



Anglo-Chinese School (Primary)

**MID-YEAR EXAMINATION 2015  
SCIENCE  
PRIMARY FOUR  
BOOKLET A**

Name: \_\_\_\_\_ . (      )

Class: Primary 4 \_\_\_\_\_

Date: 6 May 2015

Duration of paper: 1 h 45 min

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Parent's/Guardian's signature

**INSTRUCTION TO CANDIDATES**

1. This question paper consists of **18** printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

For each of the following questions 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. [60 marks]

- 1 Kingsley observed two animals, P and Q, and recorded his observations in the table below.

Characteristics	Animal P	Animal Q
Has gills?	No	Yes
Has legs?	Yes	No
Has wings?	Yes	No
Gives birth to its young alive?	No	No

Which one of the following best represents animals P and Q?

	Animal P	Animal Q
1)	Mammal	Fish
2)	Insect	Bird
3)	Bird	Fish
4)	Mammal	Insect

- 2 Olivia saw an organism. She wanted to find out whether it is an insect. Which of the following actions would enable her to do so?

- A Measure its length.
- B Count the number of legs.
- C Find out whether it has wings.
- D Find out whether it has three body parts.

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

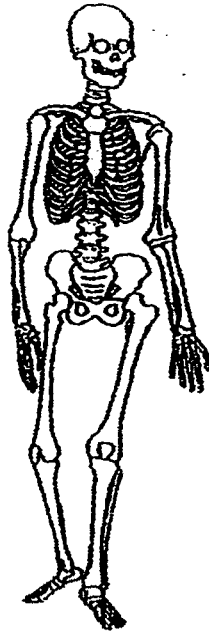
- 3 Kenneth wants to find out if the amount of light would affect the growth of fungi. He prepared two set-ups and listed the following variables that may affect the results of his experiment.

- A The amount of air present in the surroundings
- B The amount of light present in the surroundings
- C The amount of moisture present in the surroundings

Which of the above variable(s) must Kenneth keep the same for the two set-ups to ensure a fair test?

- 1) A only
  - 2) B only
  - 3) A and C only
  - 4) B and C only
- 4 Mrs Loo has some flowering plants in her garden. She is able to tell that the plants are flowering because they have \_\_\_\_\_.
- (1) fruits
  - (2) woody stems
  - (3) spore bags on their leaves
  - (4) different leaf shapes and veins

- 5 Study the human body system below.

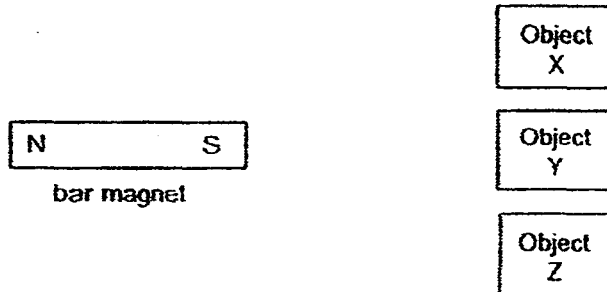


Which one of the following statements is not true about the above human body system?

- 1) It supports the body.
  - 2) It gives the body shape.
  - 3) It takes oxygen into the body.
  - 4) It protects the heart and lungs.
- 6 Which one of the following statements describes the main function of the large intestine in our body?
- (1) It breaks down food into simpler forms.
  - (2) It passes the digested food to the blood.
  - (3) It absorbs water from the undigested food.
  - (4) It passes the undigested food out of the body.

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- 7 Michael brought one end of a bar magnet near objects X, Y and Z one at a time.

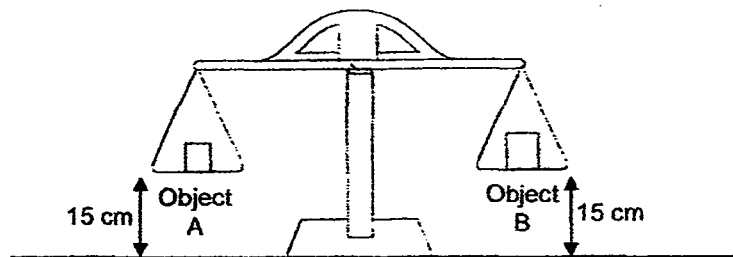


He recorded his observations below.

- A Object X was repelled by the bar magnet.
- B Object Y was attracted by the bar magnet.
- C Object Z did not move when it was brought near the bar magnet.

Based on his observations, which of the following is(are) definitely a magnet(s)?

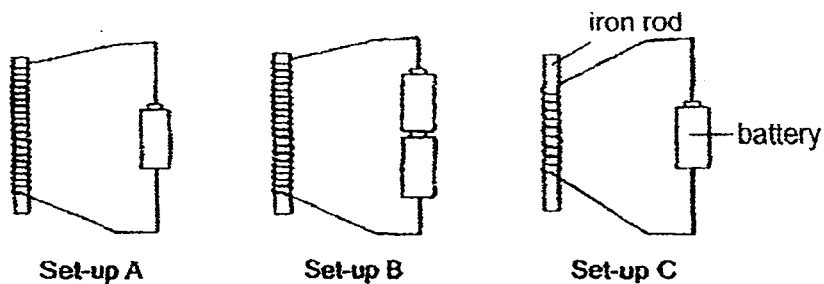
- (1) Object X only
  - (2) Object Z only
  - (3) Objects X and Y only
  - (4) Objects Y and Z only
- 8 The diagram shown below illustrates a lever balance. Both Object A and Object B are the same distance away from the ground.



Which one of the following statements is true?

- (1) Object A has a greater mass than Object B.
- (2) Object B has a greater mass than Object A.
- (3) Objects A and B have the same volume.
- (4) Objects A and B have the same mass.

- 9 Janet made electromagnets using set-ups A, B and C as shown below. The batteries, iron rods and wires used were identical and in working conditions.



She then arranged the set-ups A, B and C from the one that attracts the most number of paper clips to the one that attracts the least number of paper clips.

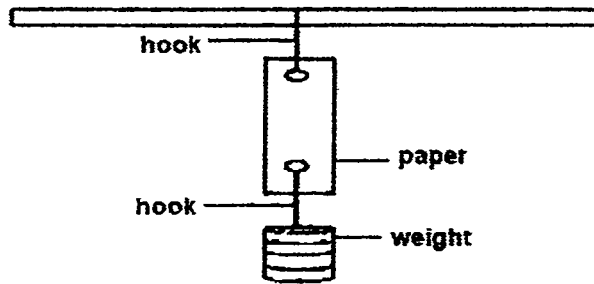
Which one of the following shows the correct order?

	Attracts the most number of paper clips	→	Attracts the least number of paper clips
(1)	A		B                      C
(2)	B		A                      C
(3)	C		A                      B
(4)	C		B                      A

- 10 Which one of the following pair of items has been grouped correctly?

	Matter	Non-matter
1)	Heat	Stone
2)	Oxygen	Sound
3)	Rainbow	Shadow
4)	Water vapour	Milk

- 11 Ravi wanted to find out the strength of four different types of paper, W, X, Y and Z. They were all of the same size and thickness. He hung each piece of paper, one at a time, using the following set-up as shown below.



He placed one weight at a time to the lower hook until the paper started to tear and recorded his results as shown in the graph below.

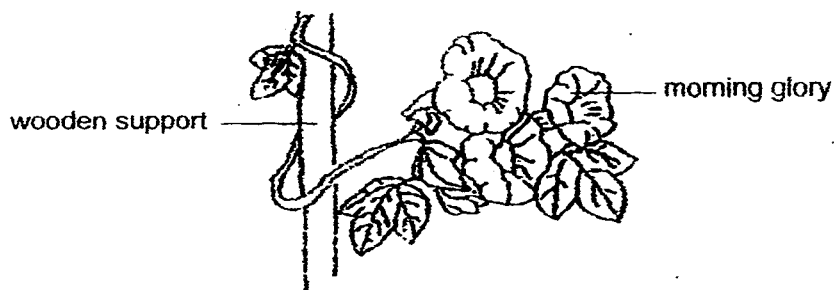


Based on the information above, which of the following statement(s) is/are correct?

- A Y is stronger than Z.
- B Z is the strongest paper.
- C W is stronger than X and Y.
- D X is stronger than W and Y.

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

- 12 Study the diagram below.



Based on the diagram above, which one of the following statements describes the morning glory?

- 1) The morning glory has a weak stem and is a flowering plant.
  - 2) The morning glory has a strong stem and is a flowering plant.
  - 3) The morning glory has a weak stem and is a non-flowering plant.
  - 4) The morning glory has a strong stem and is a non-flowering plant.
- 13 Study the diagram below.



Based on the diagram above, which of the following describes the leaves?

	Leaf edge	Vein pattern
(1)	Jagged	Parallel
(2)	Entire	Network
(3)	Jagged	Network
(4)	Entire	Parallel

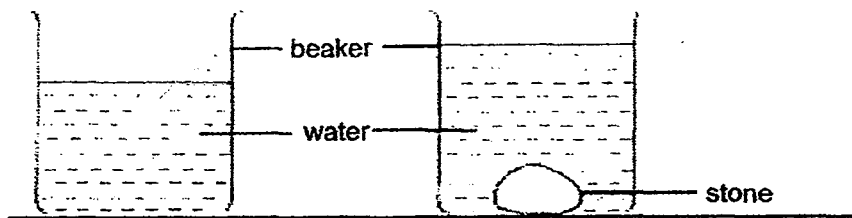


- 14 Eric conducted several tests on a material, Q. He recorded his observation in the table below.

Observation	Material Q
Bends easily?	Yes
Absorbs water?	Yes
Breaks when dropped?	No

Which one of the following is material Q likely to be?

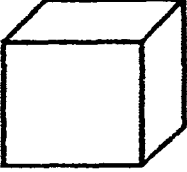
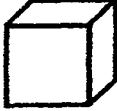
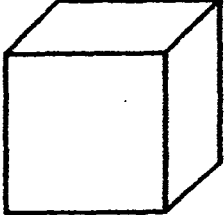
- (1) Rubber
  - (2) Metal
  - (3) Ceramic
  - (4) Fabric
- 15 A stone was dropped into a beaker of water as shown in the diagram below. It was observed that the level of water rose.



What can be concluded from the experiment above?

- 1) The stone has mass.
- 2) The stone has no volume.
- 3) The stone occupies space.
- 4) The stone has the same volume as the water in the beaker.

16 Study the information provided below.

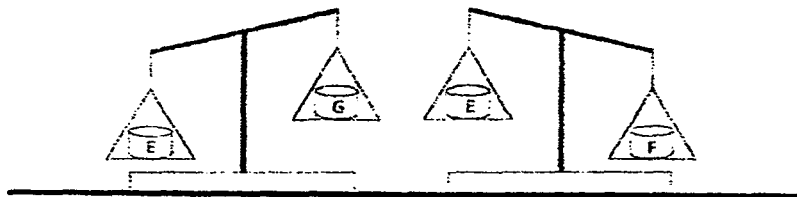
		
Box P	Box Q	Box R
Mass: 240 g Volume: 110 cm <sup>3</sup>	Mass: 360 g Volume: 60 cm <sup>3</sup>	Mass: 180 g Volume: 200 cm <sup>3</sup>

Based on the information given above, which of the following statements are true?

- A Box R has less mass than Box Q.
- B Box R has the most mass as it is the biggest box.
- C Box P occupies more space than Box Q.

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

17 Darryl placed three different objects, E, F and G, two at a time, using a lever balance. The results are as shown below.

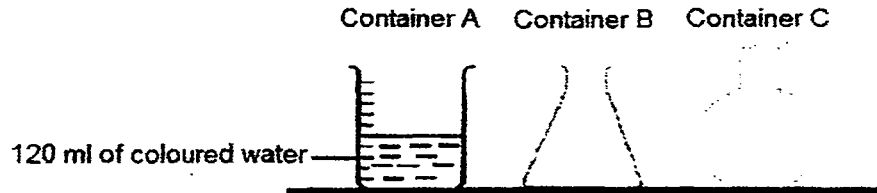


Arrange the objects, E, F and G, in descending order, according to their masses.

- (1) F, G, E
- (2) F, E, G
- (3) G, E, F
- (4) G, F, E

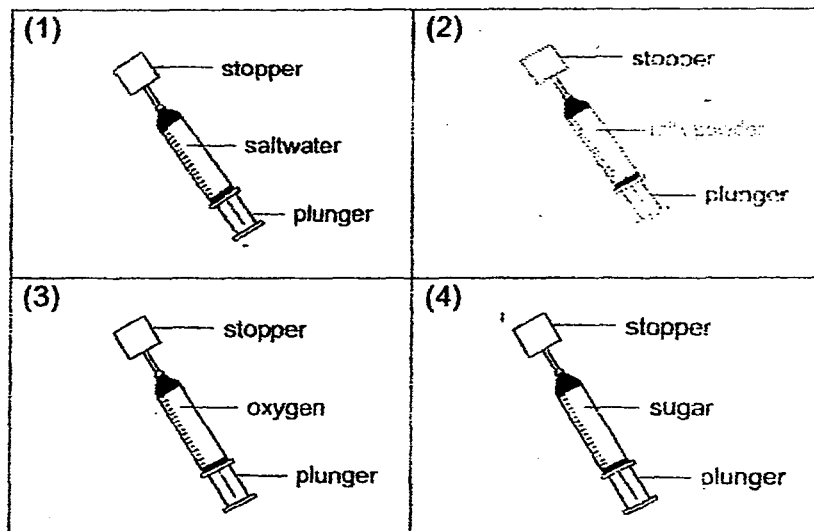
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- 18 120 ml of coloured water from Container A was poured into Container B. The coloured water was then poured from Container B to Container C. There was no spillage.

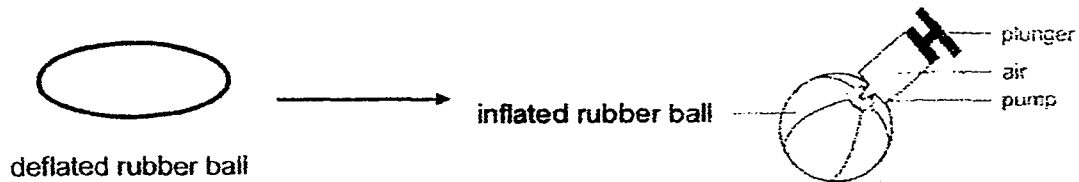


What can be concluded from the above experiment?

- (1) The volume of the coloured water changed but not the mass.
  - (2) The mass of the coloured water changed but not the volume.
  - (3) The shape of the coloured water changed but not the volume.
  - (4) The shape and volume of the coloured water remained the same.
- 19 Four syringes of the same size were filled with different substances of the same volume. A stopper was inserted at the nozzle of each syringe. Which plunger can be pushed in?



- 20 The capacity of a rubber ball is  $500 \text{ cm}^3$ . The rubber ball was first deflated. An air pump was then used to inflate the rubber ball. Each push of the pump forced  $110 \text{ cm}^3$  of air into the ball. What was the volume of air in the rubber ball if the pump was pushed five times?



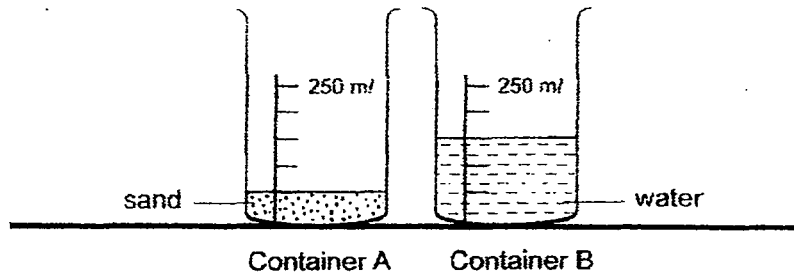
- (1)  $110 \text{ cm}^3$   
 (2)  $390 \text{ cm}^3$   
 (3)  $500 \text{ cm}^3$   
 (4)  $550 \text{ cm}^3$
- 21 Fred conducted an experiment to find out the properties of an object. He then recorded his findings in a table as shown below.

Properties	Yes / No
Does the object have a definite volume?	Yes
Does the object have a definite shape?	No
Can the object be compressed?	No

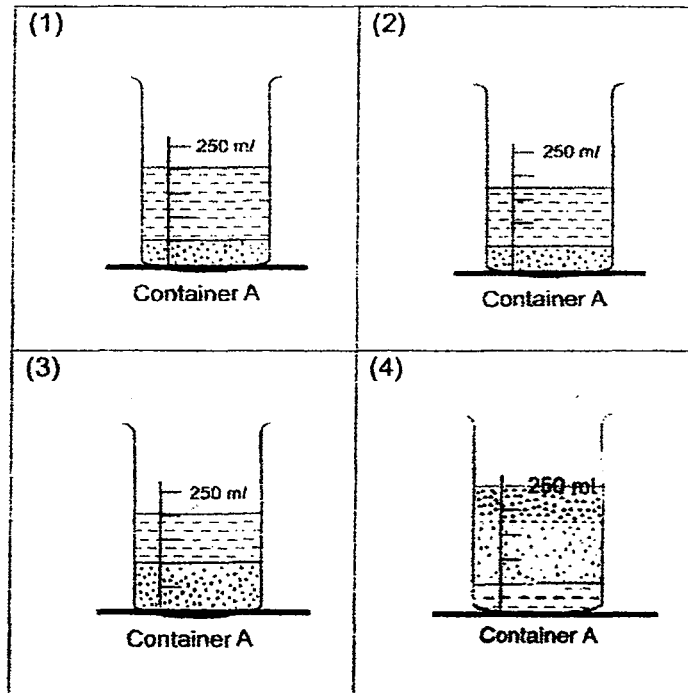
What was most likely the object that Fred was experimenting with?

- (1) salt  
 (2) jelly  
 (3) paper cup  
 (4) sugar syrup

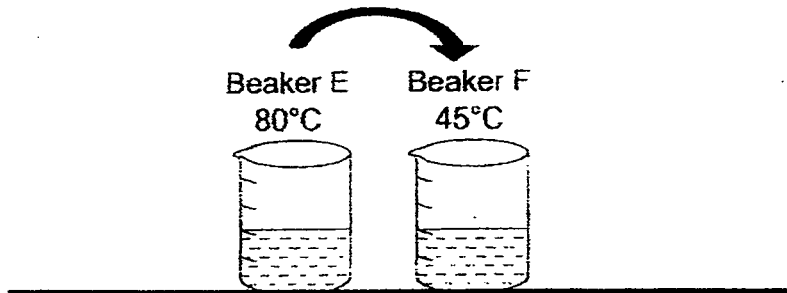
- 22 James set up an experiment as shown below.



He poured all the water from Container B into Container A. Which one of the following diagrams shows the results of his experiment?



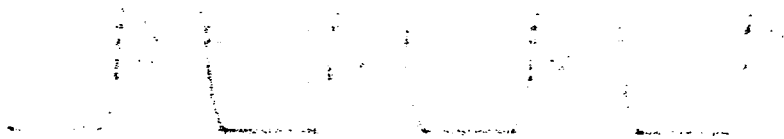
- 23 An equal amount of water of different temperatures was poured into two identical beakers as shown below. Water from Beaker E was then poured into Beaker F.



What is the most likely final temperature of the water in Beaker F?

- (1) 45°C  
(2) 70°C  
(3) 80°C  
(4) 100°C
- 24 Four identical mugs of water were left on a table at room temperature as shown below.

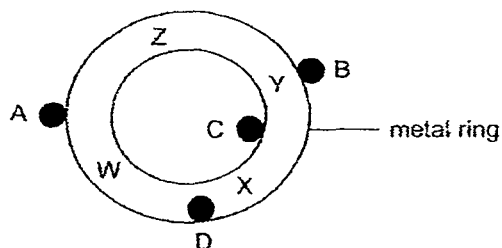
Mug A (water at 50°C)    Mug B (water at 10°C)    Mug C (water at 80°C)    Mug D (water at 5°C)



Which mugs lost heat to the surrounding air?

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

- 25 Four metal buttons, A, B, C and D, were attached to the metal ring with the same amount of wax as shown in the diagram below.



When the metal ring was heated by a lit candle at one part, the metal buttons dropped in the order of B, C, D and A. At which position, W, X, Y or Z, was the lit candle heating the metal ring?

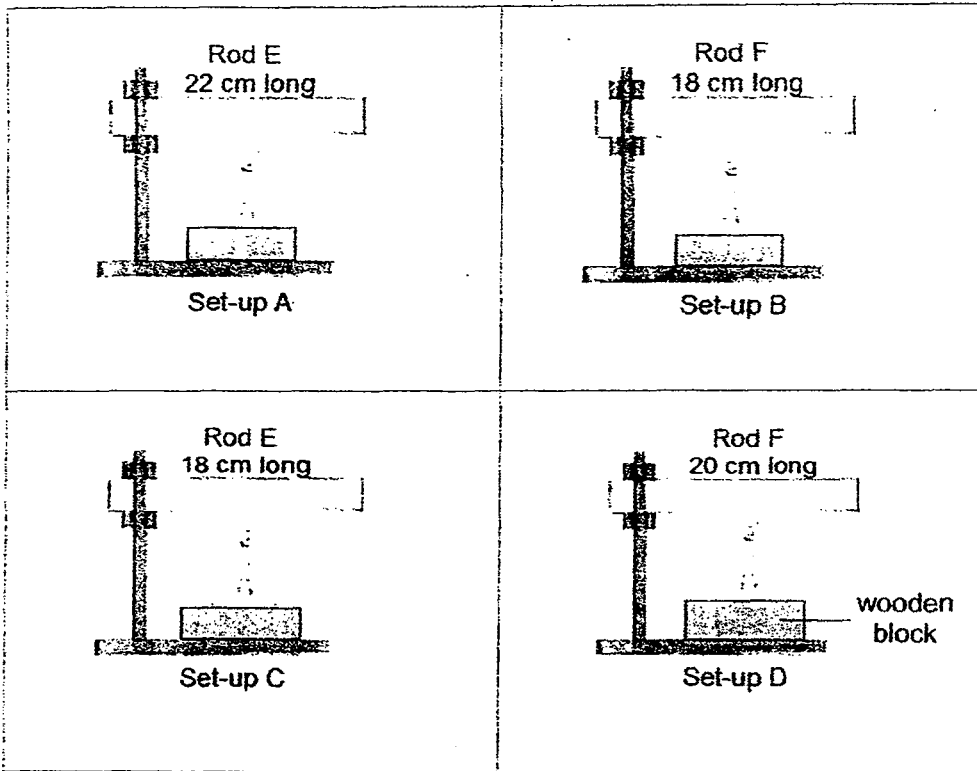
- (1) W  
 (2) X  
 (3) Y  
 (4) Z
- 26 A company wants to produce frying pans. It conducted a test on four different metals, S, T, U and V. The metals were heated for 10 minutes. The temperatures of the pans, before and after heating, were recorded. The results of the test are shown in the table below.

Metal	Temperature before heating ( $^{\circ}\text{C}$ )	Temperature after heating ( $^{\circ}\text{C}$ )
S	25	59
T	25	62
U	25	55
V	25	70

Based on the results above, which metal, S, T, U or V, is the most suitable material for making the base of a frying pan?

- (1) S  
 (2) T  
 (3) U  
 (4) V

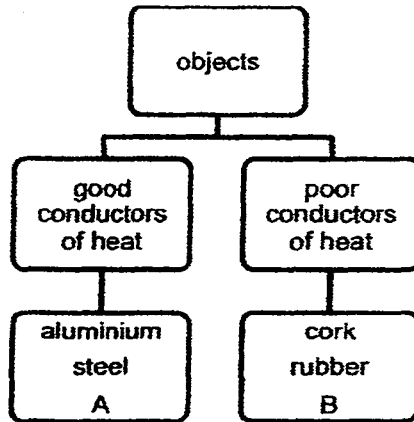
- 27 Asher wants to find out which metal bar, E or F, will expand more when heated. Which two set-ups should he use in order to carry out a fair test?



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



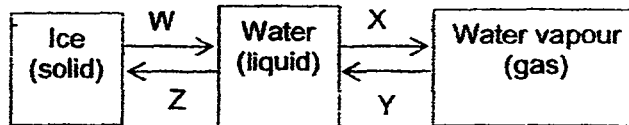
28 Study the classification diagram below.



What are objects A and B most likely to be?

	A	B
1)	Wood	Copper
2)	Wood	Air
3)	Air	Copper
4)	Copper	Air

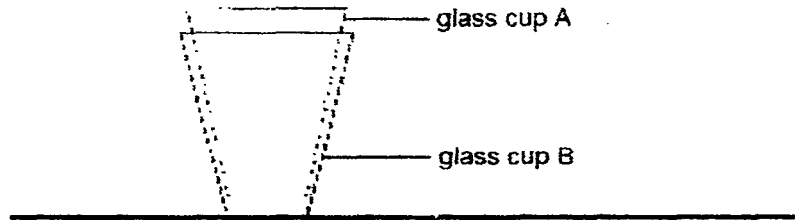
29 Study the diagram below that represents the process of how water can change into its three different states.



Which of the following shows the correct heat transfer among the three states of matter?

	Heat Gain	Heat Loss
(1)	W and Z	X and Y
(2)	X and Y	W and Z
(3)	W and X	Y and Z
(4)	Y and Z	W and X

- 30 Ali had difficulty separating two glass cups, A and B, which were stuck together as shown in the diagram below.



Which one of the following statements is the best solution to separate the two glass cups?

- (1) Put glass cup B in a basin of hot water and put ice cubes into glass cup A.
- (2) Put glass cup B in a basin of cold water and put ice cubes into glass cup A.
- (3) Put glass cup B in a basin of hot water and pour hot water into glass cup A.
- (4) Put glass cup B in a basin of cold water and pour hot water into glass cup A.

**END OF BOOKLET A**

Please go on to Booklet B



Anglo-Chinese School (Primary)

**MID-YEAR EXAMINATION 2015  
SCIENCE  
PRIMARY FOUR  
BOOKLET B**

Name: \_\_\_\_\_ ( )

Class: Primary 4 \_\_\_\_\_

Date: 6 May 2015

Duration of paper: 1 h 45 min

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

**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 13 printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

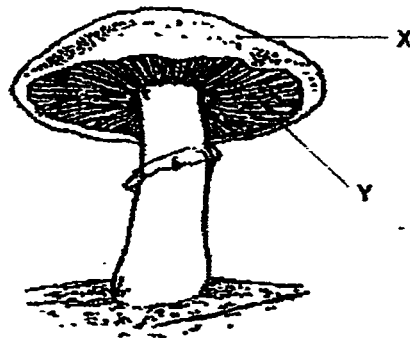
For questions 31 to 44, write your answers in the spaces provided in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part question. (40 marks)

- 31 Put a tick (✓) in the appropriate boxes to indicate if each statement about fungi is true or false. [2]

Statements	True	False
Fungi cannot make their own food.		
Fungi exist as micro-organism only.		
Fungi produce spores for reproduction.		
Fungi have true roots to help them absorb water.		

- 32 The diagram below shows a mushroom.



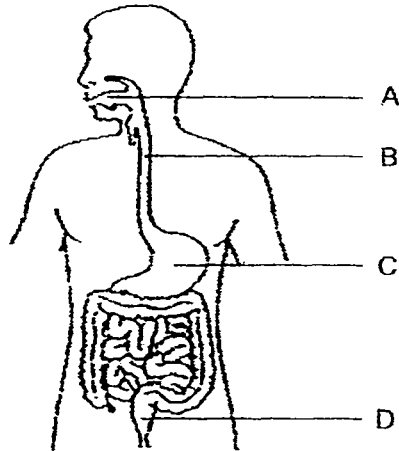
Identify parts X and Y.

- (a) X: \_\_\_\_\_ [1];
- (b) Y: \_\_\_\_\_ [1]

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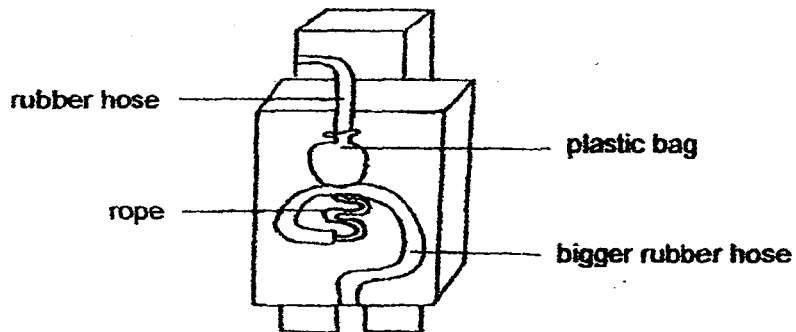
Score	4
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- 33 The diagram below shows the human digestive system.



- (a) State two of the parts (A, B, C, D) where digestion take place [2]

Kumar used some scrap materials to make a model of the digestive system as shown below.



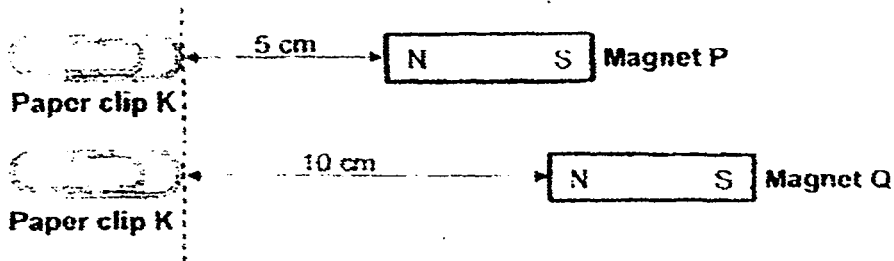
- (b) Name the parts of the digestive system represented by each of the scrap materials used. [2]

- (i) rubber hose: \_\_\_\_\_
- (ii) plastic bag: \_\_\_\_\_

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Score	4
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- 34 The diagram below shows the greatest distance from which the different magnets, P and Q, will be able to attract the paper clip K.



- (a) What can you conclude from the above experiment? [1]

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- (b) Put a tick (✓) in the appropriate boxes to indicate which variable(s) to change or keep the same to ensure a fair test in the experiment above. [1]

Variable	Change	Keep the same
Size of paper clip		
Type of magnet		
Size of magnet		
Position where the paper clip is placed		

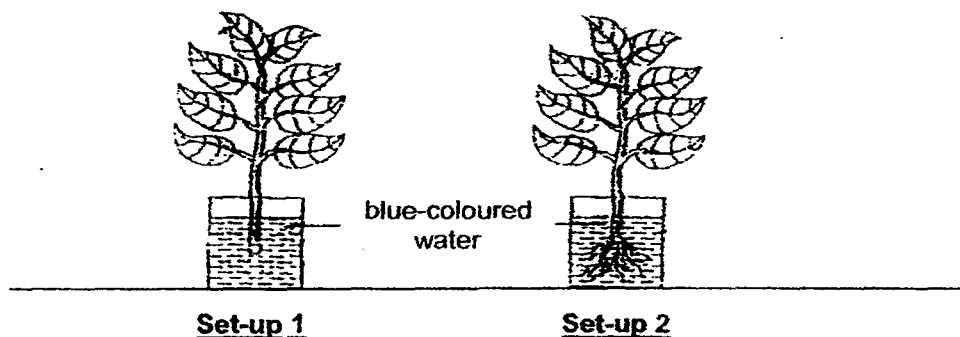
- (c) State one way to make a magnet weakens or loses its magnetism. [1]

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Score	2
	3

- 35 Aaron used two similar plants to conduct an experiment as shown below. He removed the roots of the plant in Set-up 1, and left both plants in a room in the same location.



After eight hours, he measured the amount of water left in each set-up, and recorded his results in table below.

Set-up	Amount of water at the start of the experiment	Amount of water at the end of the experiment
1	500 ml	420 ml
2	500 ml	340 ml

- (a) What was the aim of Aaron's experiment? [1]

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- (b) State the two main functions of the stem in a plant [2]

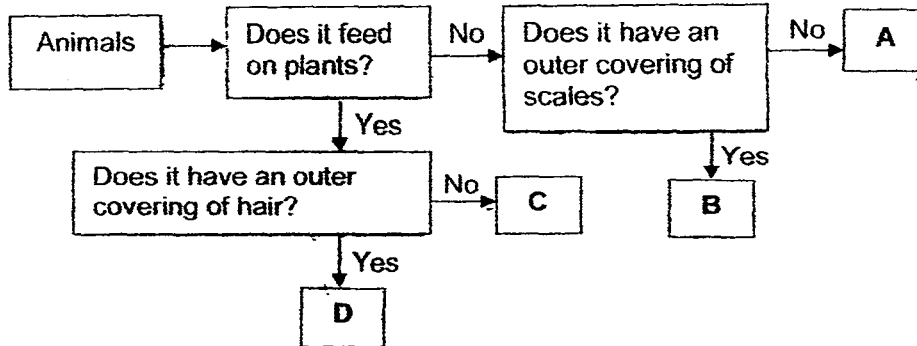
(i) \_\_\_\_\_

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

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Score	3
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36 Study the flowchart below.



- (a) Lucas was given a pet animal with hairs on its body and it feeds on plants. Based on the classification diagram, which one of the animals, A, B, C or D, represents Lucas's pet animal? [1]

- (b) Based on the flowchart above, which letter, A, B, C and D, correctly represents each of the animals below. [2]

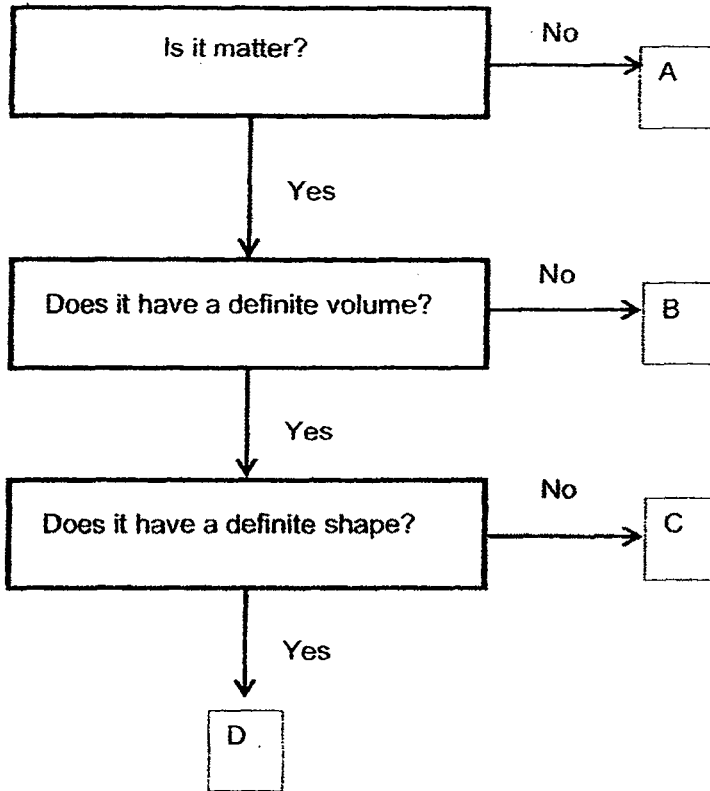
	Animal	Letter
(i)	tiger	
(ii)	horse	
(iii)	crocodile	
(iv)	grasshopper	

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Score	3
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37 Study the flowchart below carefully.



Using the flowchart above, which letter best represents the following items?

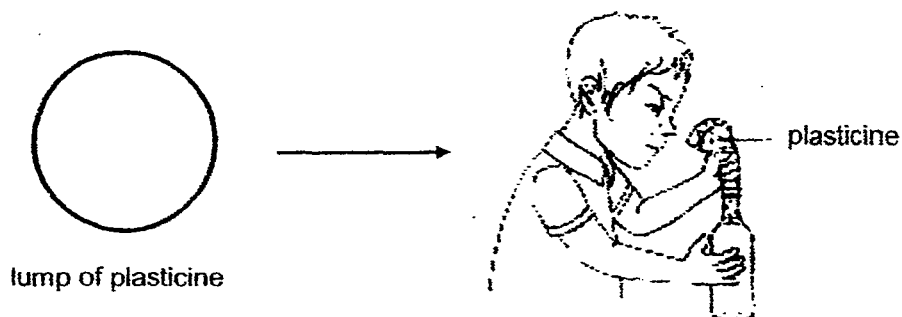
[2]

Item	Letter
Air	
Heat	
Bottle	
Orange juice	

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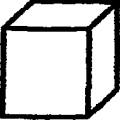
Score	2
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- 38 Zachary squeezed a lump of plasticine into a bottle as shown below. He managed to squeeze it in.



- (a) Which state of matter is plasticine in? [1]

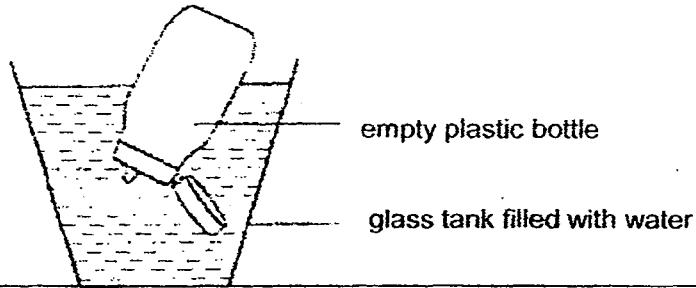
- (b) Zachary then moulded the plasticine into different shapes, one at a time. He made sure that all the plasticine was used every time. State the mass and volume for each shape of plasticine that he has moulded. [2]

Shape	Mass (g)	Volume (cm <sup>3</sup> )
 Lump of plasticine	25	35
 cylinder		
 box		

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Score	3
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- 39 An empty plastic bottle was inverted into a glass tank filled with water. The bottle was then given a tight squeeze and released.



- (a) What was observed at the mouth of the plastic bottle when it was squeezed? [1]

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

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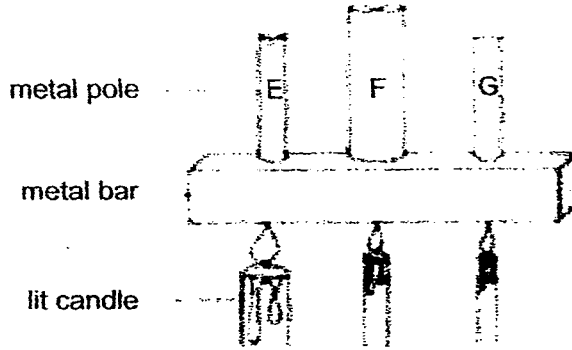
- (c) What was observed about the level of water in the plastic bottle when it was released? [1]

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Score	3
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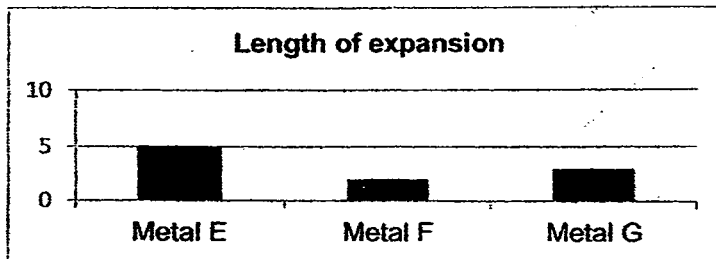
- 40 Two boys, Mark and Tom, conducted two experiments with the same aim. Mark set up an experiment as shown in the diagram below to find out which metal pole, E, F or G, expands the most when heated. However, he did not carry out a fair test.



- (a) Which variable(s) should Mark have kept constant in order to conduct a fair experiment? Put a tick (✓) next to the variable(s). [1]

Variable	To be kept constant
Size of metal poles	
Type of metals	
Size of candles	

The other boy, Tom, conducted the experiment correctly. The results of his test are illustrated in the graph below.



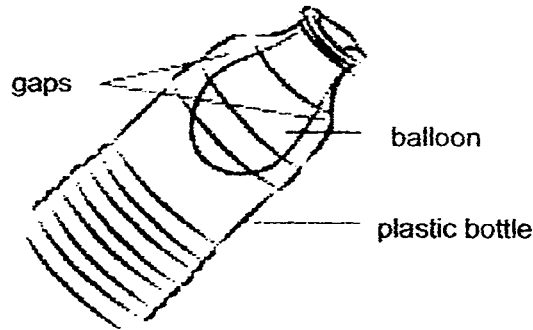
- (b) A company wants to make railway tracks. Based on this experiment, which metal, E, F or G, should the company use to make the railway tracks so that it doesn't buckle on a hot day? [1]

- (c) Explain your answer to part (b). [1]

(Go on to the next page)

Score	3
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- 41 Martin secured a deflated balloon over the mouth of a plastic bottle. He then blew air into the balloon. However, he realised that it was impossible to inflate the balloon.



- (a) Why was it not possible to inflate the balloon? [1]

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- (b) After Martin poked a hole on the bottom of the plastic bottle, the balloon could be inflated. Why was this so? [2]

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- 42 Ethan wanted to find out the volume of a pebble. He conducted the experiment and the steps he took were listed below.

- (a) Number the steps taken accordingly. Step 1 has been stated. [2]

Procedure	Step
Fill the measuring cylinder with 20 ml of water.	1
Record the total volume of the water and the pebble in the measuring cylinder.	
Repeat the procedure for two more times.	
Place the pebble in the measuring cylinder carefully, ensuring that the water doesn't splash out, and the pebble is fully submerged.	
Find the difference between the volume of the water and the pebble, and the original volume of water in the measuring cylinder.	

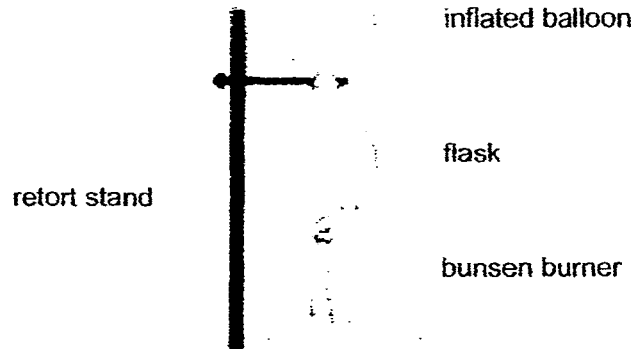
- (b) Why is there a need to repeat the procedure more than once? [1]

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(Go on to the next page)

Score	6
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- 43 A balloon was attached to the mouth of an empty flask and suspended on a retort stand as shown below. The flask was placed above a bunsen burner and heated for a few minutes. It was observed that the balloon became inflated.



- (a) What was the aim of the experiment? [1]

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- (b) A hot air balloon requires its material to stretch fairly well when it is heated. Explain why such a material is needed to create the hot air balloon. [1]

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A test was conducted on three different materials to determine their ability to stretch. The results are shown in the table below.

Material	Total length of stretch made (cm)
Cotton	2
Leather	4
Nylon	8

- (c) Based on the above results, which one of the materials, cotton, leather or nylon, is best suited to create the hot air balloon? [1]

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(Go on to the next page)

Score	3
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- 44 Classify the list of items below into two groups according to whether they are good conductors of heat or poor conductors of heat. [3]

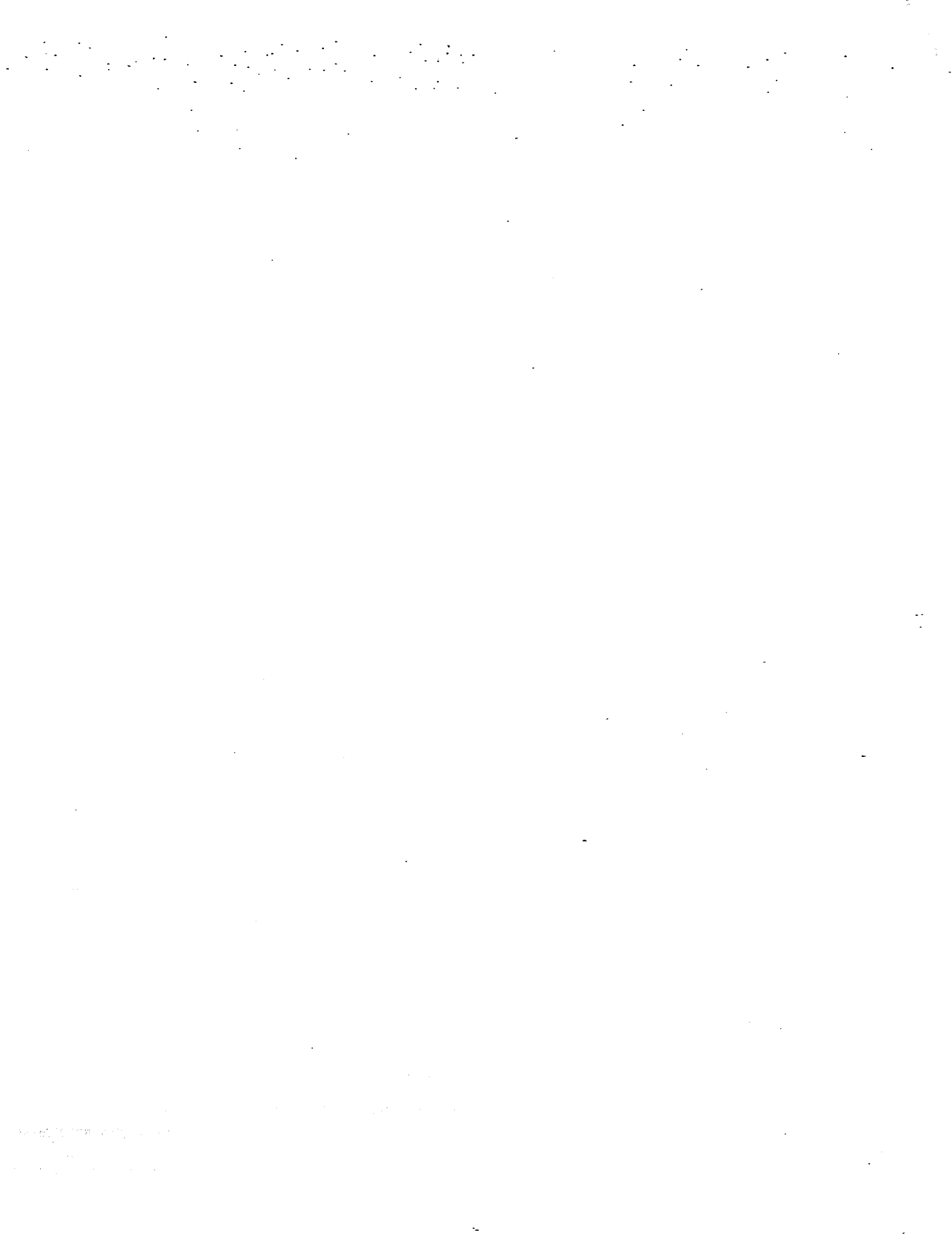
Aluminium	Steel	Rubber
Plastic	Styrofoam	Iron

Good conductors of heat	Poor conductors of heat

**END OF BOOKLET B**

Please check all your answers carefully

Score	3
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**EXAM PAPER 2015**

**LEVEL : PRIMARY 4**

**SCHOOL : ANGLO CHINESE SCHOOL PRIMARY ( BAKER ROAD)**

**SUBJECT : SCIENCE**

**TERM : SA1**

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
3	4	3	1	3	3	1	4	2	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
2	1	3	4	3	2	2	3	3	3
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
4	2	2	2	3	4	2	4	3	1

Q31. TRUE , FALSE , TRUE , FALSE

Q32. X: Spore caps Y: Gills

Q33a. A & C

Q33bi) rubber hose : gullet Q33bii) plastic bag: stomach

Q34a. Magnet Q has a stronger magnetic force than magnet P.

Q34b.

Variable	change	Keep the same
Size of paper clip		✓
Type of magnet	✓	
Size of magnet		✓
Position where the paper clip is placed		✓

Q34c. Heating can make a magnet weakens or loses its magnetism.

Q35a. To find out if the plant with roots take in more water.

Q35bi) To support the plant. Q35bii) To transports food and minerals to the rest of the plants.

Q36a. D Q36bi) A Q36bii) D Q36biii) B Q36biv) C

Q37. Air - B , Heat - A , Bottle - D , Orange juice - C

Q38a. Solid

Q38b. Cylinder - mass 25g Volume - 35cm<sup>3</sup>

Q38b. Box - 25g Volume - 35cm<sup>3</sup>

Q39a. Air bubbles were forced out of the water.

Q39b. When the person squeezed the bubbles out of the bottle.

Q39c. The level of water increased.

Q40a

Variable	To be kept constant
Size of metal poles	✓
Type of metals	
Size f candles	✓

Q40b. Metals

Q40c. Metal F expanded the least.

Q41a. The air in the plastic bottle occupied space

Q41b. As the balloon occupied more space, the air in the bottle can escape.

Q42a. 1, 3, 5, 2, 4

Q42b. To reduce experimental error.

Q43a. To find out if air expands when it is heated. Q43b. The material must be able to stretch as it will expand when the material gains heat from the hot air. Otherwise, the material will tear.

Q43c. Nylon

Q44.

Good conductors of heat	Poor conductors of heat
Iron	plastic
nickel	styrofoam
silver	wool

