



Anglo-Chinese School
(Primary)

A Methodist Institution
(Founded 1886)

SEMESTRAL ASSESSMENT ONE 2019
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____ ()

Class: Primary 4 ____

Date: 14 May 2019

Duration of paper: 1 h 45 min

Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES

1. This question paper consists of **15** 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 question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet. (56 marks)

1 Which of the following statements are true about living things?

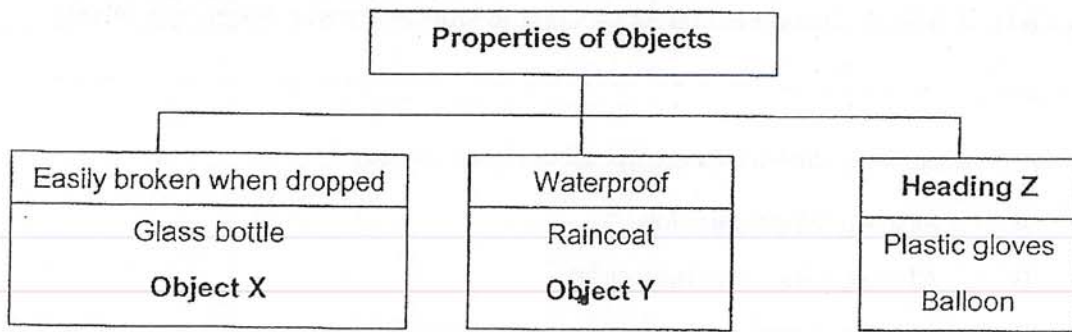
- A All living things can grow.
- B All living things can reproduce.
- C All living things need sunlight to make food.
- D All living things can respond to changes around them.

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

2 Study the table below carefully. Which one of the following animals has been matched with a correct outer covering?

	Animal	Outer Covering
(1)	Goldfish	Scales
(2)	Frog	Hair
(3)	Horse	Feather
(4)	Rabbit	Moist skin

- 3 Study the classification chart below.



Which one of the following is correct?

	Object X	Object Y	Heading Z
(1)	Rubber hose	Umbrella	Flexible
(2)	Glass window	Socks	Strong
(3)	Rubber hose	Glass window	Strong
(4)	Glass window	Umbrella	Flexible

- 4 In which direction will the poles of a freely suspended magnet finally point to?
- (1) North and East direction
 - (2) South and East direction
 - (3) South and West direction
 - (4) North and South direction
- 5 Using the electrical method, Michael tried to turn four rods into magnets. Each rod is made of a different material. He was only able to turn one rod into a magnet. Which one of the following rods became a magnet?
- (1) iron rod
 - (2) plastic rod
 - (3) wooden rod
 - (4) aluminium rod

6 Which one of the following statements about magnets is incorrect?

- (1) Magnets can be found in electrical appliances.
- (2) Sailors and hikers can use magnets to find direction when they are lost.
- (3) A refrigerator door uses magnets to keep the door closed by making use of magnetic attraction.
- (4) Magnets can be used to separate waste materials such as paper and plastic bottles.

7 Three rod magnets and a steel rod are attracted to each other. Which one of the following shows a possible arrangement of the three rod magnets and the steel rod such that they remain attracted to each other?

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

- 8 Study the diagram below carefully.



Magnet A

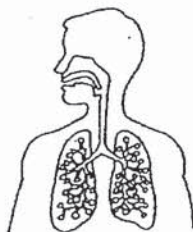


Magnet B

Which one of the following statement is most likely true about magnets A and B?

- (1) Only magnet A can attract iron nails.
 - (2) Both magnets A and B have North and South poles.
 - (3) Magnets A and B are examples of horse shoe magnets.
 - (4) Magnet A is has a stronger magnetic pull than magnet B because magnet A is bigger than magnet B.
- 9 There are many tiny openings on a leaf. These openings help plants to _____.
- (1) stay upright
 - (2) absorb water
 - (3) attract insects
 - (4) take in and give out gases
- 10 Which of the following statement(s) is/are true about the function(s) of the stem of a plant?
- A It holds the plant upright.
 - B It holds the tree firmly rooted to the ground.
 - C It takes in water and mineral salts for the tree.
 - D It transports water from the roots to the leaves.
- (1) A only
 - (2) A and D only
 - (3) B and C only
 - (4) B, C, and D only

11 The diagram below shows one of our body systems.



Which one of the following statements about the body system above is true?

- (1) It carries oxygen to all parts of our body.
- (2) It takes in oxygen to be used by our body.
- (3) It carries waste materials away from our small intestine.
- (4) It carries the food we eat into the small intestine where food is completely digested.

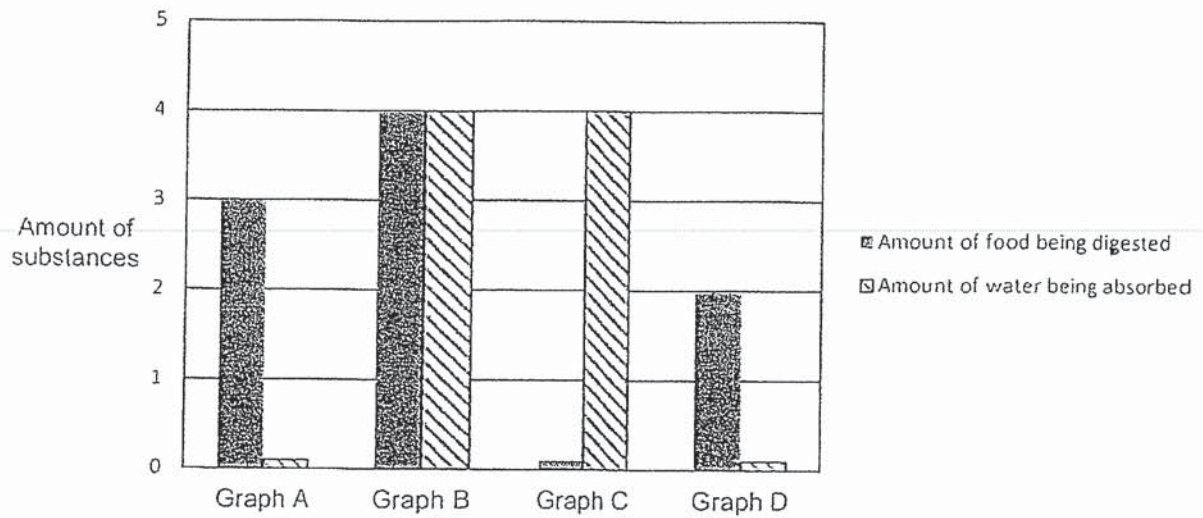
12 In which part of the human body system does digestion start?

- (1) Gullet
- (2) Mouth
- (3) Stomach
- (4) Small intestine

13 Which one of the following statements about the skeletal system is incorrect?

- (1) It supports the body.
- (2) It gives the body shape.
- (3) It protects the important organs in the body.
- (4) It transports waste materials away from the body.

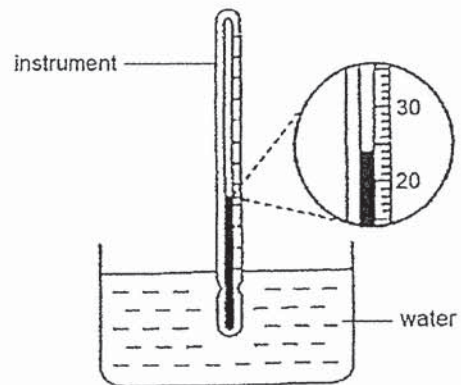
- 14 The graphs below shows the amount of substances being digested or absorbed in the various parts of the digestive system.



Which graph correctly represents the large intestine?

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

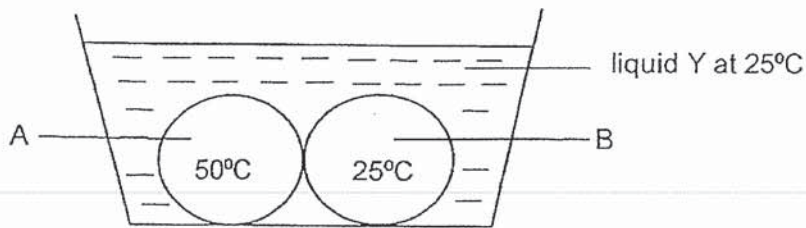
- 15 Ling Ling used an instrument to measure the temperature of water in a basin.



What is the temperature of the water in the basin?

- (1) 20°C
- (2) 24°C
- (3) 28°C
- (4) 30°C

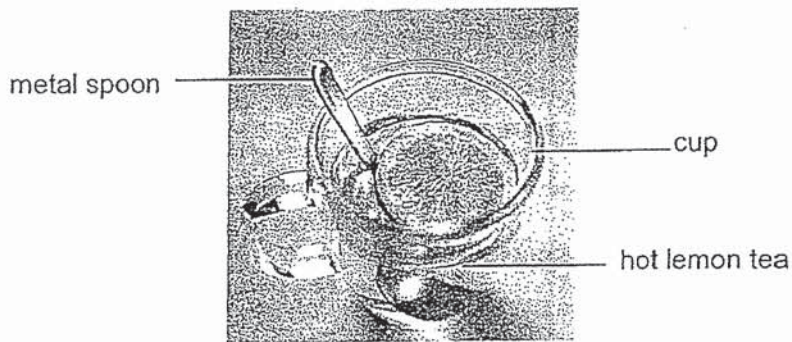
- 16 Peter used two similar metal objects, A and B, made of the same material and heated the objects to a temperature of 50°C and 25°C respectively. He then placed them together into a dish containing liquid Y at 25°C as shown below.



Which one of the following describes the heat flow immediately after A and B were placed into liquid Y?

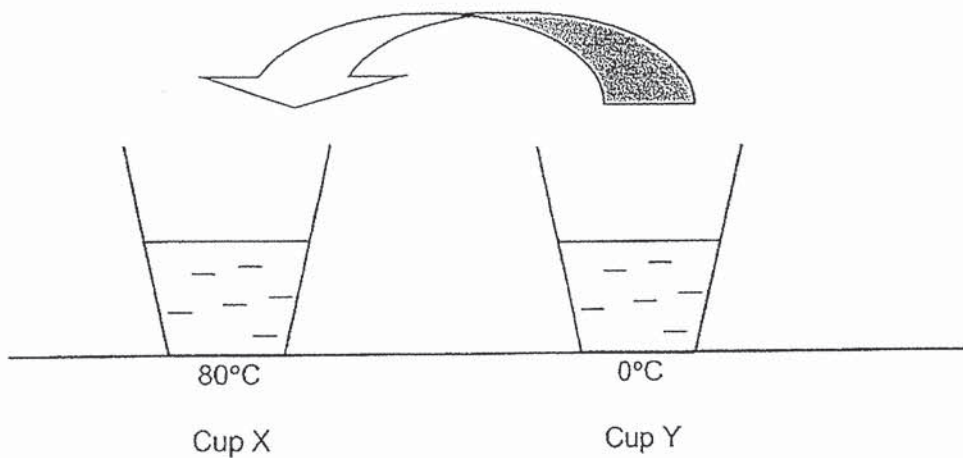
- (1) A loses heat to B only
 - (2) B loses heat to A only
 - (3) A loses heat to B and Y
 - (4) B loses heat to A and Y loses heat to A
- 17 Which one of the following statements is true about heat?
- (1) Heat is a form of energy.
 - (2) Heat cannot pass through air.
 - (3) Heat is the same as temperature.
 - (4) Heat is a measurement of the degree of hotness.

- 18 Tony placed a metal spoon in a cup of hot lemon tea as shown in the picture below.



The spoon becomes hotter after a while. Which one of the following best explains this?

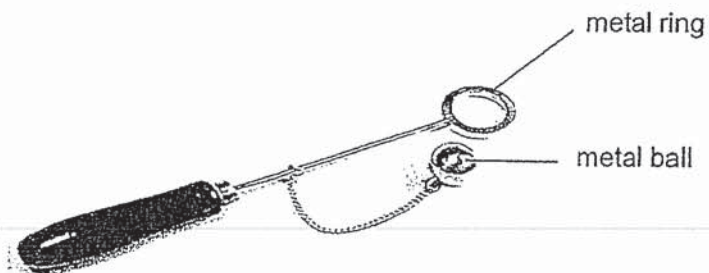
- (1) The cup loses heat to the hot lemon tea.
 - (2) The spoon loses heat to the hot lemon tea.
 - (3) The spoon gains heat from the hot lemon tea.
 - (4) The hot lemon tea gains heat from the spoon.
- 19 Gary has two cups with the same amount of water at different temperatures as shown below.



He poured all the water from Cup Y into Cup X. What would most likely be the new temperature of the water in Cup X?

- (1) 0°C
- (2) 50°C
- (3) 80°C
- (4) 100°C

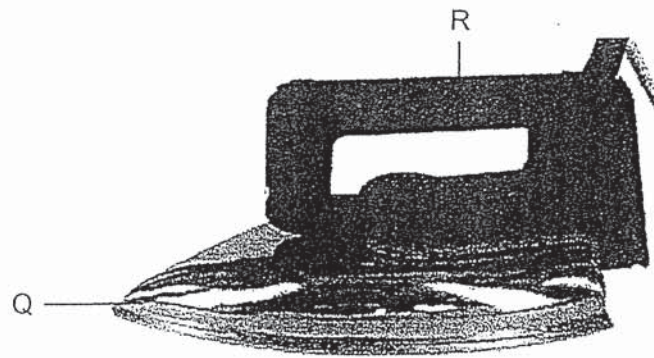
- 20 The diagram below shows a metal ball and ring apparatus. At first, the metal ball was unable to pass through the metal ring completely.



Which of the following actions will enable the metal ball to pass through the metal ring completely?

- A Dip the metal ball in cold water.
 - B Heat the metal ball over a flame.
 - C Heat the metal ring over a flame.
 - D Dip both the metal ball and ring in cold water.
- (1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

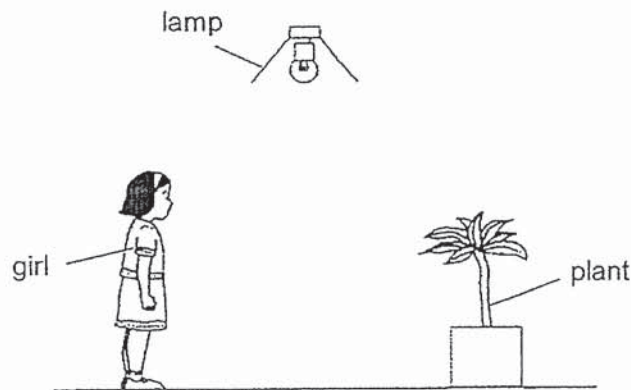
- 21 The picture below shows an electric iron for ironing clothes.



Which one of the following correctly describes the properties of parts Q and R?

	Property of Q	Property of R
(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

- 22 Study the diagram below. The girl is able to see the plant in the presence of light from the lamp.



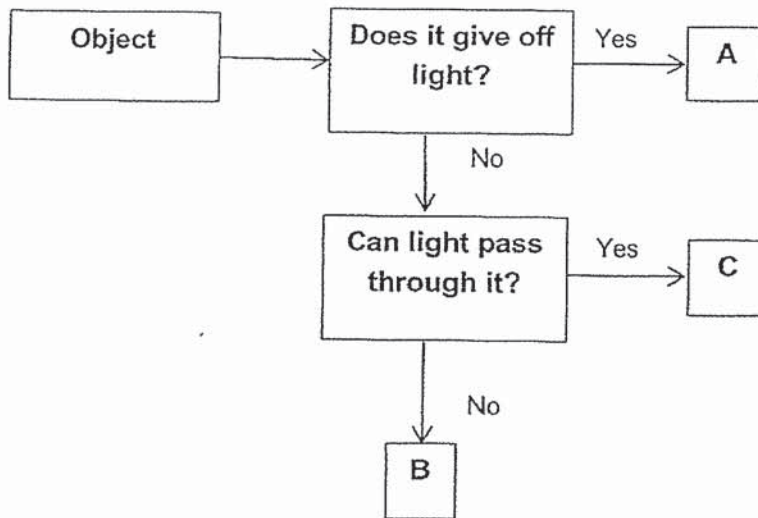
Which one of the following describes correctly the path of light that makes it possible for the girl to see the plant?

- (1) From lamp to girl to plant
- (2) From lamp to plant to girl
- (3) From girl to plant to lamp
- (4) From girl to lamp to plant

23 Which one of the following statements about light is not true?

- (1) Light is a form of energy.
- (2) Light can be measured using a torch and batteries.
- (3) We can see objects because light is reflected into our eyes.
- (4) The darkness of a shadow depends on the amount of light blocked by the object.

24 Study the flowchart below.



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

- (1) Both objects A and B give off light.
- (2) Both objects B and C do not give off light.
- (3) Object A does not give off light but object C does.
- (4) Object B allows light to pass through but not object C.

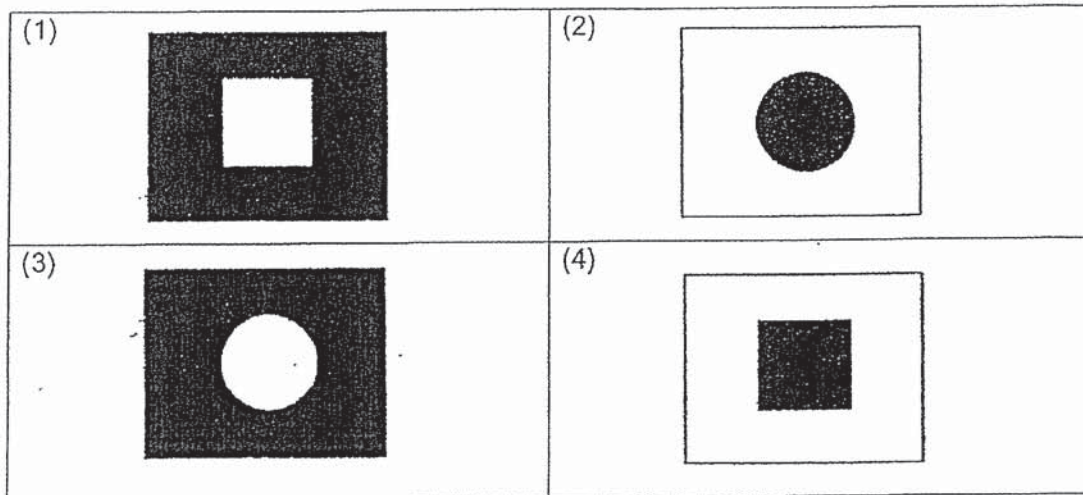
25 Which one of the following statements about the shadow of an object is correct?

- (1) It is always of the same size as the object.
- (2) It is always of the same shape as the object.
- (3) It is always of the same colour as the object.
- (4) It is formed when light is completely or partially blocked.

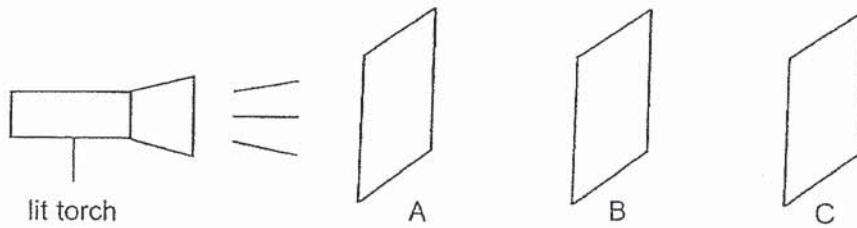
- 26 The diagram below shows light from a torch shining on a wooden ball.



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



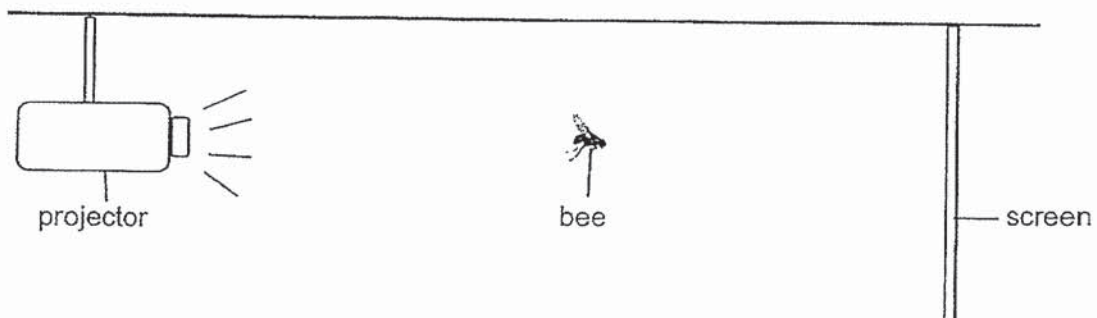
- 27 Bryan conducted an experiment in a dark room with the set-up as shown below.



Light from the torch could be seen on material B but not on material C.
Which one of the following best represents materials A, B and C?

	Material A	Material B	Material C
(1)	metal sheet	frosted glass	cardboard
(2)	clear glass	cardboard	clear plastic sheet
(3)	cardboard	clear glass	metal sheet
(4)	clear plastic sheet	clear glass	frosted glass

- 28 While watching a movie, Simon saw the shadow of a flying bee appearing on the screen. The shadow appeared to be smaller at times and larger at other times.



Which one of the following statements correctly explains the changes in the size of shadow of the bee that Simon had observed?

- (1) The shadow appeared larger when the bee was nearer to the screen.
- (2) The shadow appeared smaller when the bee was nearer the projector.
- (3) The shadow appeared larger when the bee was nearer to the projector.
- (4) The shadow appeared smaller when the bee was further from the screen.

End of Booklet A

Please go on to Booklet B



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SEMESTRAL ASSESSMENT ONE 2019
SCIENCE
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BOOKLET B

Name: _____ ()

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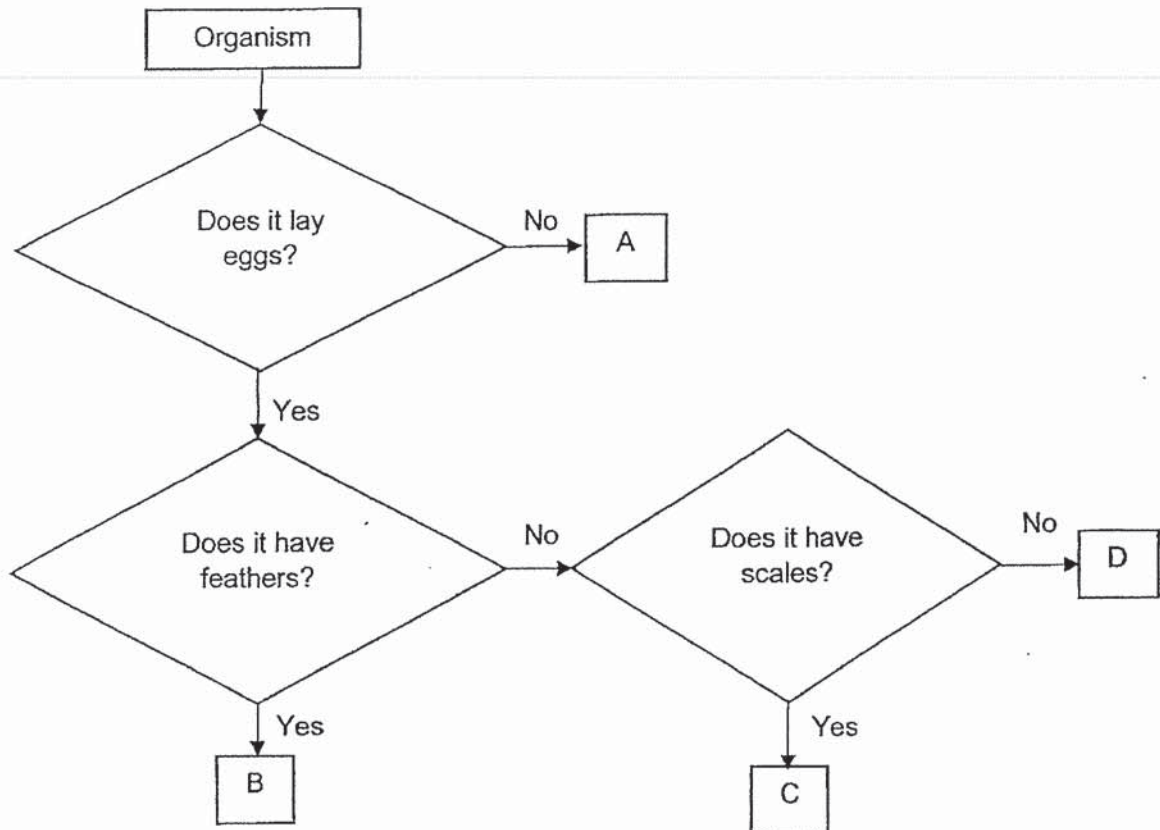
INSTRUCTION TO CANDIDATES

1. This question paper consists of **16** 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. Write all your answers in this booklet.

Booklet	Maximum marks	Marks obtained
A	56	
B	44	
Total	100	

For questions 29 to 41, write your answers in the spaces provided in the booklet. The number of marks available is shown in brackets [] at the end of each question or part question. (44 marks)

29 Study the flowchart shown below carefully.

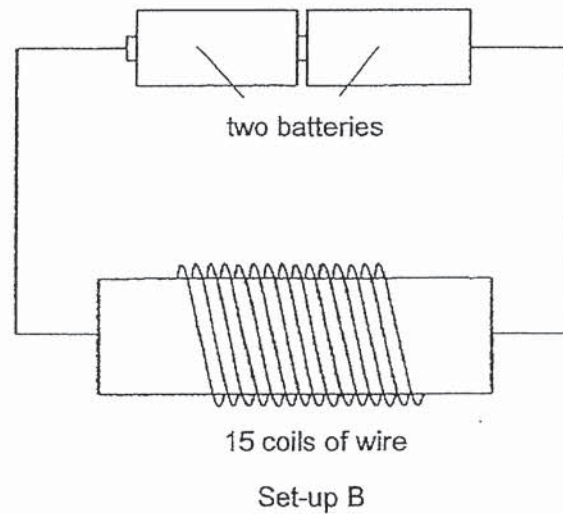
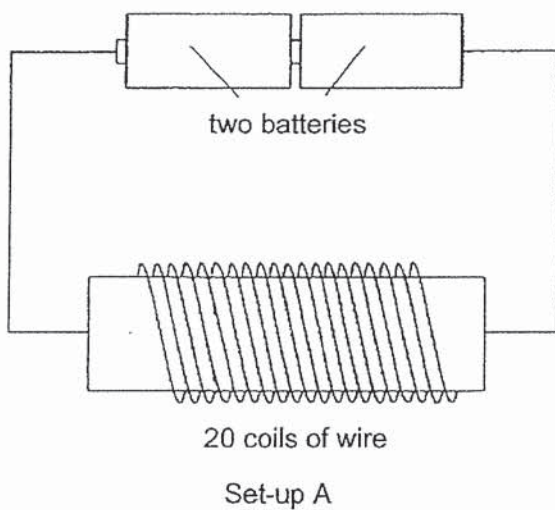


- (a) Based on the flowchart above, state all the characteristics of Organism B. [2]
- _____
- _____
- (b) Based on the flowchart above, state one difference between Organisms A and C. [1]
- _____
- _____
- (c) Based on the flowchart above, identify which group of animal Organism B belongs to. [1]
- _____

(Go on to the next page)

Score	
	4

- 30 Mei Mei carried out an experiment to study the magnetic strength of electromagnets and prepared the two set-ups in the diagrams below.

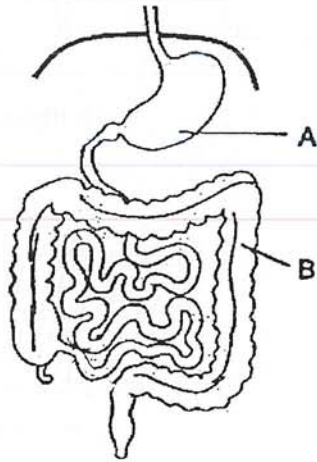


- (a) State the aim of this experiment. [1]
- _____
- _____
- (b) She counted the number of iron clips attracted to each electromagnet to determine the magnetic strength. Which set-up, A or B, would attract more iron clips? Explain your answer. [2]
- _____
- _____
- (c) Besides the electrical method, state another method that can be used to magnetise a magnetic object? [1]
- _____

(Go on to the next page)

SCORE	
	4

- 31 The diagram below shows one of the systems of the human body.



- (a) Name the body system shown above. [1]

- (b) Name the part labelled A. [1]

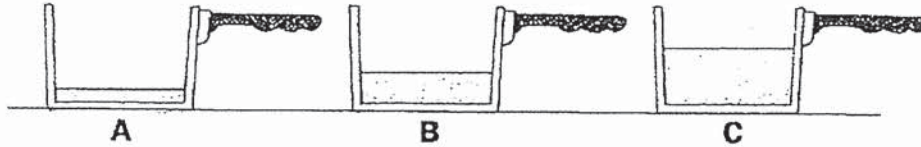
- (c) Name the part labelled B. [1]

- (d) Identify the part where food is completely digested. Using a pencil and ruler, label this part with the letter X in the diagram above. [1]

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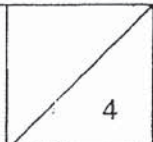
SCORE	
	4

- 32 Annie wanted to find out how long it will take to heat three pots of water at room temperature to reach a temperature of 50°C . The pots are made of identical material and are of the same size as shown in the diagram below.



- (a) State the changed variable in Annie's experiment. [1]
- _____
- (b) Name the measuring instrument that Annie should use to measure the temperature of the water accurately. [1]
- _____
- (c) The same amount of heat was used to heat each pot. Predict which pot of water, A, B or C, will take the longest time to be heated up to 50°C . Explain your answer. [2]
- _____
- _____

(Go on to the next page)

SCORE	

- 33 Gordon left a cup of cold drink in the kitchen. He recorded the temperature of the drink over a period of time as shown below.

Time (min)	Temperature of drink (°C)
0	6
5	9
10	13
15	?
20	20
25	25
30	28
35	30
40	30
45	30

- (a) The data for the temperature of the drink at the 15th minute is missing. Suggest a possible temperature of the drink. [1]

_____ °C

- (b) Explain what caused the change in the temperature of the cold drink. [1]

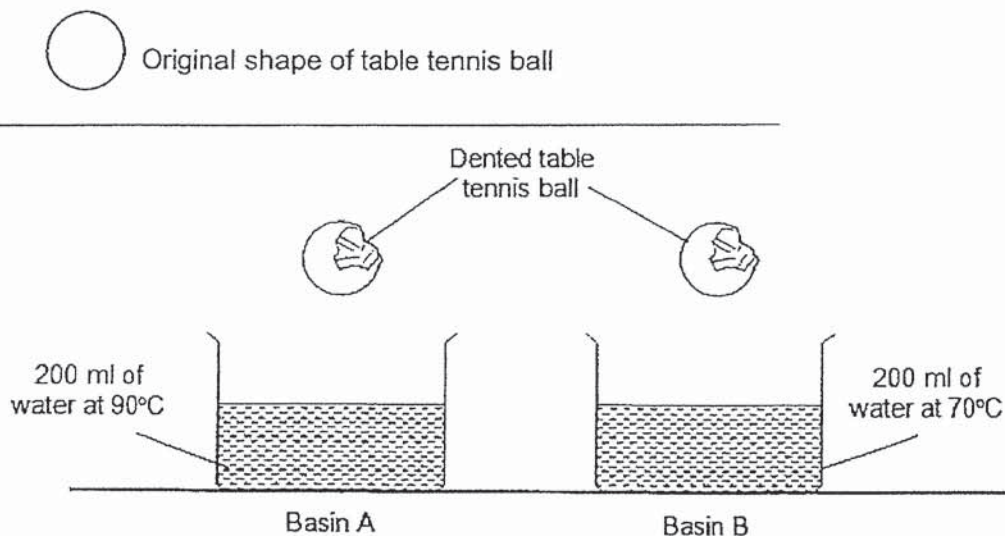
- (c) Based on the information above, what was the likely temperature of the kitchen? [1]

_____ °C

(Go on to the next page)

SCORE	3
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34. A dented table tennis ball can return to its original shape when placed into hot water. Charles had two identical table tennis balls that were similarly dented. He placed them into two basins of water separately as shown in the diagram below.



- (a) State which basin of water would cause the dented table tennis ball to become round faster. [1]
- Basin _____
- (b) Which basin of water had more heat? Explain your answer. [1]
- _____
- _____
- (c) Explain why the dented ball could return to its original shape when it was placed into hot water? [1]
- _____
- _____

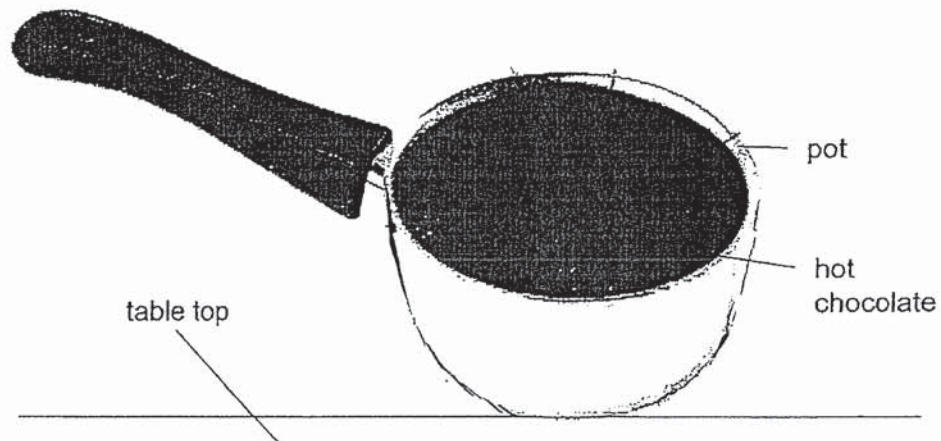
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SCORE	
	3

- 35 Samuel bought a chocolate bar which had fruits and nuts in it. He wanted to separate the fruits and nuts from the chocolate. He heated the whole chocolate bar in a pot until it melted.

(a) Identify the change of state that occurred when Samuel heated the chocolate bar. [1]

(b) Explain what caused the change of state identified in (a) to occur. [1]



(c) After removing the fruits and nuts, he left the chocolate in the pot to cool down on a table. Draw arrows in the picture above to show the direction in which heat is flowing as the chocolate is cooling down. [1]

(Go on to the next page)

SCORE	
	3

- 36 Aqil conducted an experiment on three materials, X, Y and Z. The three materials were of the same size and thickness. He heated the three materials and measured the time taken for them to reach the same temperature. The table below shows his results.

	Temperature at the start ($^{\circ}\text{C}$)	Temperature at the end ($^{\circ}\text{C}$)	Time taken (seconds)
Material X	30	50	50
Material Y	30	50	80
Material Z	30	50	35

- (a) Arrange the materials from the best conductor to the poorest conductor of heat. Fill in the blanks below with 'X', 'Y' and 'Z'. [1]

Best conductor of heat $\longleftrightarrow$ Poorest conductor of heat

Material ____

Material ____

Material ____

- (b) Aqil's father had just bought a cup of coffee but found it too hot to drink. Aqil suggested that placing a metal spoon into the cup will help to cool the coffee down. Suggest how that would help to cool the coffee down. [1]

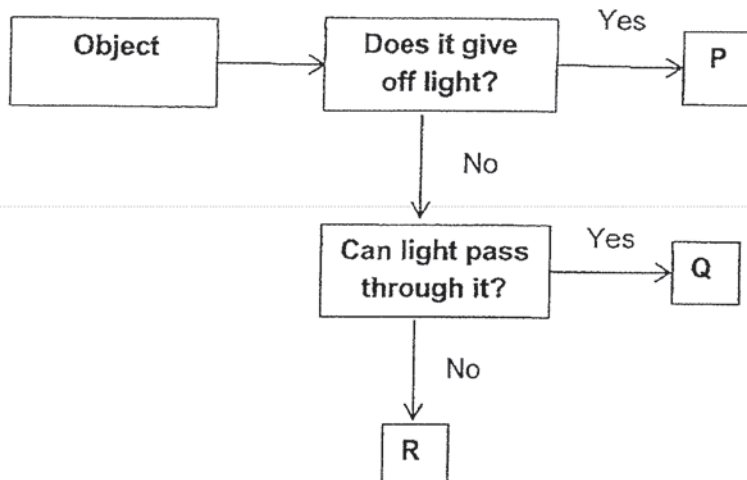
- (c) If there were three spoons made from materials, X, Y and Z, as shown in the table above, identify the spoon that would cool the coffee down fastest. [1]

The spoon that is made of material ____ .

(Go on to the next page)

SCORE	3
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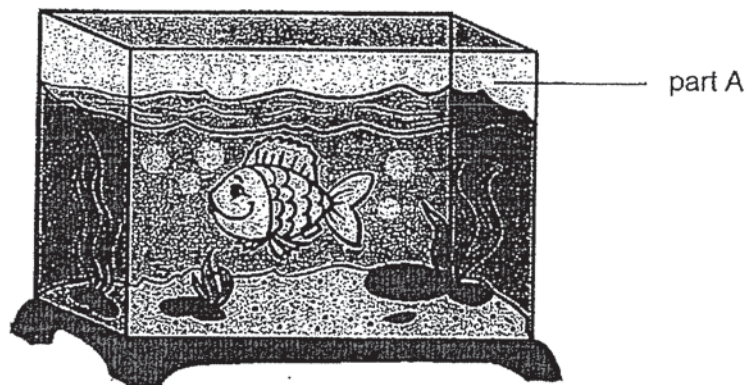
37 Study the flowchart below:



Based on the above flowchart,

- (a) state one similarity between object Q and object R. [1]

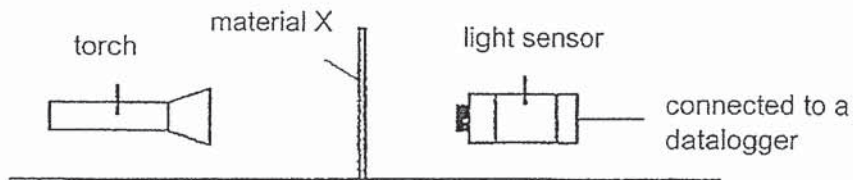
- (b) state which one of the above objects (P, Q or R) is suitable to be used for part A of the aquarium as shown in the diagram below. Explain your answer. [1]



(Go on to the next page)

SCORE	
	2

- 38 Felix carried out an investigation to find out how the number of sheets of material X affects the amount of light detected by the light sensor. He placed a sheet of material X between a torch and a light sensor as shown in the diagram below. The amount of light that passed through material X was detected and recorded by the datalogger.



Felix repeated his experiment with different number of sheets of material X and recorded the amount of light detected in the table below.

Number of sheets	Amount of light detected by the light sensor (units)
1	340
5	160
7	70
9	11

- (a) Put a tick (✓) in the appropriate boxes to indicate if each variable is to change or to keep the same to ensure a fair test in the experiment above. [2]
[There should only be one tick (✓) in each row.]

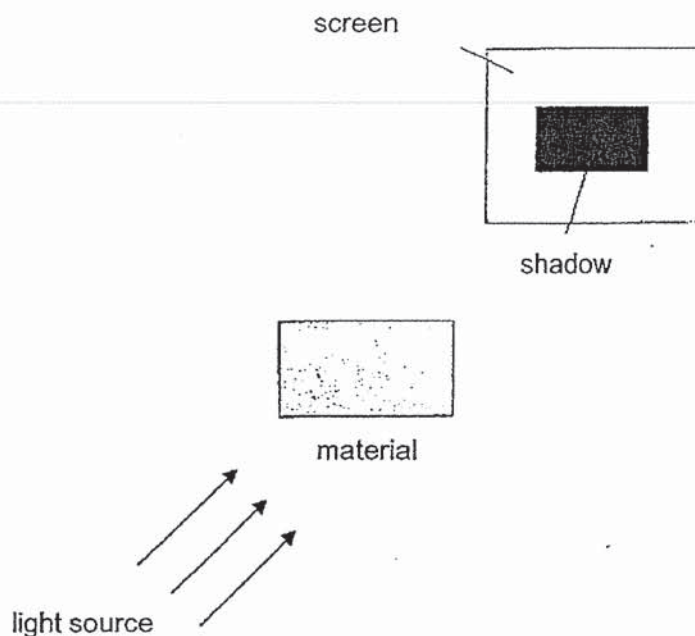
Variable	Change	Keep the same
Type of torch		
Position of the torch		
Position of the light sensor		
Number of sheets of material X		

- (b) Based on the results shown in the table above, state the relationship between the number of sheets of material X and the amount of light detected by the light sensor. [1]

(Go on to the next page)

SCORE	3
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- 39 Mike wanted to make a new set of curtains for his living room to prevent sunlight from entering the room. Materials A, B, and C, were tested to determine the type of shadow that each material created. He conducted the experiment and the results are shown in the table below.



Material	Shadow observed on the screen
A	A very dark shadow was formed
B	No shadow was formed
C	A light shadow was formed

- (a) Which material, A, B or C, should Mike use to make his curtains to prevent most sunlight from entering his room? [1]

Material _____

- (b) Based on the information given in the table above, explain your answer to (a). [1]

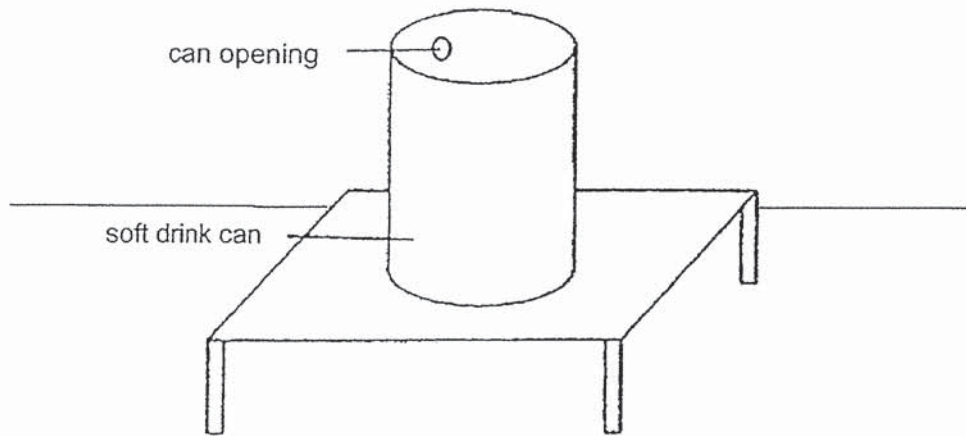
- (c) If Mike wanted to change his curtains to one that allows some light into the room, which material, A, B or C, should he use to make the curtains? [1]

Material _____

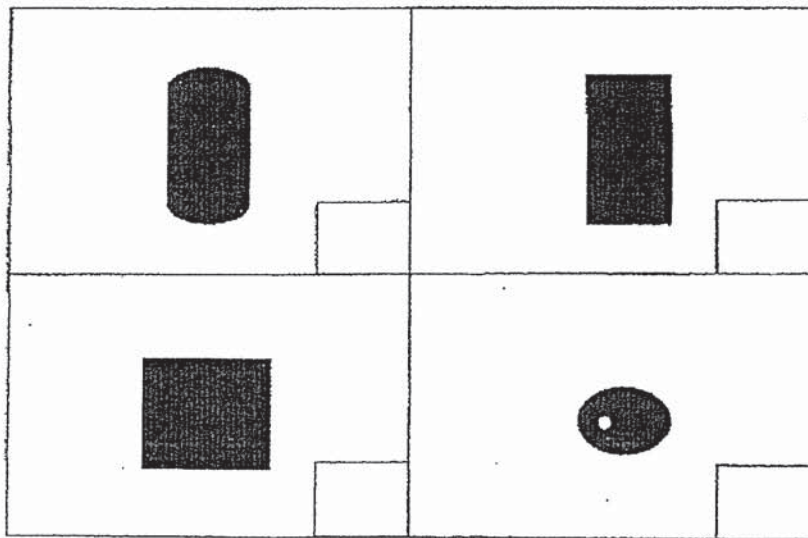
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SCORE	
	3

- 40 Jerry left a soft drink can on a table and shone a torch on the drink can from different positions, forming different shadows on the wall.



- (a) What are the possible shadows cast by the soft drink can on the wall? Put a tick (✓) in the correct box(es). [2]



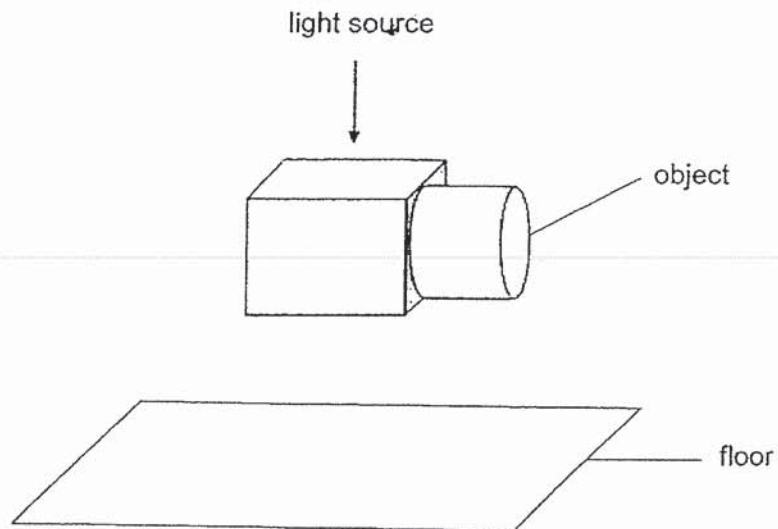
- (b) State a property of light that causes shadows to be formed.

[1]

(Go on to the next page)

SCORE	
	3

- 41 Dylan shone a light source from the top onto an object as shown in the diagram below.



- (a) In the box provided below, using a ruler and pencil, draw the shadow that will be formed on the floor. Shade the shadow completely. [1]

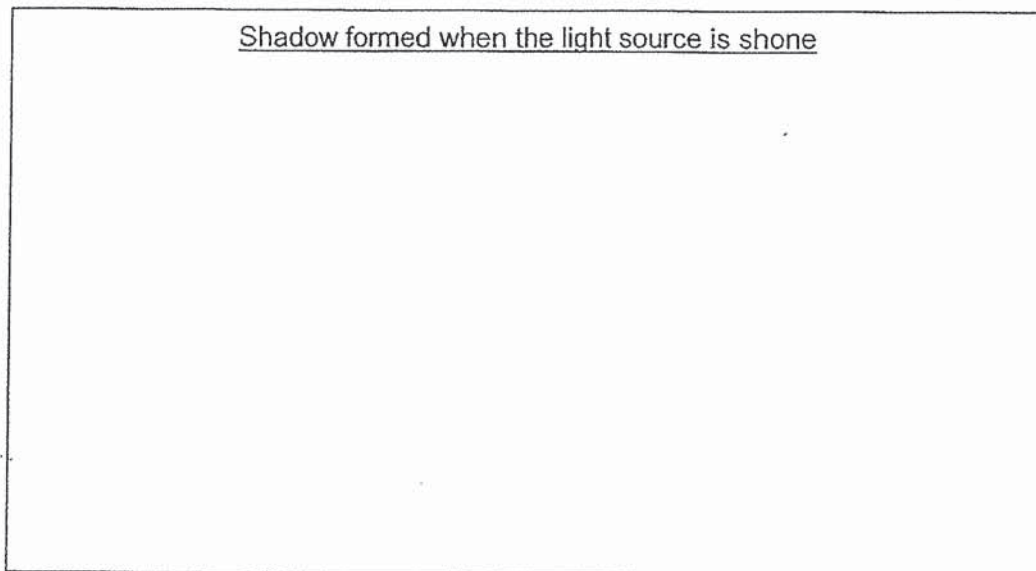
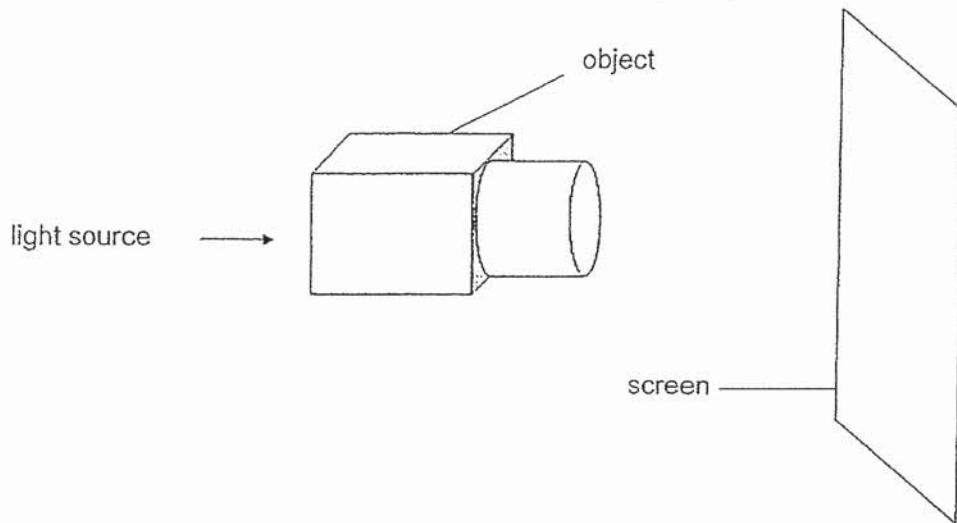
Shadow formed when the light source is shone

A large empty rectangular box is provided for drawing the shadow. The text 'Shadow formed when the light source is shone' is written at the top of the box.

(Go on to the next page)

SCORE	1
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- (b) Dylan then shone the light source from the side of the object.
In the box provided below, using a ruler and pencil, draw the shadow that will be formed on the screen. Shade the shadow completely. [1]



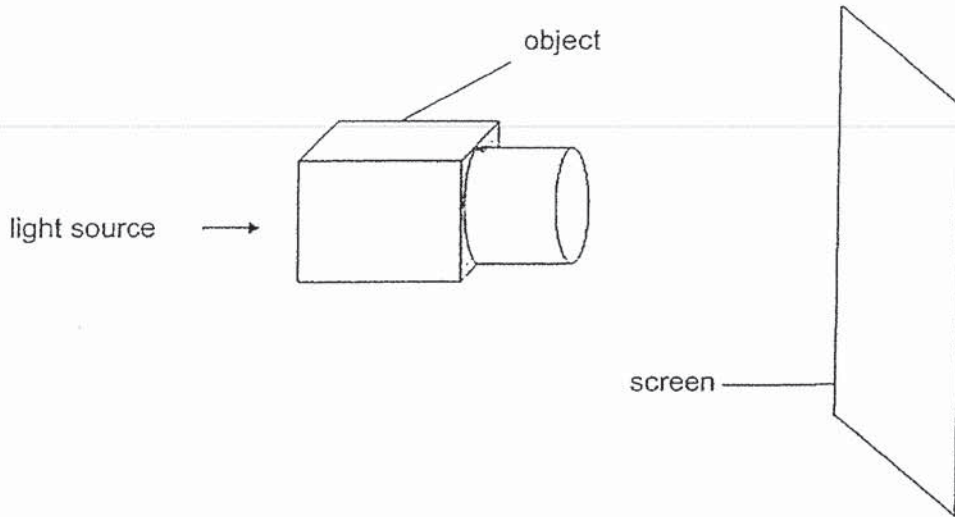
- (c) Fill in the blank below with a suitable word. [1]

From his observations, Dylan can conclude that the shadow of the object changes in _____ when the position of the light source changes.

(Go on to the next page)

SCORE	
	2

Dylan used the same set-up to investigate more about shadows.



- (d) How can Dylan form a smaller shadow by moving only the object? [1]

- (e) How can Dylan form a smaller shadow by moving only the light source? [1]

End of Booklet B/ End of Paper

Please check your answers.

SCORE	2
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ANSWER KEY

YEAR : 2019
 LEVEL : PRIMARY 4
 SCHOOL : ANGLO CHINESE SCHOOL (PRIMARY)
 SUBJECT : SCIENCE
 TERM : SA 1

BOOKLET A

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

BOOKLET B

Q29a) Organism B have feathers and lays eggs.

Q29b) Organism C lays eggs but A does not.

Q29c) Birds

Q30a) To find out if the increase of coils will affect magnetic strength.

Q30b) Set-up A. A has more coils than B and thus has a greater magnetic strength. It will cause more iron clips to be attracted.

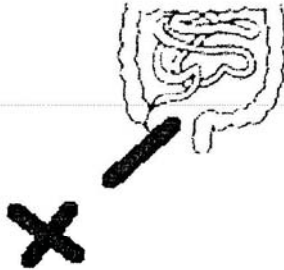
Q30c) Stroking Method

Q31a) Digestive system

Q31b) Stomach

Q31c) Large intestine

Q31d)



Q32a) The water level

Q32b) Thermometer

Q32c) Pot C. C has the most amount of water in it.

Q33a) 15°C

Q33b) The cold drink gained heat from the surroundings.

Q33c) 30°C

Q34a) Basin A

Q34b) Basin A. The temperature in A is higher.

Q34c) Heat will expand the air inside the ball and push its walls to the original state.

Q35a) Solid into liquid

Q35b) The chocolate bar gained heat and reached its melting point, turning from solid to liquid.

Q35c) UP ARROWS FROM POT SURFACE.

Q36a) $Z > X > Y$

Q36b) The metal spoon will gain heat from the cup of coffee.

Q36c) Z

Q37a) Both do not give off light.

Q37b) Object Q. Q allows light to pass through.

Q38a)

	✓
	✓
	✓
✓	

Q38b) The more sheets of material X there are, the lesser the amount of light detected.

Q39a) Material A

Q39b) Most light could not pass through A.

Q39c) Material C

Q40a)

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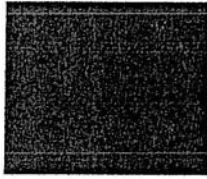
✓	✓

Q40b) Light travels in a straight line.

Q41a)



Q41b)



Q41c) shape

Q41d) Move the object closer to the screen.

Q41e) Move the light source further from the object.

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4

END

