

prelim



HENRY PARK PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2017
PRIMARY 6
SCIENCE
BOOKLET A (56 MARKS)

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers on the Optical Answer Sheet (OAS) provided.

Name: _____ ()

Class: Primary 6 ()

Date: 25 August 2017

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

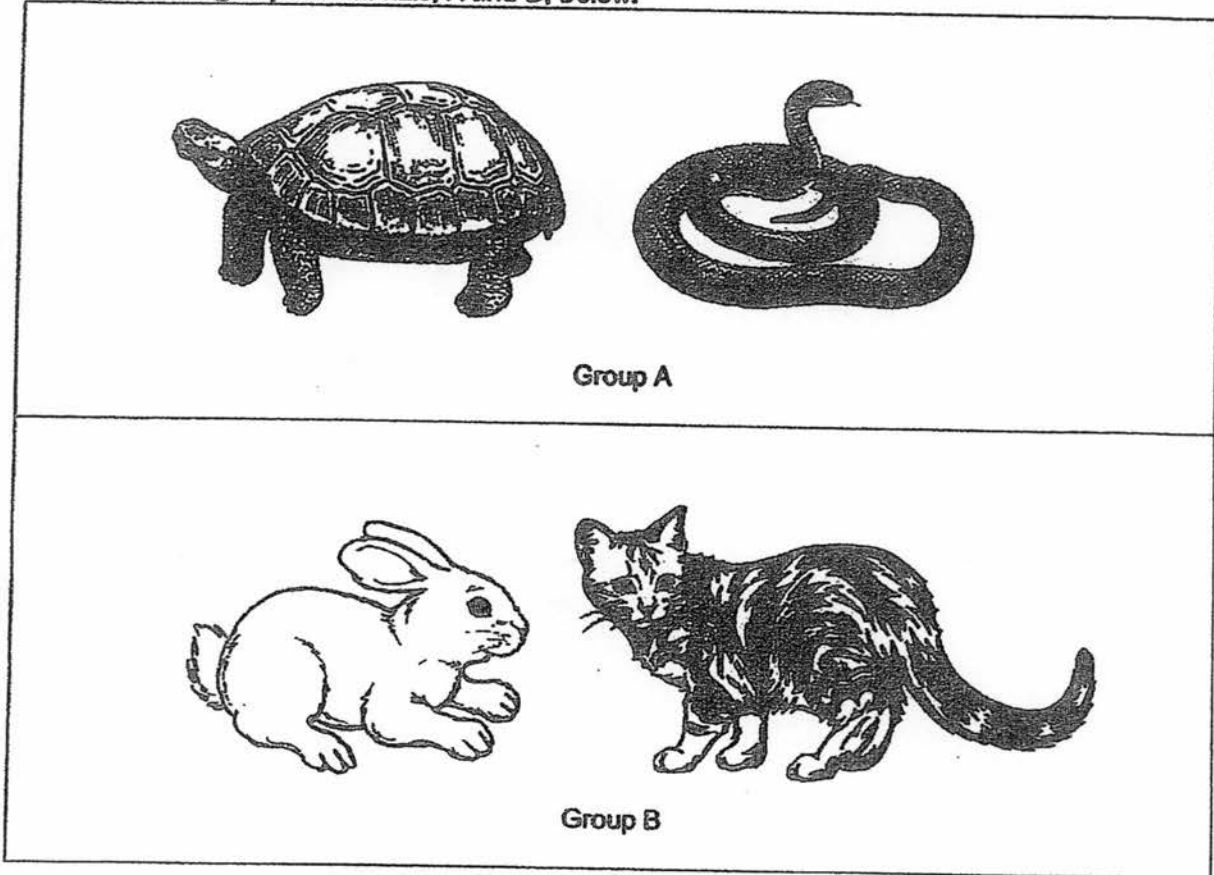
Booklet	Marks
A	
B	
Total (A+B)	

Parent's Signature: _____

Booklet A (56 marks)

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

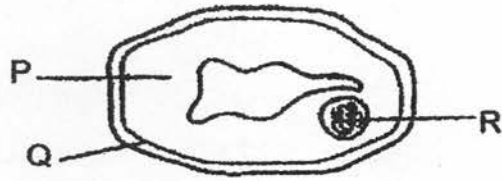
1. Study the two groups of animals, A and B, below.



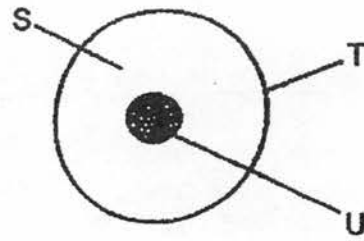
Which of the following describes the animals in groups A and B correctly?

	Group A		Group B	
	Covered with scales	Give birth to live young	Covered with scales	Give birth to live young
(1)	No	No	No	Yes
(2)	Yes	No	No	Yes
(3)	No	No	Yes	Yes
(4)	Yes	Yes	No	No

2. The diagrams below show two cells, X and Y.



Cell X



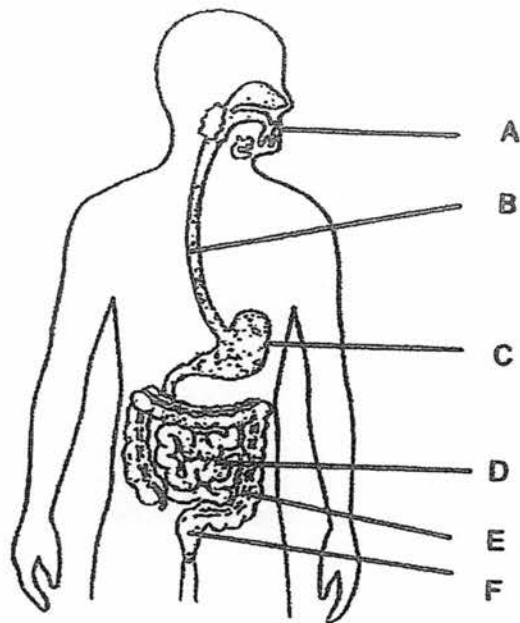
Cell Y

Which of the following statement(s) about cells X and Y is/are correct?

- A: Parts R and U control the activities in the cells.
- B: Parts P and S support and give the cells their shape.
- C: Parts Q, U and T control the movement of substances in and out of the cell.

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

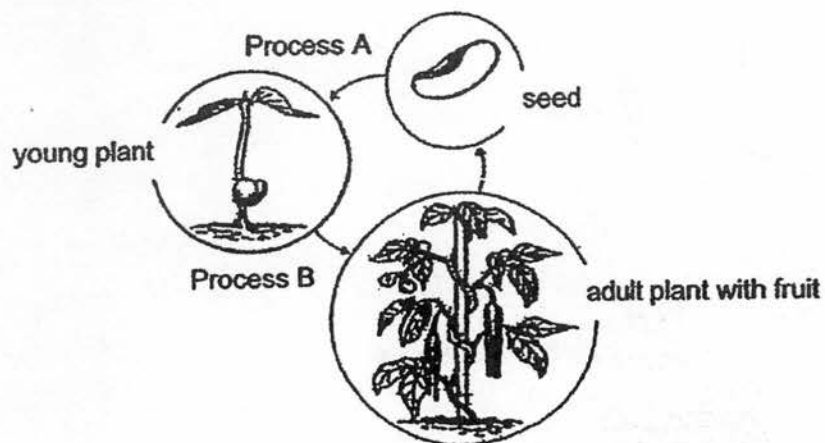
3. The diagram below shows the human digestive system.



Which of the following correctly describes the function(s) of organs A to F?

	Organs that produce digestive juice	Organ involved in absorption of food	Organ(s) involved in absorption of water
(1)	A, B	E	F
(2)	A, C, D	D	E
(3)	A, B, C	D	E, F
(4)	A, C, D	E	F

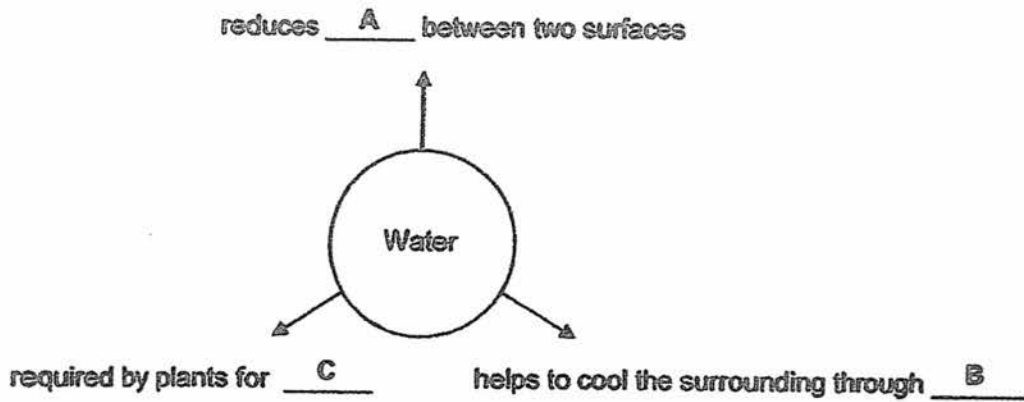
4. The diagram below shows processes A and B in the life cycle of a flowering plant.



Which of the following identifies both processes A and B wrongly?

	Process A	Process B
(1)	Germination	Pollination
(2)	Germination	Fertilisation
(3)	Fertilisation	Germination
(4)	Seed Dispersal	Fertilisation

5. The diagram shows some uses of water.



Which of the following words represent A, B and C correctly?

	A	B	C
(1)	friction	evaporation	photosynthesis
(2)	friction	photosynthesis	evaporation
(3)	friction	condensation	photosynthesis
(4)	gravity	evaporation	condensation

6. Which of the following activities do not harm the environment?

A: Writing on both sides of a paper.

B: Turning off the lights when not in use.

C: Bringing your own bag on shopping trips.

(1) A and B only

(2) A and C only

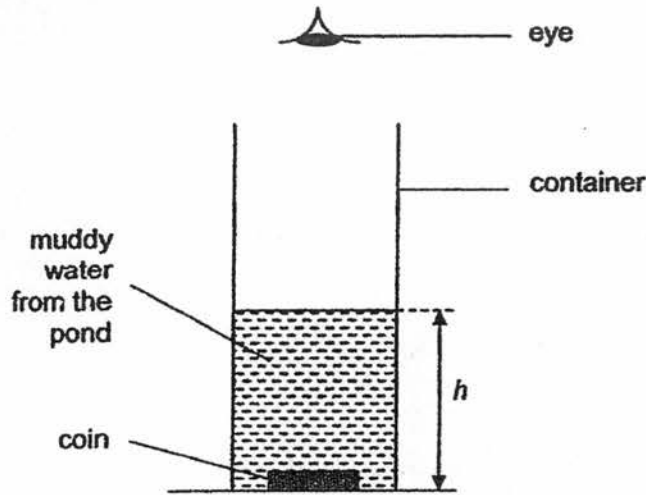
(3) B and C only

(4) A, B and C

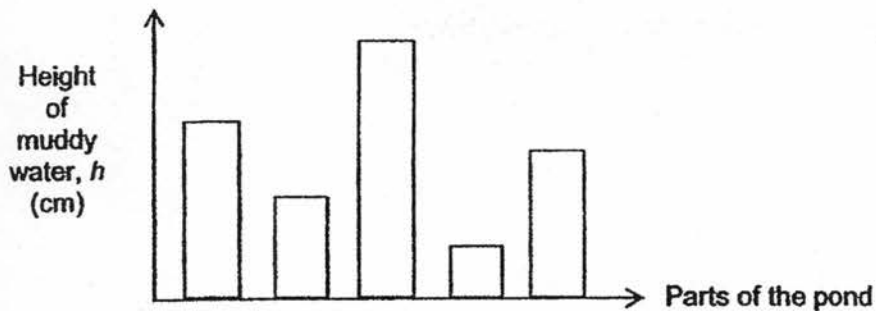
7. Aaron conducted an experiment using some muddy water from a pond.

He placed a coin at the bottom of a container and poured in the muddy water until the coin could no longer be seen, as shown in the set-up below.

Then, he recorded the height h cm of the muddy water.



Aaron repeated his experiment by taking muddy water from different parts of the pond and keeping all other variables the same. His results are shown below.

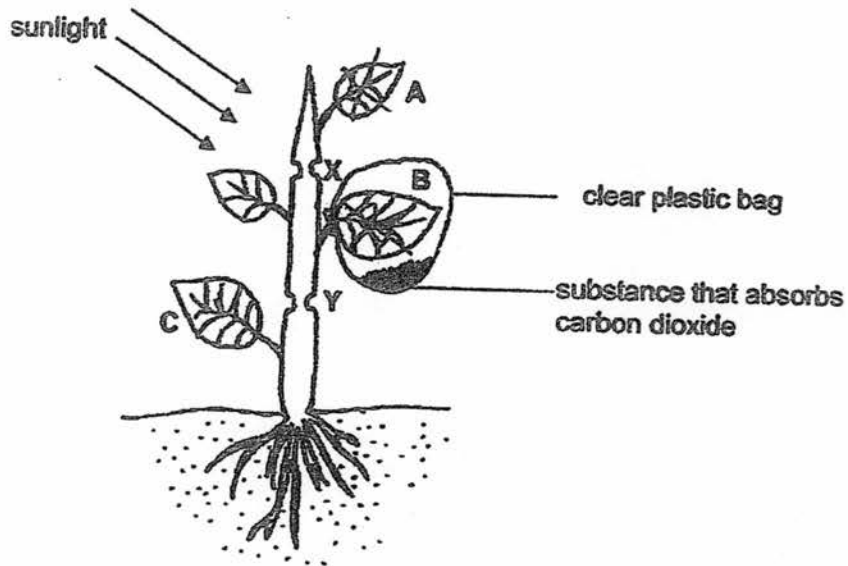


Aaron was trying to find out _____.

- (1) from which part of the pond the coin was observed
- (2) if the type of coin affects the amount of mud in the water
- (3) which part of the pond has the most amount of mud in the water
- (4) how the distance between the eye and the coin affects the amount of mud in the water

8. In an experiment, a plant had been kept in the dark for 24 hours at first. It was then exposed to bright sunlight with two outer rings of the stem, X and Y, removed.

The water-carrying tubes in ring X were removed but those in ring Y remained in the stem.

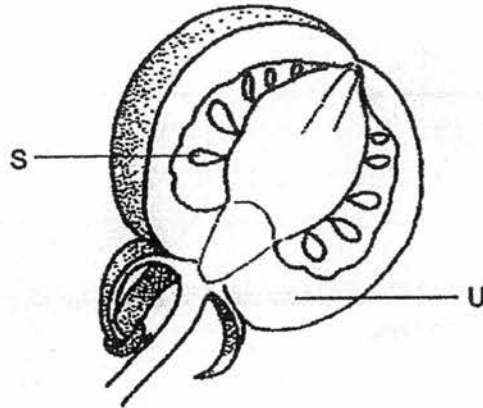
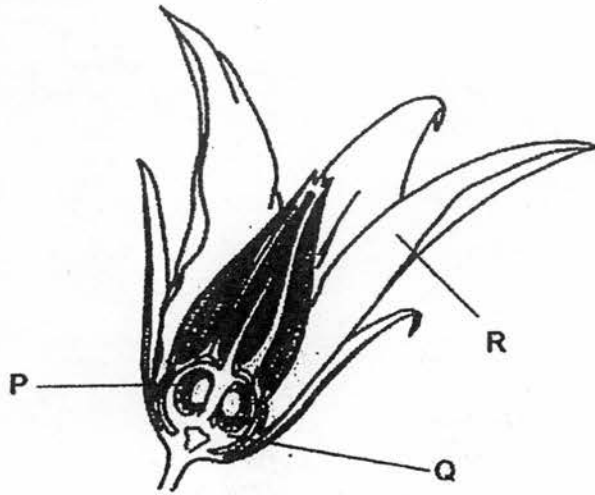


After some time, three leaves, A, B and C, were removed from the plant and were tested for starch using iodine solution.

Which one of the following sets of observation is correct for the leaves, A, B and C, when they were tested for starch?

Leaf			
	A	B	C
(1)	iodine turns dark blue	iodine turns dark blue	iodine turns dark blue
(2)	iodine remains brown	iodine remains brown	iodine turns dark blue
(3)	iodine remains brown	iodine turns dark blue	iodine turns dark blue
(4)	iodine remains brown	iodine remains brown	iodine remains brown

9. Study the diagram of a flower and the fruit below.



Which of the following statements are correct after fertilisation has taken place in the flower to form the fruit?

A: P develops into S.

B: Q develops into U.

C: R withers and falls off.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

10. Substance P is a fertiliser that helps plants to grow healthily.

Jeremy wanted to find out how the amount of substance P added to the plants help them grow healthily.

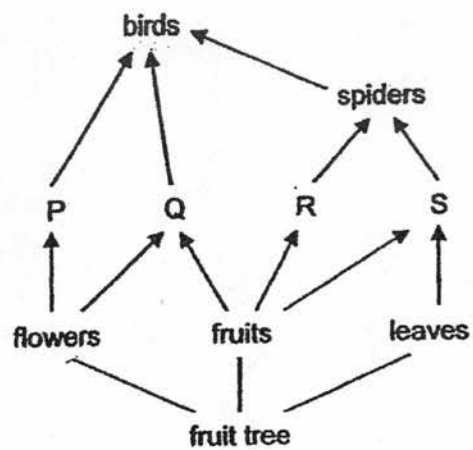
He used three similar potted plants. Of the three potted plants he used for comparison, one of them was a control set-up.

Pot	Amount of water given (ml)	Amount of Substance P (g)	Surrounding temperature (°C)	Duration of experiment (days)
A	100	10	30	15
B	100	0	30	5
C	100	5	30	15
D	100	0	30	15
E	80	5	30	15

Which three of the above potted plants did Jeremy use for his experiment?

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

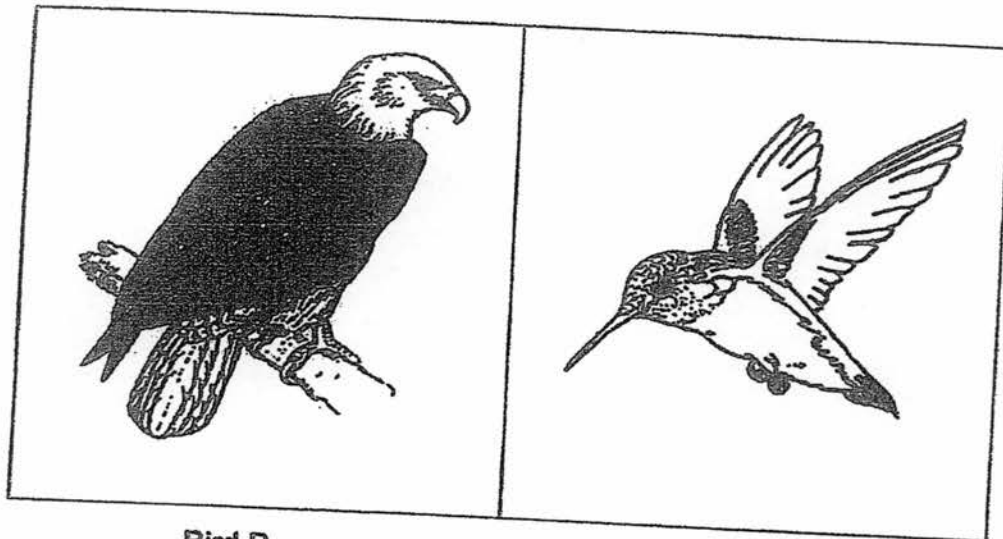
11. Study the food web below.



Which one of the organisms, P, Q, R or S, would be most affected if the flowers of the fruit tree are not pollinated and fertilised?

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

12. The diagrams below show birds R and S.



Bird R

Bird S

Based on your observation of the birds, which one of the following is most likely eaten by birds R and S?

	Bird R	Bird S
(1)	fish	seeds
(2)	seeds	nectar
(3)	nectar	seeds
(4)	mouse	nectar

13. Ravi prepared four set-ups of seeds for an experiment shown in the table below. He added an equal amount of water to each set-up.

Set-up	Type of condition	Presence of oxygen
E	Cold and Dark	Yes
F	Cold and Dark	No
G	Warm and Dark	Yes
H	Warm and Dark	No

What is/are the possible aim(s) of his experiment?

A: To find out if oxygen is needed for seeds to germinate.

B: To find out if warmth is needed for seeds to germinate.

C: To find out if the amount of light will affect germination of seeds.

(1) A only

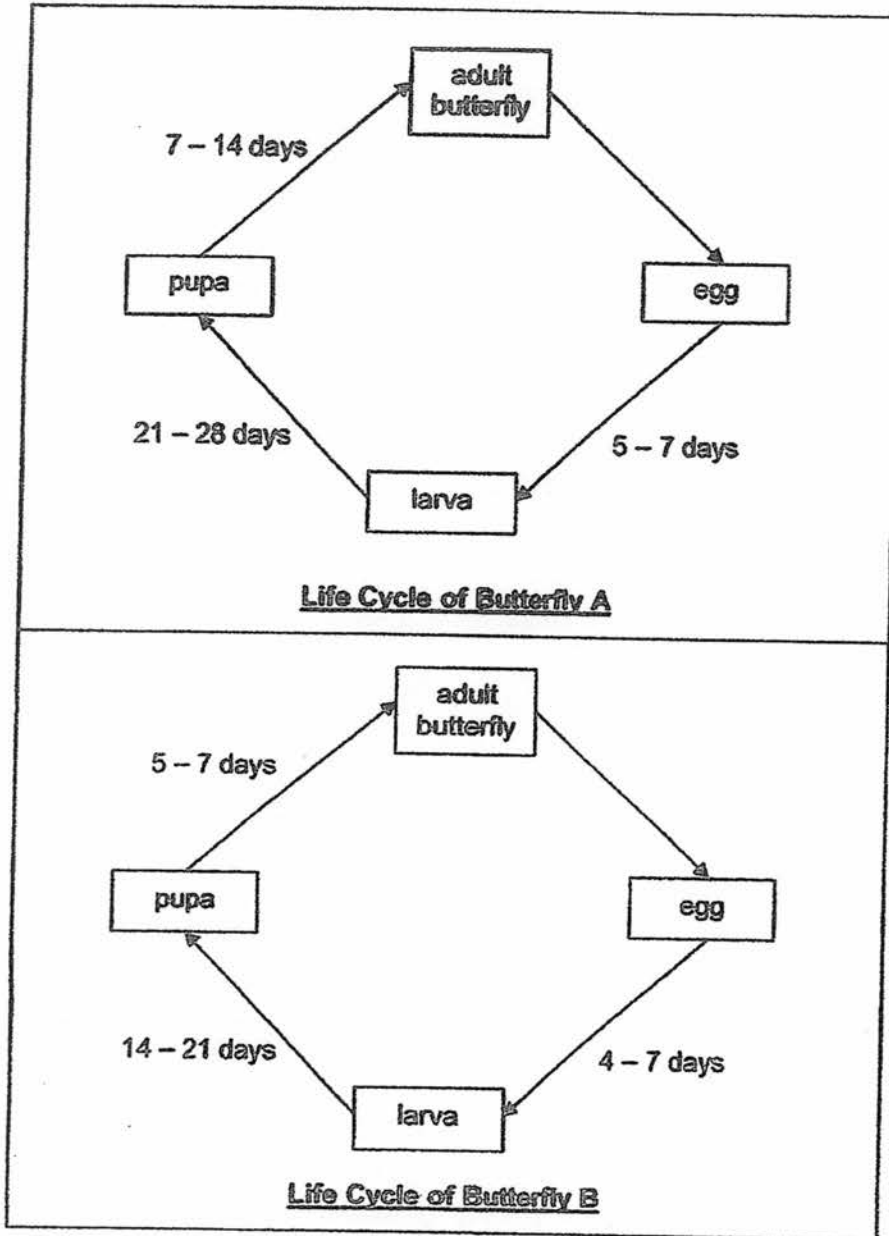
(2) B only

(3) A and B only

(4) A, B and C

14. The diagrams below show the life cycle of two types of butterflies, A and B, living in the same area.

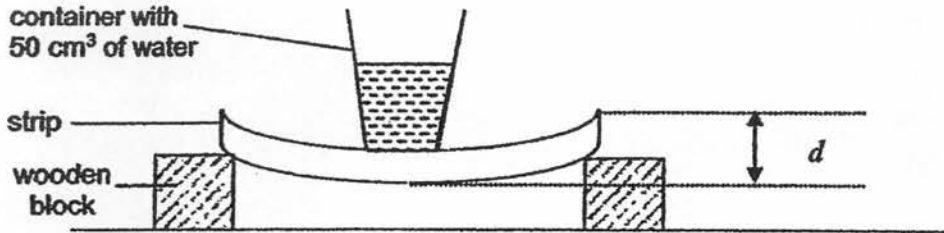
These butterflies do not reproduce in the colder months between September and March.



From the given information, it is most likely that _____.

- (1) no butterflies will be found alive in September
- (2) the adult butterfly A will live longer than the adult butterfly B
- (3) the egg of butterfly A will hatch faster than the egg of butterfly B
- (4) butterfly A will take a longer time to complete its life cycle than butterfly B

19. Wei Ling set up an experiment as shown below to compare the flexibility of four similar strips, A, B, C and D, each made of a different material.

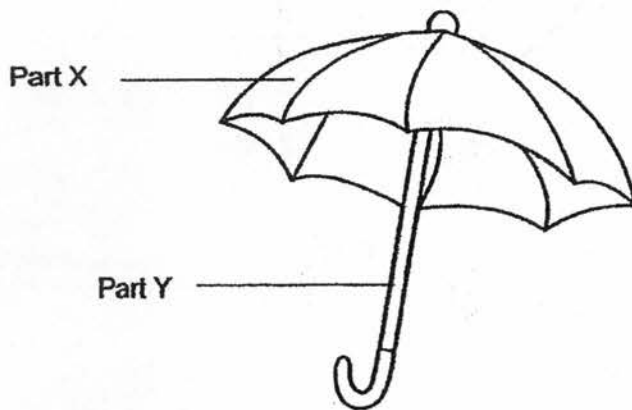


On each strip, she placed a container with 50 cm³ of water. The distance, *d*, between the highest and lowest points of the strip was measured.

Her results are shown below.

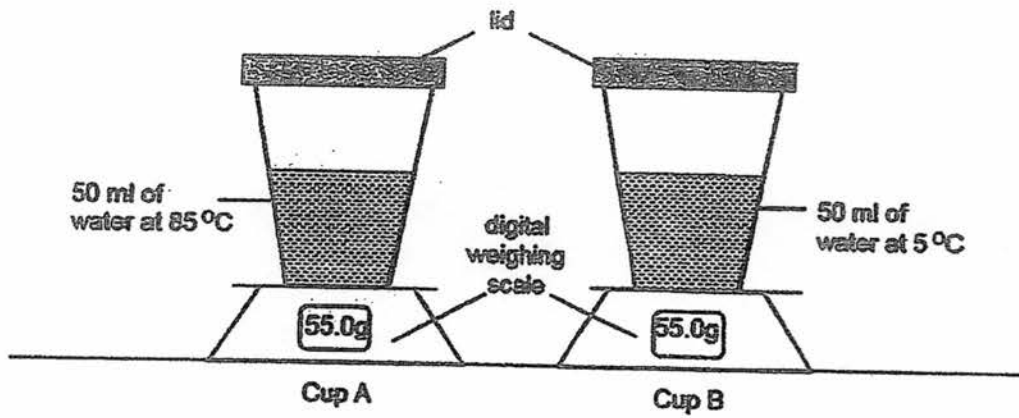
Strip	<i>d</i> (mm)
A	36
B	14
C	25
D	4

Based on the results of the experiment, which material is the most suitable to make part X and Y of the umbrella?



	Material	
	Part X	Part Y
(1)	C	D
(2)	D	A
(3)	A	B
(4)	A	D

16. Jonathan poured 50 ml of water into two identical cups, A and B. He weighed the two cups of water using similar digital weighing scale.

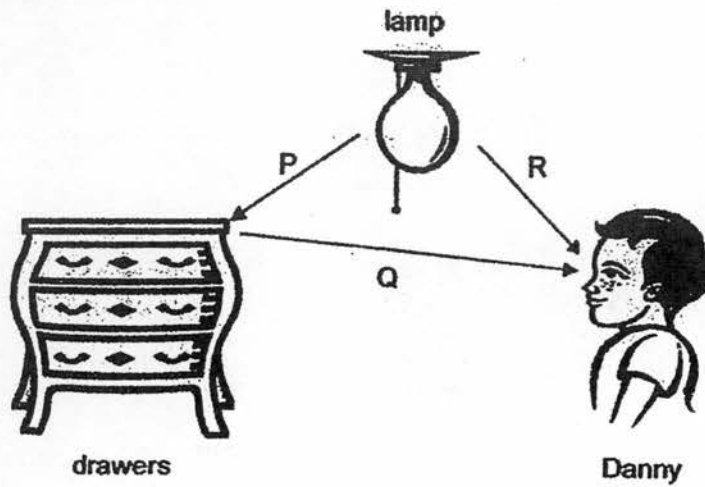


After half an hour, he observed that water droplets were formed on the lid on both cups.

Which of the following correctly shows the mass of the cups after half an hour?

Mass of the cup after half an hour (g)		
	Cup A	Cup B
(1)	55.0	55.0
(2)	55.0	55.5
(3)	55.5	55.0
(4)	55.5	55.5

17. The arrows P, Q and R show the direction of light in the diagram below.

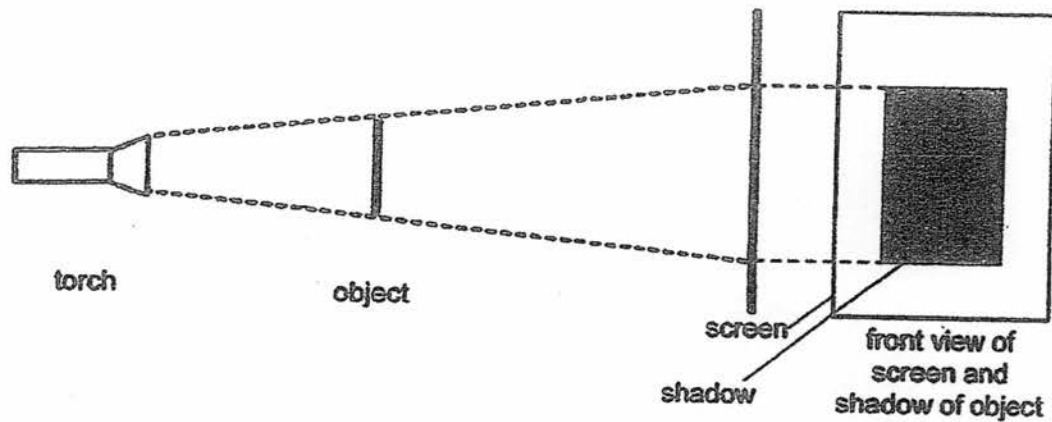


When Danny switched on the lamp in his room, he could see the lamp and the drawers.

Which arrow(s) best explain(s) why Danny could see the lamp and the drawers?

	Lamp	Drawers
(1)	R	P and Q
(2)	P	R and Q
(3)	P and R	Q
(4)	Q and R	P

18. John set up an experiment as shown below.

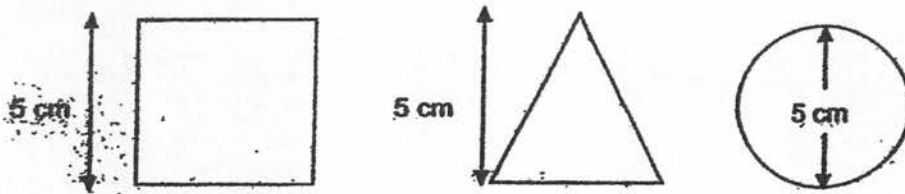


What should John do to make the shadow on the screen smaller?

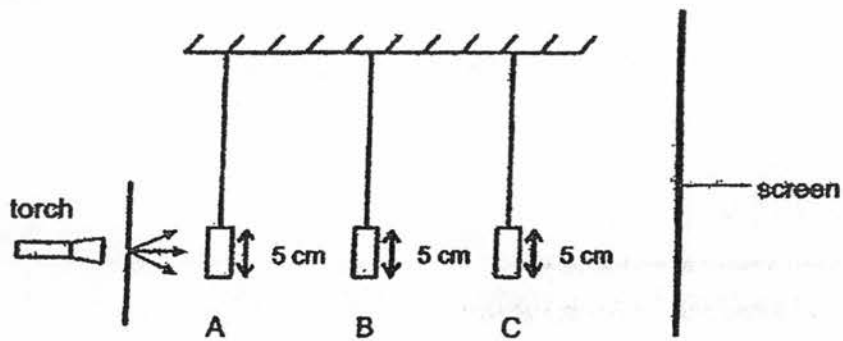
- A: Move the torch nearer to the object.
- B: Move the screen nearer to the object.
- C: Move the screen further from the object.
- D: Move the torch further away from the object.

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

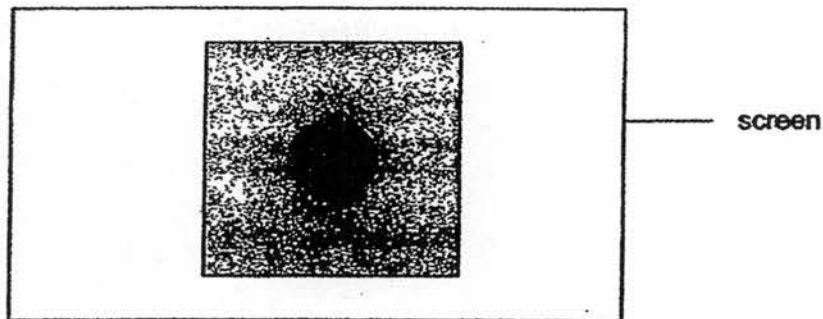
- 19.) The diagrams below show three shapes, a square, a triangle and a circle, each made of a different material.



The diagram below shows the side view of the three shapes hung at different positions, A, B and C.



The shadows cast on the screen are shown below.



Which of the following statements are correct?

- A: The square is nearer to the torch than the circle.
- B: The triangle does not allow light to pass through.
- C: The square allows more light to pass through than the circle.

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

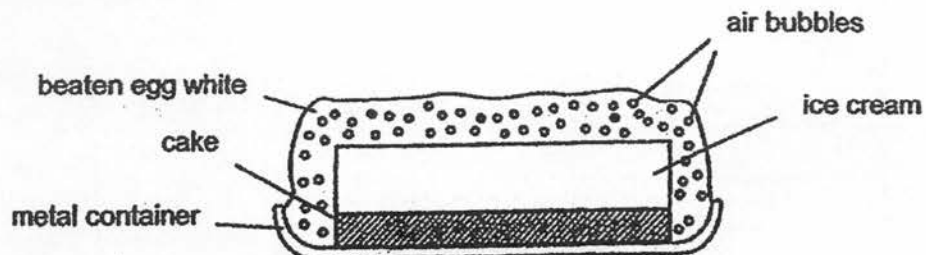
20. The table below shows the melting and boiling point of four substances, W, X, Y and Z.

Substance	Melting point (°C)	Boiling point (°C)
W	10	78
X	0	100
Y	44	280
Z	110	180

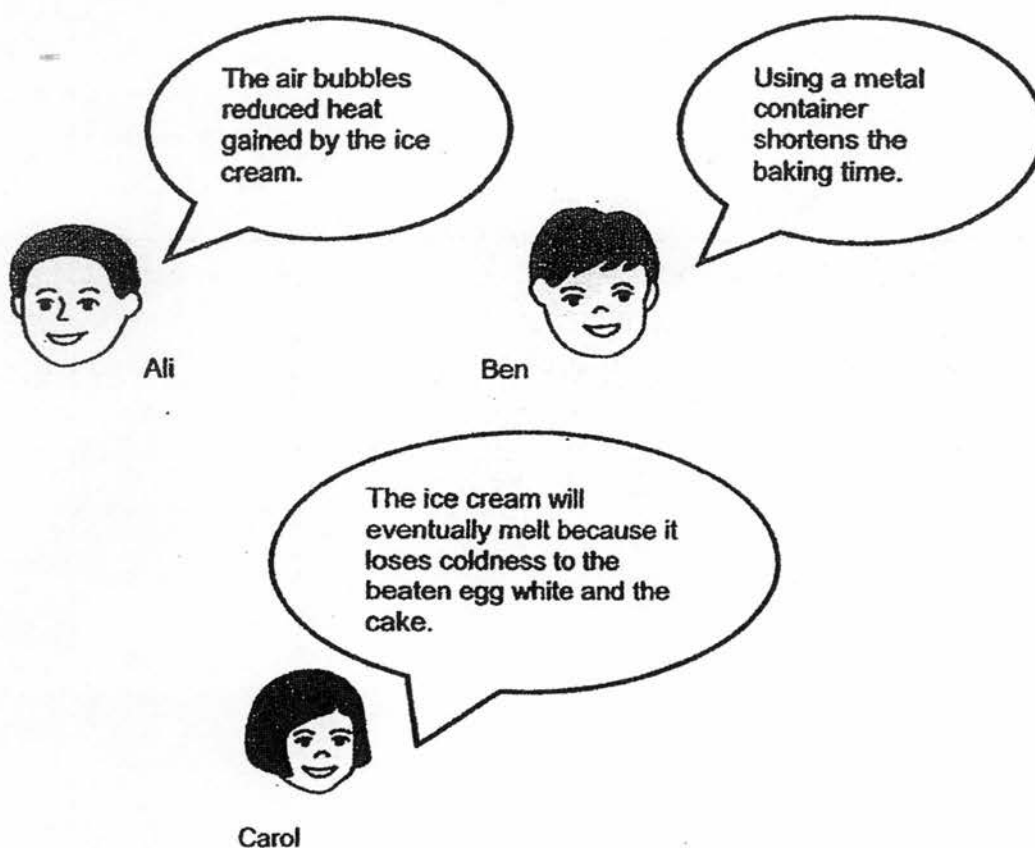
Which of the substances, W, X, Y and Z, is/are liquid(s) at 30°C?

- (1) W only
- (2) W and X only
- (3) X, Y and Z only
- (4) X, W, Y and Z

21. Mrs Heng baked an ice cream dessert shown below for 10 minutes.



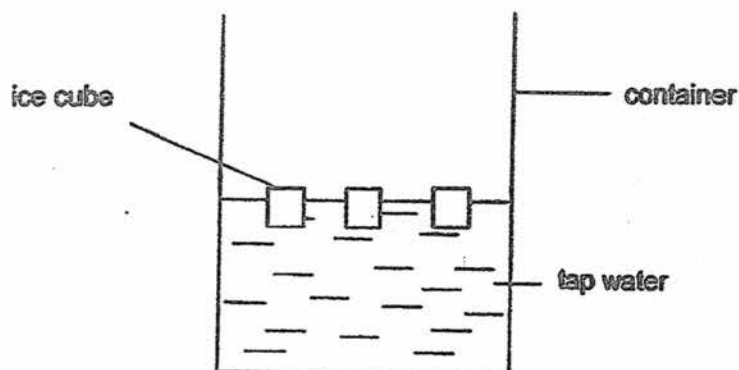
The ice cream did not melt when it was taken out of the oven. Three children, Ali, Ben and Carol, each made a statement about the ice cream dessert as shown below.



Which of the above children are correct?

- (1) Ali and Ben only
- (2) Ali and Carol only
- (3) Ben and Carol only
- (4) Ali, Ben and Carol

22. Mary was conducting an experiment shown below in the Science room which had a temperature of 32°C. She measured the temperature of the water each time after adding three ice cubes.



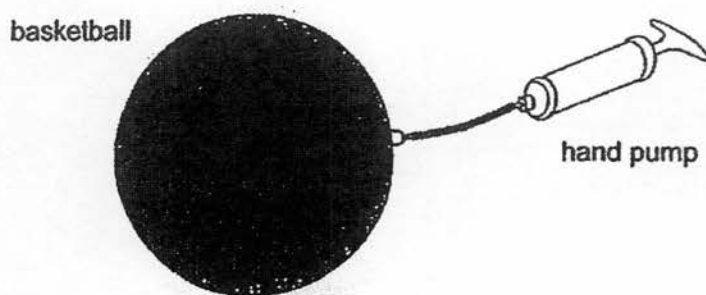
Her results are shown below.

Number of ice cubes added	Temperature of water in container (°C)
0	32
3	28
6	22
9	15
12	9
15	5
18	4

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

- (1) The surrounding air gained heat from the water.
- (2) The ice cubes have lost all the heat to the water.
- (3) The water loses more heat as more ice is added to it.
- (4) The water freezes when more than 18 ice cubes are added.

23. Matthew used a hand pump to pump more air into the basketball shown below. He observed that the size of the basketball remained the same.

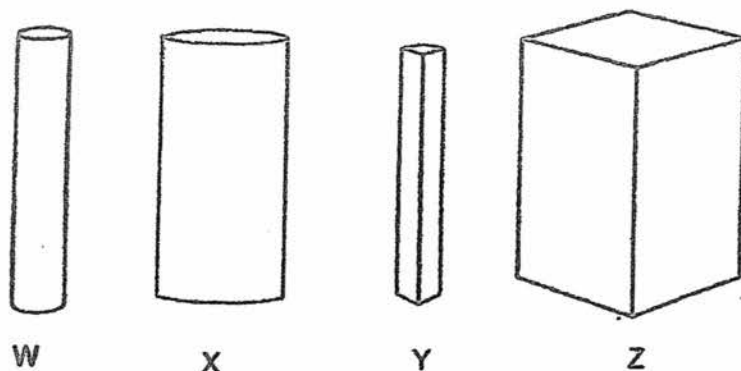


Which of the following statements are correct as Matthew pumped more air into the basketball?

- A: Air can be compressed.
- B: The volume of air increases.
- C: The mass of air increases.
- D: The mass of air remains the same.

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

24. Rina had four magnets, W, X, Y and Z, as shown below.



To compare the strength of the magnets, Rina took each of the magnets and placed them near a pile of iron pins.

The table below shows the number of iron pins that was attracted by the magnets, W, X, Y and Z, from different distances.

Magnet	Distance between magnet and iron pins (cm)	Number of iron pins attracted
W	3	9
X	3	11
Y	5	12
Z	3	12

Which of the following statements about magnets W, X, Y and Z are correct?

A: Z is stronger than X.

B: Y is stronger than Z.

C: W is the weakest magnet.

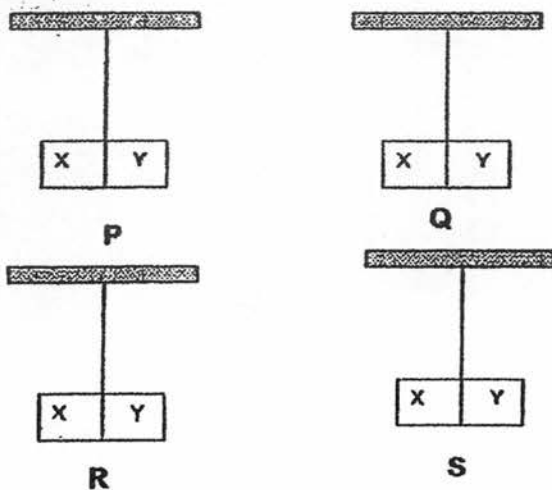
(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

25. Ravi hung 4 metal bars, P, Q, R and S, from horizontal rods as shown below.



He brought the north pole of a bar magnet near end X and then end Y of each metal bar.

He recorded the observations made in the table below.

Metal bar	Observations	
	North pole and end X	North pole and end Y
P	attracted	repelled
Q	attracted	attracted
R	no reaction	no reaction
S	repelled	attracted

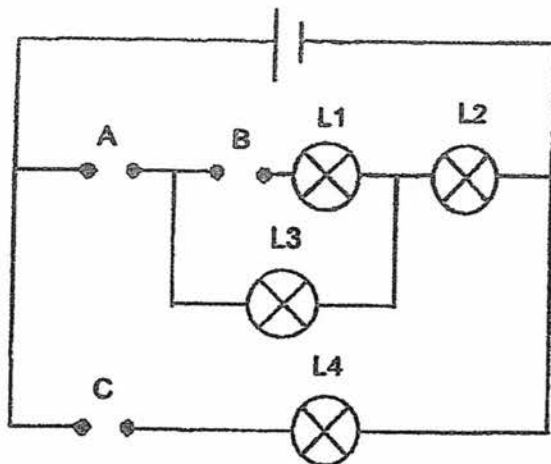
He wrote the following statements after the experiment.

- A: Metal bar P is made of magnetic material.
- B: Metal bar R can be made into an electromagnet.
- C: End X of metal bars P and S will repel each other.
- D: Both ends X and Y of metal bar P will attract metal bar Q.

Which of the above statements are correct?

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

26. Lee Cheng had three rods, P, Q and R, made of different materials. She placed them in various positions, A, B and C, of the circuit shown below.



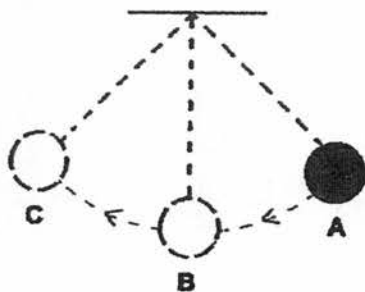
The results of the experiment were shown in the table below. When any of the lamps, L1, L2, L3 or L4, lit up during the experiment, a tick (✓) was placed in the box.

Positions where rods were placed			Lamp			
A	B	C	L1	L2	L3	L4
P	Q	R	✓	✓	✓	

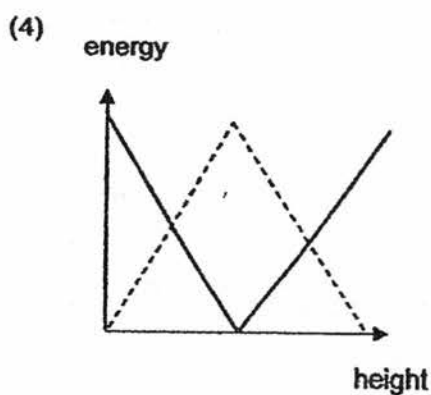
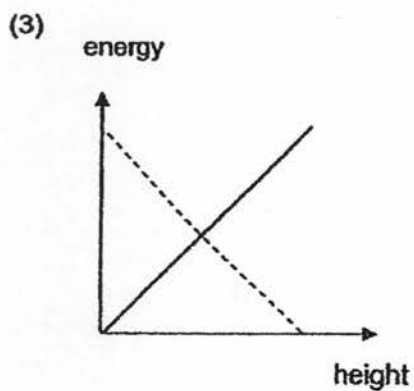
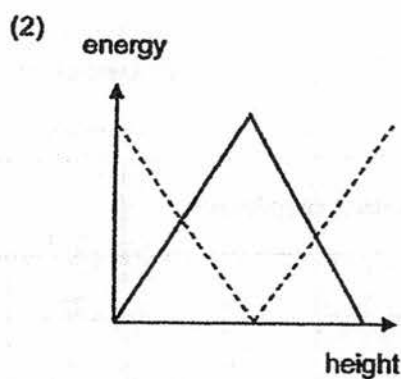
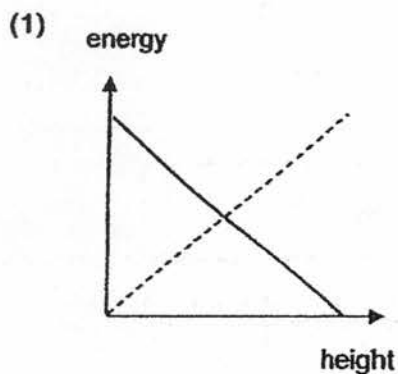
Which of the following would show the correct result if the rods, P, Q and R, were placed at different positions?

	Positions where rods were placed			Lamp			
	A	B	C	L1	L2	L3	L4
(1)	P	R	Q			✓	✓
(2)	Q	R	P		✓	✓	✓
(3)	R	Q	P				✓
(4)	Q	P	R		✓	✓	

27. A ball tied to a string swings from A to B and then C as shown in the diagram below.



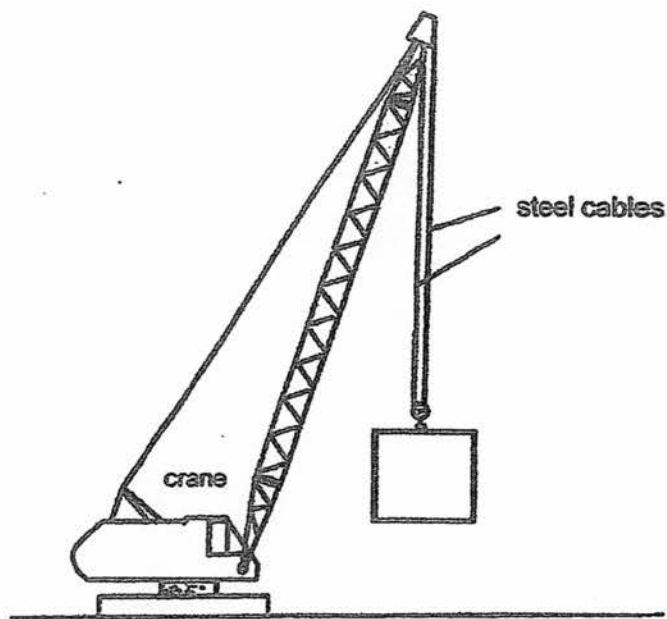
Which one of the following graphs shows correctly the change in potential energy and kinetic energy of the ball with height?



Key:

— Potential energy
 - - - Kinetic energy

28. The diagram below shows a crane lifting a heavy object.



What is / are the force(s) acting on the steel cables?

- A: frictional force
- B: gravitational force
- C: elastic spring force

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

END OF BOOKLET A

prelim



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PRELIMINARY EXAMINATION 2017
PRIMARY 6
SCIENCE
BOOKLET B (44 MARKS)**

INSTRUCTIONS TO CANDIDATES

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3. Answer all questions.

Name: _____ ()

Class: Primary 6 ()

Date: 25 August 2017

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

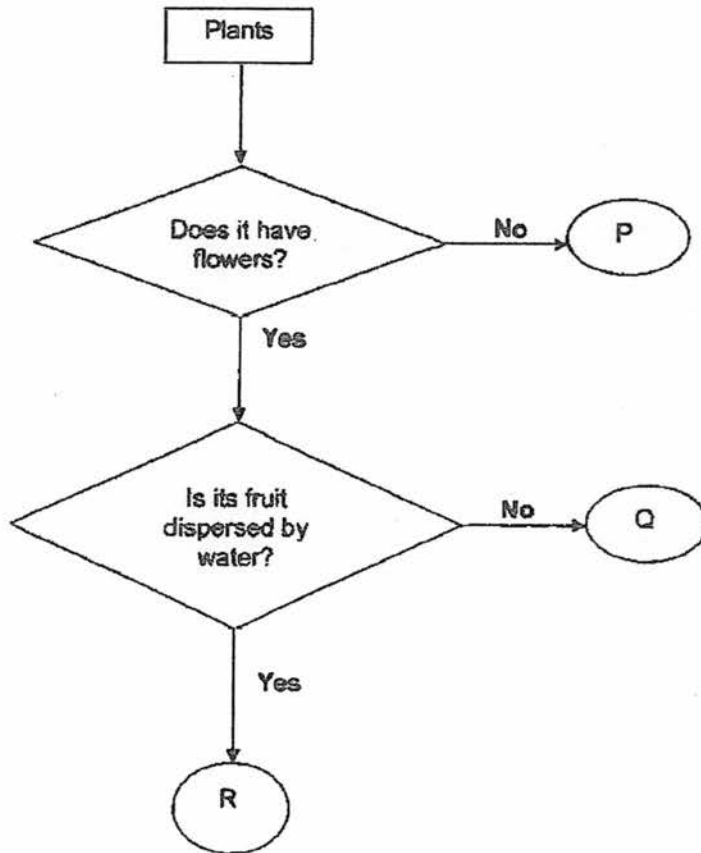
Marks for Booklet B: _____

Booklet B (44 marks)

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

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

29. Study the flow chart below.



a) Plant M reproduces from spores. Which group, P, Q or R, should it be placed in? [1]

b) The fruit of plant X is placed into group R. State one physical feature of the fruit of plant X that helps in its dispersal. [1]

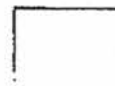


30. Alice observed three cells, S, T and U, under a microscope. She recorded the presence of parts of a cell with a tick (✓) as shown in the table below.

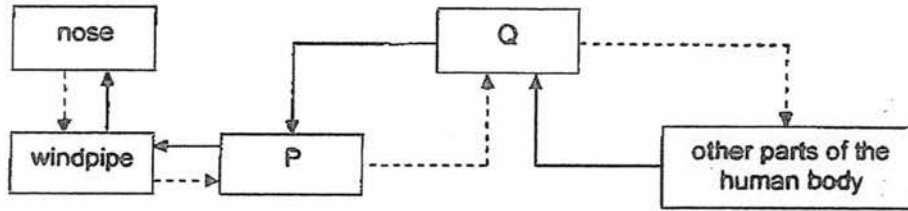
Parts of a cell	Cell S	Cell T	Cell U
Nucleus	✓	✓	✓
Chloroplast	✓		
Cell membrane	✓	✓	✓
Cell wall	✓		✓

a) Which of the following cells, S, T and U, is/are likely a plant cell?
Give a reason for your answer. [1]

b) Based on the information, state a function that cell S is able to perform but not cell U.
Give a reason for your answer. [2]



31. The diagram below shows the paths taken by two main gases, R and S, in the human respiratory and circulatory systems.



Key:
 -----> gas R
 -----> gas S

a) Identify the two main gases, R and S. [1]

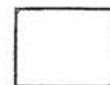
gas R : _____

gas S : _____

b) State the function of organs P and Q. [2]

Function of organ P :

Function of organ Q :



32. Mr Li, a farmer, wanted to find out which type of plants could be grown in his farm to reduce the amount of soil being washed away during a heavy downpour.

He found three plants, P, Q and R, each with different root system as shown in the diagram below.



P

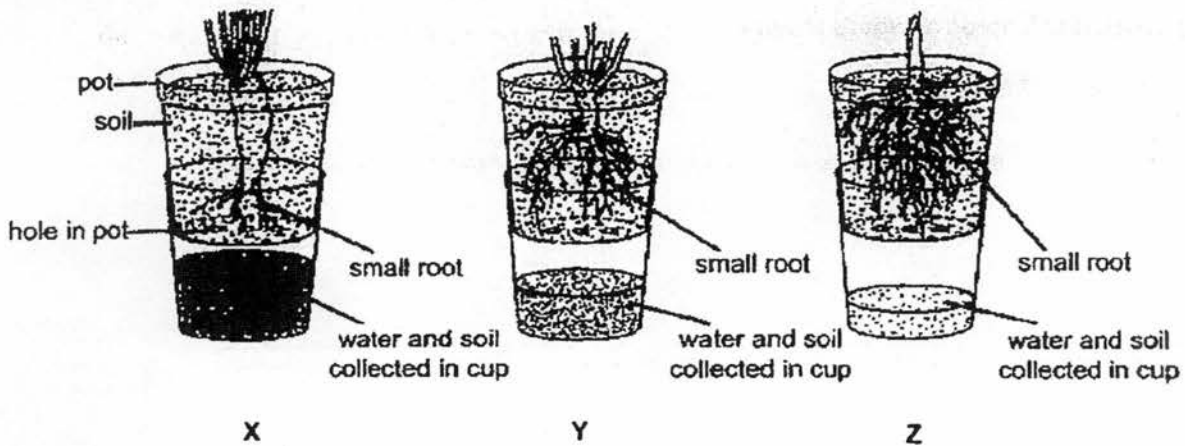


Q



R

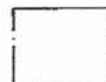
The diagram below shows the results of his experiment using the same amount of water he poured into each of the set-ups, X, Y and Z.



- a) Mr Li found out that the cup in set-up Z collected the least amount of soil.

Explain how the small roots of plant R caused the least amount of soil to be collected in set-up Z. [1]

Question 32 continues on the next page...






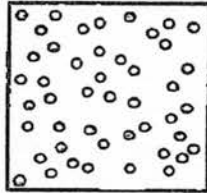
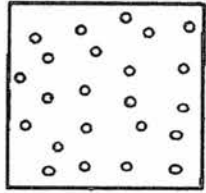
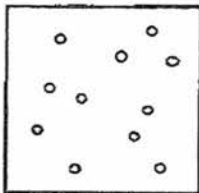
Question 32 continues on this page...

Mr Li planted equal number of plants, P, Q and R, each with the same number of leaves, in his farm as shown in the diagram below. The length of the leaves from each plant is the same.

P	P	P	Q	Q	Q	R	R	R
P	P	P	Q	Q	Q	R	R	R
P	P	P	Q	Q	Q	R	R	R

During a heavy downpour, Mr Li made some observations of the condition of the soil where each type of plant (P, Q and R) was growing.

His observations are shown in the table below.

Plant	P	Q	R
Type of leaf			
Number of raindrops that hit the soil directly			

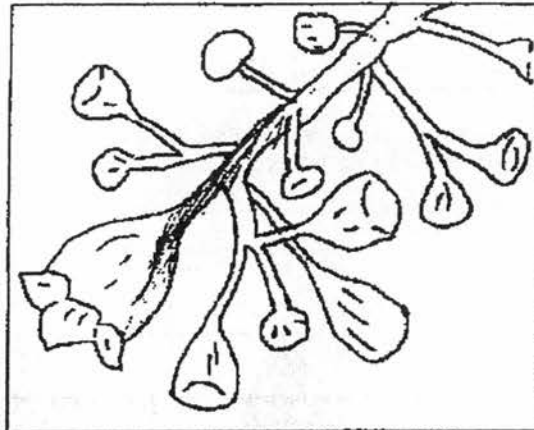
He concluded that plant R is the most suitable plant to grow in his farm to reduce the amount of soil being washed away during a heavy downpour.

- b) Based on the information given, explain how plant R is best at reducing the amount of soil being washed away. [2]



33. Tree L can conserve water and grow well in an environment with long periods of no rain.

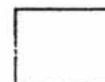
During this period, most or all the leaves fall off, leaving only the flowers as shown in the diagram below.



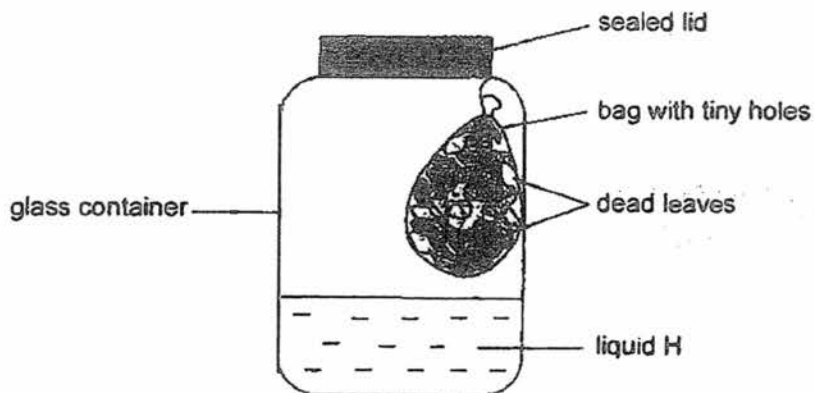
a) Explain how having fewer or no leaves help Tree L to conserve water during long periods without rain. [2]

b) Organism X depends on tree L for food and shelter. Tree L is the only type of tree growing in the habitat.

Explain how the population of organism X will be affected if a large number of tree L is severely affected by a disease. [2]



34. Hezhang conducted an experiment to find out whether dead leaves produce carbon dioxide. He set up the experiment as shown in the diagram below.

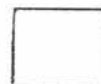


Liquid H will turn from red to yellow when the amount of carbon dioxide increases.

- a) Give a reason why Hezhang sealed the lid of the glass container. [1]

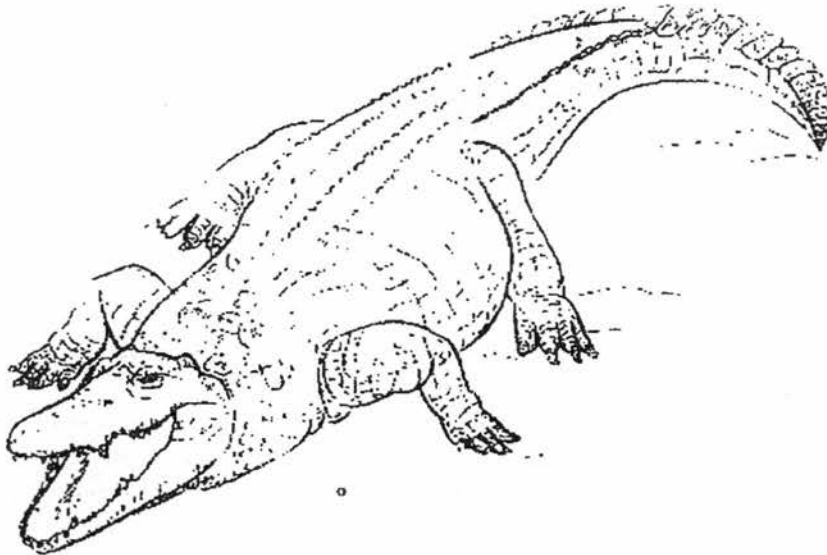
- b) What is the colour of liquid, H after a period of time? Give a reason for your answer. [2]

- c) Suggest a control set-up to show that any change in colour of liquid H was caused by the dead leaves. [1]



35. Crocodile S as shown in the diagram below lives in the swampy part of a river.

It has strong jaws and its eyes are found on top of the head instead of the sides as seen in most fishes.



a) Explain how these features benefit crocodile S in its survival in the swampy part of the river.

[2]

(i) Benefit of having strong jaws :

(ii) Benefit of having eyes on top of the head :

Question 35 continues on the next page...



Question 35 continues on this page...

Crocodile S reproduces by laying eggs.

The information below shows how temperature determines whether the young of crocodile S developing inside the egg is a male or female.

Temperature (°C)	Young of crocodile S produced
Between 32 and 35	Male
Below 32 and above 35	Female

- b) Based on the information, explain why the population of crocodile S will decrease on Earth due to global warming. [2]

The female crocodile S takes care of its young until they are big enough to care for themselves.

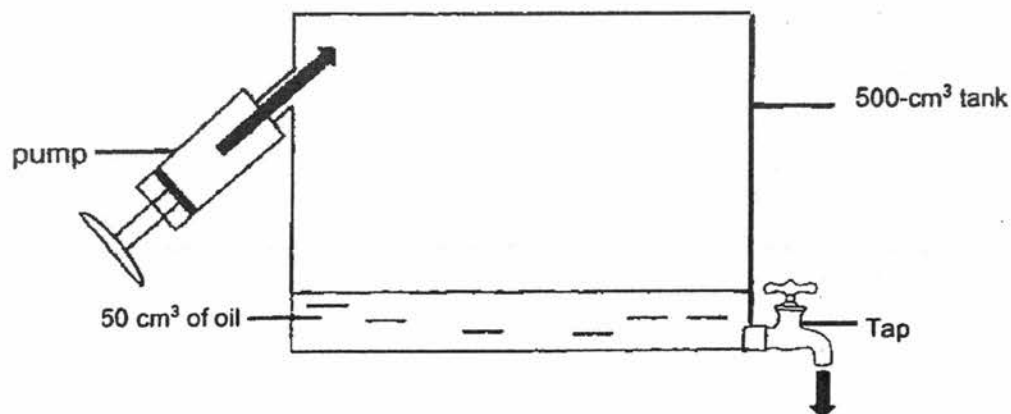
- c) Besides protection from predators, suggest two other benefits for the young of some animals to live with their parents. [1]

(i) _____

(ii) _____



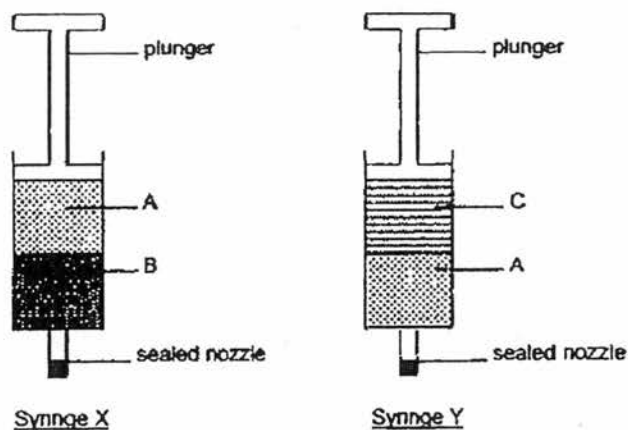
36. Royston was given a 500-cm³ tank which was filled with 50 cm³ of oil as seen in the diagram below.



He wanted to wash the tank. To remove all the oil completely, he turned on the tap and pumped in 80 cm³ of air at the same time. After that, he filled the tank with 200 cm³ of soap water.

- a) What would be the final volume of air inside the tank? [1]

Royston filled two identical syringes with equal volume of substances A, B and C as shown in the diagrams below.



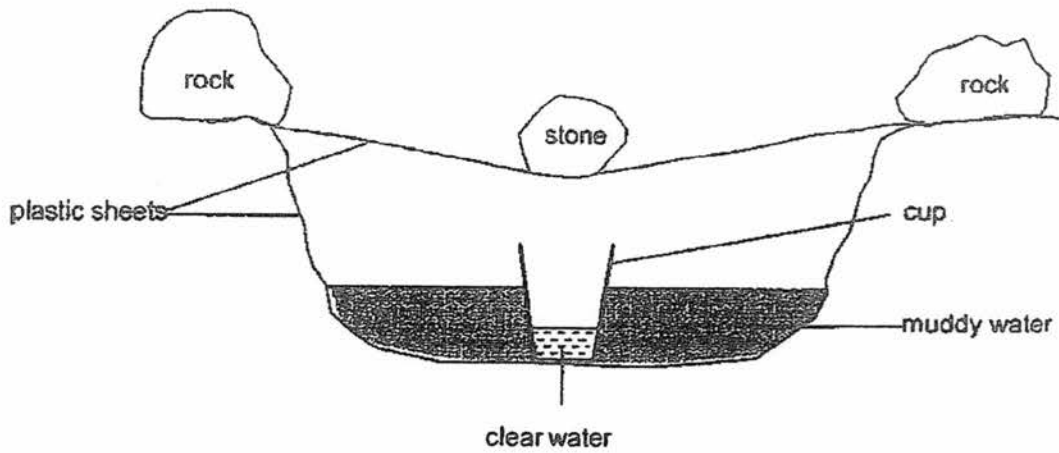
He observed that the plunger in syringe Y can be pushed down but not the plunger in syringe X.

- b) If substance B is a solid, what are the states of matter for substance A and C? [1]

Substance A - _____ Substance C - _____



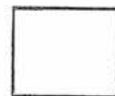
37. A group of students conducted a Science experiment in the Science garden. They used the set-up as shown below to remove dirt from muddy water to obtain clear water.



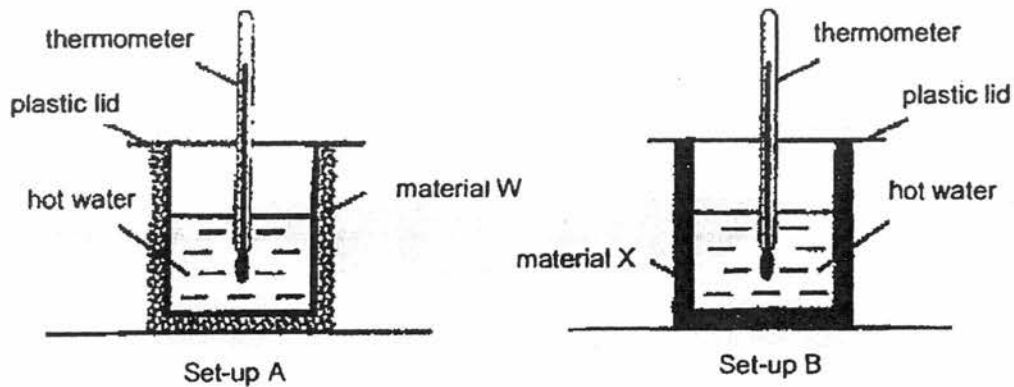
- a) After three hours, clear water was found in the cup. Describe how clear water was obtained. [2]

- b) The students observed that the amount of clear water found in the cup was greater on a hot sunny day than on a cool day. Explain why. [1]

- c) Global warming gives more rainfall as it worsens. Explain why. [1]



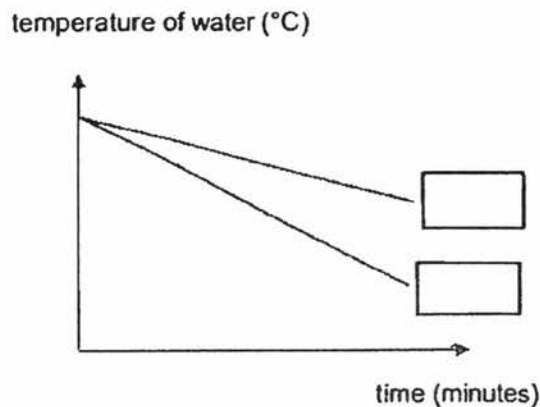
38. Lay Hoon conducted an experiment using set-ups A and B as shown below. She wrapped a glass beaker with material W and another identical glass beaker with material X. She filled both beakers with the same volume of hot water at 80°C.



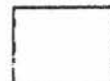
Lay Hoon measured the temperatures of the water at different times and recorded the data in the table below.

Time (minutes)	Temperature of water in set-up (°C)	
	A	B
0	80	80
2	76	78
4	72	77
6	70	75
8	67	73

a) Based on the results in the table, identify the lines that represent set-ups A and B in the graph below. Write 'A' and 'B' in the box next to the line. [1]



Question 38 continues on the next page...

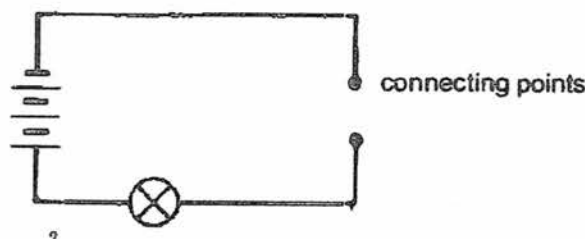


Question 38 continues on this page...

- b) What conclusion can Lay Hoon draw about the conduction of heat of material W and X? [1]

- c) Which material, W or X, is more suitable for making a box to transport ice-cream from one place to another? Give a reason for your answer. [2]

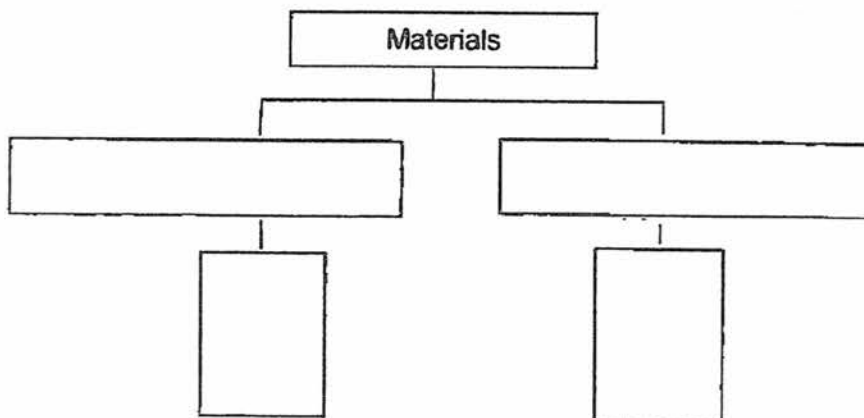
39. Samuel set up a circuit tester as shown below to test the electrical conductivity of four materials, W, X, Y and Z.



He used each material, W, X, Y and Z, one at a time, across the connecting points and recorded his observation in the table below.

Material	W	X	Y	Z
Did the bulb light up?	No	Yes	Yes	Yes

- a) Complete the classification chart below using the information from the table above. Write suitable sub-headings and the letters (W, X, Y and Z) in the boxes provided based on the information given above. [1]

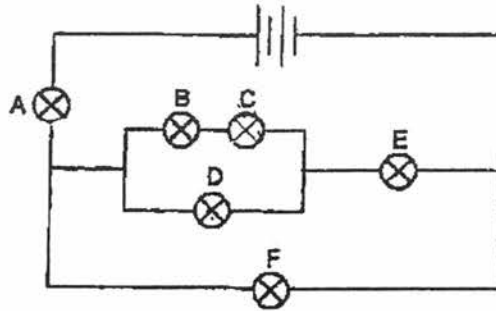


Question 39 continues on the next page...



Question 39 continues on this page...

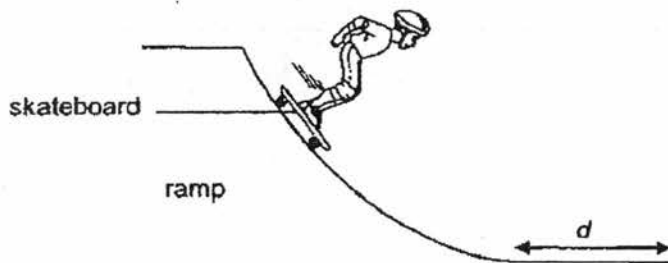
Samuel next set up the circuit below. The batteries and bulbs are all working properly.



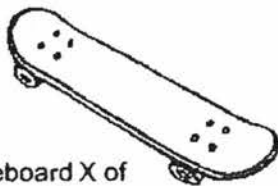
- b) i) State what will happen to bulbs A, B, D, E and F if bulb C blows. [1]

- (ii) Give a reason for your answer in (i). [1]

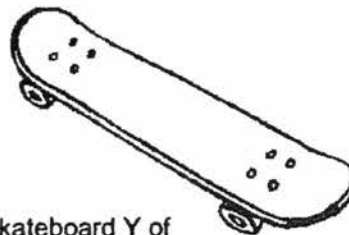
40. Jeremy wants to ride a skateboard down a ramp as shown in the diagram below.



He has two skateboards, X and Y, as shown below.



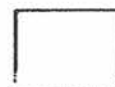
skateboard X of mass 2 kg



skateboard Y of mass 3 kg

- a) Which skateboard, X or Y, should he use to travel a longer distance 'd' on the ground? [1]

Question 40 continues on the next page...

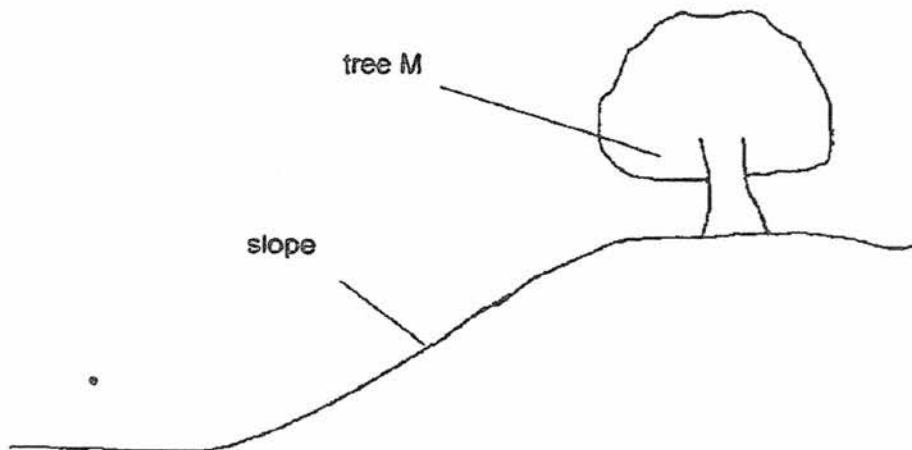


Question 40 continues on this page...

The following is an information article on seed dispersal.

Barochory or the plant use of gravity for dispersal is a simple means of achieving seed dispersal. The effect of gravity on heavier fruits causes them to fall from the plant when ripe and often roll away from the plant to gain more distance. Gravity dispersal also allows for later transmission by water or animals.

The diagram below shows tree M growing on a slope.



The tree bears fruits of different sizes and masses as shown below.

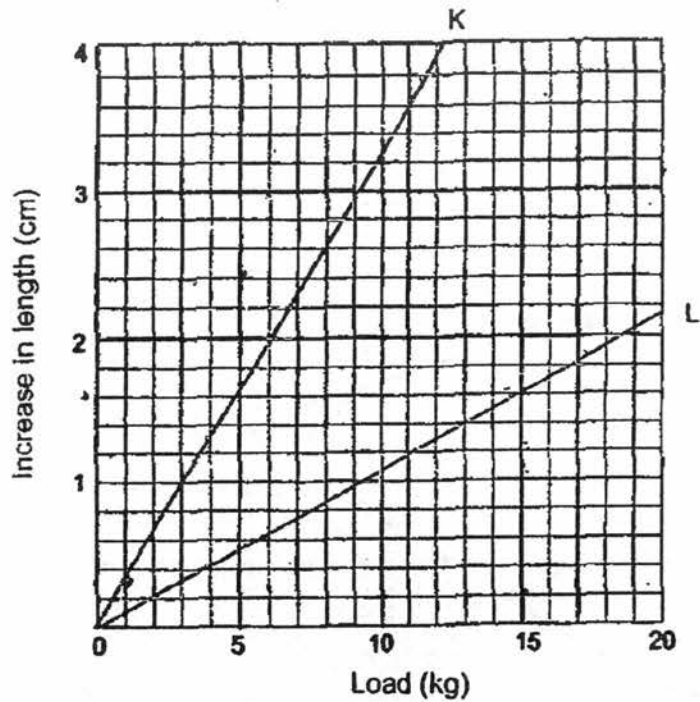


- b) (i) Based on the information article, which fruit, P or Q, has a greater advantage in seed dispersal? [1]

- (ii) Explain your answer using energy conversion. [2]



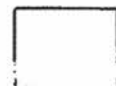
41. The graph below shows the increase in length of two rubber ropes, K and L, when loads are hung on them.



- a) Study the graph carefully and complete the table below by filling in the empty boxes. [1]

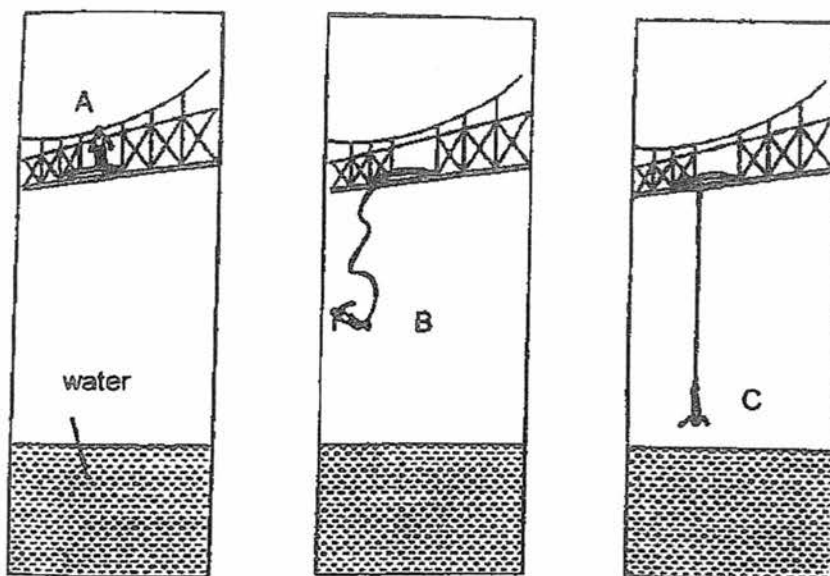
Rubber rope	Load (kg)	Increase in length (cm)
K		2
L	15	

Question 41 continues on the next page...



Question 41 continues on this page...

Raju did bungee jumping from a bridge as shown below.



- b) (i) Which rubber rope, K or L, should he use if he wants to be as near to the water as possible when he is at C? [1]

- (ii) Give a reason for your answer based on the information from the graph given. [1]

END OF BOOKLET B

Setters: Ms Evelyn Tan
Ms Peh Yunn Chyn
Mr Tan Joo Nam



YEAR : 2017
LEVEL : PRIMARY 6
SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : PRELIMINARY EXAMINATION

Booklet A

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

1
END

Name: _____

Class: _____

Science Prelim 2017 Open-ended

29a	P
b	It has a fibrous husk. Or It has a waterproof [½] outer covering/shell [½].
30a	Cell S and U because both cells have cell wall.
b	Cell S can <u>photosynthesise</u> as it has <u>chloroplasts</u> .
31a	a) gas R : oxygen [½] gas S : carbon dioxide [½]
b	<u>Function of organ P :</u> Exchange of gases take place here Or Oxygen is absorbed and carbon dioxide is removed <u>Function of organ Q :</u> <u>Pumps blood [½] to all parts of the body [½]</u>
32a	Must show comparison Plant R <u>has most roots to hold most soil together</u> . OR Plant R <u>has roots that spread the furthest to hold the most soil together</u> .
b	Leaf R <u>has the largest surface area [1] to block the most number of raindrops that hit the soil directly [½] so the amount of force exerted on the soil is the least [½]</u>
33a	There are <u>less stomata (due to less leaves) [1] resulting in reduced water loss through the stomata [1]</u>
b	The <u>population of tree L will decrease [½], organism X will lose their habitat/have no food [½]. As a result, number of organism X will decrease [1]</u> .
34a	To prevent carbon dioxide from the surrounding air to enter the container.
b	<u>Yellow [½] as the leaves are decomposing [1] thus releasing carbon dioxide [½] inside the container.</u>
c	Answer must have the following: -glass container -(sealed) lid - <u>same amount</u> of liquid H Same setup but with no dead leaves (1)
35ai	<u>Grip its prey firmly [½] so that its prey cannot escape easily [½]</u> or or Crush the bones of its prey [1] or Tear the flesh of its prey apart [1]

aii	<u>Can see the prey</u> [½] while the body is partially-submerged <u>without the prey detecting its presence</u> [½]										
b	As the <u>temperature exceeds 35°C</u> [½], <u>fewer males will be produced</u> [1] <u>to fertilise the eggs</u> [½] produced by the female crocodile.										
c	Parent provides food for its young. [½] Parent provides shelter for its young. [½]										
36a	300 cm ³										
b	A is solid / liquid [½]. C is gas [½]										
37a	<u>Muddy water gains heat</u> [½] from the warmer surroundings and <u>evaporates</u> [½] <u>Water vapour loses heat</u> [½] and <u>condenses</u> [½] on the colder surface of the plastic sheet.										
b	<u>Muddy water gains more heat</u> [½] and <u>more water evaporates and condenses</u> [½]										
c	<u>Water bodies gain more heat</u> [½] to <u>evaporate and condense faster</u> [½] to form more clouds.										
38b	Must show comparison Material W is a better conductor of heat than Material X. [1]										
c	Material X. It is a poorer conductor of heat [½]. The ice cream gains heat more slowly from the surrounding air [1] and melts more slowly [½].										
39a	Conductors of electricity: X, Y & Z Poor conductors of electricity/ non-conductors of electricity: W										
bi	Bulb B will not light up [½] but bulbs A, D, E and F will light up [½]										
bii	There is an open circuit where B is [½] but there are closed circuits where A, D, E and F are [½]										
40a	Y										
bi	Fruit Q										
bii	It has a greater mass [½]. There is more gravitational potential energy [½] to be converted to more kinetic energy [½] for it to roll further away [½] from the parent plant.										
41a	<table border="1"> <thead> <tr> <th>Rubber rope</th> <th>Load (g)</th> <th>Increase in length (cm)</th> </tr> </thead> <tbody> <tr> <td>K</td> <td>6</td> <td>2</td> </tr> <tr> <td>L</td> <td>15</td> <td>1.6</td> </tr> </tbody> </table>		Rubber rope	Load (g)	Increase in length (cm)	K	6	2	L	15	1.6
Rubber rope	Load (g)	Increase in length (cm)									
K	6	2									
L	15	1.6									
b	(i) Rope K (ii) Rope K stretches more [½] <u>with the same amount of load</u> [½] hung on it compared to Rope L. Or Rope K extends more even with lesser load [1]										