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**.

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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.

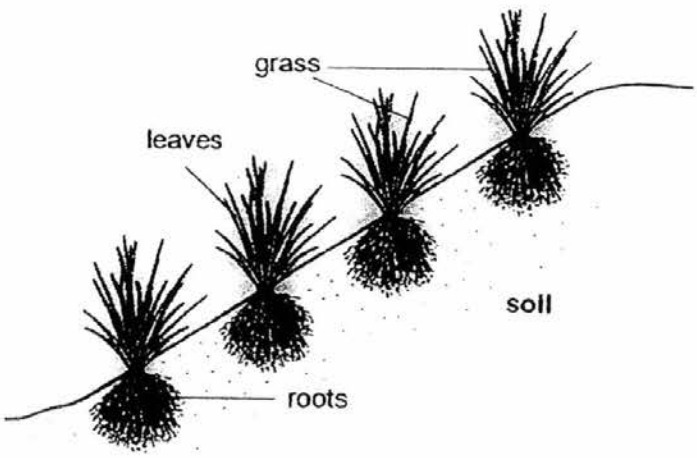
(1) A only

(2) B only

(3) A and C only

(4) B and C only

3. Ian planted some grass on a slope as shown below.

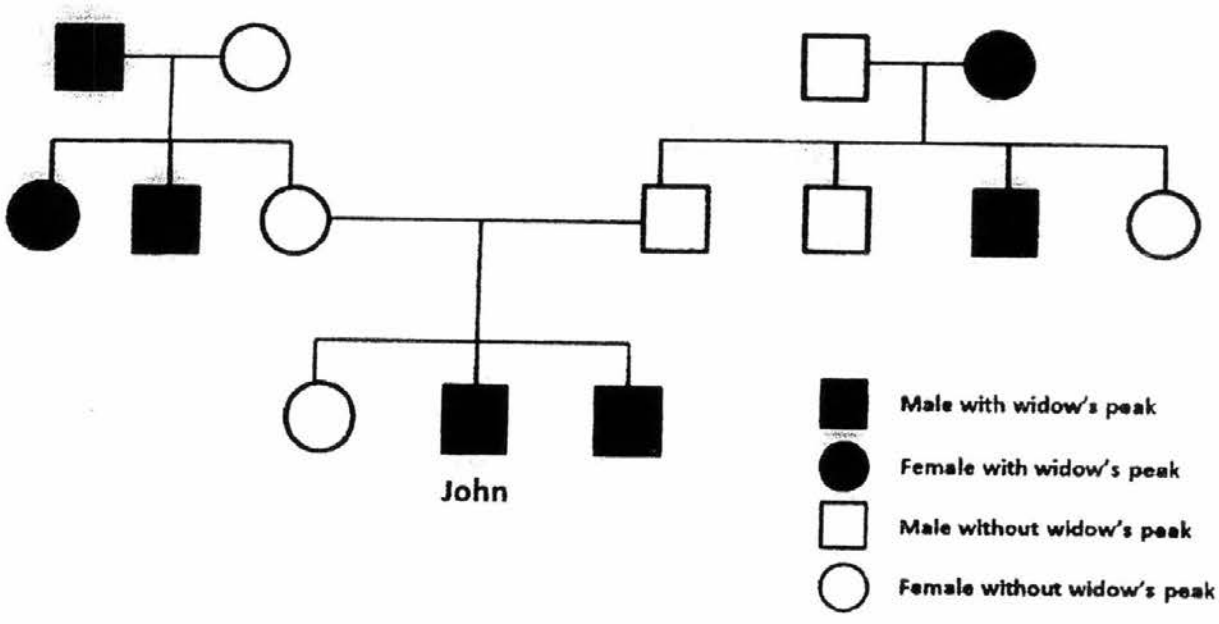


How does the grass help to prevent soil from being washed away by rain?

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.

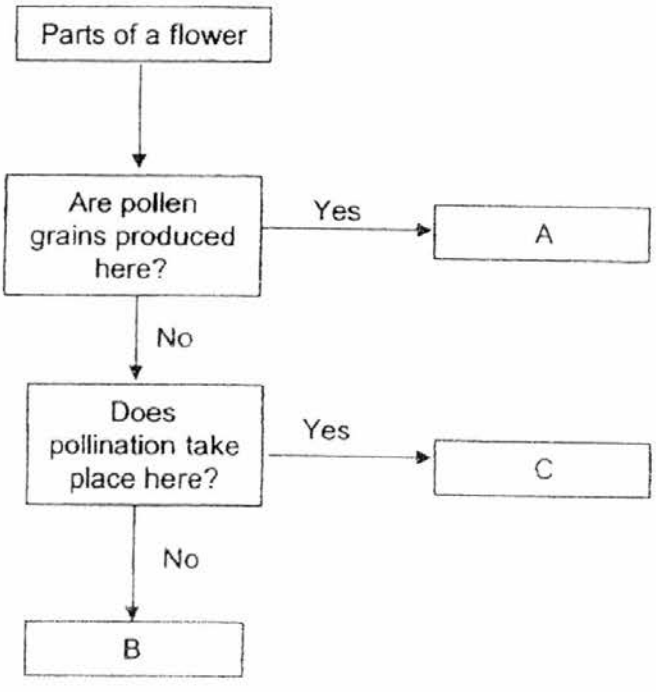
(4) Both John's grandfathers have widow's peaks.

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.

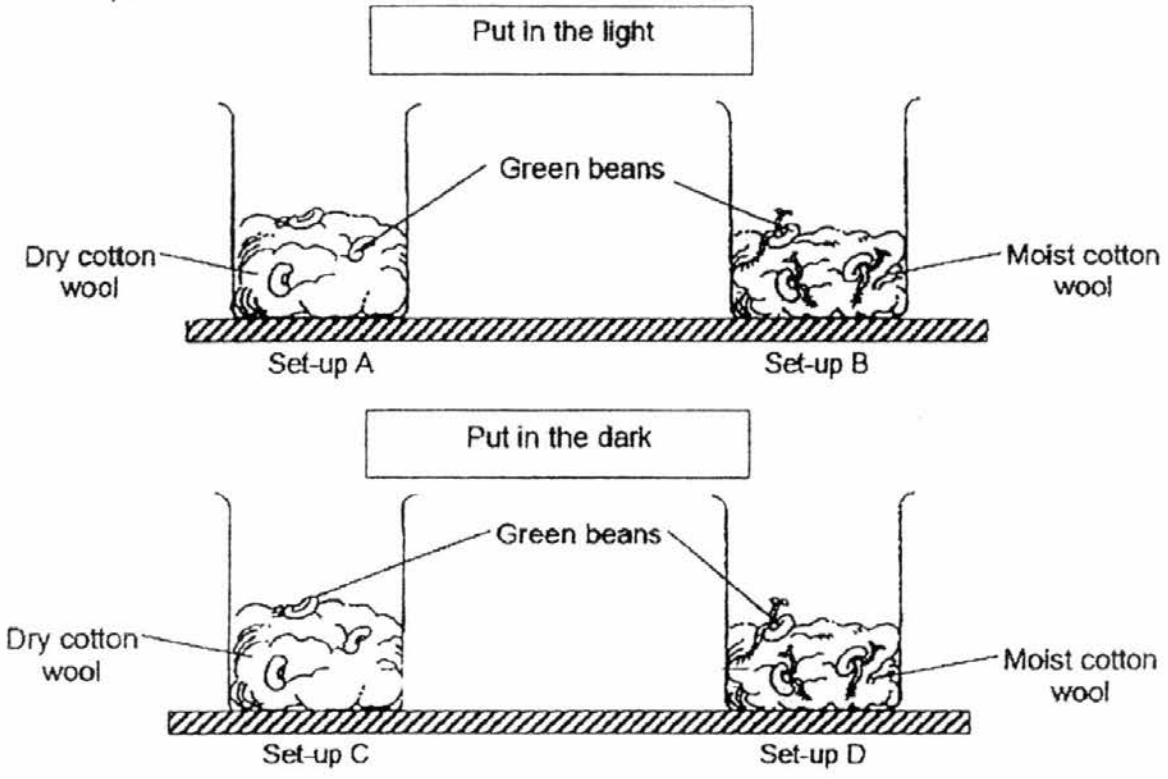


Which of the following could A, B and C be?

	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.

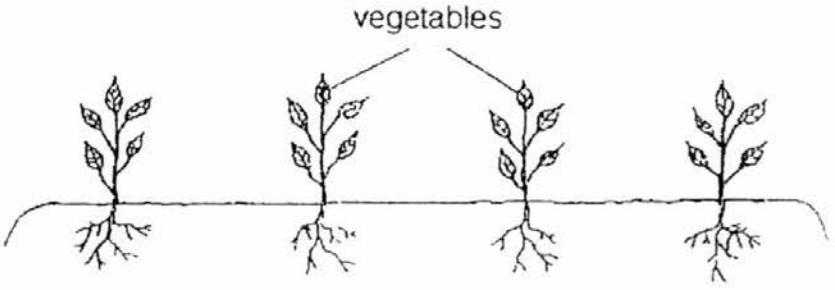
(2) Seeds can germinate without water.

(3) Seeds can germinate without warmth.

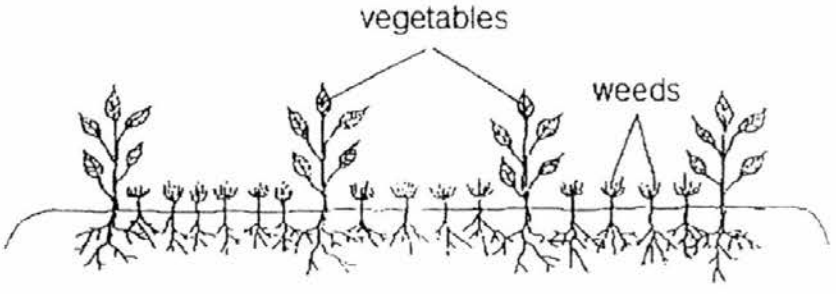
(4) Seeds can germinate without light and water.

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?

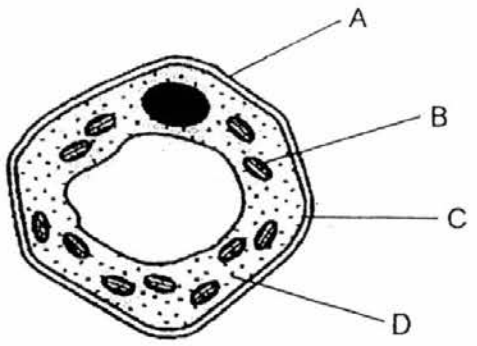
(1) The weeds can fertilise the soil.

(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.

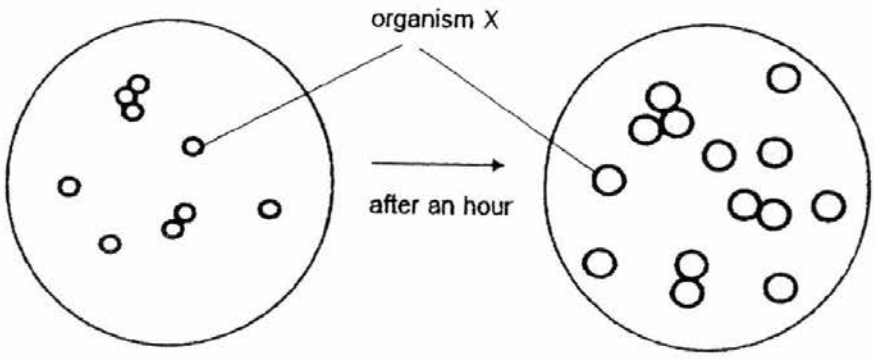
9. The diagram below shows a cell from the leaf of a plant.



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

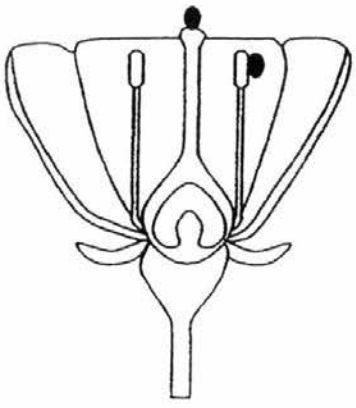
(4) A, B and C

11. The diagrams below show the cross-section of a flower.

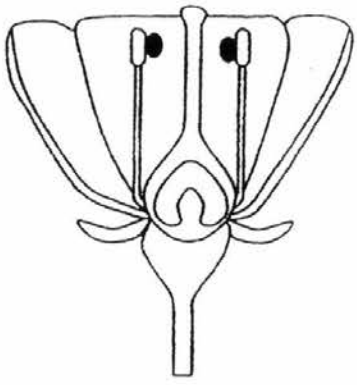
The black dots in the diagrams represent pollen grains.

Which of the following diagrams show that pollination has taken place?

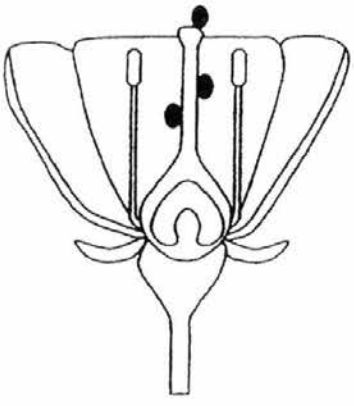
(A)



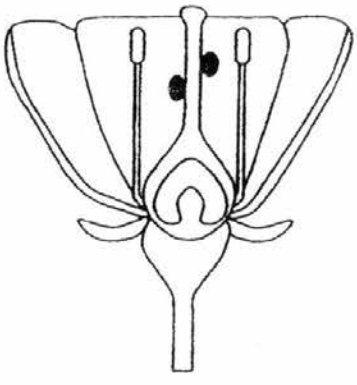
(B)



(C)

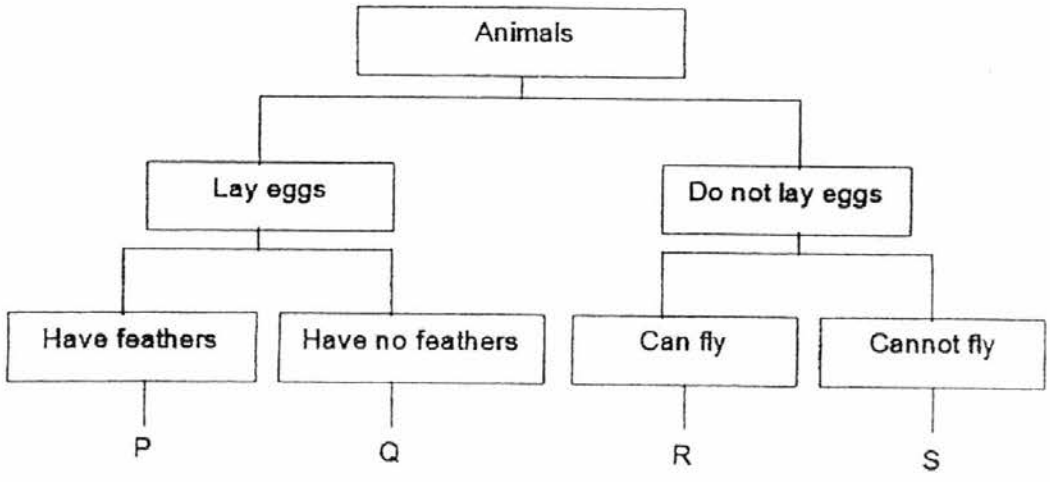


(D)



(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.



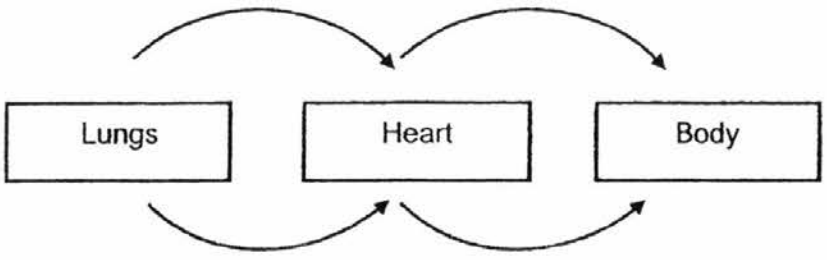
Based on the above classification chart, which of the following statements are correct?

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.

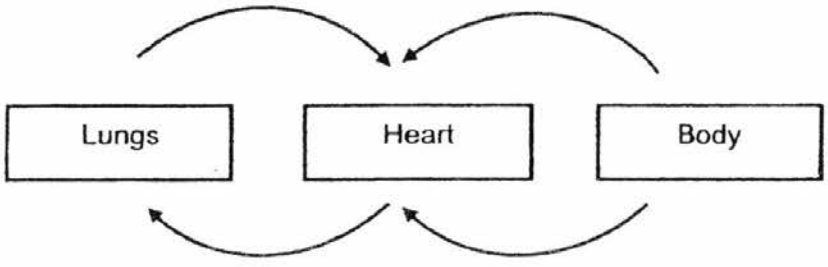
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

13. Which one of the following diagrams correctly shows how blood circulates in a human body?

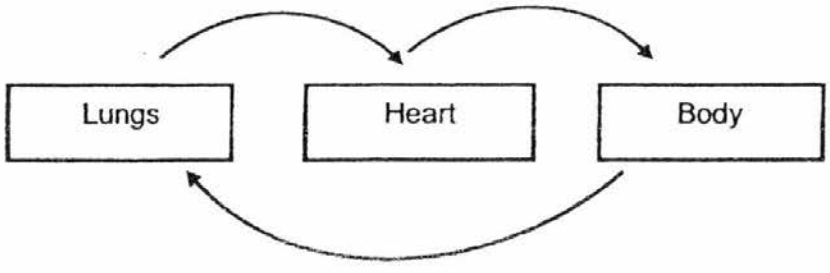
(1)



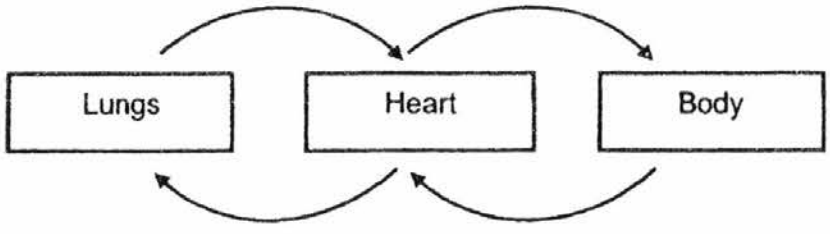
(2)



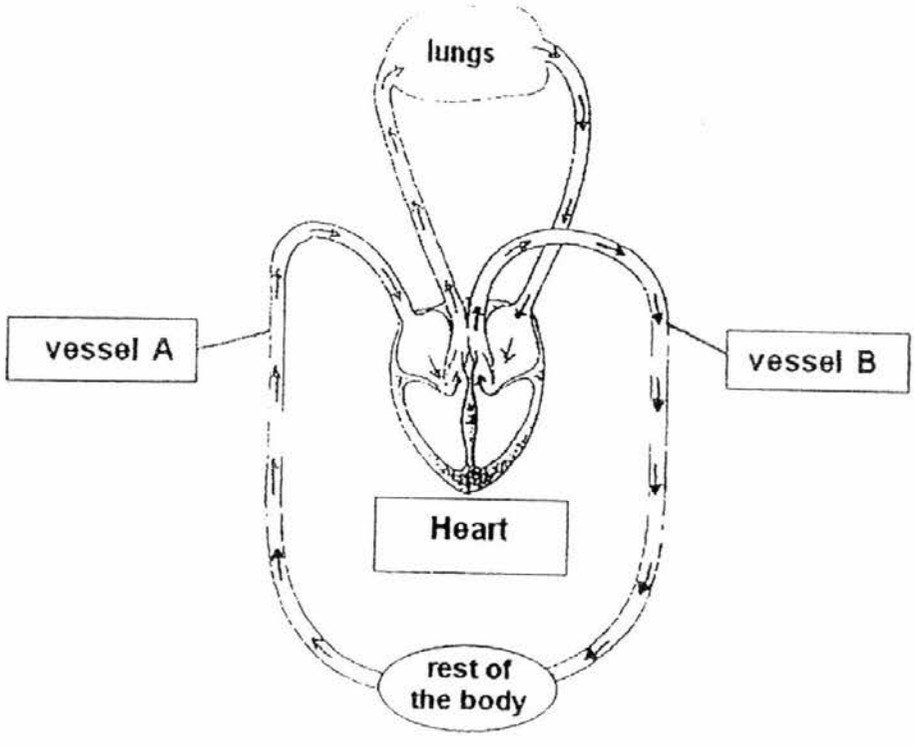
(3)



(4)



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?

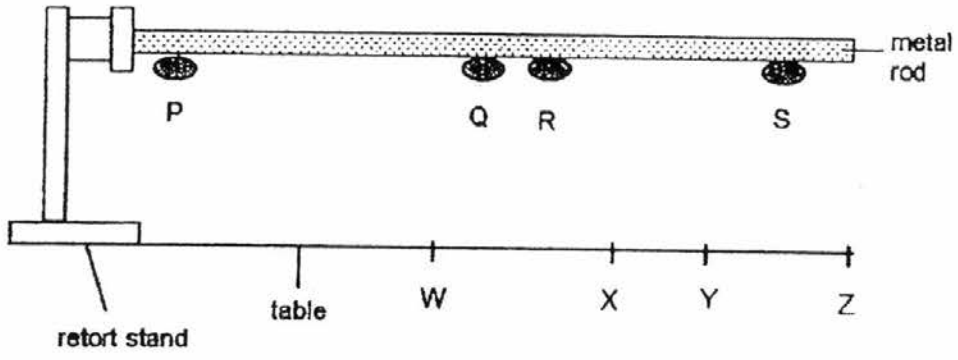
(1) Blood flowing in vessel B carries only oxygen.
(2) Blood flowing in vessel A carries more oxygen than blood in vessel B.
(3) Blood flowing in vessel B carries more oxygen than blood in vessel A.
(4) Blood flowing in vessel A carries only carbon dioxide.

15. Joel 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.

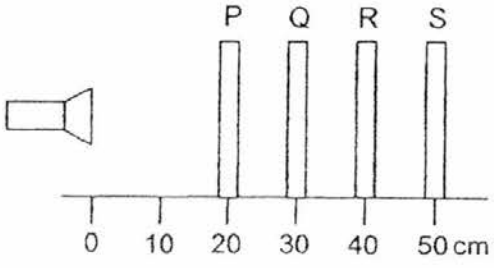
Substance	Melting Point (°C)	Boiling Point (°C)
A	16	117
B	39	688

Which of the following shows the correct state of substances A and B at 500 °C?

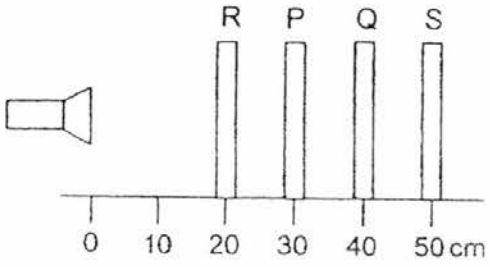
	State of substances at 500°C	
	A	B
(1)	liquid	liquid
(2)	gas	gas
(3)	gas	liquid
(4)	liquid	gas

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

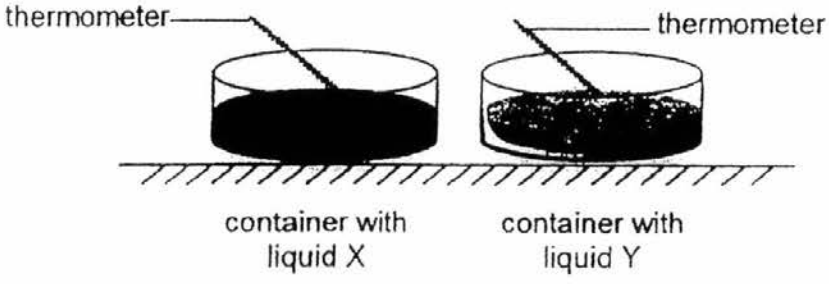
19. Which of the following correctly explains why perspiration helps to keep our body cool on a hot day?

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.



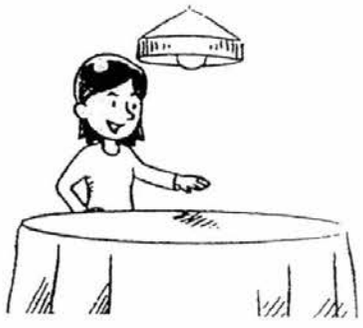
He recorded the results in the table below.

Time (min)	Temperature (° 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.

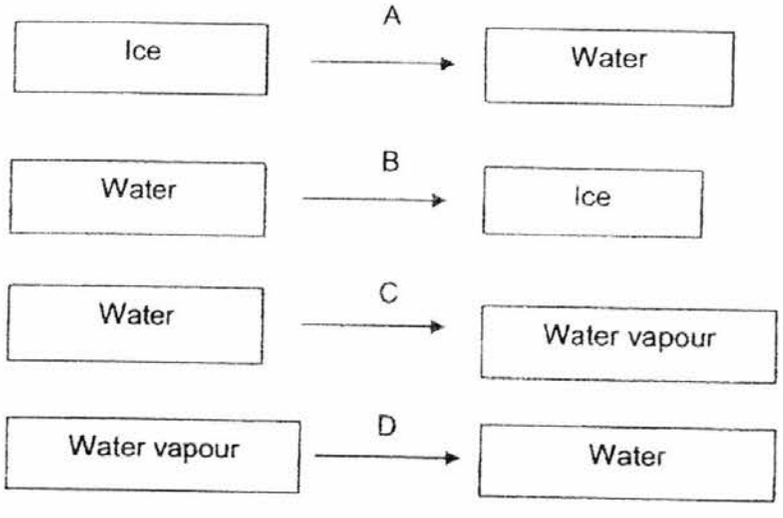
21. The diagram below shows a girl looking at her hand under a lamp.



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.

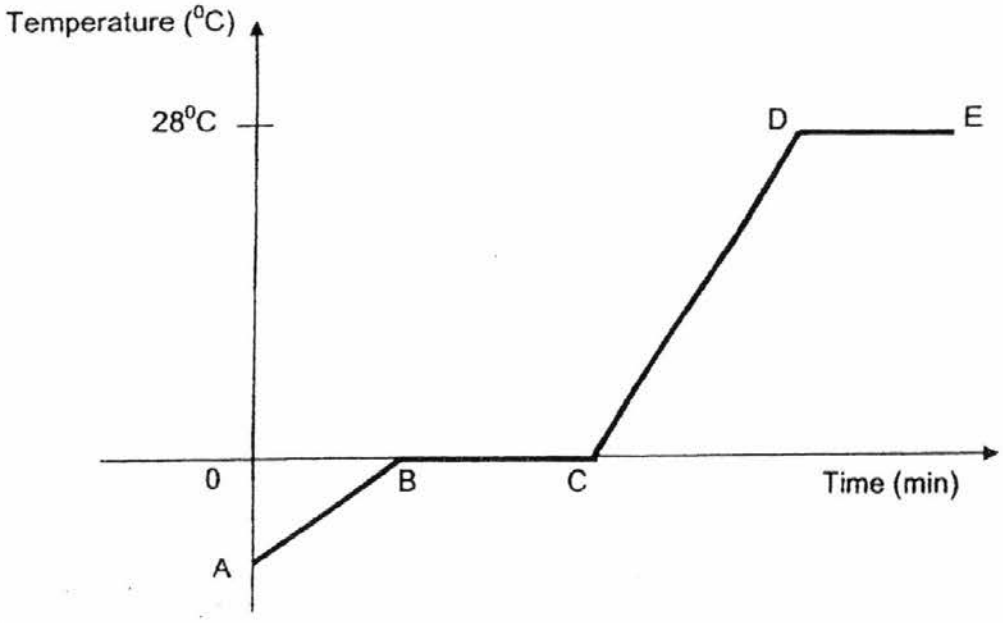
22. The diagram below shows changes in the states of water through process A, B, C and D.



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.

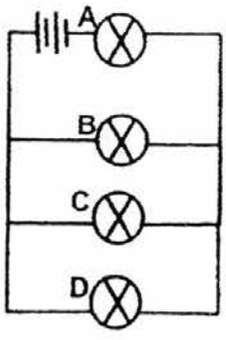


Based on the graph above, which of the following statements are correct?

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.



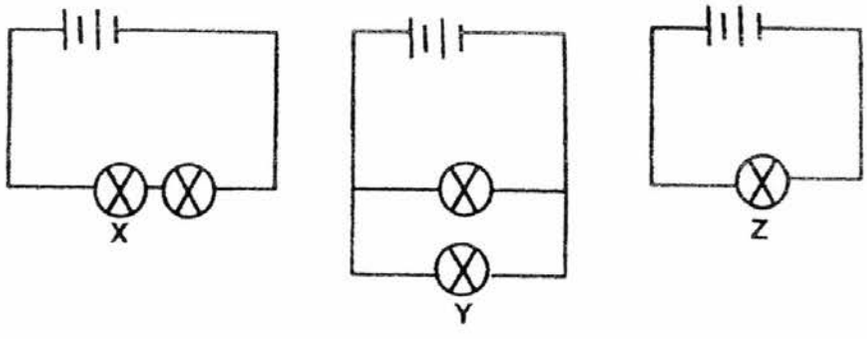
When one of the bulbs fuses, all the other three bulbs will not light up.

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

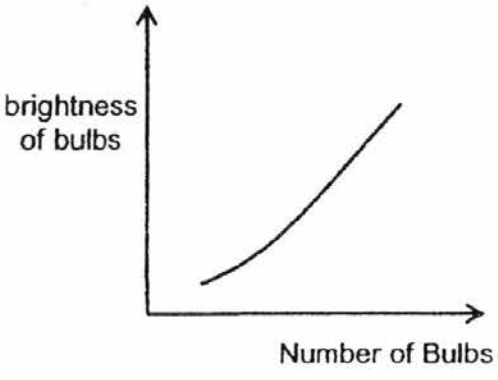
26. Ms Wong carried out an experiment to find out how the number of bulbs added in series will affect the brightness of the bulbs in a circuit.

The table below shows the results of her experiment.

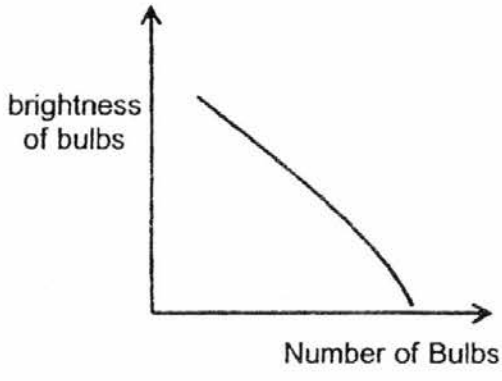
Number of Batteries	Number of bulbs added in series	Brightness of bulbs
1	1	Bright
1	2	Dim
1	3	Dimmer

Based on the table, which one of the graphs shows the results correctly?

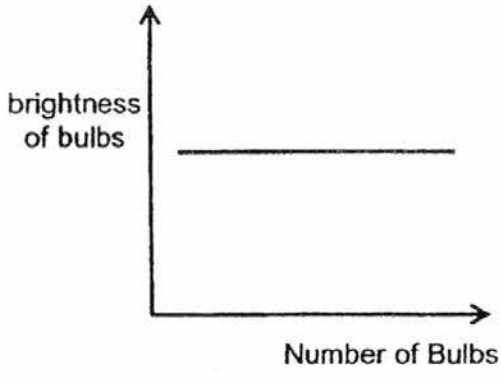
(1)



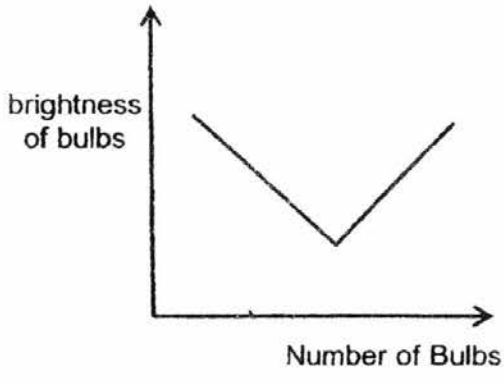
(2)



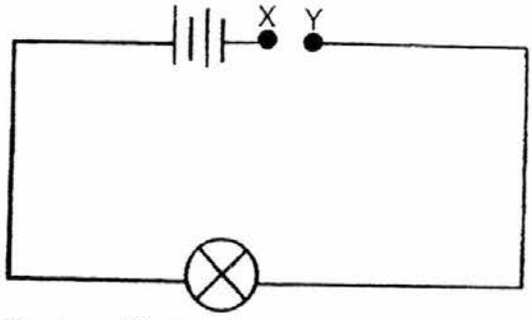
(3)



(4)



27. The diagram below shows an electric circuit with ends X and Y.



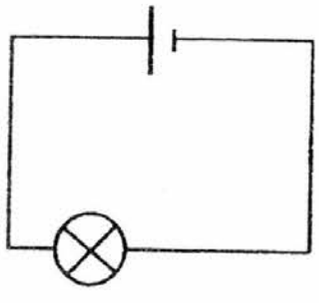
Which of the following objects when connected completely to ends X and Y will cause the bulb to light up?

A: An iron bar
B: An aluminium foil
C: A plastic ruler

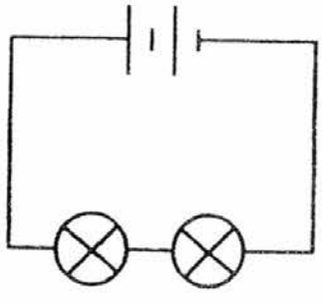
(1) A only
(2) A and B only
(3) C only
(4) A, B and C

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?

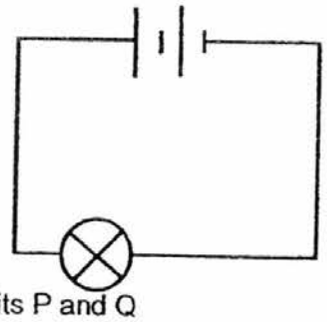
Circuit P



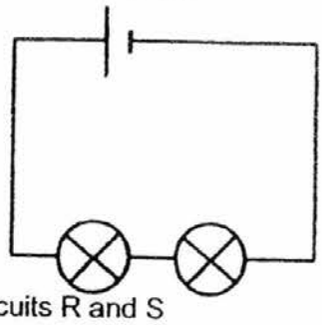
Circuit Q



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

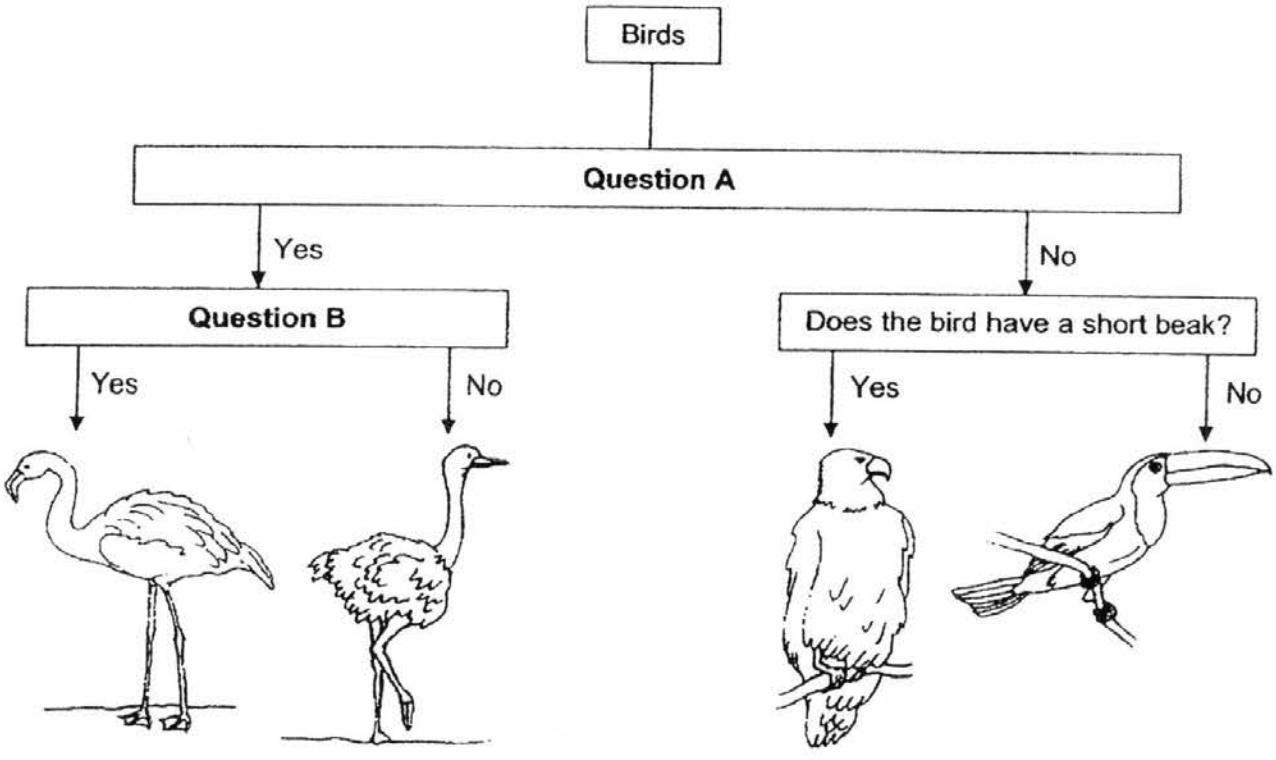
Total Time for Sections A and B: 1 h 45 min

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.



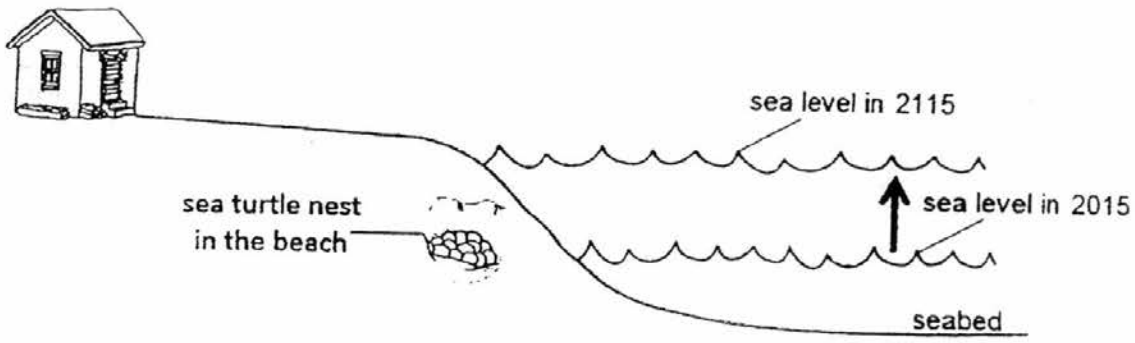
a) State one common characteristic of birds that is not found in the other animals. [1]

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.

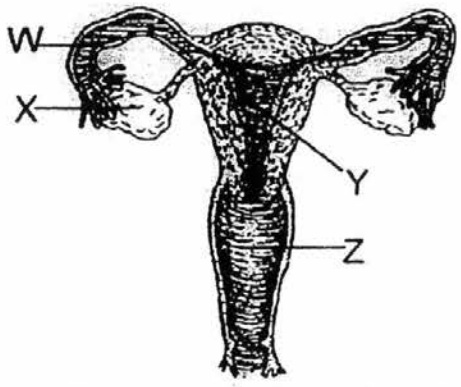
(b) State if the number of sea turtles will increase, decrease or remain the same as the sea level increases. [1]

Tick (✓) the correct answer below.

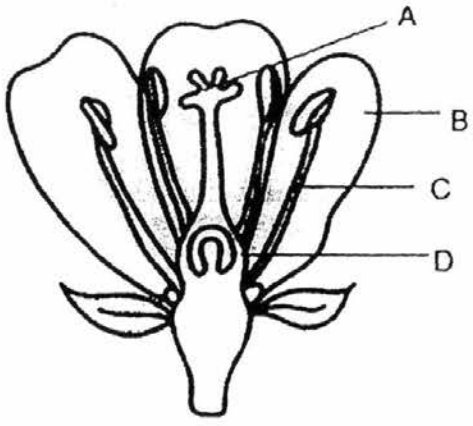
( ) increase ( ) decrease ( ) remain the same

(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]

_____

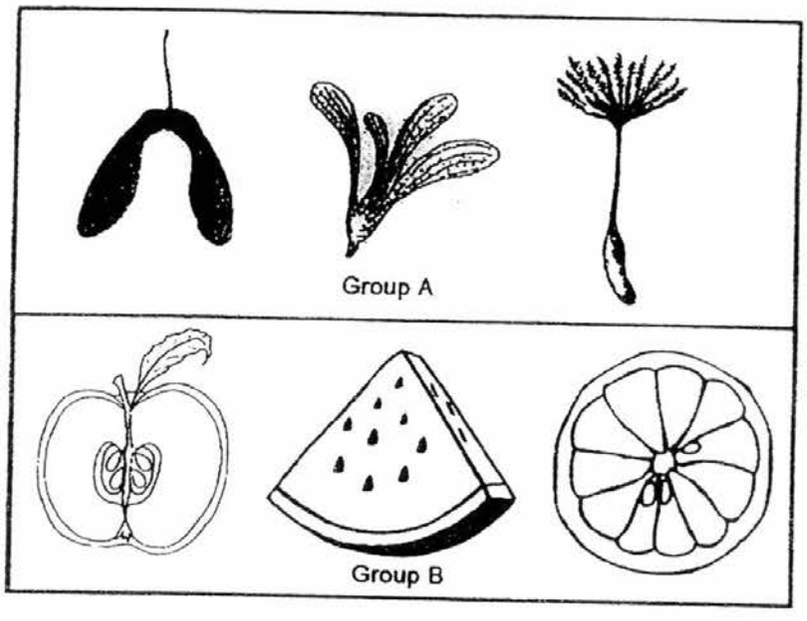
_____

c) Give a reason why part A is sticky. [1]

_____

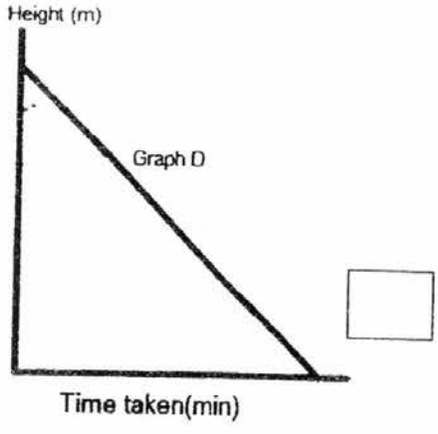
_____

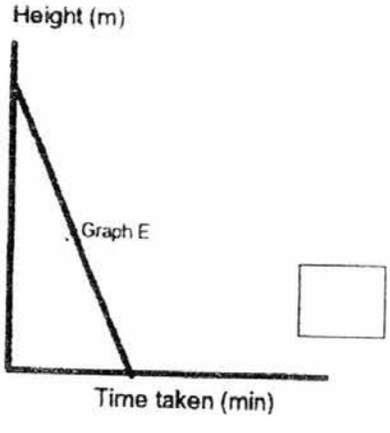
32. Peter conducted an experiment to find out how seeds are dispersed from their parent plants. Seeds from two groups, A and B, were dropped 10 metres from the ground.



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.

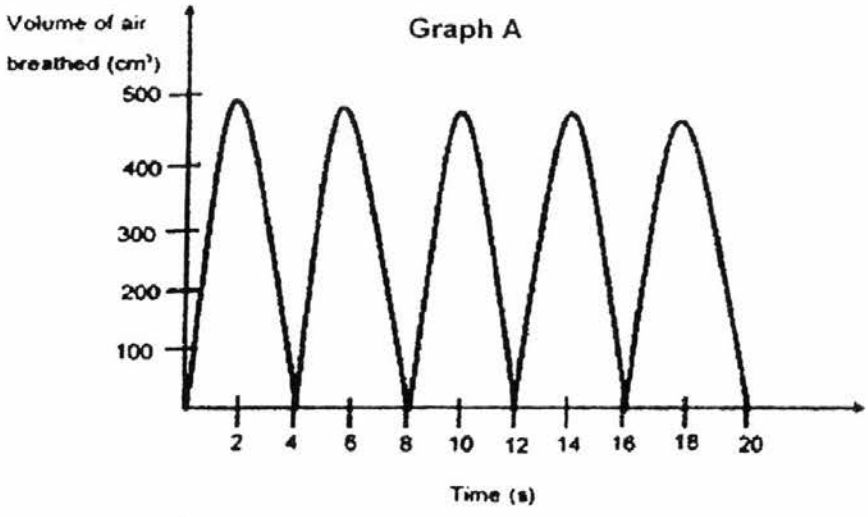


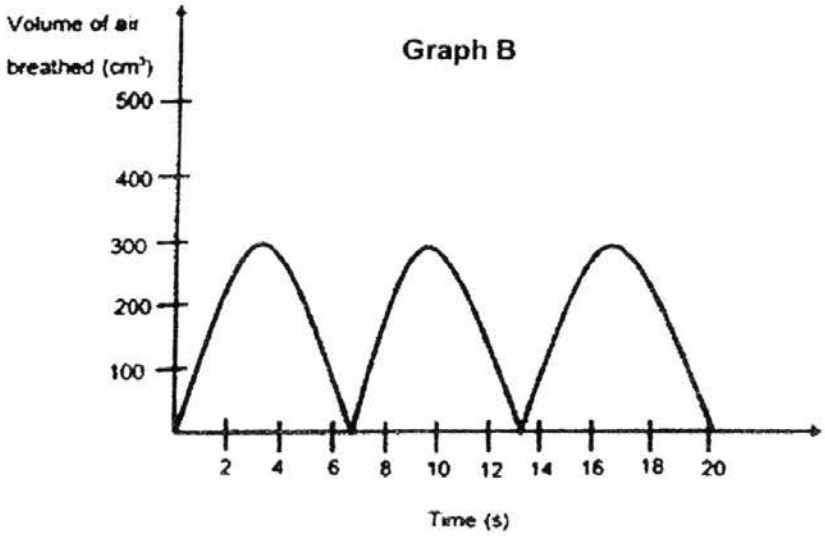


b) In the boxes above, indicate the group of seeds (A or B) that each graph represents. [1]

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]

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]

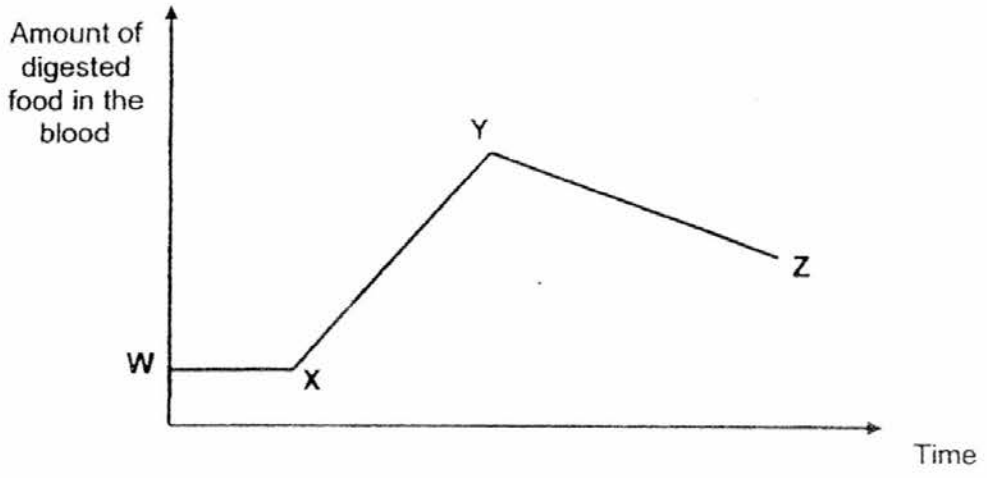
_____

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]

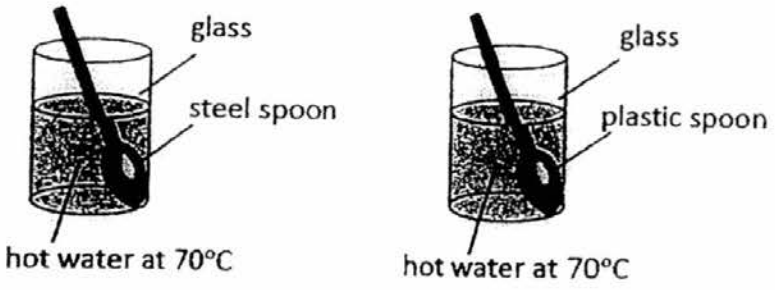
Explain your answer.

_____

_____

_____

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]

_____

_____

_____

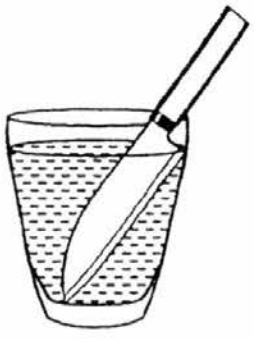
(Question 36 continues on the next page)

(Question 36 continues on the this page)

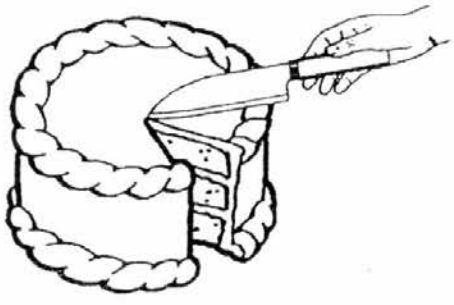
Balu found it difficult to cut a frozen ice cream cake.
He found the following idea on a website to help solve this problem.

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.

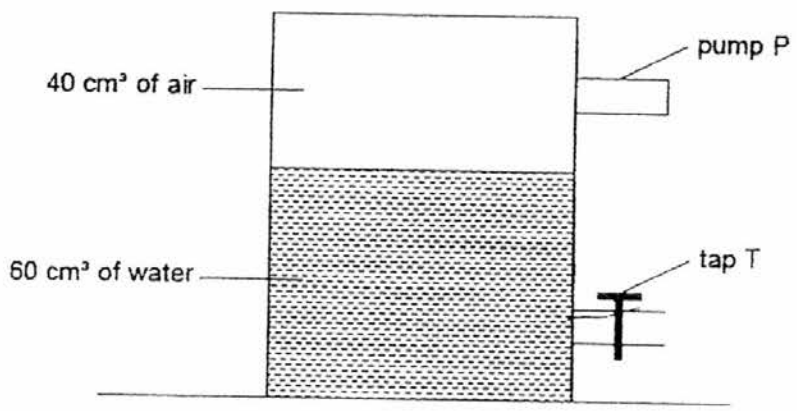
(b) Explain clearly how the method explained above will help Balu cut a frozen ice cream cake easily. [2]

(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 cm^3 of water and 40 cm^3 of air.

10 cm^3 of water was released through tap T and 30 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 : _____ cm^3

Final volume of water : _____ 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.

Container A Container B

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 (°C)	Temperature of water in the container after 10 minutes (°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]

_____

_____

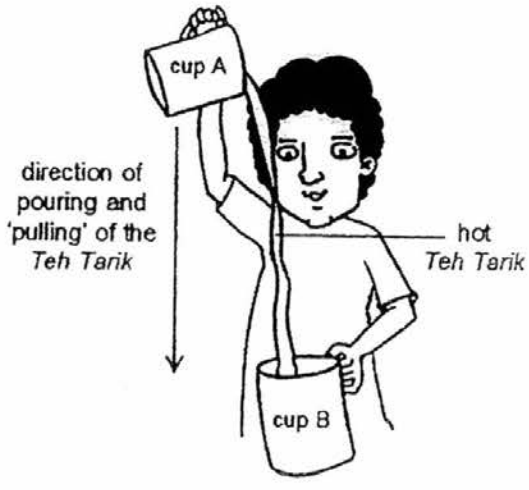
_____

(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.

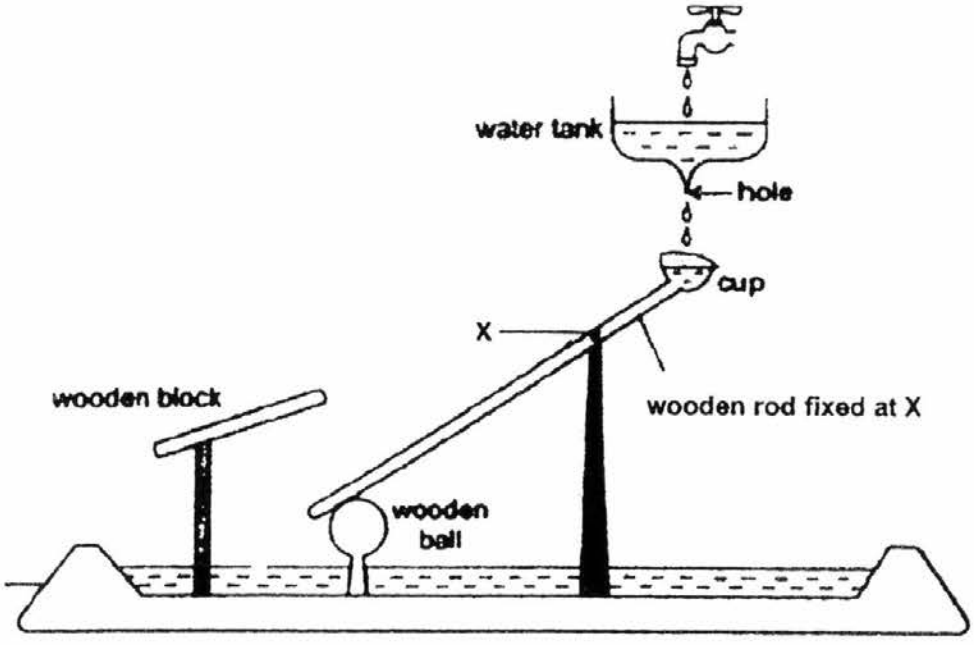


Mr. Tan

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.

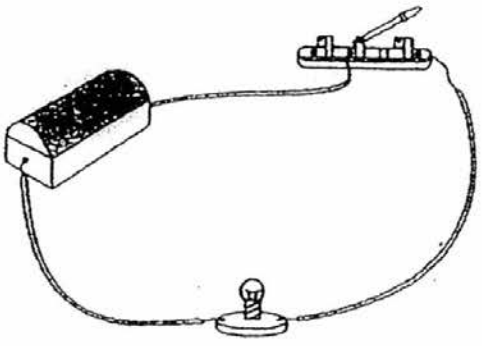
(b) Would the number of 'click' sound heard in one minute **increase, decrease** or **remain the same**? Explain your answer. [2]

_____

_____

_____

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]

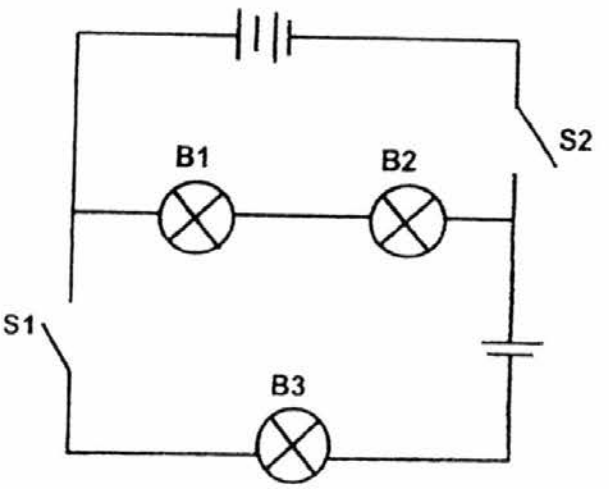
b) John added one more bulb in the above circuit. [1]

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.

Container A Container B

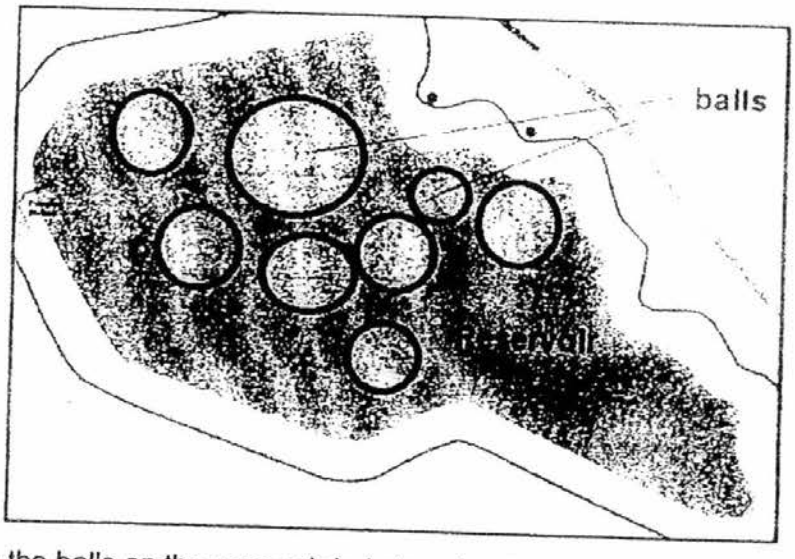
The containers are made of the same material and the amount of water in each container is the same.

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 : A Graph E : B

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 : 50 cm^3

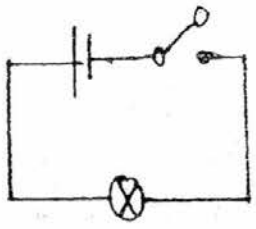
Q37b Air can be compressed but water cannot be compressed.

Q38a Container B More water in container B is exposed to

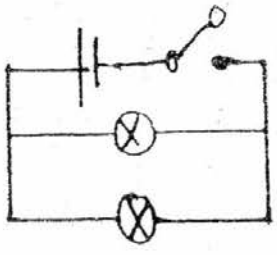
Q39a The cup filled with water moves down as it becomes heavier, emptying the water. When water is emptied, cup becomes lighter and moves up to refill.

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

End