HENRY PARK PRIMARY SCHOOL

2026 PRELIMINARY EXAMINATION

STANDARD SCIENCE

PRIMARY SIX

BOOKLET A

11 QUESTIONS

40 MARKS

TOTAL TIME FOR BOOKLETS A & B: 1 HOUR 45 MINUTES

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.

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.**

(60 marks)

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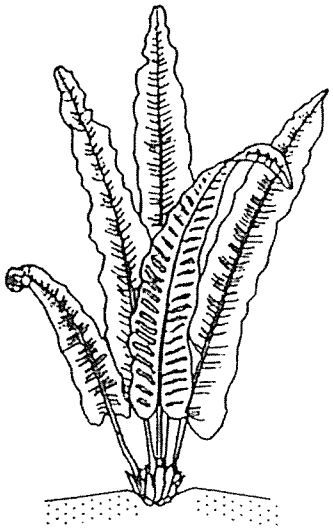
1 The diagrams show two different types of plants.



How are the two plants similar?

(1) have chlorophyll

(2) reproduce by seeds

(3) reproduce by spores

(4) have roots, fruits and stems

2 The diagrams show the young of two animals, M and N.

Young of animal M

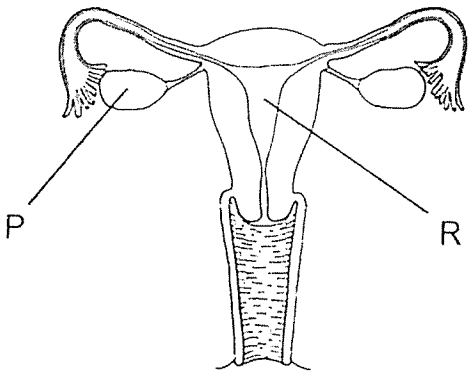
Young of animal N

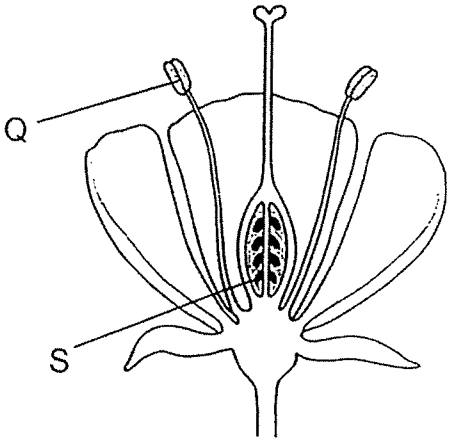
Which of the following statements about animals M and N are correct?

A Both have a 3-stage lifecycle.
B Their eggs are laid in the water.
C The young does not look like the adult.
D Only one of them has a 3-stage lifecycle.

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

3 The diagrams show the plant and human reproductive systems.





Which of the following parts of the plant and human reproductive systems have a similar function?

(1) P and S
(2) P and Q
(3) R and S
(4) R and Q

4 Sally wanted to find out the most suitable conditions under which plant H would grow. She used similar plants for her experiment.

Under each different condition, she planted and grew three plant H.
At the end of the investigation, she recorded and compared the following:

- height of plant H
- number of leaves plant H had

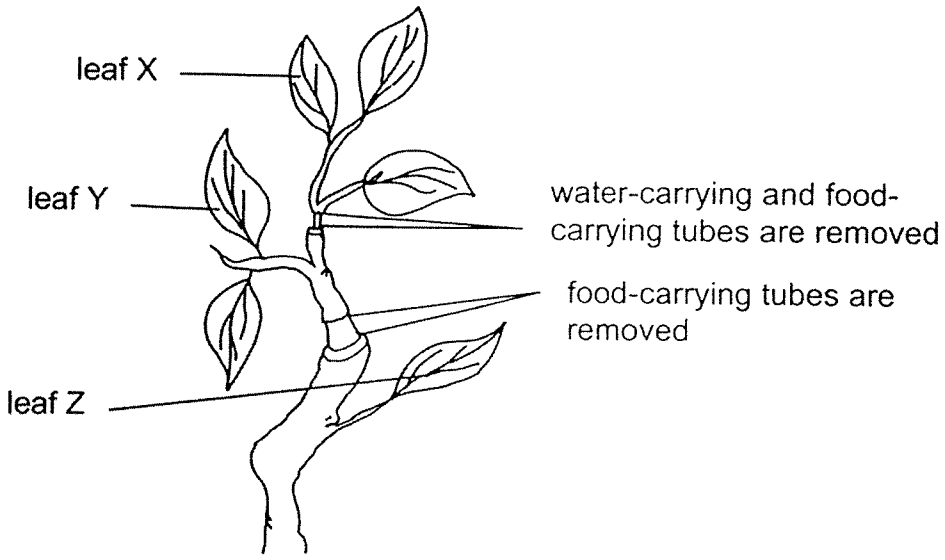
Conditions	Plant H					
	Height of plant (cm)			Number of leaves		
	1	2	3	1	2	3
placed outdoors in direct sunlight	72	75	69	16	13	17
placed outdoors in the shade	93	88	91	27	22	25
placed indoors in direct sunlight	68	62	70	19	22	18
placed indoors in the shade	55	61	57	9	12	14

Which of the following conclusions about plant H is supported by the results of Sally's experiment?

(1) The taller the plant, more leaves it has.
(2) It grows the tallest outdoors in shaded areas.
(3) It grows most leaves outdoors under direct sunlight.
(4) Plants growing outdoors have more leaves than those growing indoors.

5 Raju removed some food-carrying tubes and water-carrying tubes from the stem of a plant as shown below.

He then left the plant in an open area under the Sun and watered it daily.



Which of the following leaves, **X**, Y or Z, would still be able to make food after 2 weeks?

(1) X only

(2) Y only

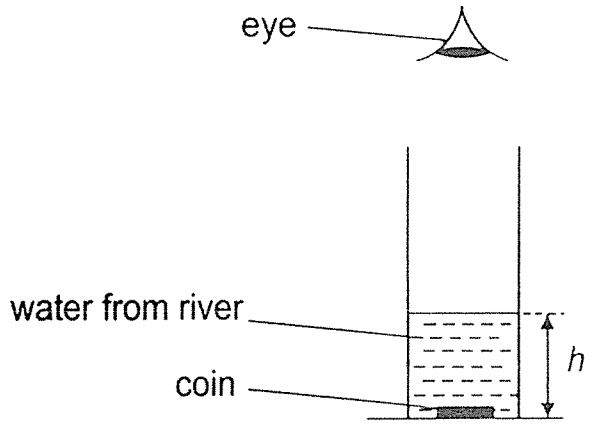
(3) Y and Z only

(4) X and Z only

6 Norah conducted an experiment using muddy water from different parts of a river, J, K, L and M.

She placed a coin at the bottom of a container and poured in the water taken from J until the coin can no longer be seen as shown below.

Then she recorded the height, *h*, of the water.



She repeated the experiment using the water taken from K, L and M.

The results are shown below.

Part of river	*h* (cm)
J	14
K	29
L	6
M	18

Norah learnt that plants in the water grew well when there was enough sunlight.

At which part of the river would there be the most number of plants in the water?

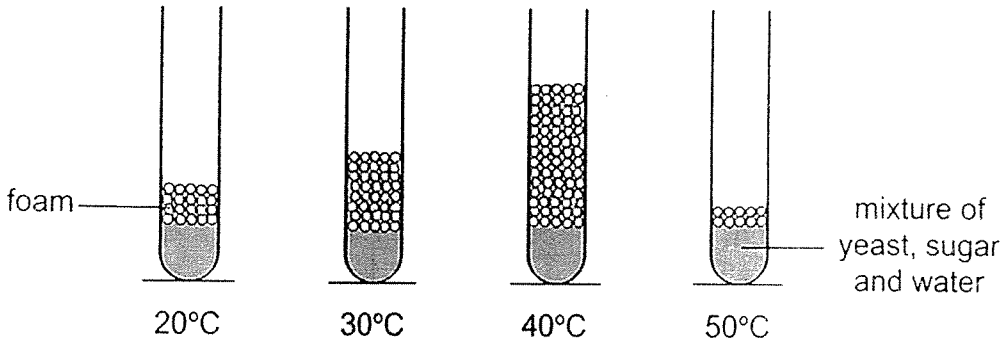
(1) J
(2) K
(3) L
(4) M

7 Yeast is a type of fungus.

When yeast is mixed with sugar and water, the yeast produces a gas that may appear as foam.

Bryan wanted to find out how the temperature of the water affects the amount of foam produced over a fixed period of time.

He set up an experiment and observed the results as shown below:



Based on the results, which of the following statements are not correct?

A The amount of foam produced increases as the temperature of the mixture increases.

B Yeast was most active when mixture is warm.

C The variable that affects the amount of foam produced is the amount yeast added to the mixture.

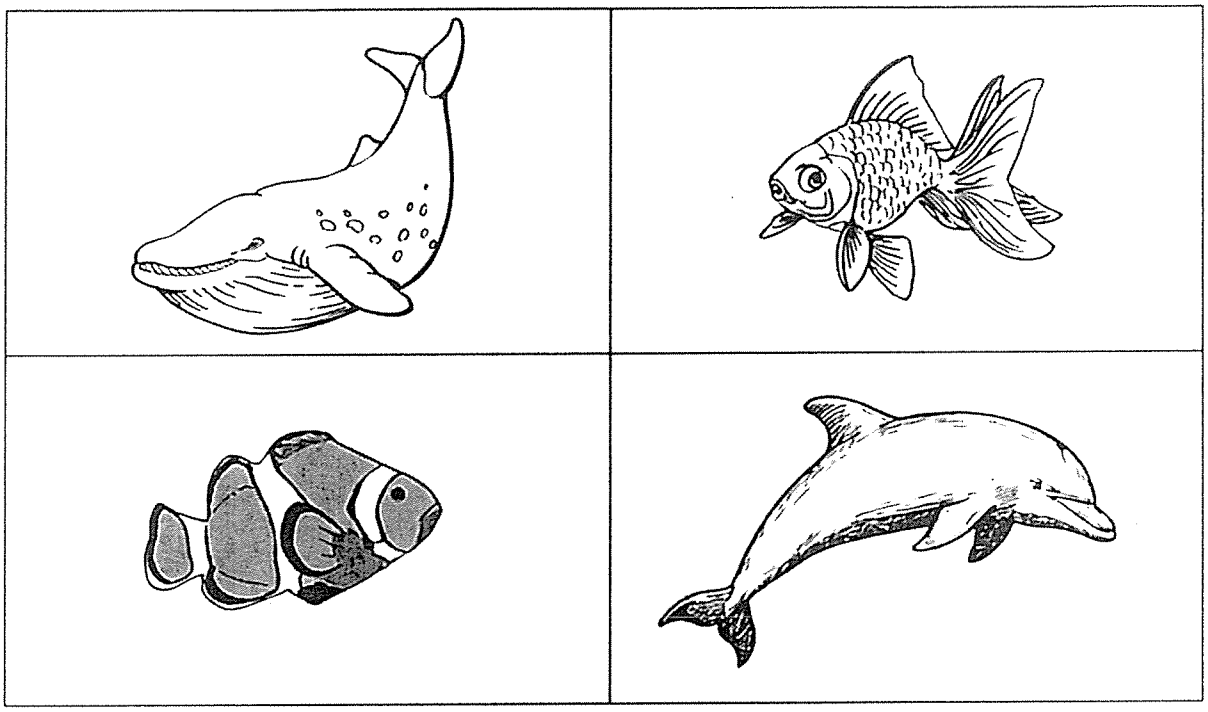
(1) A and B only

(2) B and C only

(3) A and C only

(4) A, B and C

8 The pictures show some animals.



Based on the pictures given, which of the following classifications are possible?

A

Fish	
has scales	has no scales

B

Animal	
breathes through gills	breathes through lungs

C

Animal	
lays eggs	does not lay eggs

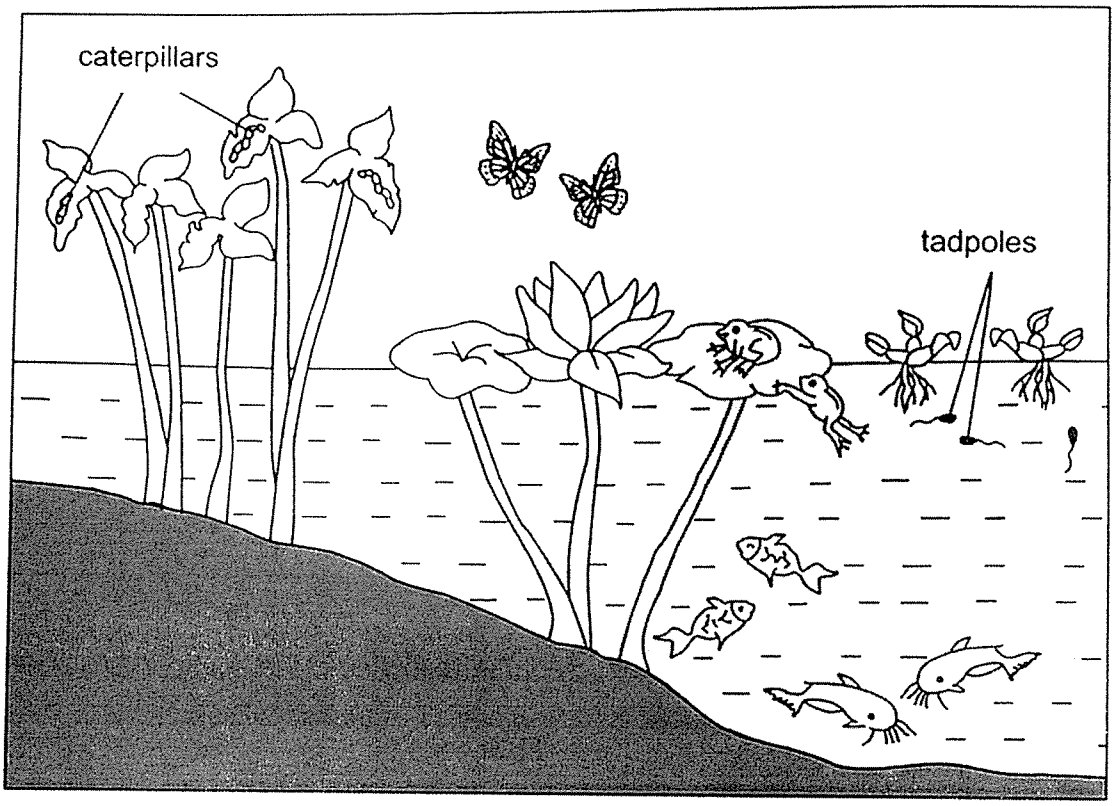
(1) A and B only

(2) B and C only

(3) A and C only

(4) A, B and C

9 The diagram below shows a pond with some organisms.



Which of the following is correct?

(1) There are two plant populations.
(2) There is one community with four populations.
(3) There is one community with seven populations.
(4) There is one community with six animal populations.

10 Four organisms from the same habitat are classified in the table below.

producer	prey	predator	both prey and predator
Q	R	S	P

Which of the following food relationships are likely to be observed among the four organisms?

(1)

R is eaten by S.
P is eaten by R.
P gets its food from Q.
S eats R but does not eat Q.

(2)

R is eaten by P.
P is eaten by S.
R gets its food from Q.
S eats R but does not eat Q.

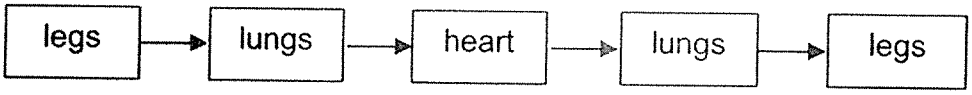
(3)

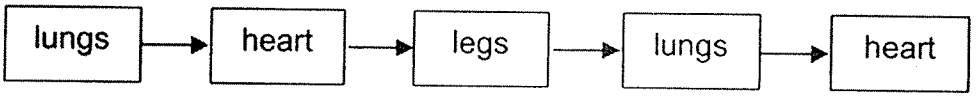
S is eaten by R.
R is eaten by P.
Q gets its food from R.
S eats R but does not eat Q.

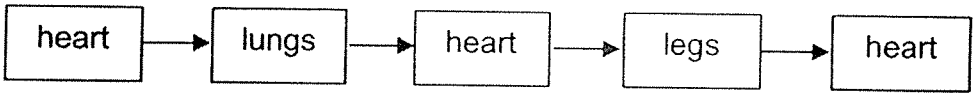
(4)

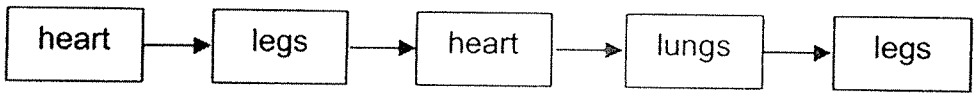
R is eaten by P.
P is eaten by S.
R gets its food from Q.
Q eats S but does not eat R.

11 Which of the following diagrams show how blood flows in the body?

(1) 

(2) 

(3) 

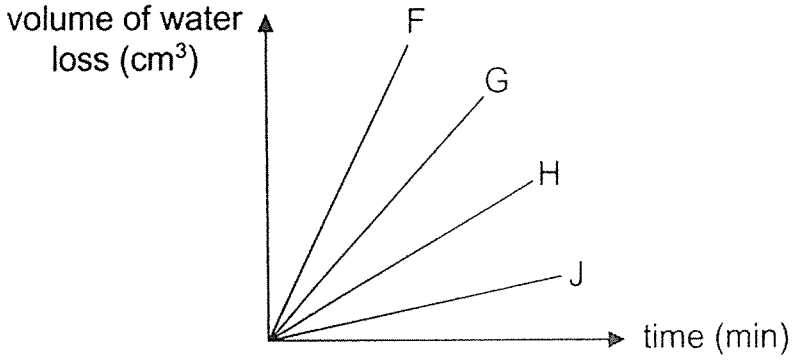
(4) 

12 Four similar leaves, F, G, H and J, were collected from the same plant.

Some of the surfaces of the leaves were covered with oil and were left in the sun for a few hours.

The volume of water loss in the leaves was measured at regular time intervals.

The results are shown in the graph below.



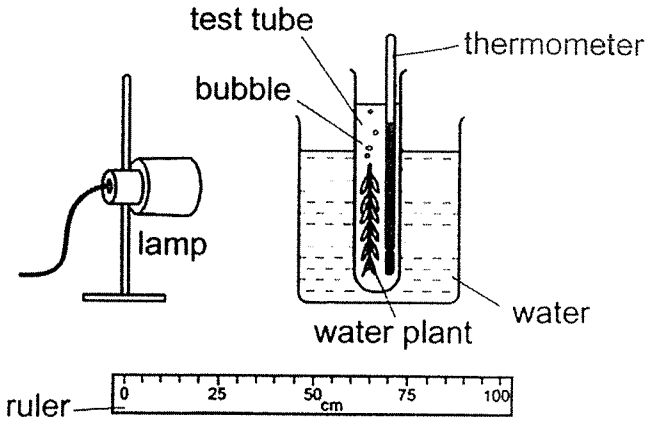
The leaves have more tiny openings on the upper surface.

Based on the results, which of the following is correct?

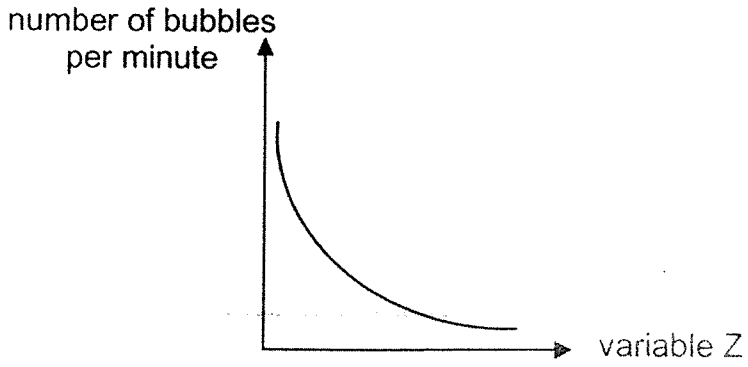
	leaf surface covered with oil			
	none	**lower only**	**upper only**	**both**
(1)	F	H	G	J
(2)	J	H	G	F
(3)	F	G	H	J
(4)	J	G	H	F

Use the following information to answer Questions **13** and **14**.

The set up shown below is used to study the rate of photosynthesis in a dark room.



Tom changed variable Z and counted the number of bubbles in the tube.
He kept the other variables the same. His results are shown below.



13 Which of the following could be variable Z?

(1) intensity of light

(2) number of water plants

(3) amount of carbon dioxide

(4) distance between lamp and plant

14 In another experiment, Tom wants to find out how the surrounding temperature affects the rate of photosynthesis.

Which of the following should he do to improve the accuracy of his results?

(1) Repeat the experiment a few more times.

(2) Use a light sensor to measure the intensity of the light.

(3) Set up another experiment with no plants in the test tube.

(4) Use an oxygen sensor to measure rate of photosynthesis.

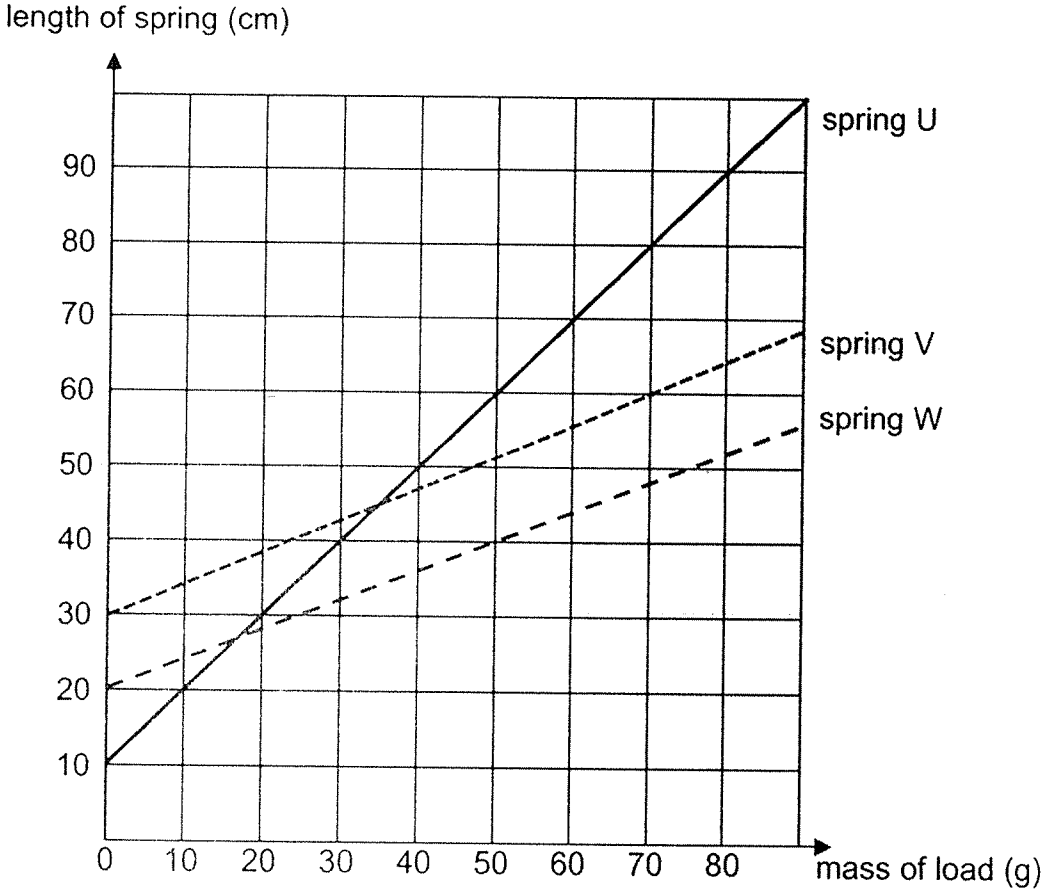
15 Mani wrote the following notes on deforestation, carbon dioxide, and global warming.

Which of the following are correct?

	Relationship observed	Reason
(1)	An increase in deforestation leads to an increase in carbon dioxide	more trees carry out photosynthesis
(2)	A decrease in carbon dioxide leads to an increase in deforestation	plants require less carbon dioxide for photosynthesis
(3)	An increase in deforestation leads to an increase in global warming	fewer trees remove carbon dioxide from the air
(4)	A decrease in carbon dioxide leads to a decrease in global warming	more heat is trapped in the atmosphere

Use the following information to answer Questions **16 and 17.**

Li Min conducted an experiment on springs U, V and W. She hung various loads, one at a time, and recorded the length of the spring.
Her results are shown in the graph below.



16 Which one of the following represents correctly the conclusion that Li Min can draw from this experiment?

	spring that is the longest before loads are added	**spring that stretches the longest with same load added**
(1)	U	V
(2)	V	U
(3)	V	W
(4)	W	U

17 Based on the graph shown, which of the following is correct?

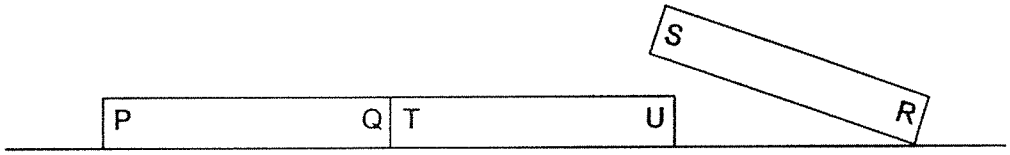
Spring	Mass of load added (g)	Extension (cm)
U	40	50
V	70	30
W	50	40
W	50	20

18 Chin Keong wanted to find out which of the three metal bars, PQ, RS and TU are magnets.

He arranged the metal bars on a wooden table in two different ways as shown below.

Arrangement 1

Arrangement 2



Based on the observations, which of the following about the three metal bars are definitely correct?

A RS is a magnet

B TU is not a magnet

C It is not possible to tell if PQ is a magnet

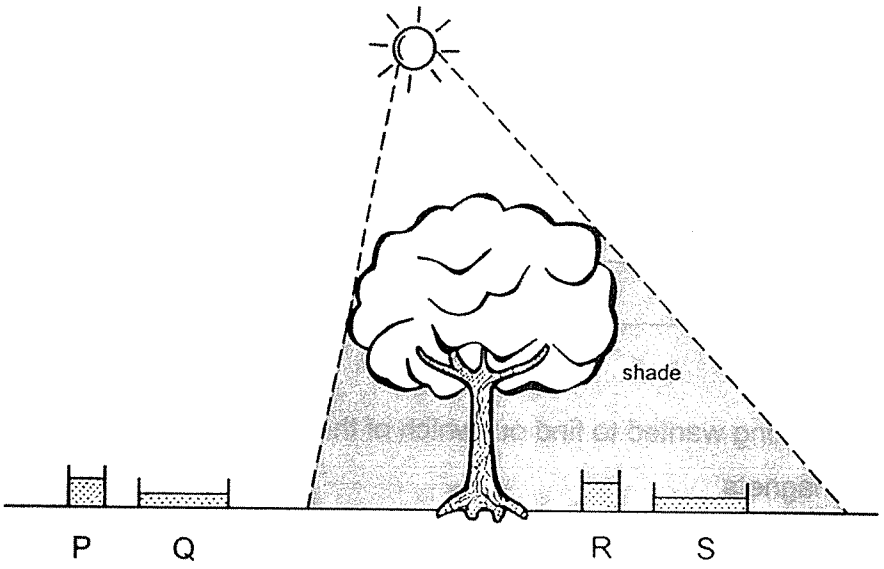
(1) A and B only

(2) B and C only

(3) A and C only

(4) A, B and C

19 Matthew conducted an experiment using the set-up as shown below.



He recorded the time taken for water in each container to evaporate completely. His results are shown below.

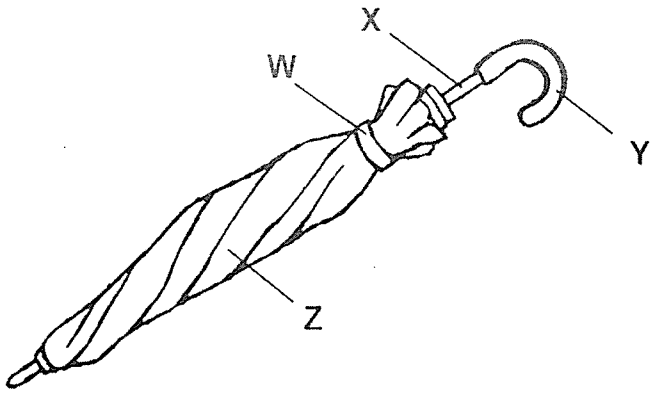
Container	Time taken for water to evaporate completely (min)
P	29
Q	29
R	29
S	29

After completing the experiment, Matthew realised that he did not remember how much water he had poured in each container.

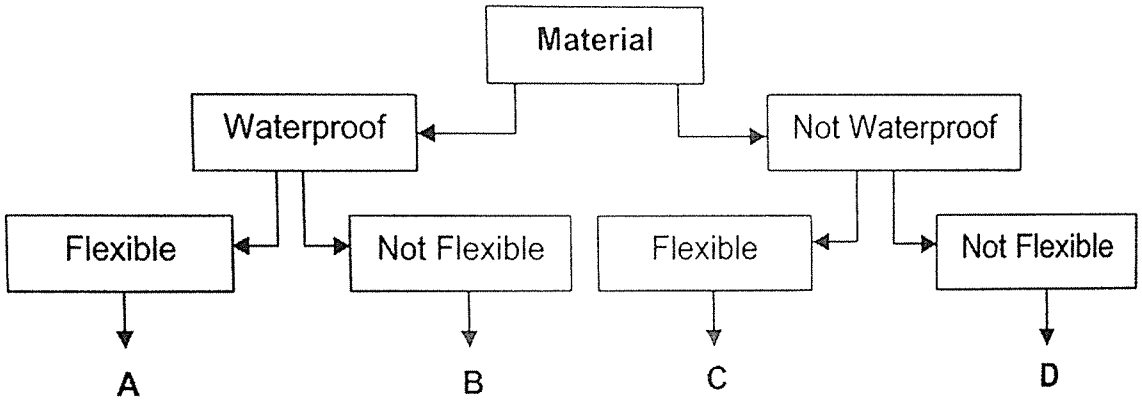
Which one of the following most likely shows the volume of water in each container at the start of Matthew's experiment?

	Amount of water at the start of the experiment (cm^3)			
	Container			
	P	Q	R	S
(1)	390	450	200	350
(2)	450	390	350	200
(3)	200	350	450	390
(4)	350	200	450	390

20 Study the parts, W, X, Y and Z, of an umbrella shown below.



The table shows how materials A, B, C and D are classified into 4 groups.



Based on the classification table, which of the following about parts W, X, Y and Z are correct?

	Parts of umbrella			
	W	**X**	Y	Z
(1)	A	B	B	A
(2)	B	A	A	B
(3)	C	D	D	C
(4)	D	C	C	D

21 Sam observed substance T and recorded its properties as shown below.

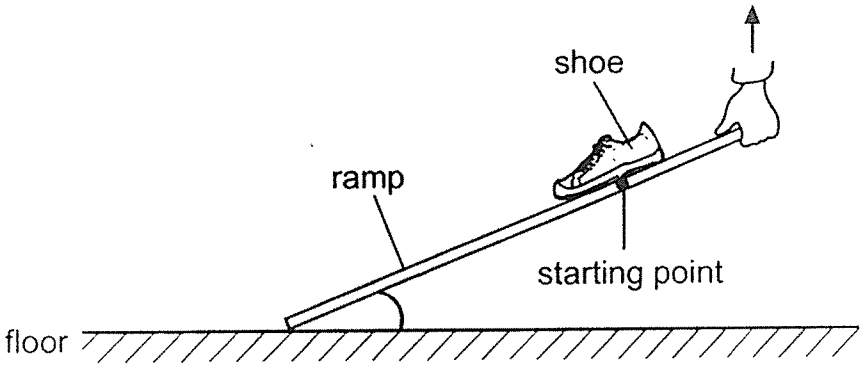
Substance T at 45°C
Has definite volume
Has no definite shape

Substance T at 290°C
Has no definite volume
Has no definite shape

Which of the following about substance T is likely to be correct?

	Substance T	
	Melting point	**Boiling point**
(1)	50°C	305°C
(2)	40°C	305°C
(3)	50°C	280°C
(4)	40°C	280°C

22 Raju conducted an experiment using a shoe and a flat wooden plank as a ramp as shown in the diagram below.

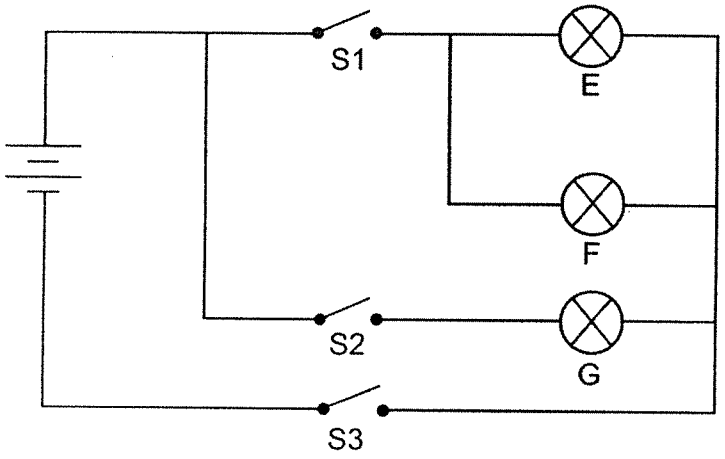


He lifts one end of the ramp to different heights and observes how far the shoe slides down from the starting point.

Which of the following is correct?

	Independent variable	Dependent variable
(1)	height of the ramp	time taken for the shoe to stop moving
(2)	angle of inclination of ramp	distance the shoe slides from the starting point
(3)	distance the shoe slides from the starting point	amount of frictional force
(4)	material of shoe used	amount of frictional force

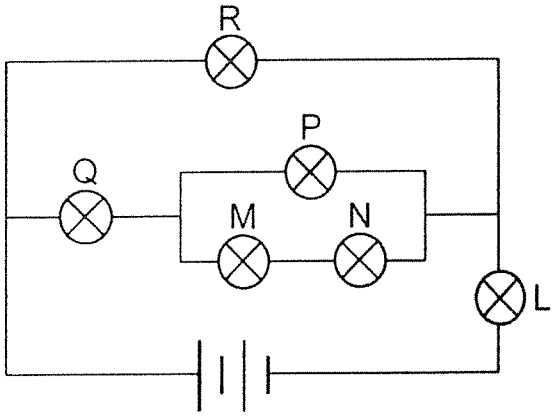
23 The diagram shows an electrical circuit with three identical bulbs, two identical batteries and three identical switches.



Which of the following shows how the switches must be set to make only bulb G light up?

	Switch		
	S1	S2	S3
(1)	open	closed	open
(2)	closed	open	open
(3)	open	closed	closed
(4)	closed	closed	open

24 Study the circuit diagram below. The batteries and bulbs are in working condition.



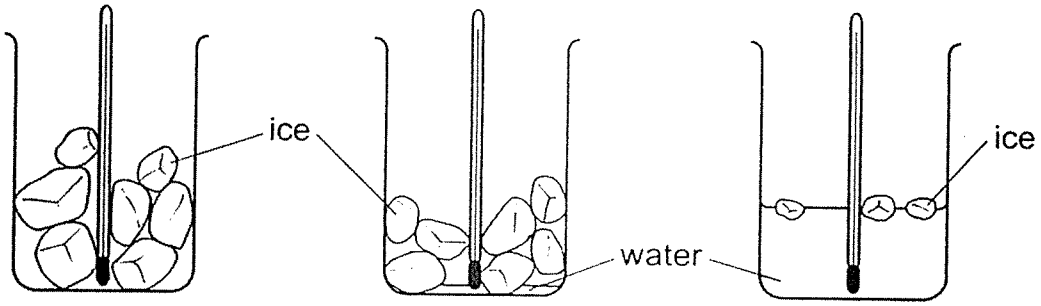
Which of the following incorrectly states the number of bulb(s) that would still be lit when one or more bulbs is / are fused?

	bulb(s) fused	number of bulbs lit
(1)	L	1
(2)	N	4
(3)	M, P	2
(4)	Q, R	0

25 A beaker containing ice taken from a freezer and a thermometer were left at room temperature for 15 minutes

Water was not observed in the beaker until 2 minutes had passed.

After 12 minutes some ice was still observed in the beaker.



Just taken out from freezer | After 2 minutes | After 12 minutes

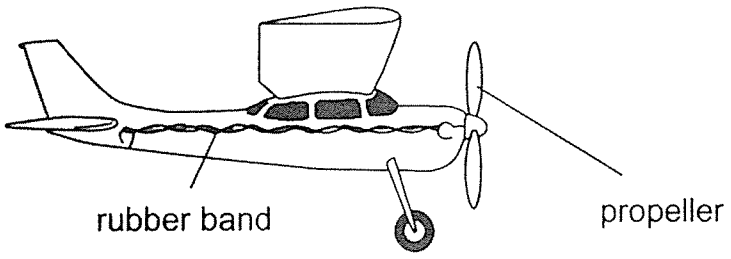
Which of the following shows the readings of the thermometer?

	Readings of the thermometer		
	Just taken out from freezer	After 2 minutes	**After 12 minutes**
(1)	0°C	0°C	above 0°C
(2)	0°C	above 0°C	above 0°C
(3)	below 0°C	0°C	0°C
(4)	below 0°C	0°C	above 0°C

26 The diagram below shows a home-made toy airplane.

The rubber band was twisted by rotating the propeller twenty times.

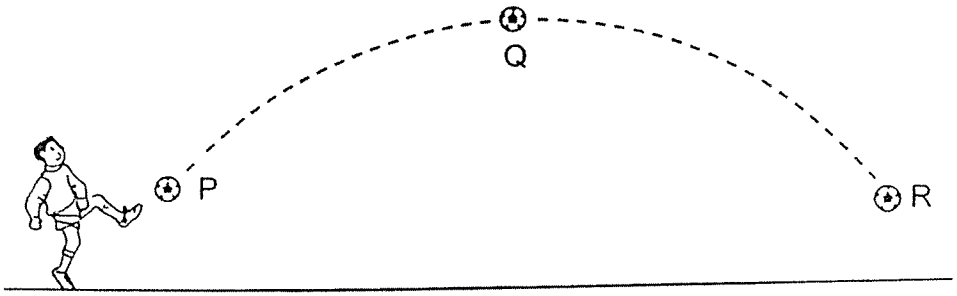
When the propeller was released, the toy airplane moved forward.



Which of the following shows the correct energy conversion when the propeller was released?

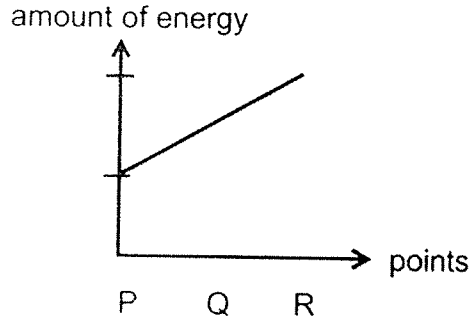
(1)	potential energy	→	kinetic energy	→	heat energy	+	sound energy
(2)	kinetic energy	→	potential energy	→	kinetic energy	+	sound energy
(3)	potential energy	→	kinetic energy	→	kinetic energy	+	sound energy
(4)	potential energy	→	potential energy	→	kinetic energy	+	sound energy

27 Joe kicked a football into the air as shown below.

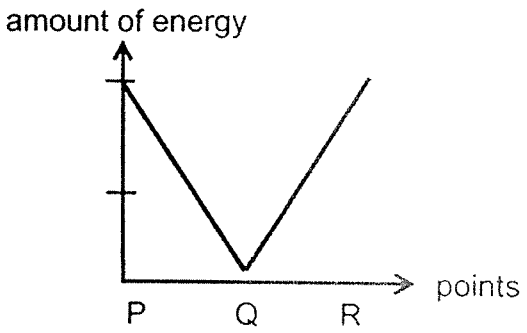


Which one of the following graphs correctly shows the amount of kinetic energy possessed by the football as it moved from point P to R?

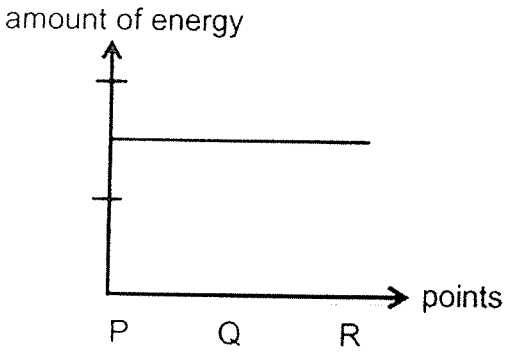
(1)



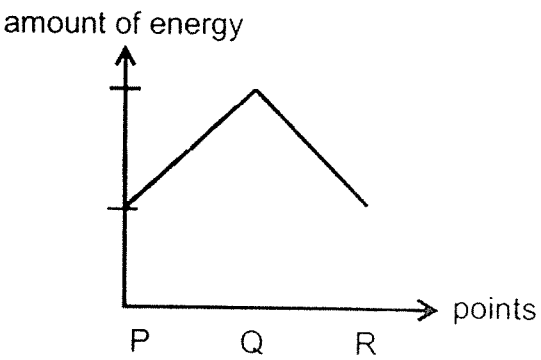
(2)



(3)



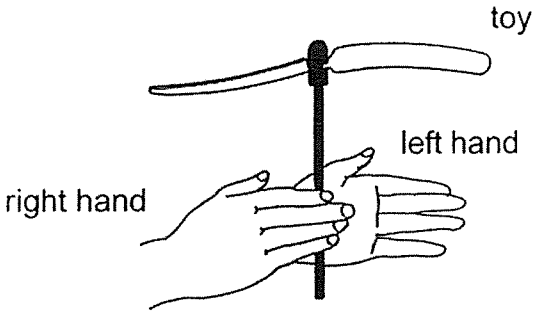
(4)



28 Samy held a toy between his hands as shown.

He rotated the toy by sliding his right hand forward and his left hand backwards before releasing it.

The toy rose to a certain height after it left his hands.



He rotated the toy from the same position again. But this time, the toy rose higher than it did before.

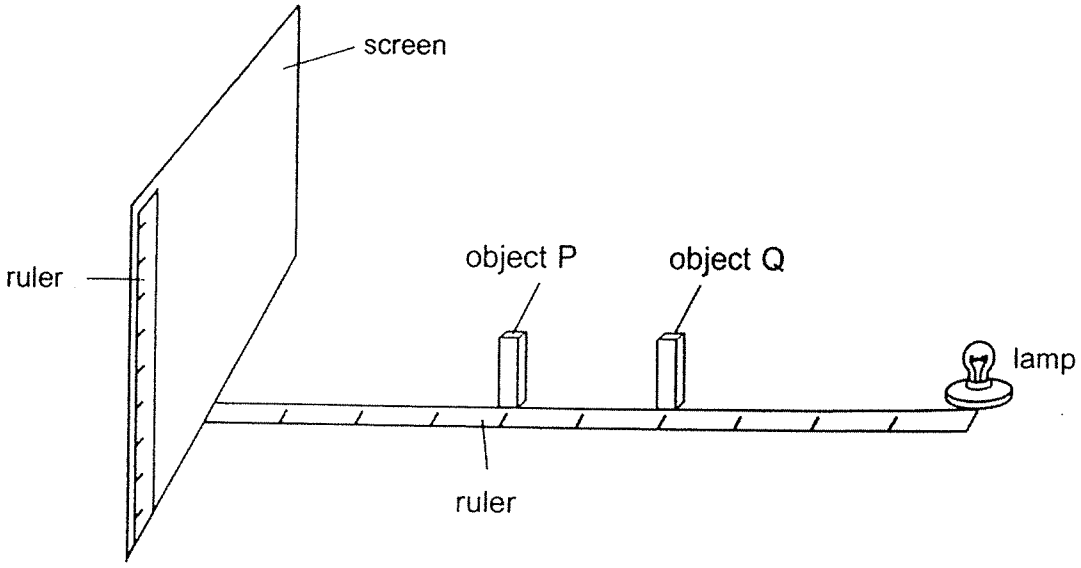
Which of the following could explain why the toy rose higher?

A The mass of the toy increased
B The toy had more kinetic energy
C The toy had more potential energy
D Samy slid his hands with more force

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

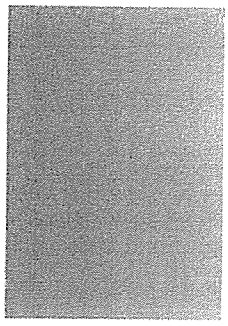
29 Rahim prepared the experimental set-up shown below.

He used objects P and Q of the same size for his experiment.

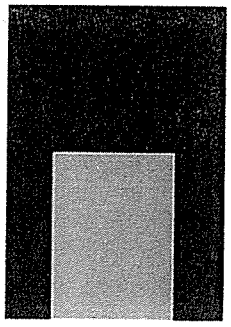


Object P is made of tracing paper while object Q is made of cardboard.

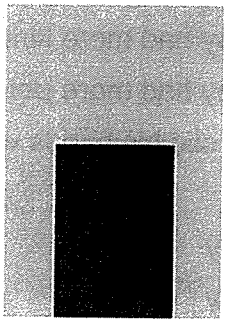
Based on the information given above, which of the following shadows will be observed on the screen?



(1)



(2)



(3)

(4)

HENRY PARK PRIMARY SCHOOL

2026 PRELIMINARY EXAMINATION

STANDARD SCIENCE

PRIMARY SIX

BOOKLET B

Name: _____ _____ ( )

Class: Primary 6 ( )

11 QUESTIONS

40 MARKS

TOTAL TIME FOR BOOKLETS A & B: 1 HOUR 45 MINUTES

INSTRUCTIONS TO CANDIDATES

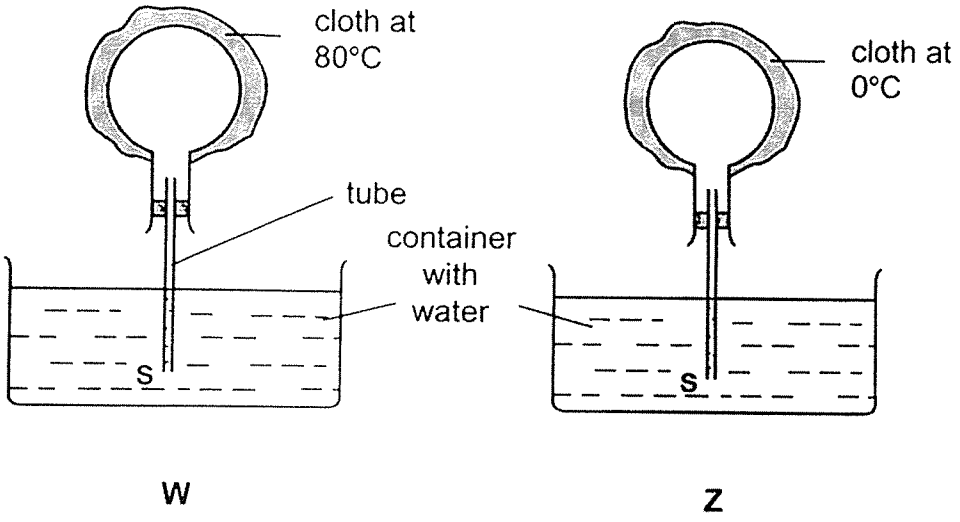
1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

Marks for Booklet B: _____ / 40

Parent's Signature: _____

Sections	Marks
A	/ 60
B	/ 40
Total	/ 100

30 Study the set-ups W and Z shown below.



Which one of the following could be observed two minutes after the cloth was placed on the flask in set-ups W and Z?

	Observation for W	Observation for Z
(1)	water rises up the tube	water rises up the tube
(2)	water rises up the tube	bubbles escape from tube at S
(3)	bubbles escape from tube at S	water rises up the tube
(4)	bubbles escape from tube at S	bubbles escape from tube at S

End of Booklet A

For questions 31 to 41, write your answers in the space provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

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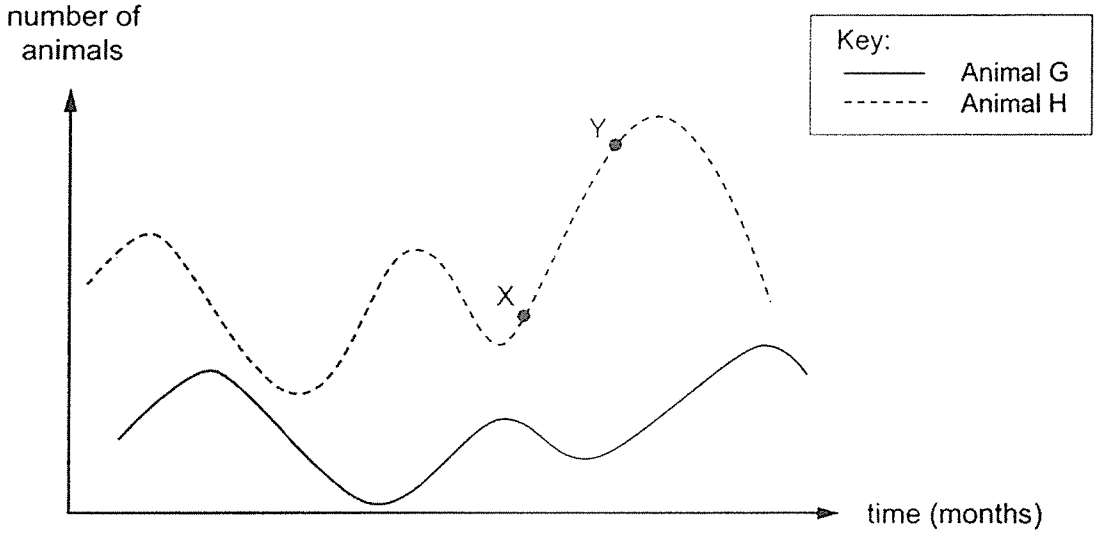
31 The graphs show changes in the populations of two animals, G and H over a period of time. Animals G and H have a prey-predator relationship.



Based on the changes observed in the graphs, Julie concluded that animal G is the predator.

(a) State the evidence from the graph that supports her claim. [1]

_____

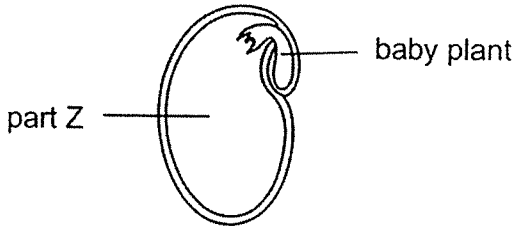
(b) Suggest **two** possible reasons for the change in the number of animal H between points X and Y on the graph. [1]

(i) _____

(ii) _____

32 The diagram shows parts of a seed.

Part Z protects the baby plant.



(a) Name part Z and state another function of part Z. [1]

Diagram 1 shows a plant that grows in the mangrove habitat. Its germinating seed is shown in diagram 2. Diagram 3 shows the young plant growing in the muddy soil after it has dropped.

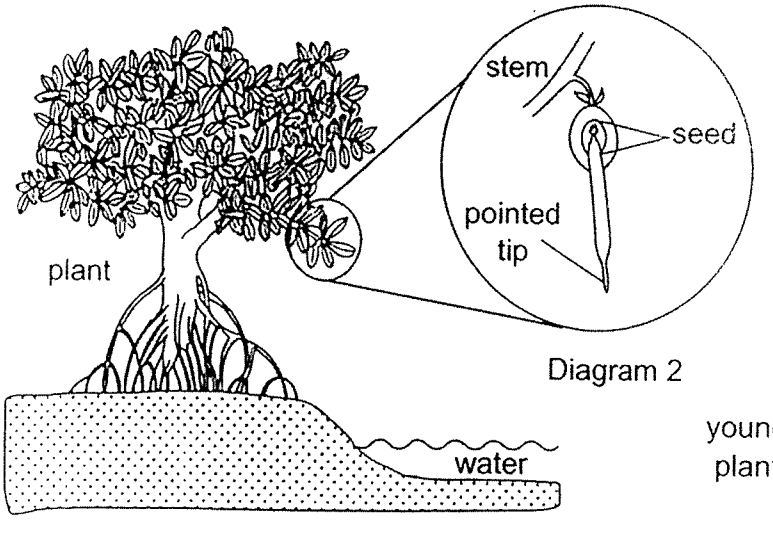


Diagram 2

Diagram 1

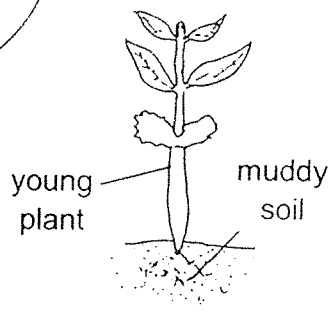


Diagram 3

(b) State all the conditions necessary for germination. [1]

Question 32 continued

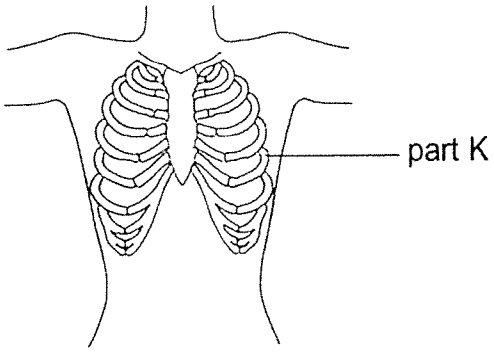
Unlike most land plants, mangrove seeds germinate while still attached to the parent plant as shown in diagram 2.

(c) Explain how this adaptation helps more young plants survive and grow in the mangrove habitat. [2]

_____

_____

33 The diagram below shows part K of the human system S.



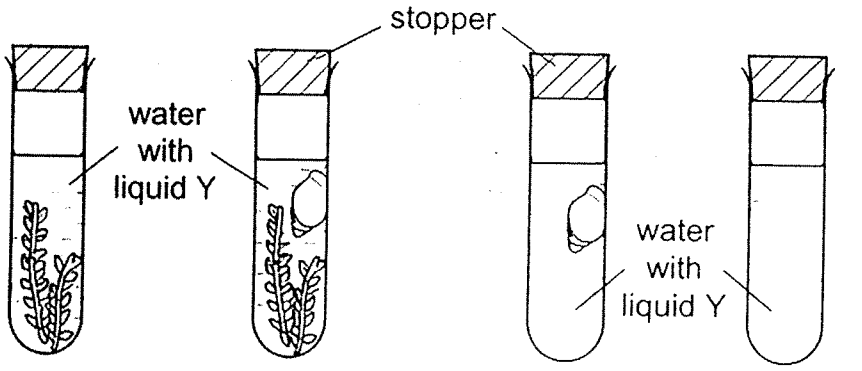
(a) (i) Name human system S - _____ [1]

(ii) Name an organ protected by part K - _____

(b) Name the two human systems that work closely to help the different parts of our body move. [1]

_____ and _____

34 Pat was investigating gaseous exchanges taking place in some organisms. She used liquid Y to identify changes in the amount of carbon dioxide in the four test tubes shown below.



Test tube R	Test tube S	Test tube T	Test tube U
(with water plants)	(with water plants and water snail)	(with water snail)	(no organisms)

The table below shows the colour of liquid Y for different amount of carbon dioxide.

	Amount of carbon dioxide		
	low →		**high**
colour of liquid Y	purple	red	yellow

Pat placed the four test tubes in the Sun and recorded her observations two hours later.

(a) State the colour of liquid Y observed in [2]

(i) test tube R - _____

(ii) test tube T - _____

(b) The colour of liquid Y did not change in test tube S. Suggest a possible reason for this observation. [1]

_____

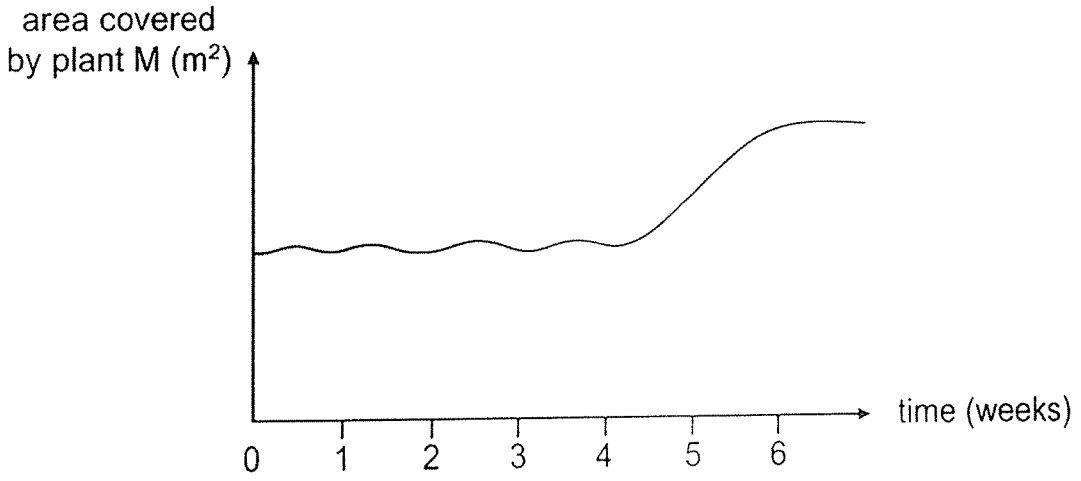
_____

(c) Without test-tube U, how would Pat's conclusion about the changes in the colour of liquid Y be affected? Explain your answer. [1]

_____

_____

35 The graph below shows the change in the area covered by plant M in a garden.



(a) At a certain time, a number of animal Y was introduced into the garden. Mark '**X**' on the graph to show when this happened. [1]

(b) Suggest a reason why introducing animal Y population caused the area covered by plant M to change. [1]

_____

_____

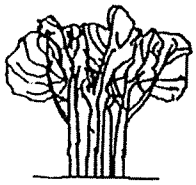
(c) Why is it important for a habitat to have a large number of food producers? [1]

_____

_____

Question 35 continued

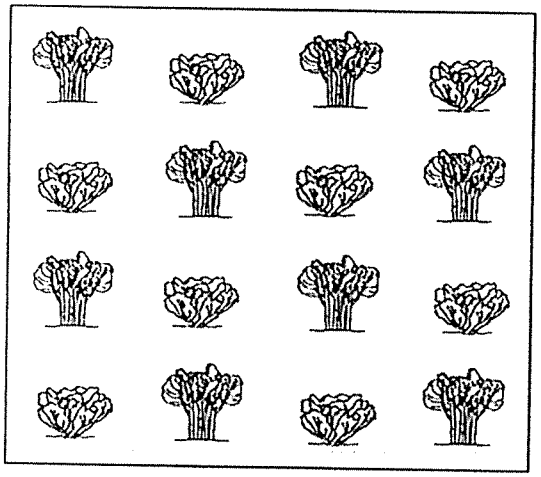
A farmer grows two types of green vegetables, P and Q, as shown below.



P

Q

The vegetables, P and Q, were planted in a plot of land as shown below.



The table below shows the number of vegetables P and Q on Day 1 and Day 35.

Vegetable	Day 1	Day 35
P	8	17
Q	8	6

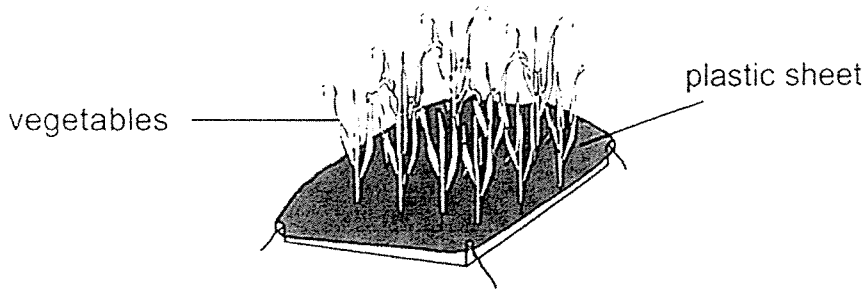
(d) Suggest what may happen to vegetable Q if vegetable P continues to grow and reproduce more quickly. Explain your answer. [1]

_____

_____

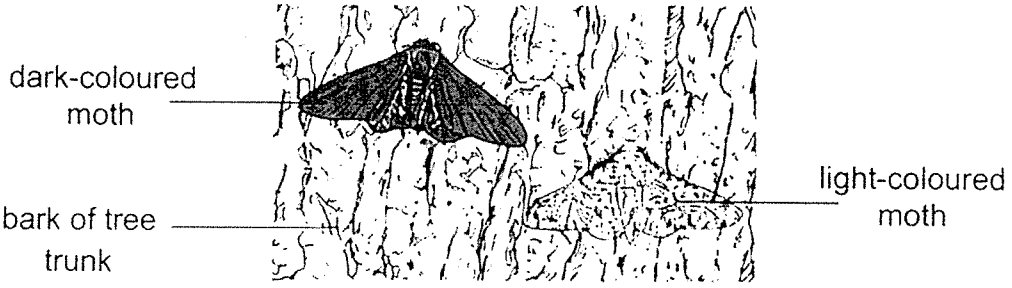
Question 35 continued

The farmer puts sheets of plastic on top of the soil in which his vegetables grow as shown below. The vegetables grew and reproduced more quickly.



(e) Give a reason why the vegetables grow better when the soil is covered with a plastic sheet. [1]

36 The diagram shows light-coloured and dark-coloured moths. The moths frequently rest on tree trunks. The bark of tree trunks in City W was light in colour.



Both types of moths were released in City W.

After 10 days, as many of the moths were caught as much as possible as shown below.

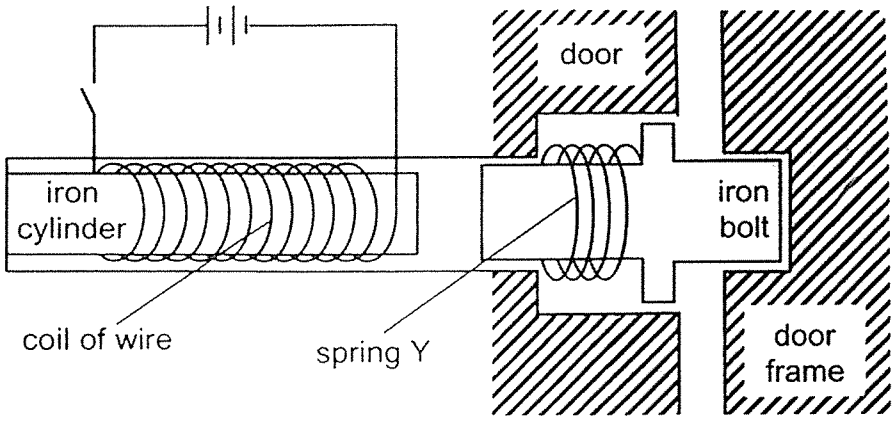
	Number of moths	
Type of moth	released	caught
light-coloured	200	85
dark-coloured	200	163

(a) Based on the information given, explain the difference in the number of moths caught. [2

Some years later, trees in City W were darkened with dust from air pollution.

(b) Suggest and explain how the results are likely to be different if both types of moths are released again in City W. [1

37 Wahid used an electromagnet to build a simple door lock system.



The diagram above shows that the door is locked.

(a) Explain how the door can be unlocked when the circuit is closed. [1]

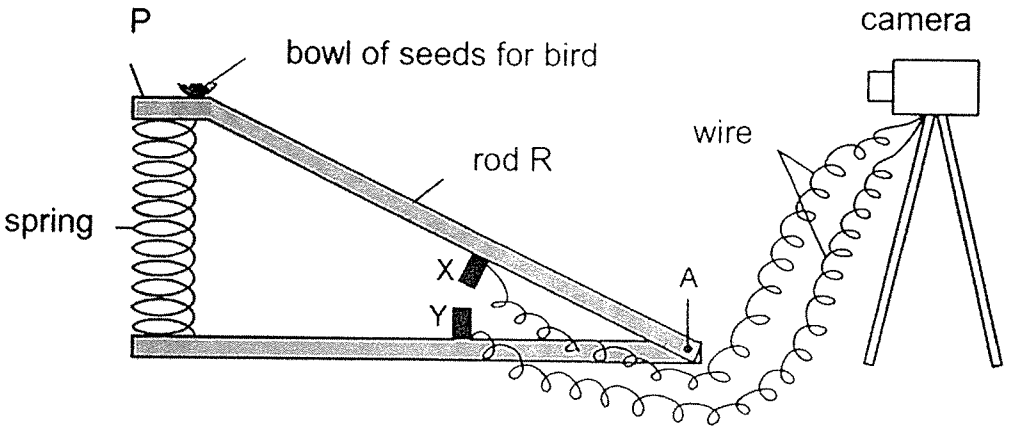
(b) Explain the function of the spring in this door lock system. [1]

(c) What effect would using a stiffer spring have on the door lock system when the circuit is closed? [1]

38 Edward used the set-up shown below in his garden to take photographs of birds automatically.

R is a rod that is attached at point A so it can be moved around that point.

The contacts X and Y are connected to a special camera by wires so that when X touches Y, the camera will take a photograph of the object at P.



(a) Explain how this set-up enables the camera to take a photograph of a bird. [2]

Edward observed some small birds at P. However, no photographs of the small birds were taken by the camera although it was working properly.

(b) Suggest one change that Edward can make to the set-up so that the camera will take photographs of small birds as well. Explain your answer. [2]

Question 38 continued

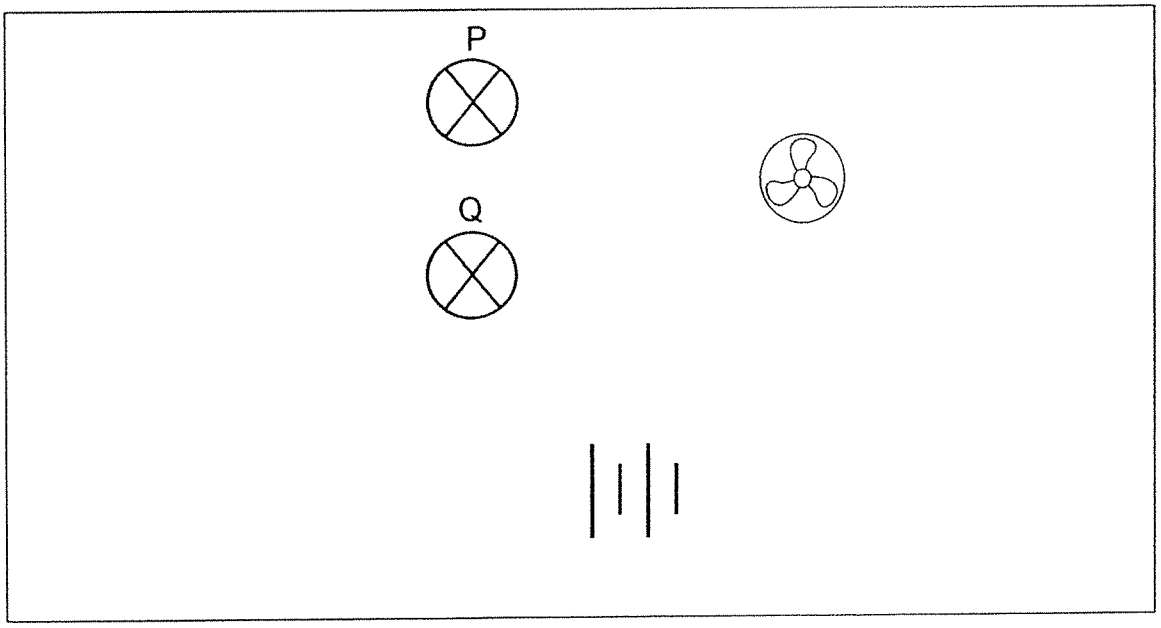
Edward wanted to install two light bulbs, a fan and two switches, Y and Z, in his living room.

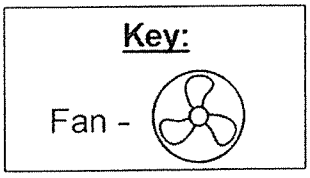
(c) Use a pencil and ruler to complete the circuit diagram of Edward's living room as shown below. [2]

Complete the circuit diagram such that the following conditions are met.

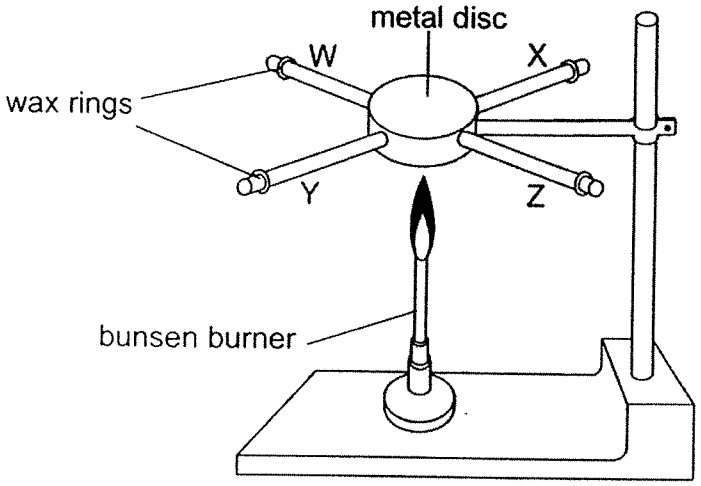
switches		conditions	
Y	**Z**	**Bulb(s) that lit**	**Fan blades**
open	closed	P only	spin
closed	open	Q only	do not spin
closed	closed	both	spin

Circuit Diagram of Edward's Living Room



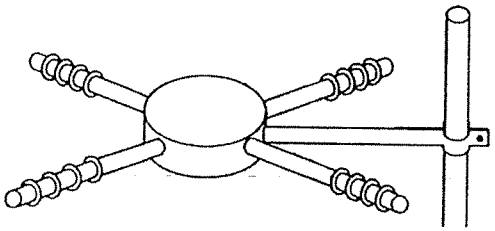


39 Mei Ling conducted an investigation on the heat conductivity of four rods made of different materials W, X, Y and Z. She inserted the four rods into a metal disc. She placed one wax ring onto each rod and then used a bunsen burner as shown below.



(a) Explain how Mei Ling would use the set-up to find out which material is the best conductor of heat. [1]

Dina is asked to suggest an improvement to Mei Ling's experiment.
She suggests placing several wax rings on each rod as shown below.



(b) Explain how Dina's suggestion improves Mei Ling's investigation. [1]

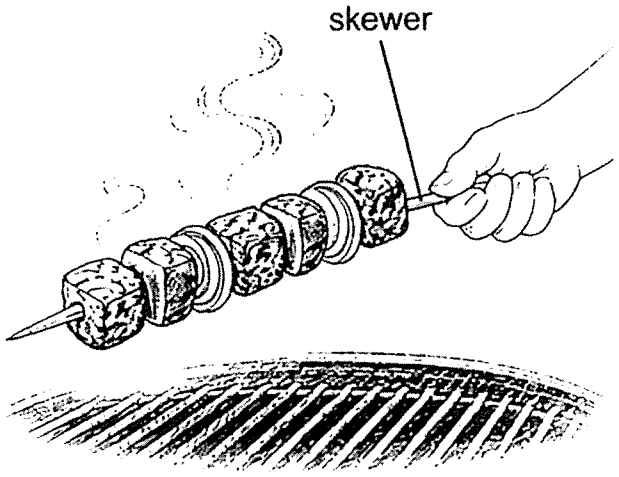
Question 39 continued

(c) State two variables that should be kept the same for all the wax rings used in this investigation. [1]

(i) _____

(ii) _____

The diagram shows a skewer used to hold the food while grilling over a source of heat.



Based on the results of her experiment, Mei Ling chooses a skewer made of material Y.

(d) If material Y is the most suitable material to make the skewer, what would Mei Ling observe during her experiment? [1]

_____

_____

40 John dropped a piece of paper and measured the time taken for it to reach the ground. He crushed the paper into a ball and repeated the experiment.

The results are recorded in the table shown below.

Average time taken for paper to reach the ground (s)	
before paper was crushed	after paper was crushed
3.5	1.5

(a) State 2 types of forces acting on the papers as they fall. [1]

_____

(b) Based on the experiment, what can be concluded about the time taken for the paper to reach the ground when it is crushed into a paper ball? [1]

_____

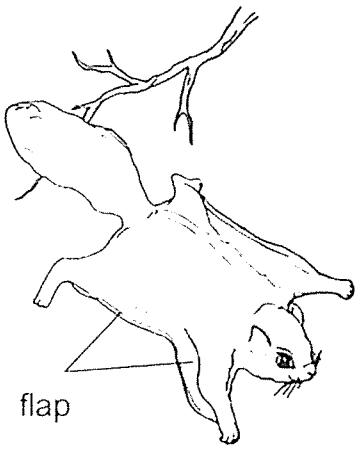
_____

(c) Based on the information given, how do you know John carried out the experiment more than once? Explain your answer. [1]

_____

_____

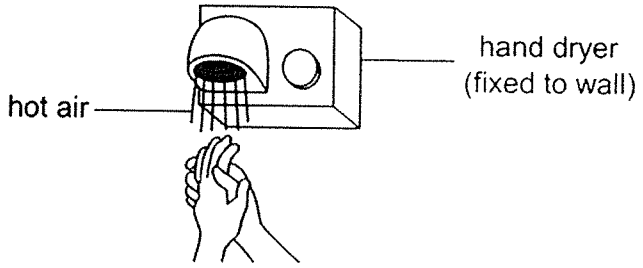
The diagram shows animal F.
Animal F uses its large flaps to glide from tree to tree in the forest.



(d) Using the results of John's experiment, explain how animal F's flaps give it an advantage when it moves from tree to tree looking for food. [1]

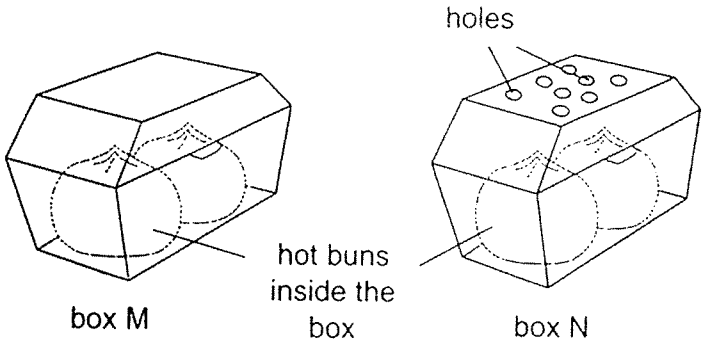
41 (a) State what condensation is. [1]

Kevin rubbed his wet hands under a hand-dryer as shown below.



(b) Explain why the water on his hands disappeared quickly when placed under the hand-dryer. [1]

Kevin put some hot buns inside two similar boxes, M and N.
Box N has some holes.



He observed that the buns in box M became wet after some time, but not those in box N.

(c) Explain why the buns in box M became wet but not those in box N. [2]

End of Booklet B

YEAR : 2026
LEVEL : PRIMARY 6
SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : PRELIMINARY EXAMINATION

(BOOKLET A)

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

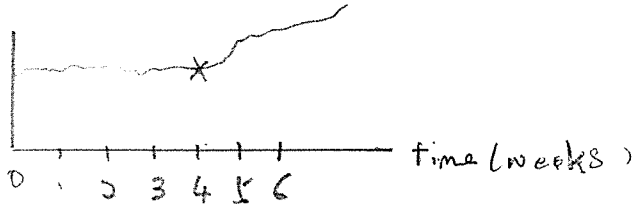
(BOOKLET B)

Q31	a)	The population of animal G is consistently smaller than that of animal H, as expected for a predator population.
	b)(i)	The number of animal G decreased, so fewer animal H were eaten.
	b)(ii)	More food became available for animal H, so more survived and reproduced.
Q32	a)	Part Z is the seed leaf. It stores food for the baby plant during germination.
	b)	Water, air (oxygen) and suitable warmth.
	c)	The seed develops a long, pointed tip while attached to the parent plant. When it drops, the tip penetrates and anchors it in the muddy soil, preventing it from being washed away by tides.
Q33	a)(i)	Skeletal system.
	a)(ii)	Lungs.
	b)	Muscular system and skeletal system.
Q34	a)(i)	Purple.
	a)(ii)	Yellow.
	b)	The amount of carbon dioxide removed by the plant during photosynthesis equalled the amount released during respiration by the plant and snail, so the total amount did not change.
	c)	Her conclusion would be less reliable because, without control test tube U, she could not show that the colour changes were caused by the organisms rather than another factor.

Q35	a)	At week 4, when the area covered by plant M begins to increase.
	b)	Animal Y may feed on an organism that eats plant M. With fewer consumers of plant M, more plant M survives and spreads.
	c)	A large number of producers provides enough food and energy for consumers, supporting the populations in the food chain.
	d)	The number of vegetable Q will continue to decrease and it may die out because the faster-growing vegetable P competes with Q for limited space, light, water and mineral salts.
	e)	The plastic sheet reduces evaporation from the soil, so more water remains available for the roots to absorb.
Q36	a)	The dark-coloured moths contrasted with the light bark and were easier to see and catch, while the light-coloured moths were camouflaged. Hence, more dark-coloured moths were caught.
	b)	More light-coloured moths and fewer dark-coloured moths would be caught because the dark bark camouflages the dark-coloured moths but makes the light-coloured moths more visible.
Q37	a)	Closing the circuit causes current to flow through the coil, turning the iron cylinder into an electromagnet. It attracts the iron bolt and pulls it out of the door frame, unlocking the door.
	b)	When the circuit is opened, the spring pushes the iron bolt back into the door frame and locks the door.
	c)	The stiffer spring exerts a greater opposing force, so the electromagnet may not pull the bolt out fully and the door may not unlock.
Q38	a)	A bird's weight pushes point P and rod R down, compressing the spring. Rod R pivots about A until contact X touches Y, which triggers the camera.
	b)	Replace the spring with a less stiff spring so a small bird's weight can compress it enough for contact X to touch Y.
	c)	Connect two parallel branches across the battery. Branch 1 has switch Y and bulb Q in series. Branch 2 has switch Z in series with a parallel pair consisting of bulb P and the fan.
Q39	a)	Heat the metal disc and record the time taken for each wax ring to melt or fall. The rod whose ring melts or falls first is made of the best heat conductor.
	b)	Rings placed at equal intervals show how far heat travels along each rod in the same time, allowing the rates of heat conduction to be compared more clearly.
	c)(i)	The mass or size of each wax ring.
	c)(ii)	The type of wax used.
	d)	The wax ring on rod Y would take the longest time to melt or fall, showing that Y is the poorest heat conductor and keeps the held end cooler.

Q40	a)	Gravitational force and air resistance.
	b)	The crushed paper takes a shorter time to reach the ground (1.5 s instead of 3.5 s) because its smaller exposed surface area produces less air resistance.
	c)	The results are average times, and an average can be calculated only after the experiment has been repeated.
	d)	The large flaps increase surface area and air resistance, slowing the fall and keeping animal F airborne longer so it can glide farther between trees to find food.
Q41	a)	Condensation is the process in which a gas cools and changes into a liquid.
	b)	The hot moving air warms the water and carries water vapour away, increasing the rate of evaporation.
	c)	Water in the hot buns evaporated. In box M, the trapped water vapour cooled and condensed into water droplets, making the buns wet. In box N, the water vapour escaped through the holes, so it did not condense on the buns.

Q35. a.



END