



Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____

Class: Primary 4

Date: 28 October 2013

Duration of paper: 1h 30 min

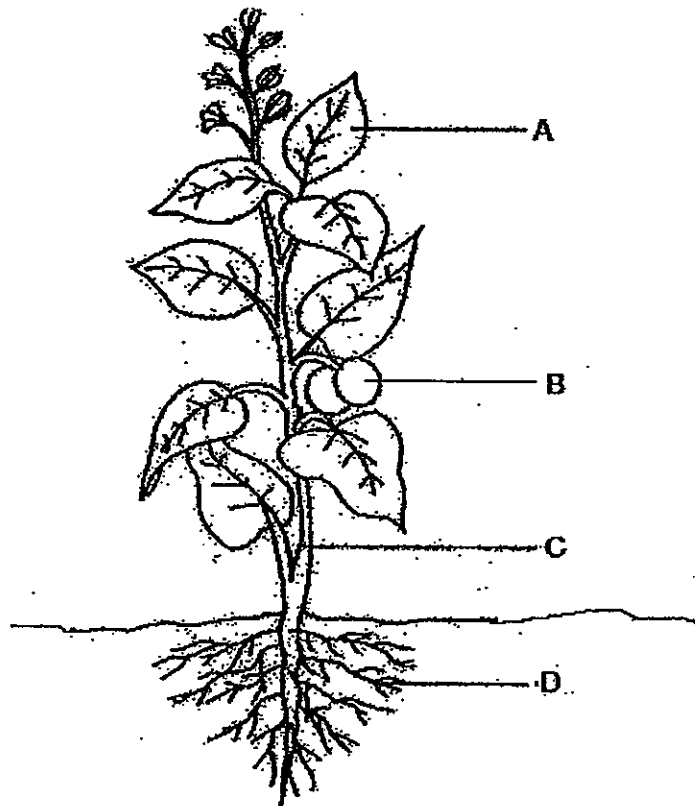
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

This booklet contains 10 pages, including the cover page.
Do not turn the page until you are told to do so.
Read all instructions carefully.
You will be given 10 minutes to read the booklet.
State your answers on the official 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 The diagram below shows different parts of a plant.
Which part (A, B, C or D) makes food for the plant?

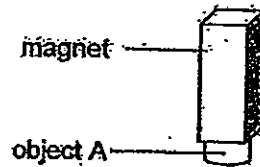


- | | |
|-----|---|
| (1) | A |
| (2) | B |
| (3) | C |
| (4) | D |

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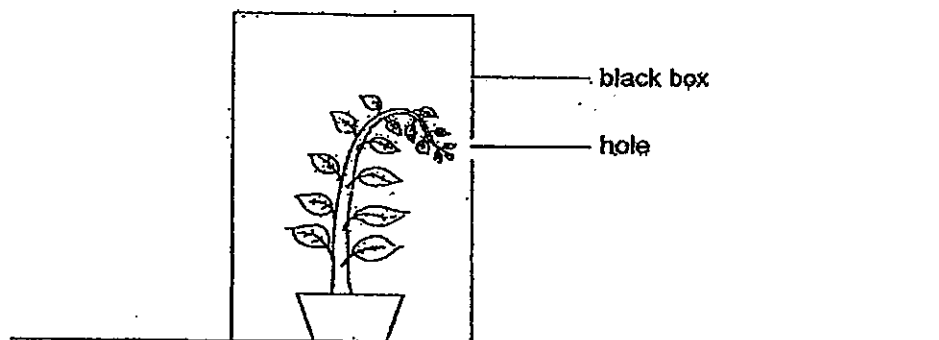
3

- 2 An object A was attracted to a magnet, as shown in the figure below.



Object A is most probably made of _____.

- (1) Steel
 - (2) Wood
 - (3) Plastic
 - (4) Rubber
- 3 A plant was placed inside a black box with a hole. The black box was placed in a well-lit place and the plant was watered daily.



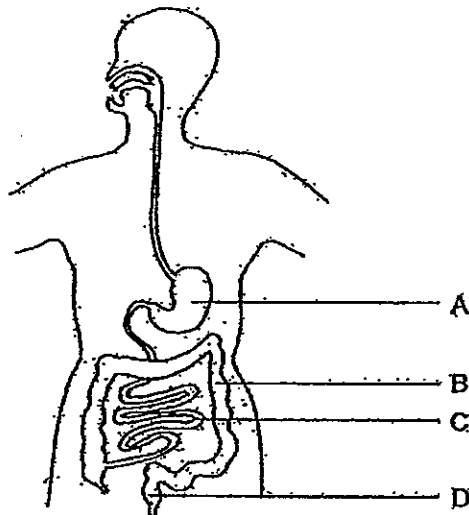
After a week, it was observed that the plant grew towards the hole as shown in the diagram above. Why was this so?

- (1) There was more air outside the box.
- (2) There was more light outside the box.
- (3) There was more water outside the box.
- (4) The leaves made the top of the plant heavier.

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4

- 4 The diagram below shows parts of the human digestive system. Which part (A, B, C or D) absorbs all the water from the undigested food?

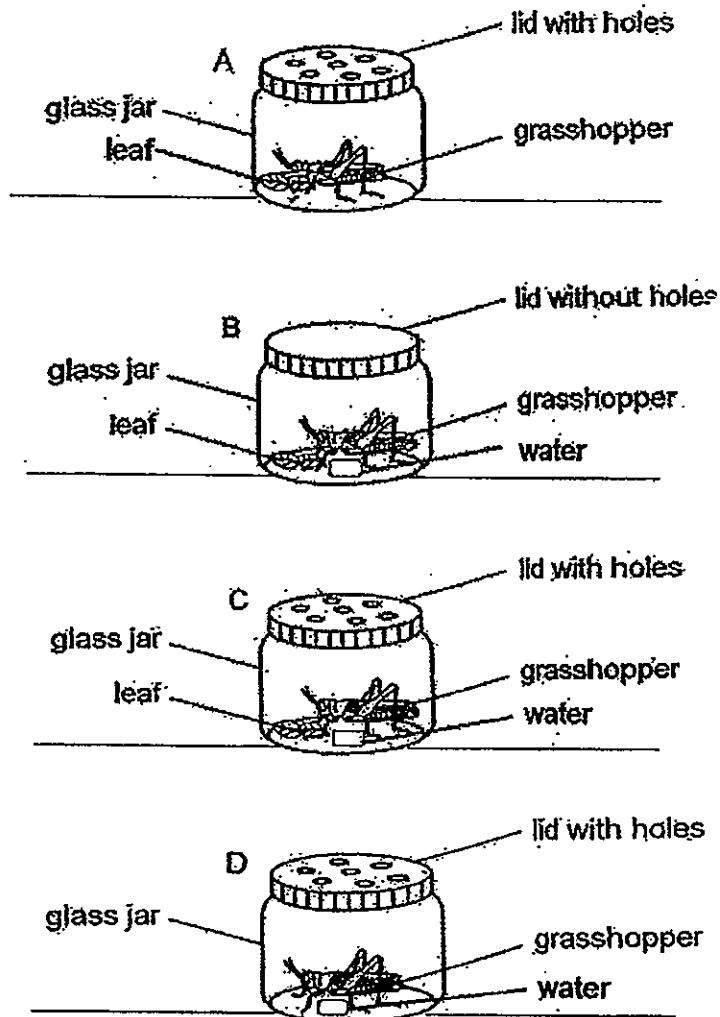


- (1) A
- (2) B
- (3) C
- (4) D

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5

- 5 Dylan wanted to find out the best set-up that would keep a grasshopper alive for the longest time. He created the following set-ups A, B, C and D as shown below.



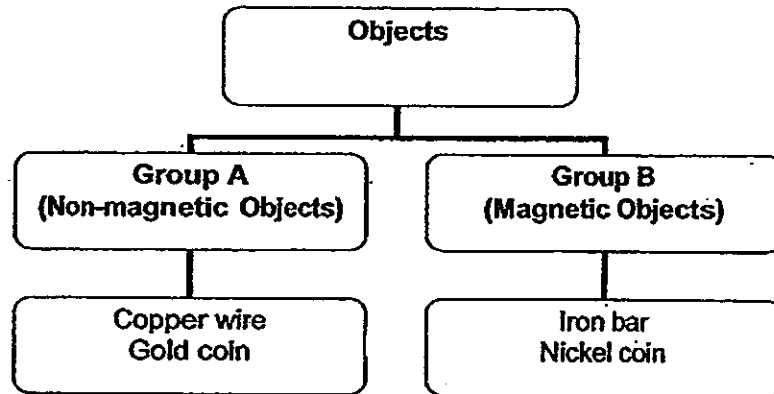
Based on your observation of the four set-ups above, in which set-up will the grasshopper most likely live the longest?

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

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6

- 6 Study the classification chart below carefully.



Which of the following can be placed in groups A and B respectively?

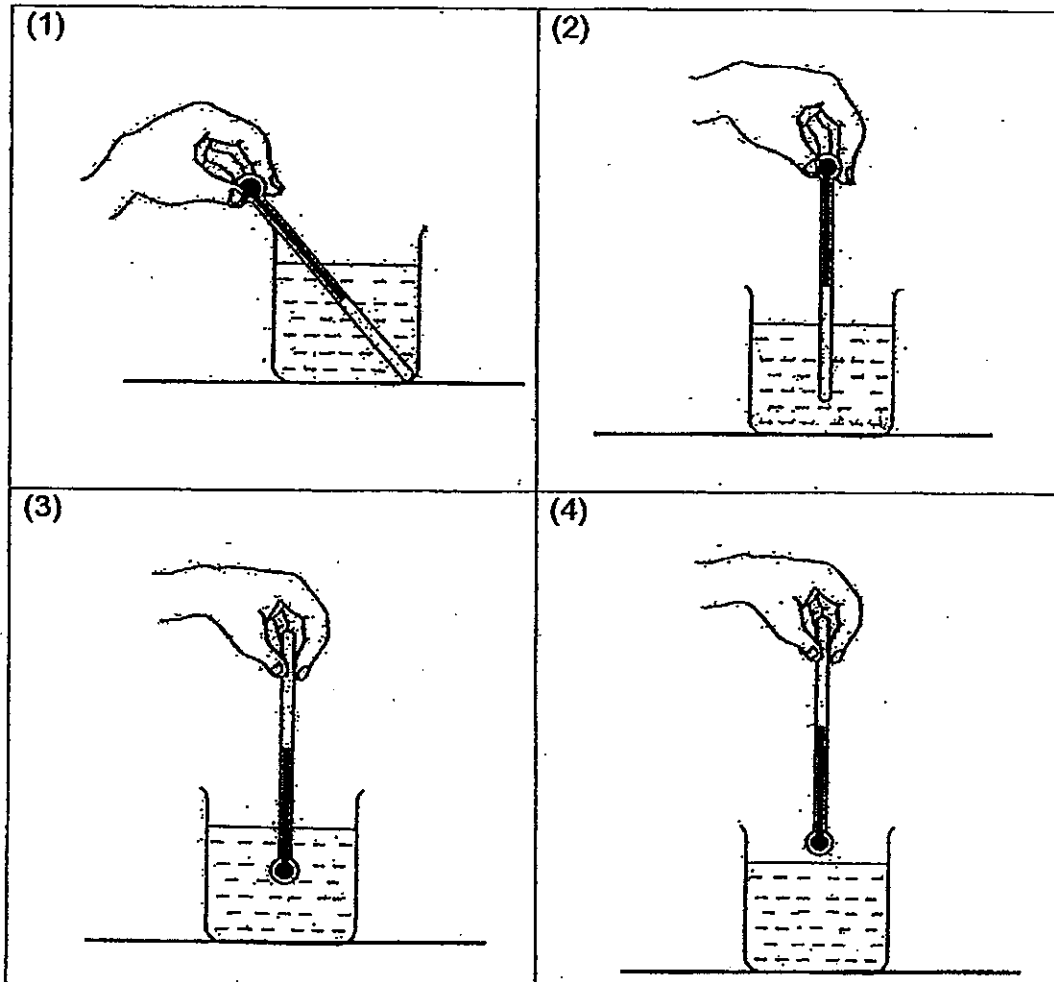
	Group A	Group B
(1)	Steel paperclip	Aluminium foil
(2)	Aluminium foil	Cobalt ring
(3)	Cobalt ring	Steel paperclip
(4)	Cobalt ring	Aluminium foil

- 7 Which one of the following substances has a fixed shape?

- (1) Air
- (2) Oil
- (3) Stone
- (4) Water

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- 8 Catherine wants to measure the temperature of hot water in a beaker. Which one of the following diagrams shows the correct way of holding the thermometer when taking the temperature reading?

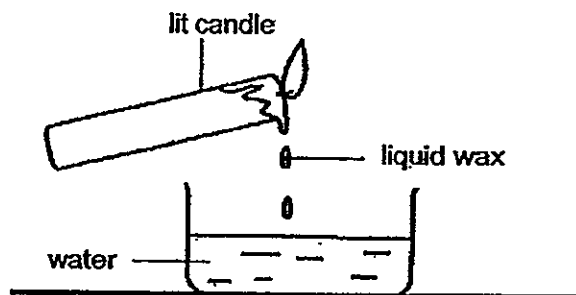


- 9 In which of the following does the underlined item loses heat energy?

- (1) Ice-cream melting.
- (2) Heating a metal ball.
- (3) Water turning into ice.
- (4) Frozen meat being thawed.

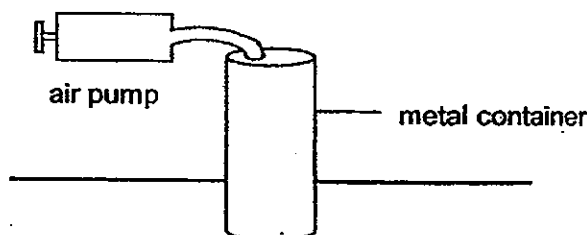
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- 10 Study the diagram below carefully.



What happens when the liquid wax falls onto the water surface?

- (1) Both the wax and water gain heat energy.
 - (2) Both the wax and water lose heat energy.
 - (3) The wax gains heat energy while the water loses heat energy.
 - (4) The wax loses heat energy while the water gains heat energy.
- 11 John connected a pump to a metal container as shown in the diagram below.



The capacity of the metal container is 400 cm^3 . When the plunger is pushed in completely, 50 cm^3 of air is forced into the metal container. What is the volume of air in the container after the plunger is pushed in once?

- (1) 350 cm^3
- (2) 400 cm^3
- (3) 450 cm^3
- (4) 500 cm^3

(Go on to the next page)

12 Which one of the following is not a source of heat?

- (1) Boiling water
- (2) Human body
- (3) Woolen gloves
- (4) Lighted light bulb

13 Four pupils, Ashley, Betty, Claire and Deborah, are predicting what will happen when a piece of plasticine is compressed.

Ashley: The shape of the plasticine will change.

Betty: The volume of the plasticine will change.

Claire: Some plasticine will flow out from the original piece.

Deborah: The volume of the plasticine will remain the same.

Which of the pupils' predictions are most likely true?

- (1) Betty and Claire only.
- (2) Ashley and Deborah only.
- (3) Ashley, Betty and Claire only.
- (4) Ashley, Claire and Deborah only.

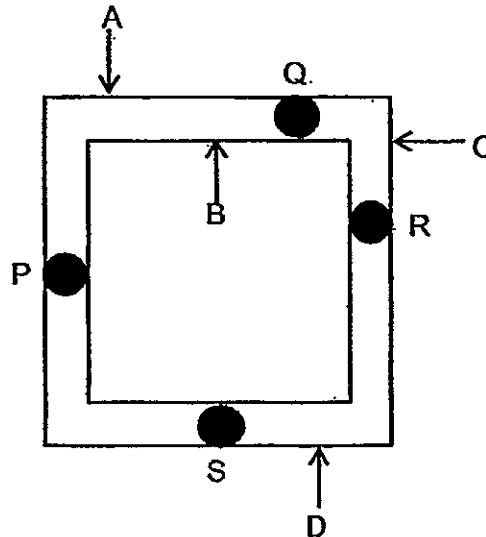
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- 14 Which one of the following list of items has been classified correctly under the various headings?

	Solid state	Liquid state	Gaseous state
(1)	Milk Powder	Fruit Juice	Carbon Dioxide
(2)	Sand	Water	Milk Powder
(3)	Wooden Block	Coffee	Shadow
(4)	Mug	Blood	Fire

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- 15 The diagram below shows a square metal frame with four similar drops of wax attached to positions P, Q, R and S on it.



Timothy heated the metal frame at one point on the metal frame and recorded the time taken for the drops of wax to melt in the table below.

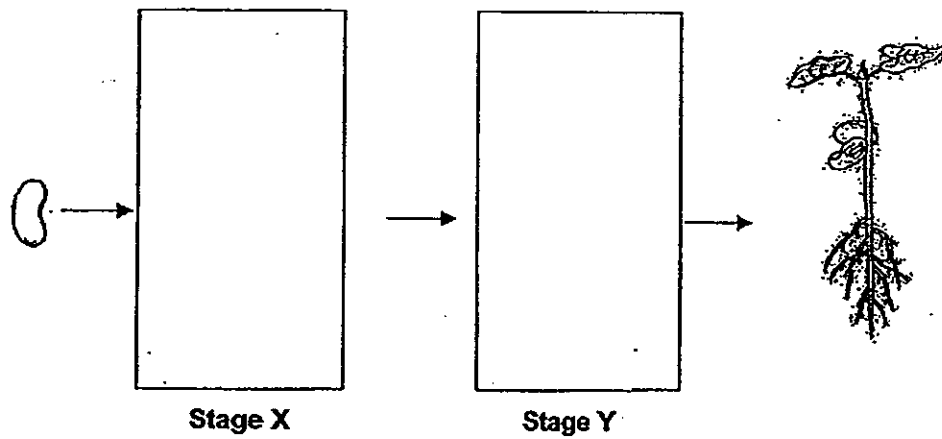
Position of drop of wax	Time taken for the drop of wax to melt (seconds)
P	53
Q	17
R	40
S	95

Based on the results above, at which point (A, B, C or D) did Timothy heat the metal frame?

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

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- 16 The diagram below shows the growth of a seed into a young plant with two missing stages X and Y.

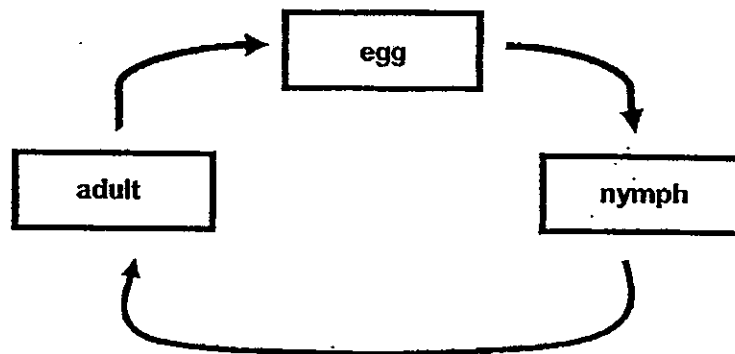


Which one of the following shows the correct stages for X and Y?

	Stage X	Stage Y
(1)		
(2)		
(3)		
(4)		

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- 17 The diagram below shows the life cycle of an animal.



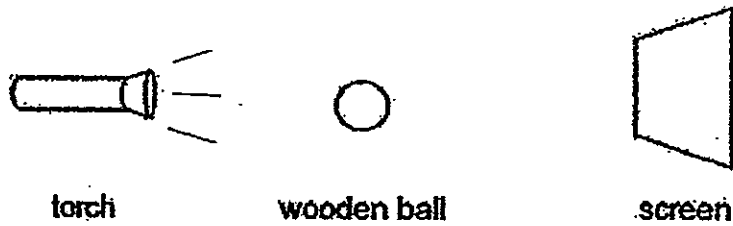
Which animal is likely to have the life cycle as shown above?

- (1) chicken
 - (2) mosquito
 - (3) housefly
 - (4) cockroach
- 18 Which one of the following is the source of light ?

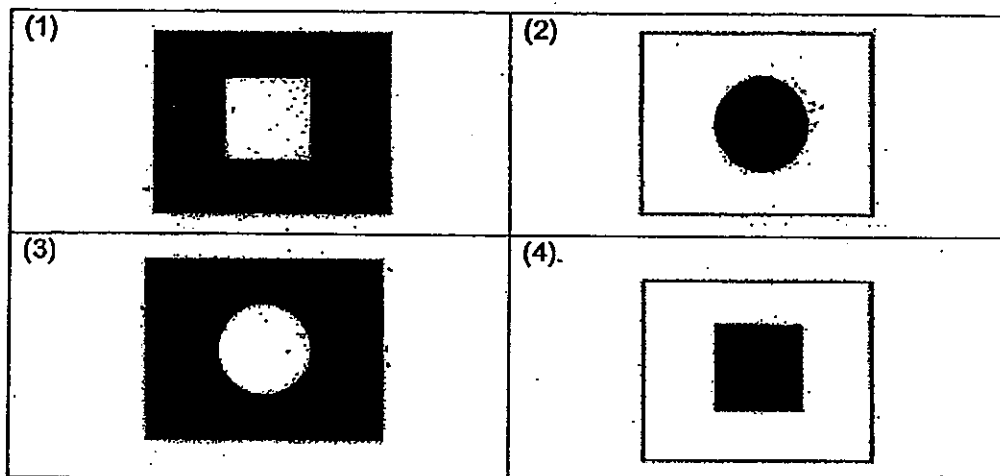
(1)  an orange	(2)  a candle flame
(3)  the moon	(4)  a leaf

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- 19 The set-up below shows light from a torch shining on a wooden ball.

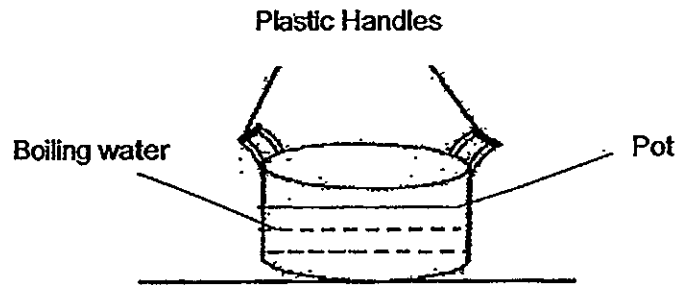


Which one of the following would likely be seen on the screen?



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- 20 Adric boiled some water using the pot as shown in the diagram below.

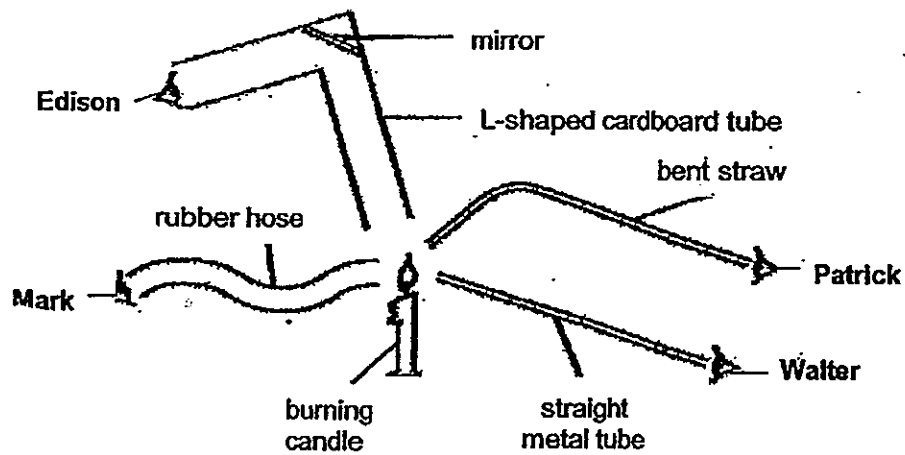


He is able to hold the pot of boiling water using the plastic handles. This is because plastic is a _____.

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

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- 21 Four boys, Edison, Mark, Patrick and Walter, tried to look at a burning candle using ~~for~~ ^{four} different items as shown below.

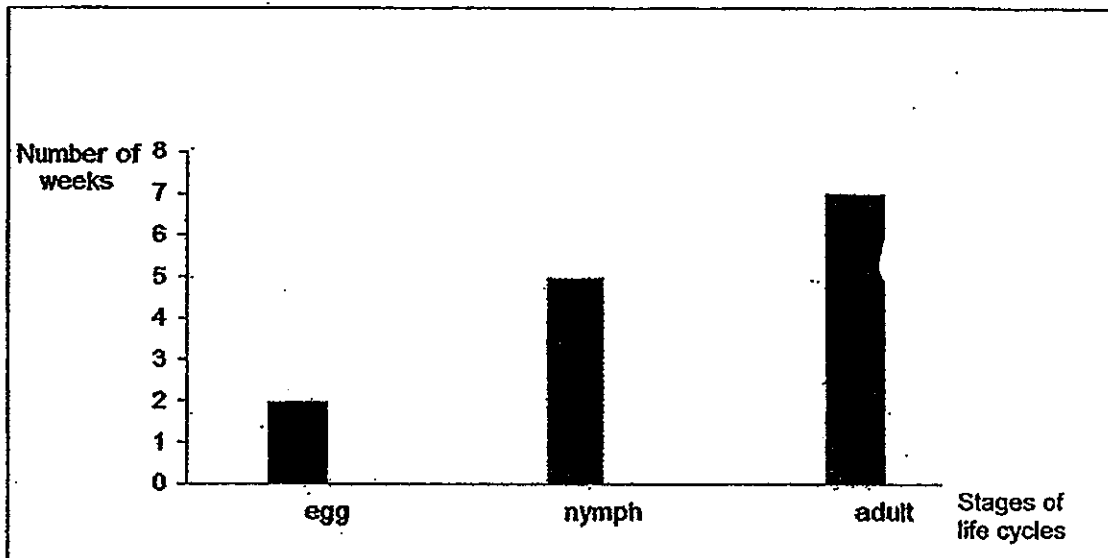


Which boys were able to see the candle flame?

- (1) Edison and Mark only.
- (2) Mark and Patrick only.
- (3) Edison and Walter only.
- (4) Patrick and Walter only.

(Go on to the next page)

- 22 The graph below shows the number of weeks that was spent in the different stages in the development of the life cycle of an insect.



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

- (1) The nymph resembles the adult.
- (2) The insect has a total lifespan of 14 weeks.
- (3) The nymph took two weeks to become an adult.
- (4) It took five weeks for the insect to hatch from its egg.

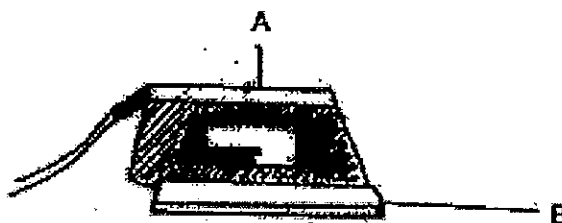
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23 Which of the following will happen when ice changes to water?

- A It gains heat energy
- B It loses heat energy
- C There is a change in the state of matter.
- D There is no change in the state of matter.

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

24 The diagram below shows an electric iron.

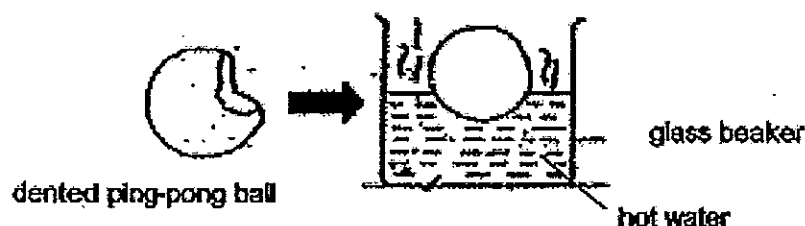


Which of the following correctly describe the properties of the parts A and B?

	Property of A	Property of B
(1)	Poor conductor of heat	Poor conductor of heat
(2)	Poor conductor of heat	Good conductor of heat
(3)	Good conductor of heat	Poor conductor of heat
(4)	Good conductor of heat	Good conductor of heat

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- 25 Jerome has a dented ping pong ball as shown in the diagram below. He then placed it into a beaker of hot water. After ten minutes, he observed that the ping pong ball had returned to its original shape.

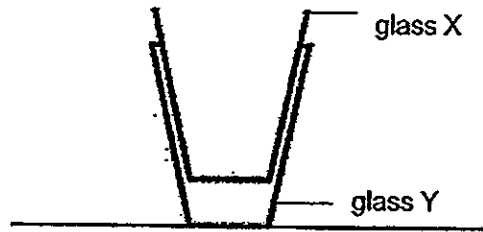


Why did the ping pong ball return to its original shape?

- (1) The air in the ping pong ball lost heat and expanded
 - (2) The air in the ping pong ball lost heat and contracted
 - (3) The air in the ping pong ball gained heat and expanded
 - (4) The air in the ping pong ball gained heat and contracted
- 26 Which of the following statements are true?
- A Light is a form of energy.
 - B We can see things because light is reflected into our eyes.
 - C A shadow can come in many shape, sizes and thickness.
 - D The darkness of a shadow depends on the amount of light that is blocked by an object.
- (1) A and B only.
 - (2) B and C only.
 - (3) B and D only.
 - (4) A and D only.

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- 27 Shaun finds it hard to separate the two glasses, X and Y, as ~~shown~~ ^{shown} in the diagram below.



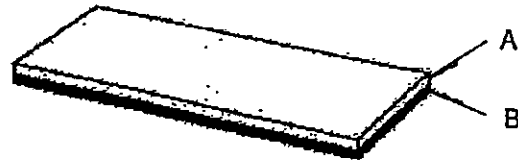
Which of the following instructions will help him to separate the two glasses?

- A Pour hot water into glass X.
- B Put some ice cubes into glass X.
- C Place glass Y into a basin of hot water.
- D Place glass Y into a basin of cold water.

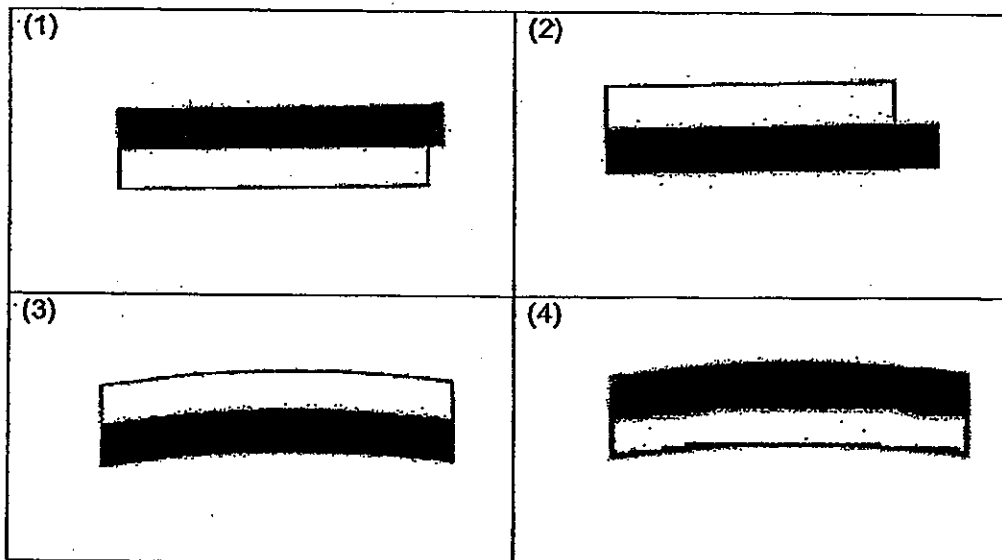
- (1) A and D only
- (2) B and D only
- (3) B and C only
- (4) A and C only

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- 28 Zubair has a metal strip made of 2 kinds of metals, A and B, which are tightly joined together.



Metal A expands more than Metal B when they are both heated. Which of the following diagrams below represents the side view of the metal strip when it is heated?



(Go on to the next page)

29 Which of the following are needed for a seed to germinate?

- A Air
- B Sunlight
- C Water.
- D Warmth

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

30 Gabriel attached a light sensor to a data logger and used it to find out how much light from a lit torch is passing through four sheets of different materials, A, B, C and D. He recorded the results as shown below.

Sheet	Amount of light that passed through (units)
A	105
B	876
C	347
D	576

Which one of the following sheets is likely to be made of clear glass?

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

END OF BOOKLET A

Check your answers carefully



Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____ ()

Class: Primary

Date: 28 October 2013

Duration of paper : 1h 30min

Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 14 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 all 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.

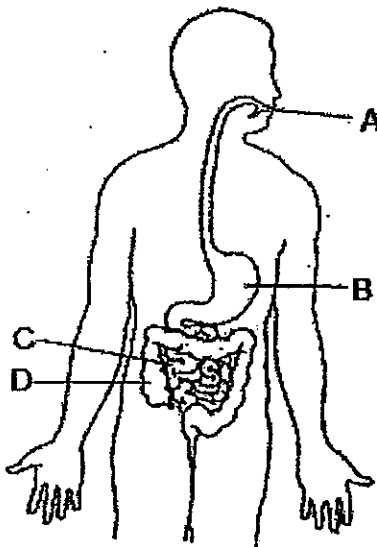
The number of marks available is shown in the brackets [] at the end of each question or part question. (40 marks)

31 Fill in the correct parts of a plant in the table below.

[2]

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

32 The diagram below shows the human digestive system.



Identify the part where

(a) digestion first takes place : _____ [1]

(b) there is no digestion : _____ [1]

(Go on to the next page)

Score	4
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- 33 Yvonne conducted an experiment with four different magnets, A, B, C and D. The results of her experiment are shown in the table below.

Magnets	Number of thumbtacks that were attracted to the magnet
A	4
B	2
C	7
D	5

(a) What was the aim of her experiment?

[1]

(b) Yvonne has another magnet E. She found that magnet E is stronger than magnet B but weaker than magnet D.

Predict how many thumbtacks would magnet E be able to attract?

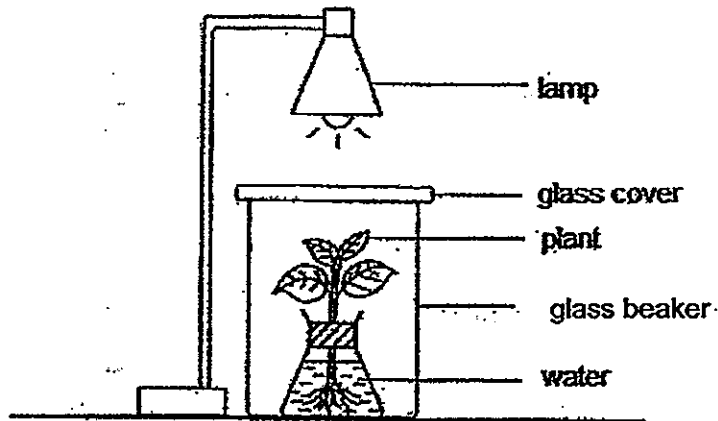
[1]

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Score	2
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4

34 An experiment was set up as shown below.



The amount of food made by the plant was recorded in the table below.

Time (min)	Amount of food made by plant (units)
0	0
30	30
60	50
90	40
120	20

(a) What can be observed from the table above?

[2]

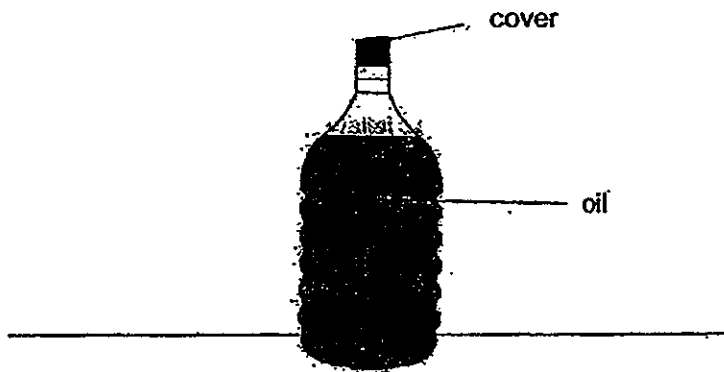
(b) Explain why there was a decrease in the amount of food made by the plant at the 90th and 120th minute

[1]

(Go on to the next page)

Score	3
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- 35 The diagram below shows a bottle of cooking oil.



Complete the sentence to state if the parts stated are solid, liquid or gas.

(a) The cover is a [1]

(b) Oil is a [1]

- 36 Cyrus conducted an experiment to find out the relationship between the number of times he rubbed his hands against each other and the time taken for one ice cube to melt when they were held in his hands. He recorded his results in the table below.

Number of times hands rubbed	5 times	10 times	15 times	20 times
Time taken for one ice cube to melt in his hands (min)	8	6 ½	5	3 ½

(a) What would be the estimated time taken for one ice cube to melt if he rubbed his hands 18 times? [1]

(b) Based on the results above, what can Cyrus conclude about his experiment? [1]

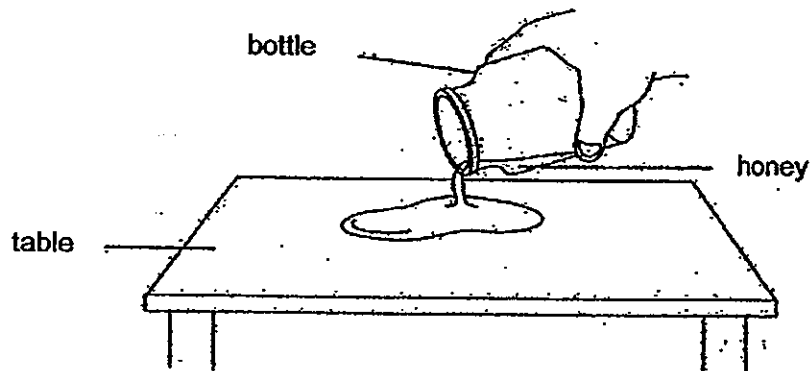
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Score	4
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- 37 Choose the correct words from the box to fill in the blanks below.

Solid	Liquid	Gas
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- (a) Ali pours honey from a bottle onto a table as shown below.

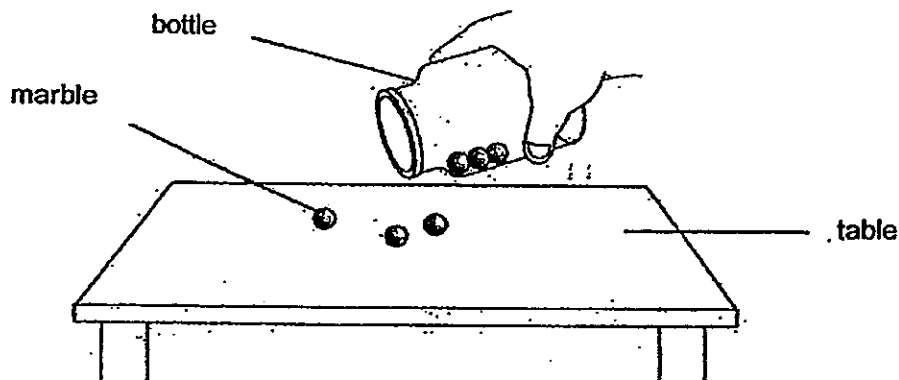


The volume of honey remains the same but its shape changes.

This shows that honey is a _____.

[1]

- (b) Ali pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remains the same.

This shows that a marble is a _____.

[1]

(Go on to the next page)

Score	2
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- 38 Two identical beakers, A and B, containing equal volumes of water, were left on a kitchen table. The temperature of the water in beaker A is at 80°C , while the temperature of water in Beaker B is at 10°C .

(a) What will happen if the beakers of water are left on the kitchen table after an hour?

Put a tick ($\checkmark$) in the correct boxes below.

[2]

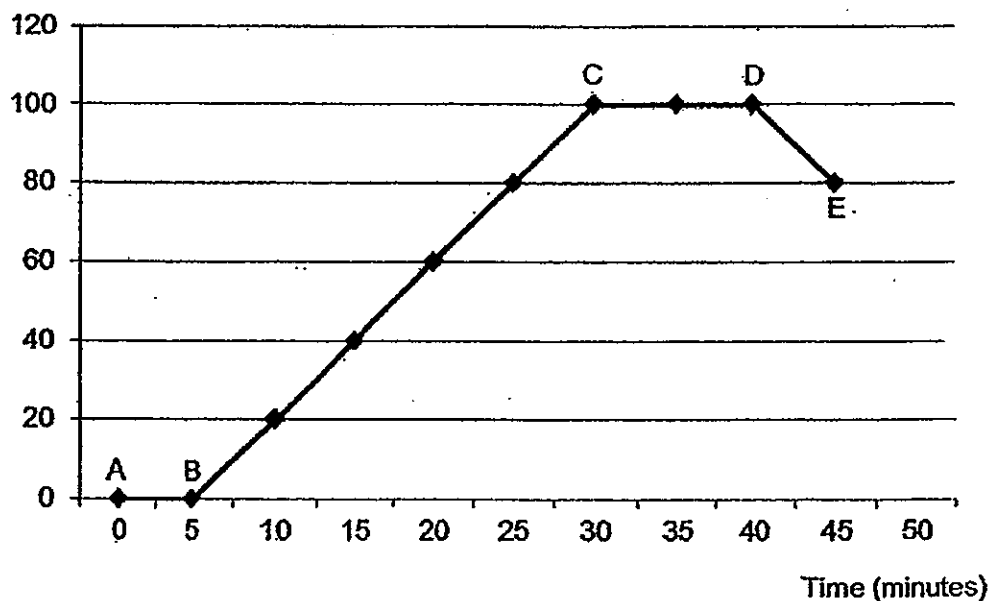
	Lose heat	Gain heat	Increase in temperature	Decrease in temperature
Water in beaker A				
Water in beaker B				

(b) What will the temperature of the water in beakers A and B be after five hours?

[1]

Jim placed a laboratory thermometer into a beaker of ice cubes and heated it continuously until the water is boiling. He recorded the temperature of the water and plotted a line graph as shown below.

Temperature ($^{\circ}\text{C}$)



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Score	3
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- (c) Which part(s) of the graph show(s) a gain of heat?

Tick (✓) the correct box(es).

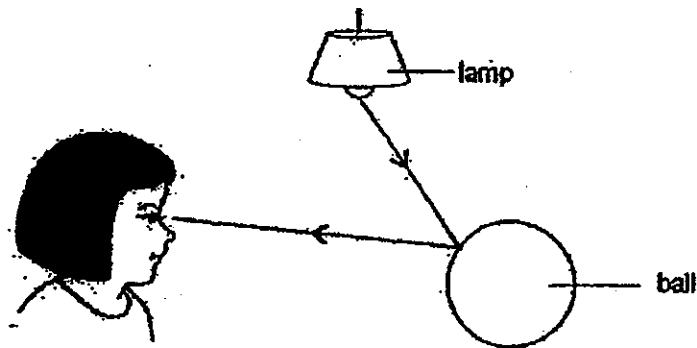
[2]

AB	☐
BC	☐
CD	☐
DE	☐

- (d) Jim turned off the flame of the burner to allow the beaker of water to cool down. Which part of the graph showed exactly when Jim had ~~turned~~ off the flame? [1]

39

The diagram below shows how Yvonne sees the ball.



Based on diagram above, fill in the blanks with the correct scientific terms for the statement below.

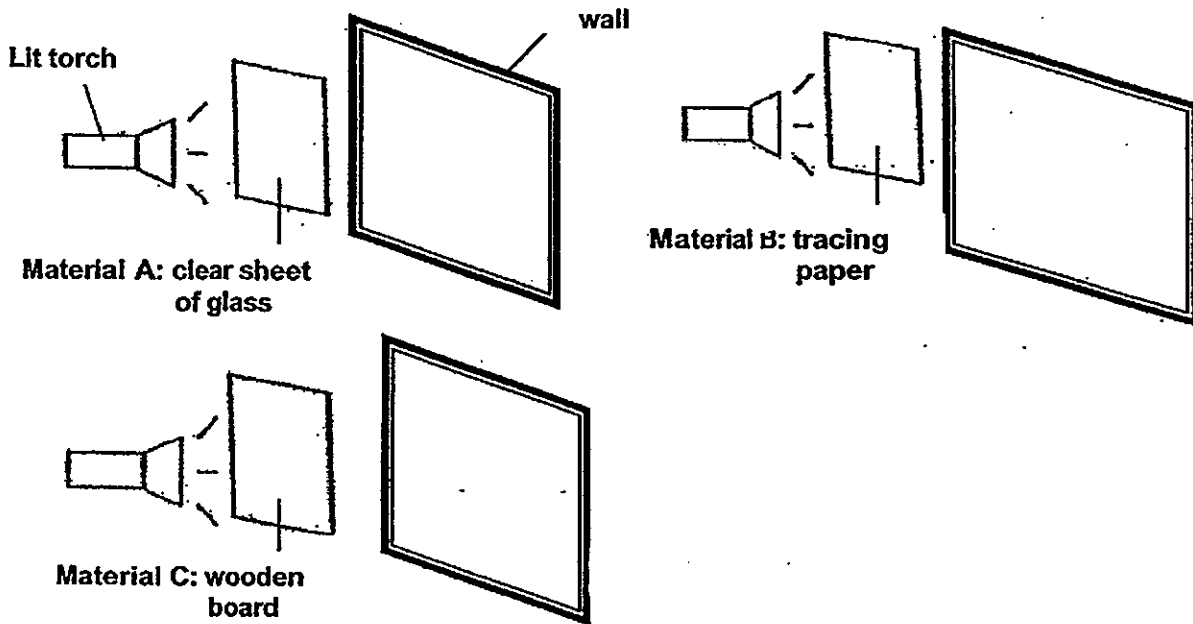
- (a) The _____ from the lamp is _____ by the ball and enters ^{Yvonne} ~~Mary~~'s eye.

[2]

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Score	5
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Jaryl shone his torchlight at three different types of materials A, B and C which were placed in front of a wall as shown in the diagram below.



(b) Which material will cast the darkest shadow on the wall?

[1]

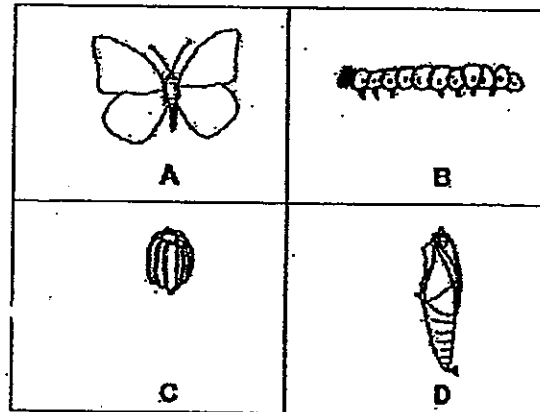
(c) Explain your answer in (b)

[1]

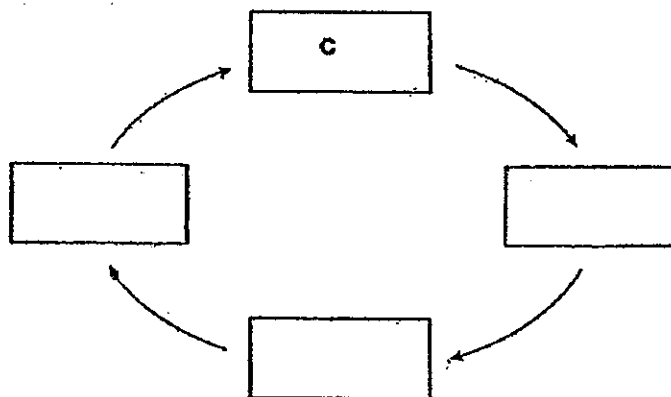
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Score	2
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40 A, B, C and D are the various stages in the life cycle of a butterfly.



(a) Arrange A, B, C and D in the correct order of the life cycle starting from C. [1]



(b) Based on the life cycle in (a), choose the correct words from the box below to answer the following questions below.

larva nymph egg pupa young
--

Name the stages in the life cycle of a butterfly.

[4]

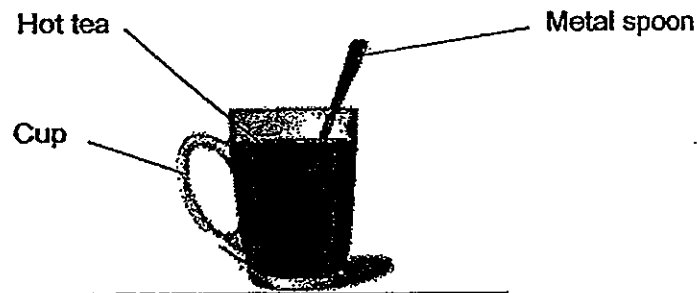
Stage B: _____

Stage C: _____

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Score	3
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- 41 The diagram below shows a cup filled with hot tea left on a table in an air-conditioned room over a period of two days.

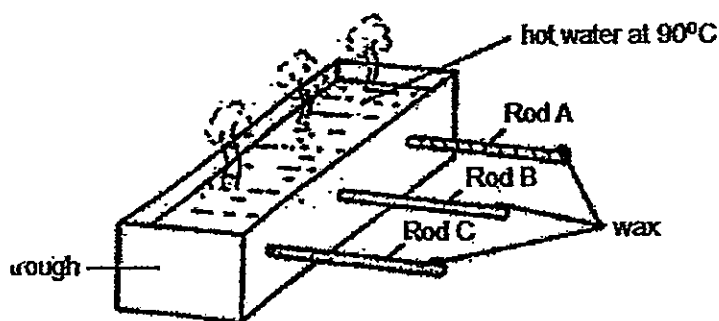


- (a) Based on the diagram above, put a letter (T) to indicate that the statement is true and (F) to indicate that the statement is false. [2]
- The hot tea will lose heat to the cup. ()
 - The air in the room will lose heat to the hot tea. ()
 - The metal spoon will gain heat from the air in the room. ()
 - The hot tea, spoon and cup will have the same temperature the next day. ()
- (b) If the metal spoon is replaced with a plastic spoon, explain why the plastic spoon will gain heat slower than the metal spoon. [1]

(Go on to the next page)

Score	3
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- 42 Joseph filled a trough with hot water. The trough has three rods A, B and C attached to it. Rods A, B and C are made of different materials. Each rod has a similar piece of wax stuck to its end as shown in the diagram below.



Joseph used a stopwatch and recorded the time taken for each piece of wax to melt. He recorded his observations in the table shown below.

Rod	Time taken for the wax to melt (min)
A	8
B	12
C	10

- (a) Based on the table above, arrange the rods A, B and C from the one that will melt the wax the fastest to the one that melt the wax the slowest. Fill in the boxes below with the letters A, B and C. [1]

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Drop of wax that melted the fastest



Drop of wax that melted the slowest

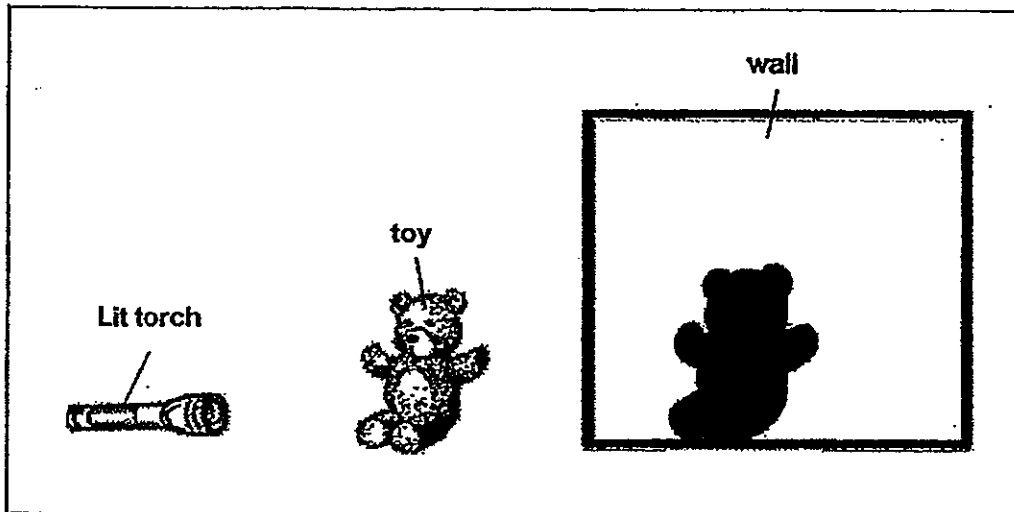
- (b) Based on the results in the table above, which rod is the best conductor of heat? [1]

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

(Go on to the next page)

Score	
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- 43 Edison formed a shadow on the wall of his room by placing a toy in front of a lighted torch as show in the diagram below.



- (a) Suggest 2 ways that Edison can cast a bigger shadow.

[2]

(i)

(ii)

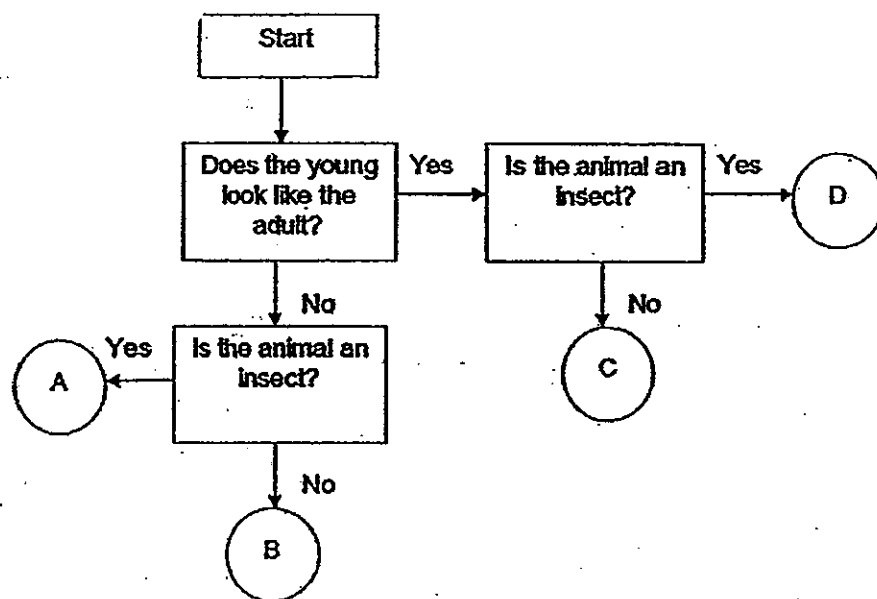
- (b) Explain how a shadow is formed.

[1]

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Score	
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44 Study the flowchart below.



(a) Based on the flowchart above, state two differences between animal B and D. [2]

(i)

(ii)

(b) Using the flowchart above, identify the following animals using the correct letter (A, B, C or D). [1]

(i) Frog : Animal

(ii) Shark : Animal

Score	3
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END OF BOOKLET B

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ACS

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

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

**31)Stem
Roots**

**32)a)A
b)D**

**33)a)To find out which magnet is the strongest.
b)4 thumbtacks.**

34)a)The amount of food made by the plant increased for the first 60 minutes and decreased in the next 60 minutes.

b)There was a lack of carbon dioxide needed for the plant to make food.

**35)a)solid.
b)liquid.**

36)a)4½ minutes.

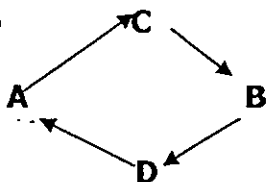
b)The number of times his hands rubbed increases, the time taken for one ice cube to melt in his hands decreases.

- 37)a)liquid.
b)solid.

- 38)a)Lose heat Decrease in temperature
 Gain heat Increase in temperature
b)27°C.
c)AB, BC, CD
d)Part D.

- 39)a)The light from the lamp is reflected by the ball and enters Yvonne eye.
b)Material C.
c)Material C is opaque so it will cast the darkest shadow on the wall compared to the other materials.

- 40)a)



- b)Stage B: larva Stage C: egg

- 41)a)i)T ii)F iii)F iv)T
b)The plastic spoon is a poor conductor of heat so it will conduct heat slower than the metal spoon as the metal spoon is a good conductor of heat.

- 42)a)A , C , B
b)Rod A.
c)The time taken for the wax to melt on Rod A was the fastest compared to the other rods as it was the best conductor of heat.

- 43)a)i)Move the toy nearer to the lit torch.
 ii)Move the lit torch nearer to the torch.
b)Light travels in a straight line so when the light was shined on the toy, the toy blocked the light from passing through if as the toy is opaque.

- 44)a)i)The young of animal B does not look like the adult but the young of animal D looks like the adult.
 ii)Animal B is not an insect but animal D is a insect.
b) i)B
 ii)C