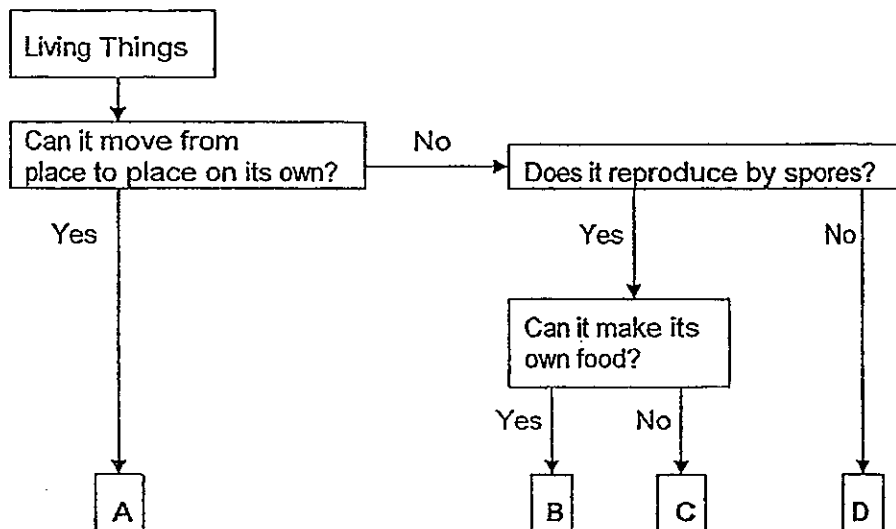


For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

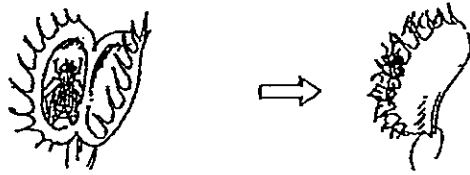
1 Study the flow chart below carefully.



Which one of the following best identifies organisms A, B, C and D?

	A	B	C	D
(1)	Snail	Bird's nest fern	Moss	Toadstool
(2)	Mealworms	Toadstool	Rose plant	Hibiscus plant
(3)	Bicycle	Rose plant	Hibiscus plant	Bird's nest fern
(4)	Snake	Moss	Mushroom	Rose plant

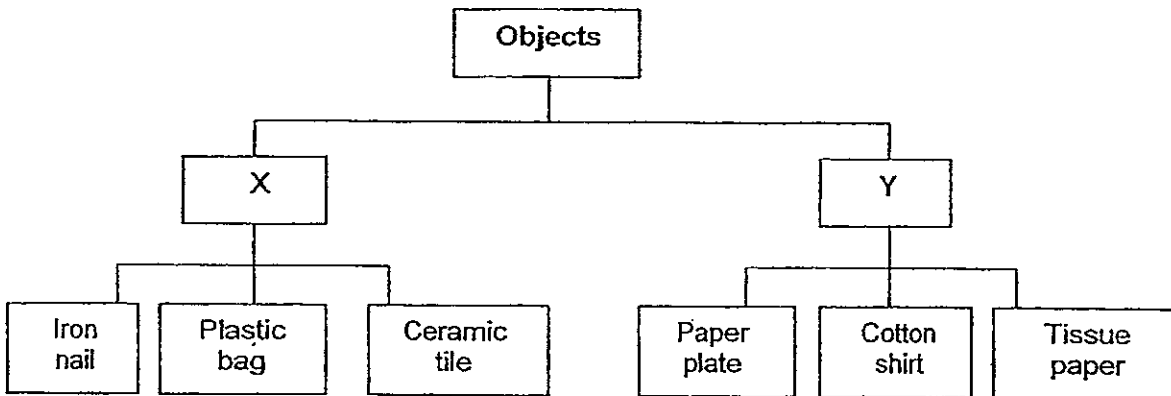
- 2 The Venus Flytrap is a plant that captures insects by snapping its two leaves shut like a shell when an insect lands on it. The diagram below shows how a Venus Flytrap captures a fly.



Which characteristics of living things are described by the action of the Venus Flytrap above?

- A Living things need air.
 - B Living things can respond to stimuli.
 - C Living things can move by themselves.
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B, and C
- 3 Larry wants to find out how the size of the bread affects the rate at which damp bread will turn mouldy. Which of the following variables must be kept constant?
- A Size of the bread
 - B Type of the bread
 - C Amount of water added to the bread
 - D Number of days the bread were kept during the experiment
- (1) A, B and C only
- (2) A, C and D only
- (3) B, C and D only
- (4) A, B, C and D

- 4 The classification chart below shows how some objects are classified.



Which headings are the most appropriate for X and Y?

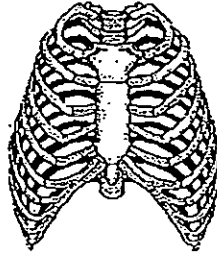
	X	Y
(1)	Waterproof	Not waterproof
(2)	Magnetic	Non-magnetic
(3)	Flexible	Not flexible
(4)	Good conductors of heat	Bad conductors of heat

- 5 Which of the following are matter?

- A Pebble
- B Shadow
- C Detergent
- D Heat

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

- 6 Which organs are protected by the part of the skeleton that is shown below?



- A Eyes
- B Brain
- C Heart
- D Lungs

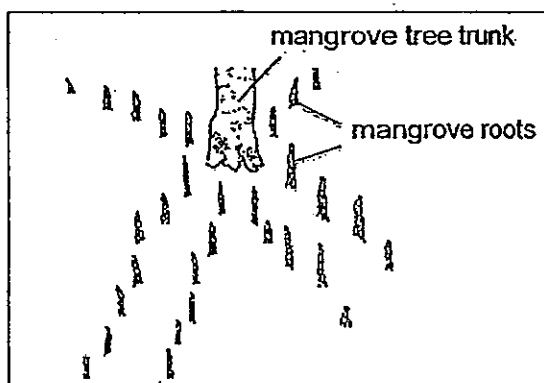
- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) B, C and D only

- 7 A celery plant with stems and leaves is placed in a beaker of red-coloured water. After a day, it was observed that the leaves had turned red. What does this show?

- A The leaves are making food.
- B The leaves carry water to the plant.
- C The stem carried water up to the leaves
- D The water-carrying tubes are in the stem and in the leaves.

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

- 8 During a visit to a mangrove swamp, Ali, Ben, Clarice and Dorothy saw the roots of the trees sticking above the surface of the ground and they made the following statements about those roots.



Ali: They help to take in air for the trees.

Ben: They help the tree to photosynthesize.

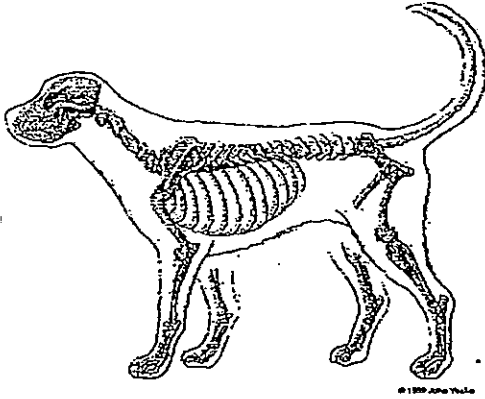
Clarice: They trap animals as food for the trees.

Dorothy: They prevent animals from eating the leaves.

Who is correct?

- (1) Ali
 - (2) Ben
 - (3) Clarice
 - (4) Dorothy
- 9 Rafidah carried out an experiment with a piece of plasticine. She molded the plasticine into a sphere and then placed the plasticine on an electronic weighing machine. She recorded the readings from the weighing machine.
- Rafidah then molded the same piece of plasticine into a cube and later she molded it to form a cylinder. She also weighed the plasticine on the electronic weighing machine when the plasticine was in different shapes. What was the aim of Rafidah's experiment?
- (1) To find out if changing the mass of a solid affects the weight of the matter.
 - (2) To find out if changing the mass of a solid affects the volume of the matter.
 - (3) To find out if changing the shape of a solid affects the volume of the matter.
 - (4) To find out if changing the shape of a solid affects the mass of the matter.

- 10 The following diagram shows a body system of a dog



Which one of the following body systems works directly together with the skeletal system of the dog to enable it to wag its tail?

- (1) Digestive system
 - (2) Muscular system
 - (3) Circulatory system
 - (4) Respiratory system
- 11 Which of the following statements are true about liquids?
- A All liquids have no definite shape.
 - B All liquids have no definite volume.
 - C All liquids have a definite mass.
 - D All liquids can be compressed.
- (1) A and B only
 - (2) A and C only
 - (3) B and D only
 - (4) C and D only

- 12 Keane owns a metal ball that has a mass of 45 kg and a volume of 30 cm³. He dropped the metal ball from a great height and the appearance of the ball changed as shown below. He also observed that the metal ball remained in one piece after the fall.



Keane measured the mass and volume of his metal ball after the drop. Which one of the following sets of measurements is correct?

	Mass	Volume
(1)	43 kg	30 cm ³
(2)	45 kg	30 cm ³
(3)	45 kg	28 cm ³
(4)	43 kg	28 cm ³

- 13 Study the classification table below.

Group A	Group B
Stone	Milk
Ice	Syrup
Clay	Ink

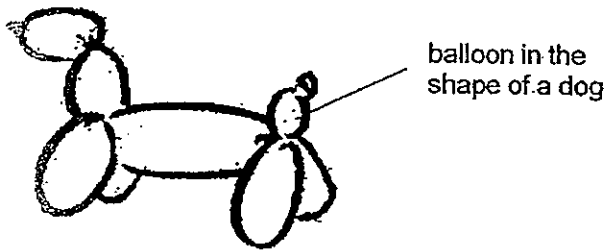
Which one of the following cannot be placed in Group A?

- (1) Rain
- (2) Table
- (3) Wood
- (4) Marble

- 14 The diagram below shows a deflated balloon.



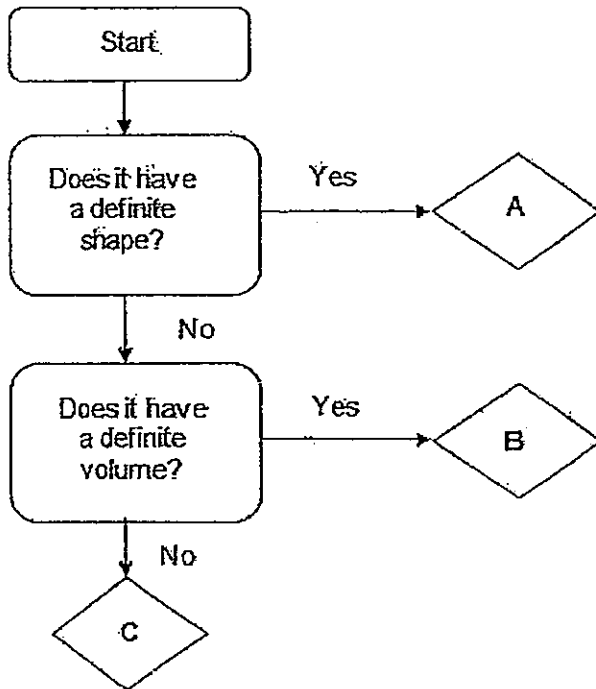
A balloon artist inflated the balloon and twisted it into the shape of a dog as shown below.



Based on the above observation, we can conclude that air _____.

- A occupies space.
 - B has no definite shape.
 - C has a definite mass.
- (1) A and B only
 - (2) B and C only
 - (3) A and C only
 - (4) A, B and C
- 15 Which one of the following apparatus can be used together with water for measuring the volume of an object that has an irregular shape?
- (1) Ruler
 - (2) Lever balance
 - (3) Weighing scale
 - (4) Measuring cylinder

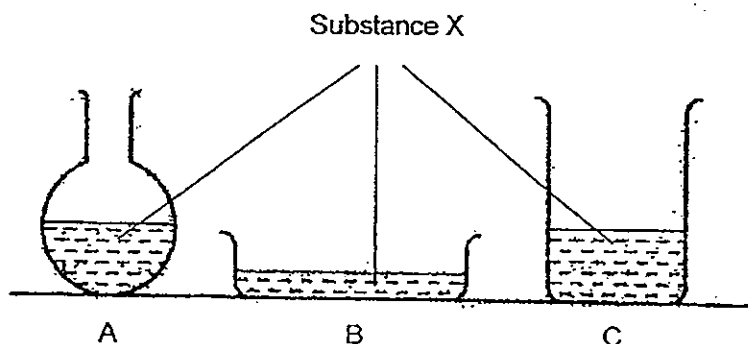
- 16 Study the flow chart below carefully.



Based on the flow chart above, which one of the following sets best represents A, B and C respectively?

	A	B	C
(1)	Water	Rock	Air
(2)	Feather	Water	Rock
(3)	Rock	Water	Air
(4)	Rock	Feather	Water

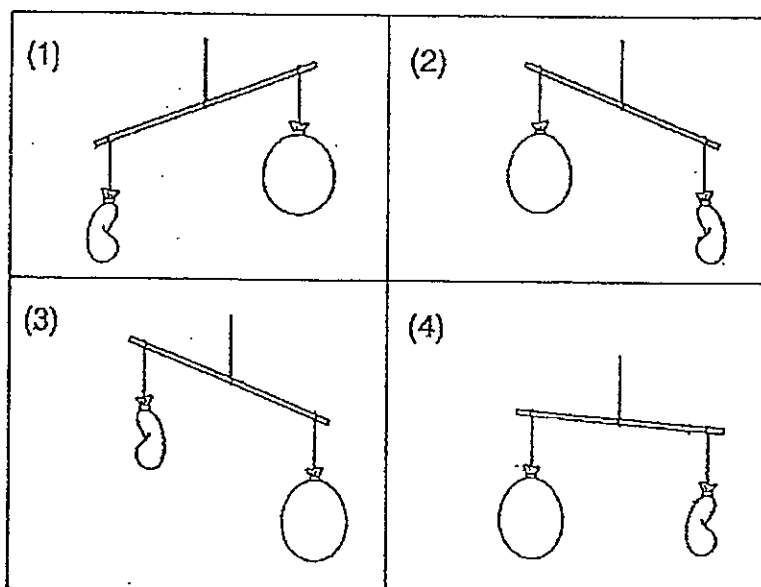
- 17 Study the diagrams below carefully. Isaac pours Substance X into 3 different containers, A, B and C.



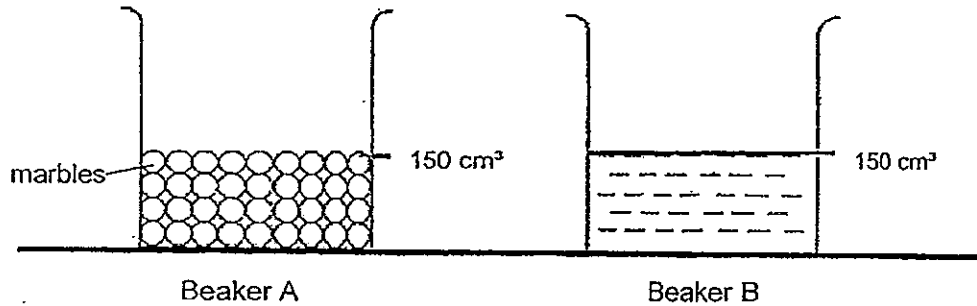
Based on the diagrams above, what can Isaac deduce about the properties of Substance X?

- (1) It has a definite mass.
 - (2) It has a definite shape.
 - (3) It has no definite shape.
 - (4) It has no definite volume.
- 18 Benjamin has two similar balloons. He inflated one of the balloons with air while the other remains deflated. He then tied the two balloons to the two ends of a lever balance.

Which one of the following diagrams shows the correct position of the lever balance in this experiment?



- 19 There are two beakers, A and B, as shown in the diagram below. Beaker A is filled with marbles to the 150 cm^3 mark while Beaker B is filled with water to the 150 cm^3 mark.



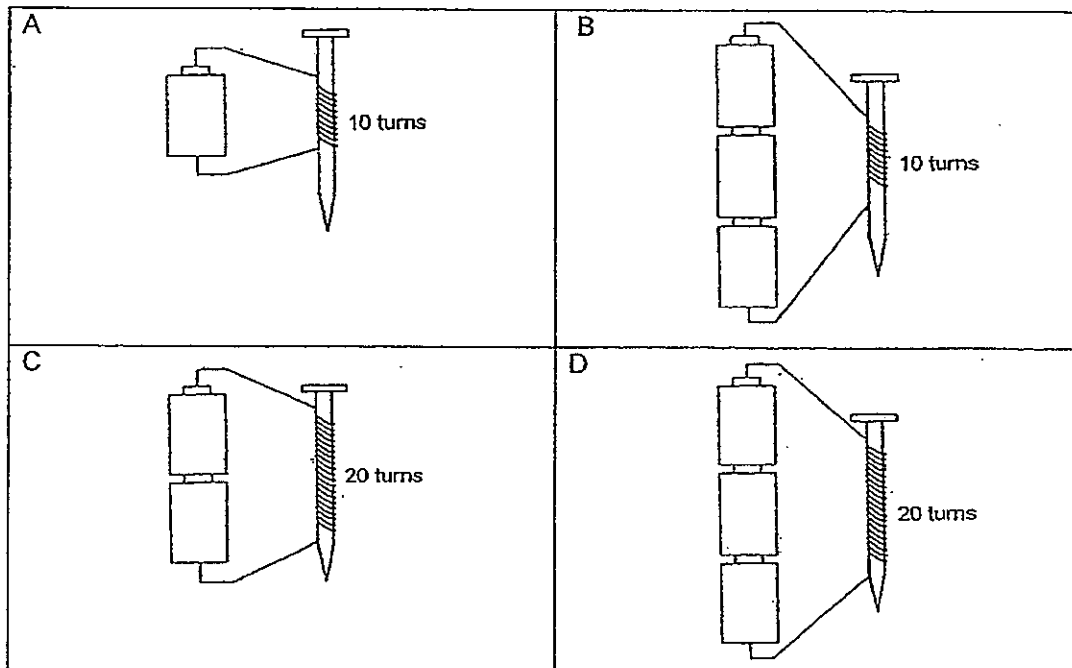
When the water in Beaker B is poured into Beaker A, what would be the most likely total volume of marbles and water in Beaker A?

- (1) 300 cm^3
 - (2) Less than 150 cm^3
 - (3) More than 300 cm^3
 - (4) More than 150 cm^3 but less than 300 cm^3
- 20 Which of the following statements are true?
- A All matter has mass.
 - B All matter occupies space.
 - C All matter can be compressed.
 - D All matter has a definite shape.
- (1) A and B only
 - (2) B and D only
 - (3) A, C and D only
 - (4) A, B, C and D.

- 21 An iron nail becomes a magnet when it is placed in a coil of wire joined to a battery or batteries.

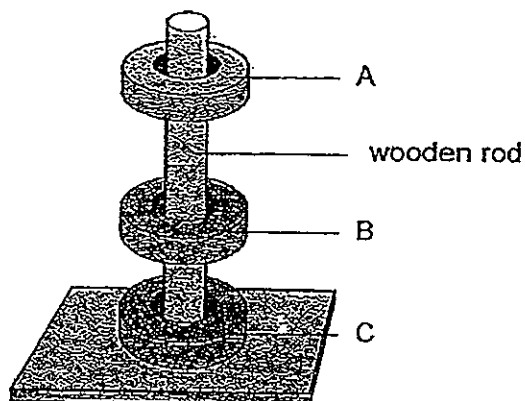
Noel wanted to find out whether the number of batteries of similar strength affects the strength of the magnet. He set up two arrangements. For each arrangement, he tests the strength of the magnet by counting the number of steel paper clips it can pick up.

Which two of the arrangements below should he set up in order to conduct a fair test?



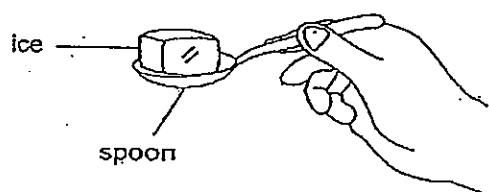
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) B and D only

- 22 The diagram below shows three rings, A, B and C, and how they behave when they are passed through a wooden rod. What can A, B and C be made of?



	A	B	C
(1)	magnet	rubber	iron
(2)	iron	magnet	rubber
(3)	magnet	magnet	iron
(4)	magnet	magnet	magnet

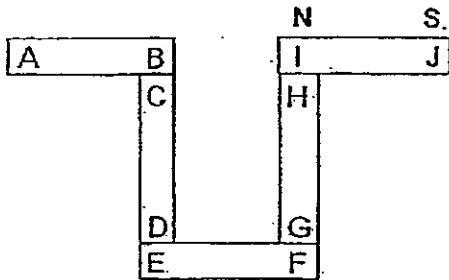
- 23 Suhailah was holding a metal spoon with a cube of ice as shown below. After some time, she felt that the spoon was cold.



Which one of the following correctly explains why Suhailah felt that the spoon was cold?

- (1) The spoon lost heat to the ice and to her fingers.
- (2) The spoon gained heat from the ice and from her fingers.
- (3) The spoon lost heat to the ice and gained heat from her fingers.
- (4) The spoon gained heat from the ice and lost heat to her fingers.

- 24 The diagram below shows how five magnets can be arranged such that they stick to one another as shown below. The magnetic poles at I and J are labeled.



Which one of the following combinations is possible?

<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>

25 A magnet was used to stroke nails made of four different materials.
Which of the following will become a magnet through the stroking method?

- A iron nail
- B steel nail
- C copper nail
- D aluminium nail

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

26 Which of the following items are sources of heat energy?

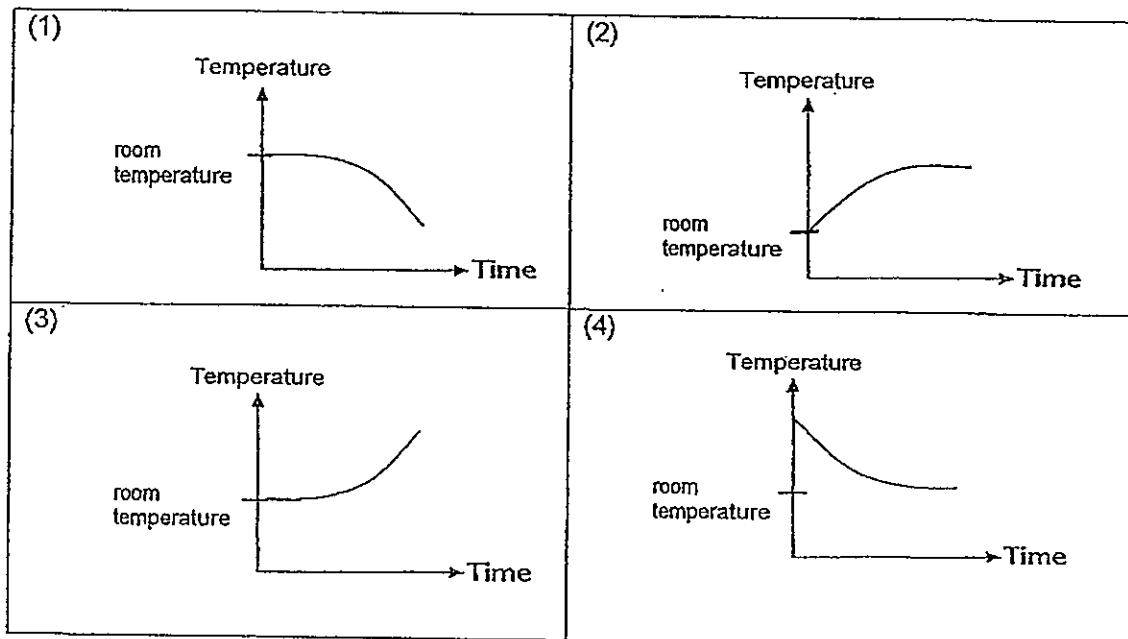
- A moon
- B sun
- C lit bulb
- D lit candle
- E wood

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

Questions 27 and 28 are related.

27 Jaden leaves a cup of hot coffee on a table for a period of time.

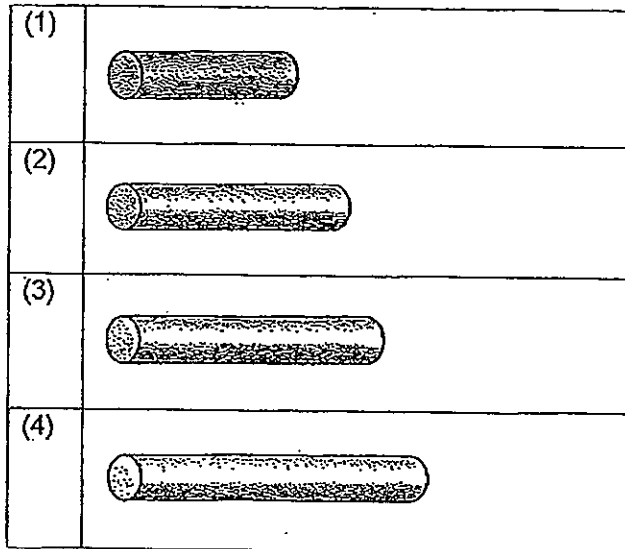
Which one of the graphs below best represents the change in temperature of the hot coffee over twenty minutes?



28 What can be concluded from the graph that you have chosen in Question 7?

- (1) The temperature of the hot coffee will increase gradually over time until it reaches its warmest temperature.
- (2) The temperature of the hot coffee will increase rapidly over time until it reaches its warmest temperature.
- (3) The temperature of the hot coffee will decrease gradually over time until it reaches room temperature.
- (4) The temperature of the hot coffee will decrease rapidly over time until it reaches room temperature.

- 29 A long piece of iron rod was cut into four parts of different lengths and they were heated to 100°C . Which one of the following rods has the least amount of heat?



- 30 Which of the following statements are true?

- A Heat is matter.
- B Heat is a form of energy.
- C Temperature is measured in degree Celsius.
- D Heat loss causes an increase in temperature.

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



Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____

Class: Primary 4

Date: 13 May 2013

Duration of paper: 1 h 45 min

Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

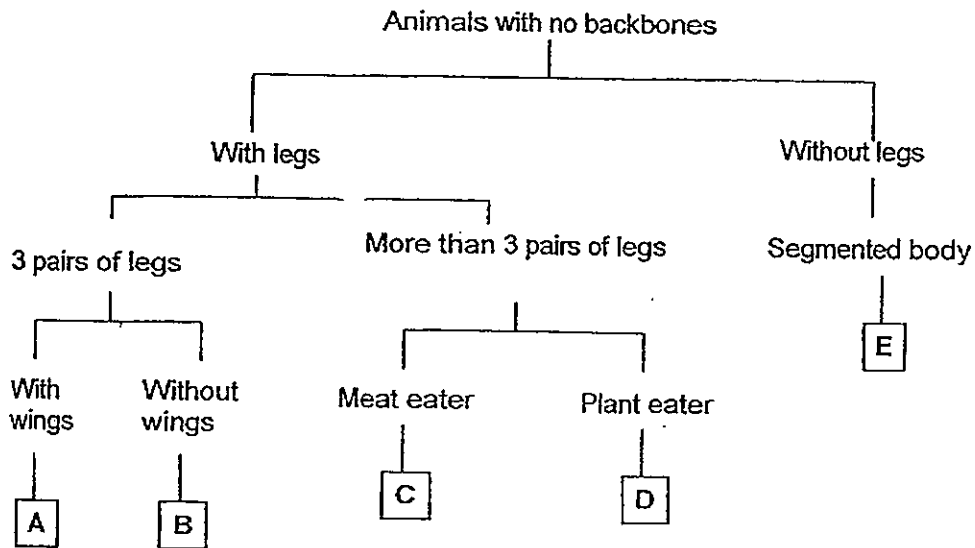
1. This question paper consists of 15 printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

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 Study the classification chart below carefully.



(a) Write down the three characteristics of Animal D based on the chart above.

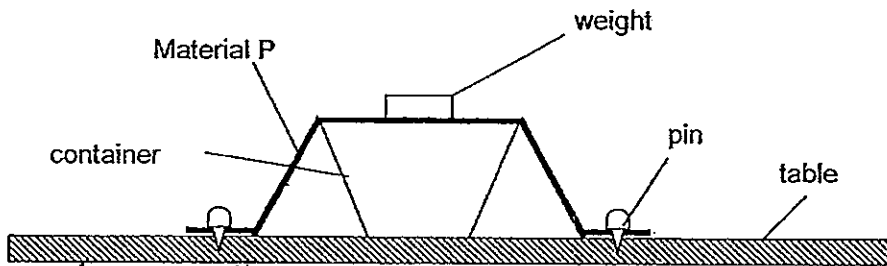
(b) Study the pictures below. Based on the above flow chart, classify the animals given using the correct letter (A, B, C, D or E). [2]

	Animal	Letter
(i)		
(ii)		

(Go on to the next page)

Score	3
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- 32 Norman carried out an experiment with four different materials, P, Q, R and S. He first stretched material P over a container as shown in the diagram below, and put a piece of weight onto it. After that, he carefully added another weight one at a time as shown in the diagram below until the material tore. All weights added are similar.



Then, he repeated the steps with materials Q, R and S, and recorded his findings in the table below.

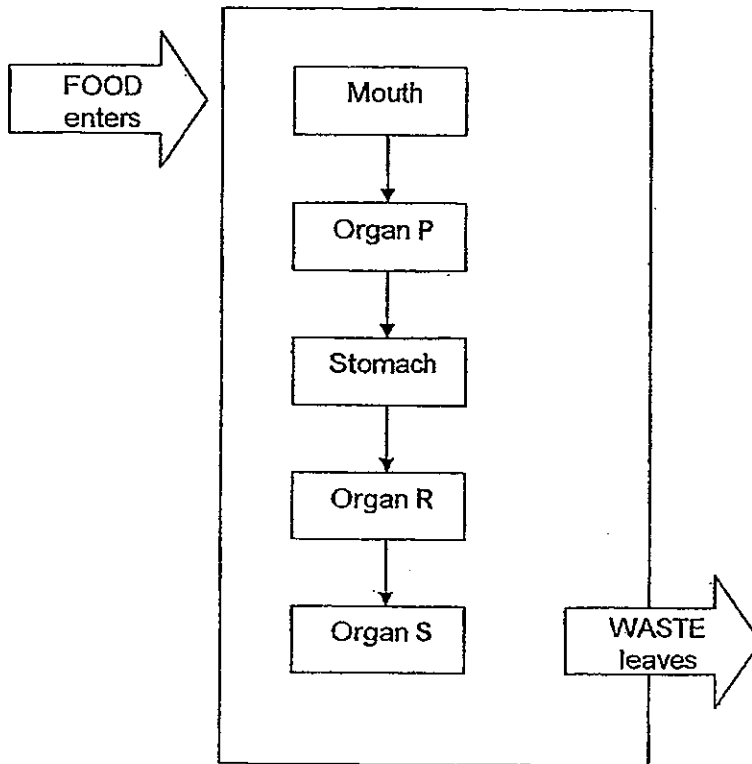
Material	Number of weights when material tore
P	5
Q	6
R	14
S	11

- (a) What is the aim of Norman's experiment? [1]
- (b) Which material, P, Q, R or S, is the most suitable to make a backpack? [1]
- (c) Explain your answer in (b) above? [1]

(Go on to the next page)

Score	3
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- 33 The flow chart below shows part of the digestive process that is carried out in the human digestive system.

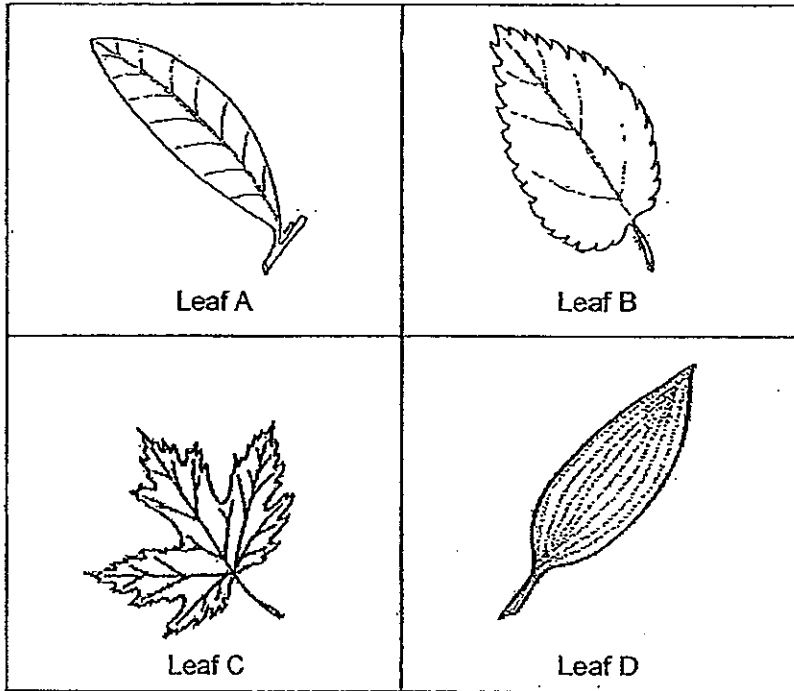


- (a) Name the organ P. [1]
-
- (b) What is the substance absorbed at organ S? [1]
-
- (c) Explain the function of organ R? [2]
-

(Go on to the next page)

Score	4
-------	---

34 Study the leaves A, B, C and D as shown below.



(a) Classify the above leaves, A, B, C and D into two main groups, in the table below. Each group should have exactly two leaves as members of the group [2]

Group 1	Group 2

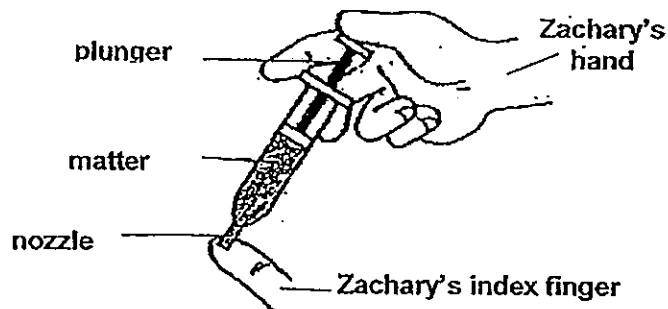
(b) State one difference between the leaves in Group 1 and Group 2 in (a) above. [1]

(Go on to the next page)

Score	3
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- 35 Zachary prepared two identical syringes and filled each of them with a different type of matter, A and B.

One at a time, he then placed his index finger to cover the nozzle of each syringe and then pushed the plunger down using the other hand as shown below.



Zachary then recorded the distance the plunger moved for each syringe in the table below.

Syringe	Distance moved by plunger (cm)
A	0
B	0.4

If Zachary used oil and air in his experiment, answer the following questions.

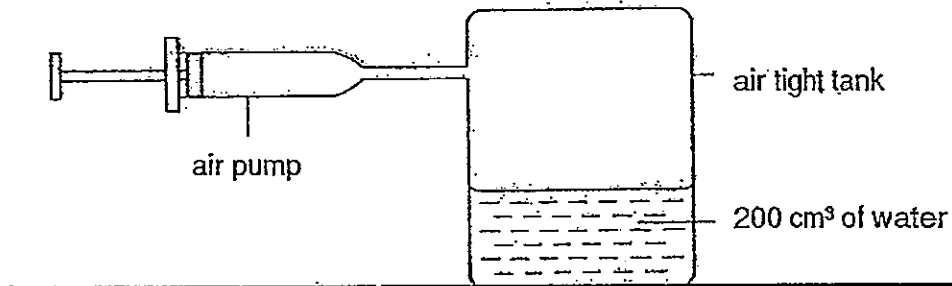
- (a) Which one of the syringes, A or B, contained oil? [1]

- (b) What state of matter is oil classified under? State the main property of oil which will help you explain your answer in (a). [2]

(Go on to the next page)

Score	3
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- 36 An air pump is attached to an airtight tank containing only 200 cm^3 of water. The maximum capacity of the airtight tank is 500 cm^3 . Each pump of the air pump can force 100 cm^3 of air into the tank.



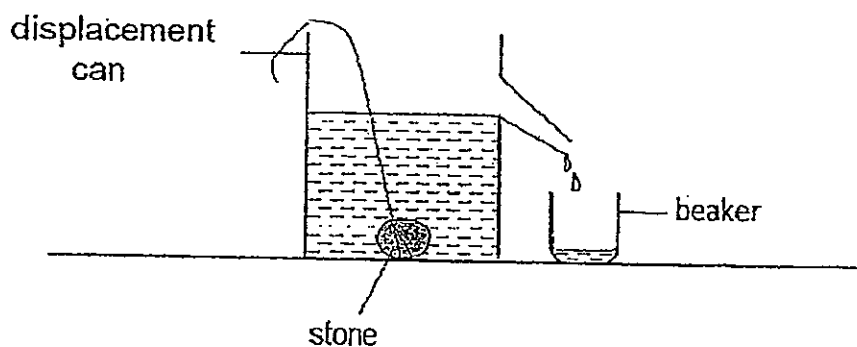
- (a) What will the volume of air in the tank be after four pumps of the air pump? [1]
-

- (b) What does your answer in (a) above tell you about one property of air? [1]
-

(Go on to the next page)

Score	2
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- 37 Hyder set up the experiment as shown below. He poured water into the displacement can and let the water overflow from the opening at the side. When no more water overflows out, he then lowered a stone slowly into the displacement can using a string. At the same time, the water that overflowed from the can was collected using a beaker.



Hyder then measured the amount of water collected in the beaker. He discovered that there was 5 ml of water in the beaker.

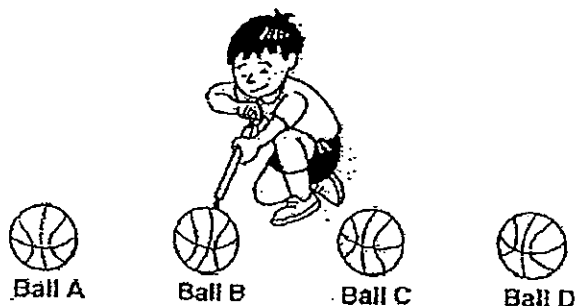
- (a) What does the 5 ml of water collected in the beaker represent? [1]

- (b) What does the above experiment tell us about the property of the stone? [1]

(Go on to the next page)

Score	2
-------	---

- 38 Joash wanted to find out if a ball could be heavier if he pumped more air into it.



He inflated 4 basketballs of original weight of 350 g with different amounts of air using a handheld air pump as shown in the diagram above. He recorded his results in the table below.

Ball	Number of times the ball has been pumped	Mass of the ball after inflated (g)
A	5	375
B	9	395
C	13	415
D	17	435

- (a) Study the chart below carefully. Which of the variables should be kept constant or changed in order for the experiment to be a fair one? For each variable, place a tick in correct box. [2]

Variable	Constant	Change
Size of air pump		
Size of each ball		
Material of each ball		
Amount of air pumped into each ball		

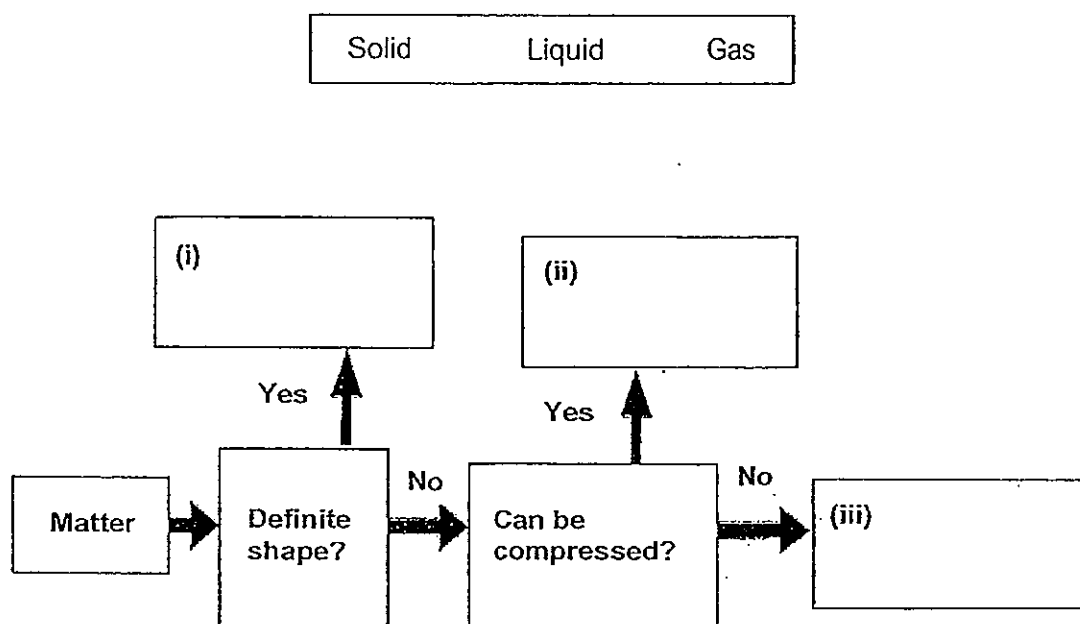
- (b) What property of air can we conclude, based on the results in the table above? [1]

(Go on to the next page)

Score	3
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39 Study the flow chart below.

(a) Complete the flowchart by filling in boxes (i), (ii) and (iii) with the following words. [3]

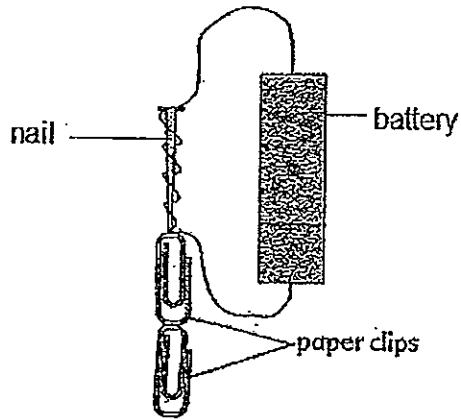


(b) Philip observed that a sponge can become smaller when it is squeezed. He said that sponge is an example of (ii) as in the flowchart above. Is Philip correct? [1]

(Go on to the next page)

Score	/
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- 40 An experiment was set up as shown in the diagram below.



When different numbers of batteries were used and connected by wires, the nail was able to attract different numbers of paper clips. The results are shown in the table below.

Number of batteries connected by wires	Number of paper clips attracted to the nail
1	3
2	6
3	9
4	12
5	15

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

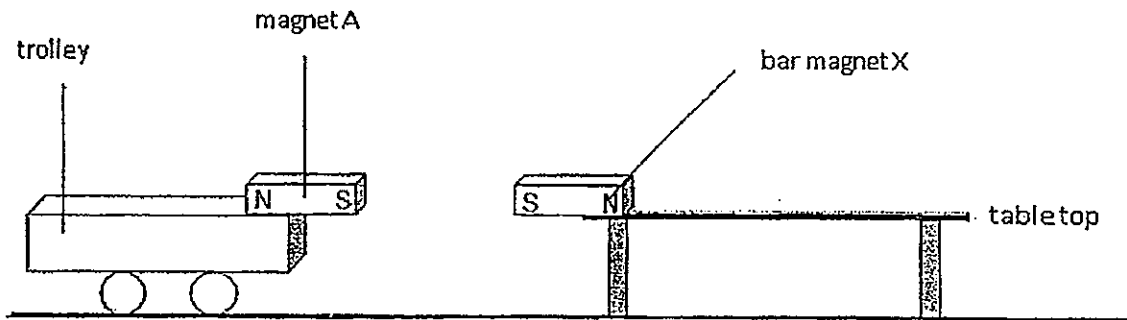
- (b) What can be concluded from the experiment above? [1]

(Go on to the next page)

Score	2
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For Question 41, please refer to pages 12 and 13.

- 41 An experiment was set up to test the strength of five magnets. Different magnets, A, B, C, D and E, were attached to a trolley with its South pole facing out. A bar magnet, X, was also attached securely to a tabletop, with its South pole facing out as shown below.



The different magnets were each brought close to the bar magnet X one at a time, till the South poles of the magnets touched each other. The magnets repelled. The trolley was then let go so that it would travel backwards a distance away from the bar magnet X. The distance that each magnet travelled backwards was measured and recorded in the table below.

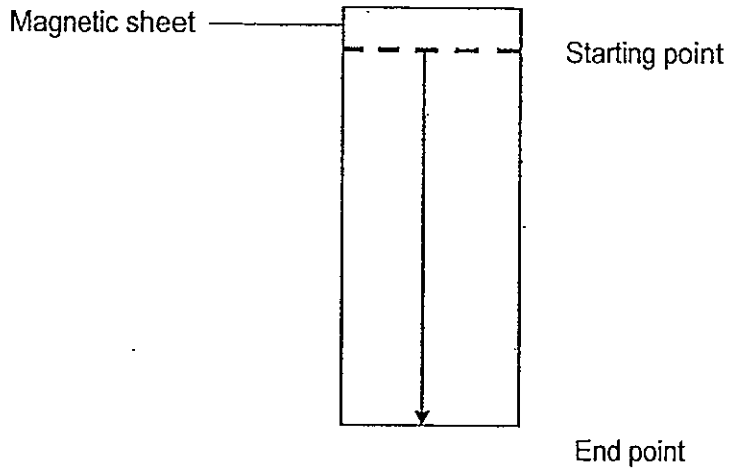
Magnets	Distance travelled backwards (cm)
A	5
B	3
C	7
D	6
E	2

- (a) Based on the results above, which magnet (A, B, C, D or E) is the strongest? [1]

(Go on to the next page)

Score	1
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Peter and Jane wanted to play a game with magnets. A magnetic sheet will be held vertically as shown below. A magnet will be placed at the starting point of the magnetic sheet and allowed to drop downwards. The magnet that reaches the end of the magnetic sheet the fastest will win the race.



- (b) Based on the magnets, A, B, C, D and E, listed in the same table on page 12, which magnet should Jane choose in order to win the game? [1]

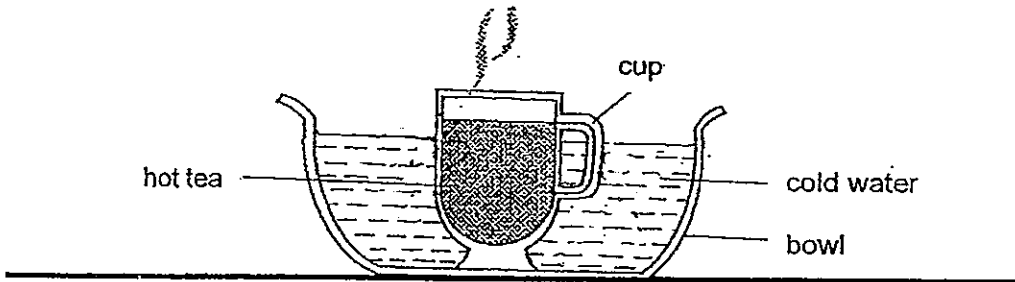
- (c) Explain your answer in (b) above. [2]

(Go on to the next page)

Score	3
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- 42 Cindy made a cup of tea. It was too hot so she placed the cup of tea in a bowl of cold water. After a while, the cup of tea cooled down.



- (a) Did the cup of tea gain or lose heat in the process of cooling down?

- (b) Draw arrows on the diagram above to show the direction of heat flow between the cup of tea and the cold water. [1]

- (c) When will heat transfer between the cup of tea and the cold water stop? [1]

- 43 Two beakers, each containing different amounts of water, 300 ml and 800 ml of water respectively, were placed on a wooden table. The water had the same temperature of 90°C. An egg was cracked and placed into each beaker at the same time. After five minutes, the eggs in the two beakers were observed.

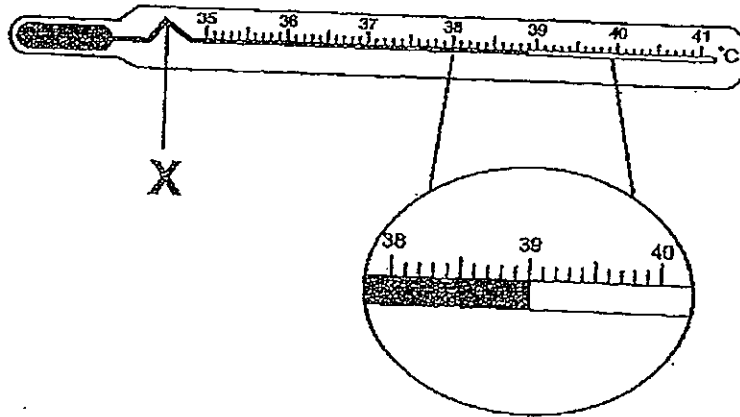
- (a) In which beaker was the egg more cooked than the other? [1]

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

(Go on to the next page)

Score	5
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- 44 The diagram below shows a temperature reading on a thermometer.



- (a) State the temperature on the thermometer as shown in the diagram above.
- (b) One day, Ali was not feeling well. He used his hands to touch his forehead to find out if he had a fever. However, his teacher told him to use a thermometer instead. State the best reason why the teacher told Ali to use a thermometer instead of using his hands to check if he has a fever. [1]

- End of Booklet B -

Score	2
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ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ACS

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

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

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

31)a)It has more than 3 pairs of legs, it is a plant eater and it has no back bones.

b)i)E ii)B

32)a)To find out which material is the strongest.

b)Material R.

c)R can hold the most number of weight before it tore, therefore it is the strongest.

33)a)Gullet.

b)The water.

c)These digested food will be absorbed into the blood to be carried to other part of the body.

34)a)Group 1 : Leaf B , Leaf C

Group 2 : Leaf A , Leaf D

b)Leaf A and D have smooth edges but Leaf B and C have jiggered edges.

35)a)Syringe A.

b)The liquid state. The oil has a definite volume.

- 36)a)300cm³
b)Air can be compressed.

- 37)a)The 5ml collect in the beaker represents the volume of the stone.
b)The stone has a definite volume.

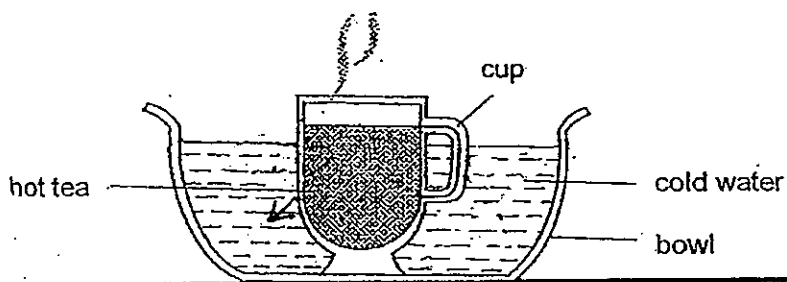
- 38)a)Constant
Constant
Constant
Change
b)Air has mass.

- 39)a)i)Solid ii)Gas iii)liquid
b)Philip is not correct.

- 40)a)The aim of the experiment was to find out if the number of batteries affect the strength of the nail acting as magnet temporary.
b)It can be concluded that the greater number of batteries used, the stronger will be the nail.

- 41)a)Magnet C.
b)Magnet E.
c)Magnet E is the weak least magnet, hence, if has the least attraction so it will reach the end point fastest.

- 42)a)It lost heat.
b)



- c)The heat transfer will stop when both the tea and the water reach the same temperature.

- 43)a)The beaker containing 800ml of water in it.
b)There was more heat in the beaker with 800ml of water.

- 44)a)39°C.
b)The thermometer is more accurate than his hand.