PRELIMINARY EXAMINATION 2016

PRIMARY 6
STANDARD SCIENCE
SECTION A (60 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 6 ( )
Date: 25 August 2016
Total Time for Booklets A and B: 1 h 45 min

Section	Marks
A	
B	
Total (A & B)	

Parent's Signature: _____

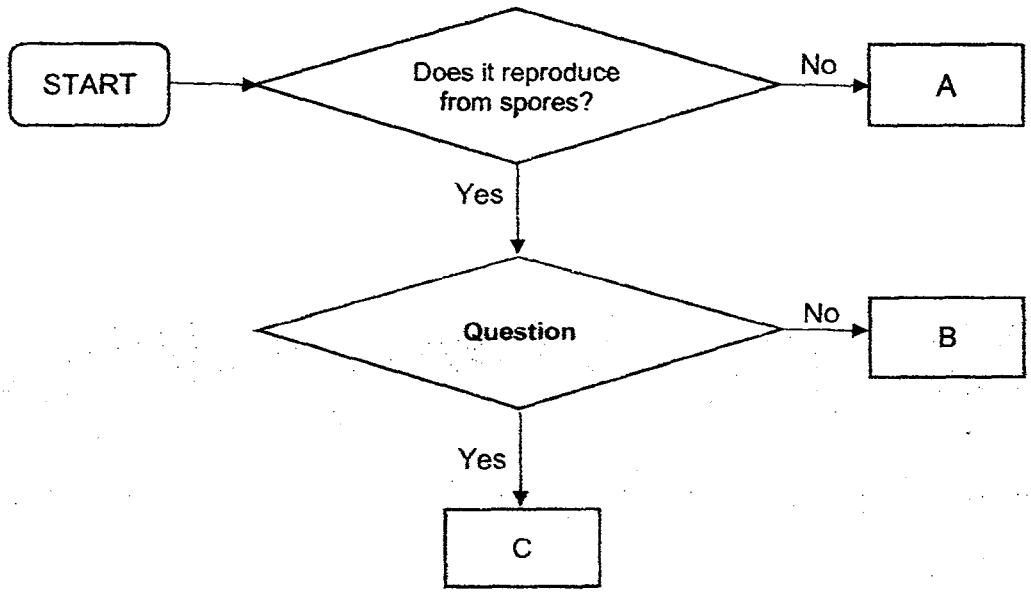
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Section A

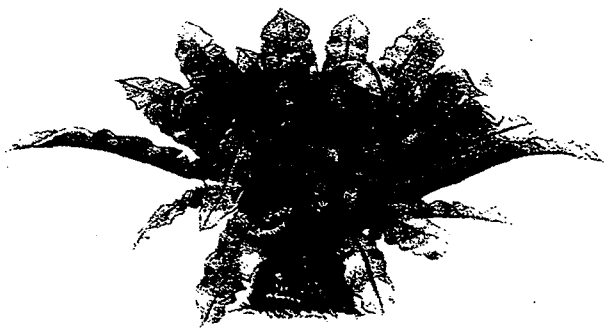
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. [30 X 2 marks]

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1. The flowchart below shows how some living things are classified into three groups, A, B and C.



The diagram below shows organism X which is a bird's nest fern.



Given that organism X belongs in group C, what could the second question in the above flowchart be?

(1) Does it make its own food?

(2) Does it feed on other plants?

(3) Does it feed on decaying matter?

(4) Does it depend on other living things for food?

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2. Sarah compared animals Y and Z and made some observations.

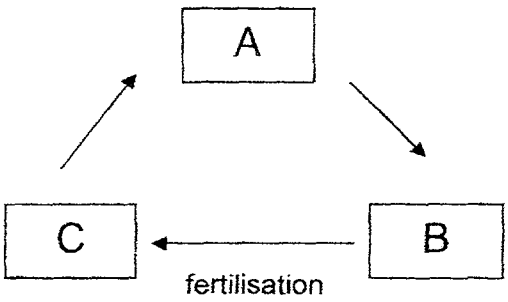
She drew a checklist and placed a tick (✓) in the box when she made the observations. Her completed checklist is shown below.

Observations	Animal Y	Animal Z
Eggs are laid in water.	✓	
There are 3 stages in the life cycle (egg, young, adult).	✓	✓
It has six legs.		✓

Which of the following are likely to be animals Y and Z?

	Animal Y	Animal Z
(1)	frog	butterfly
(2)	frog	cockroach
(3)	chicken	butterfly
(4)	butterfly	cockroach

3. The diagram shows the life cycle of a flowering plant.



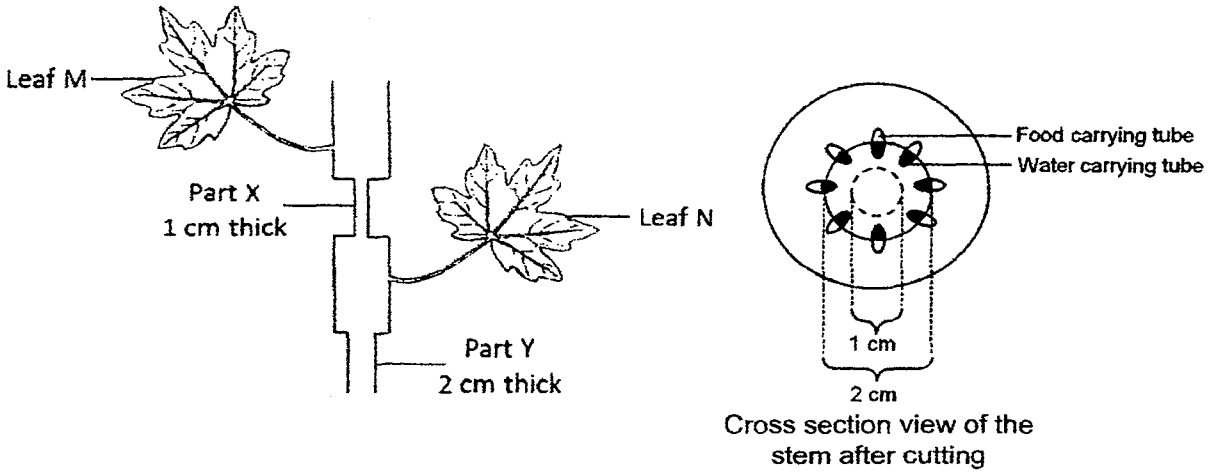
Fertilisation occurs after the flowering plant has reached stage B.

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

	A	B	C
(1)	seed	young plant	adult plant
(2)	adult plant	seed	young plant
(3)	young plant	adult plant	seed
(4)	young plant	seed	adult plant

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4. The diagram below shows a potted plant after Affin had cut away the outer ring of the stem at parts X and Y. The plant was watered daily.



Cross section view of the stem after cutting

A week later, Affin observed that only leaf N had survived.

Which one of the following statements based on Affin's observation is likely to be correct?

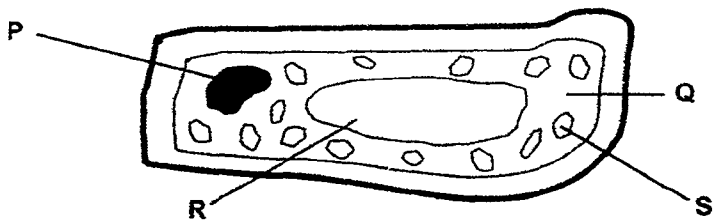
(1) Both leaves were able to receive food.

(2) Both leaves were able to receive water.

(3) Leaf M was able to receive water but not food.

(4) Leaf M was not able to receive water to make food.

5. The diagram below shows a plant cell.



In which part of the cell, P, Q, R or S, does photosynthesis take place?

(1) P

(2) Q

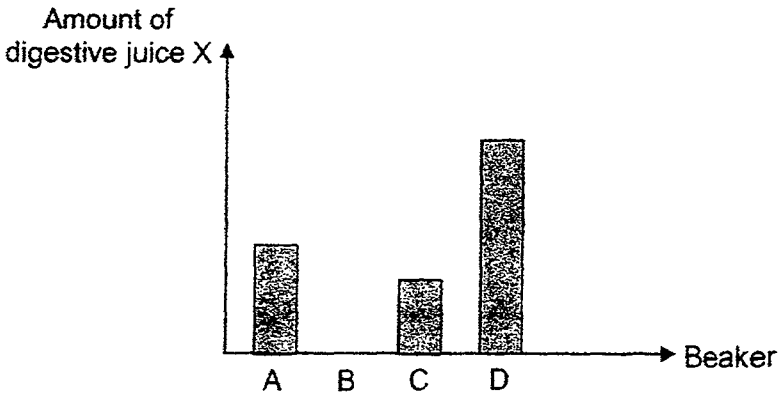
(3) R

(4) S

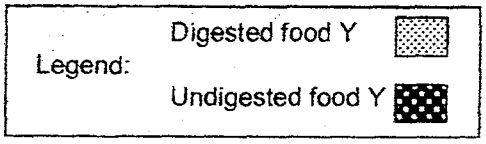
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6. The graph below shows the amount of digestive juice X in 4 similar beakers, A, B, C and D.

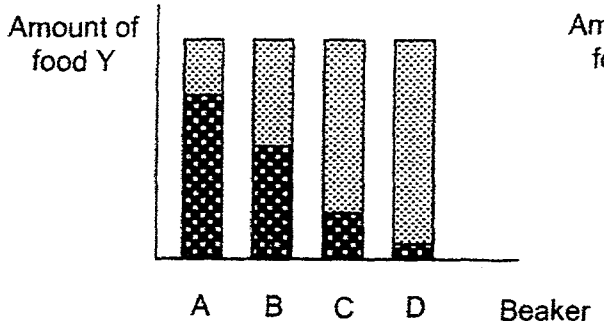
6 similar sized cubes of food Y that can be digested by X were then placed in each beaker for 4 hours.



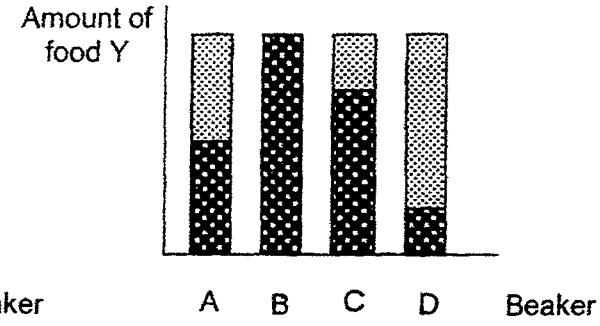
Which one of the following graphs shows the possible amount of food Y found in each beaker after 4 hours?



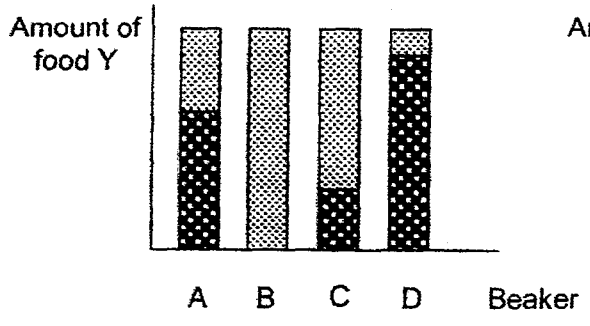
(1)



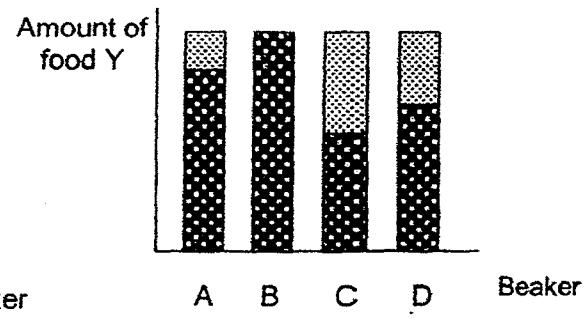
(2)



(3)

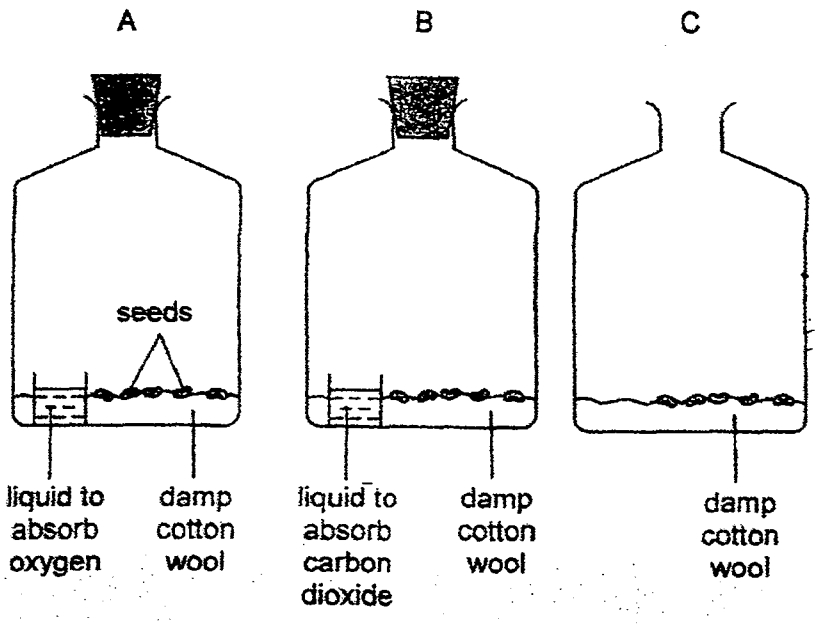


(4)



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7. The diagram below shows three jars, A, B and C, containing similar seeds. They were kept at room temperature throughout the experiment.



In which jars are the seeds likely to germinate?

(1) A and B only

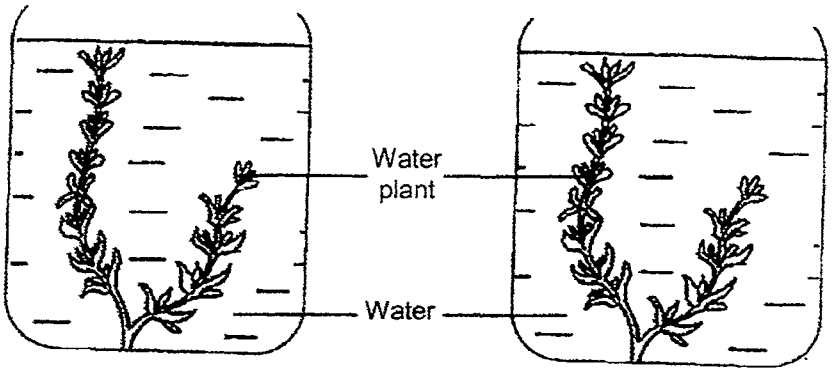
(2) A and C only

(3) B and C only

(4) A, B and C

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8. Kumar conducted an experiment using two set-ups, A and B, shown below.



Set-up A
Placed near an open window

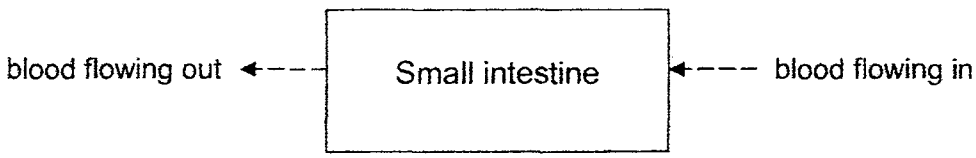
Set-up B
Placed inside a dark cupboard

After 5 hours, he observed that the plant in one of the set-ups produced bubbles.

Which one of the following could he correctly conclude based on his observation?

(1) The plant in set-up A produced oxygen.
(2) The plant in set-up B produced oxygen.
(3) Plants do not need light to photosynthesize.
(4) None of the plants produced carbon dioxide.

9. The diagram shows blood flow in a part of the human digestive system about six hours after a meal.



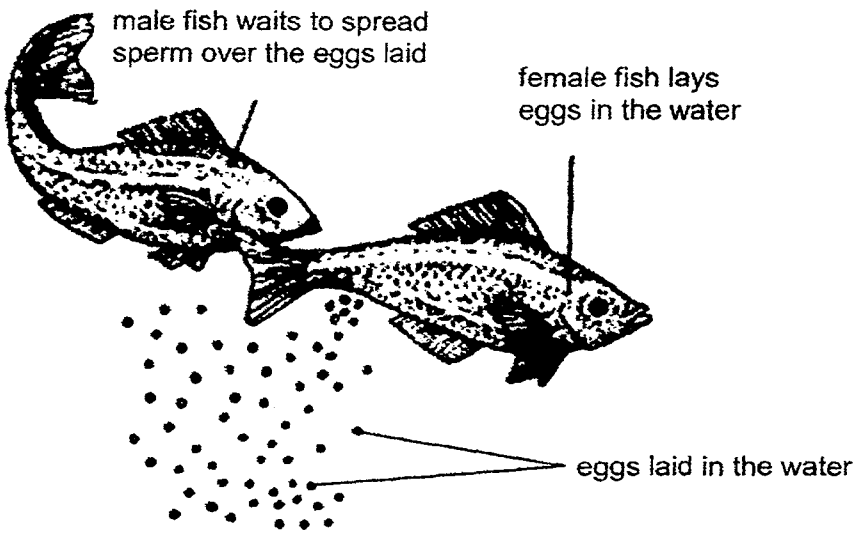
The amount of oxygen, carbon dioxide and digested food in the blood flowing out was compared with the blood flowing in.

Which of the following shows the correct comparison?

	Blood flowing out has		
(1)	more oxygen	less carbon dioxide	more digested food
(2)	more oxygen	more carbon dioxide	less digested food
(3)	less oxygen	more carbon dioxide	more digested food
(4)	less oxygen	less carbon dioxide	less digested food

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10. The diagram below shows a part of the reproduction process of fish.



Based on the above diagram, which of the following statement(s) is/are likely to be correct?

A: Sperms are needed to fertilise the eggs.

B: The eggs are fertilised outside the female's body.

C: Numerous eggs are laid to increase the chance of them hatching.

(1) A only

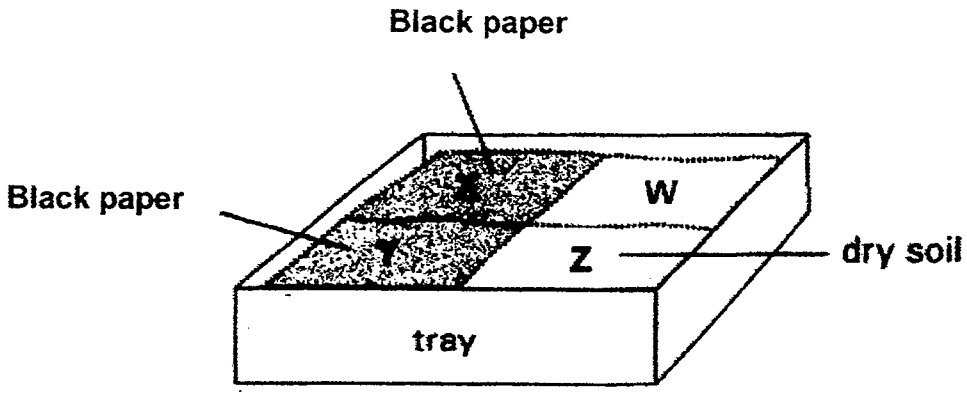
(2) C only

(3) B and C only

(4) A, B and C

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11. The diagram below shows a tray of soil which is divided into four sections, W, X, Y and Z. Sections X and Y are covered with black paper.



Alfred wanted to conduct an experiment to confirm that woodlice prefer dark and moist condition.

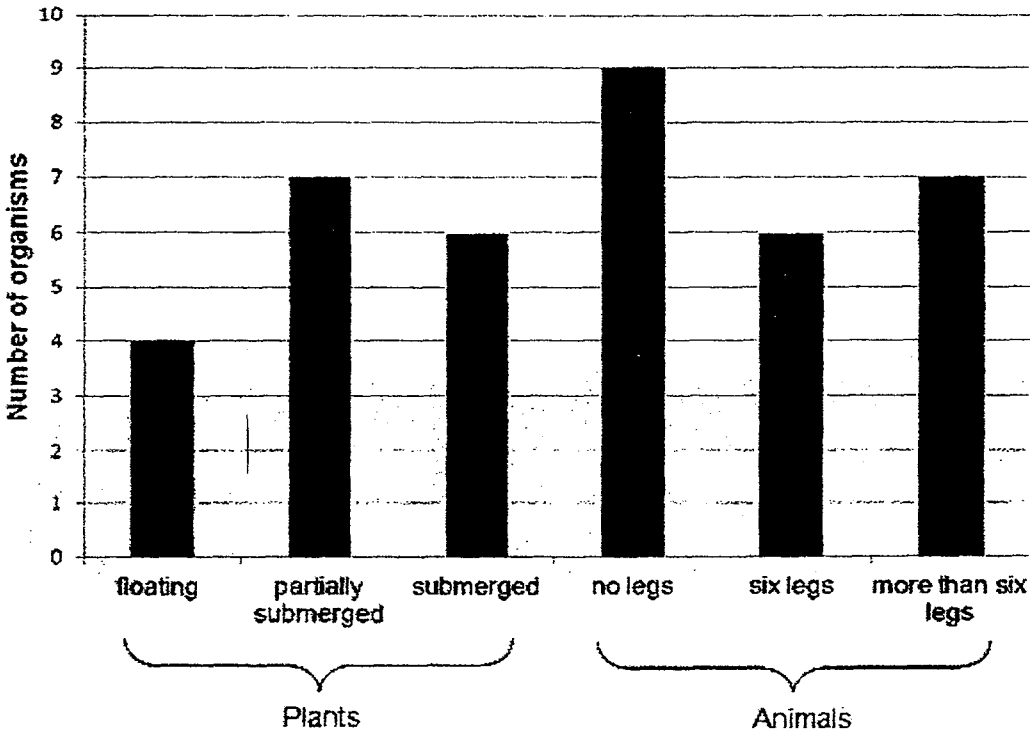
Which of the following shows correctly the condition of soil he should place in W, X and Y?

	W	X	Y
(1)	dry soil	damp soil	damp soil
(2)	damp soil	damp soil	dry soil
(3)	damp soil	damp soil	damp soil
(4)	dry soil	dry soil	damp soil

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Name: Class: P

12. A group of students counted the plants and animals found in a school pond. The results are shown in the graph below.



Which of the following statements about the plants and animals in the pond is/are definitely correct?

A There is only one pond community.

B There are twenty-two populations of animals.

C There are at least six populations of plants and animals.

(1) A only

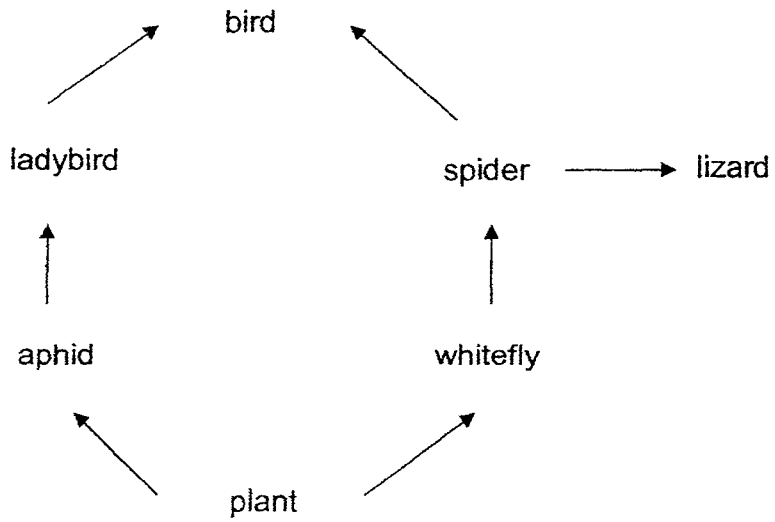
(2) A and C only

(3) B and C only

(4) A, B and C

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13. The food web below shows the feeding relationship of some organisms.

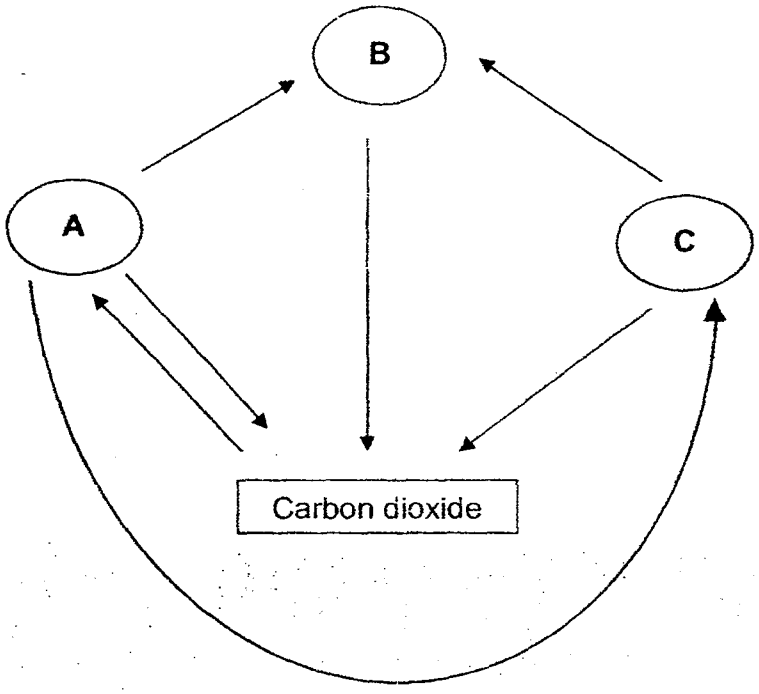


If there is an increase in the bird population, which of the following shows the most likely changes in the population of aphid and lizard?

	Aphid	Lizard
(1)	increase	increase
(2)	increase	decrease
(3)	decrease	decrease
(4)	decrease	increase

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14. The diagram below shows the interaction of plants, animals, decomposers and carbon dioxide in the environment.

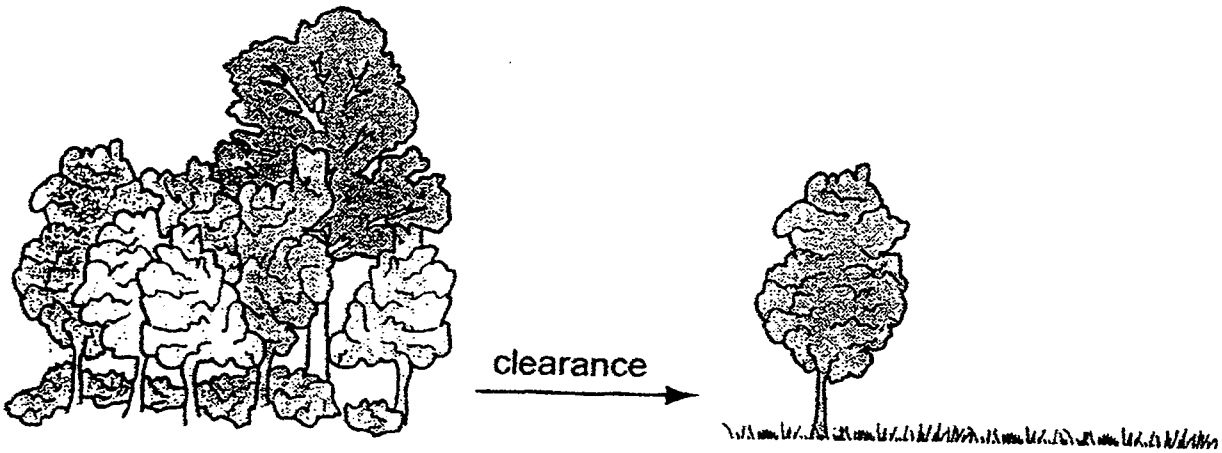


What could A, B and C likely represent?

	A	B	C
(1)	decomposers	animals	plants
(2)	plants	animals	decomposers
(3)	plants	decomposers	animals
(4)	animals	plants	decomposers

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15. The diagram below shows a forest before and after it has been cleared.



Deforestation occurs in many countries where large areas of land are cleared for building houses and roads.

Which one of the following effects of deforestation will cause a rise in the amount of carbon dioxide in the atmosphere?

(1) Less photosynthesis

(2) Decrease in rainfall

(3) The roots of trees die

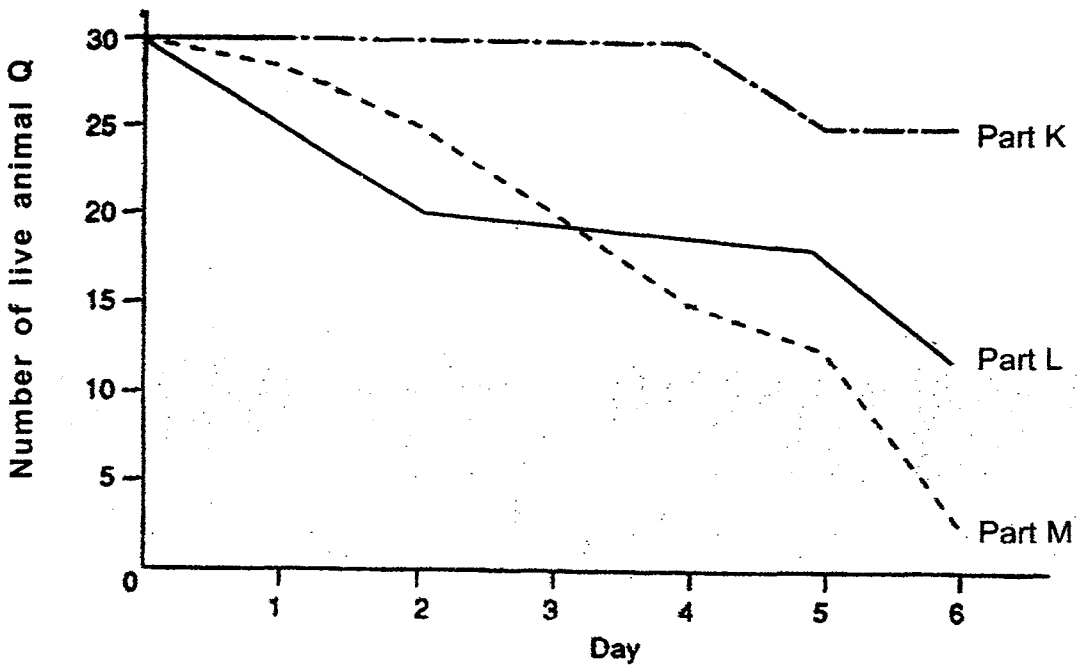
(4) Loss of natural habitat

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16. Stephen wanted to find out which part of a stream is least polluted.

He lowered three cages with the same number of live animal Q into each of the three parts of the stream, K, L and M. Animal Q is sensitive to pollutants in the water and does not survive for long in heavily polluted water.

He counted the number of live animal Q in each cage over 6 days and plotted the graph shown below.



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

A. Part K of the stream was the least polluted.
B. The number of live animal Q in part M decreased every day.
C. The number of live animal Q in part L decreased first and then increased.

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

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17. Amy tested three materials A, B and C for hardness.
She used the sharp ends of a glass rod and a plastic rod to scratch each of the three materials.
She recorded her observations in the table below.

Items used to scratch material	**Were scratch marks observed on the material?**		
	A	**B**	**C**
glass rod	✓	✓	✗
plastic rod	✓	✗	✗

(✓ - scratch mark observed, ✗ - scratch mark not observed)

Which of the following statements about the materials are correct?

A. Material C is strongest material.

B. Material B is harder than material A.

C. Material C is harder than material B.

(1) A and B only

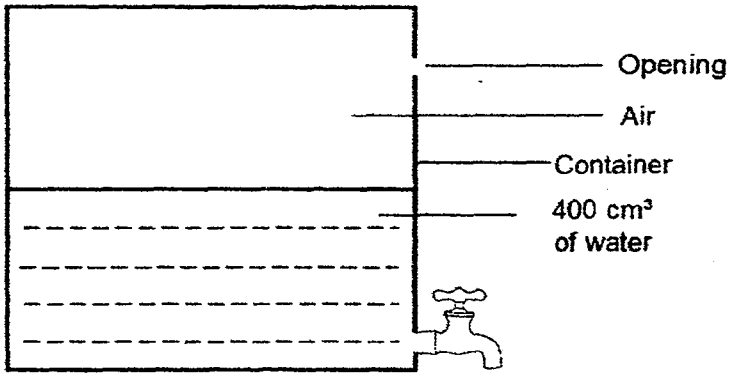
(2) A and C only

(3) B and C only

(4) A, B and C

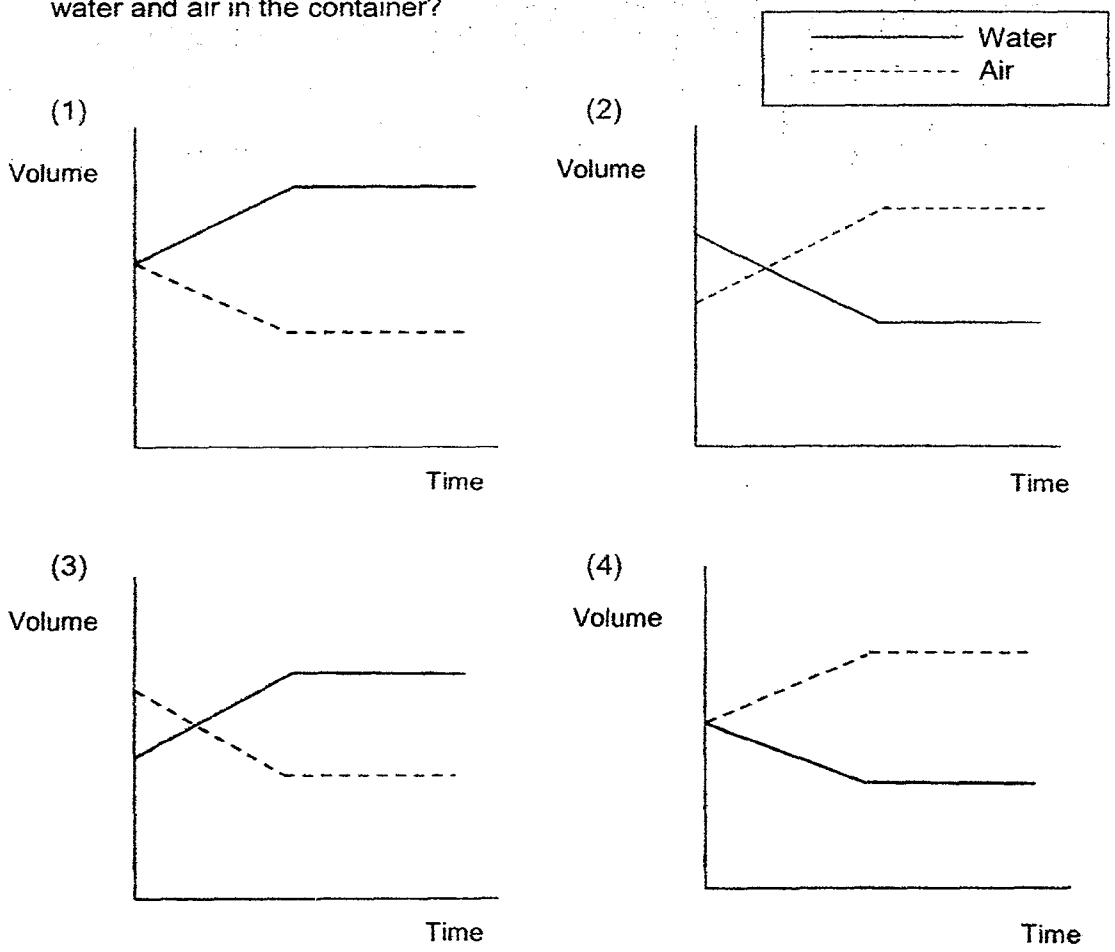
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18. The diagram below shows a container with a tap.
The volume of the container is 800 cm^3. It contains 400 cm^3 of water.



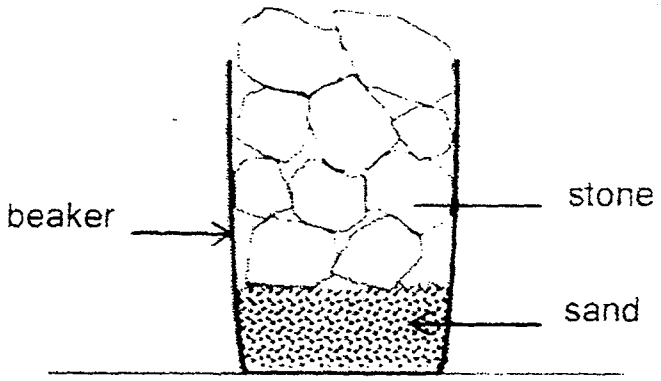
When the tap was turned on, 100 cm^3 of water flowed out before the tap was turned off.

Which one of the following graphs shows correctly the changes in the volume of water and air in the container?



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19. Leon filled a beaker with some sand and stones as shown below.



He could not place a lid to cover the beaker.

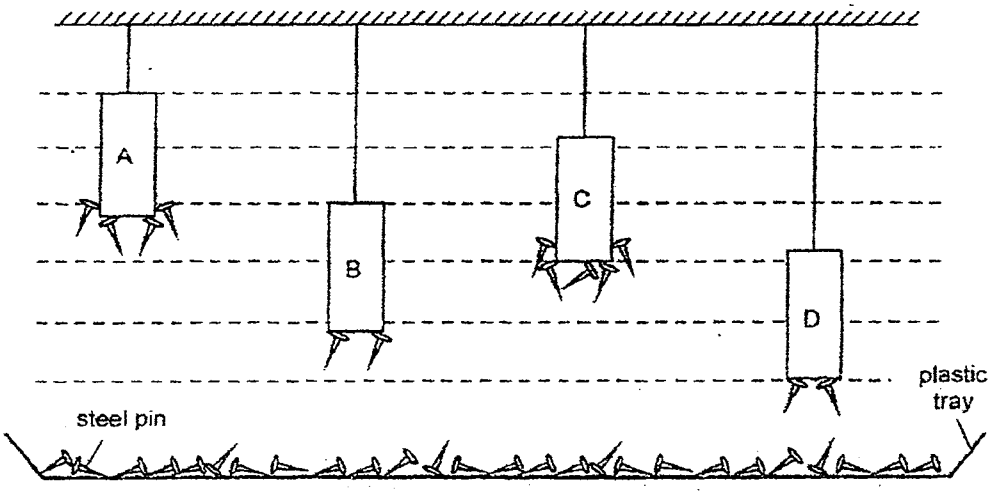
His friend suggested putting in the stones first before filling in the sand and giving the beaker a good shake.

Which of the following explains correctly whether or not the above method works?

	Does the method work?	Reason
(1)	Yes	The sand takes up less space when put above the stones.
(2)	Yes	The sand can enter and take up the spaces between the stones.
(3)	No	The sand takes up more space above and in between the stones.
(4)	No	The sand and stones still take up the same amount of space in the beaker.

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20. Yusof wanted to compare the magnetic force of four similar magnets, A, B, C and D. He set up the experiment shown below and counted the number of steel pins that were attracted by each magnet.



Yusof could not conclude which magnet was the strongest.

What change should he make to the set-up above in order to find out which magnet is the strongest?

(1) Add more steel pins into the plastic tray.

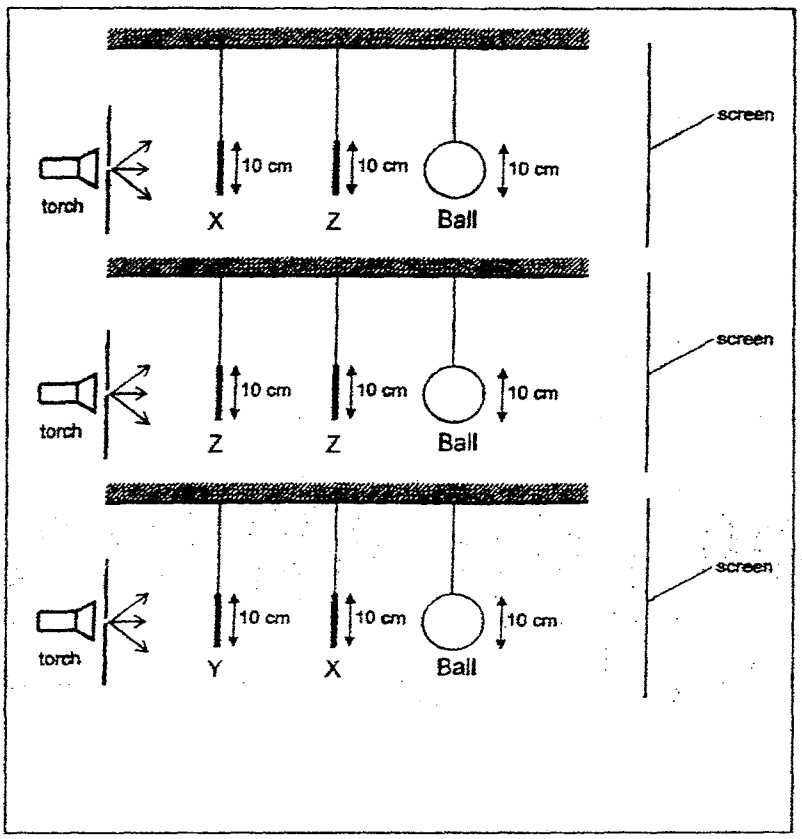
(2) Place magnet C at the same height as magnet B.

(3) Place magnet D at the same height as magnet B.

(4) Place magnet A at the same height as magnet C.

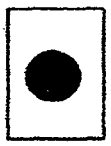
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21. Rachel carried out an experiment with three different materials X, Y and Z of rectangular shape.
She placed two materials and a ball between a torch and a screen and observed the shadow formed on the screen.
The diagrams below show her set-ups and what she observed on the screen.



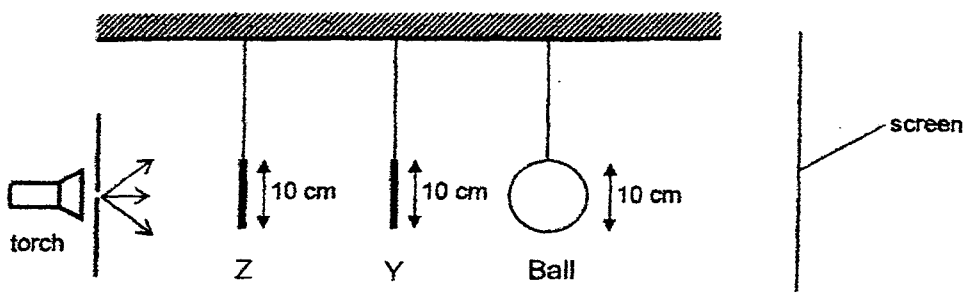
What Rachel observed:

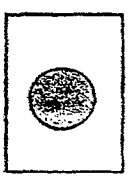

Blur image

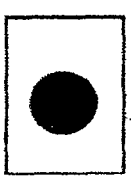

Sharp image

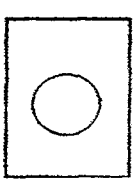

Black patch

Based on the above experiment, predict what Rachel would most likely observe in the set-up below.



(1) 

(2) 

(3) 

(4) 

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22. Jimmy breathed onto a mirror and it turned "misty" at first.

After a while, the "mist" cleared up and he was able to see himself clearly in the mirror again.

What is the explanation for his observation?

	The 'mist' on the mirror is _____.	The 'mist' on the mirror has cleared up because it has _____.
(1)	water vapour	condensed
(2)	water vapour	evaporated
(3)	water droplets	condensed
(4)	water droplets	evaporated

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23. Mr Lim poured 200 ml of cold water measuring 10°C into 4 different containers. The 4 containers were made of different materials, W, X, Y and Z.

The temperature of the water in each container is measured and recorded in the table below.

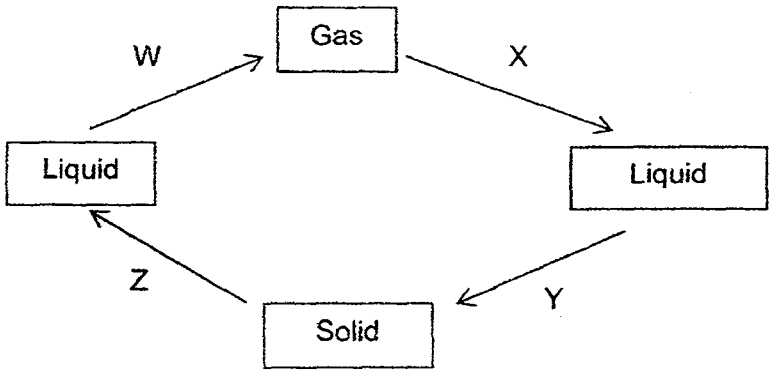
Material of container	Temperature of water after 5 minutes (^{0}C)
W	?
X	16
Y	20
Z	?

If material W is the best conductor of heat and material Z is the poorest conductor of heat, what will be the likely temperature of water in containers made of materials W and Z?

	Material W	**Material Z**
(1)	5°C	28°C
(2)	25°C	13°C
(3)	13°C	25°C
(4)	28°C	5°C

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24. The diagram below shows changes in the state of water. W, X, Y and Z represent processes during which heat is gained or lost.



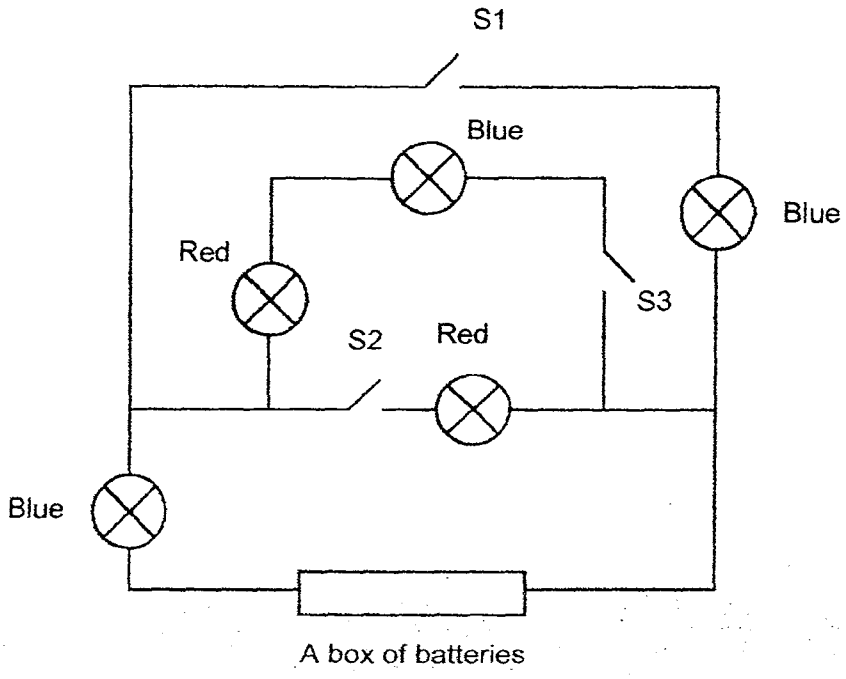
Based on the above diagram, which of the following statements are **not** correct?

A. The gas gains heat during process X.
B. The solid gains heat during process Z.
C. The liquid loses heat during process W.

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

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25. The circuit below consists of some blue and red bulbs, switches and a box of batteries.



Which switches (S1, S2, S3) should be closed in order for 2 blue bulbs and 2 red bulbs to be lit up at the same time?

(1) S1 and S2

(2) S1 and S3

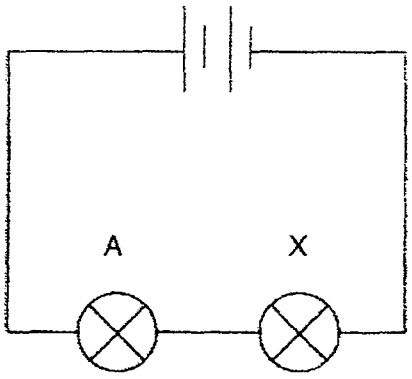
(3) S2 and S3

(4) S1, S2 and S3

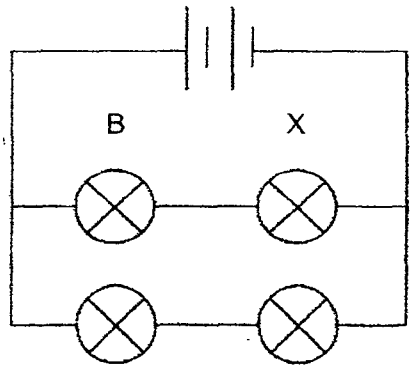
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26. Amy used some identical bulbs and identical batteries in each of the circuits below.

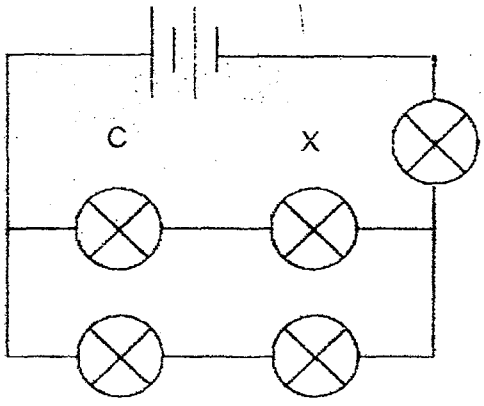
Circuit 1



Circuit 2



Circuit 3



Amy removed bulb X from each of the 3 circuits above.
She compared the brightness of bulbs A, B and C that remained lighted.

Which one of the following statements is correct?

(1) Bulbs A, B and C will have the same brightness.

(2) Bulb A will be the brightest amongst bulbs A, B and C.

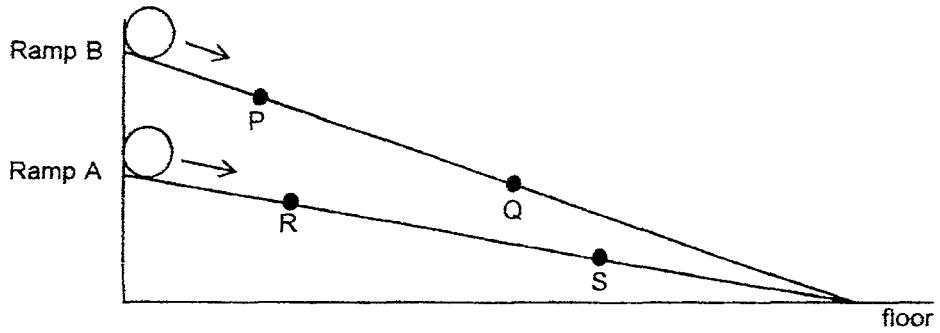
(3) Bulb B will be as bright as all the other bulbs in circuit 2.

(4) Bulb C will be the least bright amongst bulbs A, B and C.

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27. Sam set up an experiment, comprising of two similar ramps, A and B. Ramp A is placed at half the height of Ramp B. He then released two identical balls from the top of the two ramps at the same time. Sam used the same amount of force when releasing each ball.

The diagram below shows the two balls moving down the respective ramps and positions, P, Q, R and S on the ramps.



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

A: The ball at P has more potential energy than the ball at R.
B: The ball at R has more kinetic energy than the ball at S.
C: The ball at S has the least amount of potential energy than the ball at the other 3 positions.
D: The ball on ramp B is likely to go further along the floor than the ball on ramp A.

(1) A and B only

(2) A, B and D only

(3) A, C and D only

(4) B, C and D only

28. Which of the following statements about forces are correct?

A: A force can stop a moving object.
B: A force can change the shape of an object.
C: A force can change the speed of a moving object.

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

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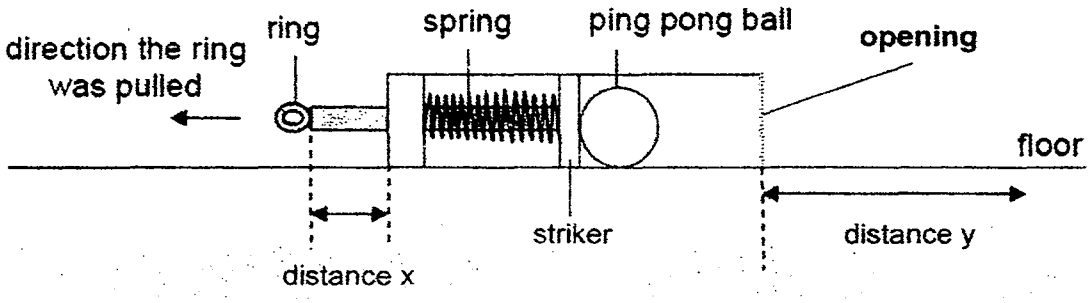
29. Lilly carried out an investigation using the toy she created.

She placed the toy on the floor and pulled the ring back over a distance, x, with a ping pong ball inserted as shown in the diagram below. A striker is attached to the spring.

When she pulls the ring back, the spring becomes compressed.

When she releases the ring, the striker hits and pushes the ping pong ball out through the opening.

The ball then moves along the floor which is measured as distance y.

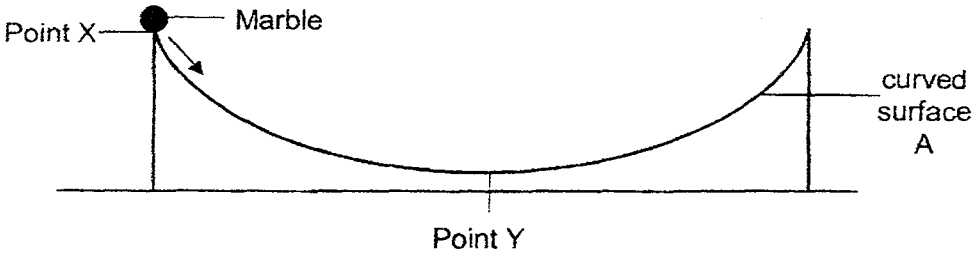


Based on the toy above, which one of the following correctly shows the relationship between distance x and distance y?

	Distance x	Distance y
(1)	longer	longer
(2)	shorter	longer
(3)	longer	shorter
(4)	shorter or longer	no change

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30. Jake wanted to find out the time taken for a marble to stop at point Y when released from point X on curved surface A as shown below.



The marble, when released from point X, rolled up and down along the curved surface for a few times before slowing down and stopping at point Y.

Jake repeated the experiment on a similar curved surface B, which was made of a different material. He recorded the results of his experiment as shown in the table below.

Curved surface	Average time taken for the marble to stop at point Y (s)
A	25
B	38

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

A. The amount of friction between the marble and surface B is smaller.

B. The amount of friction between the marble and surface B is greater.

C. The amount of gravitational force exerted on the marble on surface B is greater.

D. The amount of gravitational potential energy the marble has at point X on surface B is greater.

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

(Go on to Section B)

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PRELIMINARY EXAMINATION 2016

PRIMARY 6
STANDARD SCIENCE
SECTION B (40 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 6 ( )

Date: 25 August 2016

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

Marks for Section B: _____

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Section B

For questions 31 to 44, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. [40 marks]

---

31. Sam made the following statements about an animal he observed.

- It lays eggs.
- It has wings and can fly.

Based on his observation, Sam concluded that the animal is a bird because it lays eggs.

(a) Explain why Sam's reason for his conclusion is wrong. [1]

(b) Name one observation that Sam can make about the animal to confirm if it is a bird. [1]

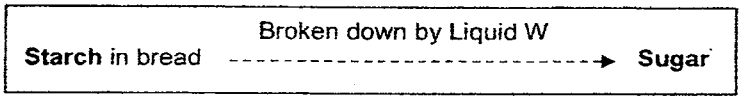
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32. Kate wanted to find out how the amount of time a piece of bread is placed in Liquid W affects how quickly it breaks down the bread. Liquid W is similar to the saliva in the human digestive system.

Kate placed a piece of bread in a beaker filled with 20 ml of Liquid W for 5 seconds. Then she removed and tested the bread for the amount of starch that was left in the bread.

She repeated the experiment by increasing the time the bread was placed in Liquid W. She used similar pieces of bread and 20 ml of Liquid W for each set-up.

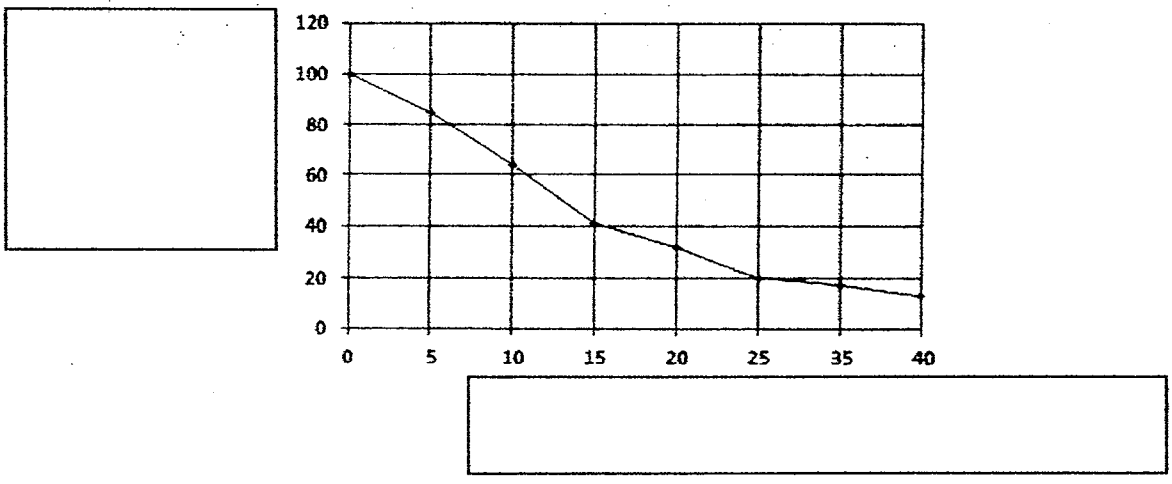
The diagram below shows what happens to the bread when Liquid W breaks it down.



The table below shows the results of her experiment.

Set-ups	A	B	C	D	E	F	G	H
Time each piece of bread was placed in Liquid W (s)	0	5	10	15	20	25	35	40
Percentage of starch left in the bread (%)	100	85	64	41	32	20	17	13

She plotted a graph to show the results of her experiment as shown below.



(a) Fill in the boxes on the graph above correctly to show the relationship between '**Time each piece of bread was placed in Liquid W (s)**' and '**Percentage of starch left in the bread (%)**' [1]

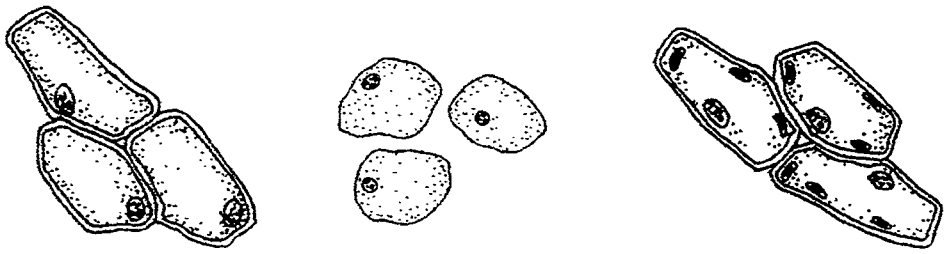
(b) Food is chewed in the mouth before it is swallowed.
Explain why chewing the food longer helps it to be digested faster. [1]

_____

_____

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33. The diagrams below show cells A, B and C.



cell A cell B cell C

Joy observed and compared the parts of the three cells.

(a) State how cell B is different from cells A and C. [1]

_____

_____

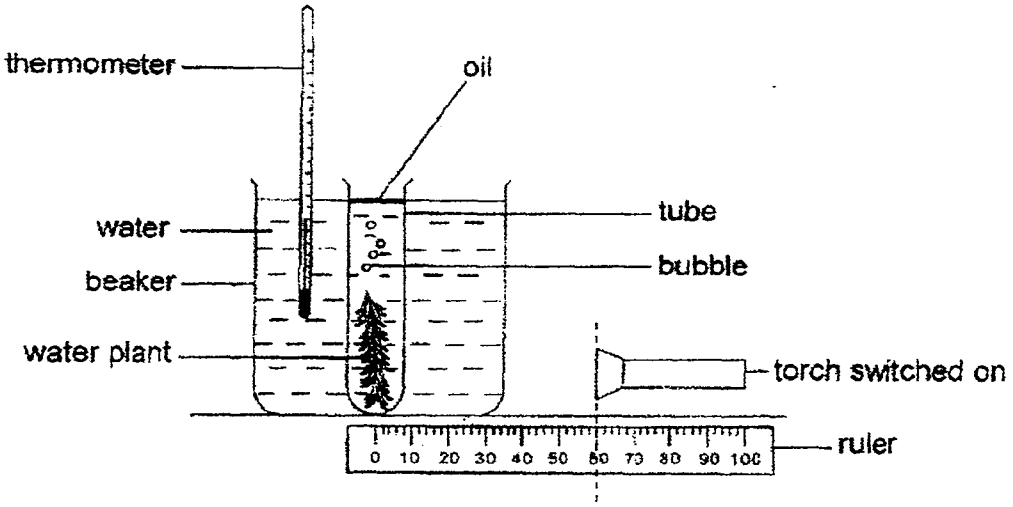
(b) Both cells A and C are found in the same organism. Identify the part of the organism in which each cell can be found. [1]

Cell A: _____

Cell C: _____

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34. Ali set up an experiment in a dark room as shown below. He wanted to find out how the distance between the torch and plant affects the rate of photosynthesis.



2 sets of data, X and Y, are shown in the tables below.

Data **X**	
Distance between torch and plant (cm)	Number of oxygen bubbles produced (per min)
40	6
60	13
80	23

Data **Y**	
Distance between torch and plant (cm)	Number of oxygen bubbles produced (per min)
40	23
60	13
80	6

(a) Which set of data, X or Y, is likely to be the results of Ali's experiment? [2]
Explain your answer.

_____

_____

_____

(b) Ali repeated the experiment by adding some live worms in the tube with the water plant. Explain the change observed in the number of oxygen bubbles produced by the water plant after the live worms were added. [2]

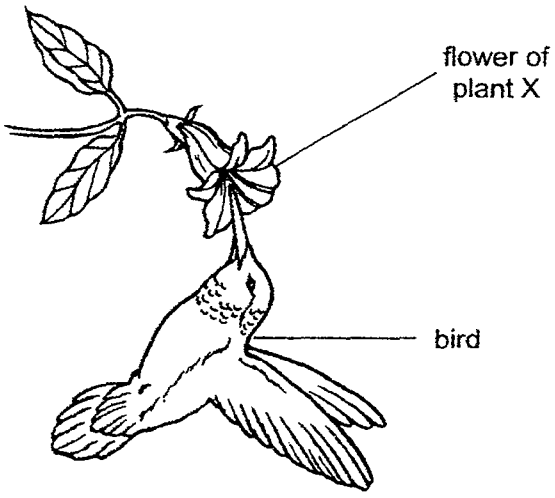
_____

_____

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35. The diagram below shows a bird feeding on the nectar of a flower of plant X.

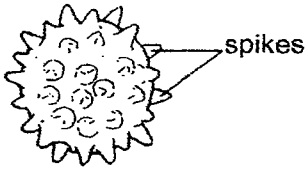


(a) By feeding on the nectar, the bird helps in one process of reproduction in plant X. Describe this process.

_____

_____

The diagram shows two types of pollen grains, P and Q.



Pollen grain P



Pollen grain Q

(b) Which pollen grain (P or Q) is more likely to be produced by the flower of plant X? [1]

_____

(c) Explain your answer in (b).

_____

_____

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36. A plantation is infested with two types of aphids, X and Y. The farmer wants to use ladybirds to remove the aphids. He wanted to find out which type of ladybird, P, Q or R, is the most effective.

He put 50 ladybird P in the first cage, 50 ladybird Q in the second cage and 50 ladybird R in the third cage. He also put 200 Aphid X and 200 Aphid Y in each of the three cages.

The number of Aphid X and Aphid Y eaten by the ladybirds in each cage is shown in the table below.

Cage with	Number of aphids eaten	
	Aphid X	Aphid Y
Ladybird P	10	84
Ladybird Q	103	175
Ladybird R	126	21

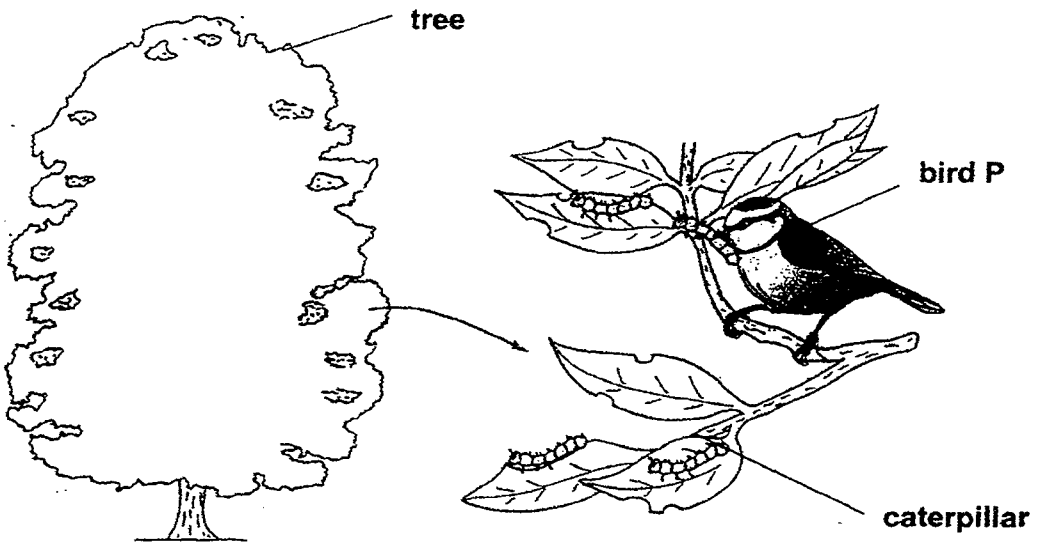
(a) If the farmer wanted to use only one type of ladybird for his plantation, which type (P, Q or R) should he use if he wanted to remove as many of Aphid X and Aphid Y as possible? [1]

(b) Using information from the table above, give a reason for your answer in (a). [1]

(c) What should the farmer do to ensure the results of his experiment are more reliable? [1]

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37. The diagram below shows a few organisms living together in a garden community.



(a) In the box below, draw a food chain linking the three organisms shown above. [1]

(b) The tree and bird P depend on each other.

How does the tree and bird P benefit each other? [2]

(i) Benefit for the tree: _____

_____

(ii) Benefit for bird P: _____

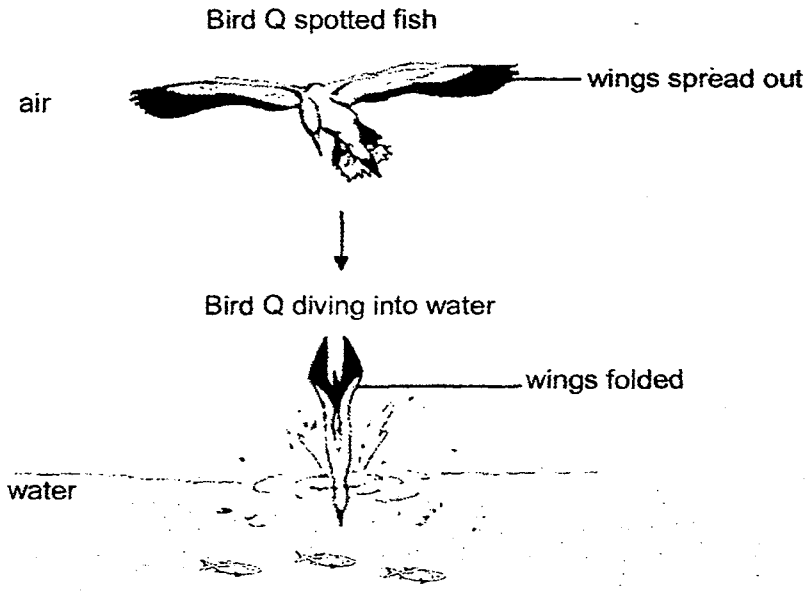
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(Question 37 continues on the this page)

The diagram below shows how bird Q catches fish for food.



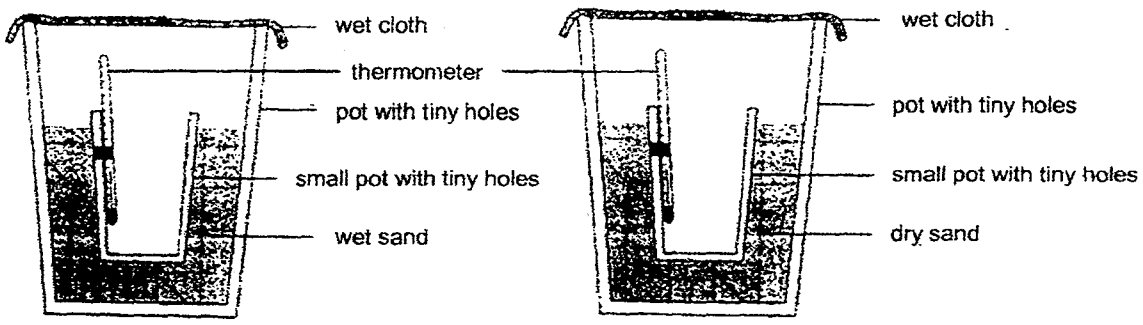
(c) Bird Q folds its wings as it dives into the water to catch its prey.
Give a reason for this behaviour. [1]

_____

_____

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38. Meng Yong set up an experiment as shown below.



Set-up A **Set-up B**

He placed both set-ups in a hot and dry place. He recorded the temperature of the air inside the small pot in each set-up. His results are shown below.

Time (min)	Temperature of air in the small pot (°C)	
	Set-up A	Set-up B
0	34	34
10	31	33
20	29	32

(a) Explain why the temperature of the air in the small pot in set-up A is lower than that in set-up B. [1]

(Question 38 continues on the next page)

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(Question 38 continues on the this page)

The picture below shows animal D which lives in a hot environment.



It can be seen spraying water over its body to keep itself cool.

(b) What type of adaptation (structural or behavioural) is this? [1]

(c) Explain how animal D can keep itself cool by spraying water over its body. [1]

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39. Mei Mei placed some wet plates on top of one another and left them to dry as shown in diagram 1 below.



Diagram 1

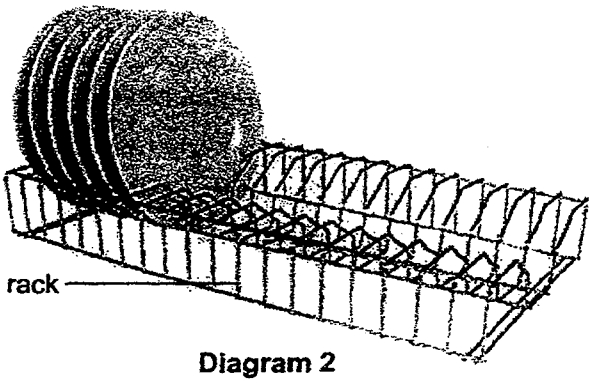


Diagram 2

Mei Mei's sister told her to arrange them on a rack as shown in diagram 2 so that the plates will dry faster.

(a) Give two reasons why the plates in diagram 2 would dry faster. [2]

Reason 1: _____

_____

Reason 2: _____

_____

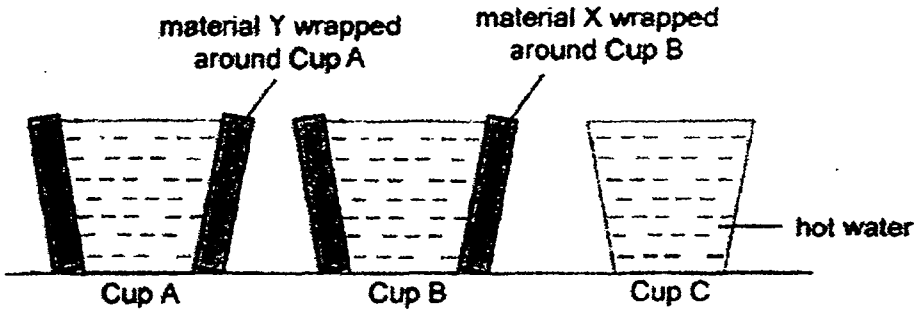
(b) Besides wiping the wet plates with a piece of dry cloth, suggest one way to make the plates in diagram 2 dry even faster. [1]

_____

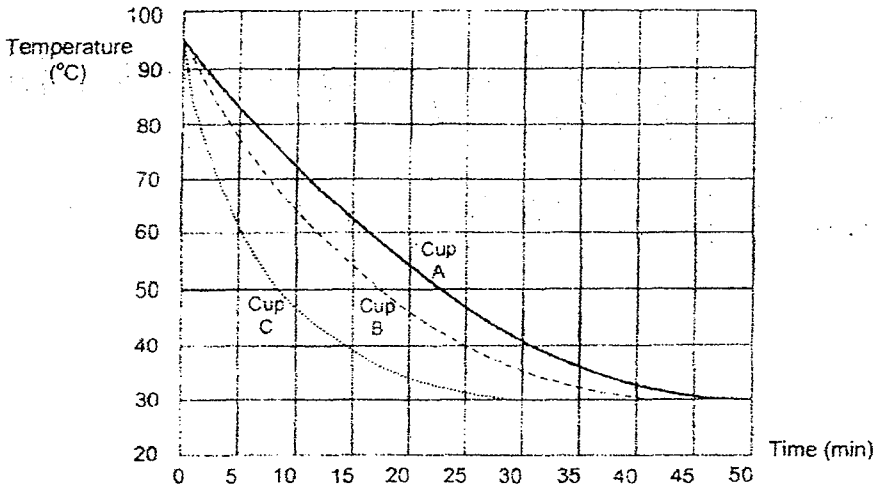
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40. Gordon wanted to find out which material, X or Y, is better at keeping water warm. He poured the same amount of hot water into three identical cups using the set-ups below. The cups were left in the Science room.



He measured the temperature of water in each cup and recorded his results in a graph below.



(a) What was the temperature in the Science room? [1]

_____

(b) Gordon wants to use a container to keep drinks cold for a very long period of time. Which material, X or Y, should the container be wrapped with? Explain your answer. [2]

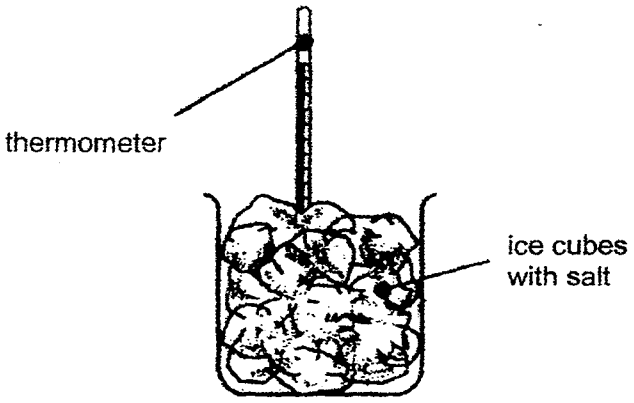
_____

_____

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41. An experiment was set up as shown below. Salt was slowly sprinkled onto the ice in the beaker and the temperature of the content was taken using a thermometer after different amounts of salt had been added.



The table below shows the readings measured by the thermometer.

Amount of salt (g)	0	10	25	40	50
Melting point of ice (°C)	0	- 2	- 5	?	- 9

(a) State the **independent** variable in the above experiment. [1]

_____

(b) What could the melting point of ice be when 40g of salt is added? [1]

_____

During winter, in country G, the roads are covered in snow and ice. This makes the roads slippery and this is a danger to motorists.

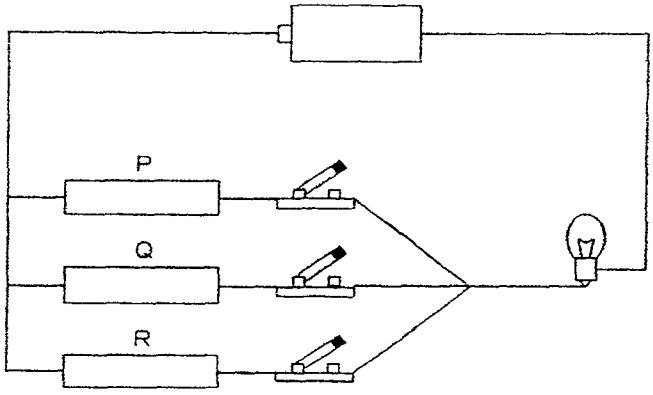
(c) People sprinkle salt onto the roads when the surrounding temperature is below 0 °C. Explain why this is done. [1]

_____

_____

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42. Thaddeus set up the following experiment to find out which material, P, Q or R, conducts electricity. He closed the switches, one at a time, and observed whether the bulb lit up.



He recorded the experimental results in a table as shown below.

Material	Does the bulb light up?
P	Yes
Q	Yes
R	Yes

(a) Explain the purpose of putting a bulb in the above set-up. [1]

In another experiment, he brought a magnet close to each of the materials, P, Q and R, and observed which one of them would be attracted to it.

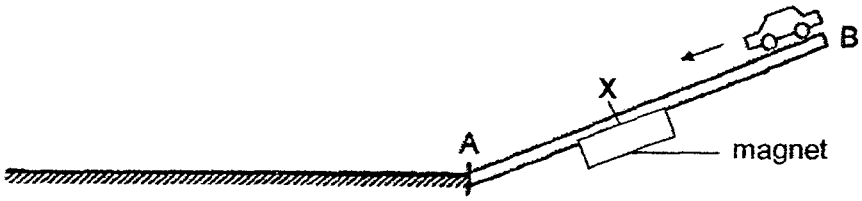
Again, he recorded the experimental results in a table as shown below.

Material	Does the magnet attract the material?
P	No
Q	Yes
R	Yes

(b) Based on the above experiments, what can be concluded about the likely relationship between a conductor of electricity and its magnetic property? [1]

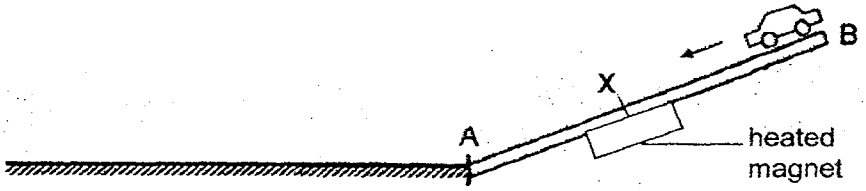
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43. John set up an experiment as shown below. He released a steel toy car down a wooden plank AB. The steel toy car moved down the plank and stopped at point X.



Experiment 1

John heated the magnet at point X for 5 minutes before experiment 2 was conducted.



Experiment 2

(a) The steel toy car reached point A without stopping at point X in experiment 2. Give a reason for this observation. [1]

_____

_____

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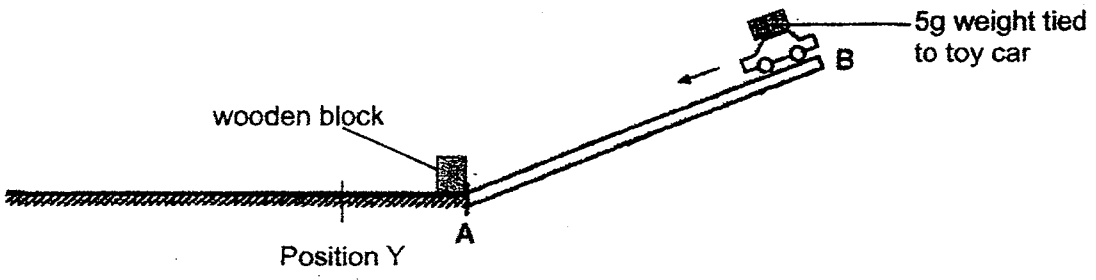
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(Question 43 continues on this page)

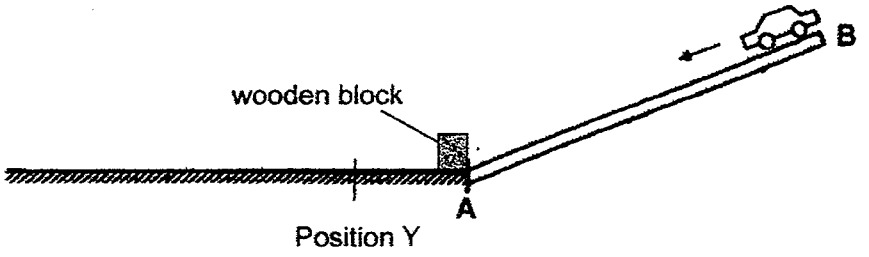
Using similar materials from the previous experiments, John conducted experiment 3 as shown below with two set-ups, P and Q.

In set-up P, a 5-gram weight was tied to the toy car.
He placed two identical wooden blocks, one in each set-up, at point A.

Set-up P



Set-up Q



When the toy cars were released, each toy car moved down the ramp and hit the wooden block.

After being hit by the toy car, the wooden block in set-up P moved to position Y but the wooden block in set-up Q did not reach position Y.

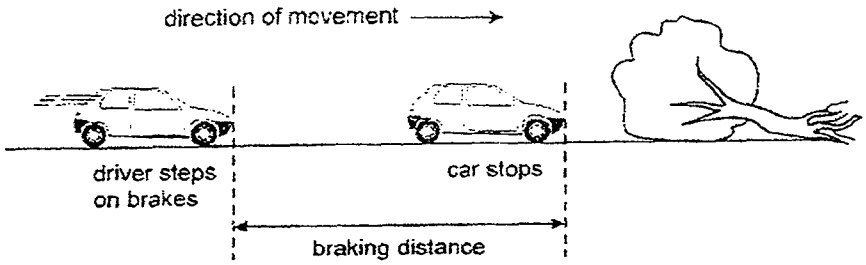
(b) Explain why the wooden block in set-up P moved further than the wooden block in set-up Q. [2]

_____

_____

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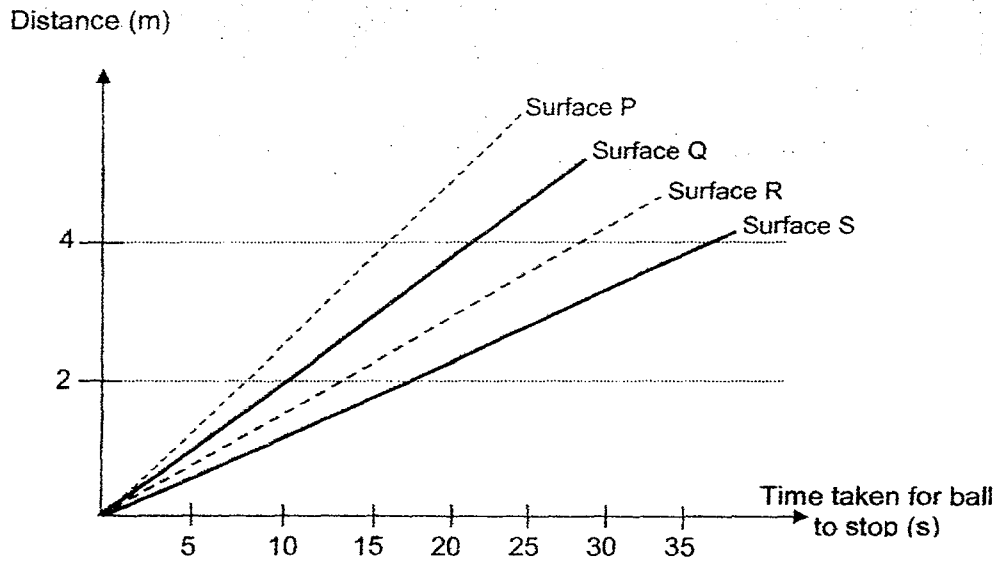
44. The diagram below shows how a car, travelling on a wet road, moves a short distance after the driver steps on the brakes. This is called the 'braking distance'.



(a) Would the braking distance be **longer**, **shorter**, or the **same** if the road was dry? [1]

Amanda rolled a rubber ball over four different surfaces, P, Q, R and S. She recorded the time taken for the ball to come to a stop on each surface at different distances.

Using the results obtained from her experiment, she plotted a graph as shown below.



(b) On which surface, P, Q, R or S, would the braking distance of the car be the longest if the car travels at the same speed? Explain your answer. [2]

-END OF PAPER-

Setters: Ms. Evelyn Tan, Mrs. Liu Ying Hui & Miss Ruchika

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ANSWER KEY

YEAR	:	**2016**
LEVEL	:	**PRIMARY 6**
SCHOOL	:	**HENRY PARK PRIMARY**
SUBJECT	:	**SCIENCE**
TERM	:	**PRELIMINARY EXAMINATION**

Booklet A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	3	4	4	2	3	1	4	4
Q11	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	**Q18**	**Q19**	**Q20**
2	2	3	3	1	1	4	4	2	4
Q21	**Q22**	**Q23**	**Q24**	**Q25**	**Q26**	**Q27**	**Q28**	**Q29**	**Q30**
4	4	2	2	3	4	3	2	1	1

Booklet B

Q31a Insects also lays eggs an some has wings and can fly.

Q31b It has a beak. / The bird has feathers.

Q32a

Percentage of starch left in the bread (%)

Time each piece of bread was placed in Liquid W (s)

Q32b The food will have more expose surface area and the liquid W will break it down faster.

Q33a Cell B does not have cell wall while Cell C and Cell A have.

Q33b Cell A : roots
Cell C : leaves

Q34a Set up Y. When there is more light, the distance between torch and plant is decreased. The rate of photosynthesis will increase and would give out more number of oxygen.

Q34b The worms give out carbon dioxide when they re-pile with more carbon dioxide.

Q35a The process is pollination. The birds will suck the nectar of the flower than pollen grains will also be carried along by the bird.

Q35b Pollen grain P.

Q35c The pollen grain has spikes to hook onto bird.

Q36a Ladybird Q.

Q36b Ladybird Q eats more Aphid X and Y as compared to ladybird R.

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Q36c He could repeat the test three times.

Q37a Plants → caterpillar → bird

Q37b (i) Benefit for the tree: The caterpillar would not eat its leave.
(ii) Benefit for bird P: The tree is a habitat for bird P.

Q37c Bird Q folds its wing to form a stream-lined body shape which reduce friction between the water and the bird.

Q38a The water in the wet sand gained heat from the surrounding air. And thus will evaporate. When the hot water vapour condenses on the cool underside of the wet cloth, the wet cloth will absorb the water vapour. This process will keep the cloth wet and thus moist the water vapour in the pot. Thus keeping the temperature of the air in the small pot in setup A lower than in setup B.

Q38b Behavioural.

Q38c When animal D sprays water over its body, its skin is wet. When the water evaporates, the water together with the heat will evaporate hence the animal can keep itself cool.

Q39a Reason 1: The exposed surface area of water is greater, thus the rate of evaporation is faster.
Reason 2: Water on the plates will drip down due to gravity.

Q39b Put it in a hot place so the water will evaporate.

Q40a 30°C

Q40b Material Y. Remains at a high temperature loses heat slower as it is a poor conductor of heat.

Q41a Amount of salt.

Q41b - 7°C

Q41c This is to prevent the people from slipping as the ice will melt faster.

Q42a The purpose of putting a bulb is to observe whether material P, Q and R are conductors or electricity.

Q42b A conductor of electricity might not be a magnetic property.

Q43a Heating make the magnets loses its magnetism.

Q43b In set-up P, there is a 5g tied to the toy hence there is more gravitational potential that is converted to more kinetic energy than set-up Q which does not have a 5g weight to the car. Hence in set-up P the wooden block moved further than position Y.

Q44a Shorter.

Q44b From the graph, the rubber ball took the longest time to come to a stop on surface P. This implies that surface P has the least friction. Thus the car would have the longest braking distance if travel on Surface P.

End

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