf D could carry out photosynthesis at the green area as chlorophyll is present. As no chlorophyll present in the white area as it did not make food.

Q37a It will decrease.

Q37b The water exits and air if blown in takes up space.

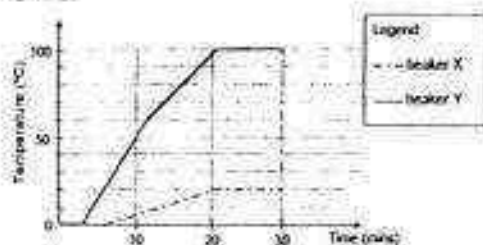
Q37c The hole allowed air to escape, allowing the water to take up its space. Air has escaped from the cup and the water take up the space that was previously occupied air.

Q38a Switch S1 and S2

Q38b No, if bulb B1 fuses, there will be an open circuit gap in the circuit.

Q39 The water vapour from the surrounding air came into contact with the cooler surface. The water vapour lost heat and condensed to form water droplets.

Q40a



Q40b 20°C

Q40c There was no temperature change after 20 minutes.

Q40d All the water evaporated.

Q41a Steel rod X will attract the iron nail.

Q41b There were more coils around rod X, making the steel rod stronger.

Q41c To ensure that the number of coils around the steel rod is the only variable that affects the strength of the electromagnet.

End



## PRIMARY 5 END-OF-YEAR EXAMINATION 2016

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

Date: 25 October 2016

Class : Primary 5 ( )

Time: 8.00 a.m. – 9.30 a.m.

Parent's Signature : \_\_\_\_\_

Marks: \_\_\_\_\_ / 44

## SCIENCE BOOKLET A

### INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

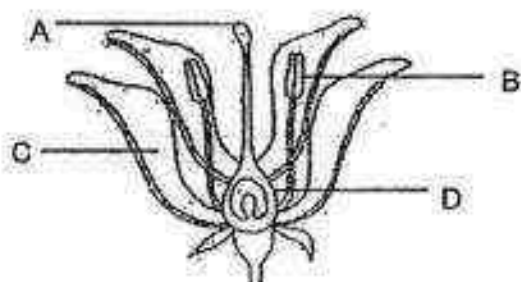
Answer all questions.

**Part I**

For each question from 1 to 22, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

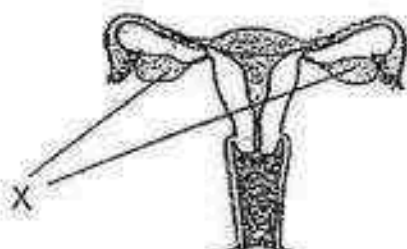
(44 marks)

1. Linda stated that the flower below is pollinated by an insect and not by wind.



Which one of the following characteristics supports her statement?

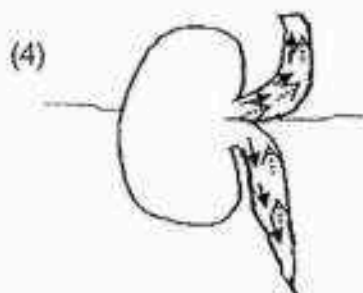
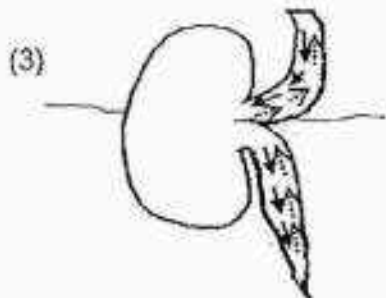
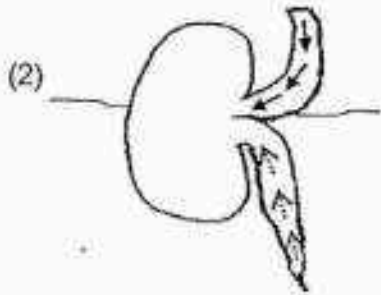
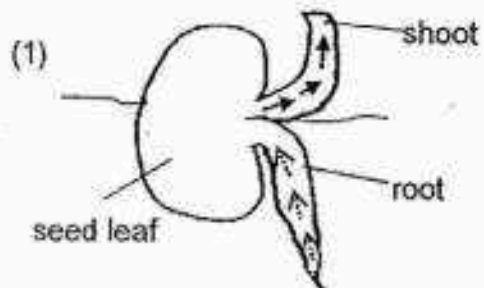
- (1) Part C is not brightly coloured.
  - (2) Part B produces pollen grains.
  - (3) Part D swells after fertilization.
  - (4) Part A and B are within the flower.
2. Study the diagram of the human reproductive system below.



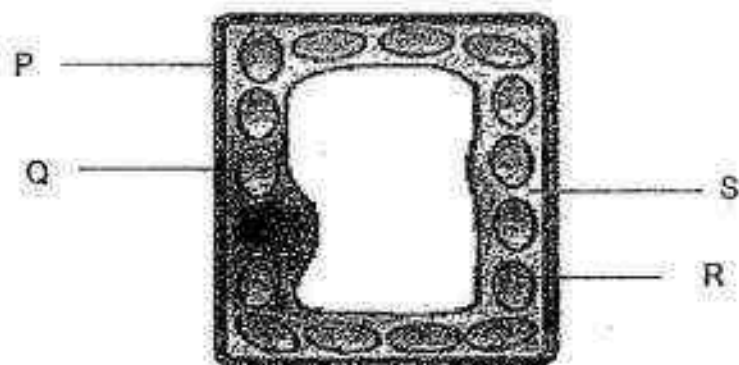
Which one of the following occurs at X?

- (1) Release of eggs
- (2) Production of sperms
- (3) Fusion of sperm and egg
- (4) Development of unborn baby

3. Which diagram shows the correct movement of food (—→) and water (---→) in a germinating seed?



4. The diagram shows a plant cell.



Which two parts shown above are found in a plant cell but not in an animal cell?

- (1) Q and R
- (2) P and R
- (3) Q and S
- (4) R and S

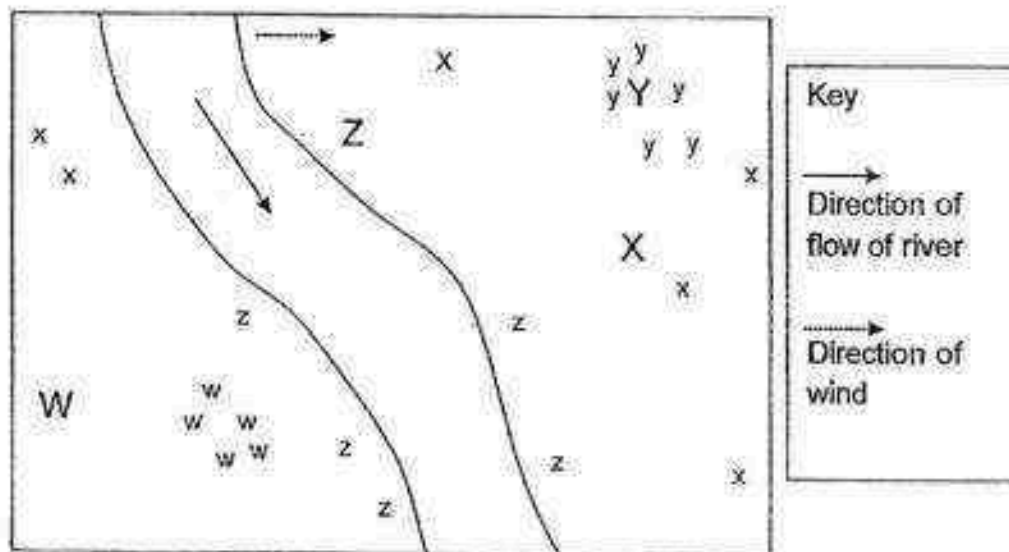
5. Read the information below carefully.

- Grasshopper feeds on grass.
- Frog feeds on grasshopper.
- Snake feeds on frog.

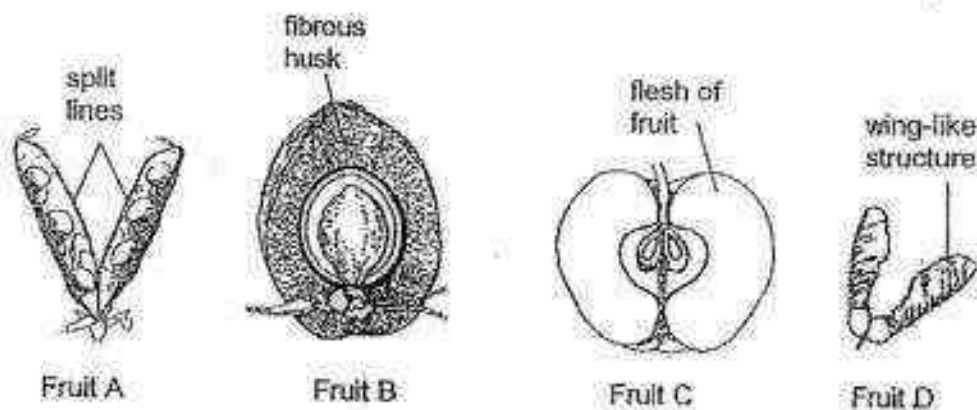
Which one of the following is definitely true about the energy transfer stated in the above box?

- (1) The grass gets its food from the Sun.
- (2) The grasshopper gets its energy from the frog.
- (3) The frog is the source of energy for the snake.
- (4) The snake feeds on the frog and the grasshopper.

6. Jim drew a map of the locations of where parent plants (W, X, Y, Z) and their young plants (w, x, y and z) of a plot of land are found.



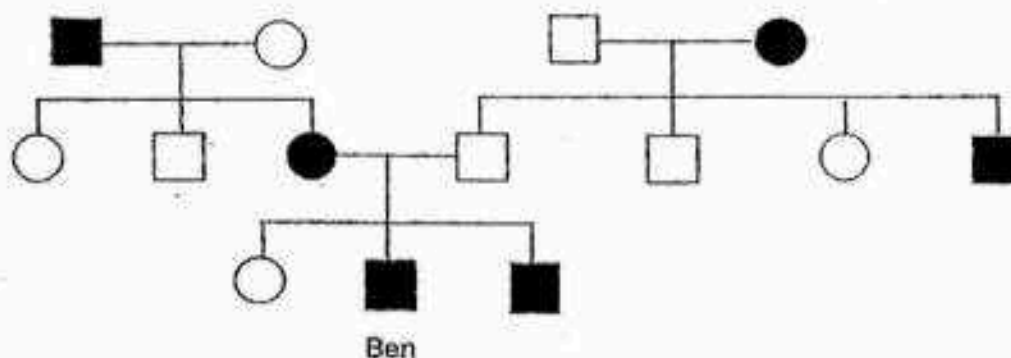
The following are the fruits of Plants W, X, Y and Z.



Which of the following matches the above fruits to W, X, Y and Z most correctly?

	W	X	Y	Z
(1)	Fruit D	Fruit B	Fruit A	Fruit C
(2)	Fruit D	Fruit B	Fruit C	Fruit A
(3)	Fruit A	Fruit D	Fruit C	Fruit B
(4)	Fruit D	Fruit C	Fruit A	Fruit B

7. Study the family tree of Ben below.



**Key**

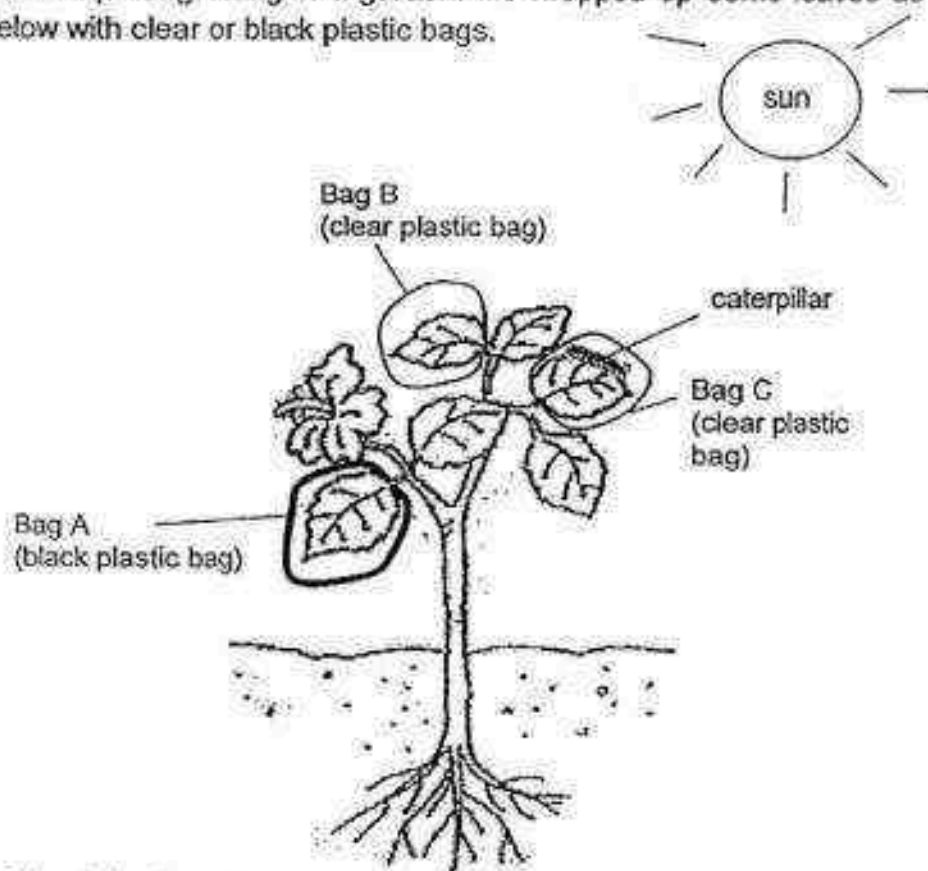
- male with characteristic X
- female with characteristic X
- male without characteristic X
- female without characteristic X

Which one of the following statements about the family tree is correct?

- (1) Ben's parents have characteristic X.
- (2) Both of Ben's grandfathers do not have characteristic X.
- (3) Both Ben and his brother do not have characteristic X.
- (4) Ben's father has a brother who has characteristic X.



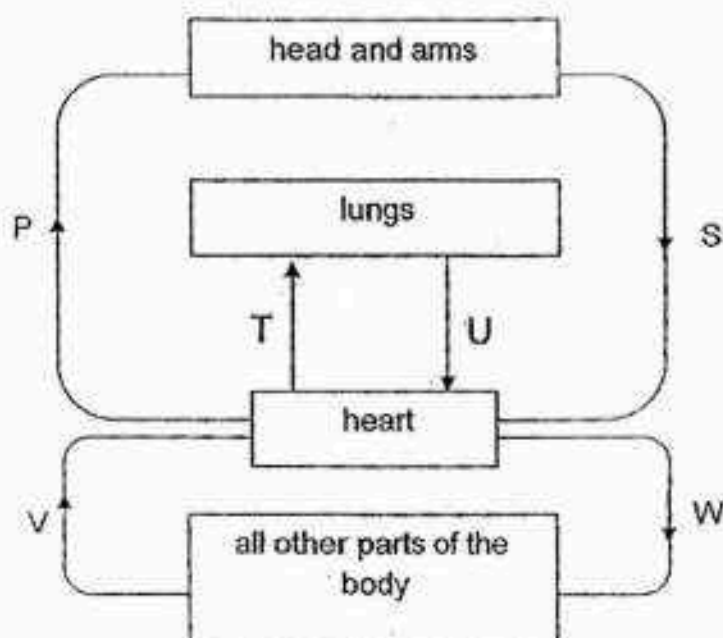
8. Leonard has a plant growing in a garden. He wrapped up some leaves as shown below with clear or black plastic bags.



Which of the following shows the correct order of the amount of carbon dioxide in the bags, beginning with the least to the greatest amount after an hour?

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

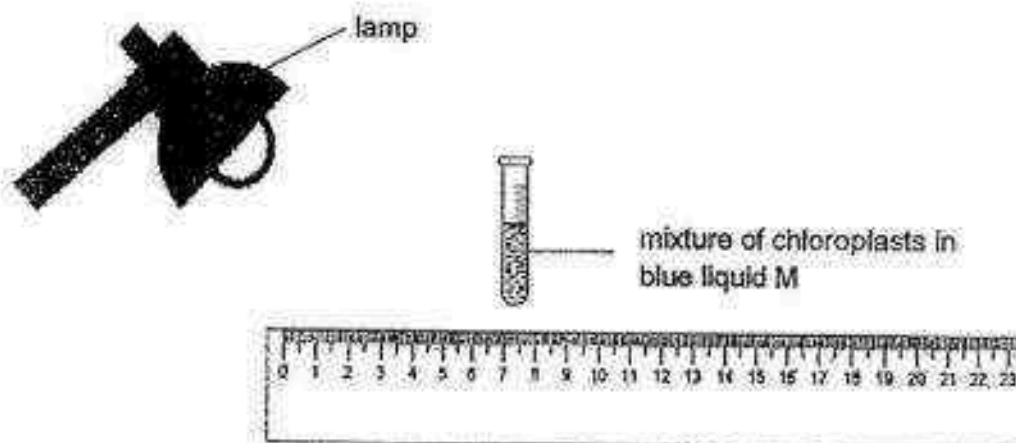
9. The diagram below shows the direction of blood flow in some parts of a human body.



Which blood vessels carry blood rich in carbon dioxide?

- (1) P, U and W only
- (2) P, U and V only
- (3) S, T and W only
- (4) S, T and V only

10. Zoe had three tubes, A, B and C, each containing an equal amount of chloroplasts and a blue liquid M which turns green after a certain amount of oxygen is produced during photosynthesis.



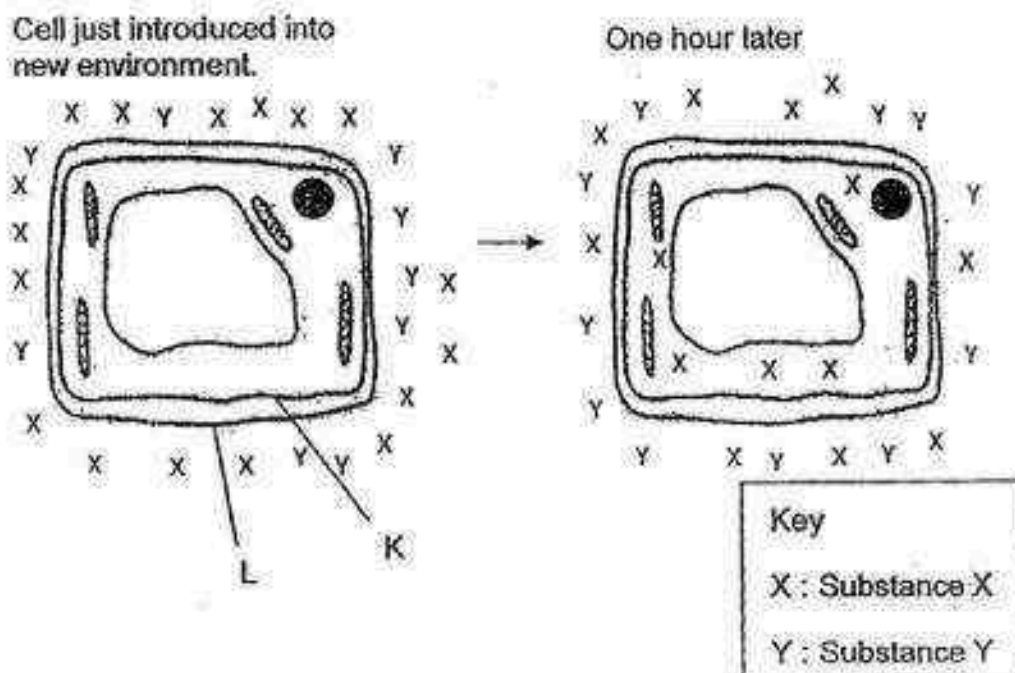
She placed the tubes at various distances from a lighted lamp as shown in the table below.

Tubes	A	B	C
Distance from lamp (cm)	10	30	20

Which of the following is most likely the time taken for the mixture to turn green for tubes A, B and C?

	Time taken for the mixture to turn green (s)		
	A	B	C
(1)	6	40	25
(2)	6	25	40
(3)	25	40	6
(4)	40	25	6

11. The diagram below shows what happened before and after a plant cell is placed in a container filled with substances X and Y.



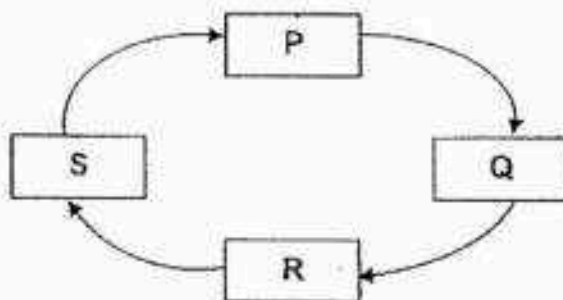
Read the statements below.

- A: Part L stops Substance X from entering the cell.
- B: Part K stops Substance Y from entering the cell.
- C: Part K maintains the shape of the cell.

Which of the above statement(s) is/are true about the cell shown?

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

12. Each letter in the diagram below represents a stage in the life cycle of a butterfly.

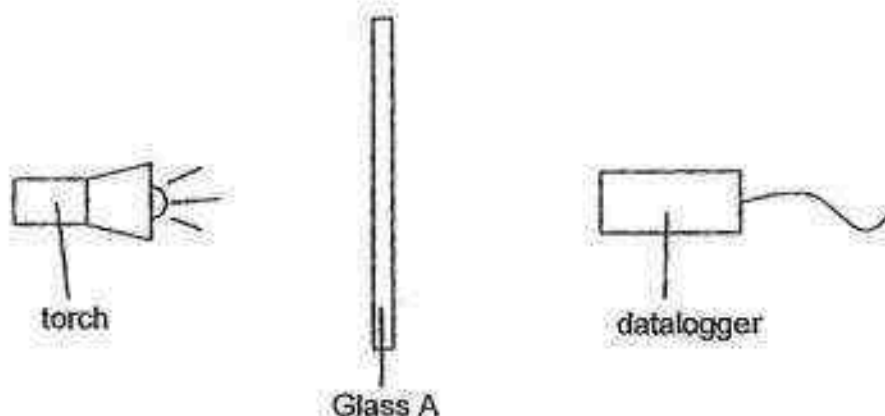


Which of the following statements are true about the butterfly if Q represents the adult stage?

- A At Stage R, it has developed wings.
- B At Stage S, it moults several times as it grows.
- C At Stage Q, it spends most of its time eating and growing in size.
- D At Stage P, it does not eat and does not move around from place to place.

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

13. Hanming set up the experiment below to find out how much light can pass through Glass A.



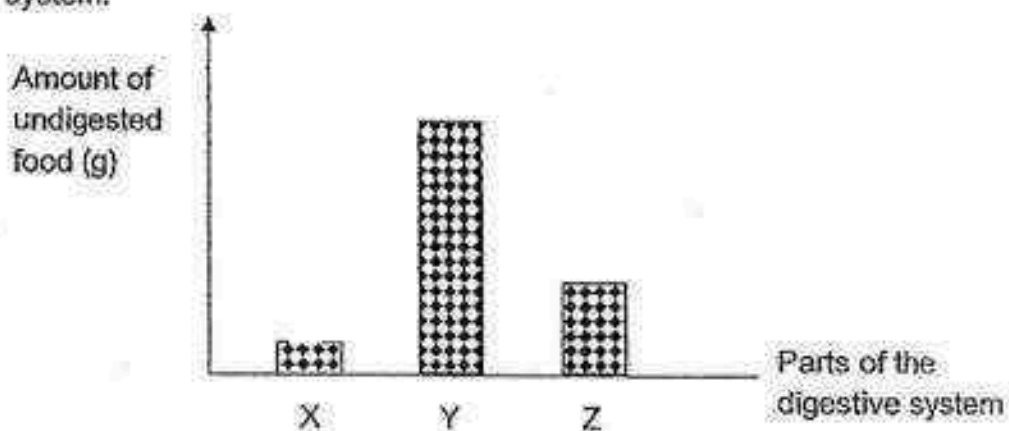
He repeated the experiment by replacing Glass A with Glass B and then Glass C. The results of the experiment are shown in the table below.

Type of Glass	Amount of light received (units)
A	0
B	65
C	28

Which type of glass is most suitable to make the lens of a pair of reading glasses and a pair of sunglasses?

	Lens of reading glasses	Lens of sunglasses
(1)	A	A
(2)	B	A
(3)	B	C
(4)	C	B

14. The graph below shows the amount of undigested food in different parts of the human digestive system just before it travels to the next part of the system.



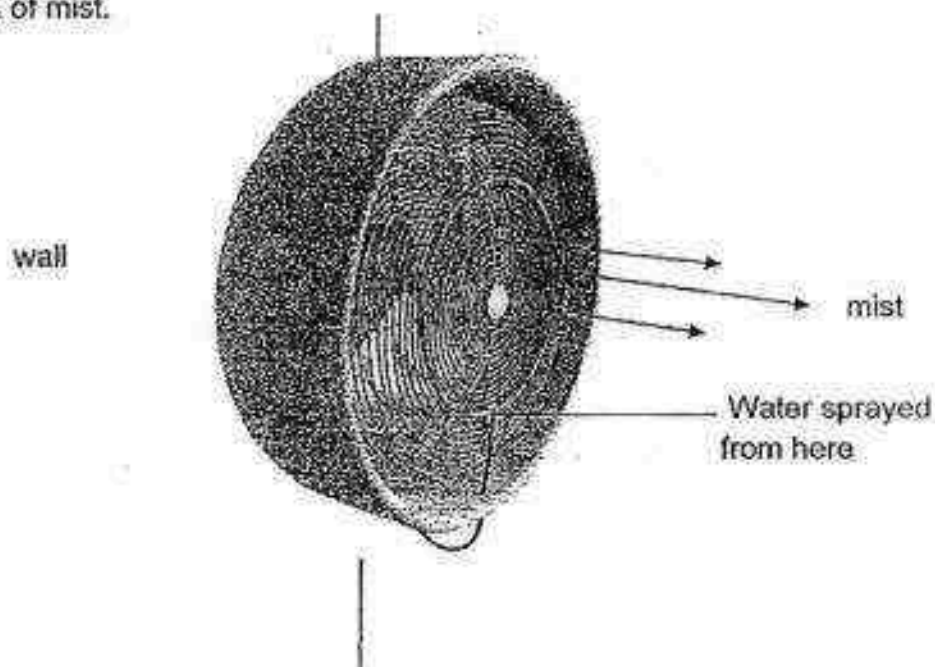
Which one of the following correctly identifies parts X, Y and Z?

	X	Y	Z
(1)	gullet	small intestine	stomach
(2)	large intestine	gullet	stomach
(3)	mouth	large intestine	small intestine
(4)	stomach	mouth	large intestine

15. Substance A is a solid at  $40^{\circ}\text{C}$  and a liquid at  $220^{\circ}\text{C}$ . Which of the following show a possible melting point and boiling point of Substance A?

	Melting point of A ( $^{\circ}\text{C}$ )	Boiling point of A ( $^{\circ}\text{C}$ )
(1)	30	150
(2)	30	250
(3)	50	150
(4)	50	250

16. The diagram below shows a mist fan found in open air cafes. These fans are used to cool the surrounding air. Tiny water droplets are produced in the form of mist.

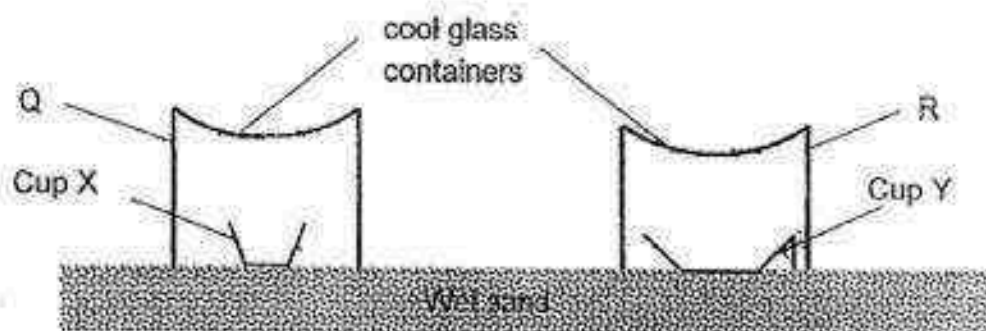


Which of the following correctly explains why the mist from the fan cool the surrounding air more effectively?

- (1) The water vapour loses heat to the wind and condenses.
- (2) The water vapour gains heat from the wind and evaporates.
- (3) The water droplets lose heat to the surrounding air and evaporate.
- (4) The water droplets gain heat from the surrounding air and evaporate.



17. On a sunny day, Shane set up the following experiment at a part of the wet sand on the beach shown below.



Which of the following will happen after 2 hours?

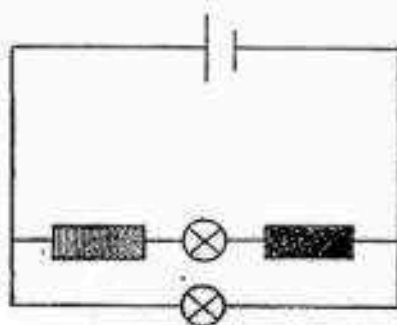
- (1) Cup Y will have more water than Cup X.
  - (2) There will be less water vapour within Container Q than Container R.
  - (3) There will be an equal amount of water collected in Cup X and Cup Y.
  - (4) There will be more water droplets on the inner surface of Container Q than Container R.
18. Mei Ling wants to find out if the temperature of water affects the rate of evaporation of water.

Set-up	Exposed surface area of water (cm <sup>2</sup> )	Volume of water (ml)	Temperature of water (°C)	Presence of wind
A	150	200	28	present
B	80	250	28	absent
C	150	200	52	present
D	80	250	52	present

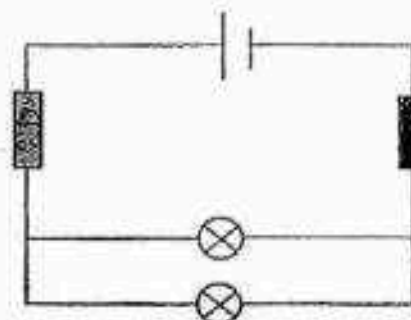
Which two set-ups must she use?

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

- 19 Each of the circuits below has a magnet and an eraser.



Circuit A



Circuit B

Key:



: eraser

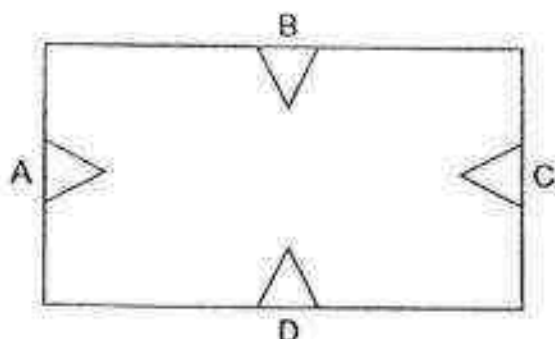


: magnet

Which of the above circuit(s) would have at least one bulb lighting up?

- (1) A only
- (2) B only
- (3) Both A and B
- (4) None of the circuits

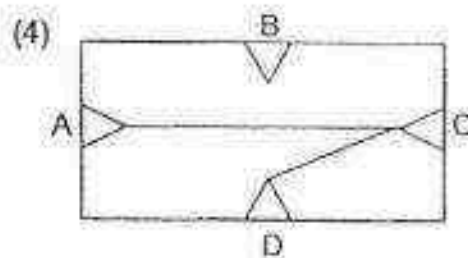
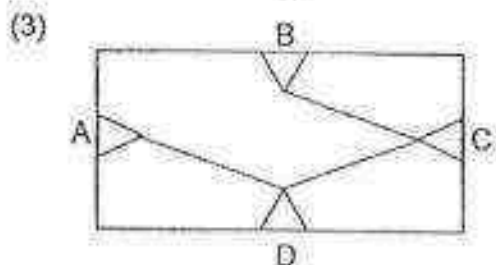
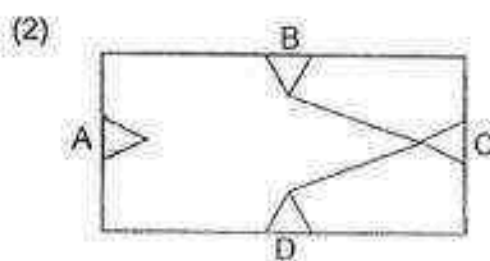
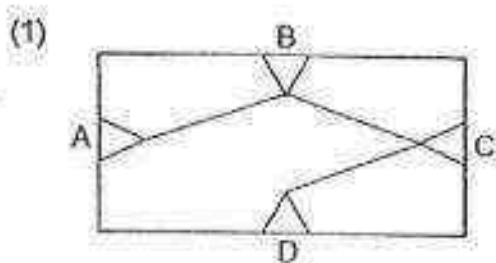
20. The diagram below shows a circuit card. Four steel paper clips, A, B, C and D, are used to secure the wires onto the card.



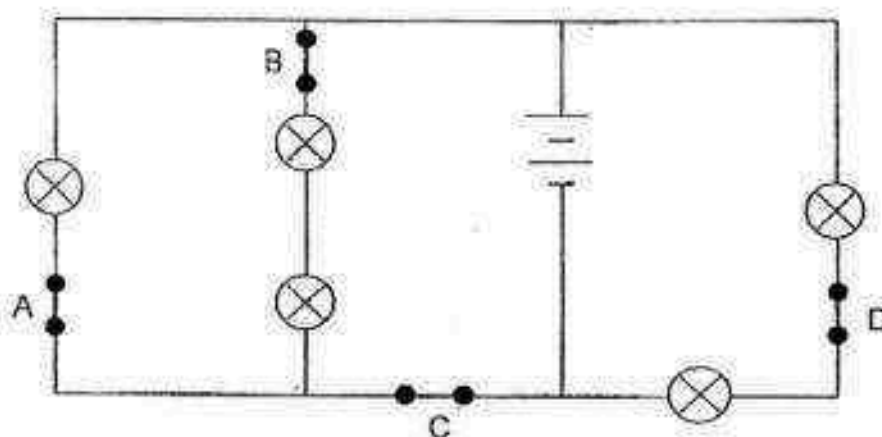
A circuit tester is connected to two of the paper clips at a time. The results are recorded below.

Paper clips tested	Does the bulb of the circuit tester light up?
A and B	No
A and C	Yes
B and C	No
B and D	No
C and D	Yes

Which one of the following shows the correct connection of wires on the underside of the circuit card?

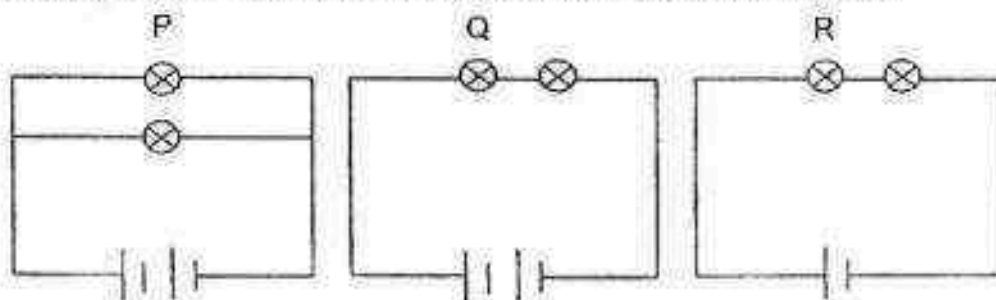


21. Jamil set up a circuit as shown.



All the five bulbs were lit when all the four switches were closed. He wanted the fewest number of bulbs to be lit by opening only one switch. Which switch should she open?

- (1) A
  - (2) B
  - (3) C
  - (4) D
22. The diagram below shows three circuits with different arrangements of identical batteries and bulbs. The bulbs in all three circuits light up.



Arrange the bulbs, P, Q and R, in the order of brightness, starting with the brightest bulb.

- (1) R, Q, P
- (2) P, Q, R
- (3) Q, P, R
- (4) R, P, Q



### PRIMARY 5 END-OF-YEAR EXAMINATION 2016

Name : \_\_\_\_\_ (    )

Date: 25 October 2016

Class : Primary 5 (    )

Time: 8.00 a.m. – 9.30 a.m.

Parent's Signature : \_\_\_\_\_

## SCIENCE BOOKLET B

### INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

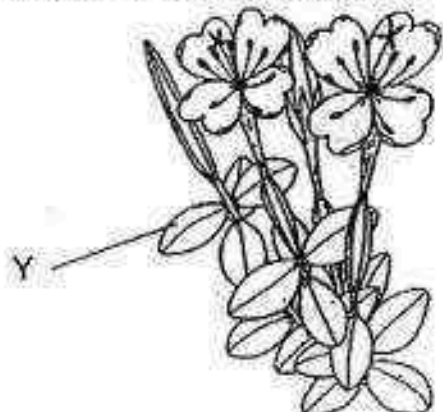
Answer all questions.

Booklet A	44
Booklet B	36
<b>Total</b>	<b>80</b>

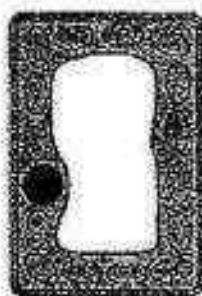
**Booket B (36 marks)**

For questions 23 to 34, write your answers clearly in the spaces provided.

23. The diagram below shows a flowering plant.



Michael observed some cells he took from part Y in a microscope. He drew a cell as shown.



- (a) Label the part of the cell that enables the plant to make food. [1]

- (b) How does the part in (a) help the cell to make food? [1]

---



---

- (c) Michael's plant produces fruits with many tiny seeds. One day, he noticed a bird feeding on the fruit and swallowing the tiny seeds. Explain how this action benefits the plant? [1]

---

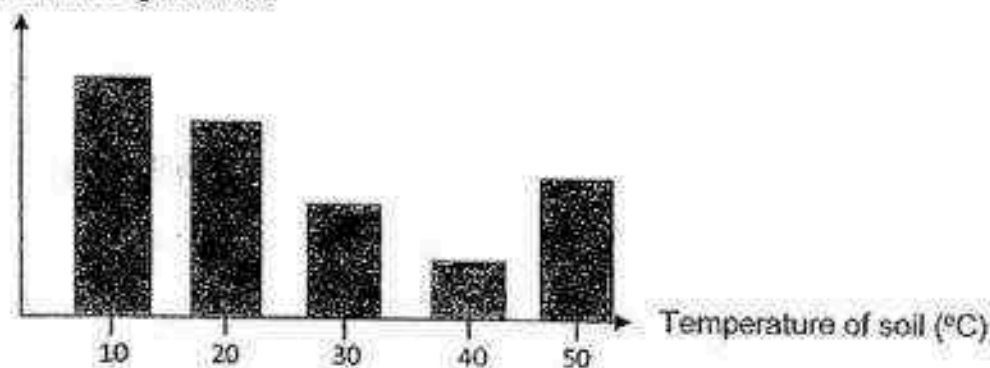


---

Score	3
-------	---

24. Farmer Tan conducted an experiment to investigate how the temperature of soil affects the germination of seeds.

Number of days before the first seed starts to germinate



- (a) Besides oxygen, state two other conditions required for seeds to germinate. [1]

---

- (b) Based on the graph above, state the temperature that causes the seeds to germinate the earliest. [1]

---

- (c) Based on the graph above, when the temperature of soil is below 40°C, what can Farmer Tan conclude between the temperature of the soil and the time needed for the germination of seeds? [1]

---



---

Score	3
-------	---

25. Esther put three female birds in a big cage. Every few weeks, she would find eggs in the cage. However, none of the eggs hatched.

(a) Give a possible reason why none of the eggs hatched.

[1]

---



---

(b) What should Esther do to ensure that she would have eggs that hatch into chicks?

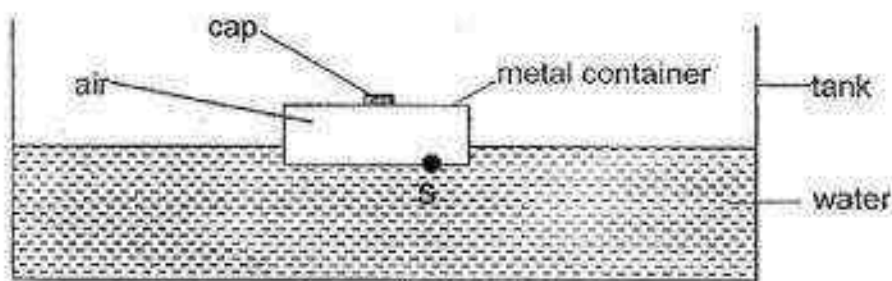
[1]

---



---

26. Chloe placed an empty sealed metal container into a tank of water as shown below. She made a hole on the metal container at S.



(a) Chloe wanted the metal container to sink. Describe what she could do to the set-up to make the container sink.

[1]

---



---

(b) Explain your answer in (a).

[1]

---



---

Score	4
-------	---



27. John fixed a heart rate monitor onto his arm to measure his heart rate in number of beats per minute (bpm) during his jog.



- (a) John noticed that his heart rate increased after he started jogging. Explain why his heart rate increased.

[2]

---



---



---

- (b) In a human, oxygen is absorbed by the red blood cells in the blood at the lungs. John's sister has a blood condition, where the number of red blood cells are far fewer than a normal person. Compare the amount of oxygen John's sister could absorb at the lungs with that of a normal person.

[1]

---

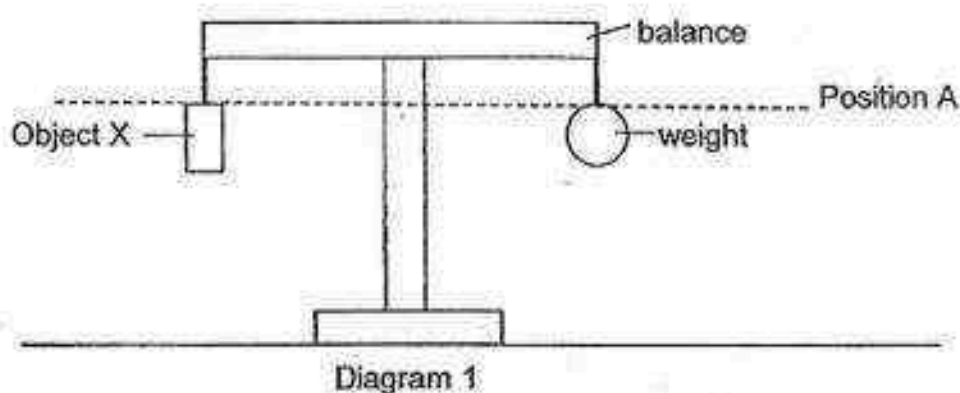


---

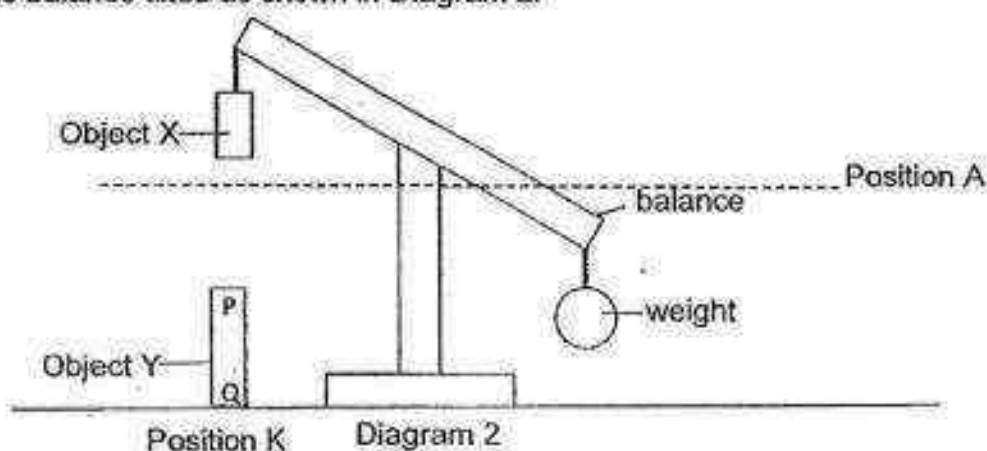
5

Score	3
-------	---

28. Amelia set up an experiment as shown below.



When Object Y was placed below Object X, Object X moved upwards and the balance tilted as shown in Diagram 2.



- (a) Based on the information above, identify what Object X and Object Y could be. [1]

---



---

- (b) Describe what Amelia could do to the Object Y (ensuring that Object Y is still at Position K) such that the weight could move upwards above Position A. [1]

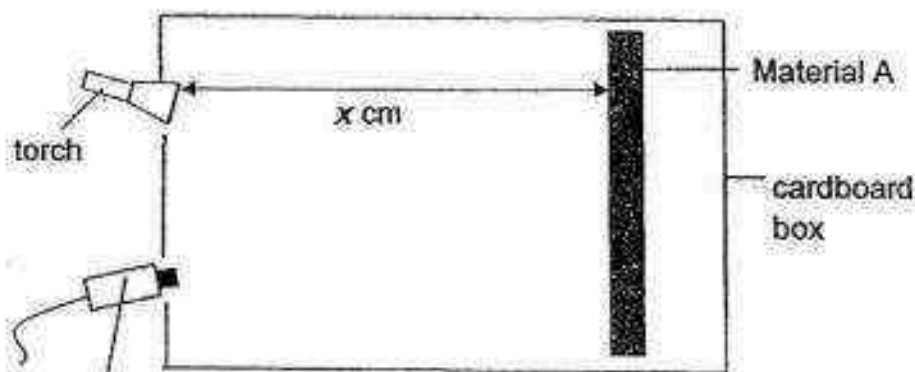
---



---

Score	2
-------	---

29. Haslinda wanted to investigate which material, A, B and C, reflects the most light. She set up her experiment as shown below. The distance between the material and the torch is indicated as  $x$  cm.

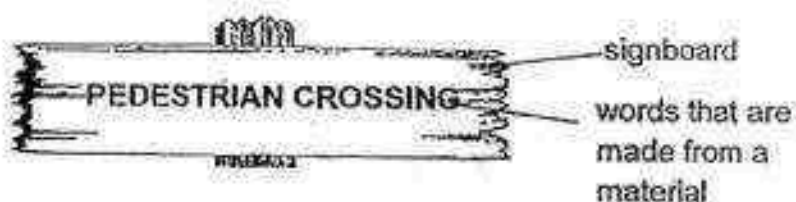


Light sensor connected to a datalogger

She recorded her results for Materials, A, B and C, in the table below.

Material	Reading on Datalogger (Units)
A	20
B	60
C	35

Haslinda wanted to use a material for the words of a signboard on a road for motorists to see well in the dark.



- (a) Based on Haslinda's results, which material, A, B or C, should she use? [2]  
Give a reason for your answer.

---



---

- (b) Explain why Haslinda should not use a clear glass box for the experiment above. [1]

---



---

- 30 Devi held onto Material P and bent it as much as she could as shown below and recorded Distance Y. She repeated the experiment for Material Q and then Material R, which were of similar length and thickness.



Her results are shown in the table below.

Material	Distance Y (cm)
P	9
Q	7
R	1

- (a) What was Devi trying to test?

[1]

Devi wants to make an exercise mat that can be easily rolled up for storage as shown below.

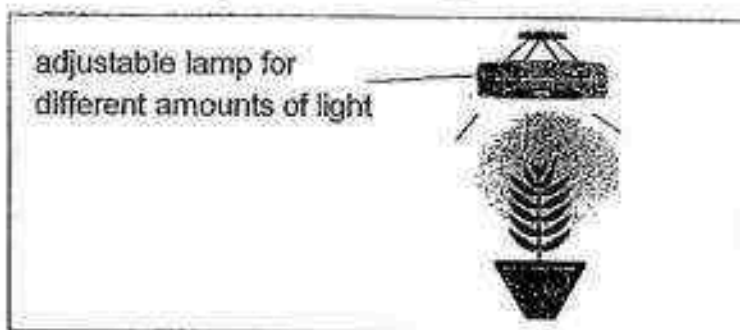


- (b) Based on her results above, which material (P, Q or R) is best for Devi to use to make the exercise mat above? Explain your choice.

[1]

Score	2
-------	---

31. Sylvia carried out an experiment to find out how the height of four similar plants is affected by the amount of light.



The four plants, A, B, C and D were placed in different enclosed dark room and exposed to different amount of light for three weeks as shown above. All other variables were kept the same. The results were recorded in the table below.

Plants	Amount of light (unit)	Height of the plants (cm)	
		Start of the experiment	End of the experiment
A	5	5.2	7.6
B	10	5.5	8.1
C	15	5.0	7.8
D	25	5.3	8.6

- (a) How would the amount of light affect the height of the plant in the experiment above?

[1]

---



---

- (b) Explain your answer in (a).

[1]

---



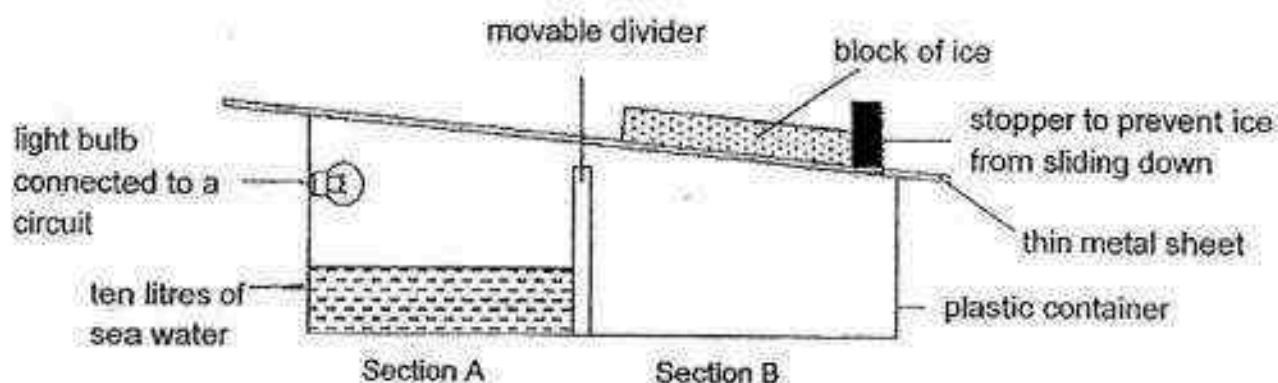
---

- (c) Suggest one way how the above experiment can be improved to ensure reliable results.

[1]

---

32 Meilin set up the experiment as shown below.



When she switched on the electric light bulb, three litres of water was collected in Section B of the plastic container after three hours.

(a) Explain the purpose of the light bulb.

[2]

(b) How will increasing the intensity of light given off by the light bulb affect the amount of water collected in Section B?

[1]

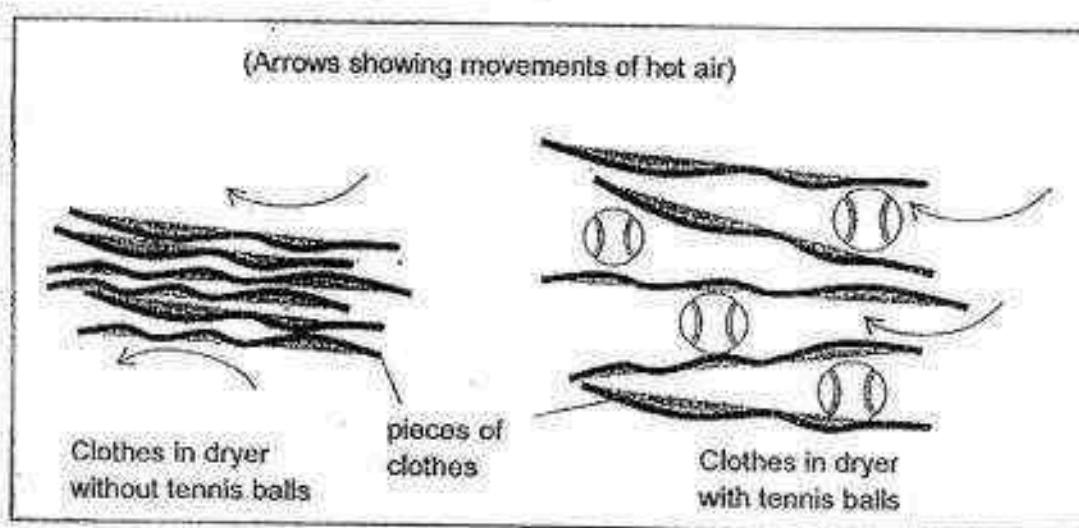
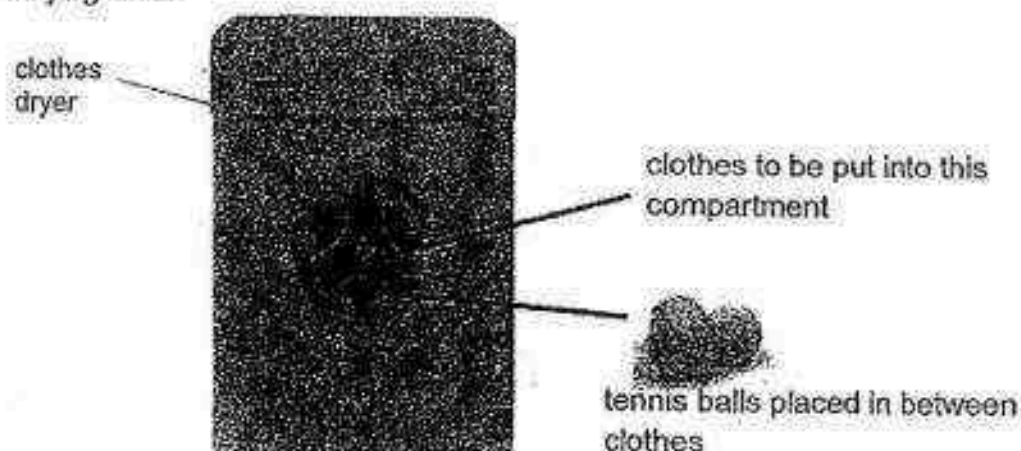
(c) Explain your answer in (b).

[2]

10

Score	5
-------	---

33. A clothes dryer is a machine used to tumble dry wet clothes using hot air. Mandy added tennis balls in between her wet clothes in the dryer to shorten the drying time.



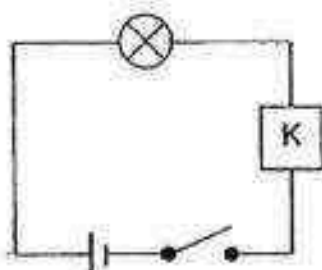
- (a) Explain how having tennis balls between the clothes will help to shorten the drying time of the wet clothes in the clothes dryer.

[2]

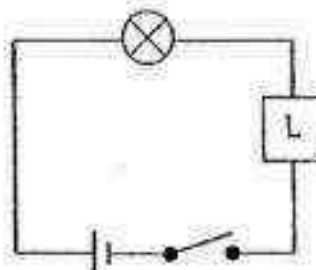
- (b) There is a fan built in the dryer that blows hot air at the wet clothes. Mandy is able to adjust the fan speed of the dryer. How will increasing the fan speed affect the time taken for the clothes to dry completely?

[1]

34. Randy set up 2 similar circuits using identical bulbs, batteries and objects, K and L, as shown below. The objects, K and L, are of the same size but made of different materials.



Circuit A



Circuit B

He made the following observations when the switches of both circuits were closed at the same time.

Circuit	Observation
A	Bulb lighted up.
B	Bulb did not light up.

- (a) Based on the observations made by Randy, state a difference in property between Object K and Object L.

[1]

---



---

- (b) Randy added four more batteries to circuit A. The bulbs and batteries were in good working condition. When the switch was turned on, the bulb in circuit A glowed very brightly for a few seconds and then did not light up after that. State what had happened to the bulb.

[1]

---

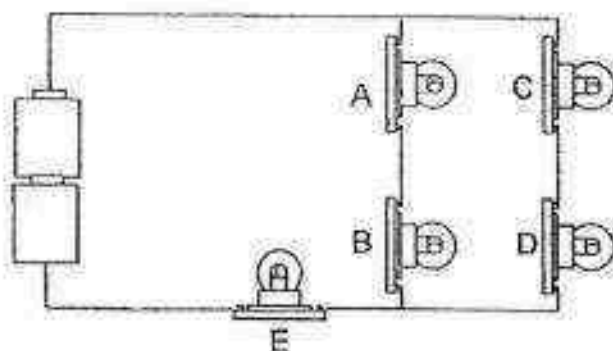


---

Score	2
-------	---



Randy set up another circuit shown below with identical bulbs, bulb holders and batteries.

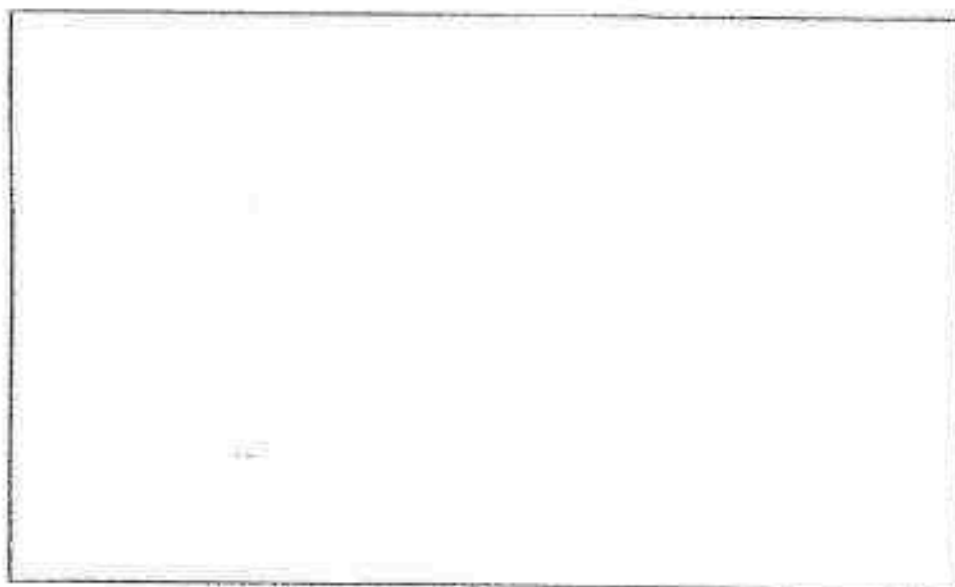


- (c) Randy removed one of the above bulbs from its bulb holder and none of the rest of the bulbs remain lit. Which bulb did he remove?

[1]

- (d) Randy wants all the bulbs, A, B, C, D and E, to light up the brightest. Rearrange the electrical circuit using all of the electrical components shown above. Using the symbols given below, draw the correct circuit diagram in the box provided.

[2]



EXAM PAPER 2016 (P5)

SCHOOL : TAO NAN


SUBJECT : SCIENCE

TERM : SA2

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

# SA 2 SCIENCE ANSWER KEY

## Section B

Qn	Answer
23a	<div> <div>chloroplast</div>  </div>
b	The chloroplast contains chlorophyll that <u>traps sunlight</u> for the plants to make food.
c	The birds help in the <u>dispersal of seeds</u> , hence preventing <u>overcrowding</u> .
24a	Water and warmth
b	40°C
c	As the temperature of the soil <u>increases</u> , the time needed for the germination of the seeds <u>decreases</u> . (faster + lower X)
25a	There are <u>no male birds</u> to <u>fertilise</u> the eggs.
b	She should put male birds in the cage.
26a	Remove the cap
b	<u>Air can escape from the container</u> so that the <u>water can occupy the space originally occupied by the air</u> .
27a	His heart has to send <u>more digested food/ oxygen</u> to <u>all parts of his body</u> to release <u>more energy</u> .
b	<u>Less oxygen</u> is absorbed at the lungs. (not speed! talking about amount!)
28a	They are magnets.
b	She can turn Object Y over such that Q is facing upwards and P is on the table.
29a	Material B. Material B <u>reflects the most light</u> so the drivers can <u>see the words most clearly</u> .
b	Glass box is <u>transparent</u> / allows (most) light to pass through it. The <u>light from the surroundings</u> will affect results of experiment.
30a	She was testing on the <u>flexibility of the materials</u> .

b	Material R. Material R is the most flexible materials.
31a	As the amount of light increases, the height of the plant increases. <i>height/length</i> & <i>NOT SPEED</i>
b	Increasing the intensity of light causes the rate of photosynthesis to increase to make more food for growth.
c	Repeat the experiment a few more times.
32a	The light bulb provides <u>heat</u> for the <u>water to evaporate</u> .
b	The amount of water collected will increase.
c	The sea water now gains <u>more</u> heat (1m). Rate of evaporation <u>increases/ more</u> water vapour is formed (1/2m). The water vapour will condense. (1/2m)
33a	The tennis balls increase the exposed surface area of the clothes to <del>the heat</del> , thus increasing the rate of evaporation of water from the clothes. <i>hot dry</i>
b	The time taken for the clothes to dry completely will decrease. <i>(time, not speed)</i>
34a	Object K is an electrical conductor and Object L is an electrical insulator.
b	The bulb has fused.
c	Bulb E
d	