**NAN HUA PRIMARY SCHOOL**
**SEMESTRAL ASSESSMENT 2 – 2018**
**PRIMARY 4**

**SCIENCE**

**BOOKLET A**

**28 Multiple Choice Questions (56 marks)**

**Total Time for Booklets A and B: 1 hour 45 minutes**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

**Marks Obtained**

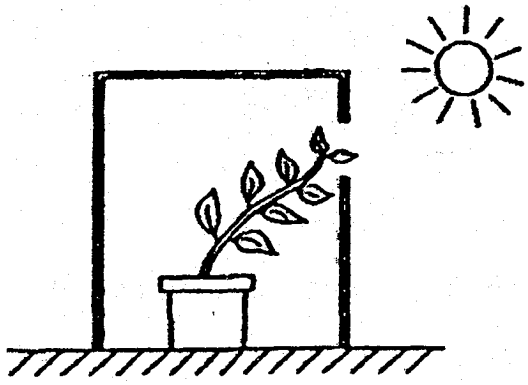
| | | |
|---|---|---|
| **Booklet A** | | **/ 56** |
| **Booklet B** | | **/ 44** |
| **Total** | | **/ 100** |

**Name:** _____ **(** **)** **Class: P 4** _____

**Date: 1 November 2018** **Parent's Signature:** _____

**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. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

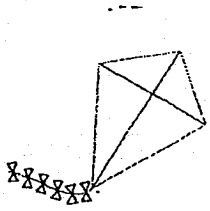
1. The plant grows towards the opening of the box where light is able to enter.



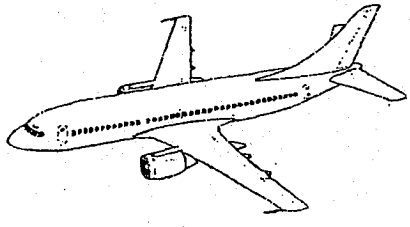
This shows that the plant is a living thing because it can _____.

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

2. Which one of the following is a living thing?



(1)

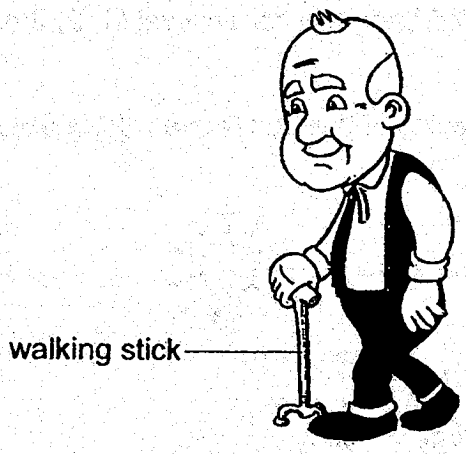


(2)

(3)

(4)

3. The diagram below shows an old man with a walking stick.




Iron is used to make the walking stick because iron _____.

(1) is shiny
(2) is strong
(3) sinks in water
(4) conducts heat well

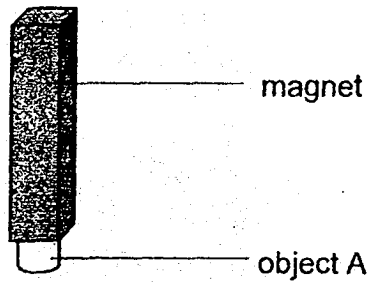
4. Which one of the following is the function of the roots of a plant?

(1) makes food
(2) takes in mineral salts
(3) holds the plant upright
(4) helps in gaseous exchange

5. In which part of the digestive system is water removed from food?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

6. Object A was attracted to a magnet as shown in the diagram below.




Object A is made of _____.

(1) iron
(2) plastic
(3) rubber
(4) ceramic

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

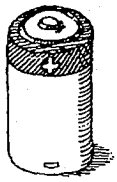
Lighted candle

(1)

Moon

(2)

Battery

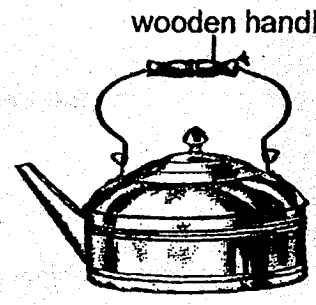


(3)

Mirror

(4)

8. Kim boiled some water in the kettle shown below.

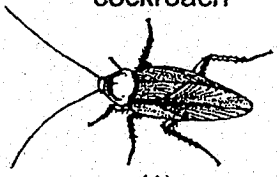



She is able to hold the kettle of boiling water using the wooden handle. This is because wood is a _____.

(1) light material
(2) flexible material
(3) poor conductor of heat.
(4) good conductor of heat

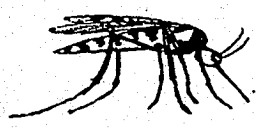
9. Which animal has a 4-stage life cycle?

cockroach



(1)

mosquito



(2)

frog

(3)

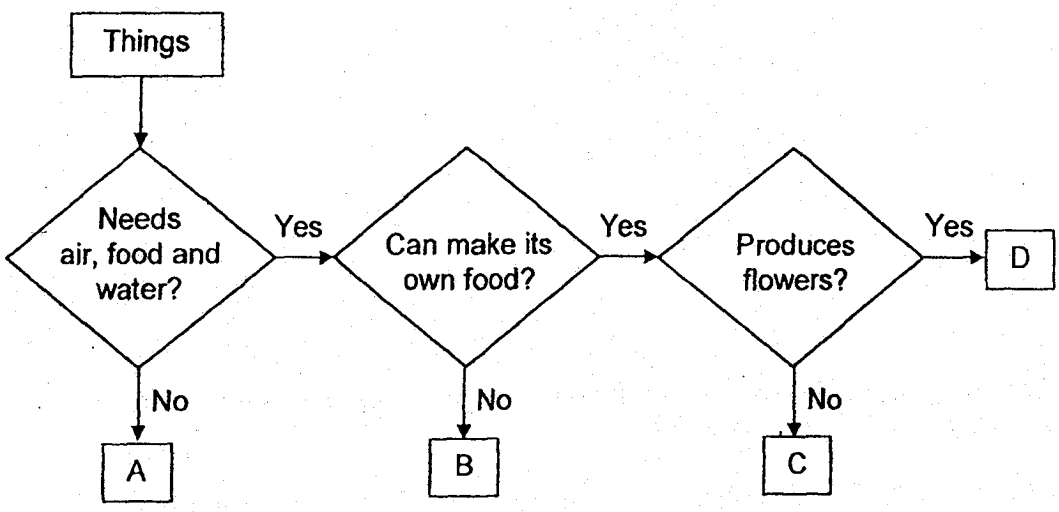
chicken

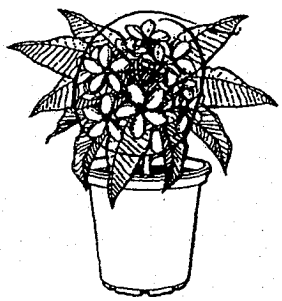
(4)

10. Matter is anything that has mass and occupies space. Which one of the following is **NOT** a matter?

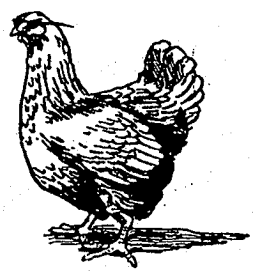
(1) ice
(2) tree
(3) water
(4) sunlight

11. Study the flowchart below.



Plant

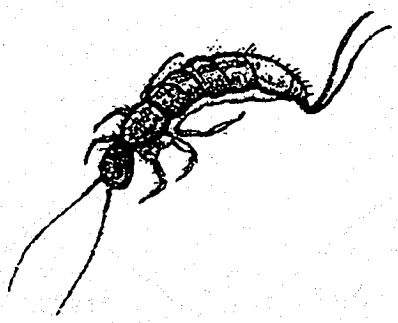


Chicken

Which of the following letters best represent the plant and the chicken shown above?

| | Plant | Chicken |
|---|---|---|
| (1) | A | B |
| (2) | D | B |
| (3) | C | A |
| (4) | D | C |

12. Some students found Animal X in the soil of their school garden as shown below.



After making some observations about Animal X, the students concluded that Animal X belongs to the insect group.

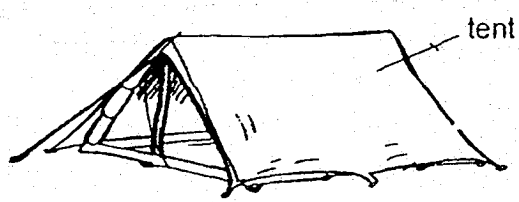
Which one of the following observations shows that Animal X is an insect?

(1) It is hairy.
(2) It has six legs.
(3) It has no wings.
(4) It has many body parts.

13. P, Q, R and S are four different materials. A tick ( ✓ ) shows the property of the material.

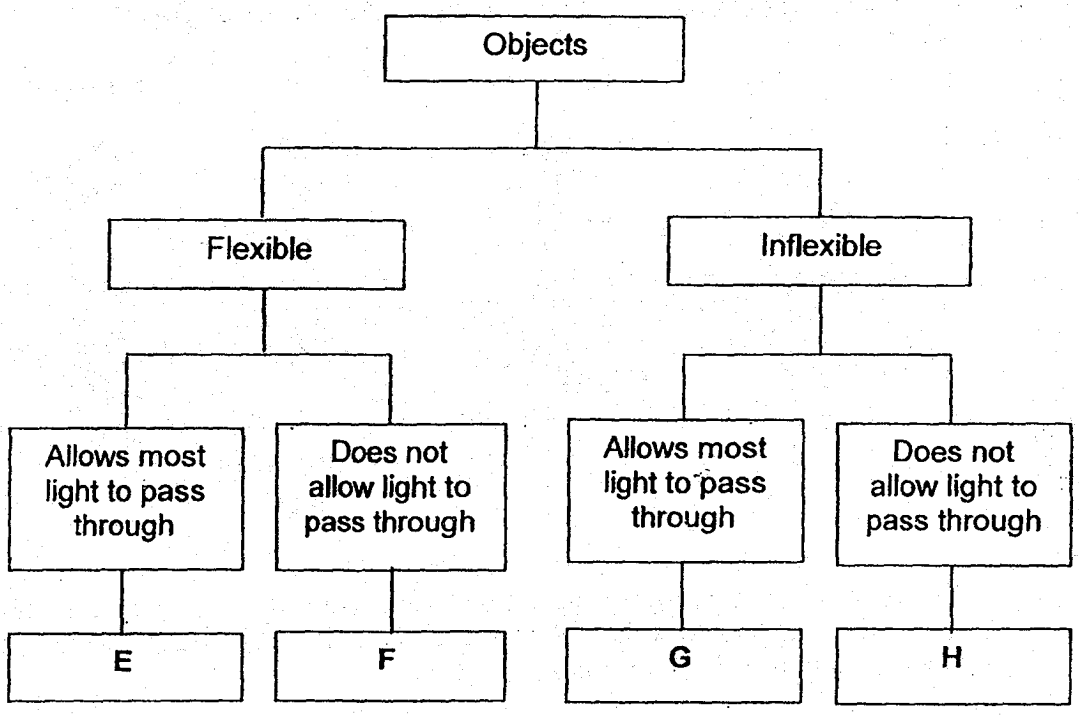
| | p | Q | R | S |
|---|---|---|---|---|
| **fragile** | ✓ | | | |
| **strong** | | ✓ | ✓ | ✓ |
| **flexible** | ✓ | | ✓ | ✓ |
| **waterproof** | ✓ | ✓ | | ✓ |

Which material, P, Q, R or S, is most suitable to make a tent as shown below?

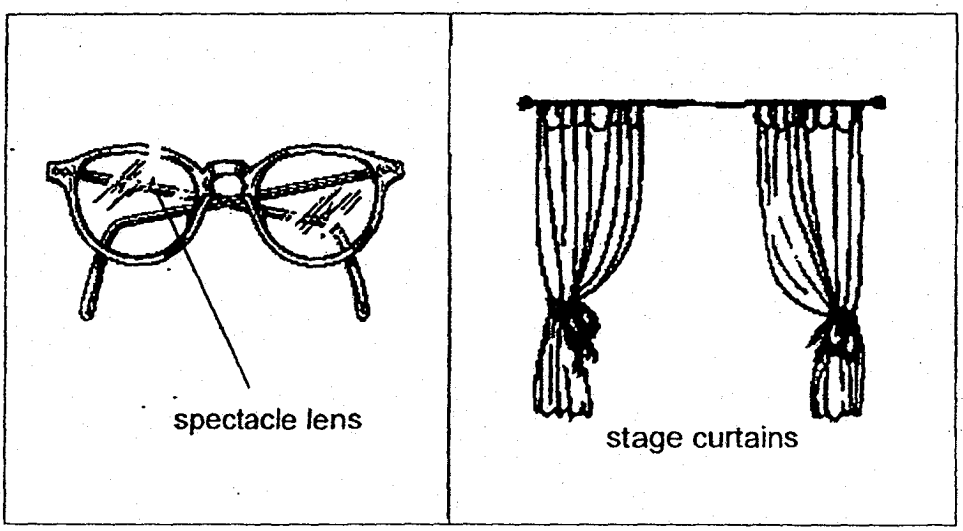



(1) P
(2) Q
(3) R
(4) S

14. Study the classification chart below carefully.

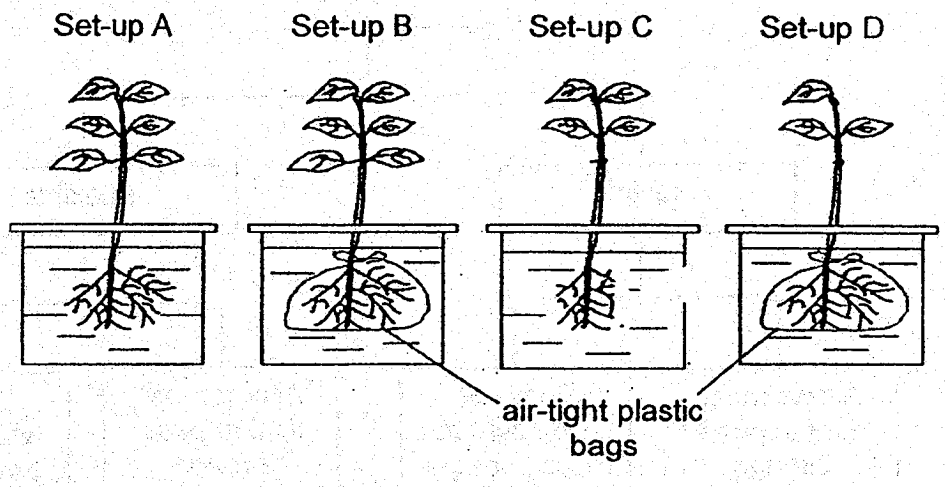



In which groups, E, F, G or H, should the spectacle lens and stage curtains be placed?




| | Spectacle lens | Stage curtains |
|---|---|---|
| (1) | G | H |
| (2) | G | F |
| (3) | E | F |
| (4) | E | G |

15. Devi wanted to find out if a plant takes in water through their roots. She prepared the following set-ups and placed them near an open window.




The roots of the plants in set-up B and set-up D were tied with air-tight plastic bags at the start of the experiment before putting the plants into the beaker of water. Each set-up had the same amount of water.

Which two set-ups should she use to conduct a fair test?

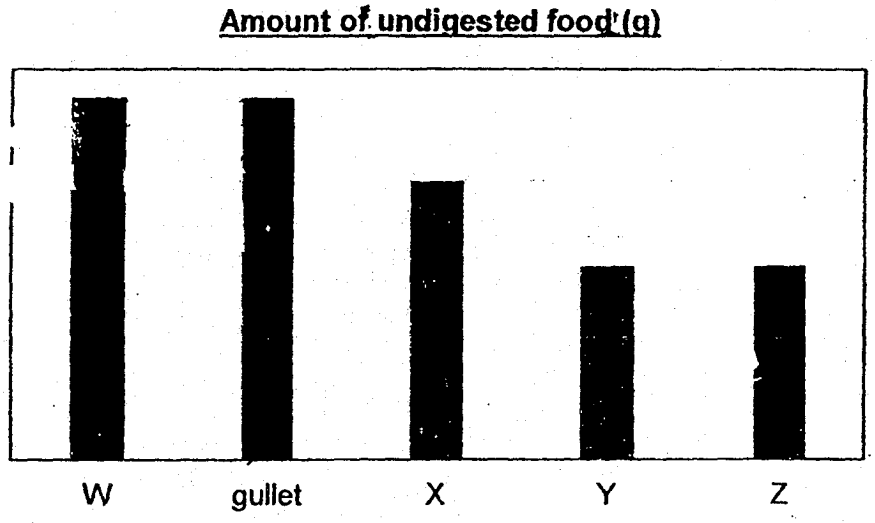
(1) A and B

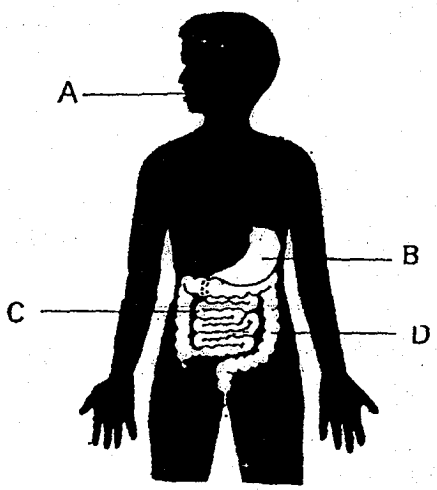
(2) A and C

(3) B and C

(4) B and D

16. The bar graph below shows the amount of undigested food as it leaves each organ of the human digestive system.

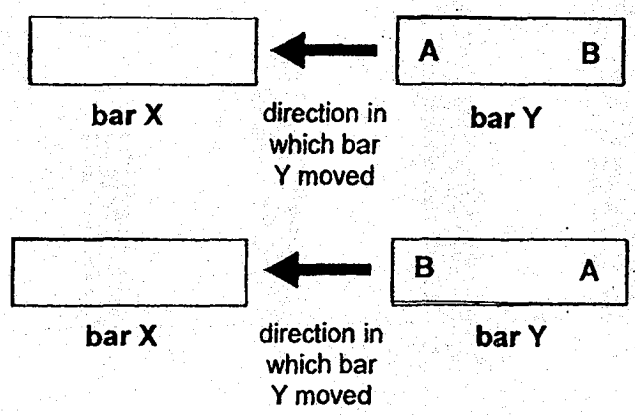


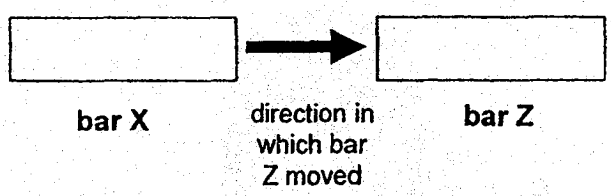

Which one of the following parts identifies part W in the graph above?

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

17. Shaun wanted to find out the magnetic properties of three metal bars, X, Y and Z. He placed one end of bar X to poles A and B of bar Y, one at a time. He observed that bar Y moved towards bar X.




Shaun placed one end of bar X next to one end of bar Z. She observed that bar Z moved away from bar X.

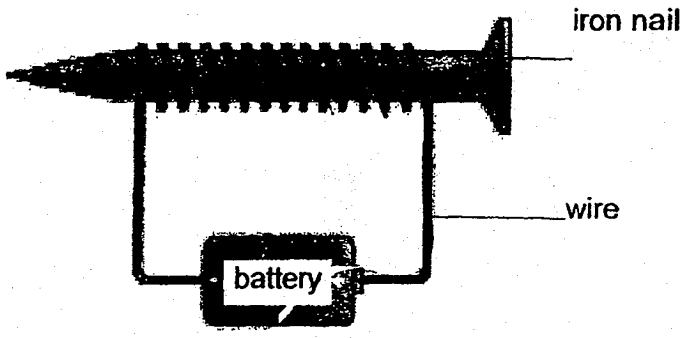



Based on the information above, which of the following conclusions that Shaun made were correct?

A Bar Y is a magnetic material.
B Only bars X and Z are magnets.
C Bar X will repel both ends of bar Y.
D Bar Z will repel both ends of bar Y.

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

18. Using the set-up shown below, Ken wanted to find out if the number of batteries affects the strength of an electromagnet.

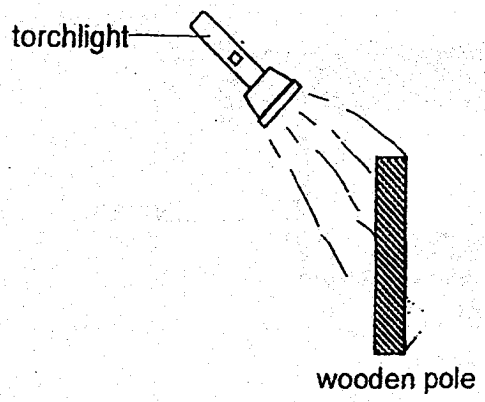



Which of the following variable(s) should Ken keep the same to ensure a fair test?

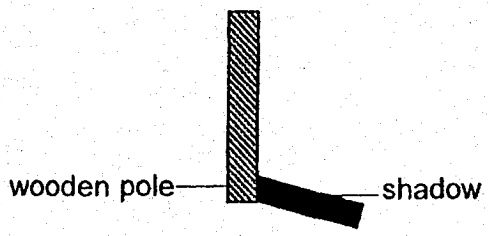
A material of nail used
B thickness of wire used
C number of batteries used
D number of coils around the nail

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

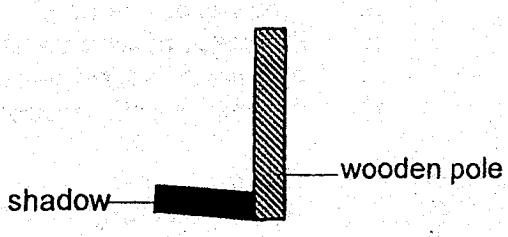
19. Yong Kang conducted an experiment in a dark room. He shone a torchlight at a wooden pole as shown in the diagram below.



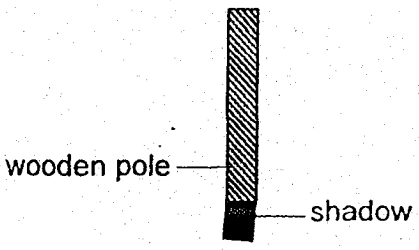

Which one of the following is the shadow that Yong Kang would observe?



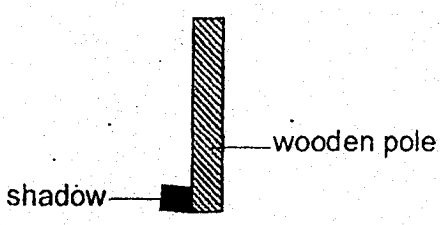

(1)




(2)

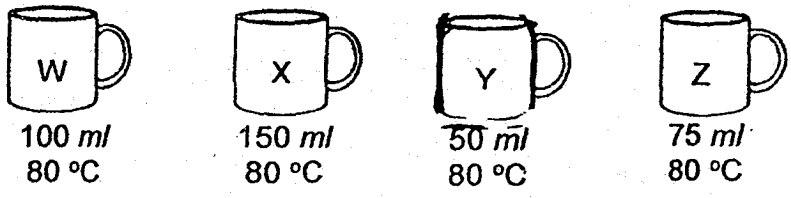



(3)




(4)

20. Four identical cups, W, X, Y and Z, were filled with different amount of coffee and placed on a table in the classroom as shown below.

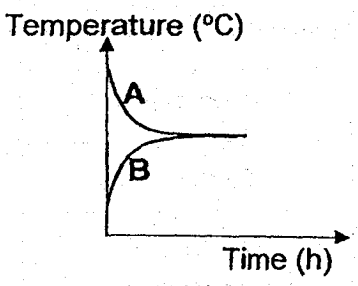



Which cup of coffee will cool to room temperature first?

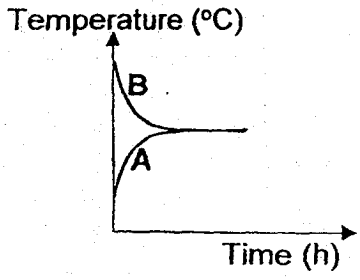
(1) W
(2) X
(3) Y
(4) Z

21. Mrs Ho brought two identical boxes, A and B, to a class party as shown below.

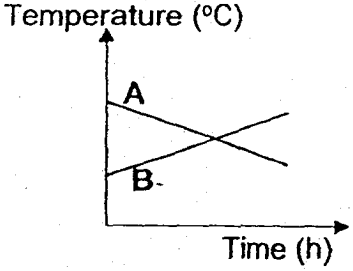

Based on the above set-ups, which of the following graph correctly show the change in temperature of the items inside the two boxes after 2 hours?



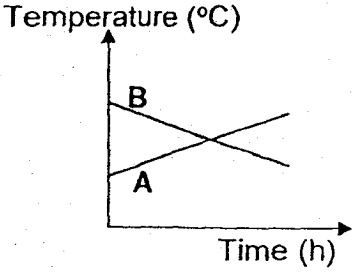

(1)




(2)

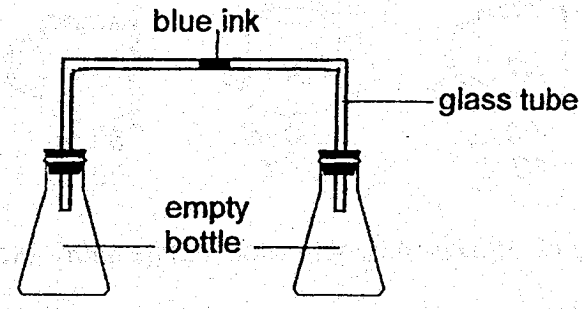



(3)

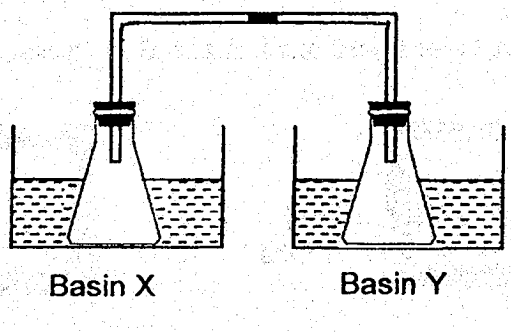



(4)

22. Danny connected two identical bottles with a glass tube. The glass tube contains a drop of blue ink as shown below.



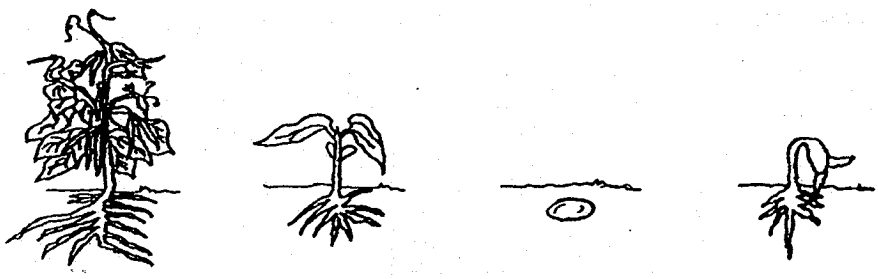

The two bottles were placed into Basin X and Basin Y as shown below. Basin X and Basin Y have the same amount of water at different temperature.




Which of the following is correct?

| | Temperature of water in Basin X | Temperature of water in Basin Y | Direction of the movement of the ink |
|---|---|---|---|
| (1) | 90 °C | 10 °C | → |
| (2) | 90 °C | 10 °C | ← |
| (3) | 40 °C | 20 °C | ← |
| (4) | 10 °C | 40 °C | → |

23. The diagram below shows the different stages in the life cycle of a plant.




Arrange the stages in the correct order to show the life cycle of a plant.

(1) A → B → D → C

(2) B → D → C → A

(3) C → D → B → A

(4) D → C → A → B

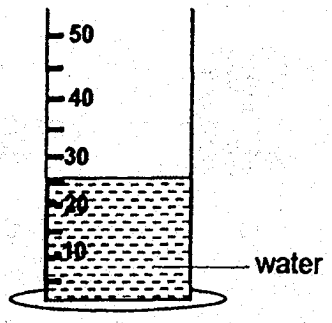
24. The table below shows what a pupil observed about the life cycle of an insect.

| Date | Observation |
|---|---|
| 10 March | Eggs were laid. |
| 11 March | Eggs hatched into larvae. |
| 18 March | Some larvae became pupae. |
| 22 March | Some pupae became adults. |

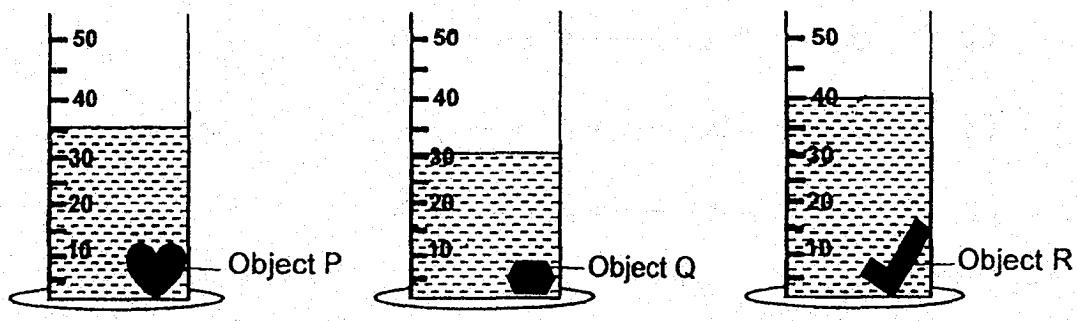
Which one of the following statement about the insect is **false**?

(1) The insect lays eggs.
(2) The insect spends most of its life as a pupa.
(3) The insect has a similar life cycle as the butterfly.
(4) The insect has three body parts and six legs in its adult stage.

25. Kailing poured 25 ml of water into each of the three containers as shown in the diagram below.




She added one object into each of the three containers as shown below.



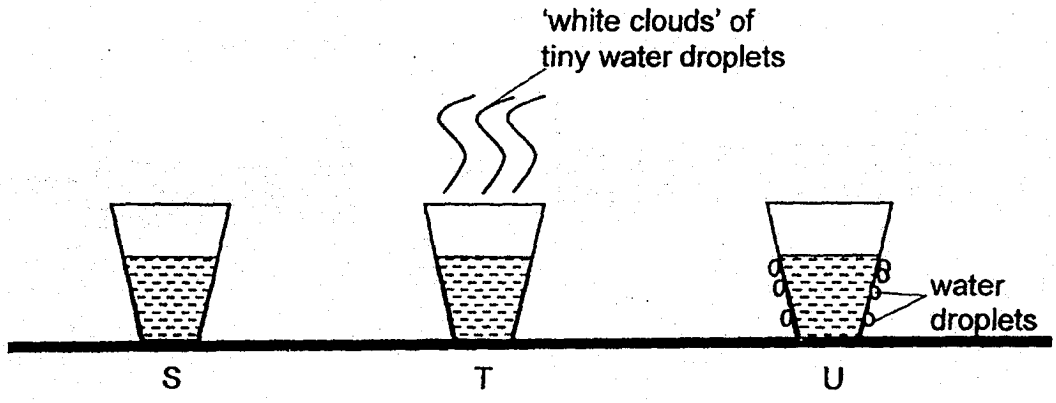

Based on the above observation, which of the following conclusion(s) is/are **correct**?

A Object R has the largest volume.
B Object Q and Object R has the same volume.
C Object P has a greater volume than Object Q.

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

26. Carrie poured 100 ml of water at different temperature into three identical cups, S, T and U. She left the three cups of water on the table at room temperature.

The diagram below shows what she observed after 5 minutes.




Arrange the cups according to the temperature of the water in the cups, starting from the highest temperature to the lowest temperature.

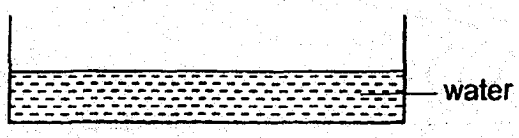
(1) U, S, T
(2) S, U, T
(3) S, T, U
(4) T, S, U

27. Which of the following is/are way(s) we can conserve water?

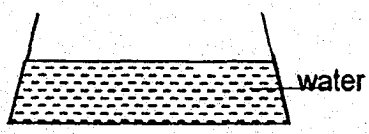
A Take shorter showers.
B Collect rain water to wash the corridors.
C Use a hose to wash the car instead of a pail.

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

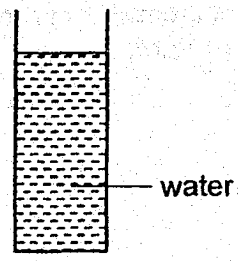
28. Muthu poured the same amount of water into four containers made from the same material. Which container will have the most amount of water left after three hours?




(1)




(2)

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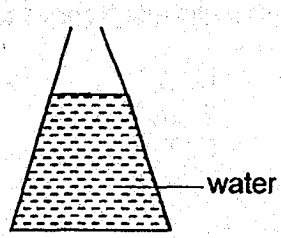



(4)

NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2018
PRIMARY 4

SCIENCE

BOOKLET B

**12 Open-ended questions (44 marks)**

**Total Time for Booklets A and B: 1 hour 45 minutes**

**INSTRUCTIONS TO CANDIDATES**

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

**Marks Obtained**

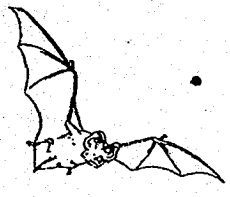
| | | |
|---|---|---|
| **Section B** | | **/ 44** |

**Name:** _____ ( ) **Class: P 4** _____

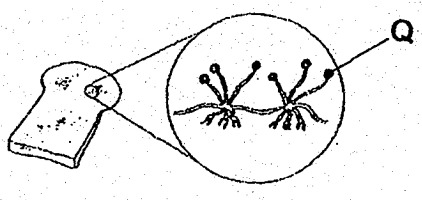
**Date: 1 November 2018** **Parent's Signature:**_____

**Section B: (44 marks)**
Write your answers to questions 29 to 40 in the space provided.
The number of marks allocated is shown in brackets [ ] at the end of each question or part of the question.

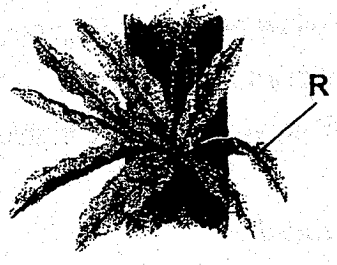
29 (a) Draw lines to match the following animals to the correct groups. [2]

| Animals | Groups |
|---|---|
|  • | • bird |
|  • | • fish |
| | • mammal |

(b) The diagram below shows two living things, Q and R.



Magnified view of Q under microscope




Put a tick (✓) in the correct box to show the group each living thing belongs to. [2]

| Living Thing / Group | Q | R |
|---|---|---|
| Fungi | | |
| Bacteria | | |
| Plant | | |



| Score | / 4 |
|---|---|

30.


(a) Susan places a magnet near a steel rod. The steel rod moves towards the magnet.

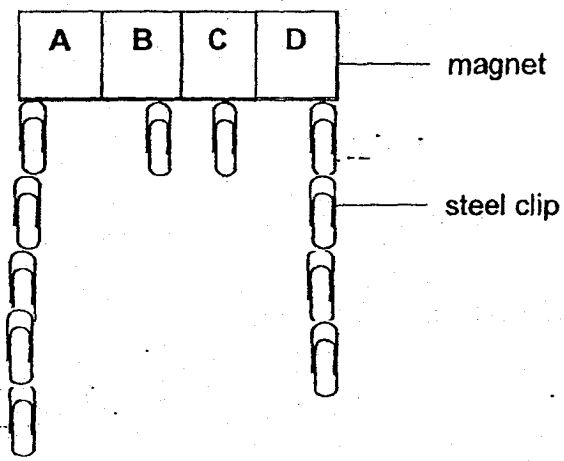
The magnet exerts a _____ on the steel rod. [1]

(b) Choose the correct word from the box to answer the question below. [1]

| strong | non-magnetic | magnetic |
|---|---|---|

Susan's observation shows that steel is a _____ material.

(c) Susan placed the magnet above a tray containing some steel clips. The diagram below shows her observation.



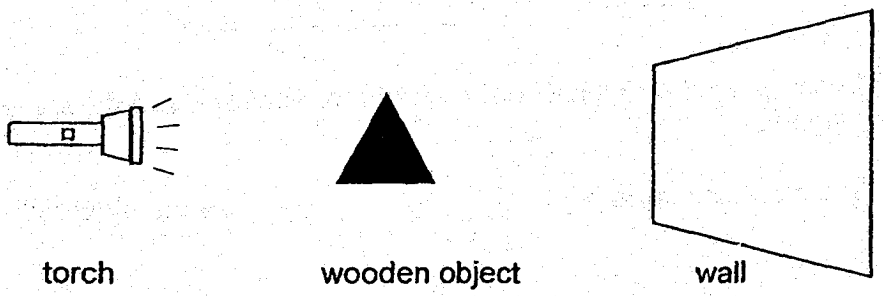

Why did Parts A and D attract more steel clips than Parts B and C? [1]

_____

_____

| Score | |
|---|---|

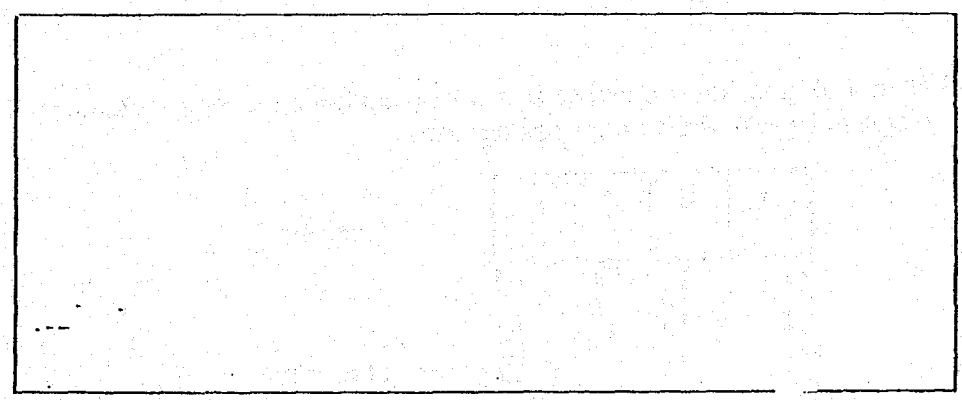
31. Alice shines a light on a wooden object and a shadow is formed on the smooth wall.



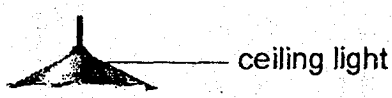
torch wooden object wall

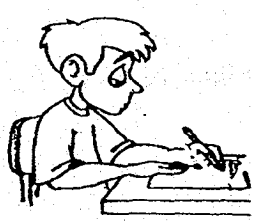
(a) A shadow is formed when light is _____ by an object. [1]

(b) Draw the shadow of the wooden object that is formed on the wall in the box below. [1]



(c) Andy is doing his homework in his room.



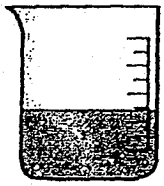



Explain why Andy is able to see his worksheet on the table. [1]

_____

_____

32. The diagram below shows a beaker of water.



Fill in the blanks using the correct word in the box.

| | | |
|---|---|---|
| solid | gas | increases |
| decreases | remain unchanged | |

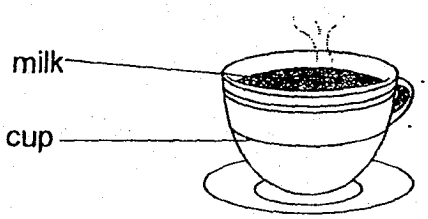
(a) When heat is supplied to the water, its temperature _____. [1]

(b) The beaker of water is put into a freezer. After some time, the water will change its state to become _____. [1]

Circle the correct answer in the brackets below.

(c) When the temperature of the water in the beaker decreases, the water has (**gained** / **lost**) heat. [1]

33. The picture below shows a cup of milk.



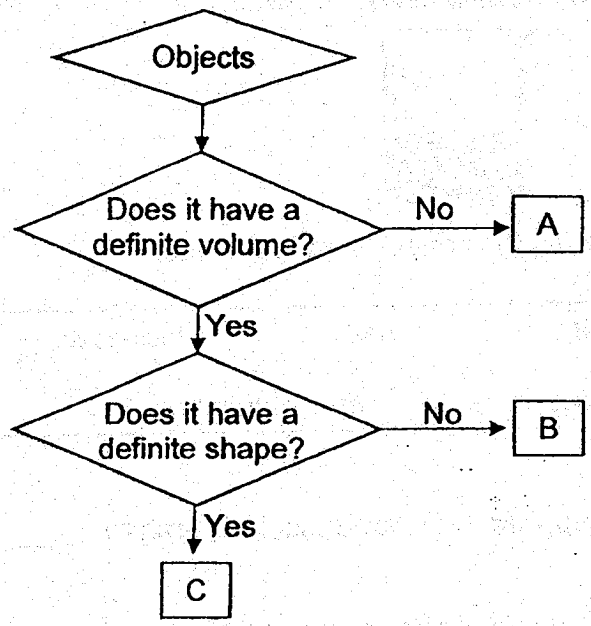

Circle the correct states for the following things.

(a) cup : solid / liquid / gas [1]

(b) milk : solid / liquid / gas [1]

| Score | |
|---|---|
| | 5 |

(c) Study the flowchart below.



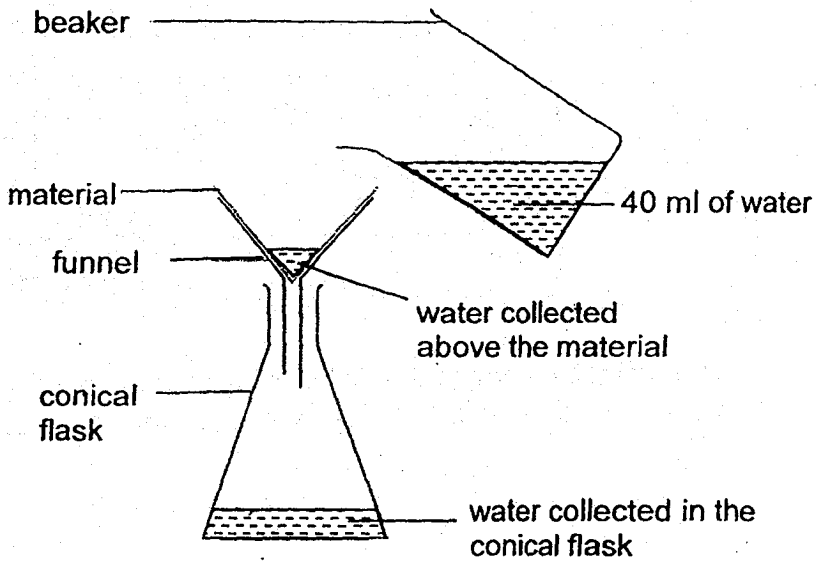

What states of water would A and C represent?
Circle the correct answers. [2]

A : water / ice / water vapour

C : water / ice / water vapour

Score 2

34. Winnie had 3 different pieces of materials, P, Q and R, of similar size and thickness. She poured 40 ml of water onto each material as shown in the diagram below.




After 5 minutes, she recorded the amount of water collected in the conical flask and the amount of water collected above the material as shown in the table below.

| Material | Amount of water collected in the conical flask (ml) | Amount of water collected above the material (ml) |
|---|---|---|
| P | 40 | 0 |
| Q | 6 | 0 |
| R | 0 | 40 |

Based on the information above, answer the following questions:

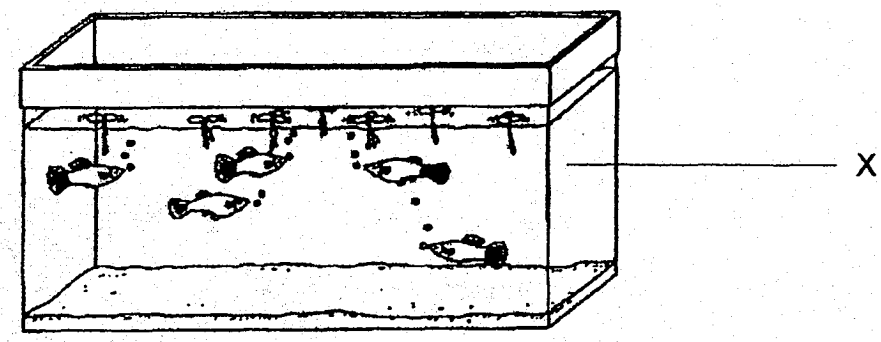
(a) Which material, P, Q or R, is most suitable to be made into a bath towel? Give a reason for your answer. [1]

_____

_____

Score 1

(b) The diagram below shows Part X of a fish tank that is made from one of the materials, P, Q or R.




Based on the information in the table, which material, P, Q or R, is most likely used to make part X? Give a reason for your answer. [1]

_____

_____

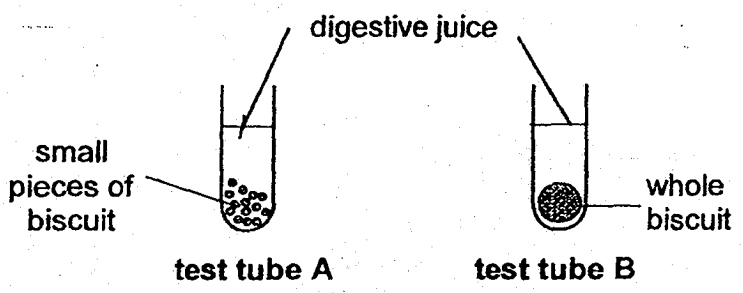
(c) Besides the property mentioned in (b), state two other properties that the material used to make Part X of the aquarium must have. [2]

_____

_____

| Score | / 3 |
|---|---|

35. Jordan wanted to find out if the surface area of food affects the rate of digestion. He cut one biscuit into many small pieces and placed them in test tube A. He then placed a whole biscuit in test tube B and added some digestive juice to each test tube as shown in the diagram below.




(a) State a variable that must be kept constant in order for Jordan to conduct a fair test. [1]

_____

(b) If Jordan had conducted a fair test, in which test tube, A or B, would the biscuit be broken down more quickly? Explain your answer. [1]

_____

_____

(c) Explain how chewing helps in the digestion of food after it enters the body. [2]

_____

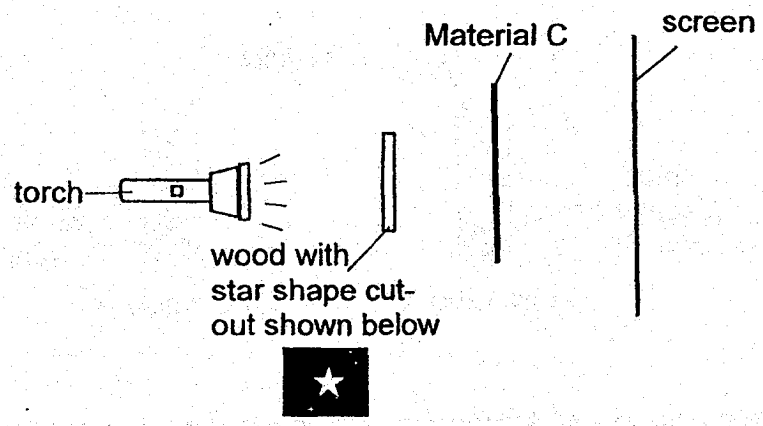
_____

_____

| Score | / 4 |
|---|---|

36. Jenny wanted to find out the amount of light which can pass through three different materials C, D and E.

She set up her experiment as shown in the diagram below using Material C and then repeated the experiment with Material D and E.




She also measured the brightness of any star-shaped image formed on the screen with a light sensor and recorded her results as shown below.

| **Material** | **C** | **D** | **E** |
|---|---|---|---|
| Amount of light detected by the light sensor | 40 units | 0 units | 35 units |

Based on the results above, answer the following questions.

(a) Which one of the materials, C, D or E, allows the most light to pass through? [1]

_____

(b) Jenny wanted to wrap a birthday present for her mother. She did not want her mother to know what the present is until her birthday.

Which one of the materials, C, D or E, should she use to wrap the birthday present? Give a reason for your choice. [2]

_____

_____

(c) How can Jenny make the shadow of the wood on the screen bigger without moving the screen? [1]

_____



Score / 4

37. Ronnie wanted to find out which material can keep soup warm for a longer period of time.

He used two bowls of the same size, Bowl X and Bowl Y. Bowl X is made of plastic and Bowl Y is made of steel.

He poured the same amount of hot water into each bowl and left it on the table. Then he measured the temperature of the water in each bowl over 30 minutes.

Bowl X

Bowl Y

(a) Write **X** or **Y** in the table below to show the results for each bowl correctly. [1]

| Bowl | Temperature (°C) at | | |
|---|---|---|---|
| | 0 min | 15 min | 30 min |
| | 80 | 59 | 40 |
| | 80 | 63 | 56 |

(b) Explain your answer in (a). [2]

_____

_____

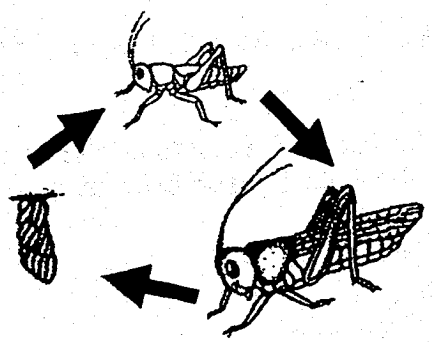
(c) After 60 minutes, he measured the temperature of the water in both bowls again and found that temperature of water in both bowls is 28°C.
Explain why the water in both bowls remained at 28°C. [1]

_____

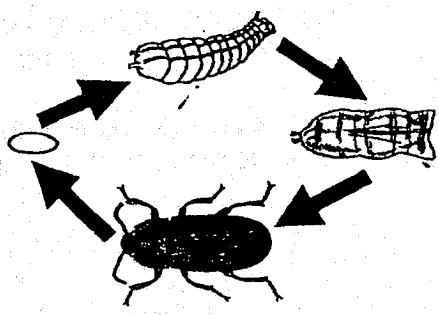
_____

| Score | / 4 |
|---|---|

38. The diagram below shows the life cycle of Animal S and Animal T.



Life cycle of Animal S



Life cycle of Animal T

(a) Based on the diagram above, state **two** differences between the life cycles of Animal S and Animal T. (Do not name the stages present) [2]

_____

_____

_____

_____

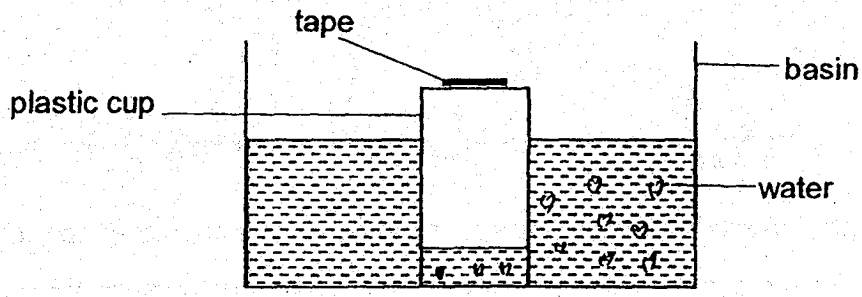
(b) Name an insect that goes through a similar life cycle as Animal S and Animal T respectively. [2]

Animal S : _____

Animal T : _____

| Score | / 4 |
|---|---|

39. Ling Ling made a hole at the base of a plastic cup and then she used a piece of tape to cover the hole. When she pushed the inverted cup into the basin of water, only a small amount of water entered the cup as shown in the diagram below.




(a) Explain why only a small amount of water can enter the cup. [1]

_____

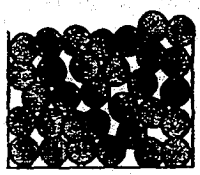
_____

(b) What will happen to the water level in the cup if she removes the tape from the cup? Explain your answer. [2]

_____

_____

(c) A container was completely filled with marbles as shown in the diagram below.



Some water was poured into the container to fill up the spaces between the marbles.

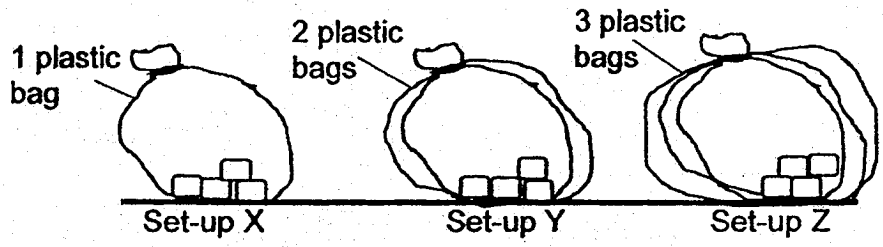
What property of water allows the water to fill up the air spaces between the marbles? [1]

_____

_____

| Score | | 4 |
|---|---|---|

40. Adam prepared three set-ups, X, Y and Z, using ice cubes of identical sizes. The ice cubes in X, Y and Z were wrapped with different number of plastic bags as shown below.




Adam recorded the time taken for all the ice cubes to turn into water below.

| ~~Set-up~~ | **Time taken for ice cubes to turn into water completely (min)** |
|---|---|
| X | 30 |
| Y | 45 |
| Z | 60 |

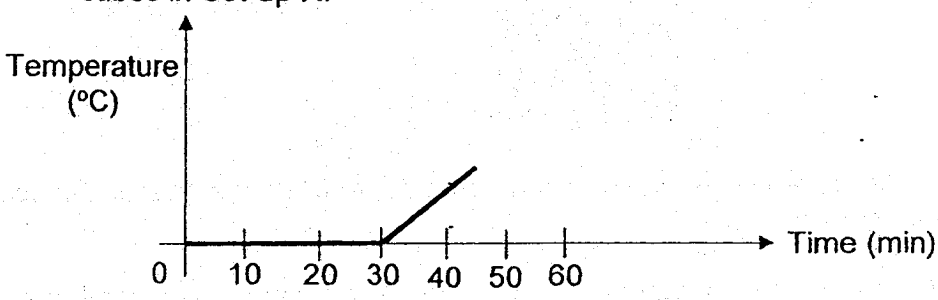
(a) Identify the ~~independent~~ variable (variable ~~changed~~) and dependent variable (variable measured) in the experiment. [2]

Independent variable (variable changed) :

_____

_____

(b) Adam drew the graph below to show the change in temperature of the ice cubes in Set-up X.




Why did the temperature of the ice cubes remain at 0°C during the first 30 minutes? [1]

_____

_____

~ End of paper ~

Score 3

# ANSWER KEY

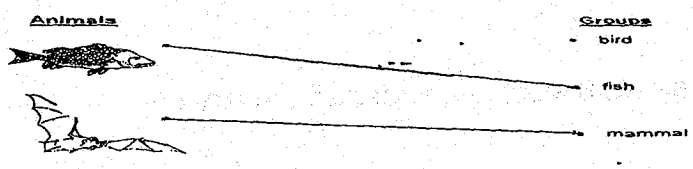
**YEAR : 2018**
**LEVEL : PRIMARY 4**
**SCHOOL : NAN HUA PRIMARY SCHOOL**
**SUBJECT : SCIENCE**
**TERM : SA2**

**BOOKLET A**

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

**BOOKLET B**

**Q29a)**




**b)**

| Group/Living thing | Q | R |
|---|---|---|
| Fungi | ✓ | |
| Bacteria | | |
| Plant | | ✓ |

**Q30a) The magnet exerts a magnetic force on the steel rod**

**b) Susan's observation shows that steel is a magnetic material.**

c)Parts A and D attract more steel clips than parts B and C because magnets are strongest at its poles.

Q31)a) A shadow is formed when light is blocked by an object.

b)

c)Andy is able to see his worksheet as the worksheet reflects light from the ceiling light into his eyes.

Q32

a) When heat is supplied to the water , its temperature increases.

b) The beaker of water is put into a freezer. After some time, the water will change its state to become solid

c) When the temperature of the water in the beaker decreases, the water has lost heat.

Q33)a) cup: solid

b)milk:liquid

c)A:water vapour

B: ice

Q34)a) Material Q. Because material Q absorbed the most amount of water

b) Material R. Material R is waterproof so the water will not leak out of the tank.

c) The aquarium must be transparent and strong

Q35)a) The amount of digestive juice

b)Test tube A. The smaller piece of the biscuit have a greater surface area in contact with the digestive juices, so the digestion of biscuit take place quicker.

c)During chewing , food is broken into smaller pieces and more surface area of the food comes into contact with the digestive juices. As a result , food is broken down into simpler substances faster.

Q36)a) Material C

b)D.D is opaque and does not let any light pass through so Jenny 's mother will not be able to see the present

c) Move the torch nearer to the wood

Q37)a)

| Bowl | Temperature (°C) *at* | | |
|---|---|---|---|
| | 0 min | 15 min | 30 min |
| Steel | 80 | 59 | 40 |
| Plastic | 80 | 63 | 56 |

b)Bowl Y is made of steel, a better conducter of heat than plastic, so the water will lose heat faster to the surrounding in the steel bowl and have a lower temperature

c) 28 °C is the room temperature.

Q38)a) The young of S resembles the adult but the young of T does not resemble the adult.

b) Animal S:cockroach

Animal T: butterfly

Q39)a)Air occupies space inside the cup and cannot escape. So only a small amount of water can enter as air can be compressed.

b)It will rise. There will be spaces for air to escape and water to take over the space previously occupied by the air.

c) Water does not have a definite shape

Q40)a)

Independent variable: Amount of plastic bags wrapped around the ice cubes.

Dependent variable:Time taken for ice cube to turn into water completely

b)The ice was melting

THE END