NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2017
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: 31 October 2017 Parent's Signature: _____

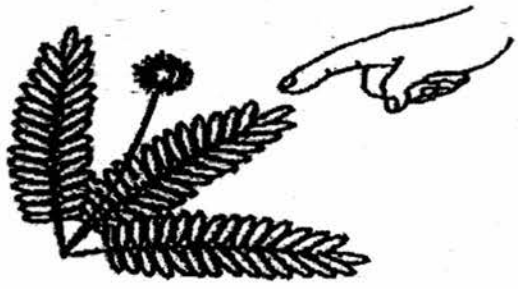
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**Section A:** (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. The leaves of the mimosa plant close when a finger touches the leaves.



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

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

2. Study the diagram below.



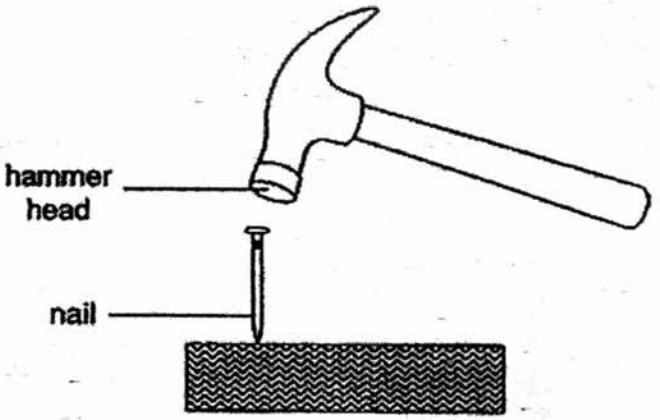
Which one of the following is a living things?

(1) Sun
(2) Plant
(3) Water
(4) Watering can



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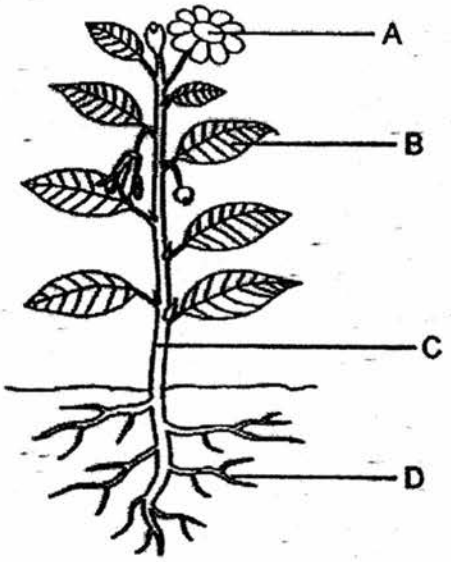
3. The diagram below shows a hammer hitting a nail.




Steel is used to make the hammer head because steel _____.

(1) is shiny
(2) is strong
(3) is flexible
(4) is able to sink in water

4. The diagram below shows a plant.




Which part, A, B, C or D, makes food for the plant?

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



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5. In which part of the digestive system is water absorbed into the blood?

(1)



Gullet

(2)



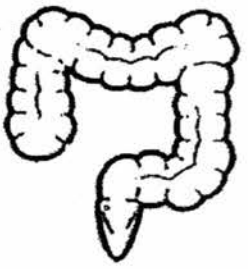
Stomach

(3)



Small intestine

(4)



Large intestine



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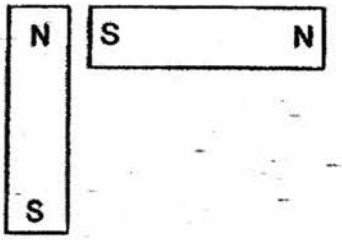
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6. In which one of the following will the two magnets push each other away?

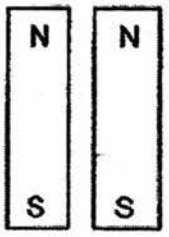
(1)



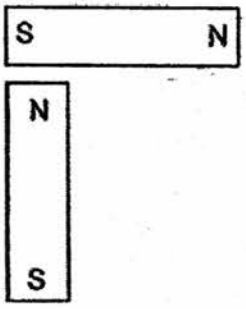

(2)




(3)



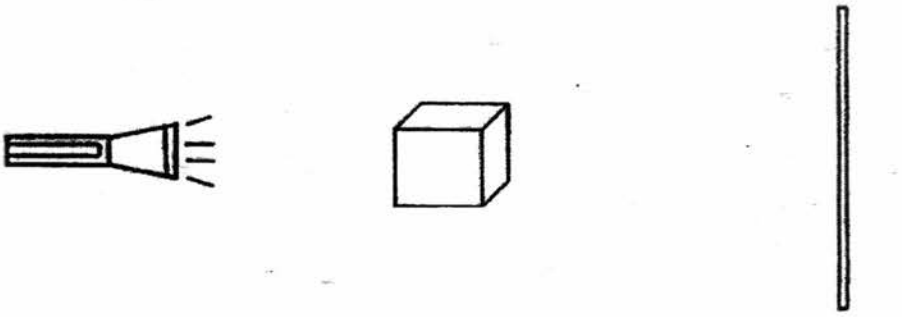

(4)



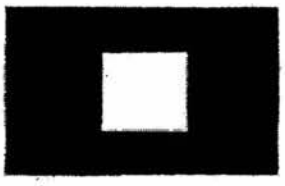


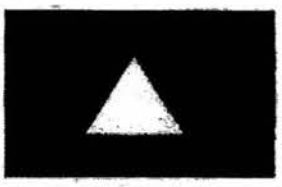

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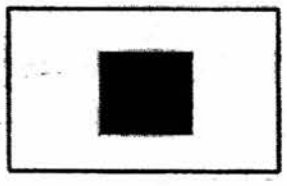
7. The set-up below shows light shining on a metal cube.

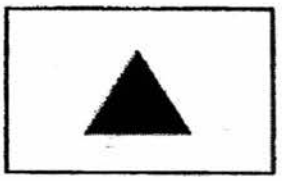



Which one of the following would likely be seen on the screen?

(1) 

(2) 

(3) 

(4) 

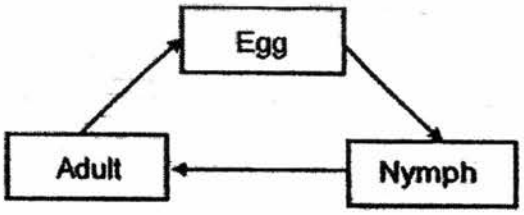
8. Which one of the following is NOT a source of heat?

(1) The Sun
(2) A lighted bulb
(3) A candle flame
(4) A woollen sweater



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9. The diagram below shows the life cycle of a living thing.



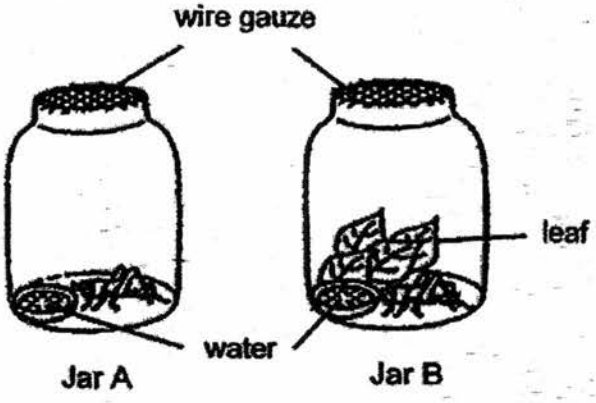

Which one of the living things goes through the same life cycle as shown above?

(1) A chicken
(2) A mosquito
(3) A cockroach
(4) A rose plant

10. Which one of the following properties is true for both air and milk?

(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes.
(4) They have fixed volumes.

11. The diagram below shows the set-ups of an experiment to find out what condition(s) affect the survival of grasshoppers. After a few days, the grasshopper in Jar A died, but the grasshopper in Jar B was alive.



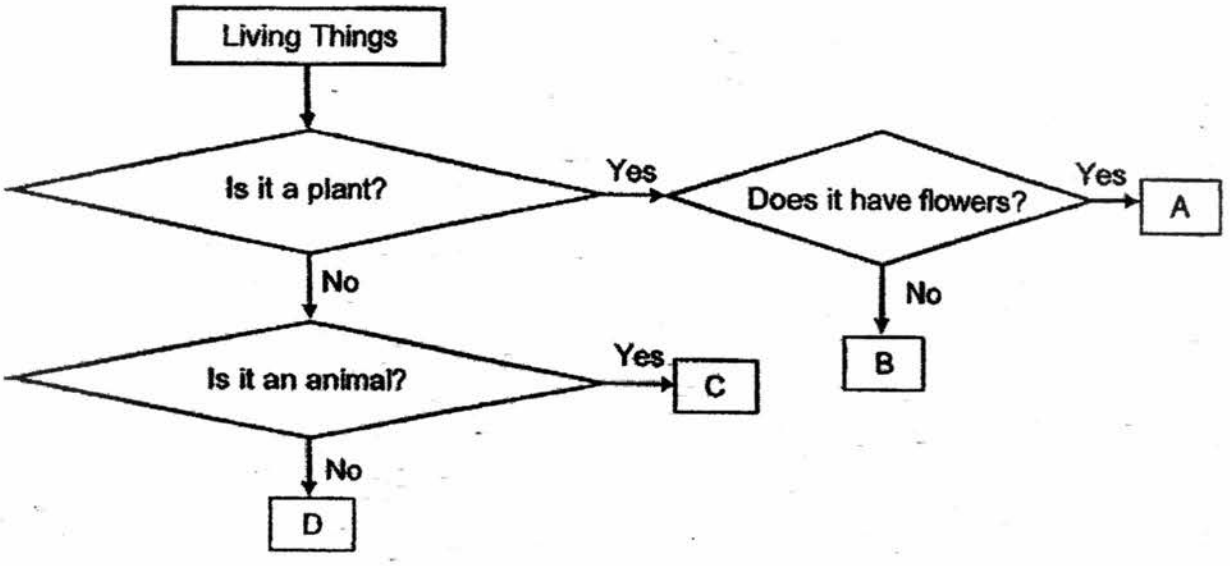

What can be concluded from this experiment only?

(1) Air is needed for the grasshopper to stay alive.
(2) Food is needed for the grasshopper to stay alive.
(3) Water is needed for the grasshopper to stay alive.
(4) Air, food and water are needed for the grasshopper to stay alive.



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12. Study the flowchart below carefully.



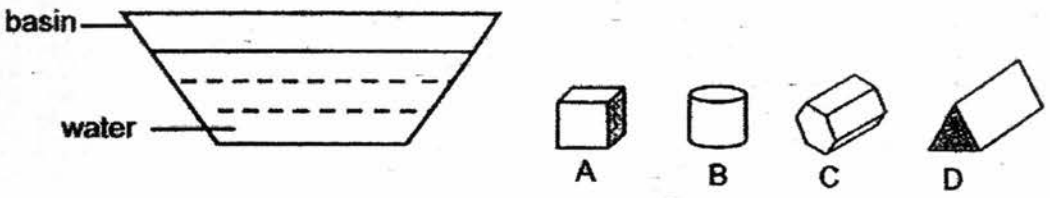

Which one of the following correctly represents A, B, C and D?

| | A | B | C | D |
|---|---|---|---|---|
| (1) | Rose plant | Yeast | Bird | Mould |
| (2) | Yeast | Mould | Fern | Rose plant |
| (3) | Fern | Rose plant | Yeast | Mould |
| (4) | Rose plant | Fern | Bird | Yeast |



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13. The materials used in an experiment are shown below. Objects A, B, C and D are put into the basin of water.



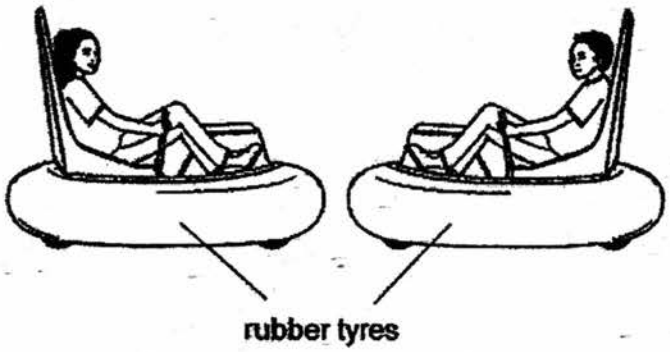

The observations are recorded in the table below.

| Object | Stay at the bottom of the basin | Stay on the water surface |
|---|---|---|
| A | Yes | No |
| B | No | Yes |
| C | No | Yes |
| D | Yes | No |

What is the aim of the experiment?

(1) To find out the mass of the objects
(2) To find out the volume of the objects
(3) To find out if the objects float or sink
(4) To find out if the objects are waterproof

14. The diagram below shows two bumper cars. The fun of riding the bumper cars is to hit other bumper cars so that the cars bounce off from one another.




Which two properties must the tyres have to prevent damages to the cars?

(1) Strong and flexible
(2) Strong and waterproof
(3) Flexible and waterproof
(4) Flexible and transparent



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15. Cassandra bought two identical pots of plants. She placed them in the garden. After a few days, she observed that Plant X grew healthily but Plant Y died.



Plant X Plant Y

The table below shows the living conditions which the plants were exposed to.

| | Type of soil | Volume of water (ml) | Volume of fertiliser (ml) | Location of the pot |
|---|---|---|---|---|
| **Plant X** | Garden soil | 50 | 10 | In direct sunlight |
| **Plant Y** | Garden soil | 0 | 10 | In direct sunlight |

Which one of the following can Cassandra conclude based on her observations?

(1) Plants need water to survive.
(2) Plants need sunlight to make food.
(3) Plant X grew healthily in the sun but not Plant Y.
(4) Plant Y could not grow healthily with the addition of fertiliser.

16. The picture below shows a food conveyor belt sending food to customers.



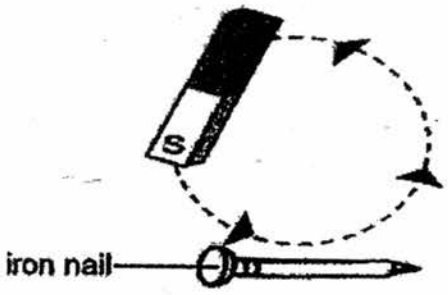

Which one of the systems in our body has the same function as the food conveyor belt?

(1) Skeletal system
(2) Muscular system
(3) Circulatory system
(4) Respiratory system

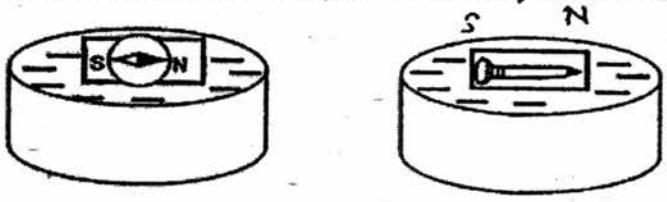


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17. Andy used a bar magnet to repeatedly stroke an iron nail as shown below.




Both the magnetised iron nail and the compass were each freely floating on a piece of foam in a basin of water. The diagram below shows the directions of the magnetised iron nail and the compass when they came to a rest.




Next, he placed the magnetised iron nail next to the bar magnet. Which of the following observations are correct?

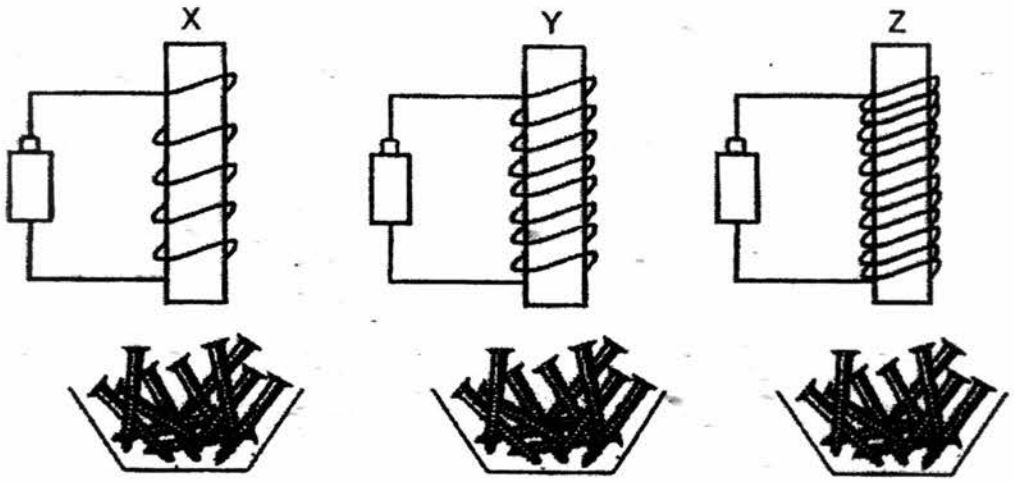
| | Setup | attract | repel |
|---|---|---|---|
| A |  | Yes | No |
| B |  | Yes | No |
| C |  | No | Yes |
| D |  | No | Yes |

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



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18. Ivanna made 3 electromagnets, X, Y and Z, using similar wires, batteries and different number of coils as shown below.




She placed each electromagnet 5 cm away from the container filled with iron nails. She observed the number of iron nails attracted by the 3 electromagnets. However, she forgot to record the number of iron nails attracted by them.

Which set of data most likely shows the observations that Ivanna made?

(1)

| Electromagnet | Number of iron nails attracted |
|---|---|
| X | 1 |
| Y | 2 |
| Z | 4 |

(2)

| Electromagnet | Number of iron nails attracted |
|---|---|
| X | 1 |
| Y | 1 |
| Z | 1 |

(3)

| Electromagnet | Number of iron nails attracted |
|---|---|
| X | 4 |
| Y | 1 |
| Z | 2 |

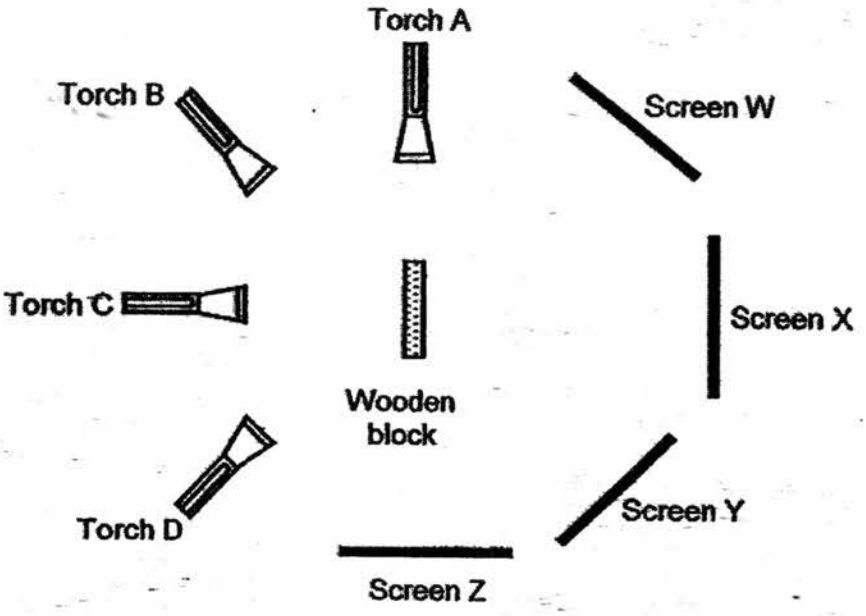
(4)

| Electromagnet | Number of iron nails attracted |
|---|---|
| X | 4 |
| Y | 2 |
| Z | 1 |



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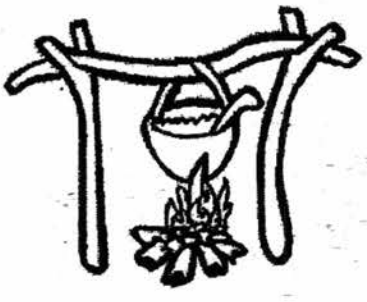
19. Torches A, B, C and D were switched on. Only Screen W did not have a shadow.




Which torch was not working?

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

20. James was boiling some soup in a pot over a campfire. He left the metal spoon in the hot boiling soup for some time.



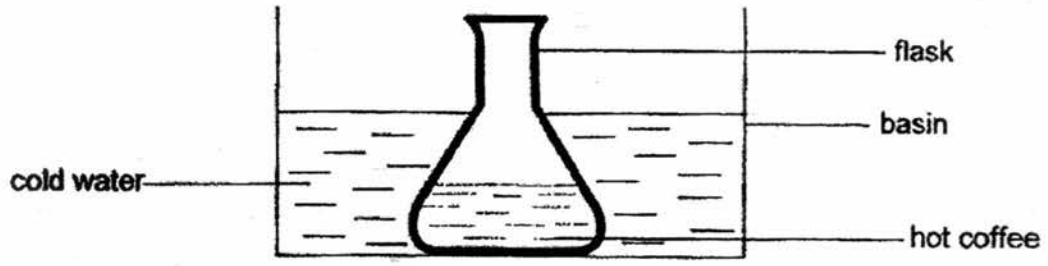
The metal spoon became hotter after a while.
Which one of the following explains this?

(1) The pot lost heat to the hot soup.
(2) The spoon lost heat to the hot soup.
(3) The hot soup gained heat from the spoon.
(4) The spoon gained heat from the hot soup.



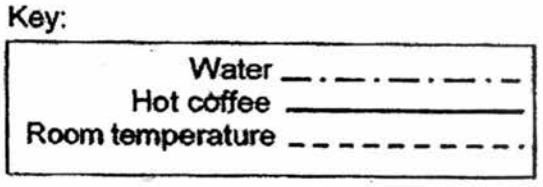
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21. Jason poured some hot coffee into a flask and placed it in a basin of cold water as shown in the diagram below.

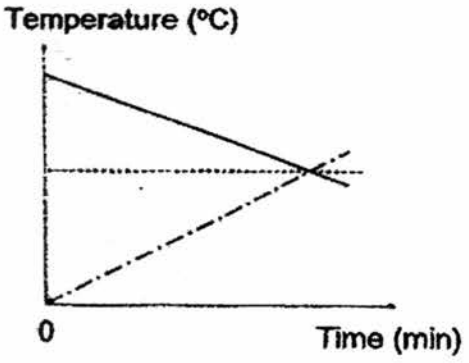



He then plotted a graph to show the temperature of the hot coffee and cold water over a period of time.

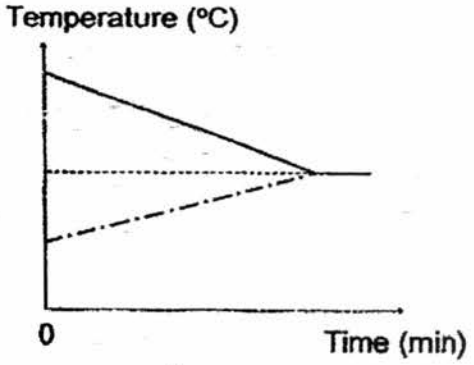
Which one of the graphs below shows the correct change in temperature of the hot coffee and the cold water after some time?



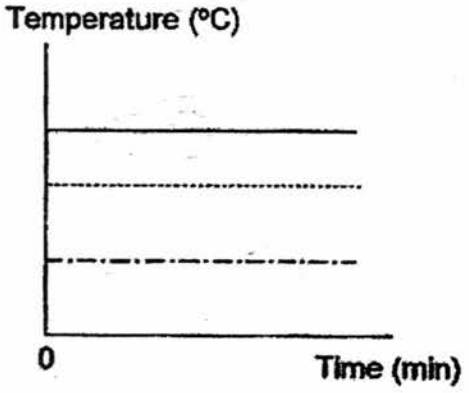

(1)



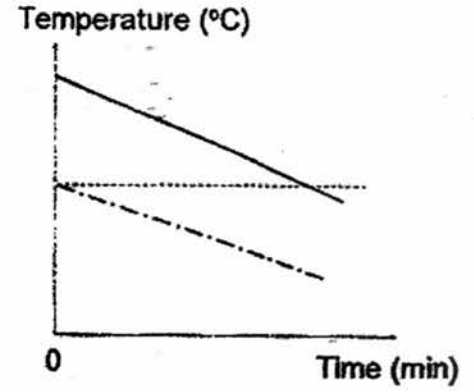

(2)




(3)



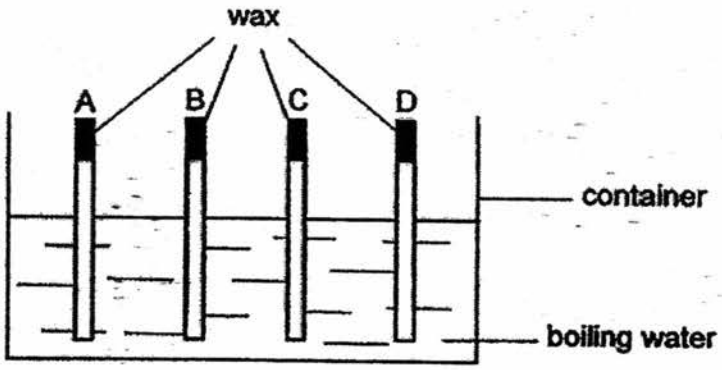

(4)






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22. Alvin wants to investigate which material is the best conductor of heat. He set up the experiment as shown below. Four metal rods, A, B, C and D, were heated on one end to melt the drop of wax that was placed on the other end of each rod.




The time taken for the drop of wax to melt completely was recorded in the table below.

| Rod | Time taken for the drop of wax to melt completely (s) |
|---|---|
| A | 90 |
| B | 65 |
| C | 150 |
| D | 200 |

A Rod B is the best conductor of heat.
B The four rods conduct heat at different rates.
C Rod C is a better conductor of heat than rod A.

Which statement(s) is/are correct based on the experiment above?

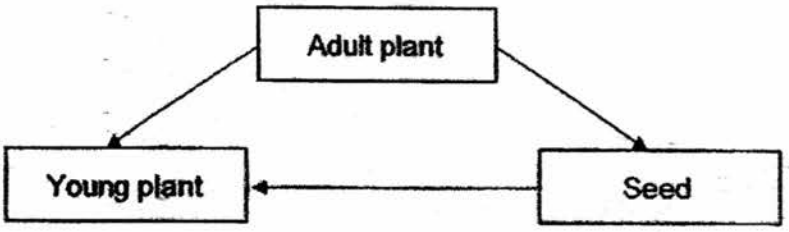
(1) A only
(2) B only
(3) A and B only
(4) B and C only



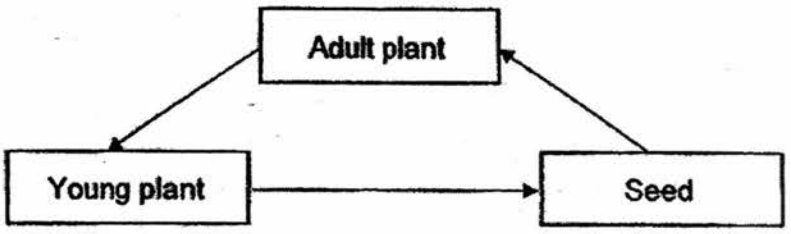
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23. Which of the following shows the correct life cycle of a flowering plant?

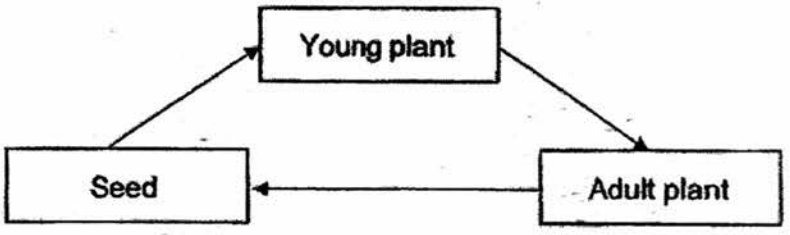
(1)



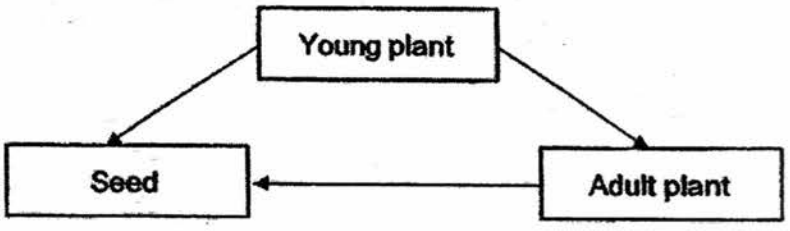

(2)




(3)




(4)





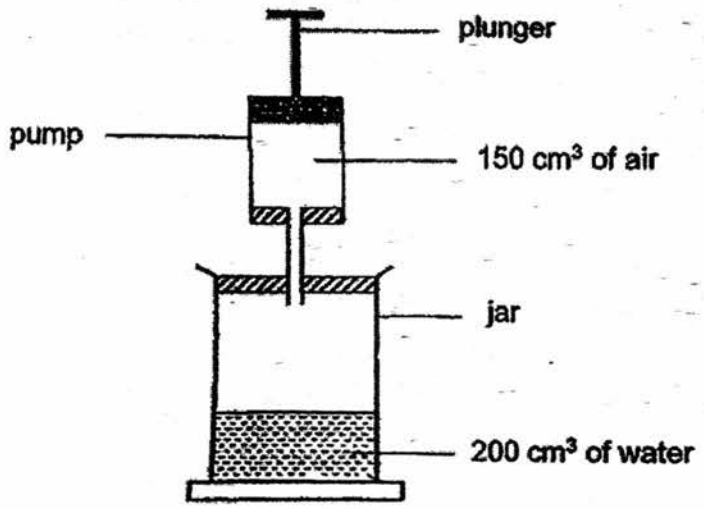

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24. Which of the following statements about the life cycles of cockroach and mosquito are correct?

A The eggs of the mosquito are laid in water.
B The eggs of the cockroach are laid on land.
C The cockroach and the mosquito have a 3-stage life cycle.
D The young of the cockroach and mosquito do not look like the adult.

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

25. The diagram below shows a 500 $cm^3$ jar containing 200 $cm^3$ of water and a pump containing 150 $cm^3$ of air. When the plunger is pushed all the way down, the air in the pump goes into the jar.



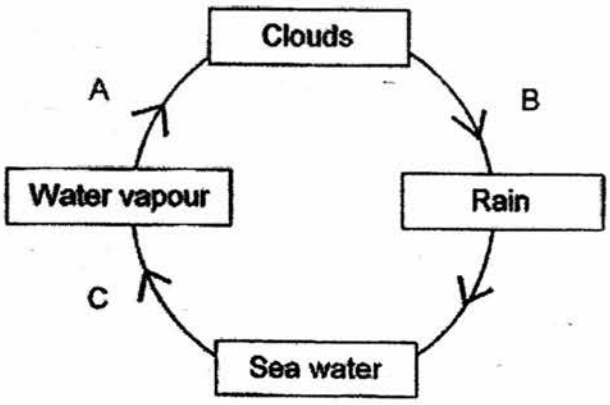

What is the volume of the air in the jar after the plunger is pushed down once?

(1) 150 $cm^3$
(2) 300 $cm^3$
(3) 450 $cm^3$
(4) 500 $cm^3$



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26. The diagram below illustrates a water cycle.




Which of the following letters represent evaporation and condensation?

| | Evaporation | Condensation |
|---|---|---|
| (1) | A | B |
| (2) | B | A |
| (3) | C | B |
| (4) | C | A |

27. Mei Ling wanted to cut down on water consumption in her house. Which of the following actions allow her to save water at home?

A Taking shorter showers.
B Brushing teeth with a mug.
C Washing a car with a hose.
D Using water from laundry to wash the toilets.

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

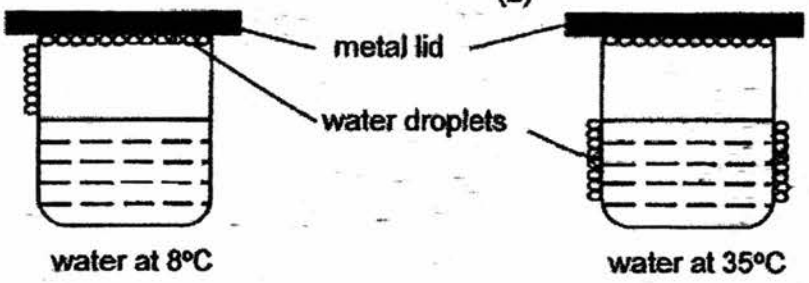


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28. All the beakers below with water at different temperature were placed in a room with a temperature of 25°C

Which one of the following diagrams shows the likely results after ten minutes?

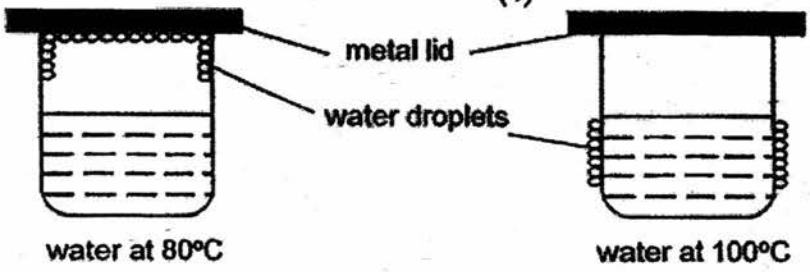
(1)




(2)




(3)




(4)






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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2017
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: 31 October 2017** **Parent's Signature:** _____

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

29. Fill in the blanks in the table with names of broad groups of living things or the body coverings for the group. [4]

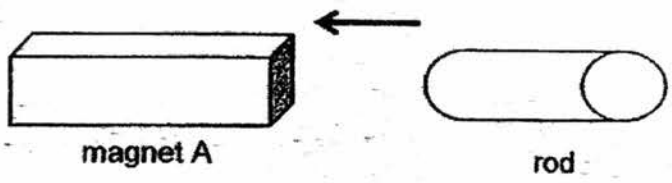
| | Group | Body coverings |
|---|---|---|
| (a) | | Hairs |
| (b) | | Dry skin, with scales |
| (c) | Fish | |
| (d) | Amphibian | |

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



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30. Susan placed magnet A near a rod made of an unknown material. The rod moves towards the magnet as shown by the arrow below.




(a) Magnet A exerts a _____ on the rod. [1]

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

| plastic | steel | aluminium |
|---|---|---|

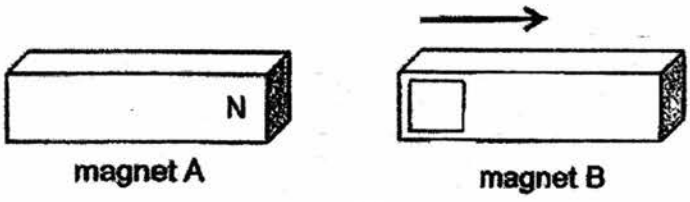
The rod is made of _____. [1]

(c) Choose the correct word from the box to answer the question below.

| hard | magnetic | strong |
|---|---|---|

Susan's observation shows that the rod is a _____ material. [1]

(d) Susan then placed magnet A with its North-pole facing another magnet B. Magnet B moves away from magnet A as shown by the arrow below.



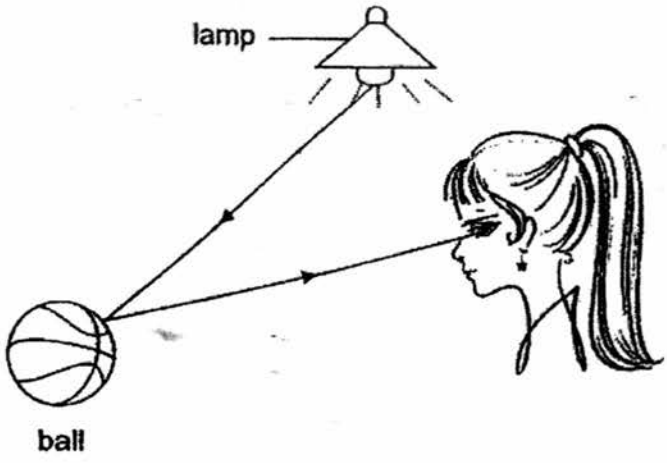

Label the pole of magnet B in the box above. [1]

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



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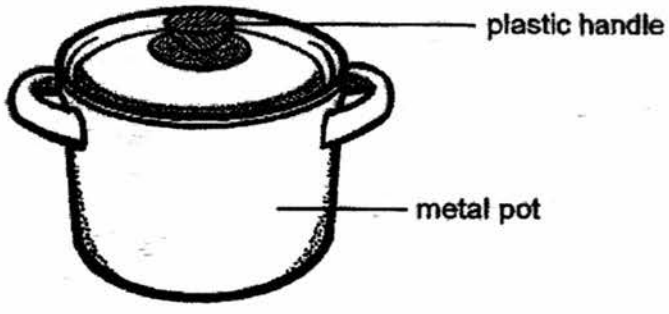
31. The diagram below shows how Siti sees the ball.




(a) Light travels in a _____ line. [1]

(b) The light from the _____ is reflected by the _____ and enters Siti's eye. [2]

32. Henry boiled some soup in the pot as shown below.




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

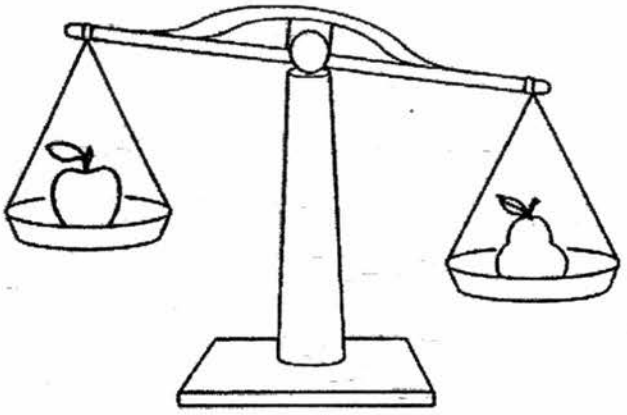
(b) The pot is made of metal because it is a _____ conductor of heat. [1]

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



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33. Jason compares the mass of three fruits.

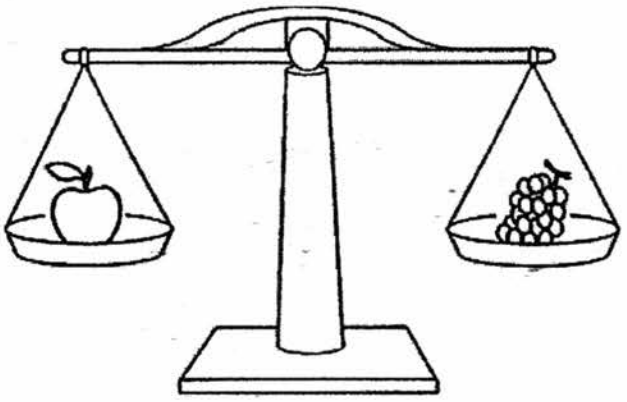


Study the diagram above. Put a tick (✓) in the box for the correct comparison.

(a)

| | |
|---|---|
| | The apple is lighter than the pear. |
| | The apple is heavier than the pear. |
| | The apple has the same mass as the pear. |

[1]



Study the diagram above. Put a tick (✓) in the box for the correct comparison.

(b)

| | |
|---|---|
| | The apple is lighter than the grapes. |
| | The apple is heavier than the grapes. |
| | The apple has the same mass as the grapes. |

[1]

(c) If we were to compare the mass of the pear and grapes, the mass of the pear would be _____ than the mass of the grapes. [1]

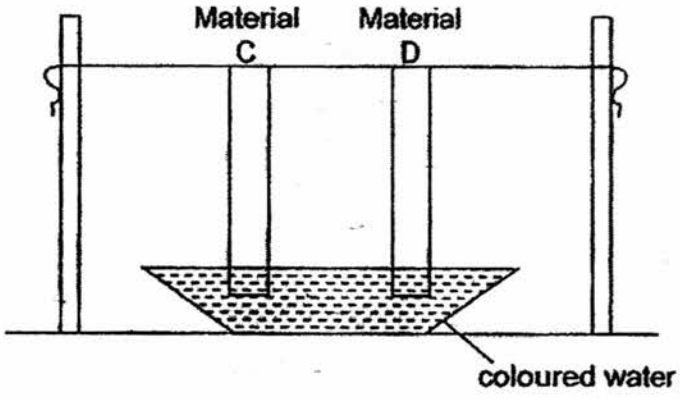
| Score | 3 |
|---|---|



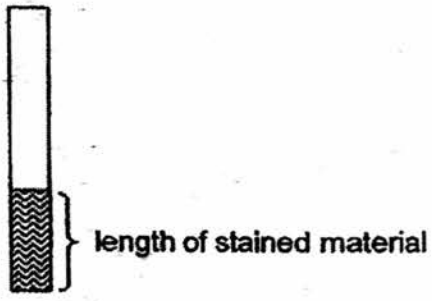
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34. The diagram below shows the set-up of an experiment to find out which material soaks up the most amount of water. Materials C and D were hung on a string such that the tips of both materials were touching the coloured water.




After 10 minutes, both materials were removed. The length of each of the material that was stained with coloured water was measured and recorded in the table below.




| Material | Length of stained material (cm) |
|---|---|
| C | 0 |
| D | 3 |

Go to the next page



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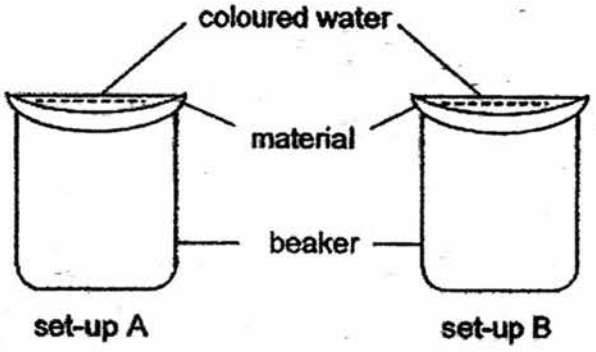
(a) Put a tick (✓) in the box to show the two variables that must be kept the same. [2]

☐ Thickness of the materials

☐ Length of the stained material

☐ Length of the material put into the coloured water

Materials C and D of the same size were each put over a beaker as shown in the diagram below. 20 $cm^3$ of coloured water was poured onto both materials.




After 15 minutes, the amount of water left on the material was measured and recorded in the table as shown below.

| Set-up | Amount of water left on material ($cm^3$) |
|---|---|
| A | 0 |
| B | 20 |

(b) Which set-up is material C placed on? Explain your answer. [2]

_____

_____

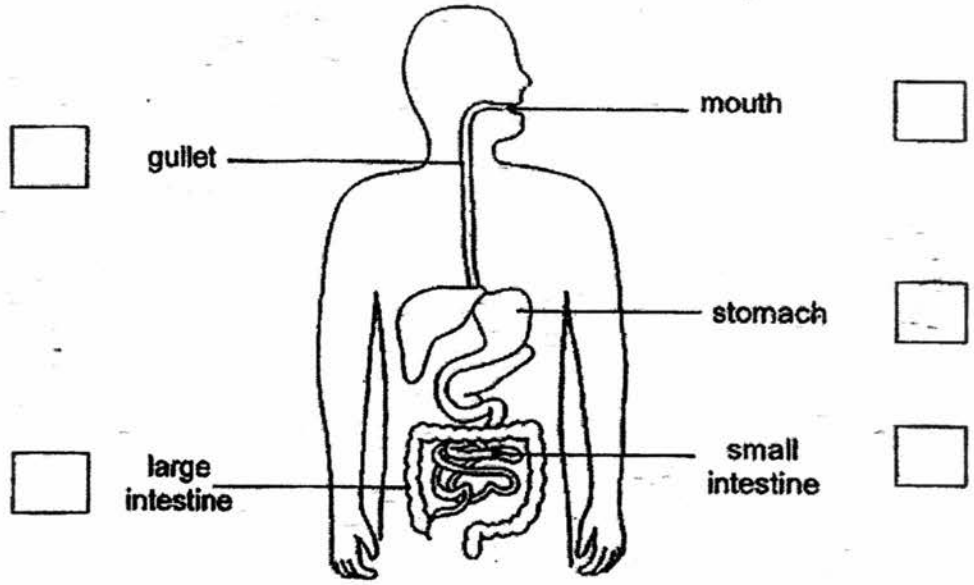


| Score | / 4 |
|---|---|

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35. Study the diagram below carefully.



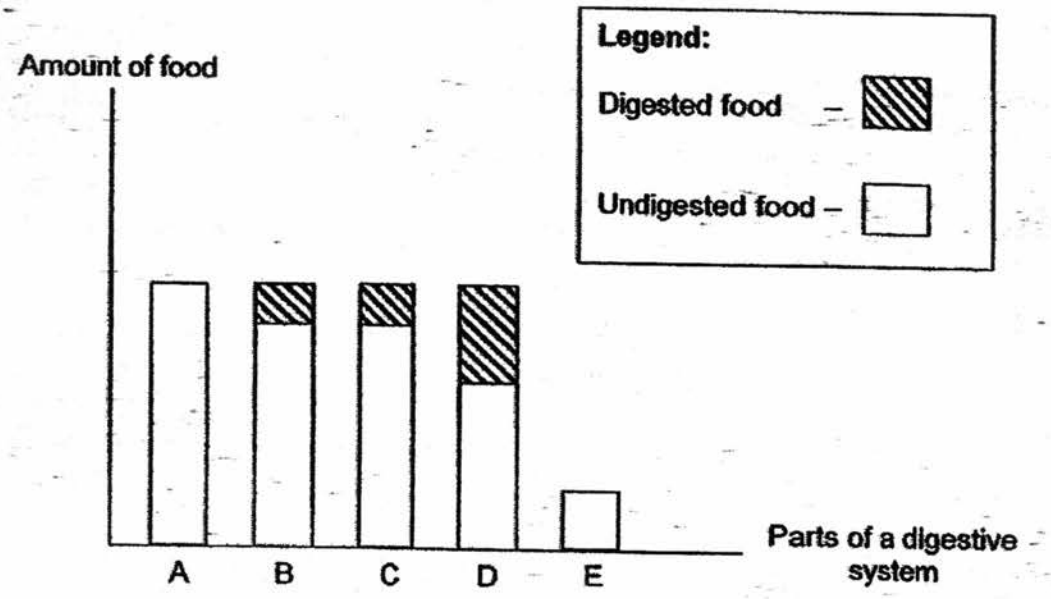

(a) Put a tick (✓) in the boxes to show two parts of the human digestive system where no digestion will take place. [2]

Go to the next page



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The graph below shows the amount of digested and undigested food when it first enters each part of the digestive system. The food moves from A to E.




(b) From the information in the graph, which part, A, B, C, D or E, represents the small intestine? Give two observations to support your answer. [2]

_____

_____

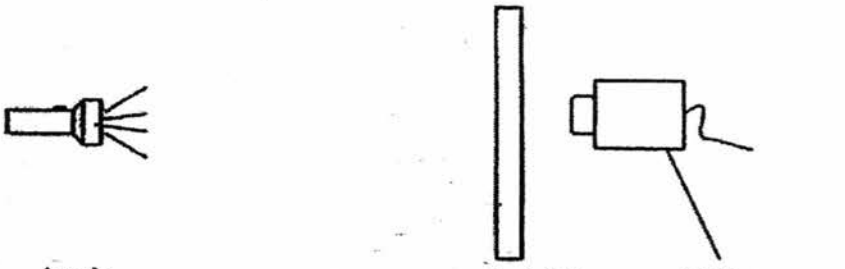
_____

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



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36. The diagram below shows the set-up to find out the amount of light that will pass through material X. The experiment was conducted in a dark room.




The results are shown in the table below.

| Material | Amount of light shown on light sensor (lux) | | |
|---|---|---|---|
| | 1st try | 2nd try | Average |
| X | 0 | 0 | 0 |

(a) State the property of material X based on the results shown in the table above. [1]

_____

_____

Two different shapes were cut out from material X of different colour.




Shapes A and B were glued together to form Object C as shown below.



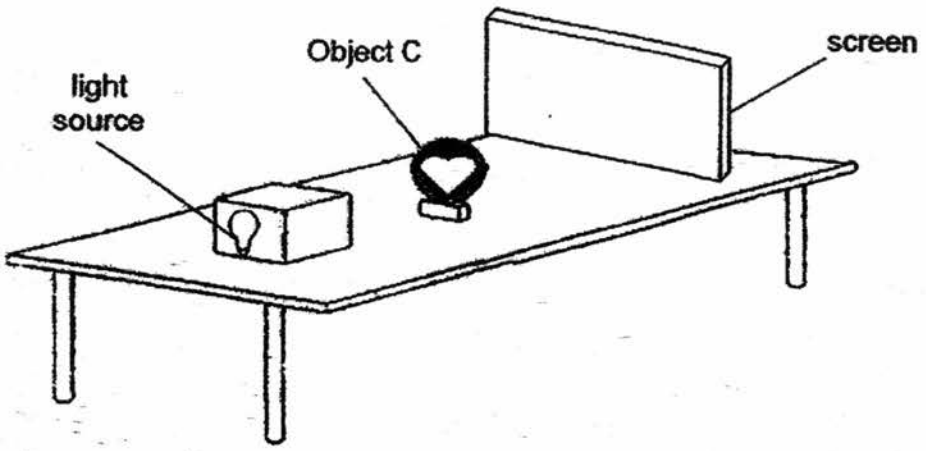
object C

Go to the next page



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A light source was shone on object C and a shadow was formed on the screen.




(b) Put a tick (✓) in one of the boxes below to show the shadow of Object C that will be formed on the screen. [1]



☐



☐

(c) Can material X be used to make the screen? Explain your answer. [2]

_____

_____

_____

_____

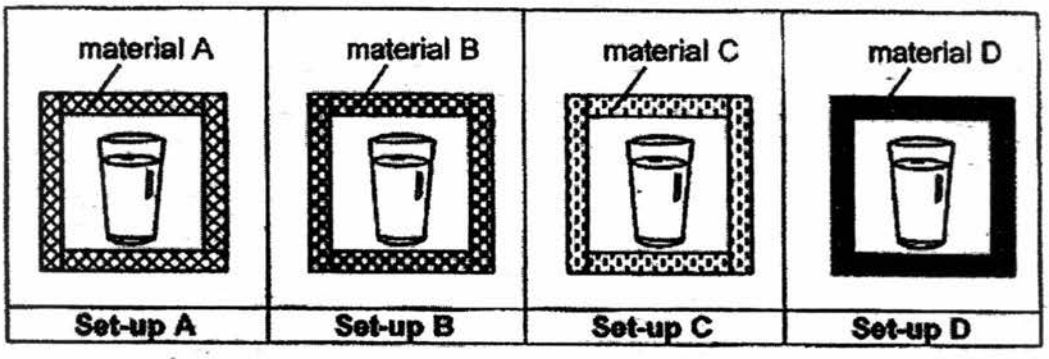
| Score | / 4 |
|---|---|



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37. Hazlinah conducted an experiment using four containers made of different materials, A, B, C and D, as shown below. She placed four identical cups containing cold water at 2°C in the containers and placed these containers in the science laboratory.




After 20 minutes, she recorded the temperature of water in each cup with a thermometer. The results are shown in the table below.

| Material | Temperature of water (°C) | |
|---|---|---|
| | At the start of experiment | At the end of experiment |
| A | 2 | 20 |
| B | 2 | 5 |
| C | 2 | 14 |
| D | 2 | 8 |

(a) Arrange the materials based on their heat conductivity starting from the poorest heat conductor to the best heat conductor. [1]

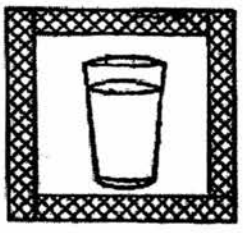
_____

(b) Hazlinah wants to hold a cup filled with hot tea without burning her hand. Which one of the materials, A, B, C or D, should the cup be made of? Explain your answer. [2]

_____

_____

(c) Draw an arrow to show the direction of heat flow between the water and the air in the container.

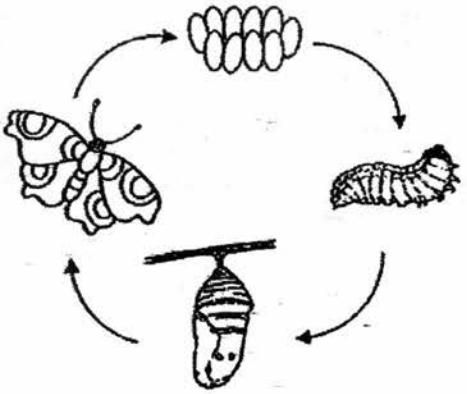




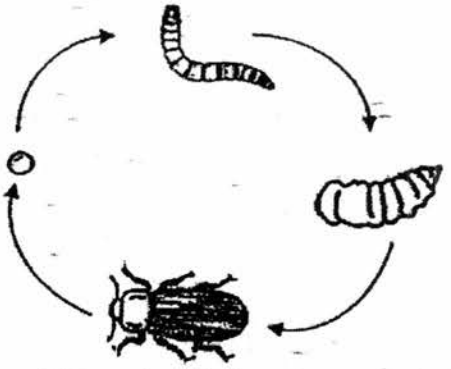
| Score | 4 |
|---|---|

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38. The diagrams below show the life cycles of a butterfly and a beetle.



Life cycle of a butterfly



Life cycle of a beetle

(a) State one similarity between the life cycle of the butterfly and the beetle. [1]
(Do not name the stages in the life cycles.)

_____

(b) Which group of animals does the two living things belong to? [1]

_____

(c) State one characteristics of the group of animals mentioned in part (b). [1]

_____

(d) State one characteristic of living things that enables its own kind to continue to exist. [1]

_____

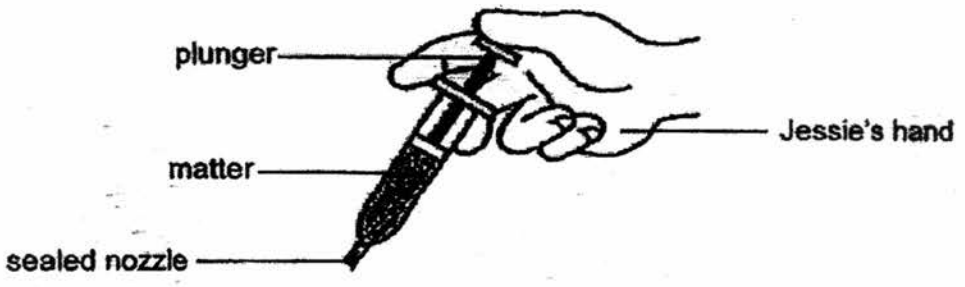
| Score | / 4 |
|---|---|



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39. Jessie prepared two identical syringes and filled each of them with a different type of matter, Q and R.

The nozzle is sealed at each end of the syringe. Then, she pushed the plunger for the two syringes, one at a time, as shown below.




She recorded the distance moved by the plunger for each syringe in the table below.

| Distance moved by plunger (cm) | |
|---|---|
| Q | R |
| 0 | 0.6 |

(a) If Jessie had used air and water in her experiment, identify Q and R in the table below. [1]

| | Matter |
|---|---|
| Q | |
| R | |

(b) Predict the distance moved by the plunger when cotton wool is used. [1]

_____

(c) Explain your answer for cotton wool.

_____

_____

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



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40. Three identical towels, A, B and C, were soaked with 100 ml of water and the towels were then folded along the dotted lines as shown in the diagram below.



Towel A Towel B Towel C

They were placed under the Sun in the open field. The time taken for each towel to dry completely was recorded in the table below.

| | Towel A | Towel B | Towel C |
|---|---|---|---|
| Number of folds | 2 | 4 | 8 |
| Time taken to dry (h) | 1 | 2 | 4 |

(a) What is the independent variable (changed variable) in this experiment? [1]

_____

(b) Based on the experiment, state the relationship between the number of folds of the towels and the time taken for the towels to dry? [1]

_____

_____

(c) Explain why Towel A took the shortest time to dry. [2]

_____

_____

**End of paper**

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



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EXAM PAPER 2017 (P4)

SCHOOL : NAN HUA

SUBJECT : SCIENCE

TERM : SA2

ORDER CALL :

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

29)a)Mammals b)Reptiles c)Scales d)Wet skin

30)a)force b)steel c)magnetic d)N

31)a)straight b)lamp / ball

32)a)poor b)good

33)a)The apple is lighter than the pear.

b)The apple has the same mass as the grapes.

c)heavier

34)a)Thickness of the materials

Length of the material put into the coloured water

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34)b)Set-up B. All the water is left on the material. This shows that the material on Set-up B is waterproof.

35)a)gullet / large intestine

b)Part D. Part D has the most amount of digested food. No digested food from D enters E.

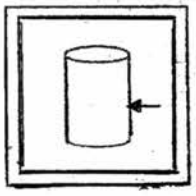
36)a)It does not allow light to pass through.

b) 

c)Yes, material X can be used to make the screen. It is an opaque material and to make a screen it needs to be a opaque material or the shadow cannot be seen.

27)a)Material B, Material D, Material C followed by Material A.

b)Material B. The temperature of the water in container made of material , B is the lowest at the end of the experiment. Material B is the poorest conductor of heat. The hand will gain heat slowest from the hot tea.

c) 

38)a)Both of them have 4 stages in their life cycle.

b)Insects.

c)Insects has six legs.

d)Reproduction.

39)a)Q: water R: Air

b)0.2cm

c)There are air spaces between the cotton wool and air can be compressed.

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40)a)The amount of times the towels have been fold.

b)The more numbers of folds the longer it take for the towel to dry.

c)Towel A had the greatest exposed surface are so the rate of evaporation is the fastest.

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