



# Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2008  
SCIENCE PAPER  
PRIMARY FOUR

BOOKLET A

Name: \_\_\_\_\_ (    )    Class: Primary 4 \_\_\_\_\_

Date: 23 October 2008

Duration of paper: 1 h 45 min

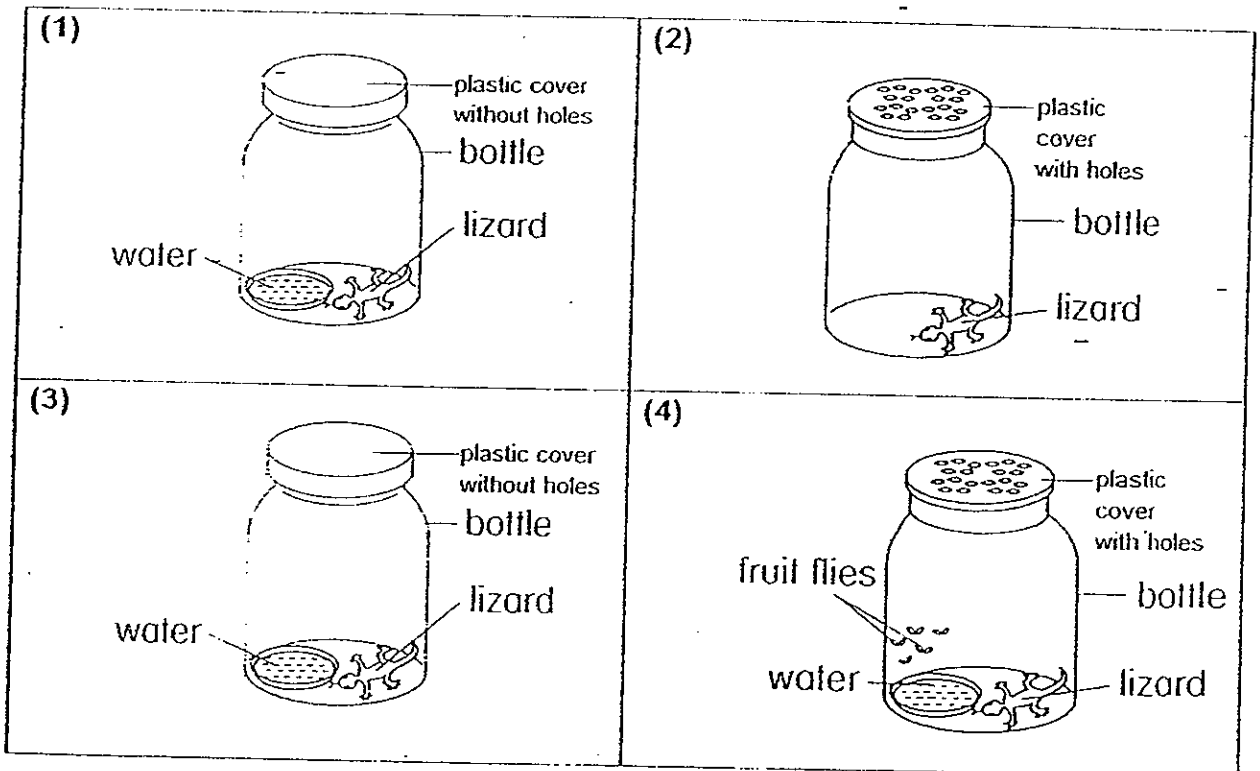
THIS BOOKLET CONTAINS 20 PAGES.  
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FOLLOW ALL INSTRUCTIONS CAREFULLY.

PART I

For each of the following question from 1 to 30, 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.

(30 x 2 marks)

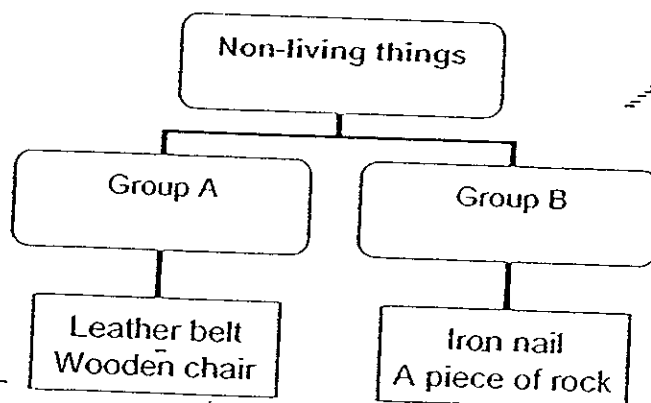
- 1 Phillip placed four lizards into four similar bottles with different conditions. Which one of the following set-ups will the lizard most likely be alive for the longest period of time?



- 2 A beaker of ice was left in the open for ten minutes. Which one of the following statements is true when the ice melts?

- (1) The ice loses heat when it melts.
- (2) The ice gains heat when it changes to water and steam.
- (3) The ice loses heat to the surrounding and changes its state.
- (4) The ice gains heat from the surrounding and changes its state.

3 Study the classification chart below.



Which one pair of the following things below can be correctly classified under group A and group B respectively?

	Group A	Group B
(1)	Steel spoon	Ceramic bowl
(2)	Paper	20-cent coin
(3)	Rubber hose	Cotton wool
(4)	Glass cup	Silk blouse

4 Lucy wrapped the roots of a Balsam plant that has just been removed from the soil with a plastic bag. Then, she put back the Balsam plant into the pot of soil. She left it alone in the open and checked on it two weeks later.

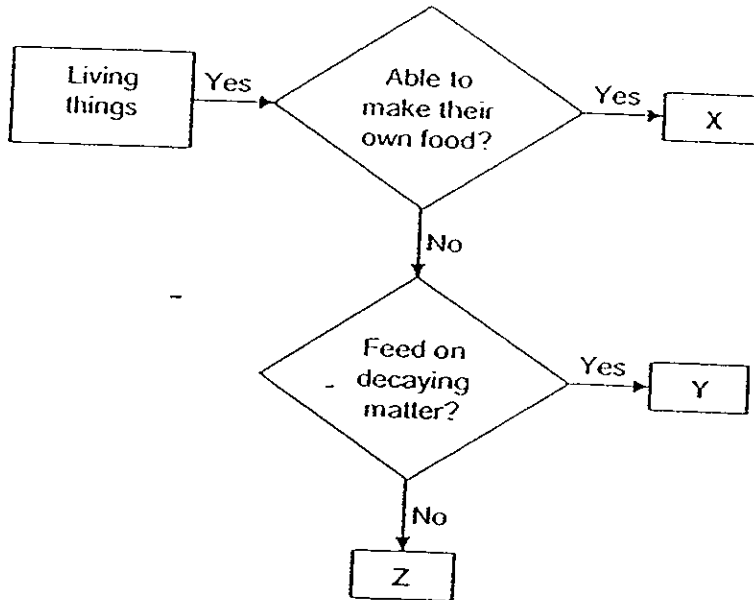
What was observed two weeks later?

- A The plant started to wither.
- B The flowers started to bloom.
- C The plant started to bear fruits.
- D The plant grew taller than before.

- (1) A only
- (3) B only

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

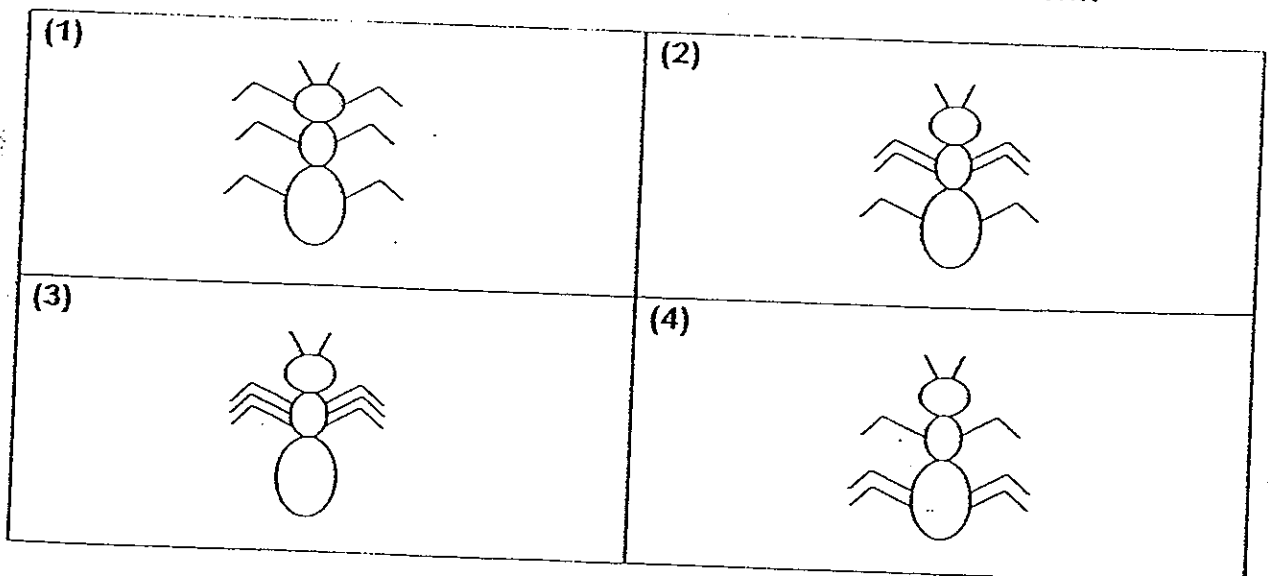
5 Study the flowchart below.



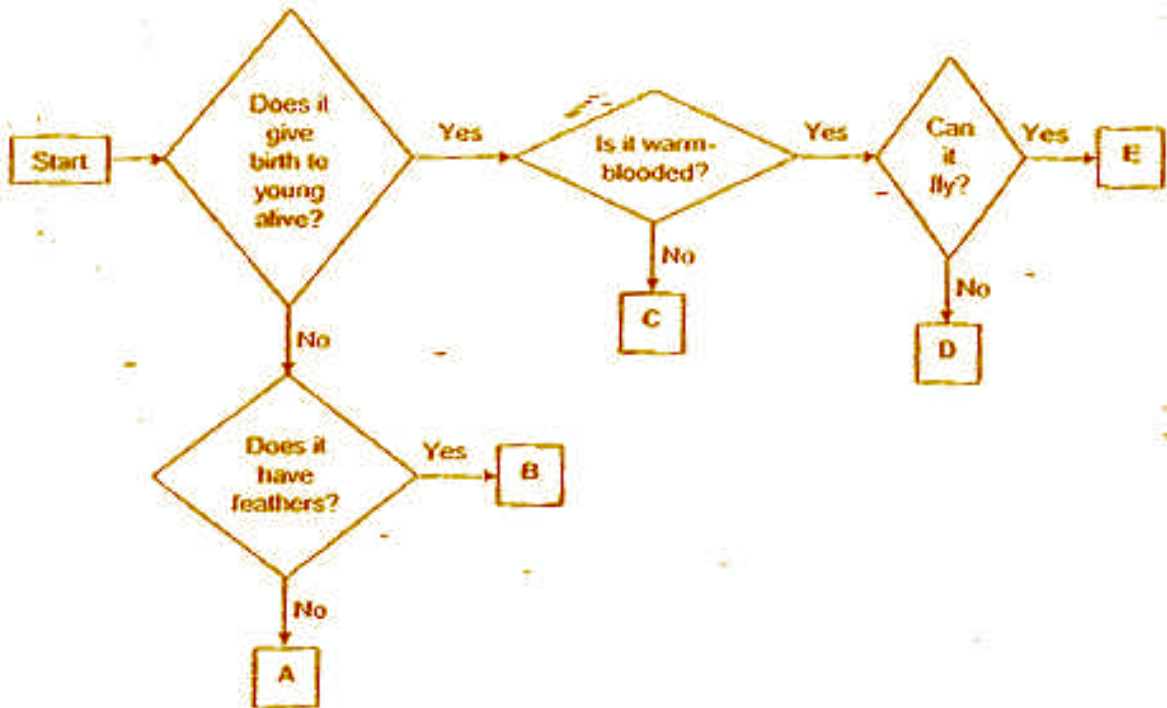
Based on the flowchart above, which one of the following is correct?

	X	Y	Z
(1)	Human	Mushroom	Potato
(2)	Grass	Yeast	Butterfly
(3)	Stag's horn fern	Mould	Toad
(4)	Moss	Bacteria	Bird's nest fern

6 Which one of the following diagram is the best representation of an ant?



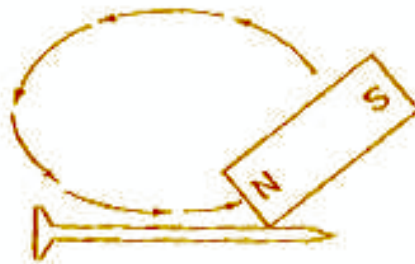
7 The flowchart shows the characteristics of five animals, A, B, C, D and E.



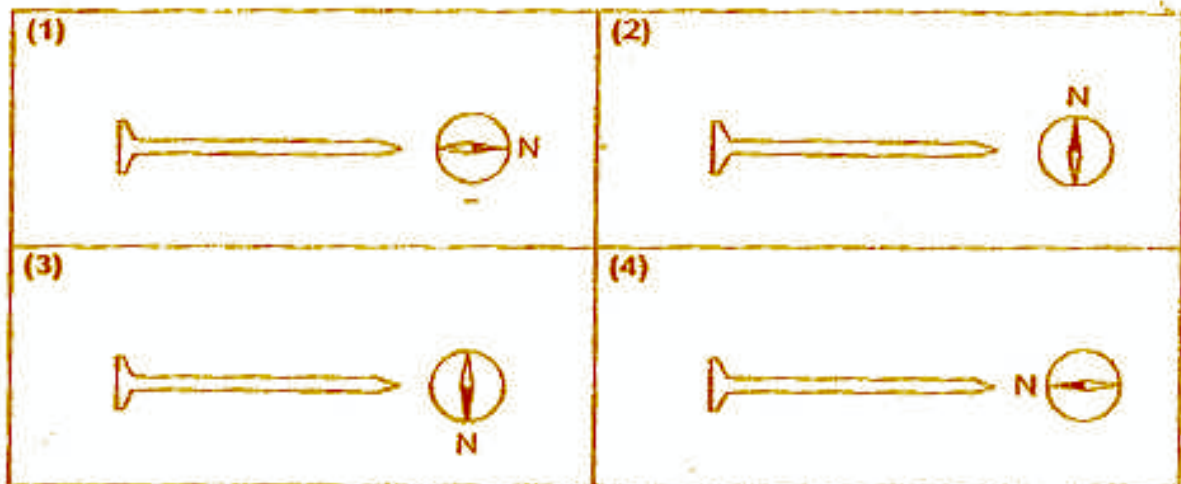
Based on the flowchart above, which one of the following is correct?

	A	B	C	D	E
(1)	Platypus	Ostrich	Guppy	Monkey	Bat
(2)	Chicken	Parrot	Emu	Penguin	Dragonfly
(3)	Sparrow	Bat	Shark	Emu	Crow
(4)	Ant	Peacock	Lion	Platypus	Butterfly

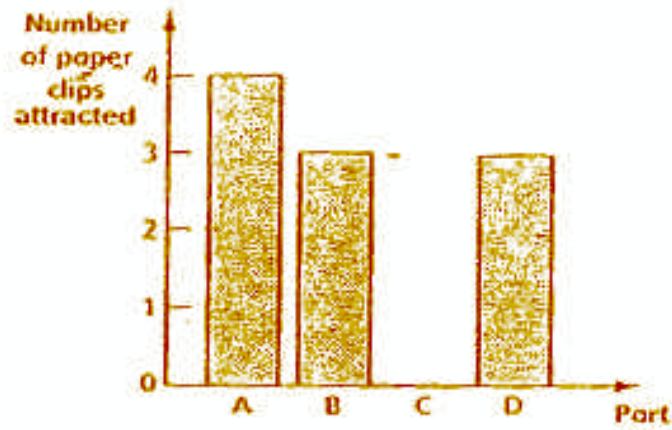
- 8 Jason magnetised an iron nail by using the stroking method as shown in the diagram below. He then brought the nail near to a compass.







Which one of the following correctly shows what happens when the magnetised nail is brought near to a compass?



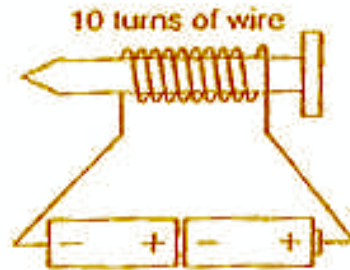
9. Raju recorded the number of paper clips attracted to the different parts of a bar magnet and plotted a graph as shown below.



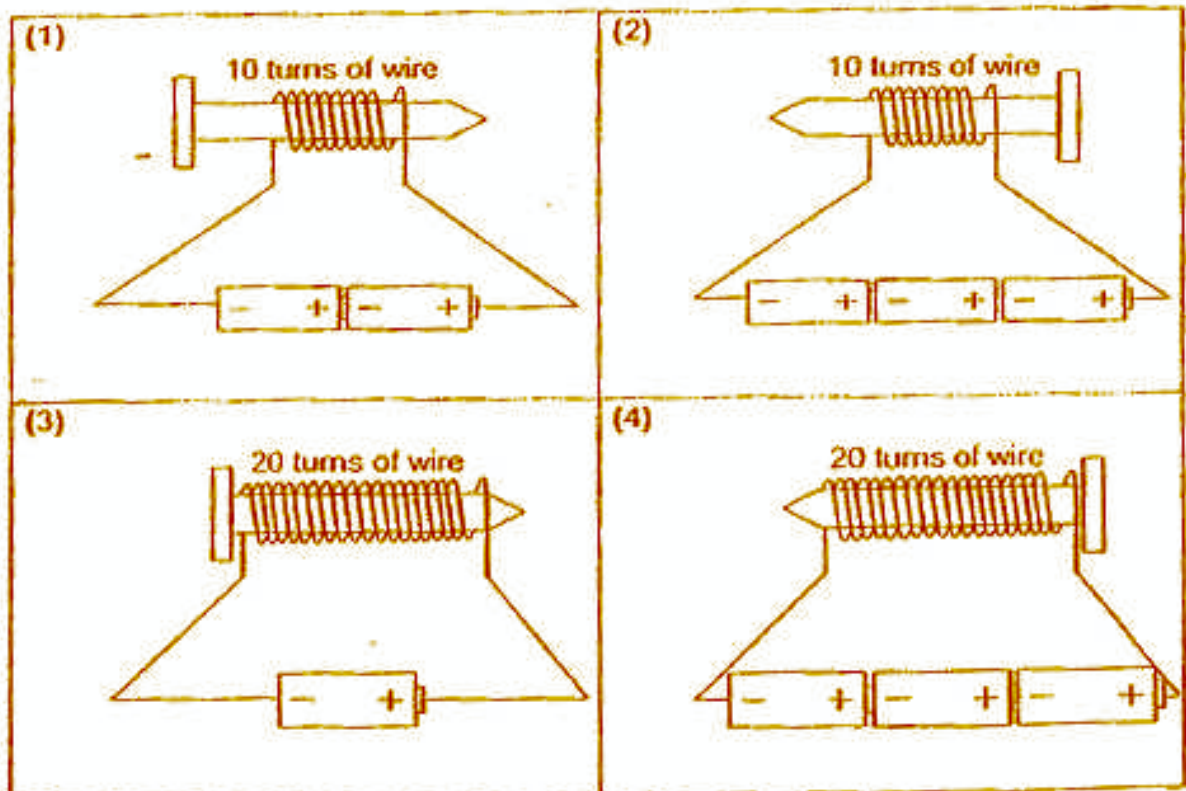
Which one of the following shows the correctly labelled bar magnet?

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

- 10 Mary wanted to find out whether the amount of electric current affects the strength of an electromagnet. She sets up her experiment as shown in the diagram below.



Mary needs another set-up to conduct a fair test. Which one of the following should she use?





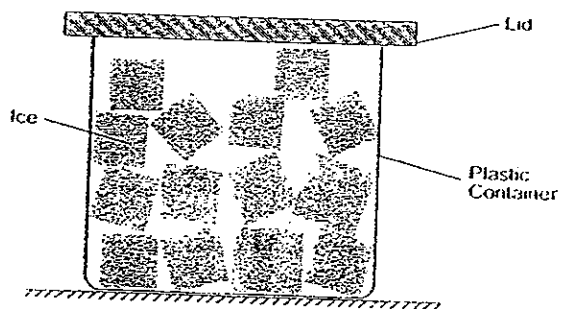
- 11 The table below shows the melting and boiling points of 4 unknown substances: P, Q, R and S.

Substance	Melting Point (°C)	Boiling Point (°C)
P	0	85
Q	-30	110
R	-40	15
S	80	200

Based on the table above, what is the state of the substances at room temperature?

	P	Q	R	S
<del>(1)</del>	Liquid	Liquid	Gas	Solid
<del>(2)</del>	Gas	Solid	Liquid	Liquid
<del>(3)</del>	Solid	Gas	Liquid	Solid
<del>(4)</del>	Liquid	Liquid	Solid	Gas

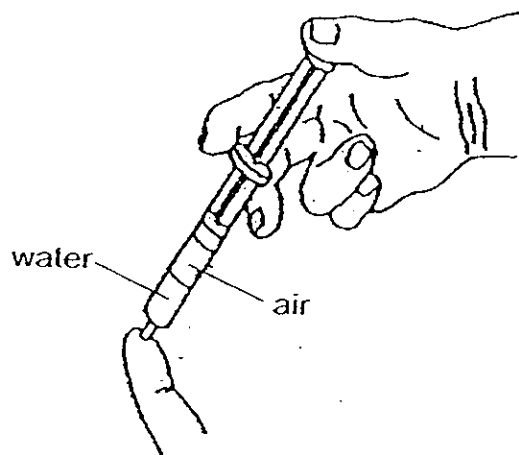
- 12 The diagram below shows some ice cubes in a sealed plastic container.



Which one of the following describes the temperatures of the ice and the air in the plastic container when the ice cubes melts.

	Temperature of ice in the container	Temperature of air in the container
(1)	Decrease	Increase
(2)	Increase	Decrease
(3)	Remains unchanged	Increase
(4)	Remains unchanged	Decrease

- 13 A syringe is filled with an equal volume of air and water. The nozzle of the syringe is covered lightly as shown below.



Which one of the following is true when the plunger is pushed in?

	Volume of Air	Volume of Water
(1)	Decreases	Decreases
(2)	Decreases	Remains the same
(3)	Remains the same	Remains the same
(4)	Remains the same	Decreases

- 14 The table below shows the masses and volumes of solids A, B and C.

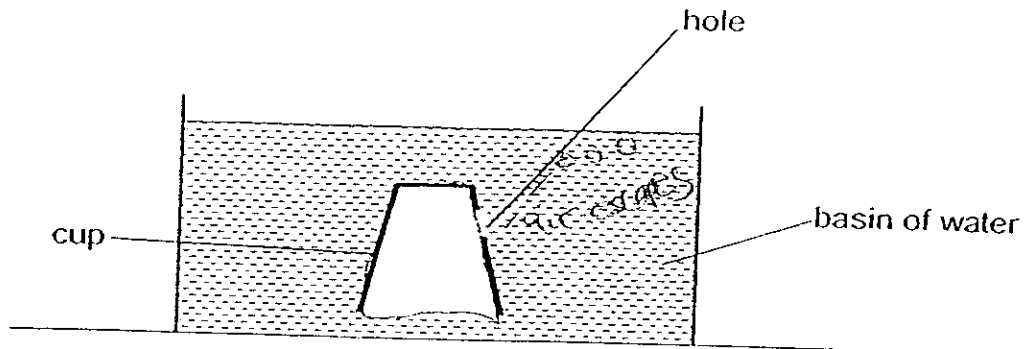
Solid	A	B	C
Mass (g)	50	50	100
Volume (cm <sup>3</sup> )	20	20	10

Based on the table, which one of the following statements is true?

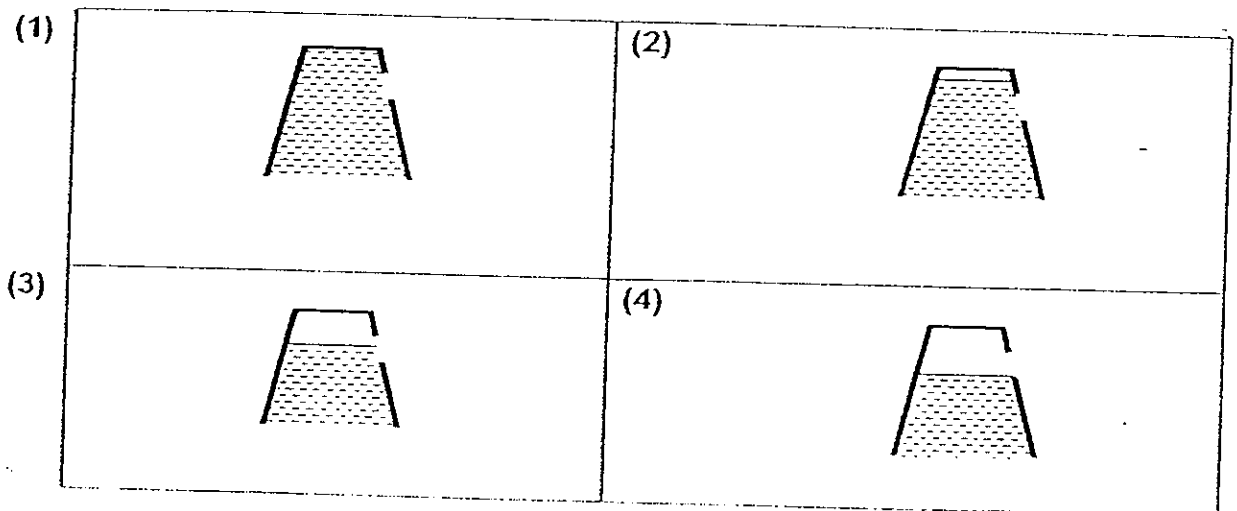
- (1) 100 g of A has the same volume as 100 g of B.
- (2) 100 g of A has the same volume as 100 g of C.
- (3) 100 g of B has a smaller volume than 100 g of A.
- (4) 100 g of B has a smaller volume than 100 g of C.



- 17 A hole is made at the side of a plastic cup. The cup is inverted and pushed vertically into a basin of water as shown in the diagram below.



Which one of the following most likely shows the correct water level in the cup?

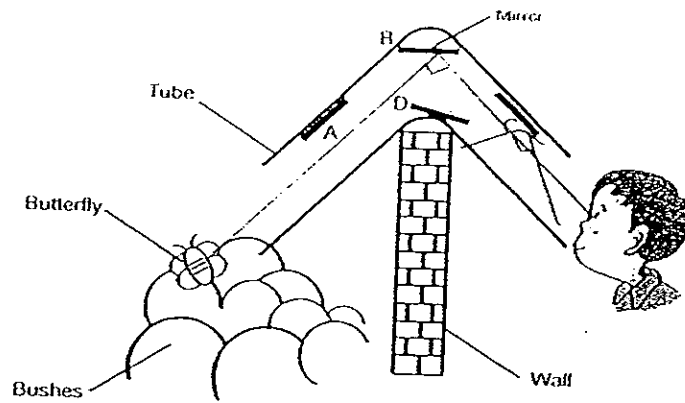


- 18 Andrew moulded four different shapes using 5 g plasticine for each shape. After that, he lowered one of the shaped plasticine into a measuring cylinder with 50 ml of water and observed the rise in water level in the measuring cylinder. He repeated the procedures with the other three pieces of plasticine.

What was Andrew's aim in this activity?

- (1) To find out whether the shape of plasticine would affect its mass.
- (2) To find out whether the shape of plasticine would affect its volume.
- (3) To find out whether the volume of water would affect the mass of plasticine.
- (4) To find out whether the volume of water would affect the shape of plasticine.

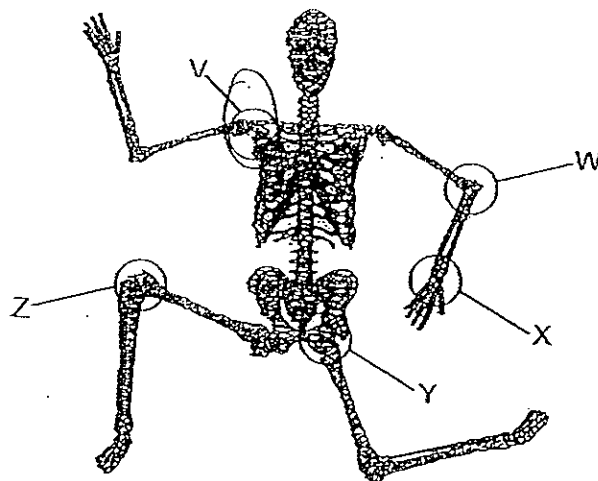
19 Study the diagram below.



Bob looked through the tube containing 4 mirrors placed at different angles. Which mirror(s), (A, B, C or D), helped Bob to see the butterfly?

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

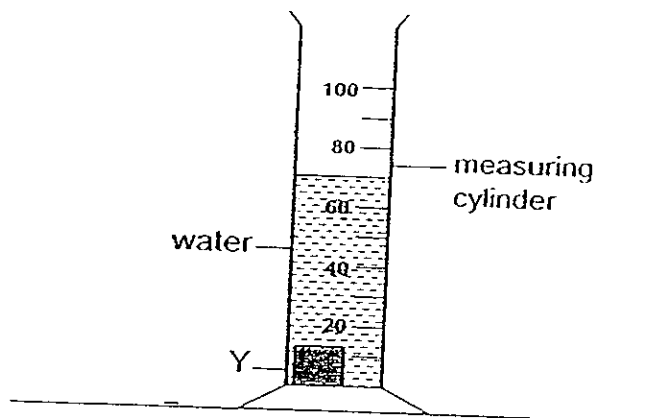
20 The diagram shows a human skeleton.



The letters V, W, X, Y and Z represent the different types of joints. Which of the joints allow 360° rotation?

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

- 21 The set-up below is used during a Science activity to investigate the mass and volume of Y.



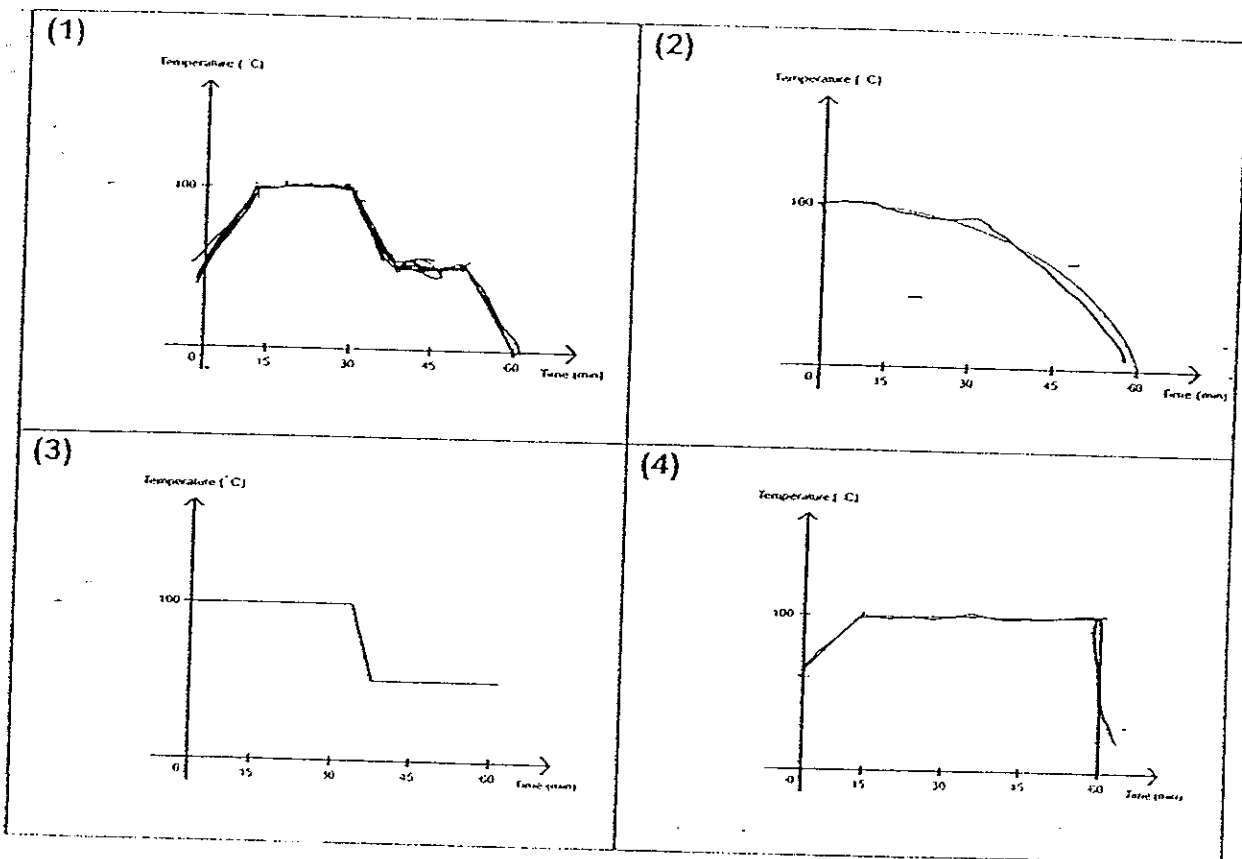
The table below shows some measurements taken during the activity.

Mass of measuring cylinder and water (g)	Mass of measuring cylinder (g)	Volume of water in measuring cylinder (cm <sup>3</sup> )	Volume of water and Y (cm <sup>3</sup> )
300	250	50	70

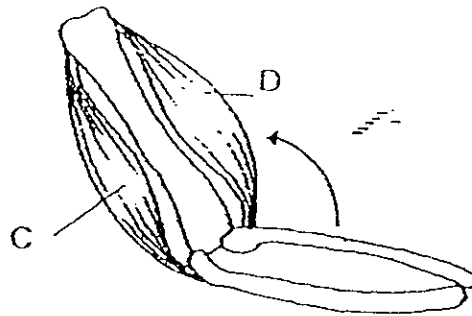
From the information given above, which one of the following is the correct mass and volume of Y?

	Mass of Y (g)	Volume of Y (cm <sup>3</sup> )
(1)	50	20
(2)	Not possible to tell	20
(3)	20	50
(4)	50	70

22 Timothy conducted an experiment on temperature change. He heated a kettle of tap water at room temperature till it boils. After the water has boiled for some time, he allowed it to cool to room temperature before placing it into the freezer to freeze. Which one of the following graphs best shows the correct change in temperature?



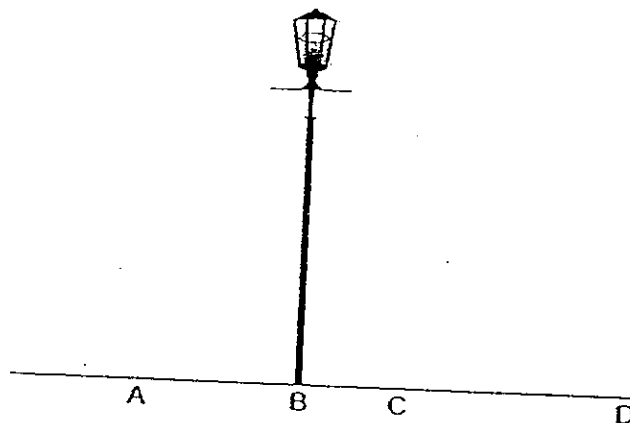
23 The diagram shows the bone and muscles structure of an arm.



Which one of the following shows the correct condition of the muscles when we bend our arm upwards as shown above?

	Muscles C	Muscles D
(1)	Relax	Contract
(2)	Contract	Remain unchanged
(3)	Contract	Relax
(4)	Relax	Remain unchanged

24 On a dark night, Ethan walked from A to D under a lighted street lamp.

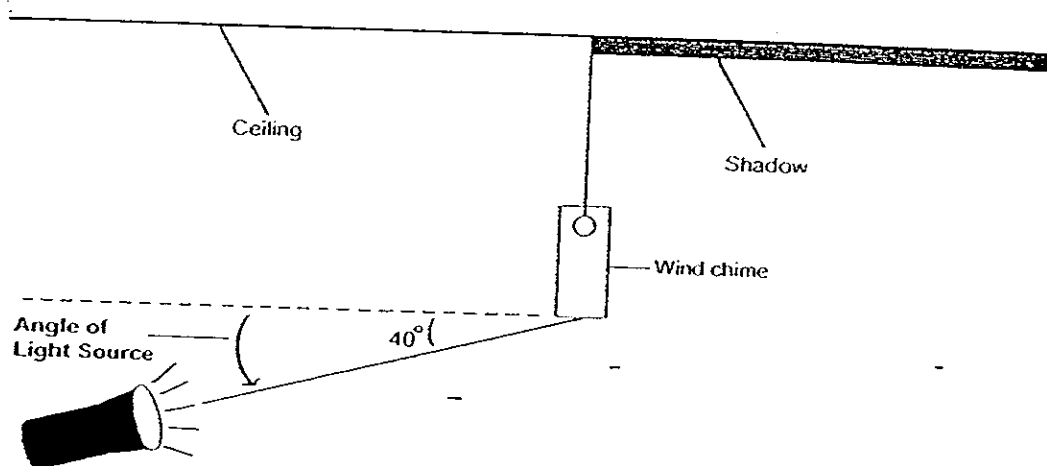


Which one of the following shows the correct order of the length of Ethan's shadows from the longest to the shortest?

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



- 25 While keeping the distance between the wind chime and the torchlight the same; Daniel shone his torchlight at the wind chime from different angles as shown in the diagram below.



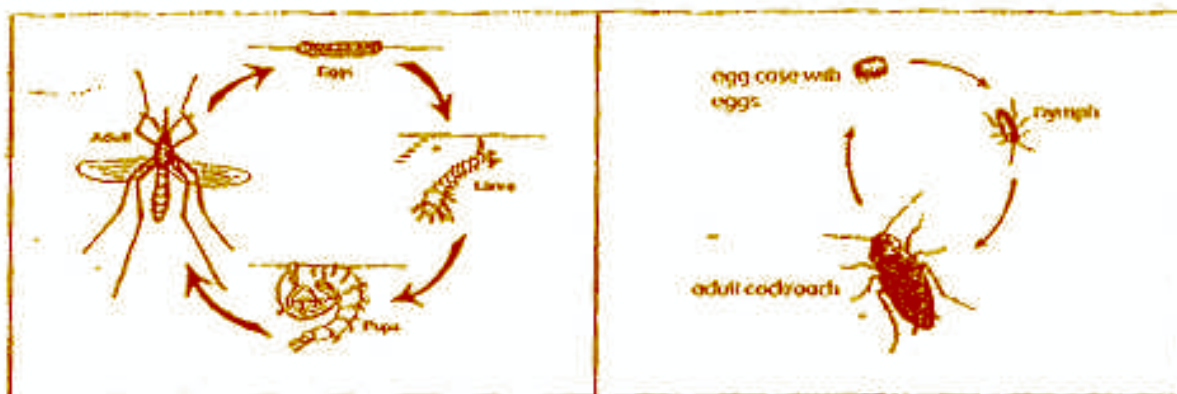
He measured the length of each shadow formed. The table below shows his results.

Angle of light source (degree)	Length of shadow (cm)
40	30
50	25
60	20
70	15
80	10

From his results, what can you conclude about the relationship between the angle of light source and the length of the shadow formed?

- (1) The length of the shadow increases when the angle of light source increases.
- (2) The length of the shadow decreases when the angle of light remains unchanged.
- (3) The length of the shadow decreases when the angle of light source increases.
- (4) The length of the shadow remains unchanged when the angle of light source increases.

26 Study the life cycles of a mosquito and cockroach below.



Based on the life cycles shown above, it can be inferred that \_\_\_\_\_

- A both animals lay eggs on land.
- B both animals reproduce by laying eggs.
- C the young of both animals look like the adult.

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

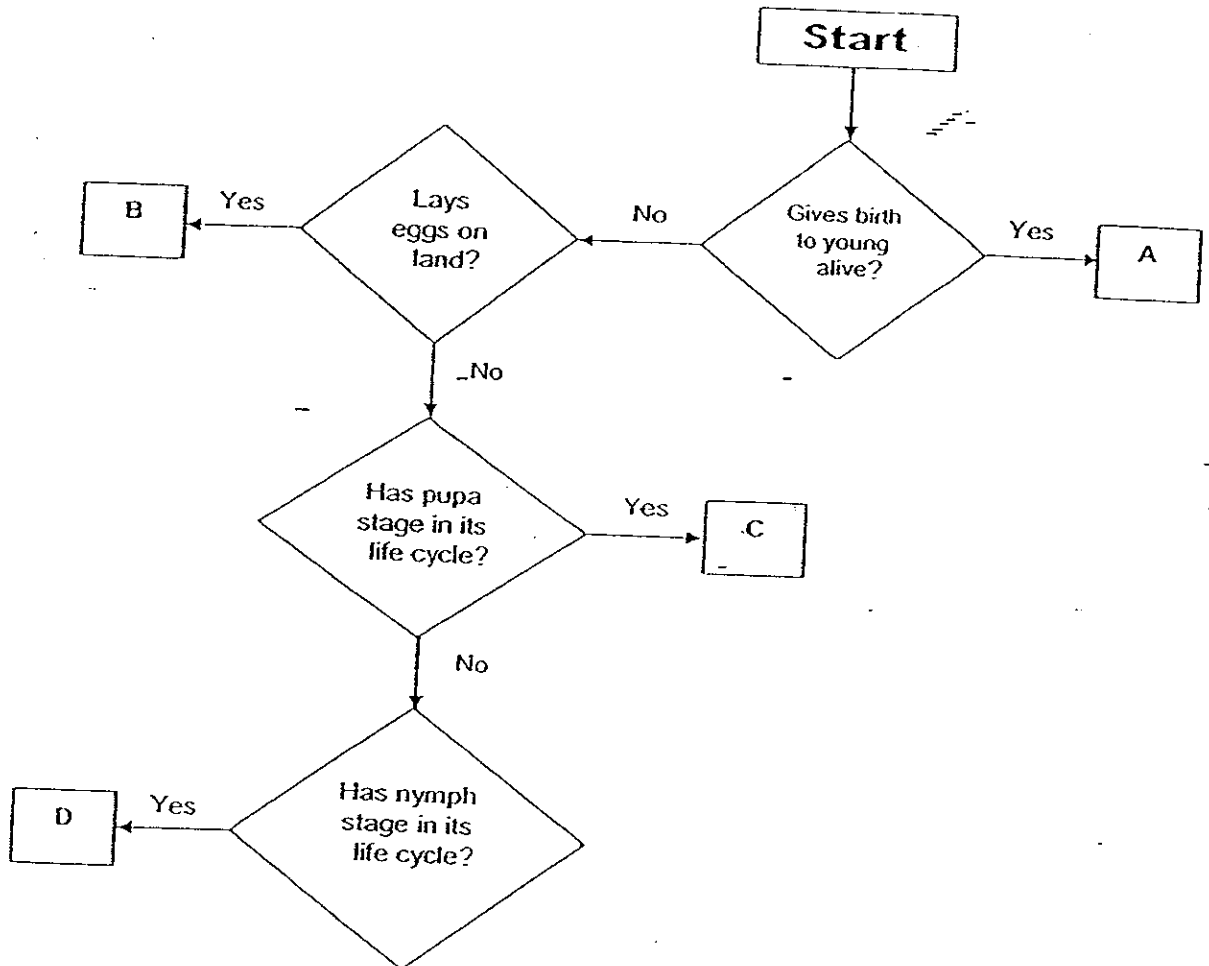
27 The following diagram shows a green leaf of a plant undergoing photosynthesis.



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

	A	B	C	D
(1)	Water	Sugar	Oxygen	Carbon dioxide
(2)	Water	Sugar	Carbon dioxide	Oxygen
(3)	Oxygen	Sugar	Carbon dioxide	Water
(4)	Water	Carbon dioxide	Sugar	Oxygen

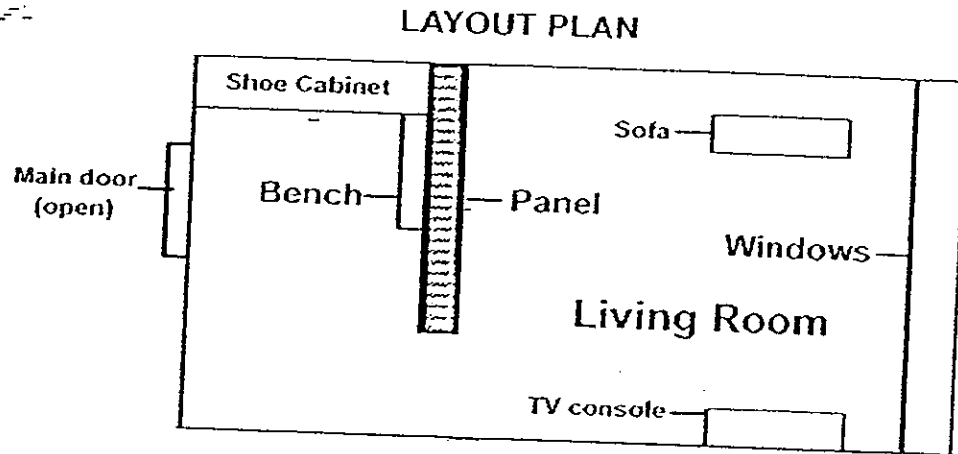
28 Study the flowchart below carefully.



Which letter would best represent a dragonfly?

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

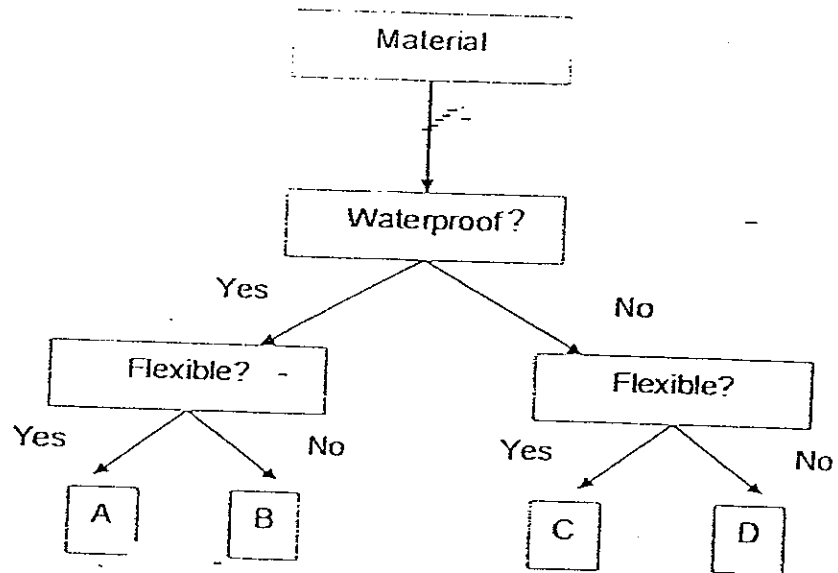
- 29 To ensure there is some level of privacy for Mr Chen and his family while they are using the living room, Mr Chen constructs a panel as shown in the lay out plan below. As he wants to conserve energy, he ensures that the area near the main door receives sufficient light from the living room. In addition, he wants to be able to lean against the panel when he sits on the bench while putting on his shoes.



Based on the information given above, which of the following properties should the panel be made of?

Properties of material used to make the panel						
	Strong	Fragile	Soft	Opaque	Transparent	Translucent
(1)	✓				✓	
(2)		✓		✓		✓
(3)			✓			
(4)	✓					✓

30 Study the classification chart of different materials below.



Which material is suitable to be used to make a tent?

(1) A

(2) B

(3) C

(4) D



# Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2008  
SCIENCE PAPER  
PRIMARY FOUR

BOOKLET B

Name: \_\_\_\_\_ (     )     Class: Primary 4 \_\_\_\_\_

Date: 23 October 2008

Duration of paper: 1 h 45 min

\_\_\_\_\_  
Parent's/Guardian's signature

	Maximum Marks	Marks Obtained
Section A / Booklet A	60	
Section B / Booklet B	40	
Total	100	

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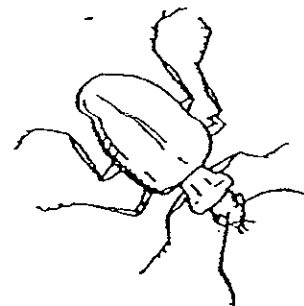
For questions 31 to 46, write your answers in this booklet.  
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

31 Observe the diagram of the two animals below carefully. (Both animals are not drawn to scale)



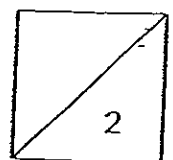
Animal P



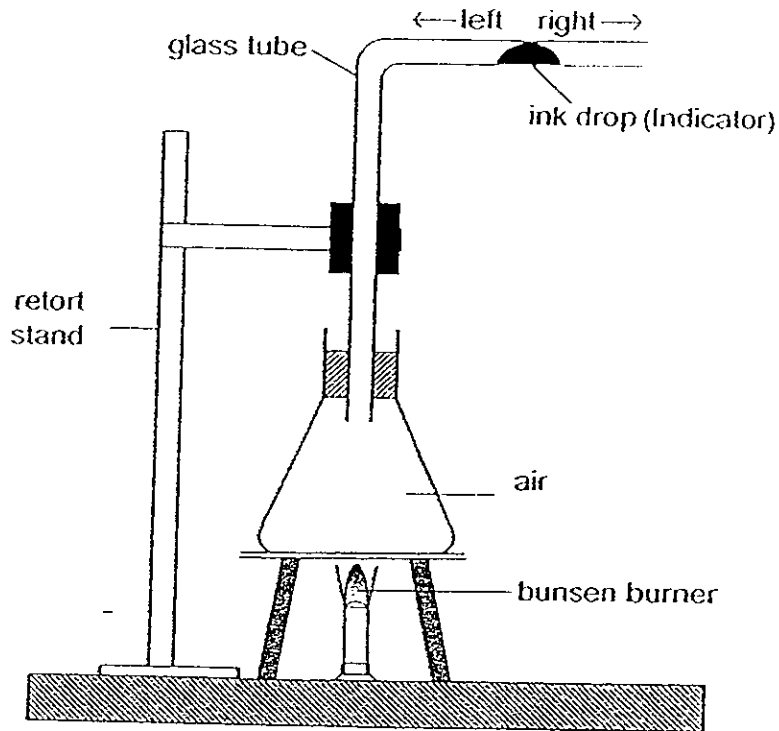
Animal Q -

Based on your observation only, write down two ways in which they are different. [2]

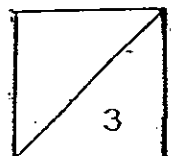
- (i) \_\_\_\_\_  
\_\_\_\_\_
- (ii) \_\_\_\_\_  
\_\_\_\_\_



- 32 Lily wanted to find out how if heat gain affects gases. She set up the experiment as shown below.

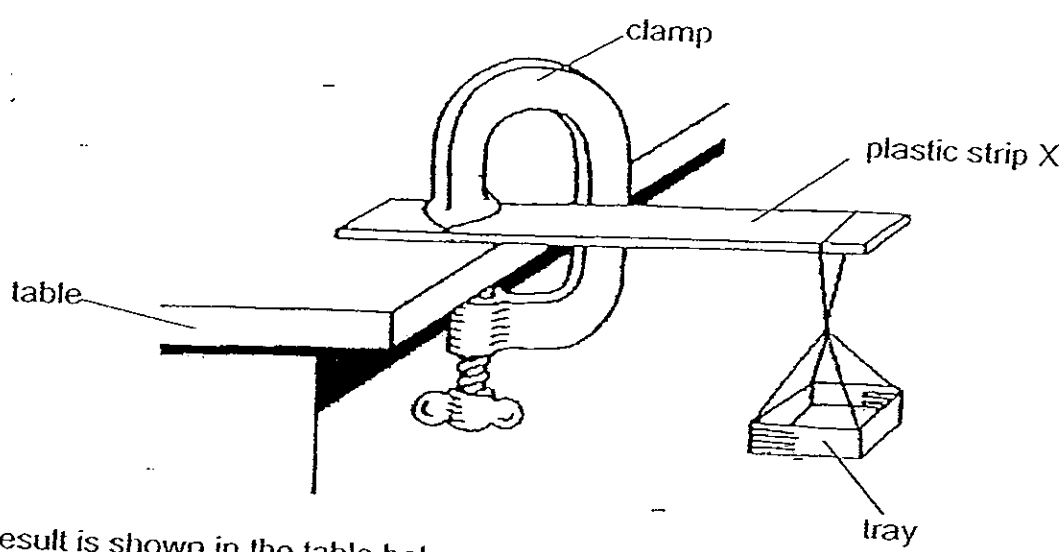


- (a) What will happen to the ink drop in the glass tube after the flask has been heated for 5 minutes? [1]
- \_\_\_\_\_
- (b) Explain your answer in (a)? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (c) How would the result be different if she repeated the experiment using 2 Bunsen burners? [1]
- \_\_\_\_\_
- \_\_\_\_\_





33 Jane set up an experiment as shown in the diagram below to investigate the flexibility of 2 different plastic strips, X and Y. She clamped one end of plastic strip X on top of a table and hung a tray over the other end. She placed 5g, 10g, 15g and 20g weights one at a time onto the tray and measured the degree of the bending angle for each weight used. She recorded the results in the table below and repeated the experiment with plastic strip Y



The result is shown in the table below.

Weight (g)	Degree of bending (°)	
	Plastic Strip X	Plastic Strip Y
5	8	5
10	15	10
15	20	13
20	27	15

(a) Based on the results above, what is the conclusion that can be made from the experiment? [1]

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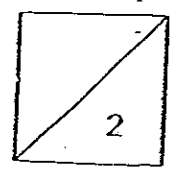


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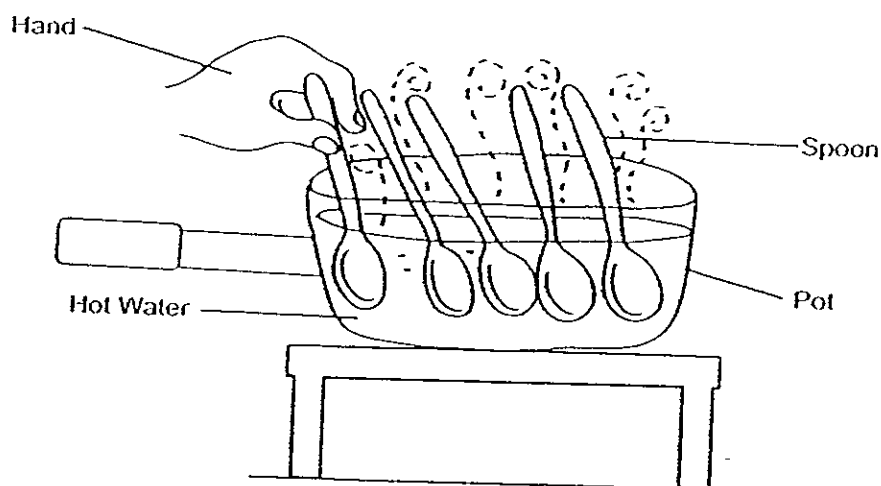
(b) List two variables that must be kept constant in order for this experiment to be fair. [1]

(i) \_\_\_\_\_

(ii) \_\_\_\_\_



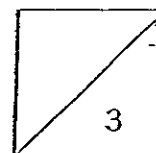
- 34 Five pupils were each told to hold onto a spoon while hot water was poured into the pot as shown below. The spoons were similar in size but made from different materials. The pupils were told to let go of the spoon the moment they could not withstand the heat felt on the spoon.



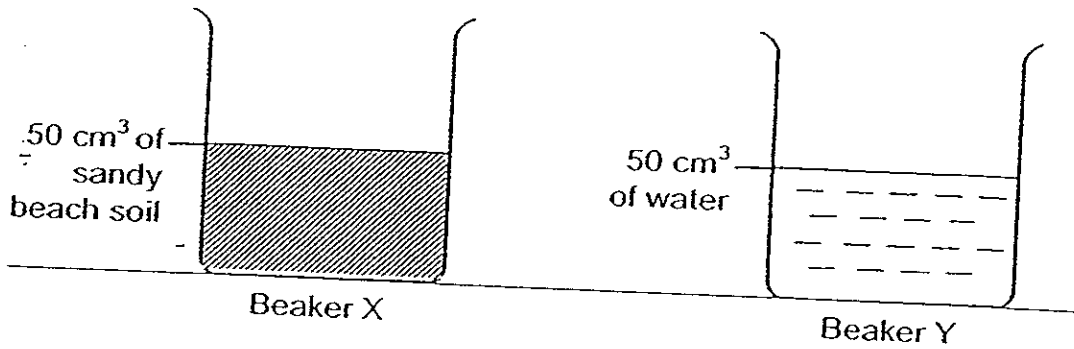
The table below shows the time each pupil held onto his spoon before the spoon was let go.

Material of spoon	Time (seconds)
Steel	35
Copper	10
Plastic	120
Wooden	120
Aluminum	50

- (a) Where did the spoons gain most the heat from? [1]
- 
- (b) From the above experiment, which material is the best conductor of heat? [1]
- 
- (c) Besides wood and plastic, name one other material which will be suitable as good insulator for making kitchen utensils. [1]
- 

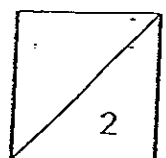
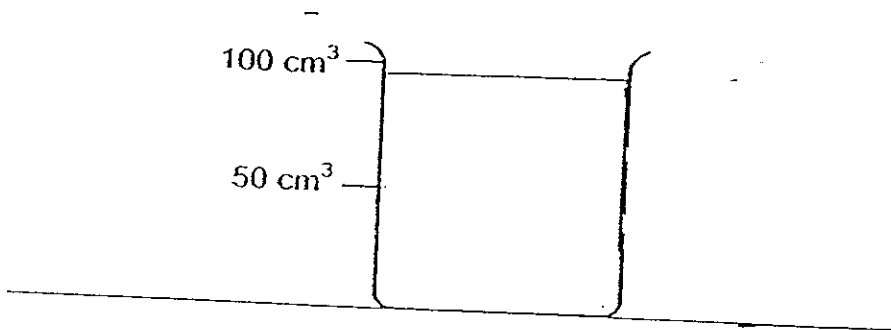


- 35 The diagram below shows two beakers, X and Y. Beaker X contains some sandy beach soil while beaker Y contains some water.

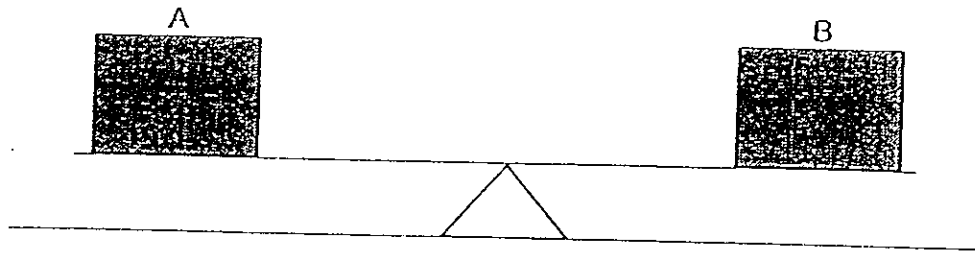


The water in beaker Y is then poured into beaker X. Using ruler and pencil, complete the following diagram to show the volume of total contents in the beaker after water is poured into beaker X. Please label your diagram.

[2]



- 36 Two similar metal containers, A and B, can contain 10 litres of air each. 8 litres of air has been pumped into each container. Both containers are placed on a balance as shown in the diagram below.



- (a) State one observation you would make when another 4 litres of air is pumped into metal container B. [1]

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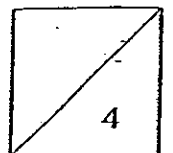
- (b) What is the volume of air in metal container B now? [1]

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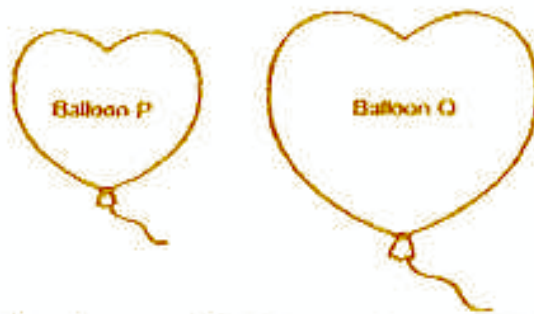
- (c) State two properties of air that are shown in the experiment. [2]

(i) \_\_\_\_\_

(ii) \_\_\_\_\_



- 37 Tommy has two similar heart-shaped balloons. He pumped 1 litre of air into balloon P and 3 litres of air into balloon Q as shown below.



- (a) From his observation, he concluded that air has a definite shape. Do you agree with his conclusion? [1]

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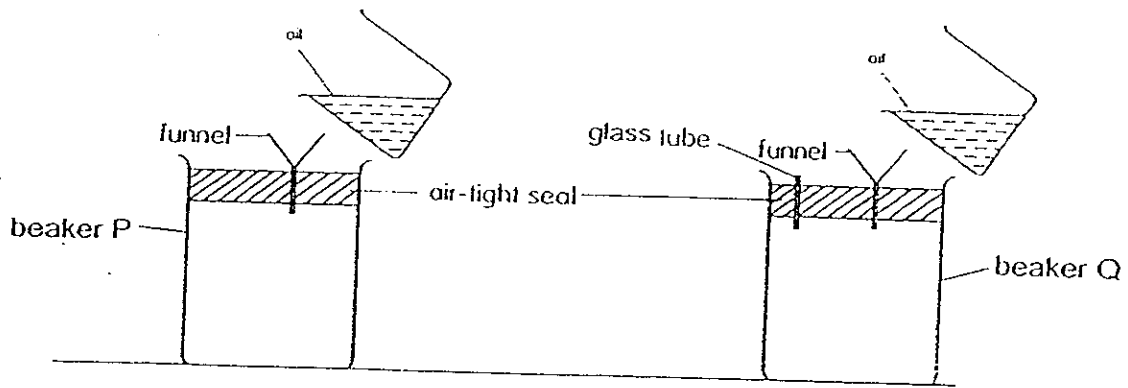
- (b) Explain your answer in (a). [1]

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38 Christopher poured oil into two similar beakers, P and Q, as shown in the diagram below. He noticed oil flowed faster into one of the beakers than the other.



(a) In which beaker will oil flow in faster? [½]

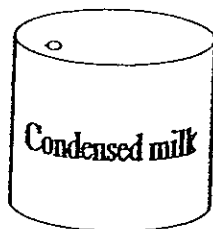
\_\_\_\_\_

(b) Give a reason why one beaker filled up faster than the other. [1½]

\_\_\_\_\_

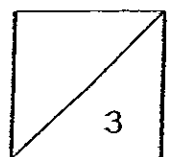
\_\_\_\_\_

(c) Christopher wanted to add some condensed milk into a cup of coffee he was drinking. He pierced a hole on the top of the can as shown in the diagram below. The condensed milk was flowing very slowly from its container. What can he do to increase the flow of condensed milk out of its container? (Do not suggest removing the top cover of the can completely) [1]

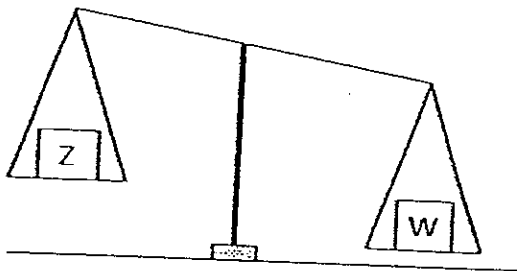
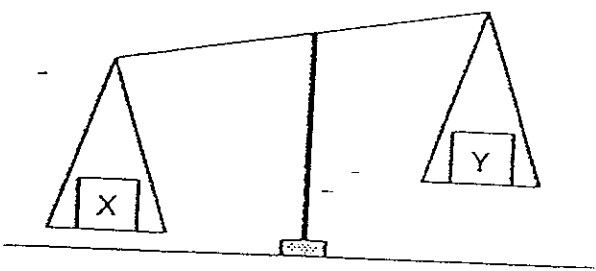
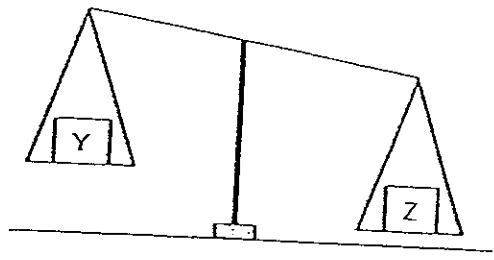
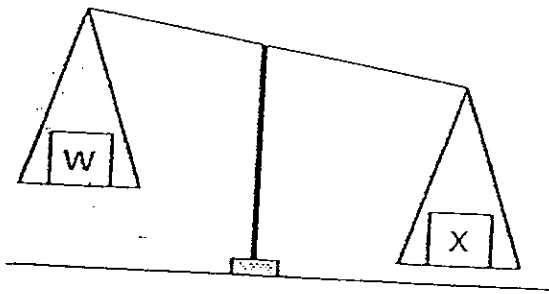


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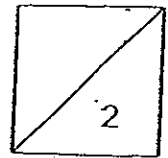
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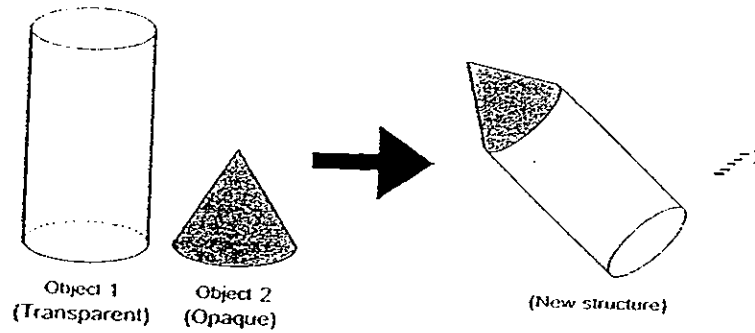
39 Study the diagrams below carefully.



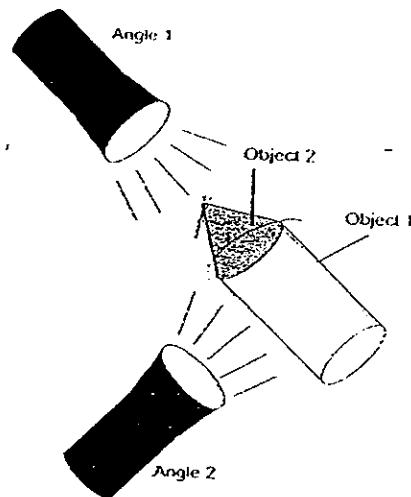
Based on the diagrams above, arrange objects, W, X, Y and Z from the heaviest to the lightest. [2]



- 40 The two objects 1 and 2, made of different materials are placed together to form a new structure as shown below.

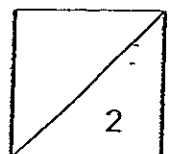


Light is shone onto the new structure from 2 different angles.



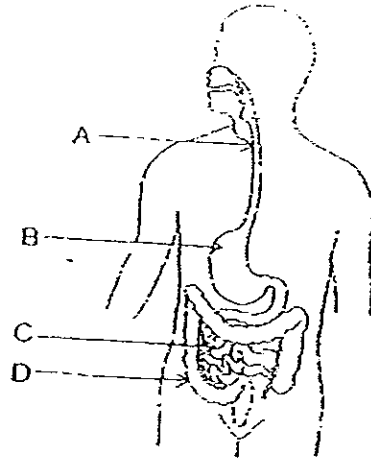
Based on the information above, draw the 2 shadows in the space provided. [2]

<p><u>Angle 1</u> (Shadow formed)</p>	<p><u>Angle 2</u> (Shadow formed)</p>
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41 The figure below shows our digestive system.

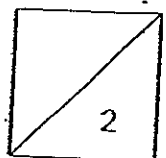


(a) At which part(s) (A, B, C, D) is /are digestive juices secreted?

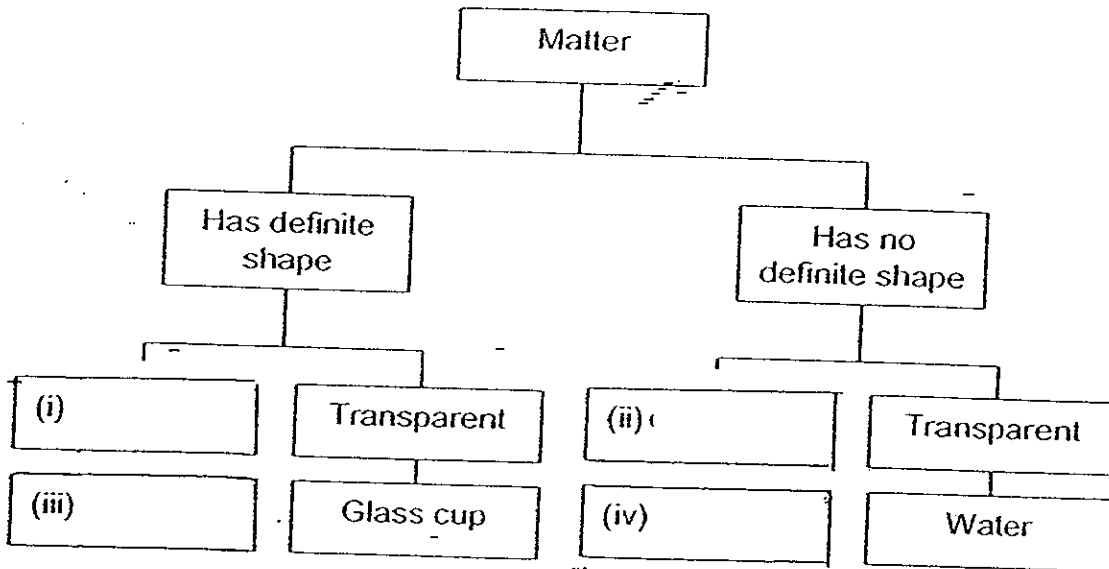
[1]

(b) What is the function of part D in the digestive system?

[1]



42 Study the classification chart below.



(a) Complete the classification chart above.

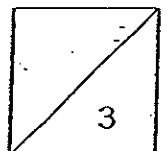
[2]

(b) Based on the information in the classification chart above, state one difference between the property of the glass cup and the water.

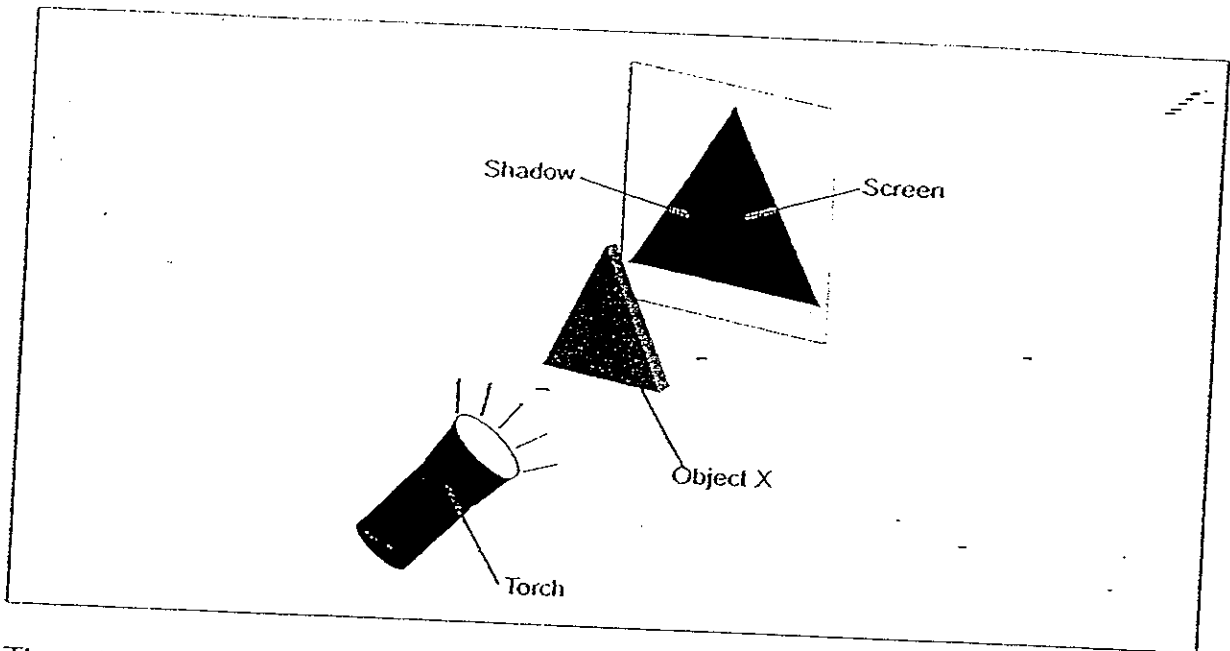
[1]

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- 43 The following set-up shows an object placed between a lighted torch and a screen. A shadow was cast onto the screen as shown.



The table below shows a record of how the distance between object X and the torch has been changed and the height of shadow that was formed.

Distance between the object X and torch (cm)	Height of shadow (cm)
15	10
10	15
5	20

- (a) State two ways of how you can enlarge the shadow of object X. [1]

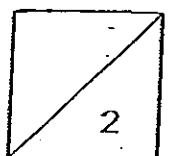
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- (b) State the likely aim of the experiment conducted above. [1]

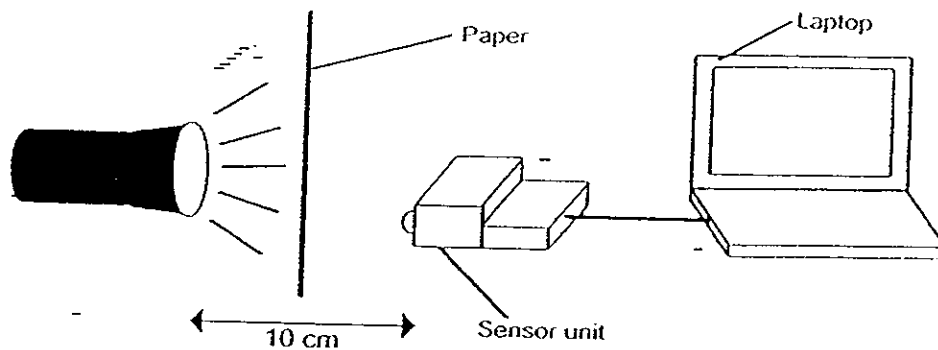
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- 44 Peter wants to find out if the thickness of paper affects the amount of light passing through it. He placed a piece of paper between the lighted torch and a sensor unit which is connected to the laptop. He measured the amount of light that was able to pass through the paper and recorded the result in the table below.

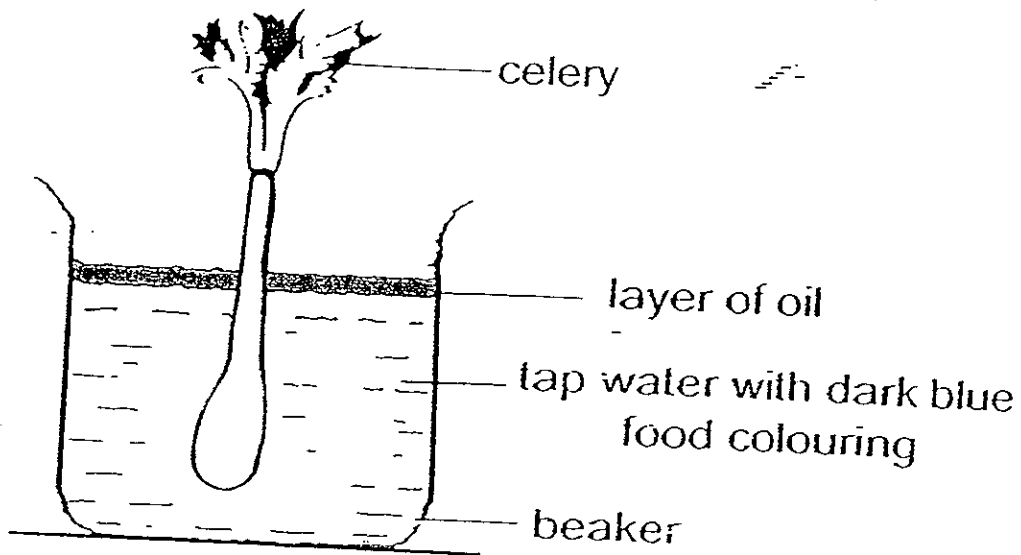


Gradually, he increased the number of sheets of paper used. The table below shows the results after his experiment.

Number of sheets of paper used	1	2	3	4	5
Amount of light (Lux)	100	80	X	40	20

- (a) What does X represent as shown in the table above? [1]
- 
- (b) What can you conclude from the result of the experiment? [1]
- 
- 
- (c) State one variable he must keep constant to ensure a fair test. [1]
-

45 Ellya placed a stalk of celery into a beaker of coloured water and added a layer of oil as shown in the set up below.



A day later, Ellya noticed that the height of the water level in the beaker has decreased.

(a) Based on the information above, explain why the water level has decreased. [1]

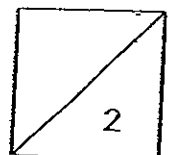
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(b) What is the purpose of adding the layer of oil into the beaker of water? [1]

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- 46 Timothy placed 3 different types of seeds into 3 different styrofoam cups of the same size, each containing some soil. Timothy left the cups in a dark corner of the classroom and watered them equally everyday to keep it damp at all times.

The table below shows the results for the growth of the seeds.

Seeds	Height (mm)					
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Tomato	0	0	4	6	11	13
Chilli	0	0	5	8	12	15
Green Bean	0	8	16	25	30	38

- (a) Based on the table above, which one of the seeds grows the fastest? [1]

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- (b) Name 3 conditions that are needed for the seeds to germinate into seedlings. [1]

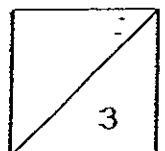
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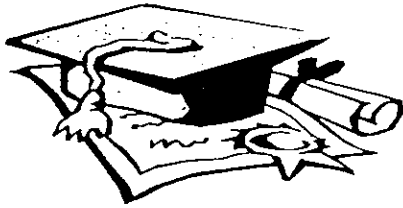
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- (c) State the aim of the experiment. [1]

\_\_\_\_\_

\_\_\_\_\_





# ANSWER SHEET

EXAM PAPER 2008

SCHOOL : ACS HIGH PRIMARY SCHOOL  
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA 2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	4	2	1	3	3	1	4	2	2	1	4	2	1	1	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	2	1	2	1	1	2	3	2	1	4	4	1

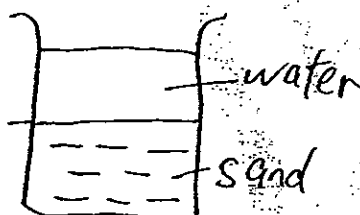
- 31) i) Animal P has eight legs but Animal Q has six legs.  
ii) Animal P has 2 body parts while animal Q has 3 body parts.

- 32) a) The ink drop will move to the right.  
b) The air in the container will gain heat and expand, the expanding air pushes the ink drop to the right.  
c) The ink drop would move faster.

- 33) a) Plastic strip X is more flexible than plastic strip Y.  
b) i) The thickness of the plastic.  
ii) The weight of the tray.

- 34) a) Hot water.  
b) Copper.  
c) Glass.

35)



36)a)A will move up while B will move down.

b)10L

c)i)Air has mass.

ii)Air can compressed.

37)a)No.

b)If Tommy pump air into a round shaped balloon, the shape will be round.

38)a)Beaker Q.

b)Air occupies space, the allow tube allows in beakers to escape when oil is poured into the beaker up space occupies by air.

c)He should pierce a few more holes.

39)X, W, Z, Y

40)Angle 1



Angle 2



41)a)B and C.

b)It absorbs water from undigested food.

42)a)i)Opaque ii)Opaque ii)Eraser iii)Orange juice

b)Glass has a definite shape but water has no definite shape.

43)a)Move the screen further from the object.

b)To find out if the distance between object X and the torch will affect the height of the shadow.

44)a)60 Lux.

b)The number of sheets of paper used will affect the amount of light passing through the paper.

c)He must use the same torch through out his experiment.



45)a)The water has been absorbed be the plants.  
b)To prevent evaporation.

46)a)Green bean.  
b)Water, air, warmth.  
c)To observe the different plants grow at different rate.