



Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2013  
SCIENCE  
PRIMARY FIVE  
BOOKLET A

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

Class: Primary 5

Date: 13 May 2013

Duration of paper: 1h 45 min

\_\_\_\_\_  
Parent's/Guardian's Signature

**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 19 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 the questions in this section.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

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 The table below shows how 4 fruits A, B, C and D are grouped.

	One Seed	More than one seed
Smooth Skin	A	C
Rough Skin	B	D

Which one of these fruits is most likely to be a durian?

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

2 Water is taken in from the soil through the roots of the plant. Which parts of the plant is the water transported to?

- A Stem
- B Fruits
- C Leaves
- D Flowers

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

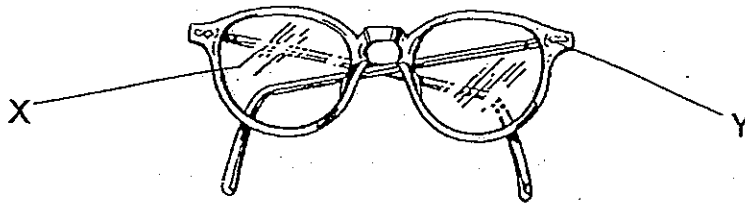
- 3 Julie observed a few animals she saw at the zoo and wrote down some notes regarding their outer covering in the table below.

Animals Observed	Outer Covering of Animals
Zebra	Hair
Dolphin	Scales
Penguin	Feathers
Crab	Shell

She realized she made a mistake in one of her observations. Which animal's outer covering was wrongly described?

- (1) Crab
  - (2) Zebra
  - (3) Dolphin
  - (4) Penguin
- 4 Which one of the characteristics about fungi is correct?
- (1) They can all be eaten.
  - (2) They reproduce by spores.
  - (3) They produce food by photosynthesis.
  - (4) They can all be seen with the naked eye.

5 The picture below shows a pair of spectacles.



Which materials represents X and Y correctly?

	Material X	Material Y
(1)	Paper	Plastic
(2)	Glass	Metal
(3)	Clear Plastic	Cotton
(4)	Cloth	Rubber

6 Which one of the following comparisons between the life cycles of the two insects, butterfly and cockroach is correct?

- (1) Both insects lay eggs.
- (2) Both insects have a three-stage life cycle.
- (3) Both insects have life cycle stages in water.
- (4) Both insects feed on nectar in their adult stage.

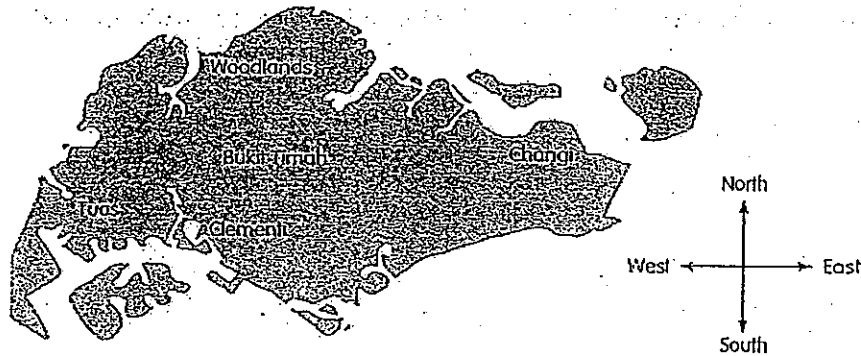
- 7 Four pupils are predicting what will happen when an inflated balloon is pricked with a pin and then the balloon burst.

Alan	The volume of air in the balloon will remain the same.
Benedict	The shape of the balloon will change.
Charles	The air escapes into the atmosphere.
Donald	The volume of air in the balloon will change.

Based on the predictions only, which of the pupils' predictions are most likely true?

- (1) Alan, Benedict and Charles only
- (2) Alan, Benedict and Donald only
- (3) Benedict, Charles and Donald only
- (4) Alan, Benedict, Charles and Donald

Use the diagram below to answer question 8



- 8 Look at the map above. You are at Bukit Timah, and you tied a bar magnet to a string, suspend it to a retort stand and allowed it to turn freely. Which one place would the south pole of the magnet be pointing to when it stops turning?

- (1) Tuas
- (2) Changi
- (3) Clementi
- (4) Woodlands

9 The table below shows four different materials and the objects that can be made from them.

Materials	Object that material can be made into
S	Wooden Door
T	Glass Bulb Casing
U	Window Panel
V	Paper Lamp

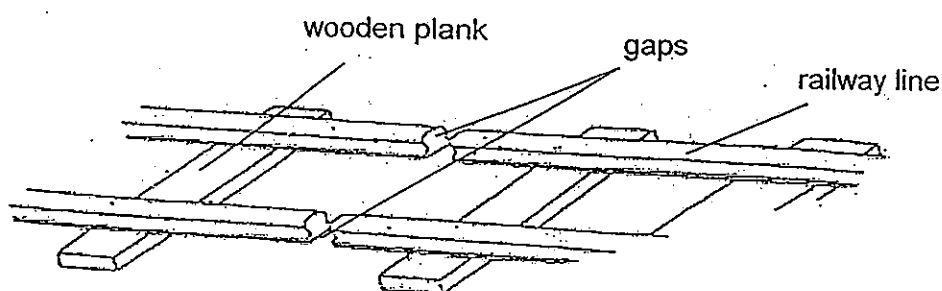
The following are four statements about the materials (S, T, U and V).

- A Material T is transparent.
- B Material V allows no light to pass through.
- C Material U allows light to pass through.
- D Material S is translucent.

Based on the table only, which of the following statements are true?

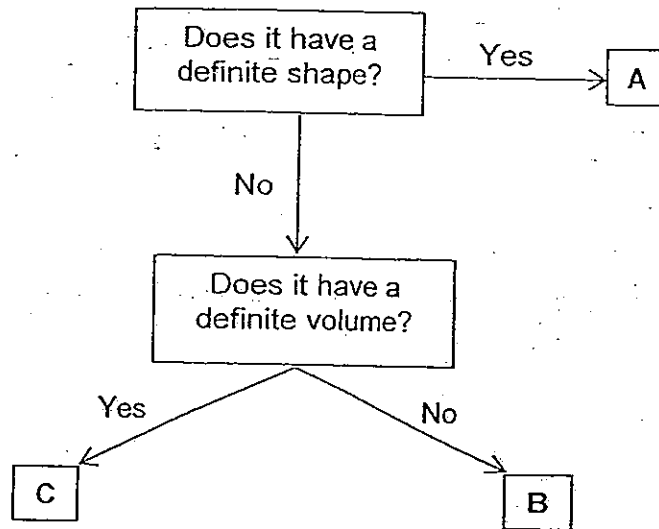
- (1) A and B only
- (2) A and C only
- (3) A, B and C only
- (4) B, C and D only

10 It has been observed that there are small gaps between railway lines. Why is this so?



- (1) To prevent overheating of the railway line.
- (2) To allow heat to pass through the wooden plank.
- (3) To allow for room for expansion of the railway line.
- (4) To allow for room for contraction of the wooden plank.

11 Study the flowchart below carefully.



Based on the observations in the flowchart only, which of the following materials are correctly classified?

	A	B	C
(1)	Brick	Orange	Milk
(2)	Apple	Heat	Water
(3)	Coin	Carbon Dioxide	Carrot Stick
(4)	Pencil	Oxygen	Honey

12 Diagram A shows eggs being boiled in a pot of water. Diagram B shows a cross section of a boiled egg. Which one is the correct path of heat transfer in the process of boiling an egg?

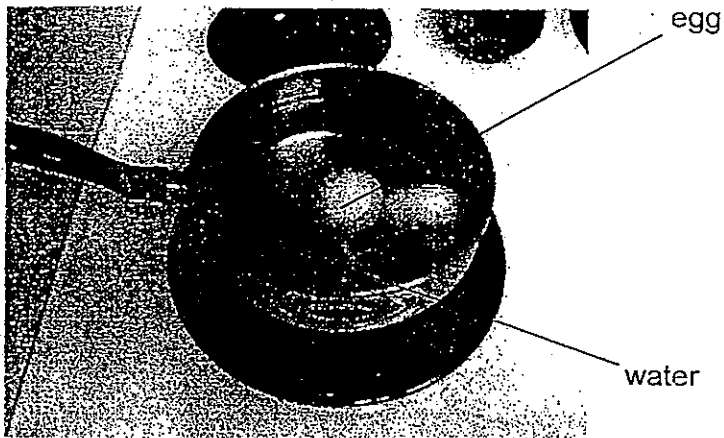


Diagram A

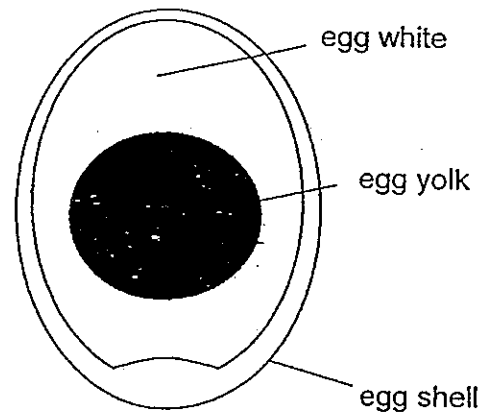
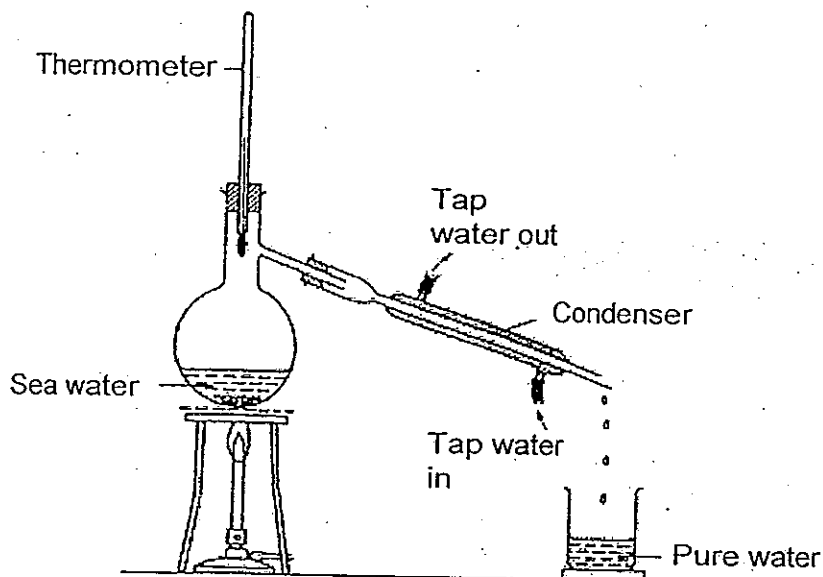


Diagram B

- (1) Boiling water → egg shell → egg yolk → egg white
- (2) Boiling water → egg yolk → egg white → egg shell
- (3) Boiling water → egg white → egg yolk → egg shell
- (4) Boiling water → egg shell → egg white → egg yolk



13 Study the set-up below. The sea water is allowed to boil and pure water can be obtained at the end of the process. The steam coming out from the sea water enters the condenser.

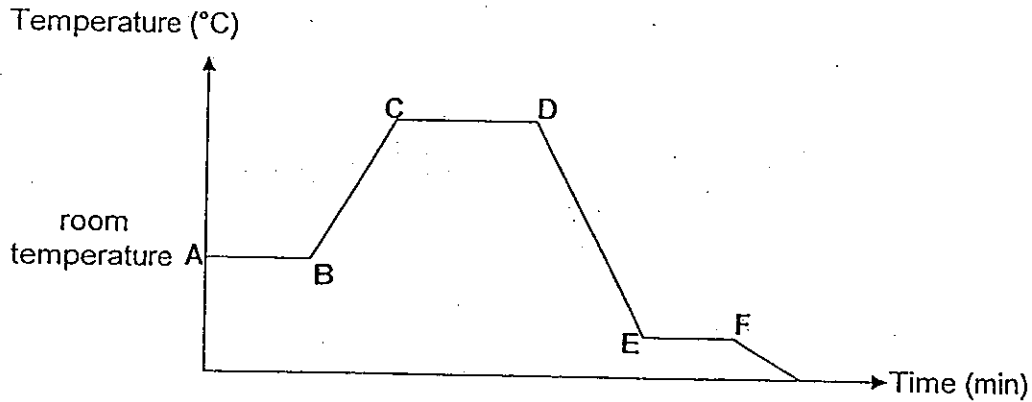


The tap water is just flowing around the condenser's outer chamber and did not mix with the sea water.

Based on the set-up above, what is the function of the continuous flow of tap water in the outer chamber of the condenser?

- (1) It controls the boiling point of sea water.
- (2) It removes all the salt from the sea water.
- (3) It allows the steam to lose heat to the tap water.
- (4) It allows the steam to gain heat from the tap water.

- 14 Vishnu filled a beaker with tap water at room temperature and placed it on the stove to boil. He then placed the boiled water into the freezer immediately. He recorded the changes in temperature of the water over time throughout the experiment as shown in the graph below.



From the graph, between which points was the water boiling?

- (1) A and B
  - (2) B and C
  - (3) C and D
  - (4) E and F
- 15 The following statements suggest four ways how water can be conserved.
- A Treating waste water to make it drinkable again.
  - B Using water from washing rice to water the plants.
  - C Using water from washing laundry to flush the toilet.
  - D Using a pail of water to wash the car instead of using tap water coming from a hose.

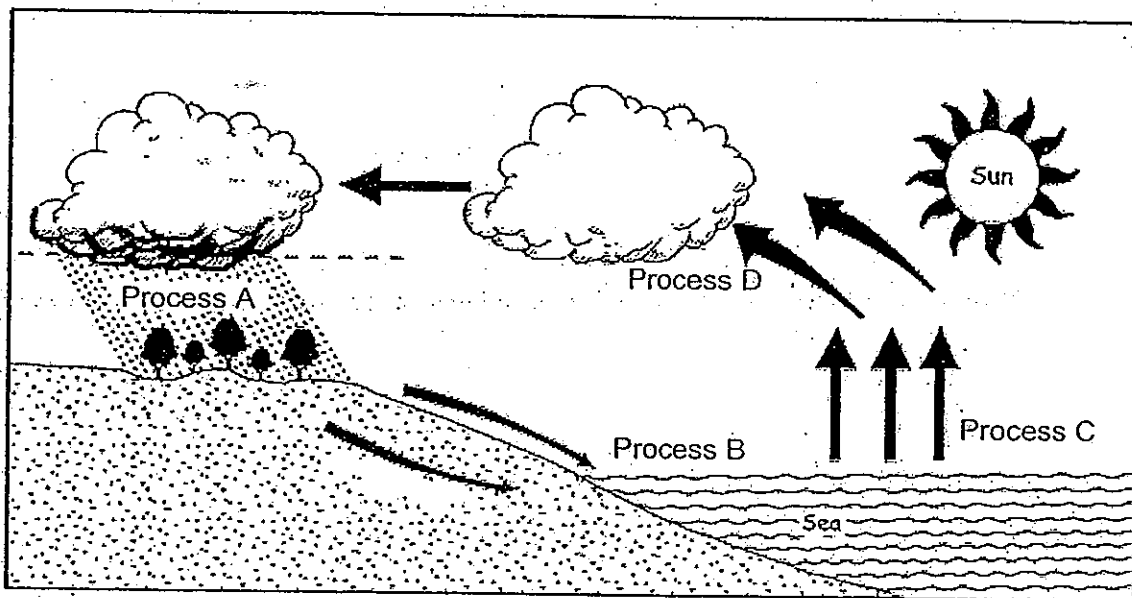
Based on the information given above, classify the statements A, B, C and D above under the correct heading of recycling, reducing or reusing water.

	Recycling water	Reducing water	Reusing water
(1)	A	C	B
(2)	A	D	C
(3)	D	A	B
(4)	D	C	A

- 16 Bala filled two identical cups with  $300 \text{ cm}^3$  of two different liquids, liquid A and liquid B. They were both placed next to an open window. After three days, he realized that there was less of liquid B than liquid A in the respective cups.

Based on the information given above, what is the aim of the experiment?

- (1) To find out if the amount of liquid affects the rate of evaporation.
  - (2) To find out if the location of the cups affects the rate of evaporation.
  - (3) To find out if different types of liquid used affects the rate of evaporation.
  - (4) To find out if the amount of time taken for the experiment affects the amount of liquid left over.
- 17 The diagram below represents a water cycle.



What is the process labeled D?

- (1) Evaporation
  - (2) Condensation
  - (3) Precipitation
  - (4) Collection
- 18 The form of energy needed for the water cycle to take place is \_\_\_\_\_ energy.
- (1) light
  - (2) heat
  - (3) sound
  - (4) movement

- 19 National Water Foundation wanted to find out how polluted the water is around Singapore. Water samples of  $200\text{cm}^3$  were taken from four different lakes, A, B, C and D, around the country.

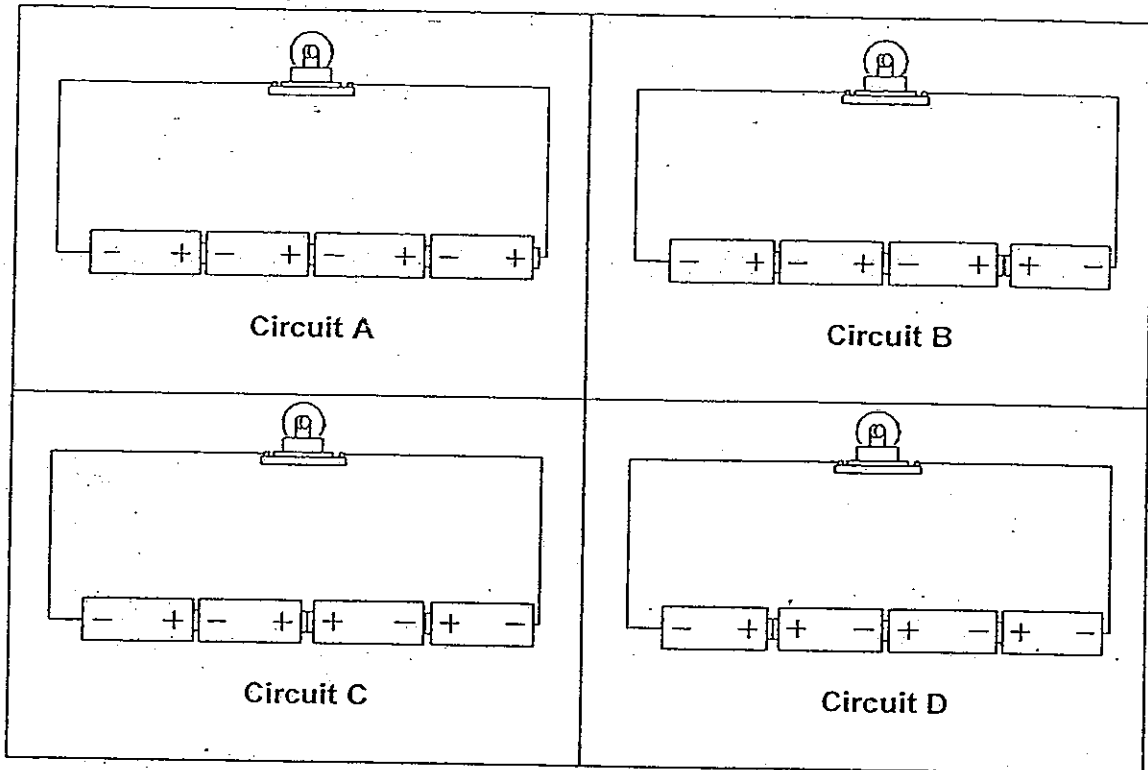
As duckweeds do not grow well in polluted waters, it was used as an indicator to tell how polluted the water is. Twenty duckweeds were placed in each water sample for one week in the Laboratory. The number of duckweeds at the end of the experiment were counted and recorded in the table below.

	Water from Lake A	Water from Lake B	Water from Lake C	Water from Lake D
Number of duckweeds at the start of the experiment	20	20	20	20
Number of duckweeds after one week	12	8	17	5

Based on the table above, arrange the lakes from the most polluted to the least polluted.

- (1) A, B, C, D
  - (2) B, C, D, A
  - (3) C, D, A, B
  - (4) D, B, A, C
- 20 What happens when water is in the process of freezing?
- A The water loses heat.
  - B The temperature of the water decreases.
  - C The temperature of the water remains constant.
- (1) A only
  - (2) C only
  - (3) A and B only
  - (4) A and C only

- 21 Study the circuits below carefully. All the bulbs and batteries are identical and in working condition.



The brightness of the bulbs in the different circuits were measured and recorded in the table below.

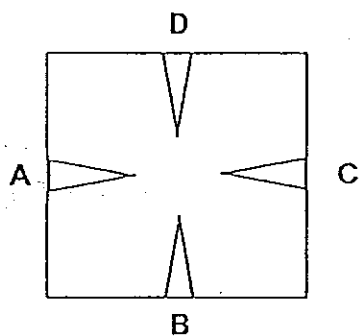
Circuit	A	B	C	D
Brightness	20 units	10 units	0 unit	?

Predict the brightness of the bulb in Circuit D.

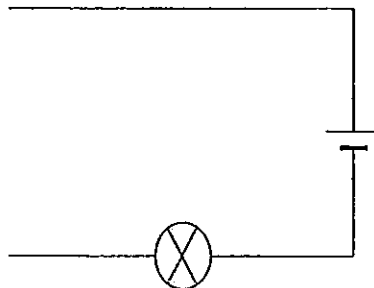
- (1) 0 unit
- (2) 5 units
- (3) 10 units
- (4) 20 units

22 James tested the circuit card below with a circuit tester.

Circuit Card



Circuit tester



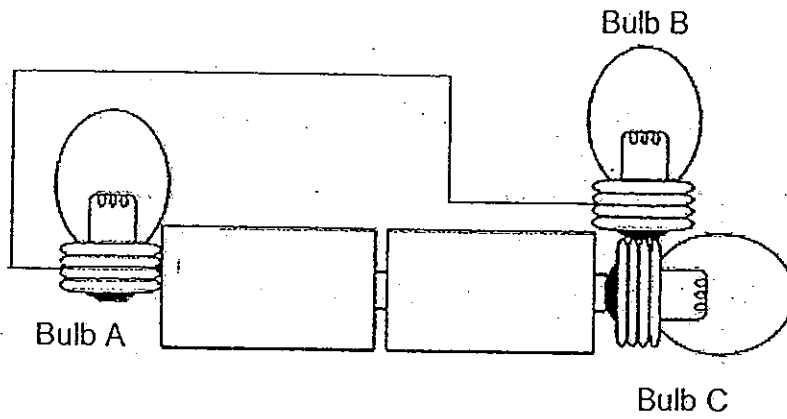
He recorded the results in the table below.

Points tested	Does the bulb light up?
A and B	No
B and C	No
C and D	Yes
D and A	Yes

Which one of the following circuit cards shows the correct arrangement of the wires?

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

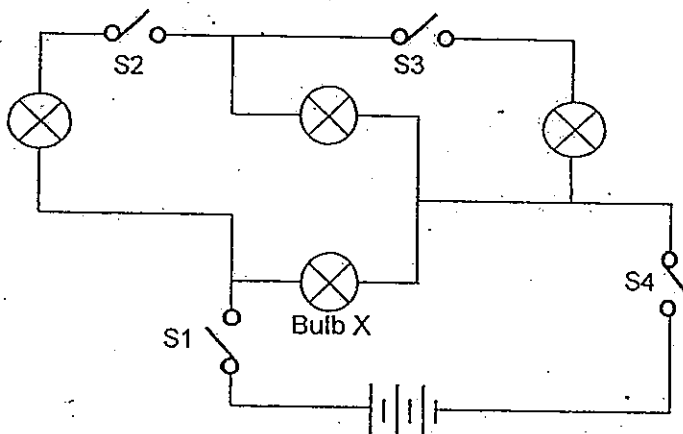
23 Study the diagram below carefully.



Which of the following bulbs will light up?

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

24 The diagram below shows an electrical circuit.



To light up bulb X only, which of the switches should be closed?

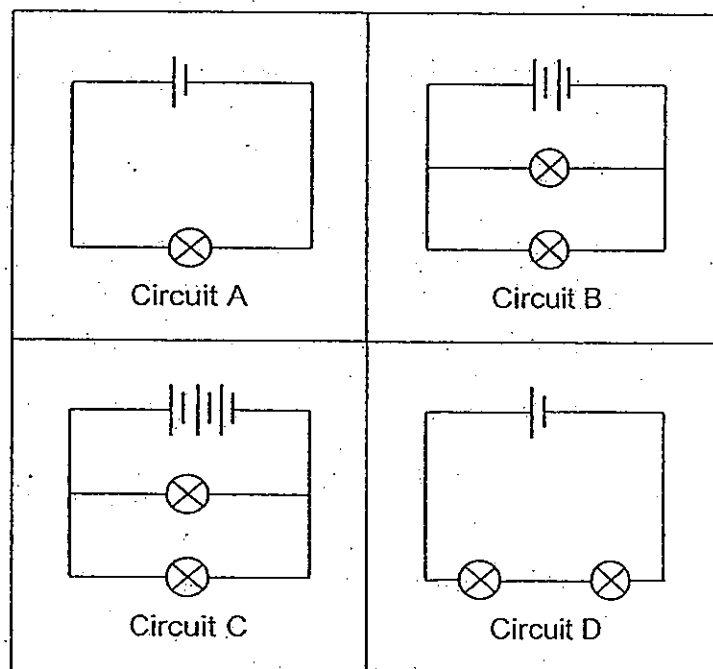
- (1) S1 and S4 only
- (2) S2 and S3 only
- (3) S1, S3 and S4 only
- (4) S1, S2, S3 and S4

25 Which of the following statements describe safe practices when using electrical appliances?

- A Turning on the switch with wet hands.
- B Prevent overloading of electrical sockets.
- C Repairing faulty electrical appliances by yourself.
- D Using electrical appliances with the SAFETY mark.

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

26 Four different electrical circuits A, B, C and D were set up as shown below. The bulbs and the batteries in the four electrical circuits are identical and are all in working condition. All the bulbs in the four electrical circuits are lit up.

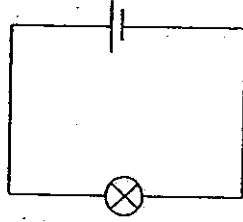


Based on the diagrams above, arrange the circuits to show the brightness of its bulb(s) from the brightest to the dimmest.

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

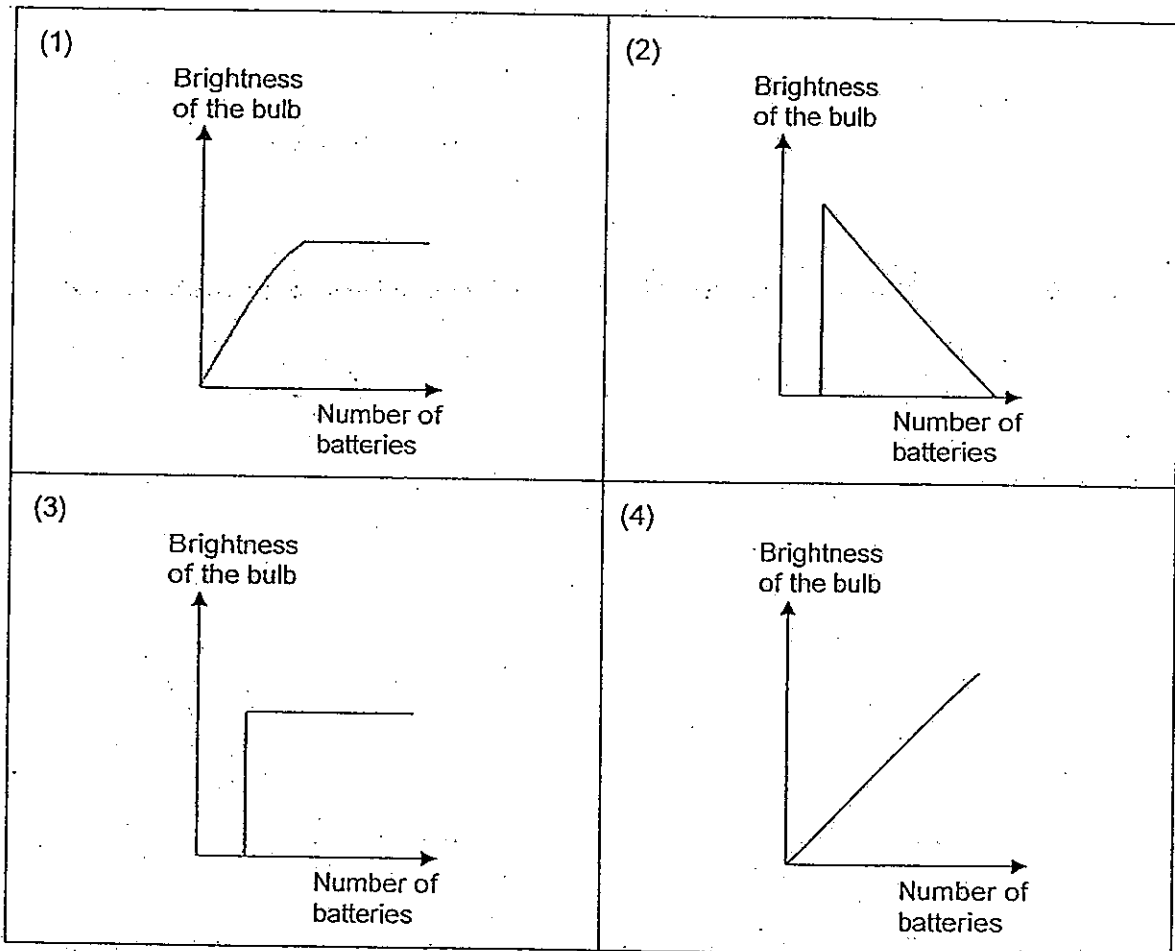


27. The circuit diagram below was set-up.

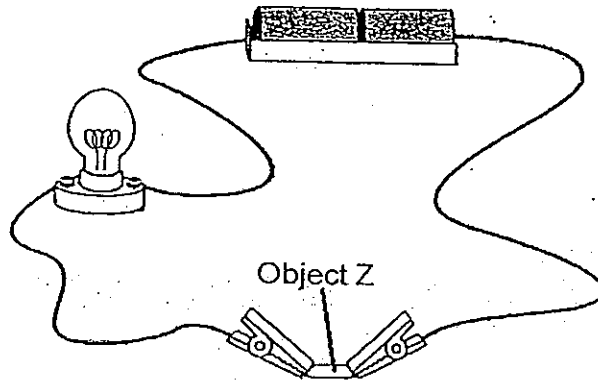


Which one of the following graphs below correctly represents how the brightness of the bulb will change when more batteries are added in series arrangement in the above circuit?

(Assume the bulb and batteries are identical and in working condition.)



28 Study the electrical circuit shown below.



Which materials might object Z be made of in order for the bulb to light up?

- A Plastic
- B Iron
- C Steel
- D Aluminium
- E Rubber

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

29 Which one of the following correctly defines the term "population"?

- (1) A population is different groups of organisms living together and reproducing in a habitat.
- (2) A population is a group of different organisms living together and reproducing in a habitat.
- (3) A population is a group of organisms of the same kind living together and reproducing in a habitat.
- (4) A population is group of organisms of the same kind living together and reproducing in different habitats.

30 Which of the following factors below will lead to an increase in population size of animal X in their habitat?

- A Diseases that kill animal X
- B Abundance of food for animal X
- C High birth and death rate of animal X
- D Decrease in the number of predators that feeds on animal X

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





Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2013  
SCIENCE  
PRIMARY FIVE  
BOOKLET B

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

Class: Primary 5 \_\_\_\_\_

Date: 13 May 2013

Duration of paper: 1h 45 min

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Parent's/Guardian's Signature

**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 15 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this section.

BOOKLET	MAXIMUM MARKS	MARKS OBTAINED
A	60	
B	40	
Total	100	

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

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

(40 marks)

- 31 Rong Jie conducted an experiment with four similar potted plants. He removed a specific part of each plant and allowed them to grow over two weeks. The plants were given the same amount of water and were placed in the same location. After two weeks, he recorded his observations in the table below.

Potted Plant	Part removed from potted plant	Is the plant dead after two weeks?
A	Some leaves	No
B	All flowers	No
C	All roots	Yes
D	All fruits	No

- (a) Explain why potted plant C died after two weeks.

[1]

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- (b) What can Rong Jie conclude from this experiment?

[1]

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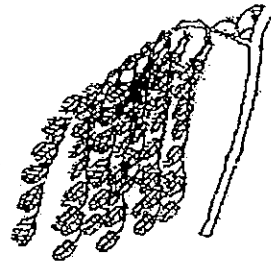
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Score	2
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32 It was observed that the leaves of the rain tree look different at different times of the day. The differences were recorded and the pictures of the same group of leaves are shown below.



In sunny weather



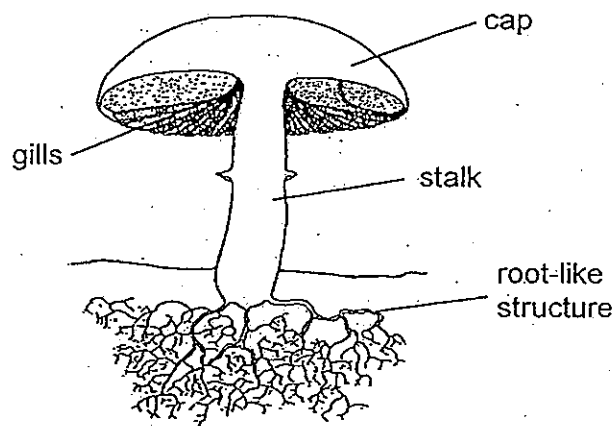
In cloudy weather or in darkness

(a) What are the two characteristics of living things that the rain tree is demonstrating? [2]

Characteristic one:

Characteristic two:

Study the picture of a mushroom shown below.



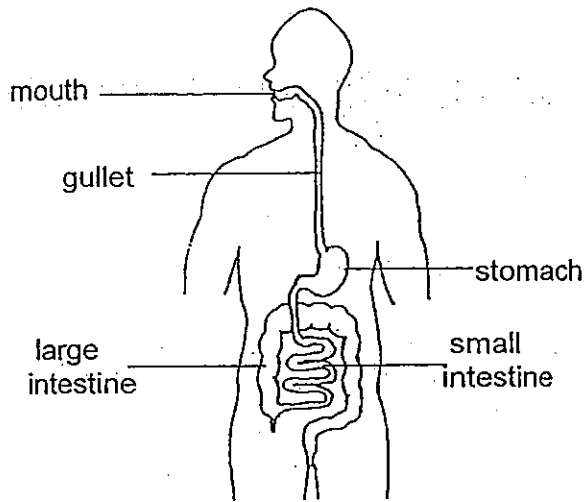
(b) How does the mushroom obtain food? [1]

(c) What does the gills of the mushroom store? [1]

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Score	4
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- 33 After eating a meal of mass, 500 g, the food travels down the digestive system. The amount of digested food and undigested food at the different digestive organs is recorded in the table below.



Organ of digestive system	Mass of undigested food	Mass of digested food	Total mass of food
mouth	470 g	30 g	500 g
gullet	470 g	30 g	500 g
stomach	400 g	100 g	500 g
small intestine	250 g	250 g	500 g
large intestine	250 g	0 g	250 g

- (a) Based on the table above, identify where digestion first took place. Explain your answer. [2]

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- (b) Why is there no change in the mass of digested food in the gullet? [1]

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- (c) Explain why there is no digested food found in the large intestine. [1]

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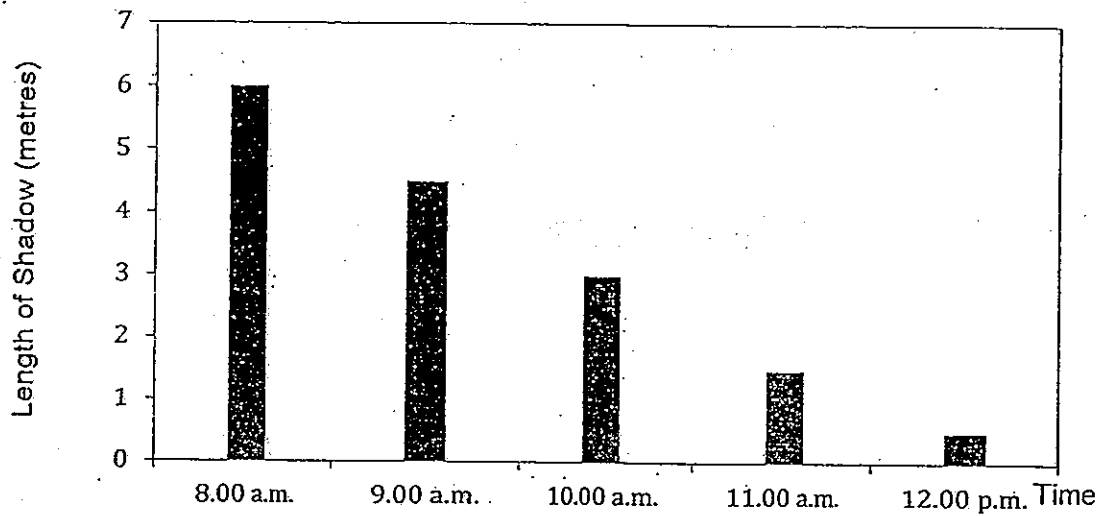
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Score	4
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- 34 Natalie measured the length of the shadow cast by a lamp-post at different times of a sunny day. She plotted a graph as shown below.



- (a) Based on the graph above only, predict the length of the shadow at 11.30 a.m. [1]

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- (b) Explain why the shadow was the shortest at 12.00 p.m. [1]

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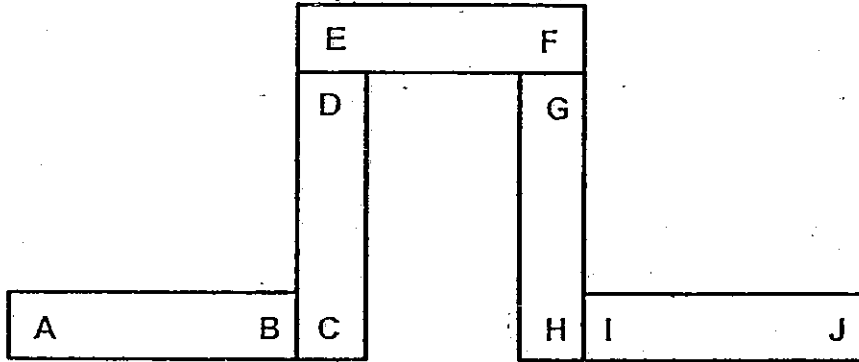
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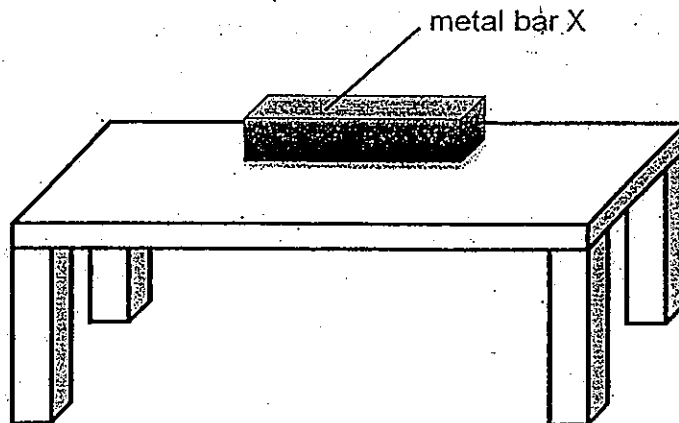
- 35 Five bar magnets with their ends marked A to J can be arranged as shown below.



- (a) If end A is the south pole of the bar magnet, determine the magnetic pole for the following ends of the bar magnets (Based on the diagram above).

(i) End E: \_\_\_\_\_ [1]

(ii) End H: \_\_\_\_\_ [1]



- (b) A piece of metal bar X was placed on the table. Using a magnet only, explain how to determine if the metal bar X on the table is a magnet. [2]

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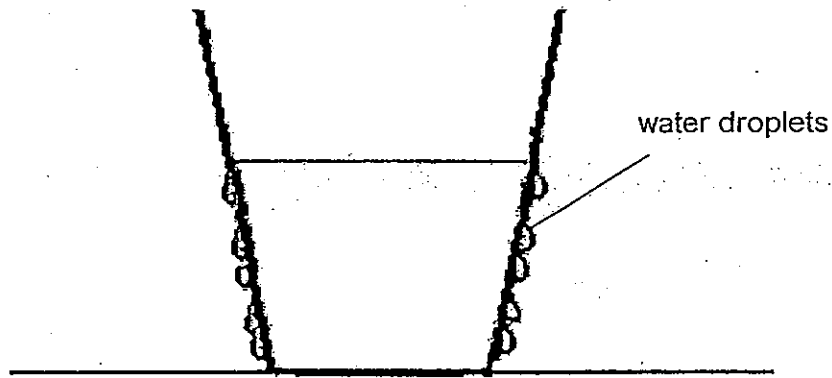


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Score	4
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- 36 Michael places a glass of water on the kitchen table. The water is not at room temperature. After five minutes, he observed water droplets forming at the outer lower surface of the glass as shown in the diagram below.



Is the glass containing hot or cold water? Explain your answer.

[2]

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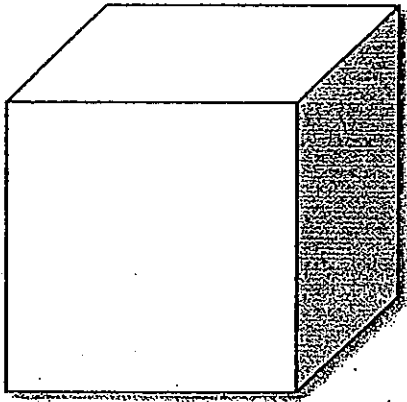
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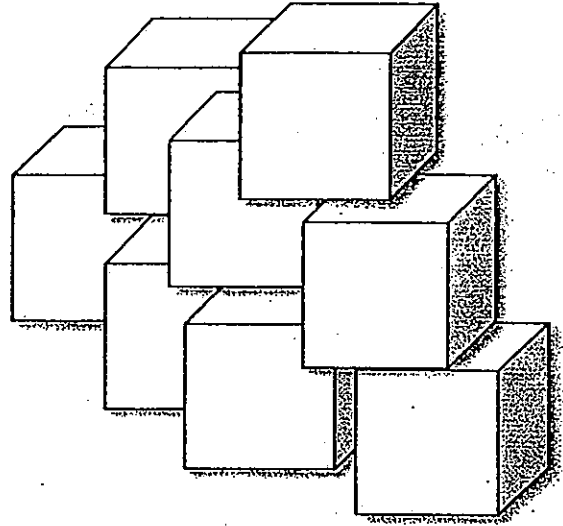
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Score	2
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- 37 Branson has two litres of water. He used the water (one litre each) to make different sizes of the ice cubes as shown below.



Ice cube A  
(one litre of water was used)



Eight ice cubes B  
(one litre of water was used)

All eight ice cube B melts faster than ice cube A.

Give two possible explanations for the observations made.

[2]

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Score	2
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38 Read the article below and answer the questions that follow.

On the 25<sup>th</sup> of March 1989, an oil tanker collided with another vessel in the open sea and spilled 230 000 litres of thick black crude oil. The effect of the incident was devastating. Many marine life like fishes, and sea birds were affected and died as a result.

- (a) Give two possible ways the sea birds would have been negatively affected by the oil spill. [2]

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- (b) Explain clearly how the oil spill will affect the fully submerged plants in the sea? [1]

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Score	3
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- 39 The table below shows the melting and boiling points of four substances, A, B, C and D.

Substance	Melting point ( $^{\circ}\text{C}$ )	Boiling point ( $^{\circ}\text{C}$ )
A	4	56
B	0	100
C	240	600
D	-200	-20

Based on the information above, put a tick ( $\checkmark$ ) to indicate in what state each of the substance will be at  $27^{\circ}\text{C}$ .

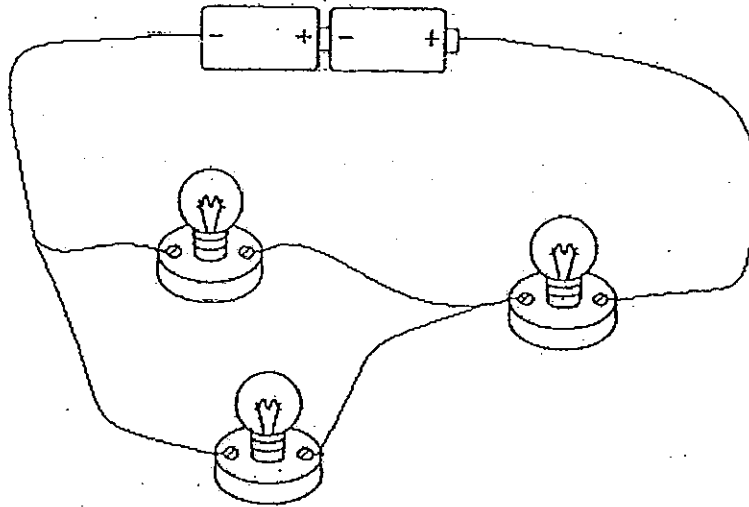
[2]

Substance	Solid	Liquid	Gaseous
A			
B			
C			
D			

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Score	2
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40 The diagram below shows a picture of an electrical circuit.

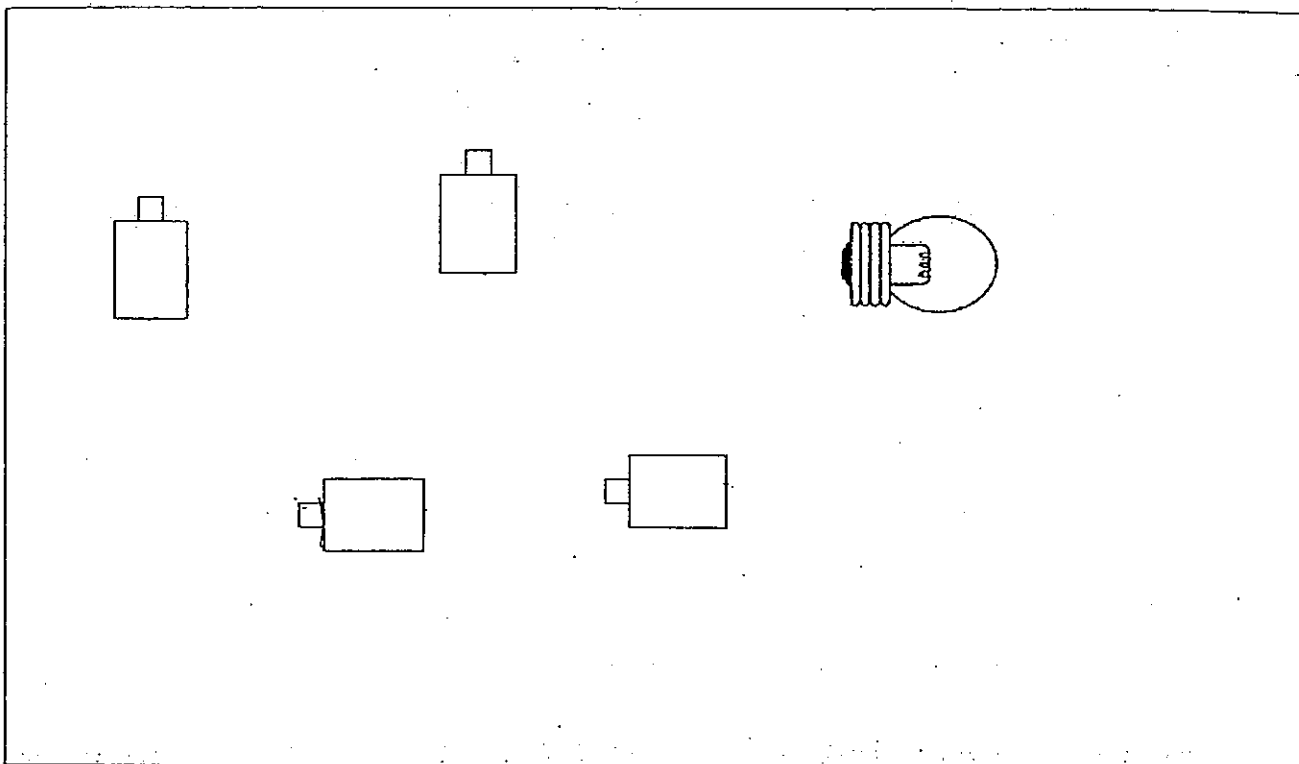


In the box below, draw using pencil and ruler a circuit diagram that represents the above electrical circuit. Your diagram must include all the electrical components in the same arrangement as shown in the diagram above. [3]

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Score	3
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- 41 The diagram below shows a bulb and four batteries. Draw wires to complete the electrical circuit such that the bulb lights up the brightest. [2]

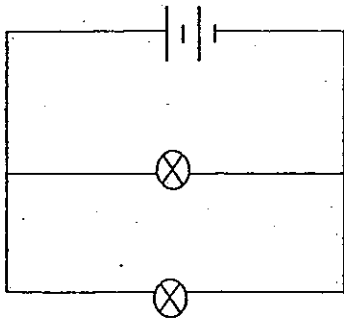


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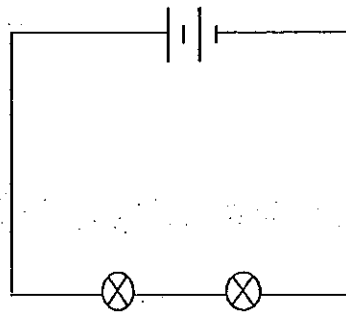
Score	2
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- 42 Study the two electrical circuits below. The batteries and bulbs used are identical and in working condition.



Circuit A



Circuit B

- (a) Based on the diagrams above, compare the brightness of the bulbs found in circuit A and B. [1]

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- (b) What will happen if one of the bulbs in circuit A fused? [1]

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- (c) What will happen if one of the bulbs in circuit B fused? [1]

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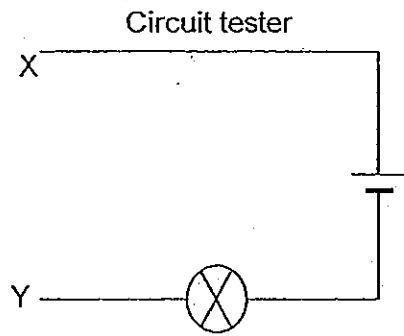


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Score	3
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- 43 A circuit tester was set up as shown in the diagram below.



Wires of different thickness were used to join point X to Y. The brightness of the bulb was measured using a data logger. The results were recorded in the table below.

Thickness of wire	Brightness of the bulb
1 mm	15 units
3 mm	11 units
5 mm	9 units

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

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- (b) According to the result, what is the relationship between the thickness of the wire and the brightness of the bulb? [1]

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- (c) Predict the likely brightness of the bulb if a 4 mm thick wire is used. [1]

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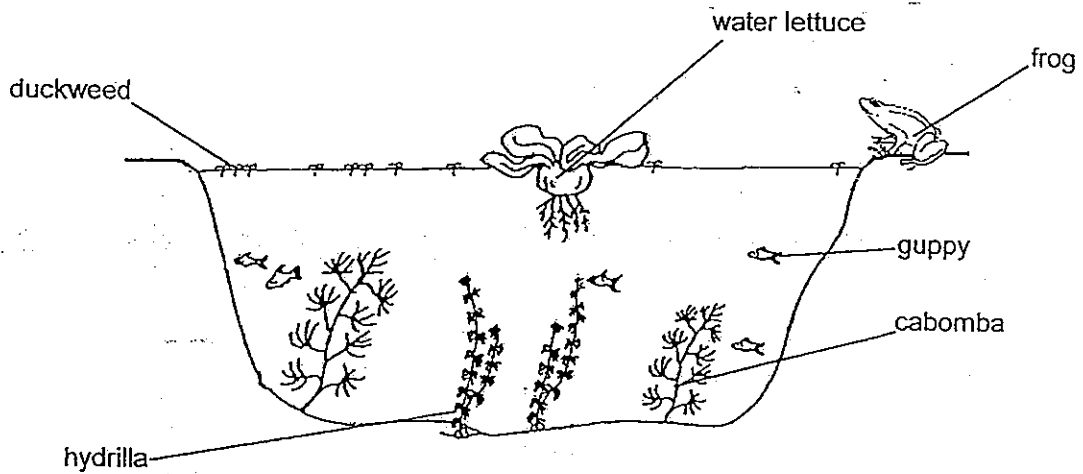


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Score	3
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- 44 The diagram below shows a pond habitat with its pond community.



Malik commented that there are only five populations in this community as a frog cannot be counted as a population by itself.

- (a) Explain why a frog alone cannot be considered as a population. [1]

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- (b) How are the guppies and fully submerged plants (hydrilla and cabomba) interdependent? [2]

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- (c) Explain how the fully submerged plants (hydrilla and cabomba) will be affected if the population of floating plants (duckweed and water lettuce) increases? [1]

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End of Booklet B

Score	4
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# ANSWER SHEET

**EXAM PAPER 2013**

**SCHOOL : ACS**

**SUBJECT : PRIMARY 5 SCIENCE**

**TERM : SA1**

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

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

31)a)No roots means that the plant cannot get water and minerals which will cause them to die.

b)He can conclude that a plant needs its roots to lives.

32)a)One: That it responds to changes.

Two: It can move on their own.

b)It absorbs food from the soil place its grows on.

c)They store spores.

33)a)Mouth, from then on the mass of digested food took place.

b)The gullet does not digest anything, it only transport the food from the mouth to the stomach.

c)The digested food was all absorbed in the small intestine before proceeding to the large intestine.

34)a)It would be One meter fifty centimeters long.

b)The sun should have been right above the lamp-post in that way, only a little shadow could have been formed.

35)a)i)South ii)North

b)Place the magnet near(the end)of metal bar. If the metal bar repels the metal bar is a magnet.

36)Cold water. The water droplets appeared on the lower surface of the glass showing that the lower surface is cooler than the surrounding water vapour. The water vapour from the surrounding air touches the cooler lower surface of the glass, loses heat and condenses to form water droplets.

37)The eight ice cube B has larger exposed surface area than ice cube A. Therefore it gains heat and melts faster.

38)a)The birds could have oil all over their wings not allowing them to take flight. And when it eats dead fish which died due to the oil, seabirds are eating contaminated food which may cause death.

b)As the oil is black it blocks the sunlight from reaching fully submerged plants and they cannot photosynthesize the plant will eventually die.

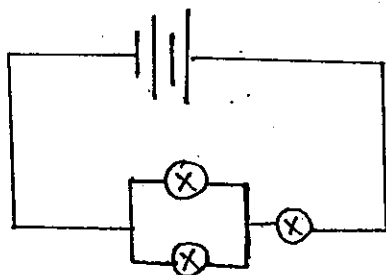
39)A: Liquid

B: Liquid

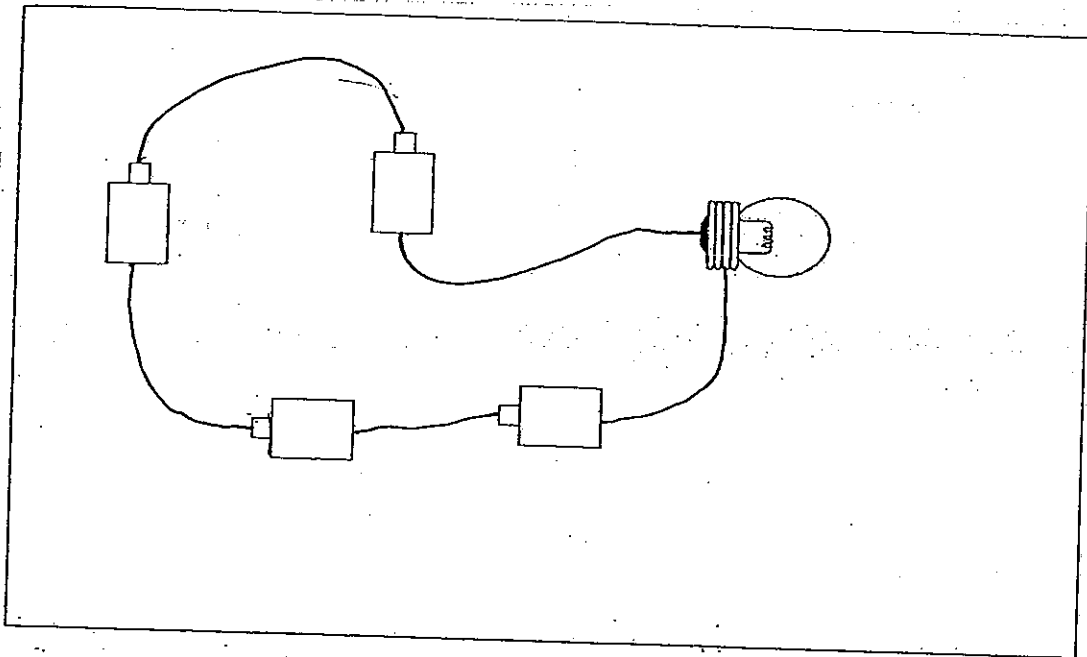
C: Solid

D: Gaseous

40)



41)



42)a)A will be brighter than B.

b)The other bulb will continue shining.

c)In circuit B, when one bulb fuses, the other will not belt.

43)a)To see whether the thickness of wire will affect the brightness of the bulb.

b)The thicker the wires are the dimmer the bulb are.

c)10 units.

44)a)There is no frog of the opposite gender around the park.

b)The guppies give carbon dioxide to the hydrilla and cabomba in return the fully submerged plant give oxygen to the guppies.

c)The floating plant will block the sun light from fully submerged plant and fully submerged cannot photosynthesis and will eventually die.

