



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

**SEMESTRAL ASSESSMENT TWO
2018**

BOOKLET A

Date : 29th October 2018

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4 ()

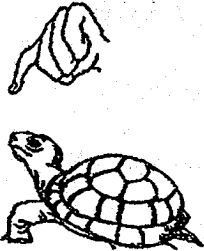
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet A consists of 17 printed pages including this cover page.

Section A (28 x 2 marks = 56 marks)

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

1. A tortoise hides itself in its shell when touched.



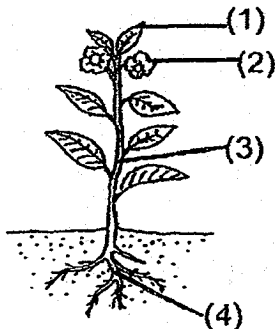
This shows that the tortoise is a living thing because it can _____.

- (1) grow
- (2) breathe
- (3) respond
- (4) reproduce

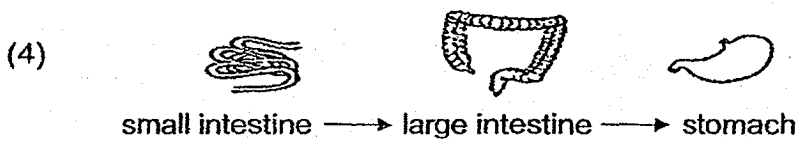
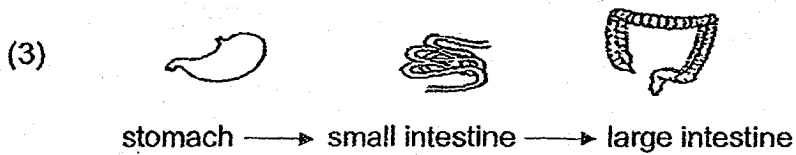
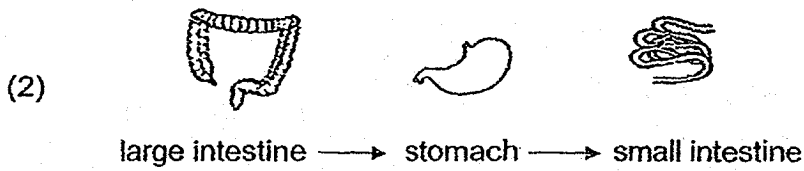
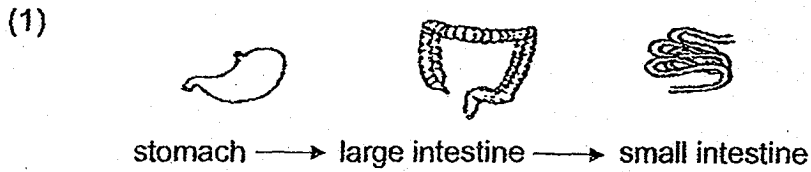
2. Which one of the following statements is true for ALL insects?

- (1) They have tails.
- (2) They have a pair of wings.
- (3) They have three body parts.
- (4) They have a soft outer covering.

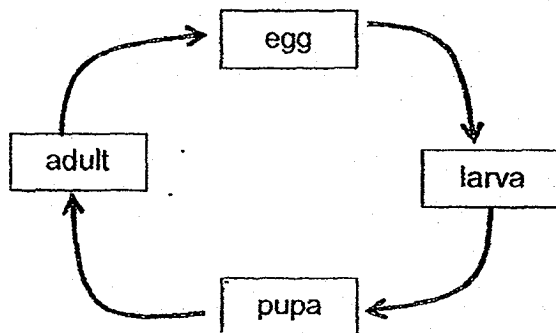
3. The diagram shows a plant.
Which part, (1), (2), (3) or (4), is the root?



4. Which one of the following shows the correct order when food moves through some parts of the digestive system?



5. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

- (1) chicken
- (2) butterfly
- (3) cockroach
- (4) grasshopper

6. Which one of the following objects can be attracted by a magnet?

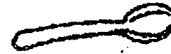
- (1) Iron ball
- (2) Plastic ball
- (3) Rubber ball
- (4) Wooden ball

7. Which one of the following objects can be bent easily without breaking?

(1) A sheet of glass



(2) A metal spoon



(3) A towel

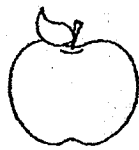


(4) A wooden ruler



8. Which one of the following is a source of light?

(1)



an apple

(2)



the moon

(3)



a lit candle

(4)



a leaf

9. Which one of the following is a source of heat?

- (1) A metal ring
- (2) A lighted bulb
- (3) A woollen cap
- (4) A cotton sock

10. Which one of the following substances has a definite shape?

- (1) air
- (2) oil
- (3) stone
- (4) water

11. Ganesh classified some things as shown in the table below.

Living things	Non-living things
rabbit	pen
bicycle	shirt
apple tree	water bottle

His teacher identified that the bicycle has been wrongly classified.

Which of the following statements about living things correctly explained why Ganesh was wrong?

- A All living things can grow.
 B All living things can reproduce.
 C All living things need air, food and water to survive.
 D All living things can move from one place to another.

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

12. Which of the following statements about plants are correct?

- A All plants have roots.
 B All plants have stems.
 C All plants have leaves.
 D All plants reproduce by seeds.

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

13. Study the table below.

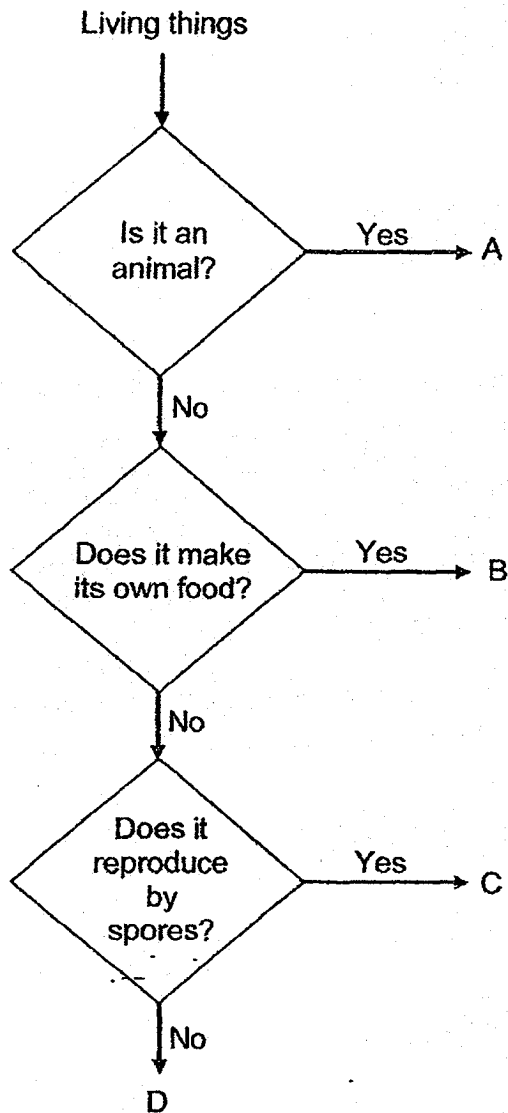
A tick (✓) shows that the animal has the characteristic.

Characteristic	Animals		
	P	Q	R
Has scales			✓
Has feathers		✓	
Has moist skin	✓		
Reproduce by laying eggs	✓	✓	✓

Which of the following correctly represents animals P, Q and R?

	Animal P	Animal Q	Animal R
(1)	owl	goldfish	salamander
(2)	toad	owl	goldfish
(3)	goldfish	crocodile	toad
(4)	salamander	toad	crocodile

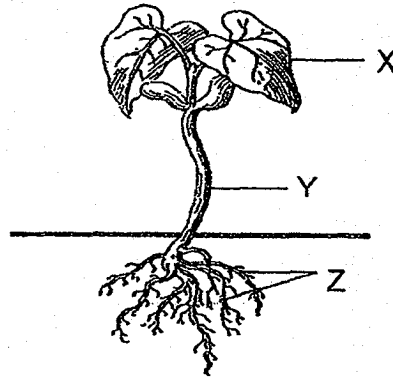
14. Study the flowchart below.



Based on the flowchart above, which one of the following correctly represents the mushroom and bird's nest fern?

	mushroom	bird's nest fern
(1)	A	B
(2)	B	D
(3)	C	A
(4)	C	B

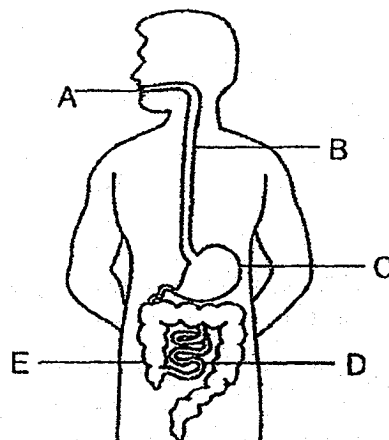
15. The diagram below shows a plant.



Which of the following represents the functions of parts X, Y and Z?

	X	Y	Z
(1)	produces flowers	holds the plant upright	makes food for the plant
(2)	holds the plant upright	produces flowers	absorbs water and mineral salts
(3)	makes food for the plant	holds the plant upright	absorbs water and mineral salts
(4)	makes food for the plant	absorbs water and mineral salts	produces flowers

16. The diagram below shows the human digestive system.



At which parts do digestion take place?

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

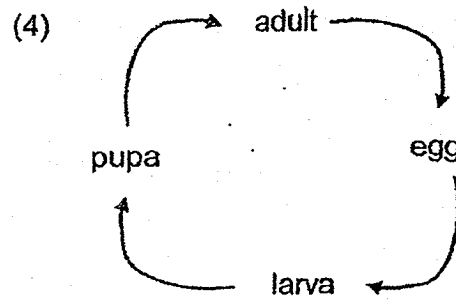
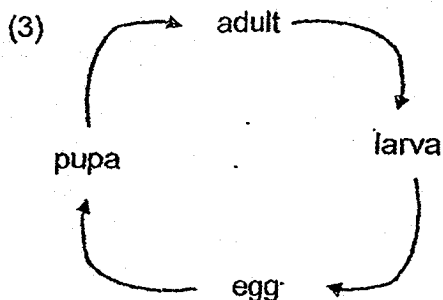
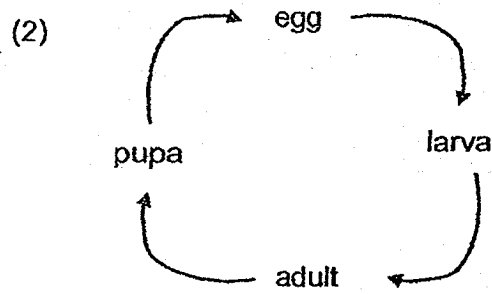
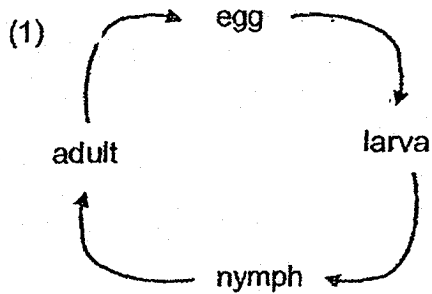
17. Wei Jie made the following statements about the human organ systems.

- A The digestive system breaks down food into simpler substances.
- B The skeletal system and the muscular system enable movement.
- C The circulatory system carries digested food in the blood to all parts of the body.

Which of the statements above are correct?

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

18. The beetle has four stages in its life cycle. Which one of the following life cycle diagrams correctly shows the life cycle of a beetle?



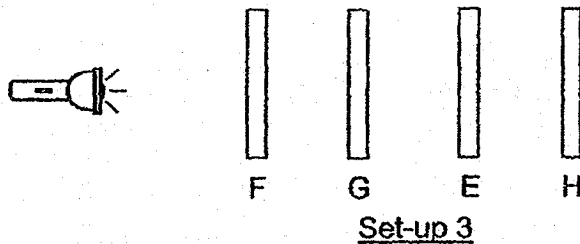
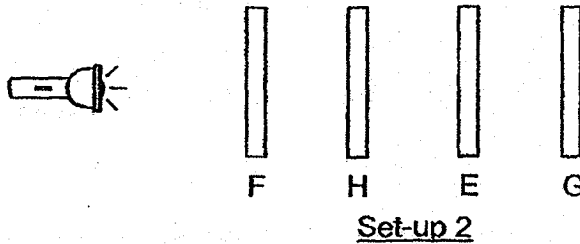
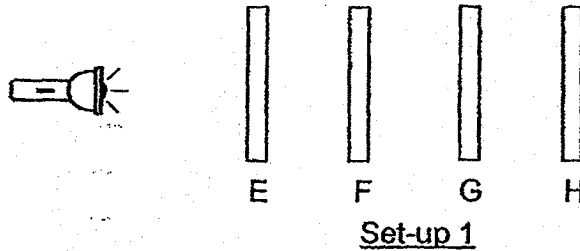
19. Lucas observed animals X and Y over a period of time and recorded his observations in the table below.

Observations	Animal X	Animal Y
It has four stages in its life cycle.	Yes	No
The young resembles the adult.	No	No
The eggs are laid in water.	Yes	Yes
The young moults several times.	Yes	No

Which one of the following correctly represents animals X and Y?

	Animal X	Animal Y
(1)	butterfly	chicken
(2)	mosquito	frog
(3)	cockroach	butterfly
(4)	beetle	grasshopper

20. Elkan arranged four sheets, E, F, G and H, in a straight line as shown in set-ups 1, 2 and 3 below. The four sheets are of the same thickness and size, but they are made of different materials.



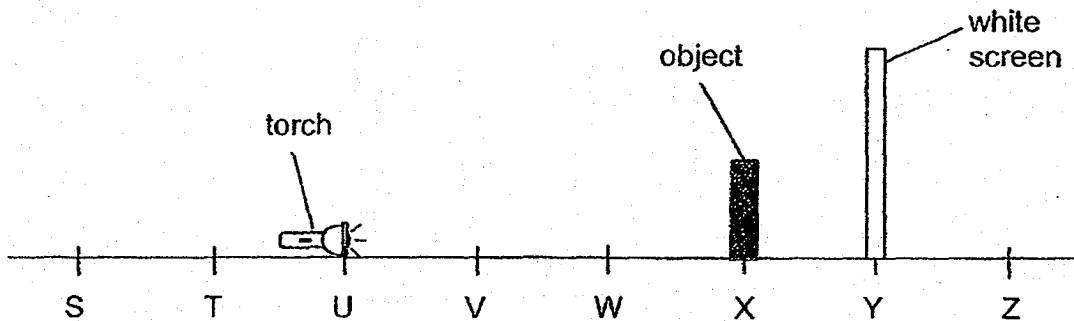
He shone light of the same brightness at each set-up and recorded his observations in the table below.

Set-up	Observation
1	A bright patch of light was only seen on sheet E.
2	A bright patch of light was only seen on sheet H.
3	A dim patch of light was only seen on sheet E.

Based on Elkan's observations in the table above, which one of the following best represents the materials that were most likely used to make sheets E, F, G and H?

	Sheet E	Sheet F	Sheet G	Sheet H
(1)	aluminium	clear glass	cardboard	tracing paper
(2)	clear plastic	cardboard	frosted glass	clear glass
(3)	cardboard	clear plastic	frosted glass	aluminium
(4)	tracing paper	frosted glass	cardboard	clear glass

21. Meredith set up a torch, object and screen at positions U, X and Y respectively, as shown in the diagram below.



She recorded the height of the shadow formed on the white screen when the torch was switched on.

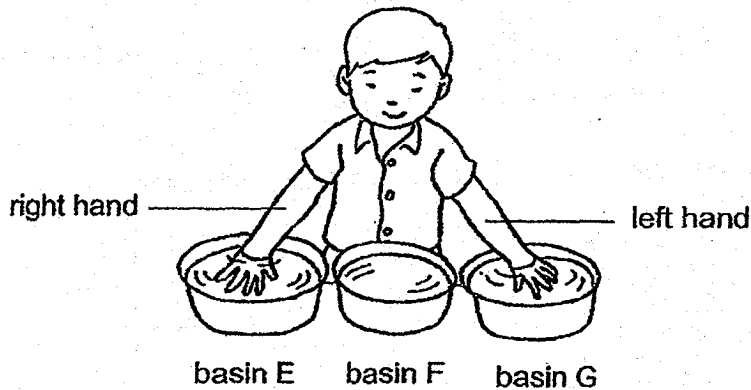
Which of the following positions could she use so that the shadow formed on the screen would be larger?

	position of torch	position of object	position of white screen
A	V	Y	Z
B	T	V	W
C	S	V	X
D	W	X	Y

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

22. Wei Shen placed his right hand into the water in basin E and his left hand into the water in basin G at the same time.

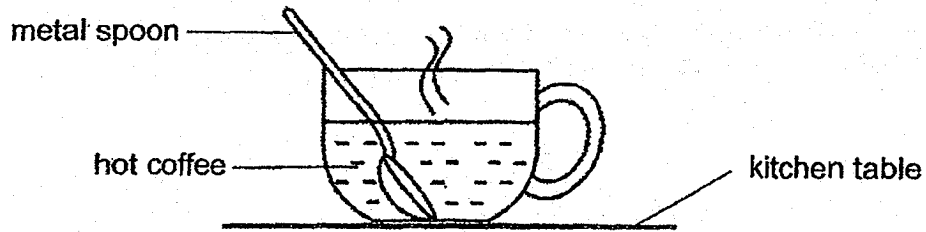
After 30 seconds, he placed both his hands into the water in basin F. His right hand felt cool but his left hand felt warm.



Which one of the following shows the possible temperatures of the water in the three basins, E, F and G?

Temperature of water ($^{\circ}\text{C}$)		
Basin E	Basin F	Basin G
(1) 12	24	45
(2) 24	12	45
(3) 45	24	12
(4) 12	45	24

23. In his kitchen, at room temperature, Eugene placed a metal spoon into his cup of hot coffee as shown in the diagram below.

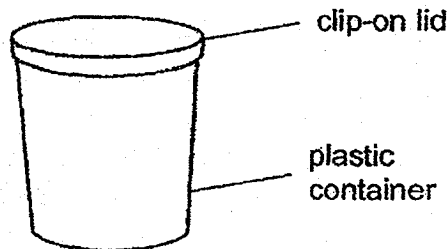


Which of the following correctly represents the flow of heat?

	Heat flowed from	Heat flowed to
A	hot coffee	metal spoon
B	surrounding air	hot coffee
C	hot coffee	surrounding air
D	metal spoon	hot coffee

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

24. Mei Lin has a 600 cm^3 plastic container with a clip-on lid as shown in the diagram below.

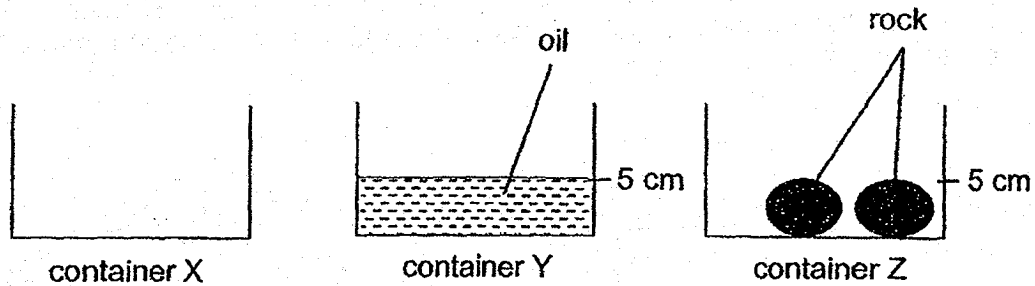


Which of the following matter can be totally placed into the plastic container and still allow Mei Lin to clip the lid on?

- A Pour in 550 cm^3 of milk
 B Pump in 700 cm^3 of oxygen
 C Put in 6 wooden balls each with a volume of 100 cm^3

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

25. Colin set up three identical containers, X, Y and Z, as shown below.



He then used containers X, Y and Z to collect water from the same tap.

Which one of the following correctly shows the time taken for the containers to be filled to the brim with water?

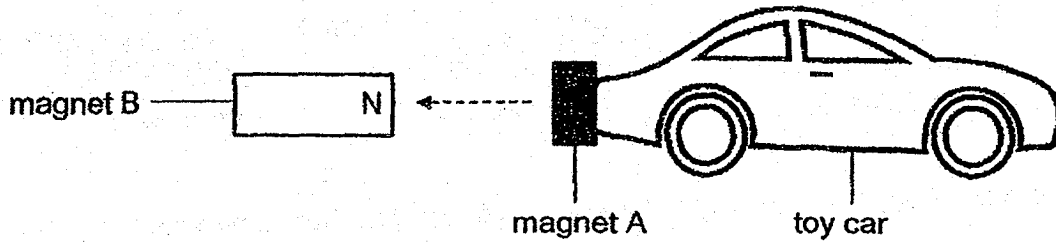
Time taken for the containers to be filled to the brim with water	
shortest → longest	
(1)	X, Y, Z
(2)	Y, Z, X
(3)	Z, X, Y
(4)	Z, Y, X

26. Li Ting put her belongings in her handbag, closed it tight and went out. When it rained, she observed that all her belongings in her handbag were soaked with water.

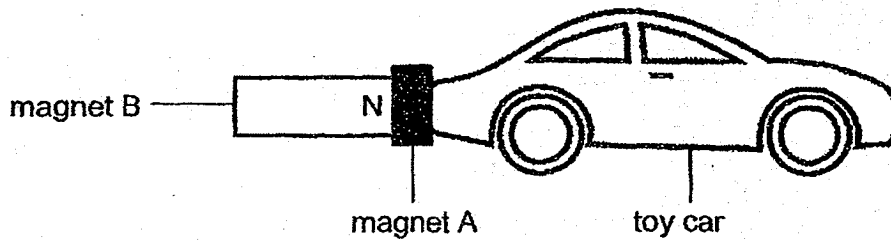
Which of the following materials was her handbag most likely made of?

- (1) Steel
- (2) Cotton
- (3) Plastic
- (4) Rubber

27. Marcus glued magnet A behind his toy car and held magnet B near it. He observed that the toy car moved backwards and was attracted to magnet B as shown below.



Before

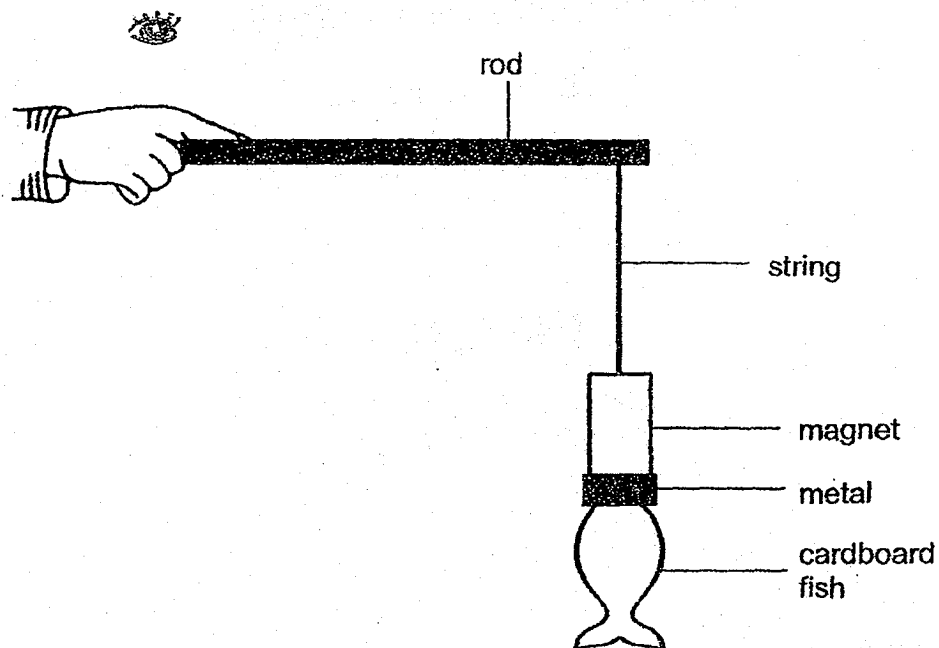


After

Which one of the following should Marcus do in order to make his toy car move forward?

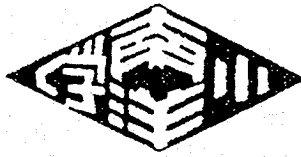
- (1) Replace magnet B with a steel bar.
- (2) Flip magnet B and hold it near magnet A.
- (3) Move magnet B further away from magnet A.
- (4) Stroke magnet B with an iron nail many times.

28. Farah attached a piece of metal to a cardboard fish. She then held a rod with a magnet attached to it above the cardboard fish. She made the following observation as shown below.



Which one of the following materials is most likely used to make the metal attached to the cardboard fish?

- (1) Iron
- (2) Gold
- (3) Copper
- (4) Aluminium



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

**SEMESTRAL ASSESSMENT TWO
2018**

BOOKLET B

Date : 29th October 2018

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4 ()

Marks Scored:

Booklet A:		56
Booklet B :		44
Total :		100

Any query on marks awarded should be raised by 5th Nov 2018. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature:

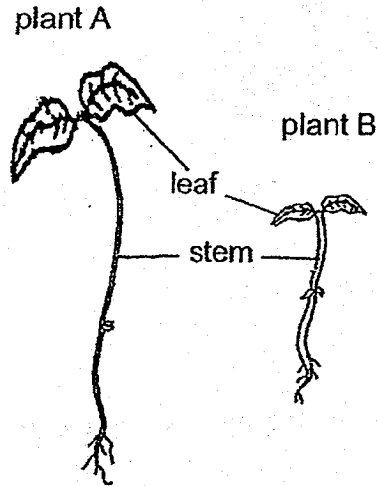
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Booklet B consists of 16 printed pages including this cover page.

Section B (44 marks)

Write your answers to questions 29 to 41 in the spaces provided.

29. The diagram below shows two plants.

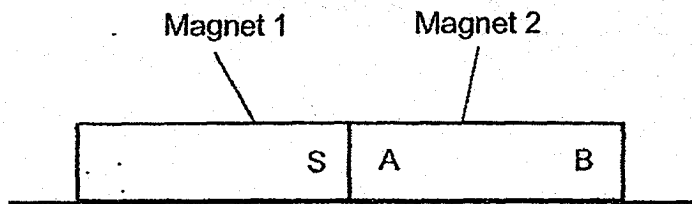


(a) What is one difference between the leaves of plant A and the stem of plant B?

The leaves of plant A is _____ than the leaves of plant B. [1]

(b) The _____ help both plants to keep themselves upright. [1]

30. Two magnets are placed together as shown below.



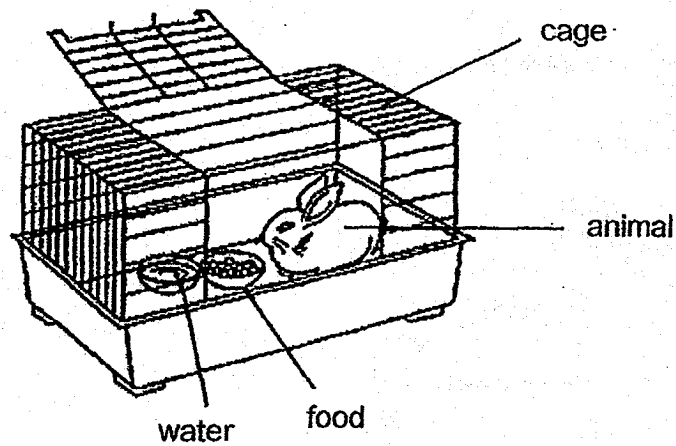
The south pole of magnet 1 is labelled S.

Identify the poles labelled A and B on magnet 2. [2]

A: _____

B: _____

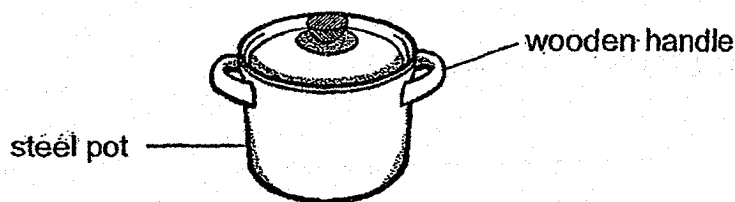
31. Study the diagram below.



(a) After a few days, will the amount of food in the bowl increase, decrease or remain the same? [1]

(b) Based on the diagram above, name one thing the animal needs to remain alive. [1]

32. The diagram below shows a cooking pot.



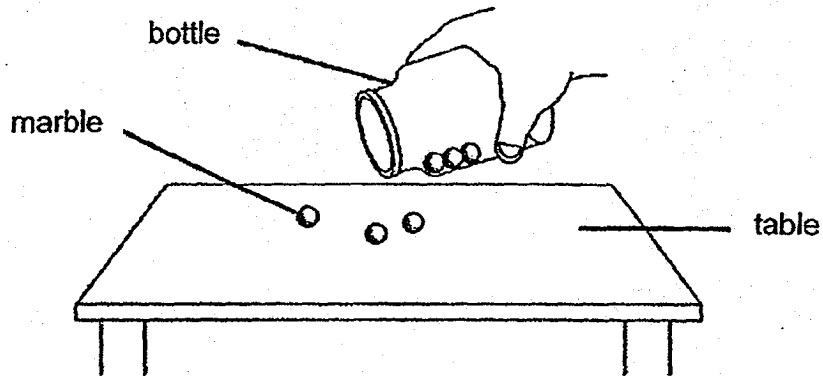
(a) The handle is made of wood because it is a _____ [1]
conductor of heat.

(b) The pot is made of steel because it is a _____ [1]
conductor of heat.

33. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas
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Ali pours some marbles from a bottle onto a table as shown below.

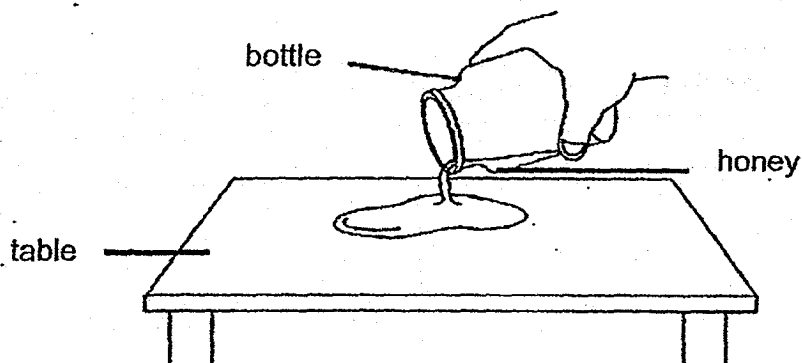


(a) The shape and volume of the marbles remain the same.

This shows that a marble is a _____

[1]

Ali then pours honey from a bottle onto a table as shown below.

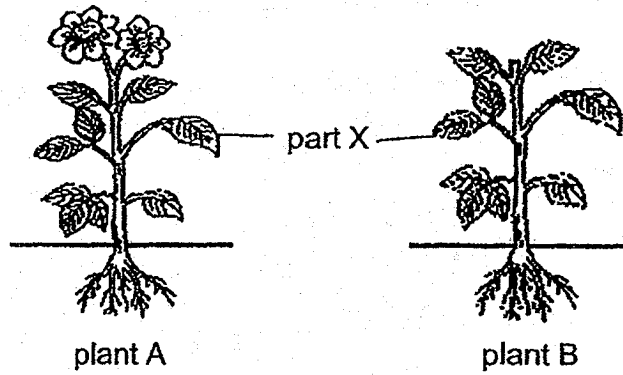


(b) The volume of honey remains the same but its shape changes.

This shows that honey is a _____

[1]

34. Study the diagrams below carefully.



(a) Based on the diagrams above, state one similarity between plant A and B. [1]

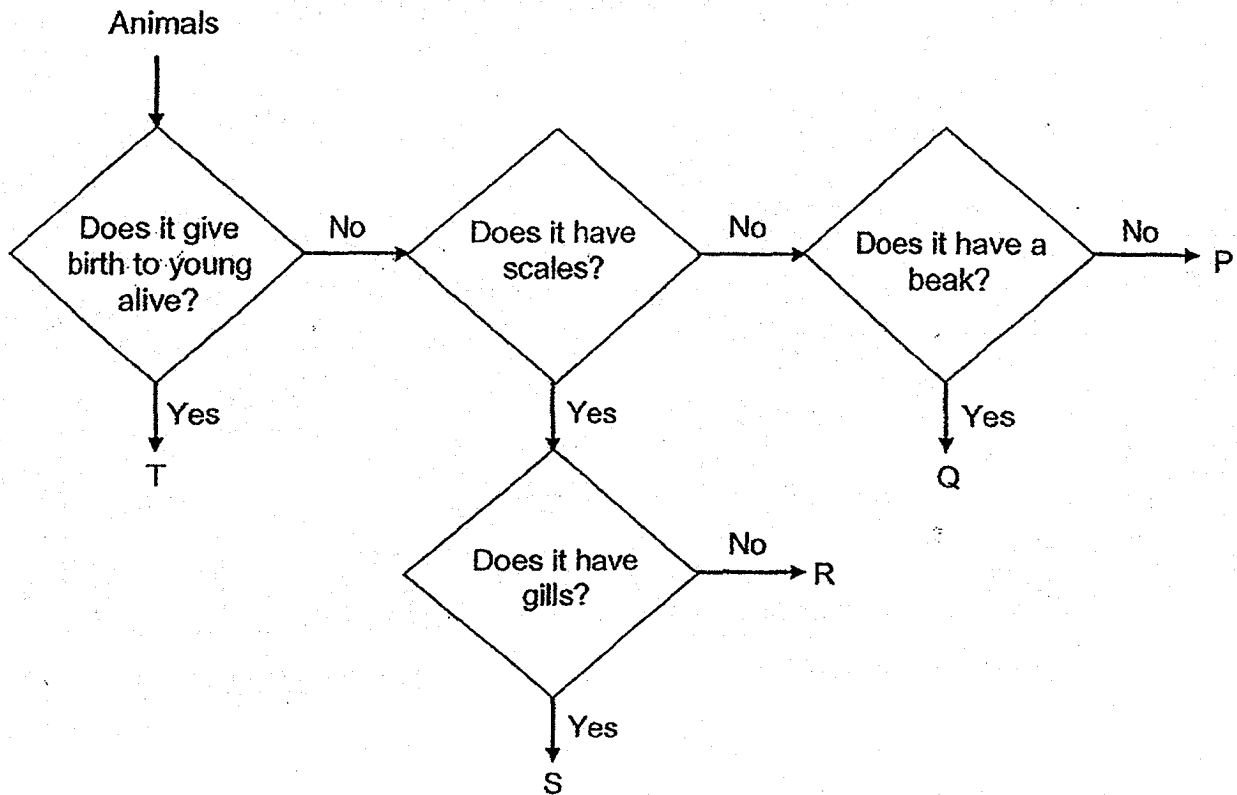
(b) State one function of part X. [1]

Study the list of plants below. Classify all the plants in the table below and give a suitable heading for the table. [2]

sunflower plant	mango tree	bird's nest fern	moss
-----------------	------------	------------------	------

(c)(i)	
(c)(ii)	

35. Study the flowchart below carefully.



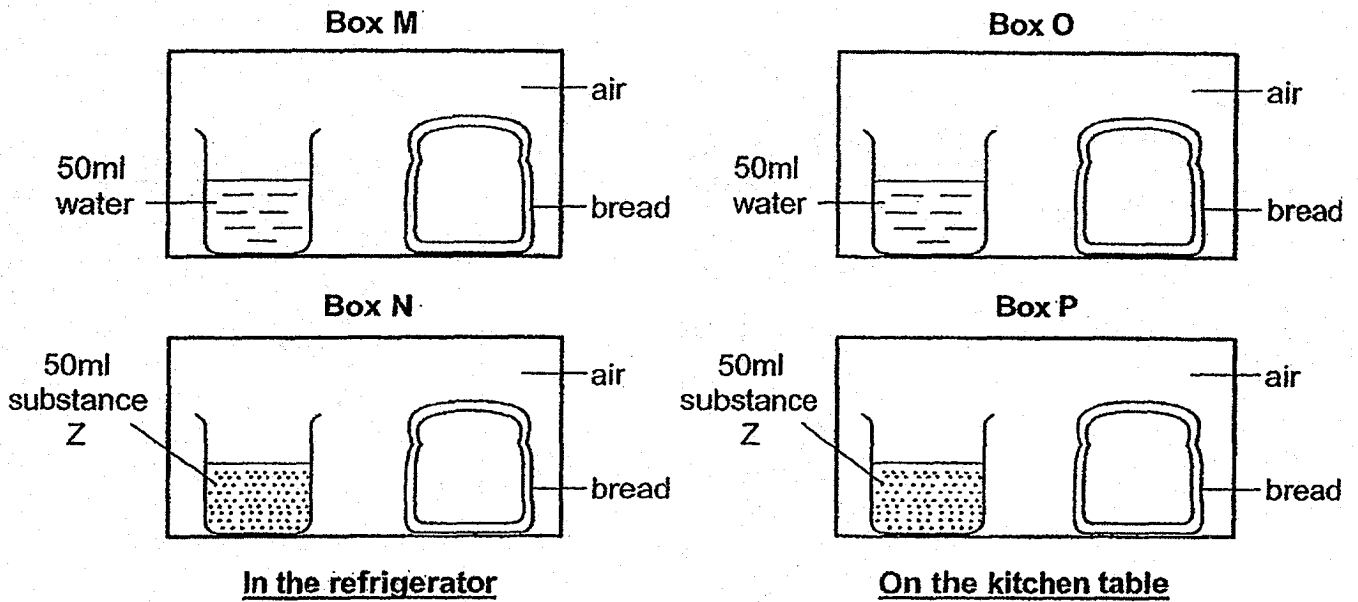
(a) Based on the flowchart above, state **all** the characteristics of animal S. [1]

(b) Based on the flowchart above, state one difference between animal P and animal Q. [1]

(c) Based on the flowchart above, which animal group does animal R most likely belong to? [1]

(d) Based on the flowchart above, state an example of animal T. [1]

36. Mitchell conducted an experiment using identical slices of bread as shown below. He placed boxes M and N in the refrigerator and boxes O and P on the kitchen table. Substance Z absorbs water from the surrounding.

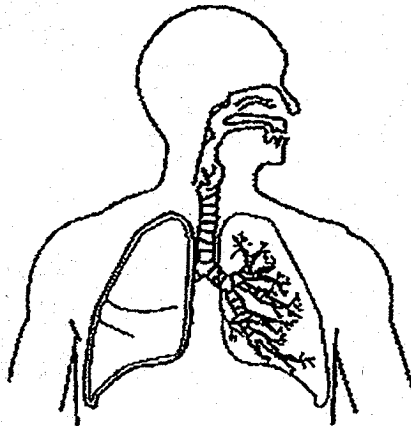


(a) In which box, M, N, O or P, would mould appear on the bread first? Explain your answer. [2]

(b) Which group of living things does mould belong to? [1]

(c) State how mould obtains food for growth. [1]

37. The diagram below shows a human organ system.



(a)(i) Identify the human organ system shown above. [1]

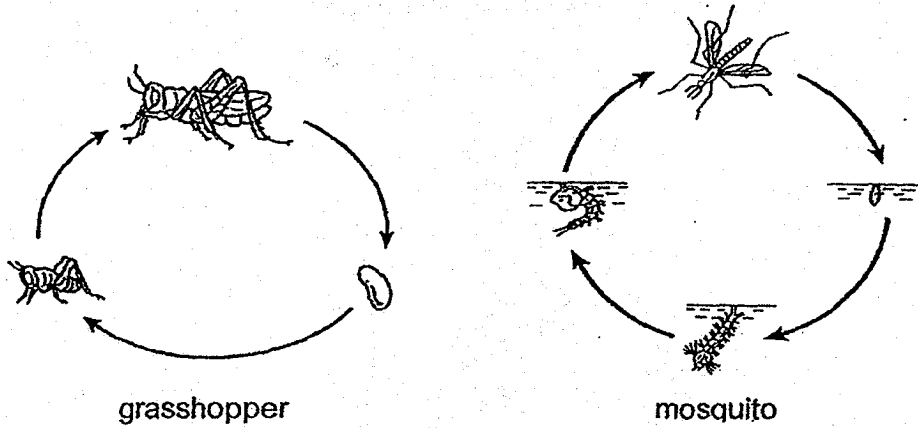
(a)(ii) State the function of the human organ system identified in (a)(i) [1]

Jamie ate a piece of biscuit. The piece of biscuit was digested in her digestive system.

(b)(i) State all the organs in the digestive system that carry out digestion. [1]

(b)(ii) Digestion is completed in the small intestine. State another function of the small intestine. [1]

38. The diagrams below show the life cycles of a grasshopper and a mosquito.



(a)(i) Based on the above life cycles, state one similarity between the two life cycles. [1]

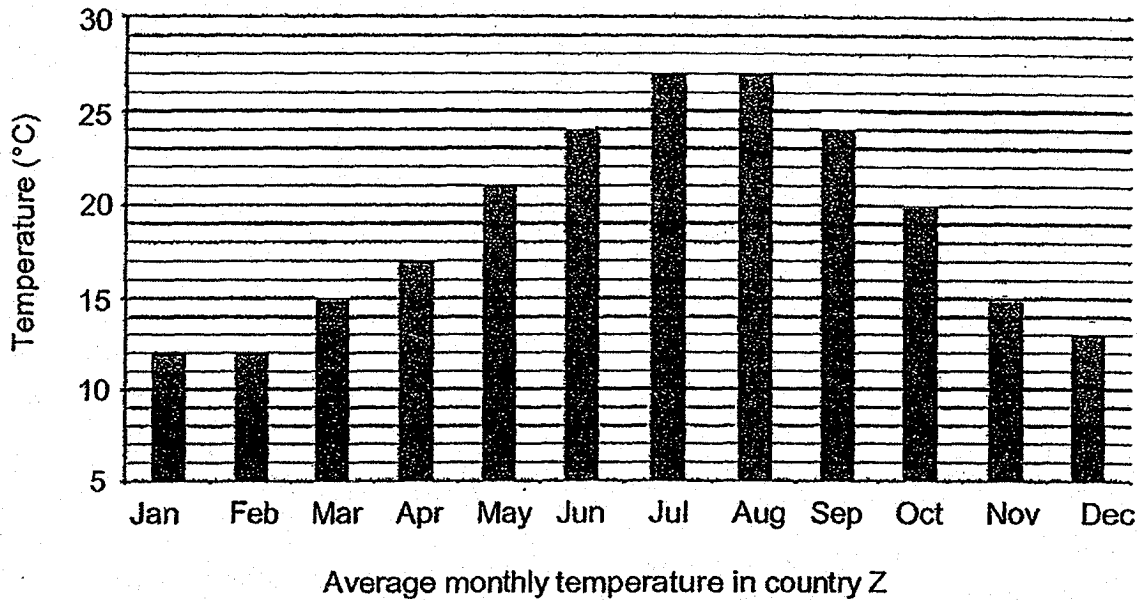
(a)(ii) Based on the above life cycles, state one difference between the two life cycles. [1]

It was observed that the adult of mosquito Z spreads a deadly disease to human beings. Scientists carried out an experiment and kept mosquitoes Z at different temperatures. They recorded the time for them to complete their life cycles in the table below.

Temperature (°C)	Time taken to complete the life cycle (days)
23	17
25	13
27	9

(b) State the relationship between the temperature of mosquito Z's surroundings and the time taken for it to complete its life cycle. [11]

Mosquitoes Z are found in country Z. The table below shows the average monthly temperatures in country Z.

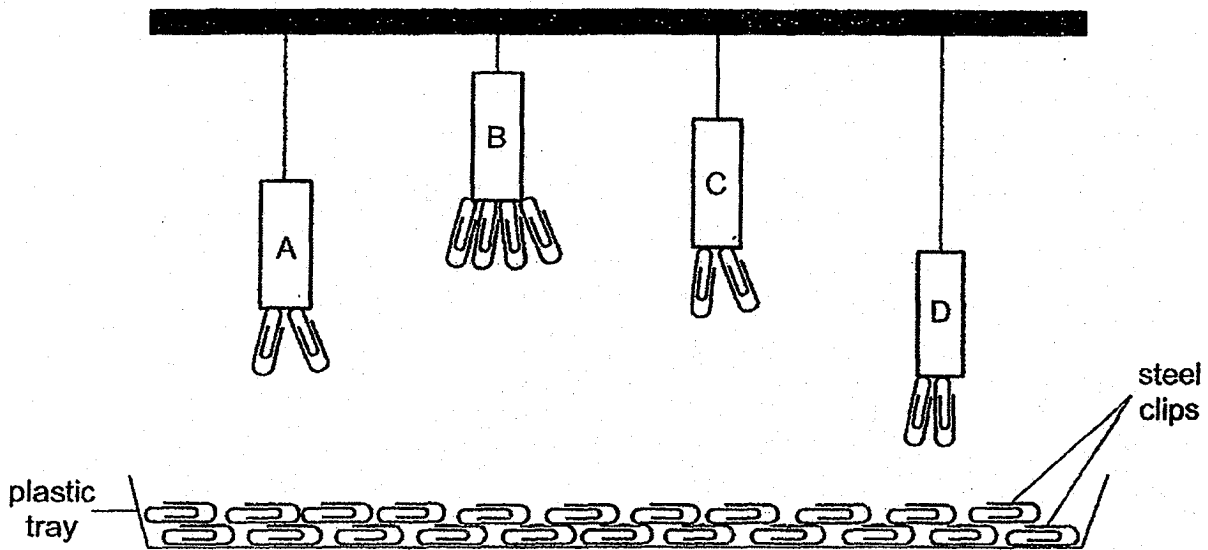


- (c) During which month(s) of the year would there be the least number of mosquitoes Z? [1]

It was observed that in July and August, there was the highest number of people suffering from the deadly disease spread by mosquito Z.

- (d) Based on the results of the scientists' experiment, explain the above observation. [1]

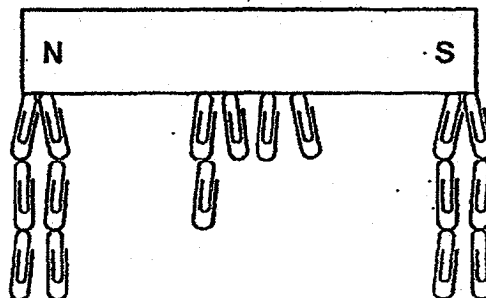
39. Tiffany hung four magnets, A, B, C and D, above a plastic tray of identical steel clips. The diagram below shows her observation.



- (a) Based on her observation, arrange the magnets in the order of their magnetic strength, beginning with the strongest magnet. [1]

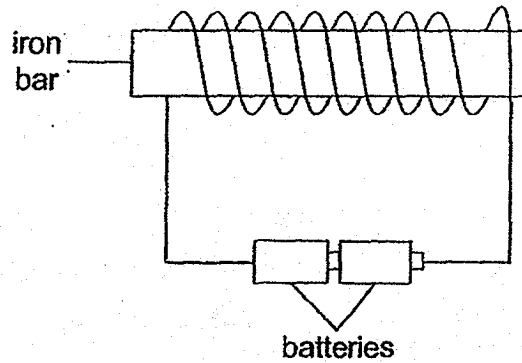
Strongest → Weakest			

Tiffany then placed magnet E into the plastic tray of steel clips and made the following observation.



- (b) Give a reason why there were most steel clips attracted to the poles of the magnet. [1]

Tiffany then set up another experiment with an iron bar as shown below.



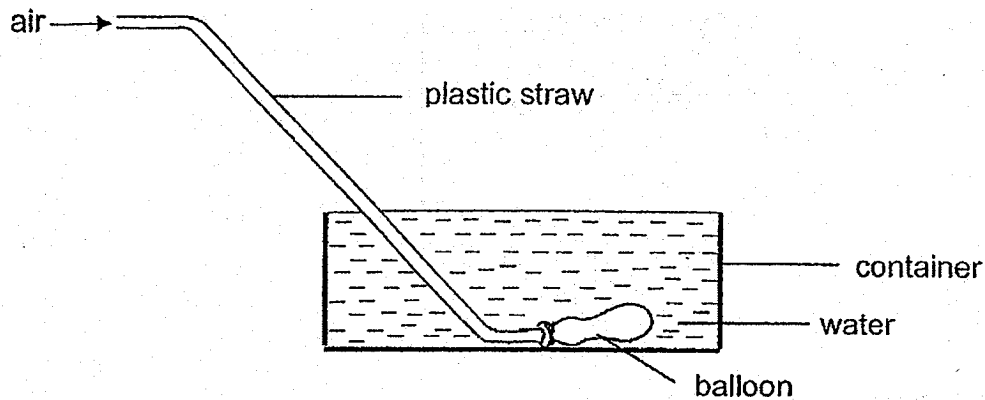
She then hung the iron bar above the same plastic tray of identical steel clips. She repeated the experiment with different number of coils of wire around the iron bar and recorded her results as shown in the table below.

Number of coils of wire around the iron bar	Number of steel clips attracted by the iron bar
10	3
15	6
20	12
25	18

(c)(i) Based on the results above, state the relationship between the number of coils of wire around the iron bar and the number of steel clips attracted by the iron bar. [1]

(c)(ii) Besides increasing the number of coils of wire around the iron bar, suggest another way for the electromagnet to attract more than 18 steel clips. [1]

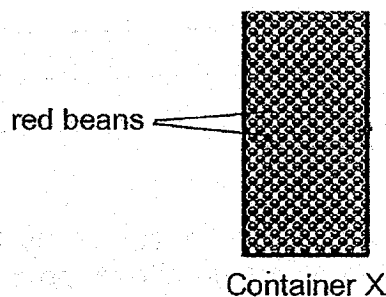
40. Timothy set up an experiment as shown in the diagram below. He filled the container to the brim with water. Then, he blew air through the plastic straw.



- (a)(i) What would happen to the water in the container when the balloon is inflated? [1]

- (a)(ii) Explain your answer in (a). [1]

In another experiment, Timothy filled container X, which has a volume of 250cm^3 , to the brim with red beans as shown in the diagram below.

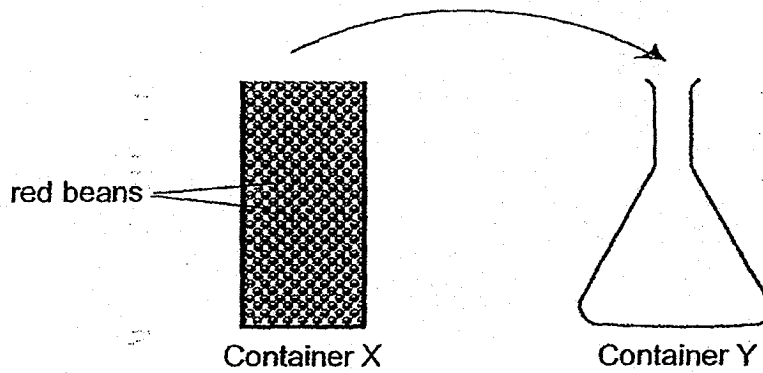


Timothy's teacher told him that the volume of red beans in container X was actually less than 250cm^3 .

- (b) Explain why the volume of the red beans was less than 250cm^3 . [1]

(Continue from Question 40)

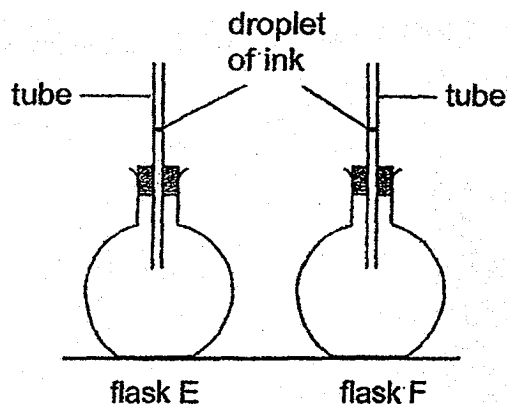
- () Timothy then poured the red beans from container X into container Y as shown in the diagram below.



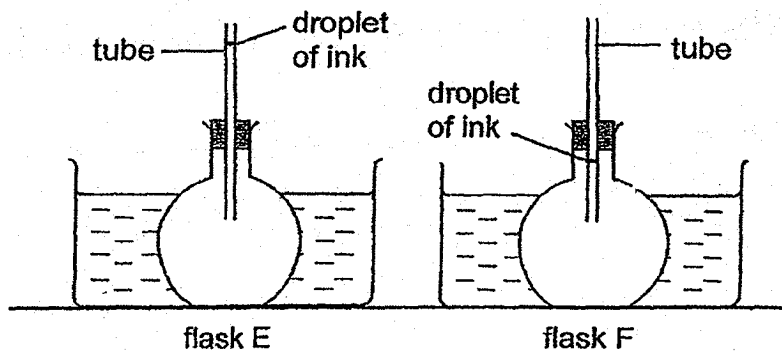
Timothy observed that the red beans took the shape of container Y. He concluded that red beans are in the liquid state.

Using the properties of matter, explain why Timothy's conclusion is wrong. [1]

41. Enya set up the following experiment at room temperature. The droplet of ink in the tube in each set-up is at the same position at the start of the experiment.



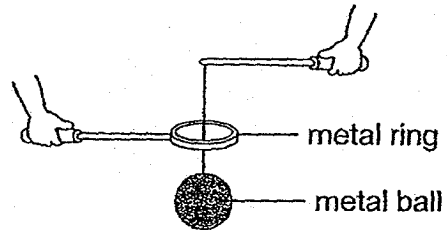
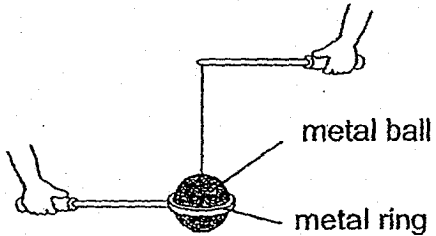
Enya then placed each flask into a basin of water at different temperatures, one at 10°C and the other at 50°C . After 5 minutes, the droplet of ink in the two flasks moved to different positions as shown in the diagram below.



- (a) Which flask had been placed into the basin of water at 50°C ? Explain your answer. [2]

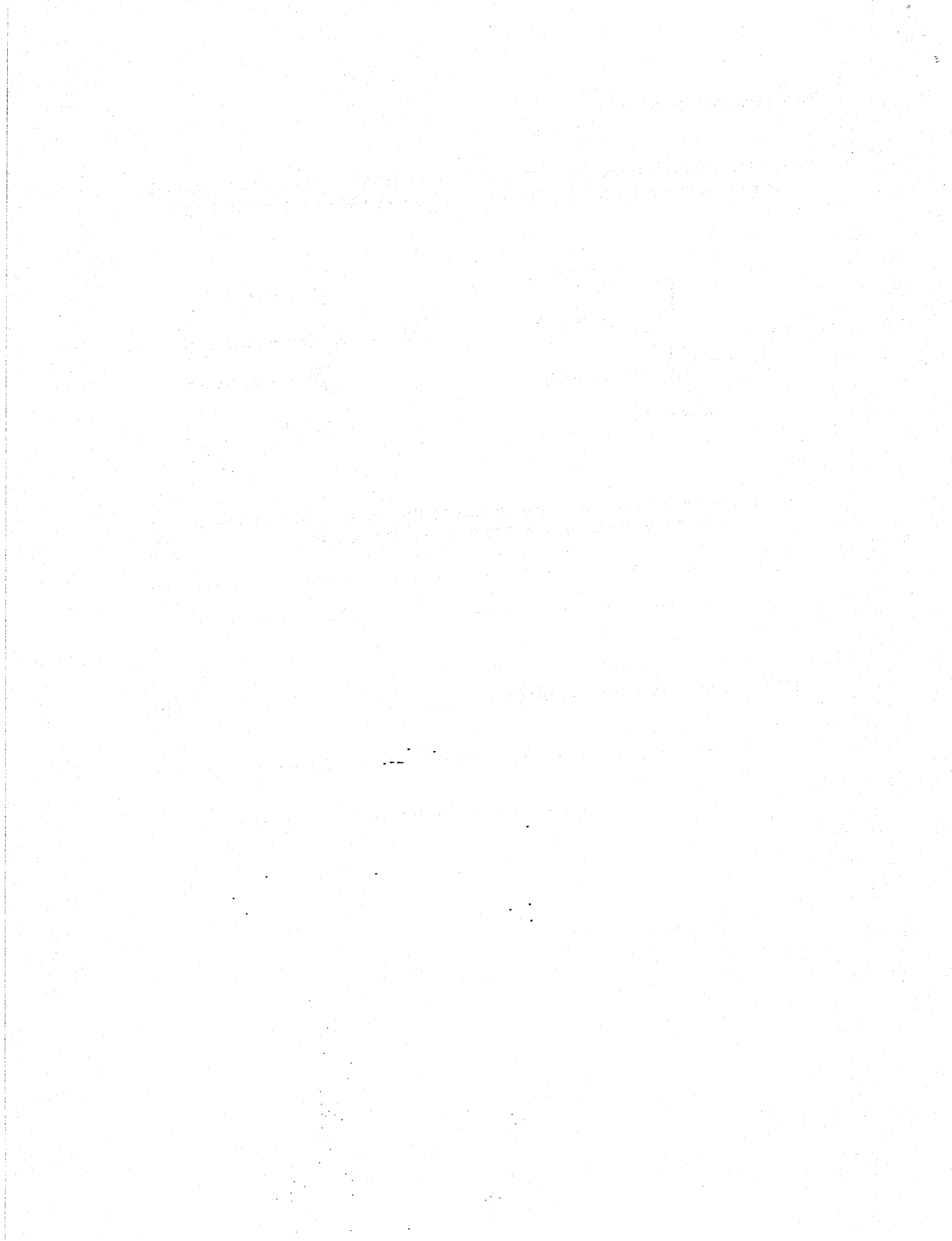
(Continue from Question 41)

In another experiment, Enya had a pair of metal ball and metal ring. The metal ball was not able to pass through the metal ring as shown in diagram 1 below.



- (b)(i) What can Enya do to the objects so that the metal ball is able to pass through the metal ring as shown in diagram 2 above? [1]

- (b)(ii) Explain your answer in (b)(i). [2]



SCHOOL : NANYANG PRIMARY SCHOOL

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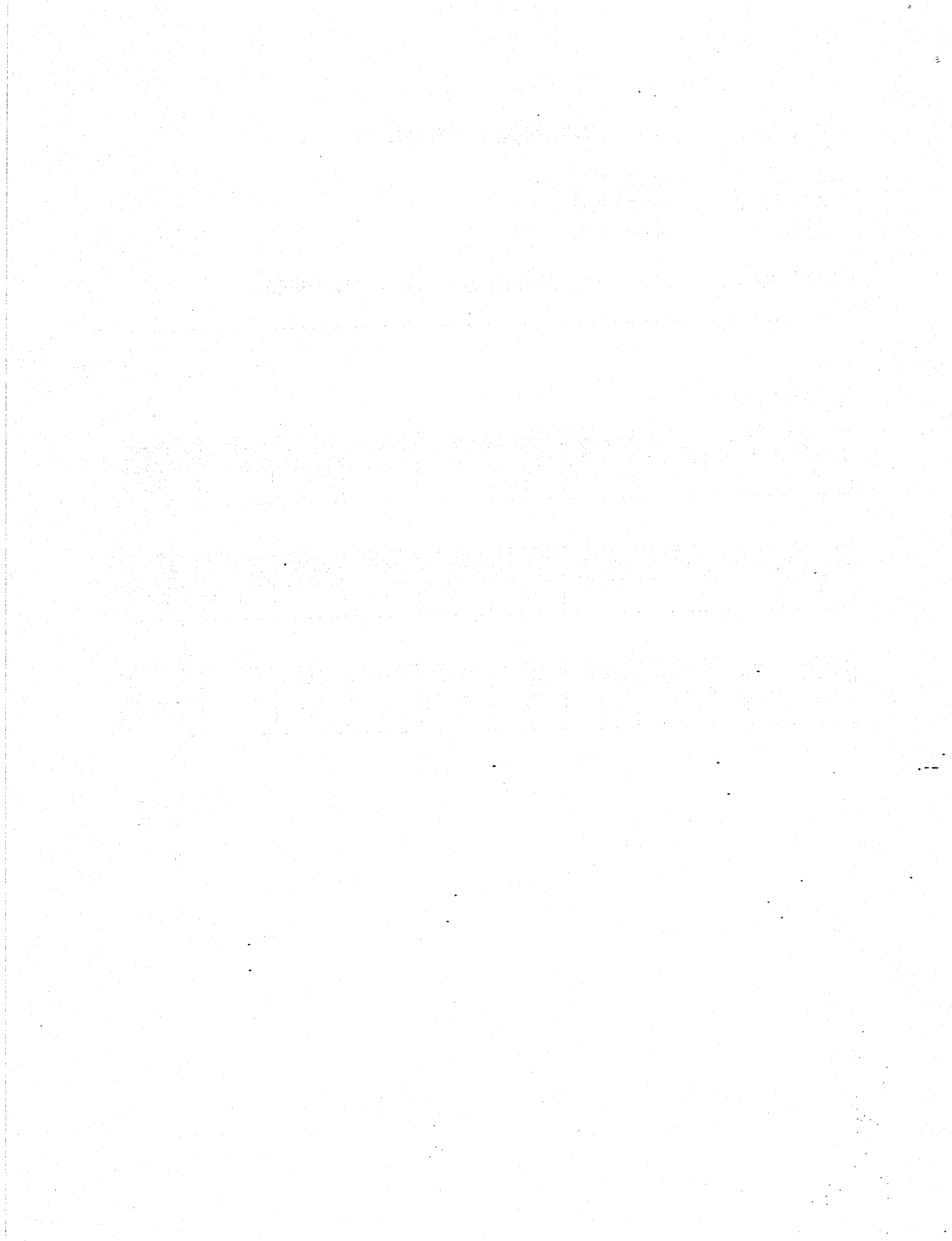
TERM : 2018 SA2

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	4	3	2	1	3	3	2	3

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	2	4	3	2	4	4	2	3

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	3	2	1	2	2	2	1		



**Nanyang Primary School
P4 SCIENCE SA2 2018
Suggested Answer Key**

Section B (Suggested Answers)

- 29a. bigger
- 29b. stems

- 30. A:North
B:South

- 31a. decrease
- 31b. The animal needs food to remain alive.

- 32a. poor
- 32b. good

- 33a. solid
- 33b. liquid

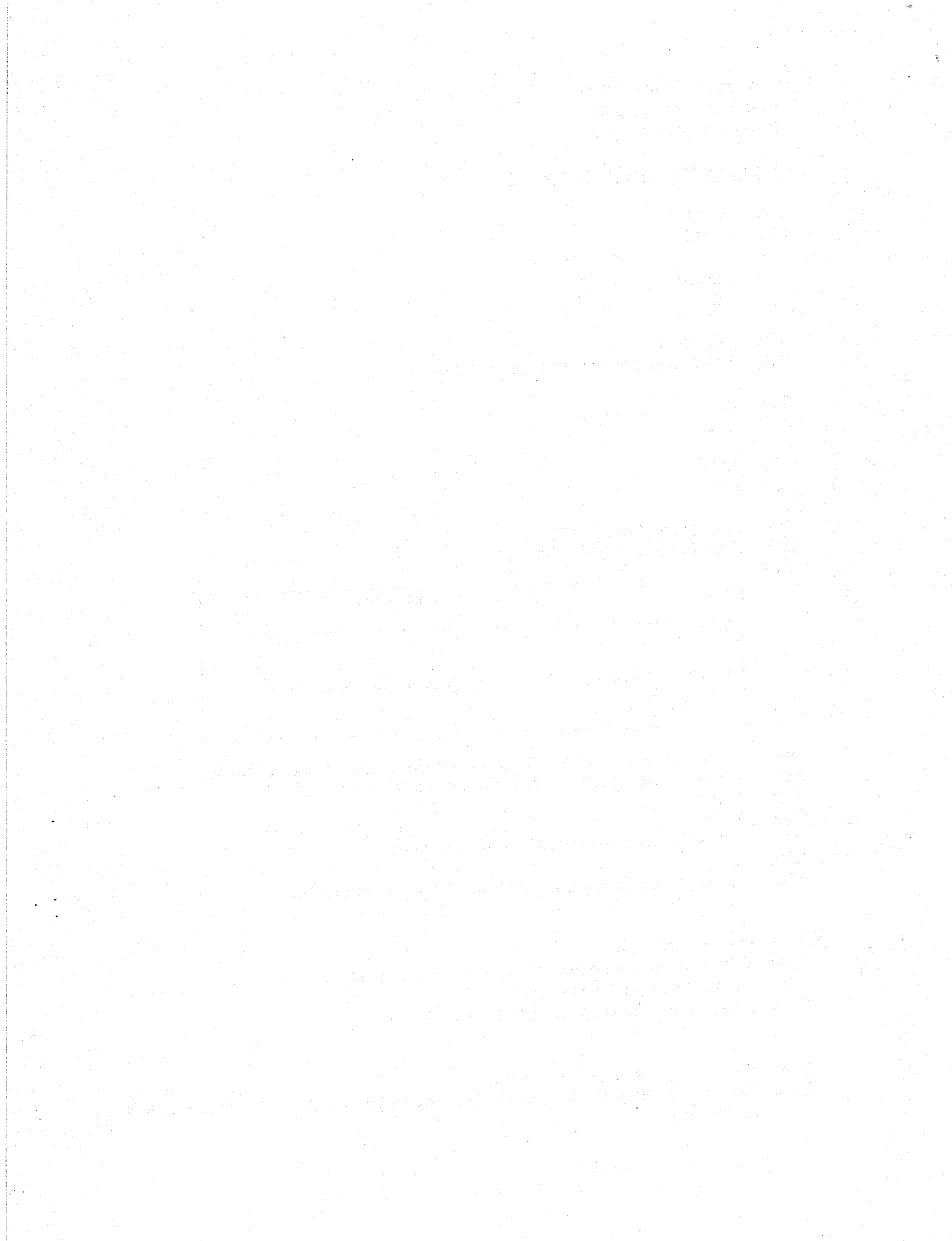
- 34a. Both plants have leaves.
- 34b. Part X makes food for the plant.
- 34ci.

(c)(i) Flowering	Non-flowering
(c)(ii) sunflower plant, mango tree	bird's nest fern, Moss

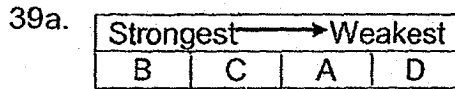
- 35a. Animal S does not give birth to young alive, has scales and has gills
- 35b. Animal Q has a beak but animal P does not have a beak.
- 35c. Reptile
- 35d. Dog
- 36a. Box O. There is water and warmth in the box.
- 36b. Fungi
- 36c. Mould obtains food from other living things, dead or alive.

- 37ai. Respiratory system
- 37aii. Takes air into the body and removes air from the body.
- 37bi. mouth, stomach, small Intestine
- 37bii. Digested food is absorbed into the blood

- 38ai. Both life cycles have the egg stage.
- 38aii. The grasshopper has 3 stages in its life cycle but the mosquito has 4 stages in its life cycle.



- 38b. As the temperature of the mosquito Z's surroundings increases, the time taken for it to complete its life cycle decreases.
- 38c. January and February.
- 38d. July and August are the months with the highest temperatures hence mosquito Z will take the shortest time to reach the adult stage.



- 39b. The magnet is strongest at its poles.
- 39ci. As the number of coils of wire around the iron bar increases, the number of steel clips attracted by the iron bar increases.
- 39cii. Use more batteries.
- 40ai. The water will flow out of the container.
- 40aii. The air in the balloon occupies space.
- 40b. There are air spaces between the red beans.
- 40c. Red beans have definite shape.
- 41a. Flask E. The air in flask E gained heat and expanded, and pushed the droplet of ink up the tube.
- 41bi. Heat the metal ring
- 41bii. The metal ring will gain heat and expand so that it is now bigger than the metal ball.

