



PRIMARY 5 SEMESTRAL ASSESSMENT 1 2019

Name : _____ ()

Date: 14 May 2019

Class : Primary 5 ()

Time: 8.00 a.m. – 9.45a.m.

Duration: 1h 45min

Parent's Signature : _____

Marks: _____ / 56

SCIENCE BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

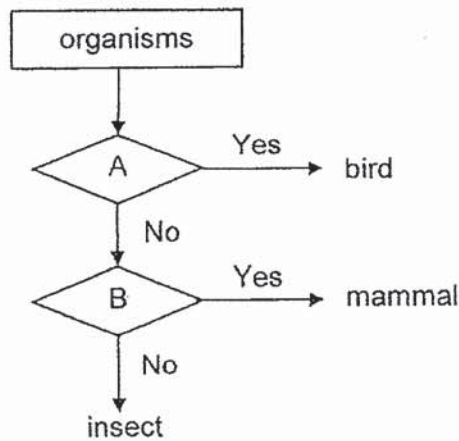
Answer all questions.

Shade your answers on the Optical Answer Sheet (OAS) provided.

Booklet A (28 x 2 marks)

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

1. Study the chart below.



Which of the following shows the characteristics represented by A and B?

Characteristics		
	A	B
(1)	has wings	has beak
(2)	has feathers	has hair
(3)	has hard body covering	gives birth to young alive
(4)	has six legs	has hair

2. Which of the following is a function of the stem in a plant?

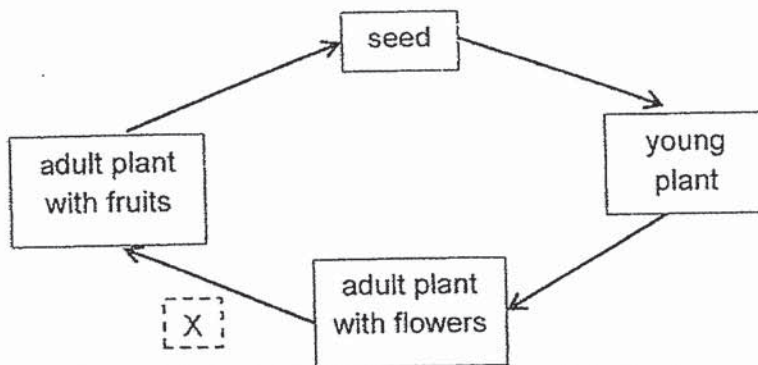
- (1) taking in food from the soil
- (2) supporting the plant upright
- (3) taking in water from the soil
- (4) holding the plant firmly to the ground

3. The diagram below shows a bird's nest fern.



What is the reason a fern produces many spores?

- (1) increases the distance between young plants
 - (2) reduces competition between parent plants and young plants
 - (3) disperses the spores to places further away from parent plants
 - (4) increases the chances of more spores growing into adult plants
4. The diagram below shows the life cycle of a flowering plant.

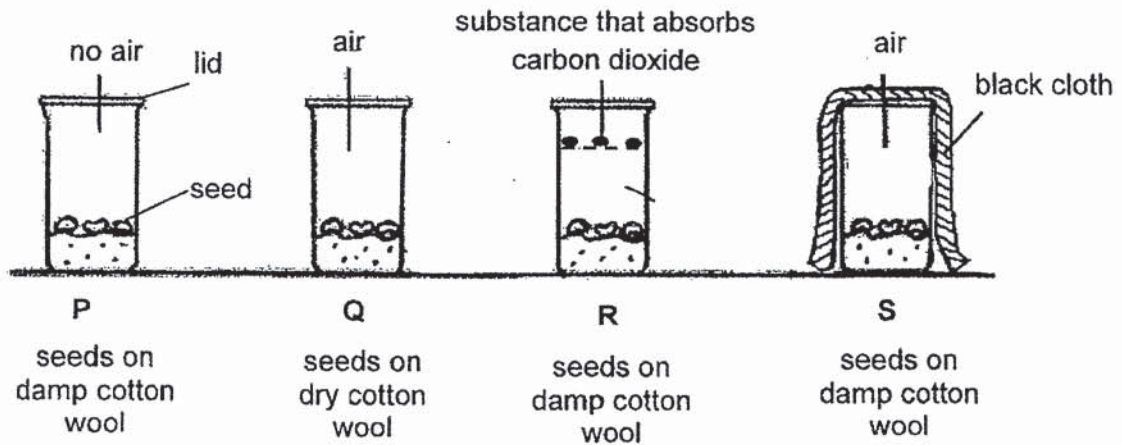


Which process(es) take(s) place at X?

- A Pollination
- B Germination
- C Fertilisation
- D Seed dispersal

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

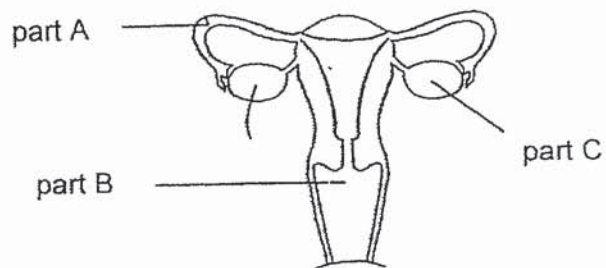
5. Harry set up an experiment to find out the conditions needed for seeds to germinate. He placed the same number of seeds in four similar beakers, P, Q, R and S, each with a lid, in a room as shown in the diagram below.



In which container(s) would the seeds likely germinate?

- (1) R only
 - (2) S only
 - (3) R and S only
 - (4) P, Q and S only
6. Which of the following is not a characteristic a child inherits from his/her parents?
- (1) type of eyelid
 - (2) colour of hair
 - (3) type of earlobe
 - (4) length of toenail

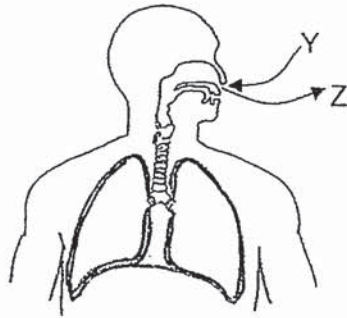
7. The diagram below shows the human reproductive system of a mature female.



Which of the following is a correct statement?

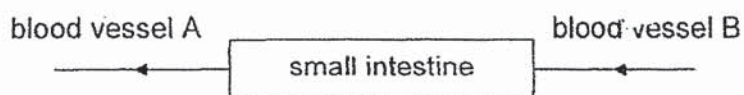
- (1) An egg is released into part A.
- (2) A fertilised egg develops in part C.
- (3) A fertilised egg develops into a baby at part B.
- (4) A sperm released from part C can fertilise an egg.

8. The diagram below shows the human respiratory system. Y represents the air that enters the body while Z represents the air that leaves the body.



Which of the following statements about Y and Z is correct?

- (1) Y contains nitrogen but not Z.
 - (2) Only Z contains carbon dioxide.
 - (3) Z contains oxygen and other gases.
 - (4) Z contains less water vapour than Y.
9. The diagram below shows the flow of blood in blood vessels, A and B, after a meal.

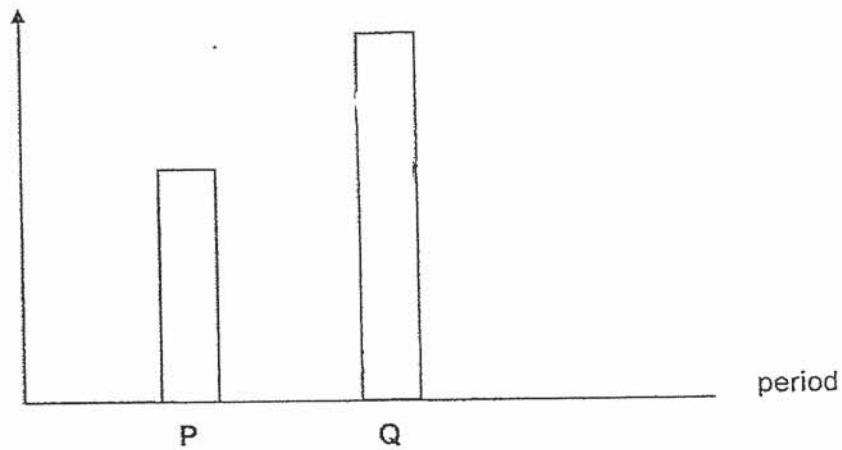


Which of the following best describes the blood in blood vessels A and B?

- (1) Blood in B has less digested food than blood in A.
- (2) Blood in A has less carbon dioxide than blood in B.
- (3) Blood in B has more waste materials than blood in A.
- (4) Blood in A and blood in B have similar amount of carbon dioxide.

10. On Day 1, Peter put a piece of 80g biscuit into his mouth and chewed on it for 15 times before swallowing it. On Day 2, he extracted four teeth. On Day 8, he chewed on an identical piece of biscuit for the same number of times. The bar graph below shows the amount of undigested biscuit in his mouth at the point of swallowing, on Day 1 and Day 8.

amount of undigested
biscuit in Peter's mouth
at the point of
swallowing (g)

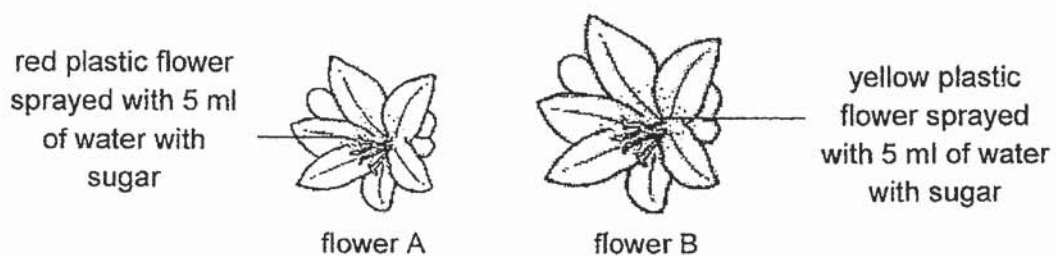


Which bar, P or Q, shows the amount of undigested biscuit in Peter's mouth at the point of swallowing on Day 8 and the reason for it?

	Bar	Reason
(1)	P	smaller surface area of biscuit in contact with digestive juices
(2)	Q	smaller surface area of biscuit in contact with digestive juices
(3)	P	greater surface area of biscuit in contact with digestive juices
(4)	Q	greater surface area of biscuit in contact with digestive juices

11. Mike carried out an experiment to find out if butterflies are attracted to water with sugar. He used two plastic flowers of different colours and sprayed each of them with 5 ml of water with sugar as shown below.

The plastic flowers were left in a garden for five hours. The number of butterflies visiting each flower was counted.



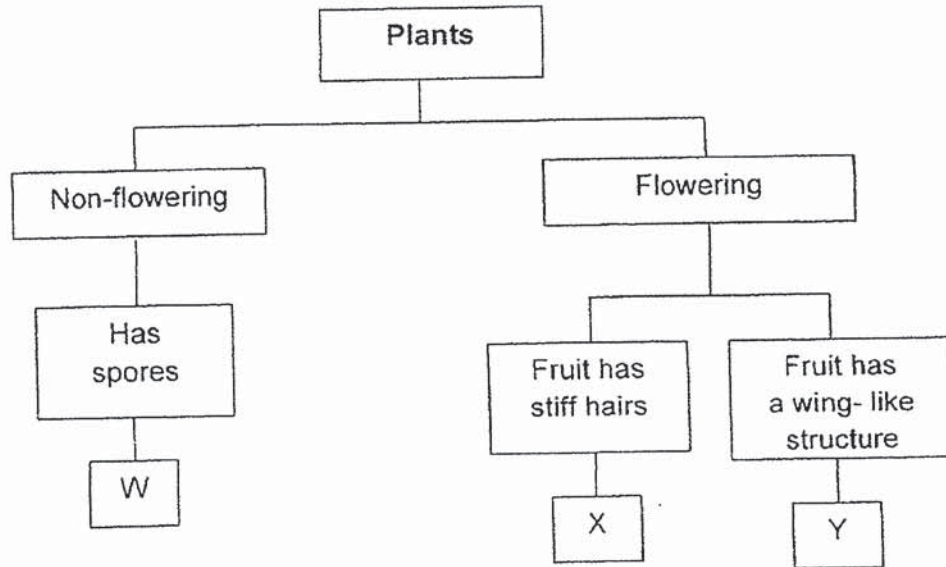
However, his teacher told him that he had to make some changes to his set-up to make it a fair test.

Which of the following changes should Mike make to his set-up?

- A Use flowers of the same size.
- B Change flower B to a red flower.
- C Do not spray water with sugar on flower A.
- D Spray 10 ml of water with sugar on flower A.

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

12. Study the chart below.



The table below shows the characteristics of two plants, A and B. A tick (✓) shows the characteristic(s) that A and B have.

Characteristic	Plant	
	A	B
Fruits or spores are dispersed by wind		✓
Reproduces from seeds		✓

Which of the following shows the correct grouping for plants A and B?

	Plant A	Plant B
(1)	X	Y
(2)	W	X
(3)	Y	W
(4)	W	Y

13. The following shows the fruits of three plants, A, B and C. Each fruit is dispersed differently.



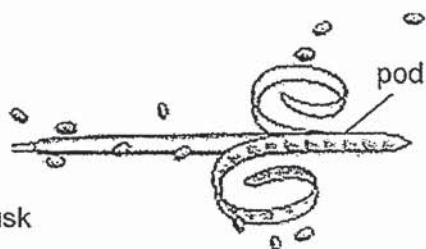
wing-like structure

fruit of plant A



fibrous husk

fruit of plant B

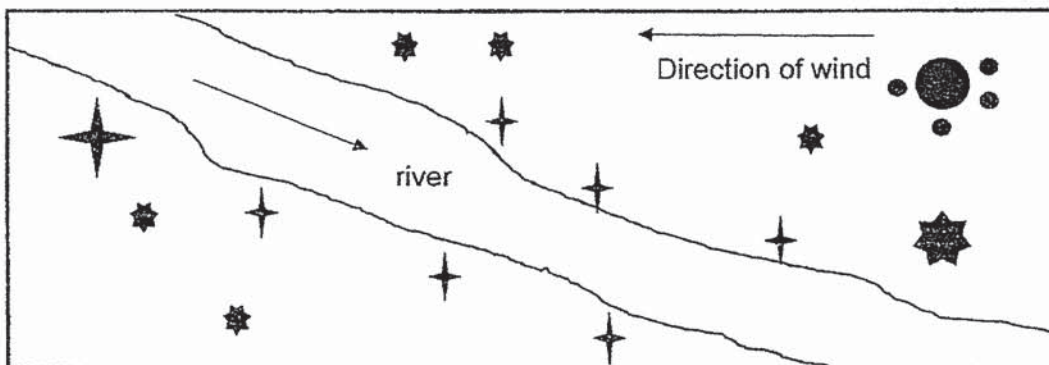
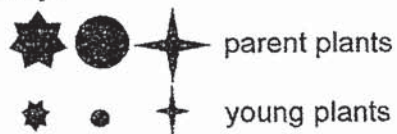


pod

fruit of plant C

The diagram below shows where plants A, B and C and their young plants are growing after a few years.

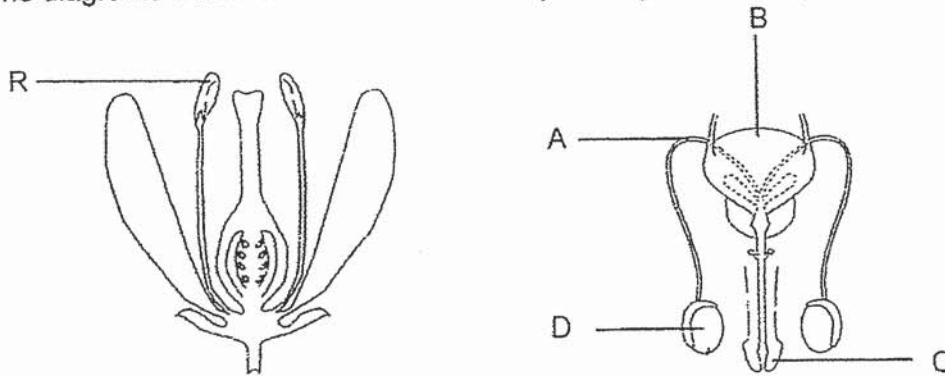
Key:



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

	Plant A	Plant B	Plant C
(1)			
(2)			
(3)			
(4)			

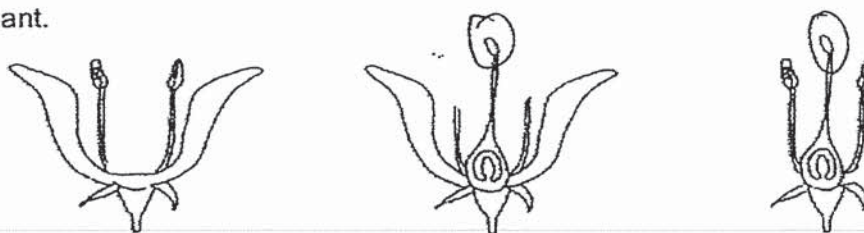
14. The diagrams below show the human and plant reproductive systems.



Which part of the human reproductive system has the same function as part R of the plant reproductive system?

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

15. Gina has three similar flowers growing on a plant. She removes some parts of the flowers and labelled them as flowers K, L and M. The flowers are still attached to the plant.



flower K

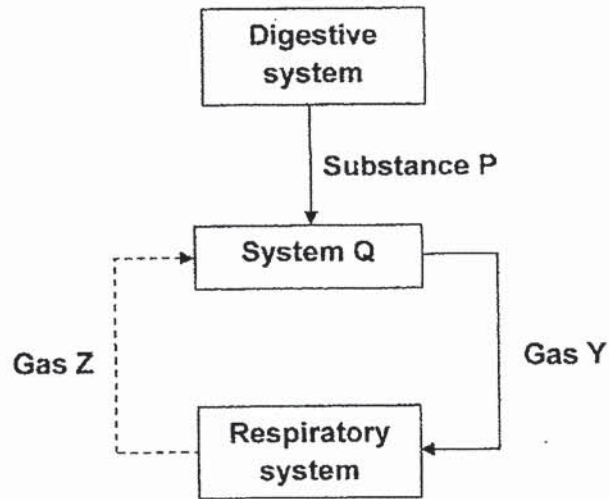
flower L

flower M

Which of the flower(s) will still be able to develop into fruits?

- (1) K only
- (2) L only
- (3) L and M only
- (4) K and M only

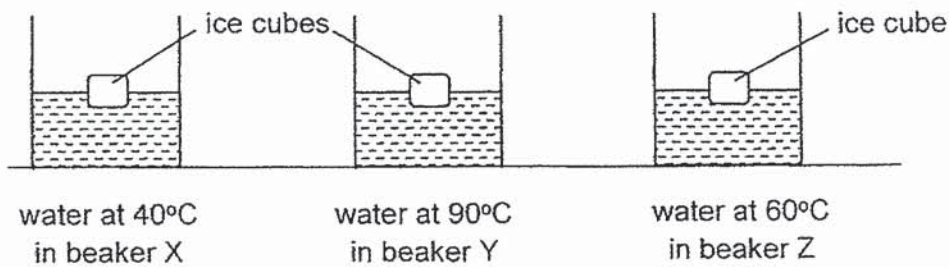
16. The diagram below shows the movement of substance P and gases, Y and Z, in some of the human organ systems.



Which of the following best represents P, Q, Y and Z?

	P	Q	Y	Z
(1)	digestive juice	muscular system	carbon dioxide	oxygen
(2)	digested food	muscular system	oxygen	carbon dioxide
(3)	digested food	circulatory system	carbon dioxide	oxygen
(4)	waste	circulatory system	Oxygen	carbon dioxide

17. Ali set up an experiment as shown below. He placed similar ice cubes into similar beakers, X, Y and Z, containing equal amounts of water but at different temperatures.

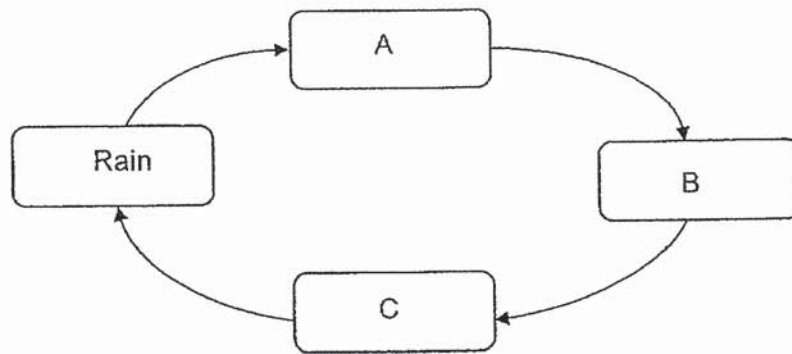


Ali recorded the time taken for each ice cube to melt completely.

Which of the following shows the correct result of the experiment and a reason for it?

	Result	Reason
(1)	Ice cube in beaker X melted completely the slowest.	Ice cube in beaker X gained the most heat from the water.
(2)	Ice cube in beaker Y melted completely the fastest.	Ice cube in beaker Y lost the least heat to the water.
(3)	Ice cubes in beakers X and Z melted completely at the same time.	The amount of heat in the water in beakers X and Z was the same.
(4)	Ice cube in beaker Y melted completely the fastest.	Ice cube in beaker Y gained the most heat.

18. The diagram below represents the water cycle.



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

	A	B	C
(1)	water vapour	sea	clouds
(2)	river	water vapour	steam
(3)	river	water vapour	clouds
(4)	water droplets	clouds	sea

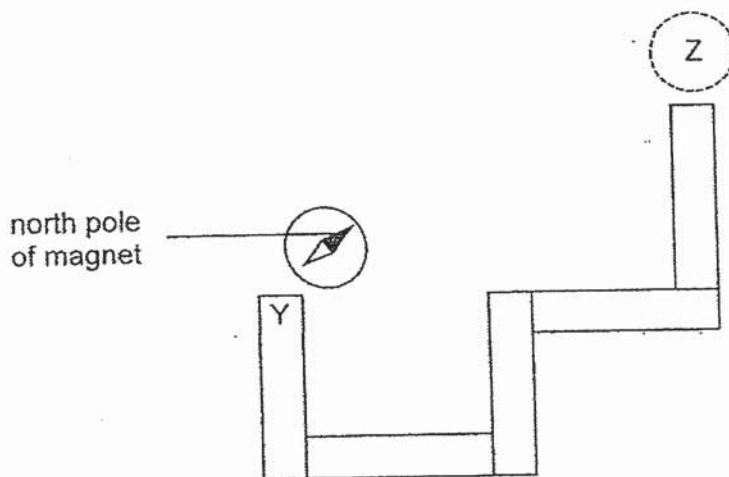
19. When water loses heat, it can change its state. Which of the following is one such example?

- (1) water drying on the floor
- (2) wet clothes drying in a garden
- (3) an ice cube melting on a plastic plate
- (4) water droplets forming on a glass of cold orange juice

20. Which of the following is not an example of water conservation?

- (1) repairing a leaking water pipe
- (2) collecting rain water to water the plants
- (3) leaving the tap on while soaping oneself
- (4) watering plants with water used to wash rice

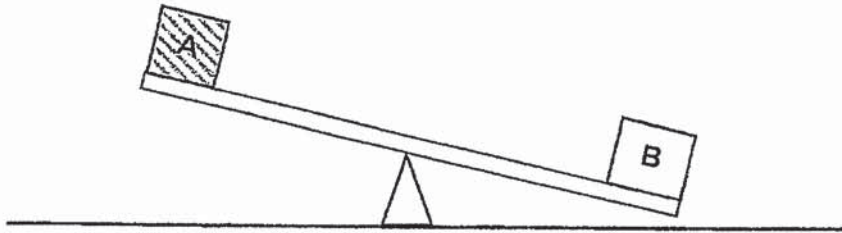
21. A compass has a small magnet that can rotate freely. Five bar magnets were arranged such that they were attracted to one another. A compass was then placed near end Y and the direction of the compass needle is as shown below.



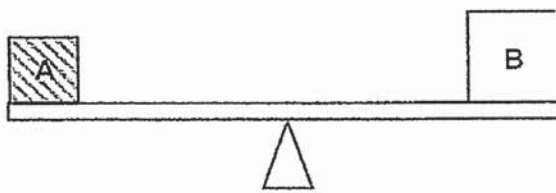
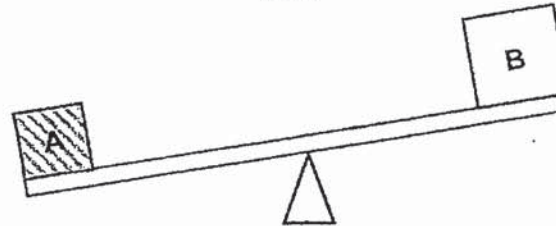
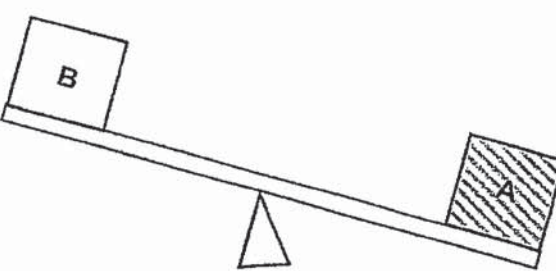
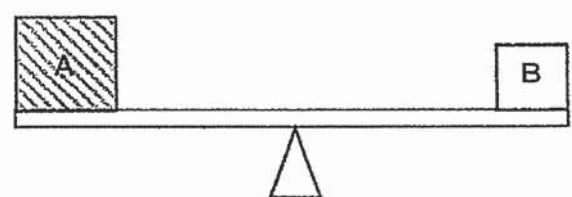
Which direction would the needle in the compass point to when placed at position Z?

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

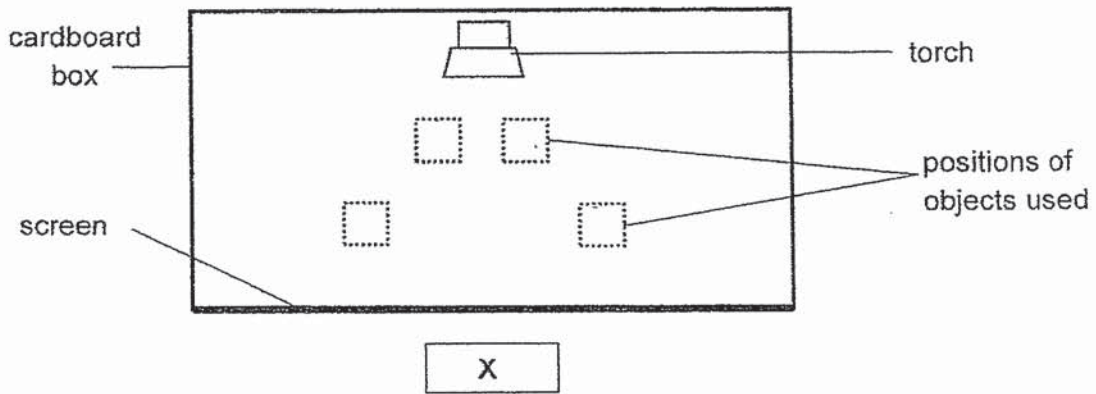
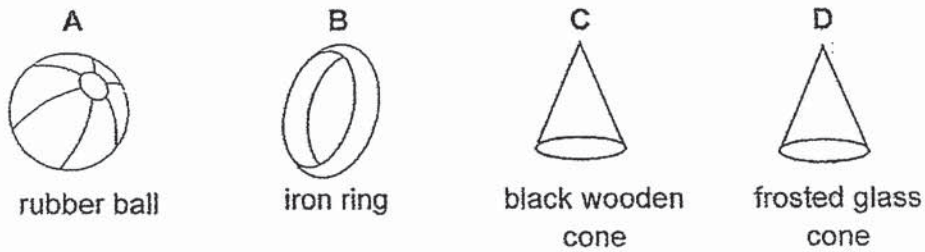
22. Two cubes of the same size but made of different materials, A and B, are placed on a lever balance as shown.



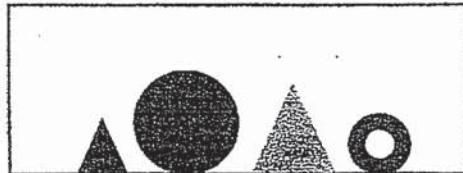
Which of the following is a possible result if there is a change of size of cube A and/or cube B?

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

23. Four objects of the same height are placed in a cardboard box as shown below.



The shadows of the objects seen from position X is shown below.



Which of the following shows the positions of objects, A, B, C and D, in the box?

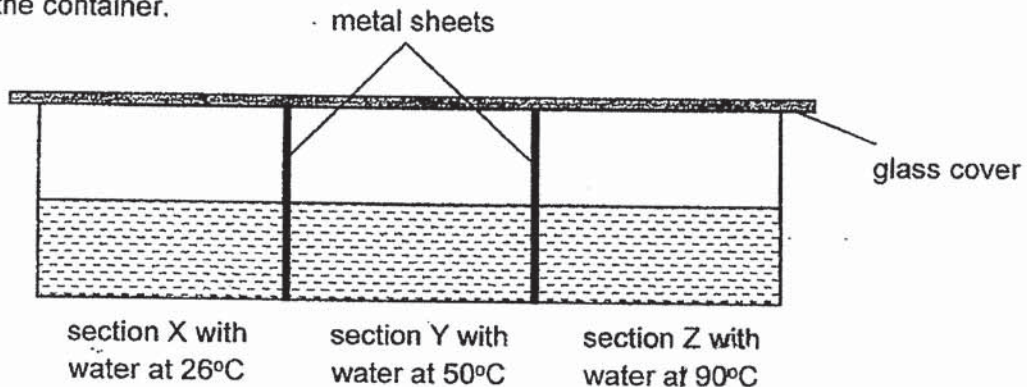
- (1)
- (2)
- (3)
- (4)

24. Substance X is a liquid at 60°C and a gas at 250°C.

Which of the following is a possible melting point and boiling point of substance X?

	Melting point (°C)	Boiling point (°C)
(1)	40 ✓	220 ✓
(2)	40 ✗	260 ✗
(3)	80 ✗	240 ✗
(4)	80 ✗	300 ✗

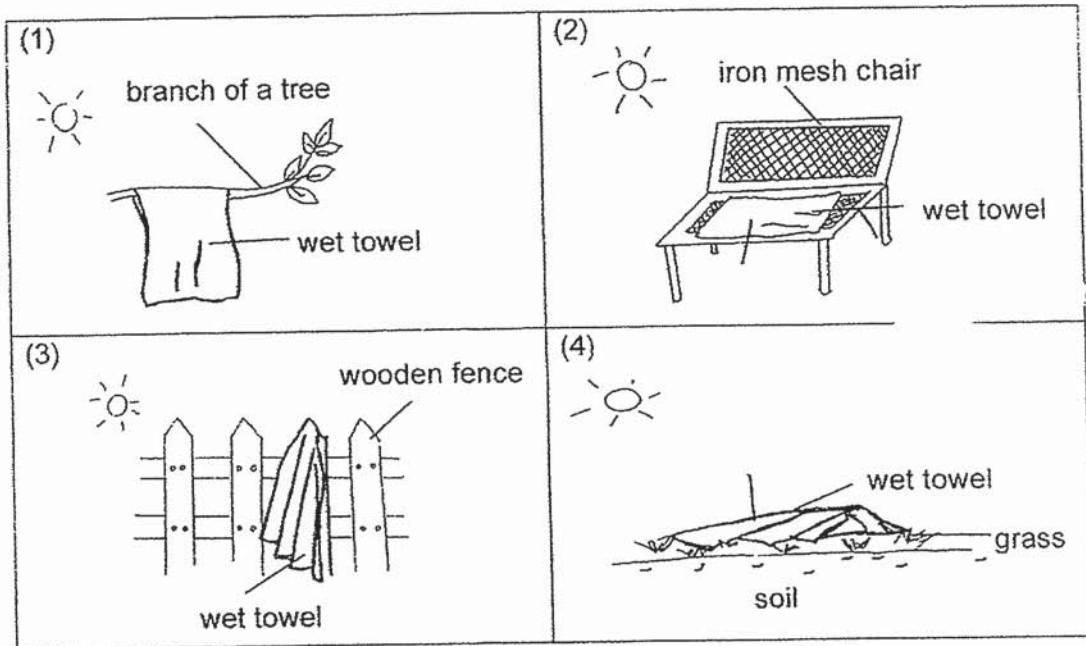
25. A large metal container is separated by two identical metal sheets into three sections, X, Y and Z. Each section is filled with 250 ml of water at different temperatures as shown below. The metal container is placed in a room at room temperature of 28°C. A glass cover left in the room is then placed over the top of the container.



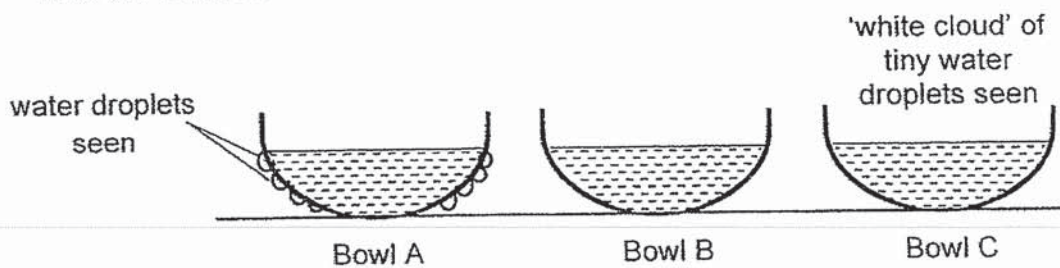
Which of the following statements is correct?

- (1) Heat flows from sections X to Y to Z.
- (2) Temperature of the water in all the three sections drops to 26°C.
- (3) No water droplet is formed on the underside of the glass cover at section X.
- (4) Fewer water droplets formed on the underside of the glass cover at section Z than at section Y.

26. Ramly left four identical wet towels with similar amount of water in a garden to dry. Which towel dried the fastest?



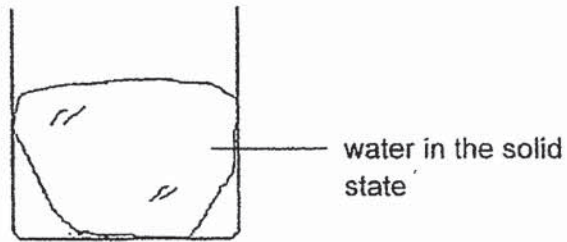
27. Mei Mei poured water of different temperatures into three similar bowls, A, B and C, and placed them on a table. The diagram below shows what Mei Mei observed after two minutes.



Which of the following is true about the temperature of water in the bowls?

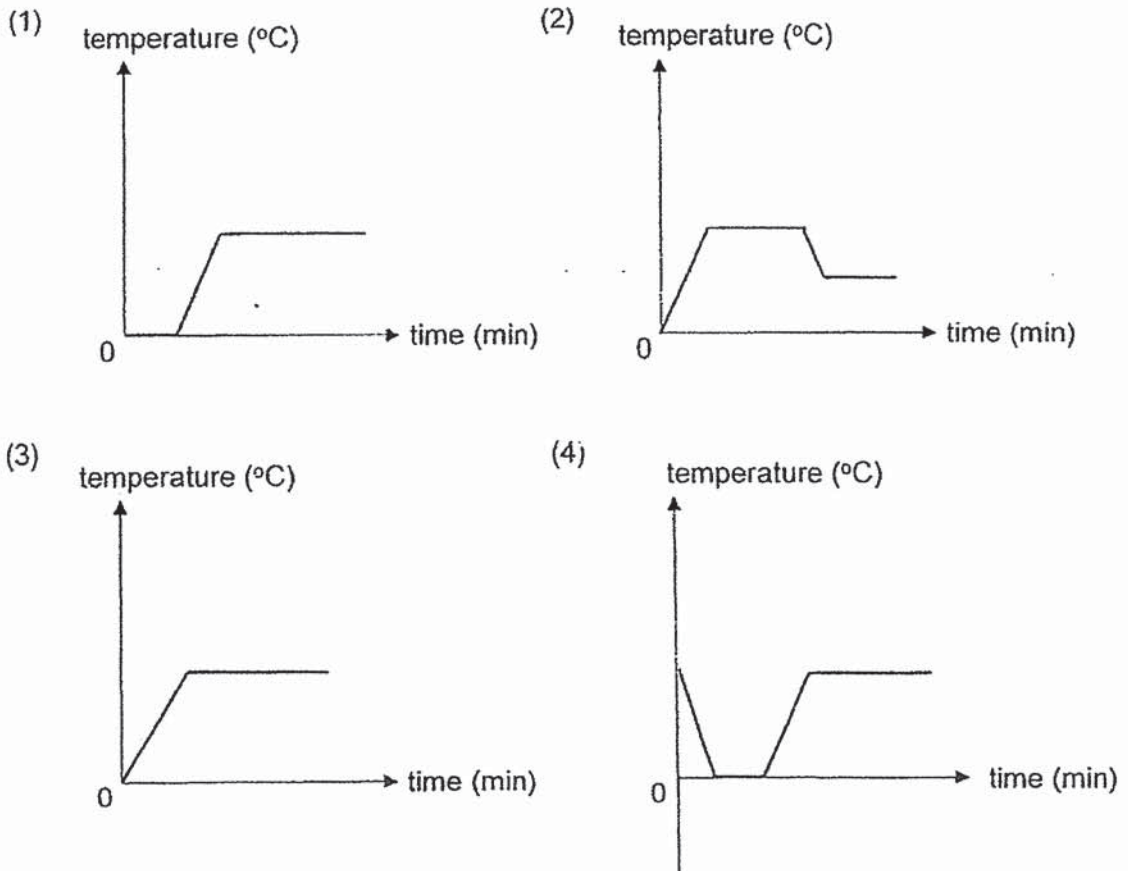
	Bowl with water at the lowest temperature	Bowl with water at the highest temperature
(1)	C	A
(2)	B	A
(3)	A	B
(4)	A	C

28. A beaker containing water in the solid state was left in a classroom at room temperature for one hour.



At the start

Which of the following graphs correctly shows the changes in the temperature of the water in the beaker throughout the one-hour period?





2019 PRIMARY 5 SEMESTRAL ASSESSMENT 1

Name : _____ ()

Date: 14 May 2019

Class : Primary 5 ()

Time: 8.00 a.m. – 9.45 a.m.

Parent's Signature : _____

Duration: 1 hour 45 minutes

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in the booklet.

Booklet A	56
Booklet B	44
Total	100

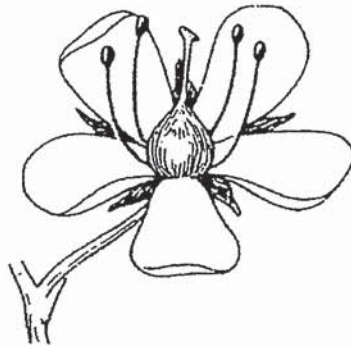
Booklet B (44 marks)

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

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

(44 marks)

29. Elijah has a plant, X, in his garden and its flower is shown below.



(a) Based on the diagram, is the flower pollinated by wind or animals? Give two reasons for your answer. [2]

Elijah took some seeds from Plant X. He planted them in a pot of soil. He left the pot in the garden. After some time, he found some young plants of Plant X growing in the pot as shown below.



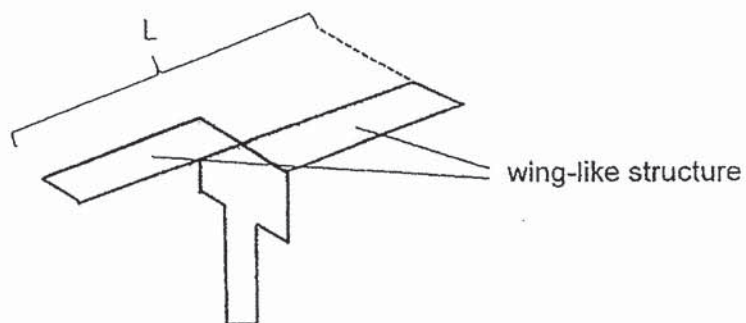
(b) What are the conditions necessary for the seeds of Plant X to become young plants? [1]

Elijah also noticed some other very small, fast-growing plants in his pot of young plants. His mother told him that they are weeds and that he has to remove them so that the young plants of Plant X, would grow well.

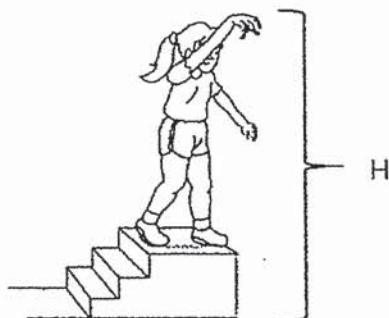
(c) Explain why these weeds would affect the growth of the young plants of Plant X? [1]

Score	2
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30. The diagram below shows a toy paper helicopter.



Lynn conducted an experiment using the above toy to find out how the length of wing-like structure affects the time taken for the toy to reach the ground. She dropped three of these toys with different lengths of L from the same height, H .



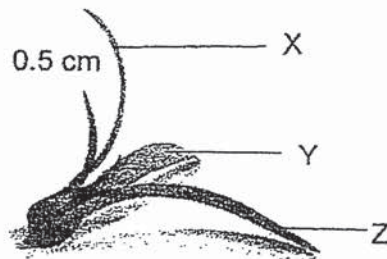
She conducted the experiment twice and recorded her findings in the table below.

Toy	Length of L (cm)	Time taken for the toy to reach the ground (s)	
		First try	Second try
A	9	9	10
B	6	6	5
C	3	3	2

(a) Based on the results shown in the table, what is the relationship between the length, L, and the time taken for the toy to reach the ground? [1]

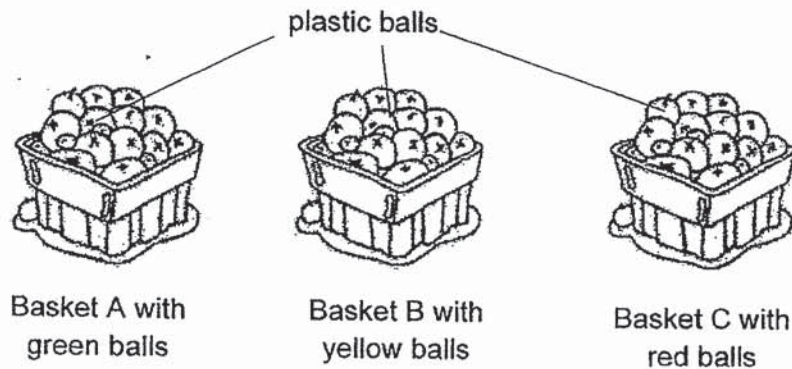
(b) Lynn made another toy paper helicopter and dropped it from the same height, H. The toy took 8 seconds to reach the ground. State a possible length, L, of his toy. [1]

Like the toy paper helicopter, the fruit below is dispersed by wind with the help of its wing-like structures, X, Y and Z.



(c) If Lynn cuts away 0.5 cm of each wing-like structure, X, Y and Z, explain how this would affect the dispersal of the fruit. [1]

31. Janet carried out an experiment to find out how the colour of an object affects the number of birds attracted to it. She placed an equal number of plastic balls in each basket as shown below. All the plastic balls are sprayed with paint of different colours. The same fragrance is sprayed on all the plastic balls. Janet placed the ~~two~~ ^{three} boxes of plastic balls in an open space for three days.



During the three days, she counted the number of birds visiting each basket and recorded her results in the table below.

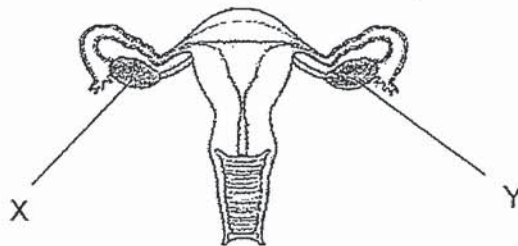
Basket	Colour of plastic balls	Number of birds visiting the basket
A	Green	3
B	Yellow	19
C	Red	7

- (a) State another variable that has to be kept constant for the experiment to be a fair test. [1]

- (b) Based on Janet's results, which colour is most attractive to the birds? [1]

- (c) Janet repeated the experiment two more times. Why did she have to repeat the experiment? [1]

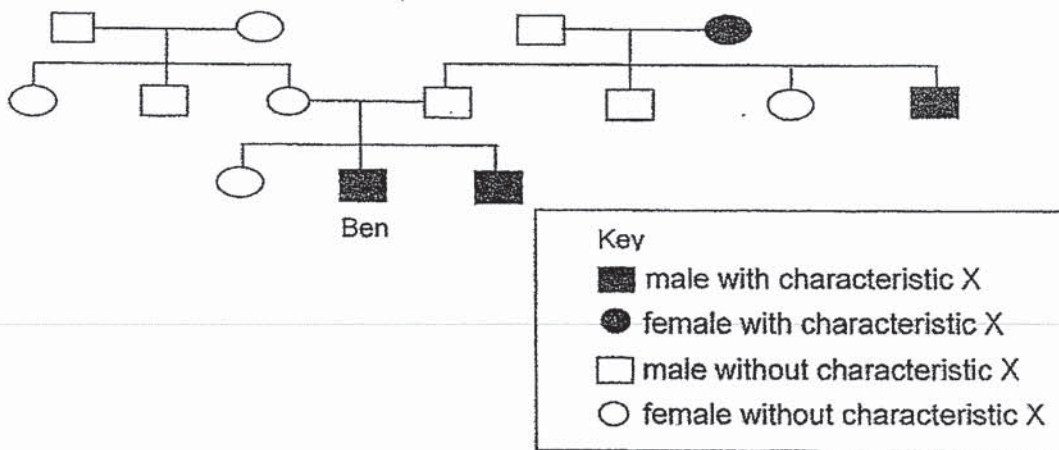
32. The diagram below shows the female reproductive system of a human.



(a) Name the process that takes place when the female egg cell fuses with the male reproductive cell. [1]

(b) Due to health reasons, a woman needs to have her part Y removed. Will she still be able to reproduce after that? Explain why. [1]

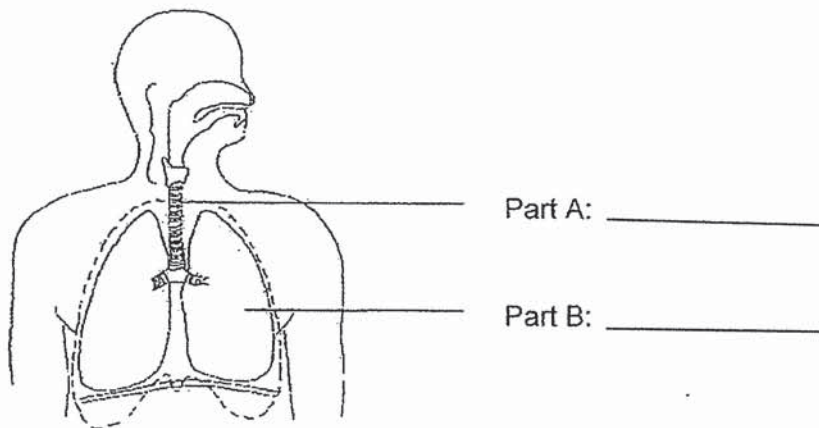
Study the family tree of Ben.



(c) Ben has characteristic X. Based on the above family tree, explain how Ben gets characteristic X. [1]

	3
Score	

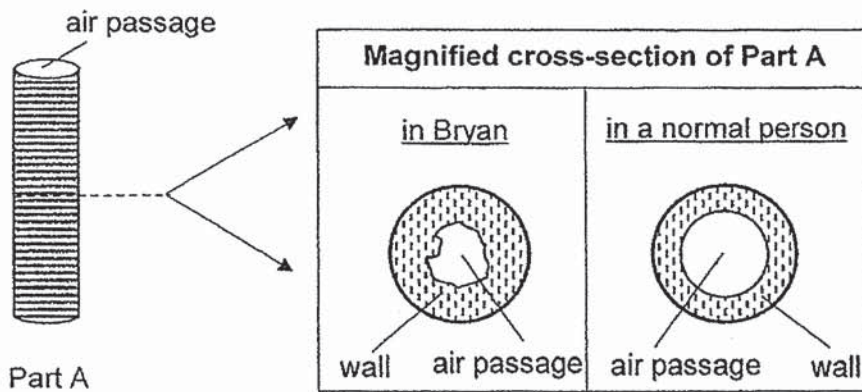
33. The diagram below shows a human respiratory system.



(a) Label the parts A and B in the above diagram.

[1]

Bryan has a condition where the wall of his Part A swells when he inhales dust.

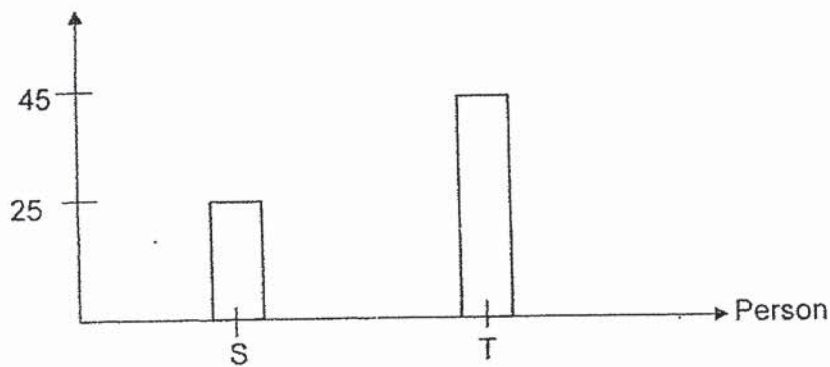


(b) How does the thickening of the walls of Part A in Bryan affect the amount of oxygen absorbed in Part B as compared to a normal person? [1]

Score	2
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While Bryan was experiencing the condition stated in (b), he and a normal person recorded their breathing rate when at rest. Their readings are shown below.

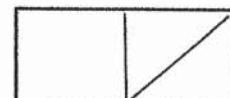
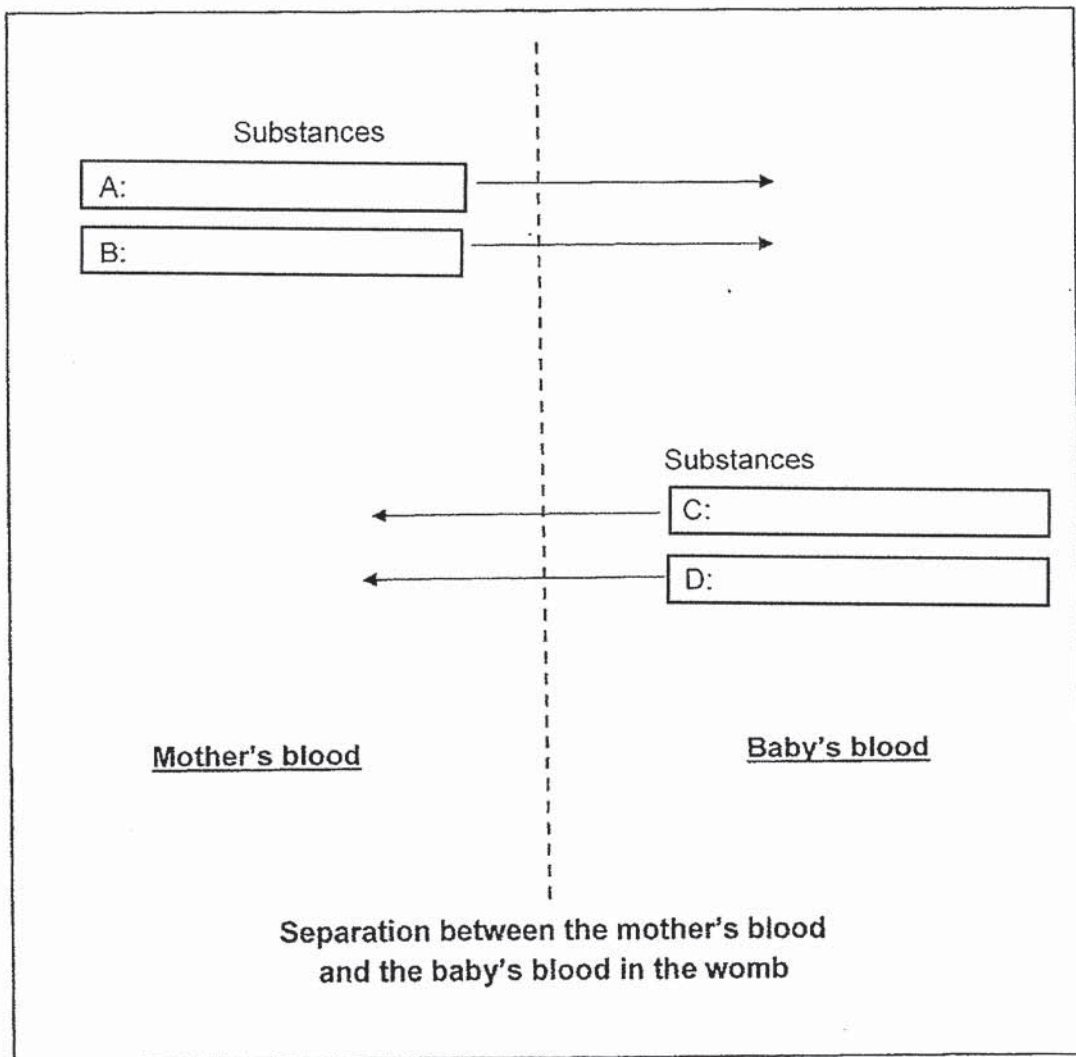
Average breathing rate when at rest (number of breaths per minute)



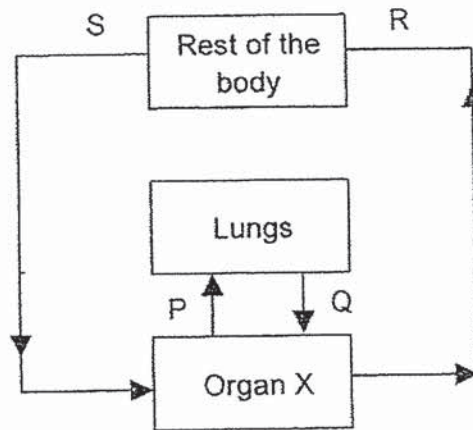
(c) Which of the above bar graphs, S or T, represents Bryan's breathing rate? Explain your choice, making comparison with that of a normal person. [2]

34. Below is a diagram showing the exchange of substances, A, B, C and D, between the mother's blood and her unborn baby's blood in the mother's womb. The arrows show the direction of the movement of these substances.

Write in the boxes below the substances represented by A, B, C and D. [2]



35. The diagram below shows the direction of blood flow in some parts of the human body.



(a) Identify organ X. [1]

(b) State a difference in the amount of oxygen in the blood at R and the blood at S. [1]

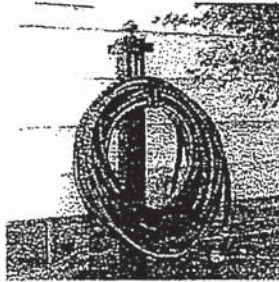
(c) State a difference in the amount of carbon dioxide in the blood at P and the blood at Q. Explain your answer. [2]

Score	4
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36. The table below shows the properties of three materials, A, B and C.

Material	Is it waterproof?	Is it flexible?	Is it strong?
A	No	No	No
B	Yes	Yes	Yes
C	Yes	No	Yes

(a) Based on the information in the above table, state one difference between Materials A and C. [1]



Andrew wants to make a new garden hose for watering his plants as shown above. He would also like to hang it onto the hook as shown above.

(b) Which material, A, B or C, can he use to make the garden hose? Give two reasons for your choice. [2]

Material _____

Reason 1: _____

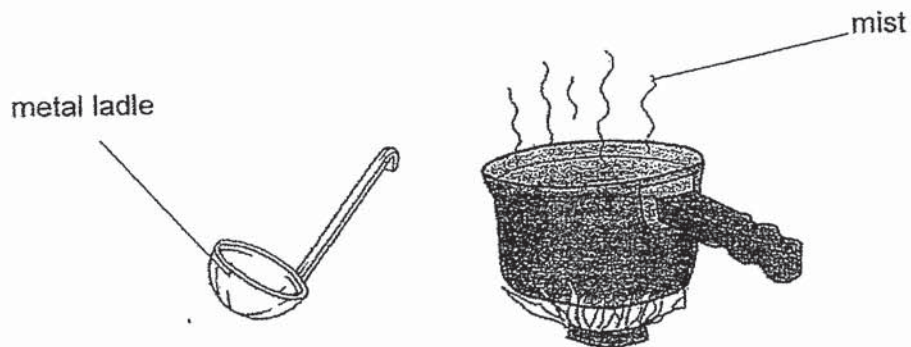
Reason 2: _____

Score	3
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37. (a) State a similarity between evaporation and boiling. [1]

(b) State a difference between evaporation and boiling. [1]

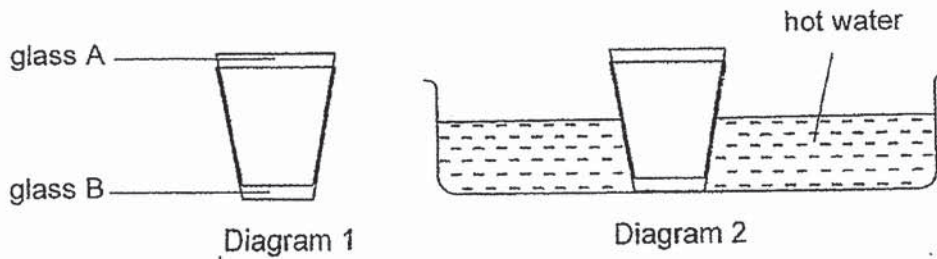
Ben's mother was cooking a pot of soup. The soup started boiling and bubbles were seen.



(c) When his mother placed the ladle into the pot, the boiling of the soup stopped immediately and there were less bubbles in the soup. Explain how the ladle stopped the boiling. [1]

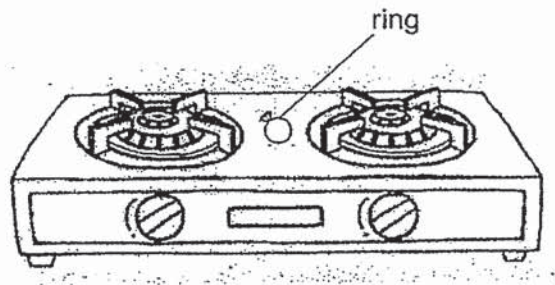
Score	3
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38. Jeannie had two glasses which are tightly stuck together as shown in Diagram 1. She managed to separate them by dipping glass B into a basin of hot water.



(a) Explain how dipping glass B into the hot water enabled Jeannie to separate both glasses. [1]

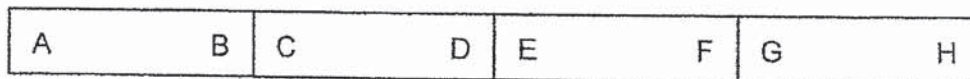
Sean's mother accidentally left her silver ring on top of a hot stove.



(b) When Sean's mother tried to put her ring back on her finger, she found that the ring was loose. Explain why the ring was loose on her finger. [1]

Score	3
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39. Four bar magnets can be arranged as shown below.



They can also be arranged as shown below.

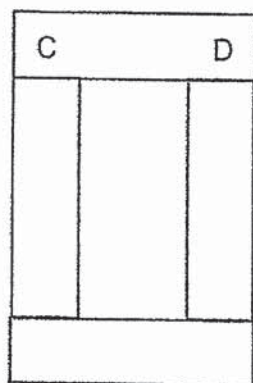


Diagram 1

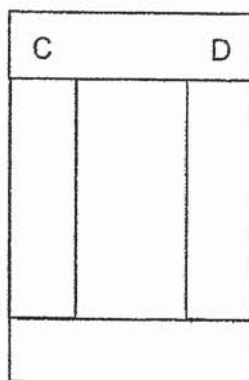
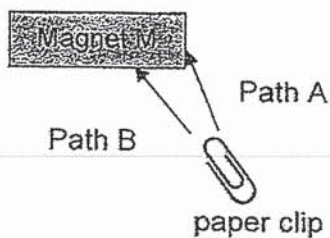


Diagram 2

(a) Write down the letters "A", "B", "E", "F", "G" and "H" in the other three magnets in two different possible arrangements. [2]

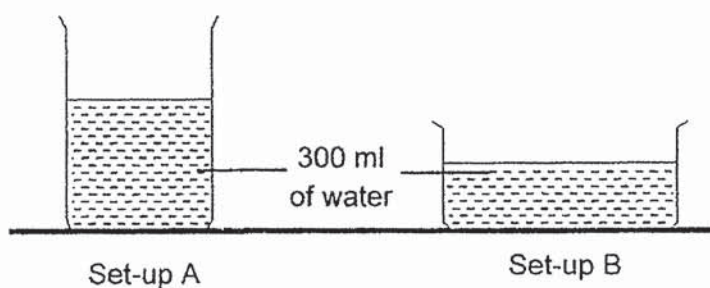
Hongyi placed magnet M on a table. He then held a paper clip near the magnet.



(b) Which path will the paper clip travel to be attracted to the magnet? Explain why. [1]

	3
Score	

40. Danny placed 2 set-ups on a table as shown below. Each container had 300 ml of water in it.



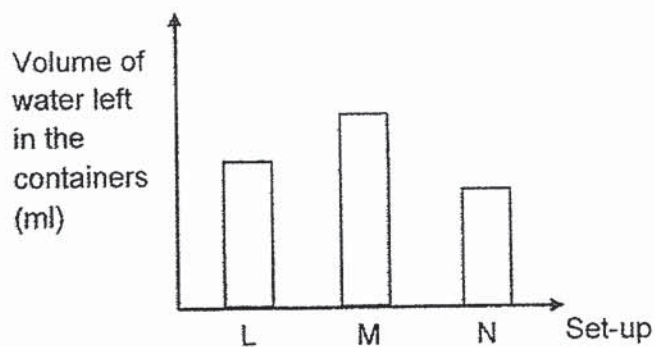
- (a) In which of the set-ups, A or B, would the water dry up first? Explain your answer. [2]

Danny conducted another experiment with the following conditions for the three set-ups.

	Set-up L	Set-up M	Set-up N
Material of container	glass	glass	glass
Volume of water (ml)	350	350	350
Exposed surface area of water (cm ²)	200	200	200
Surrounding wind speed	higher	high	highest

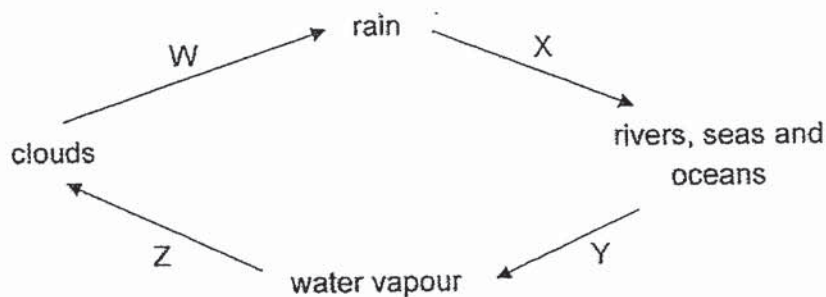
Score	2
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The graph below shows the amount of water left in the containers of the three set ups at the end of the experiment.



(b) Based on his experiment and graph above, what can he conclude about the surrounding wind speed and the rate of evaporation? [1]

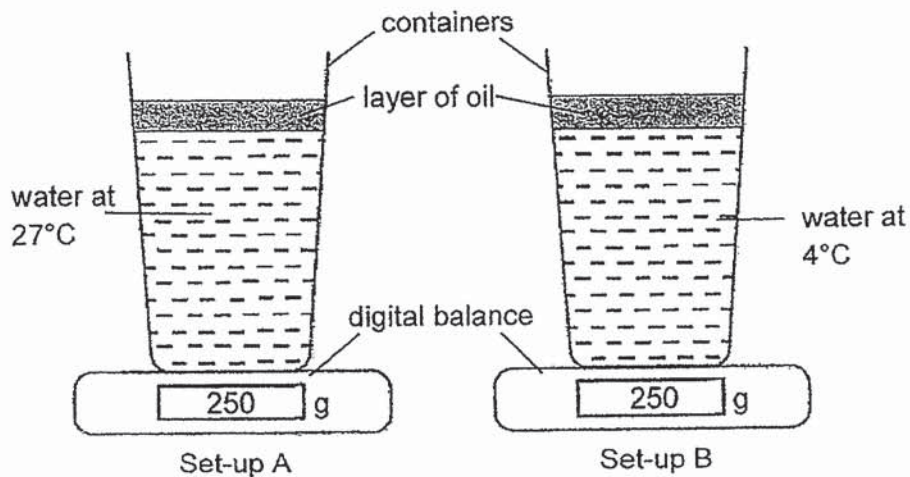
Study the diagram of the water cycle shown below.



(c) Which arrow(s), W, X, Y and/ or Z, represent(s) a process/ process(es) involving a change of state? [1]

Score	2
-------	---

41. Alaric prepared two set-ups, A and B, with the same amount of water but at different temperatures. He placed both set-ups in a room at 27°C.



After two minutes, the readings for the two set-ups are shown below.

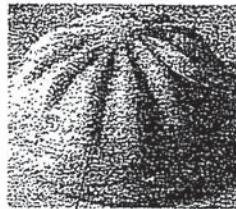
Set-up	Reading of digital balance (g)	
	Start of experiment	Two minutes later
A	250	250
B	250	252

- (a) Explain why there is an increase in the reading of the digital balance for Set-up B.

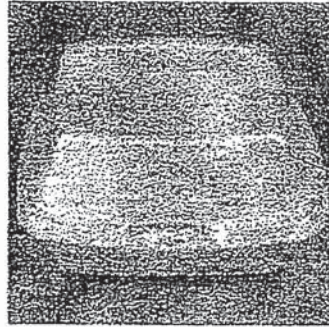
[2]

Score	2
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Alaric placed some hot buns into a styrofoam box.



bun



styrofoam box

(b) The buns turned wet and soggy after an hour. Explain why.

[2]

(c) Suggest what Alaric can do to the styrofoam box to prevent the buns from turning soggy and wet.

[1]

Score	1	3
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End of Booklet B

TAO NAN SCHOOL
SEMESTRAL ASSESSMENT ONE 2019
PRIMARY 5
SCIENCE

S/No	Suggested Answers	
29	(a)	The flower is pollinated by <u>animals</u> . The <u>stigma and anther</u> are found within the flower.
	(b)	<u>Air, water, warmth</u>
	(c)	The <u>plants</u> will experience overcrowding OR The <u>young plants</u> will have <u>to compete for light, water, minerals and space</u> .
30	(a)	As the <u>length L</u> increases, the time taken for the toy to reach the ground <u>increases</u>
	(b)	Any value <u>more than 6cm but less than 9cm</u>
	(c)	The <u>surface area of the wing-like structure</u> has <u>decreased</u> so the <u>fruit will travel a shorter distance</u>
31	(a)	The <u>colour of basket</u> OR The <u>amount of fragrance sprayed on the plastic balls</u>
	(b)	Yellow
	(c)	To ensure that the <u>readings/ results of the experiment</u> is <u>reliable</u> .
32	(a)	Fertilisation
	(b)	is able to reproduce because she still has her <u>ovary/ X</u> which can <u>release an egg</u> .
	(c)	Ben inherited characteristic X <u>from his grandmother</u> .
33	(a)	A: Windpipe B: Lungs
	(b)	Less oxygen is absorbed into the lungs/ Part B.

	(c)	T
	(d)	Bryan has to <u>breathe more times to take in sufficient oxygen</u> to release sufficient energy for survival.
34		Substance A/B: digested food/ oxygen / <u>water</u> Air Substances C/D: carbon dioxide/ waste materials/ <u>water</u>
35	(a)	Heart
	(b)	Blood at R has <u>more oxygen</u> .
	(c)	Blood at P has more carbon dioxide. <u>Explanation</u> The rest of body releases carbon dioxide into the blood as it releases energy.
36	(a)	Material A is not waterproof while Material C is waterproof OR Material A is not strong while Material C is strong.
	(b)	Material B. <u>Material B is flexible so that it can be coiled.</u> Reason: <u>The house must be waterproof so</u>
37	(a)	Both processes result in <u>a change of state, from liquid to gas</u>
	(b)	<u>Evaporation</u> takes place <u>at any temperature</u> while <u>ing only</u> takes place <u>at the boiling point of a stance.</u>
	(c)	The <u>ladle conducts heat from the soup to the surroundings</u> OR <u>Heat is lost from the soup to the ladle and then to the surroundings</u>
38	(a)	Glass B <u>gained heat from the hot water and expanded</u>

that water can flow out of it without wetting it.

	(b)	The ring <u>gained heat from the hot stove and expanded.</u>																								
	(c)	The ring <u>lost heat to the running water and contracted.</u>																								
39	(a)	<table border="1" style="margin-bottom: 20px;"> <tr><td>C</td><td></td><td>D</td></tr> <tr><td>B</td><td></td><td>E</td></tr> <tr><td>A</td><td></td><td>F</td></tr> <tr><td>H</td><td></td><td>G</td></tr> </table> <table border="1"> <tr><td>C</td><td></td><td>D</td></tr> <tr><td>F</td><td></td><td>G</td></tr> <tr><td>E</td><td></td><td>H</td></tr> <tr><td>B</td><td></td><td>A</td></tr> </table>	C		D	B		E	A		F	H		G	C		D	F		G	E		H	B		A
C		D																								
B		E																								
A		F																								
H		G																								
C		D																								
F		G																								
E		H																								
B		A																								
	(b)	The paper clip will travel path A. The magnetic force is strongest at its poles of Magnet M																								
40	(c)	Set-up B. There is greater <u>exposed surface area of</u> <u>ter</u> in Set-up B. <u>More heat is gained from the surroundings</u> and so the <u>water evaporates faster/ gains heat faster.</u>																								
	(b)	As the wind speed increases, the rate of evaporation increases.																								
	(c)	Y and Z																								
41	(a)	When <u>warm water vapour in the surroundings touches the cooler surface of the container</u> , it																								

		<u>condenses into water droplets: As water droplets has mass</u> , the total mass of set-up B will increase.
	(b)	Water vapour in the box gains heat from the bun. As touches the cooler surface of the box, it condenses into water droplets. Water droplets then drop onto the buns, causing them to be wet.
	(c)	Poke holes at the top of the container.

01. 2	11. 3	21. 3
02. 2	12. 4	22. 4
03. 4	13. 4	23. 4
04. 2	14. 4	24. 1
05. 3	15. 3	25. 3
06. 4	16. 3	26. 2
07. 1	17. 4	27. 4
08. 3	18. 3	28. 1
09. 1	19. 4	
10. 2	20. 3	