Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2019)

PRIMARY 5

SCIENCE

BOOKLET A

Thursday **31 October 2019** **1 hr 45 min**

Name: _____ ( ) Class: 5.( )

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 28 questions in this booklet.

4 Answer ALL questions.

5 Shade your answers in the Optical Answer Sheet (OAS) provided.

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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) and shade your answer on the Optical Answer Sheet.

(56 marks)

1. Avery, Benjamin, Claus and Daniel made a few observations about fungi.

Avery	Fungi are living things.
Benjamin	All fungi are harmful.
Claus	All mushrooms are fungi.
Daniel	Fungi are neither animals nor plants.

Which of the following boys made an **incorrect** observation about fungi?

(1) Avery

(2) Benjamin

(3) Claus

(4) Daniel

2. Study the following clues about an object and identify the object.

I am not waterproof. I am made from a soft material. I allow some light to pass through me.

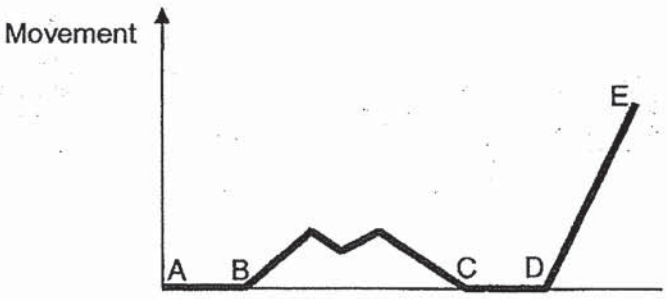
(1) beach towel

(2) ceramic mug

(3) tracing paper

(4) window pane

3. The graph shows how active an insect is during the different stages in its 4-stage life cycle.



At which part of the graph is the larva stage?

(1) AB

(2) BC

(3) CD

(4) DE

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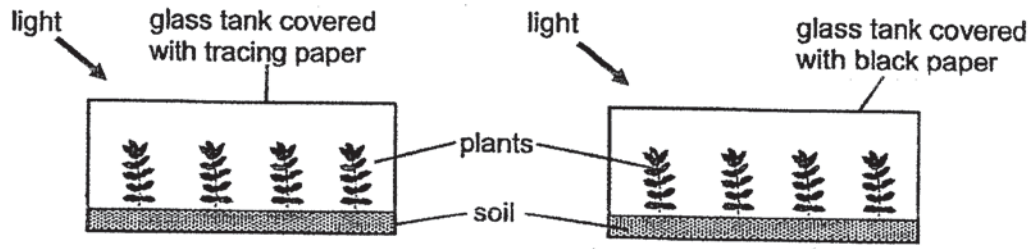
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4. Matter Q can be compressed. When it loses heat, it turns into Matter R which has no definite shape. After it loses even more heat, Matter R will turn into Matter S, which cannot be compressed.

Which one of the following is most likely Matter Q, R and S respectively?

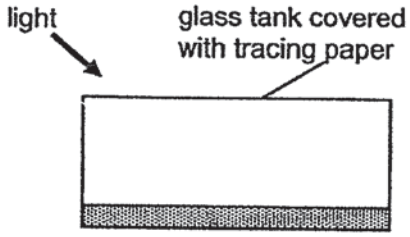
	Matter Q	Matter R	Matter S
(1)	water vapour	water	steam
(2)	steam	water	ice
(3)	Ice	water	water vapour
(4)	steam	ice	water

5. Edward wants to find out how the amount of light affects the growth of a type of plant. The diagram shows his set-ups in identical glass tanks, with four identical plants and the same amount of soil.

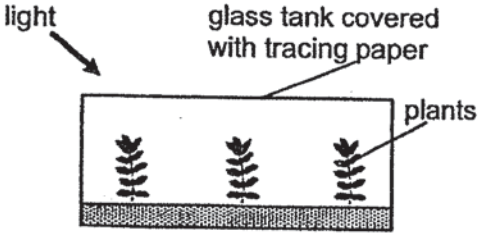


Which of the following can Edward use as a control set-up for his experiment?

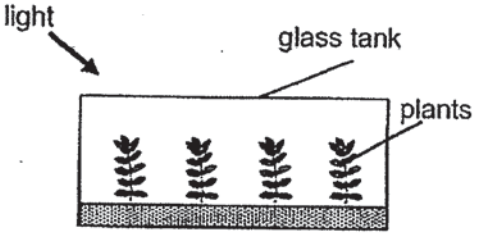
(1)



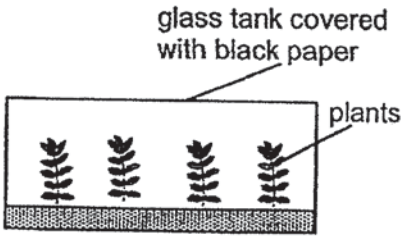
(2)



(3)



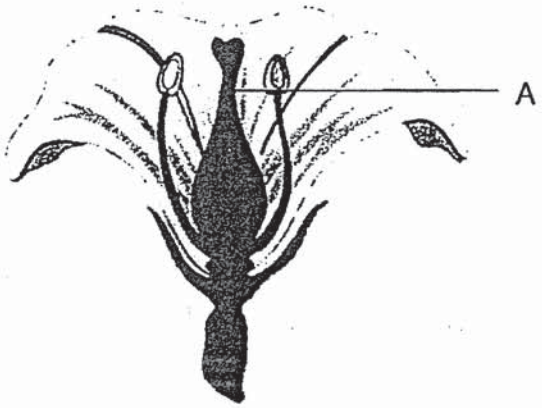
(4)



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6. The diagram shows the cross-section of a flower.



What will happen to the flower if part A is cut off?

A It will wither.

B It will not be able to reproduce.

C It will not be able to produce. pollon

D It will take a longer time before the fruit is formed.

(1) A only

(2) B only

(3) B and C only

(4) A, C and D only

7. Adrian wants to find out if Plant P grows well in water containing liquid soap. He prepared the following set-ups with identical beakers and plants.

Set-up	Amount of liquid soap (ml)	Amount of tap water (ml)	Number of Plant P
A	0	500	4
B	10	500	2
C	20	500	4
D	20	500	2

Which two set-ups should he use to conduct his experiment?

(1) A and B

(2) A and C

(3) B and C

(4) C and D

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8. Fruit E is dispersed by birds. A scientist modified fruit E by changing its colour to orange, white, yellow and red. He wanted to find out how the colour of the fruits affect their rate of dispersal. He placed 40 fruits, 10 of each colour, on a tray in a bird enclosure. He recorded the number of fruits left on the tray over 24 hours.

Time Passed (hours)	Number of Fruit E			
	Orange	White	Yellow	Red
0	10	10	10	10
6	8	10	9	7
12	7	8	7	6
18	7	5	6	4
24	4	5	5	3

Based on the results, which of the conclusion is correct?

(1) The sweeter the fruit, the faster the rate of dispersal.

(2) The darker the colour of the fruit, the slower the rate of dispersal.

(3) The brighter the colour of the fruit, the faster the rate of dispersal.

(4) There is no relationship between the colour of the fruit and the rate of dispersal.

9. Which of the following can be inherited from parents?

A Eye colour
B Hair length
C Type of eye lid
D Type of ear lobe

(1) A and C only

(2) B and C only

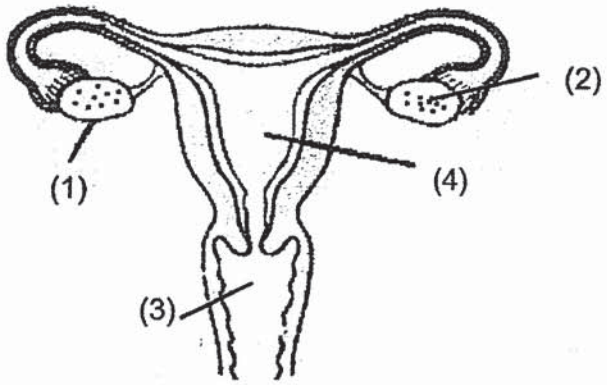
(3) A, C and D only

(4) A, B, C and D

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10. A female contracted a disease in a part of her reproductive system. Although fertilisation of the egg is still able to take place, a baby cannot develop. Which part of her reproductive system is affected?



11. The table shows the states of four substances, P, Q, R and S, at different temperatures.

Temperature (°C)	State of substances			
	P	Q	R	S
10	solid	liquid	liquid	solid
80	solid	liquid	liquid	liquid
140	gas	gas	liquid	gas

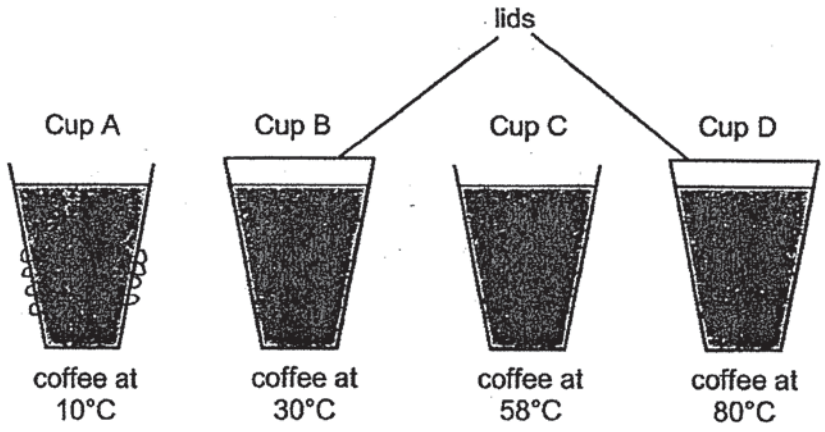
Which of the following substances, P, Q, R or S, best represents water?

(1) P
(2) Q
(3) R
(4) S

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12. Daniel prepared four identical cups with 200m*l* of coffee at different temperatures and left them on the canteen table. He covered two of the cups with lids.



In which cups of coffee will evaporation take place?

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

13. Paul conducted a test on four objects, T, U, V and S, using a bar magnet. He placed each pole of the bar magnet near one end of each object and recorded his observations in the table.

Pole of Bar Magnet near Object	**Interaction**			
	T	**U**	**V**	**S**
North pole	attraction	no interaction	attraction	attraction
South pole	attraction	no interaction	repulsion	attraction

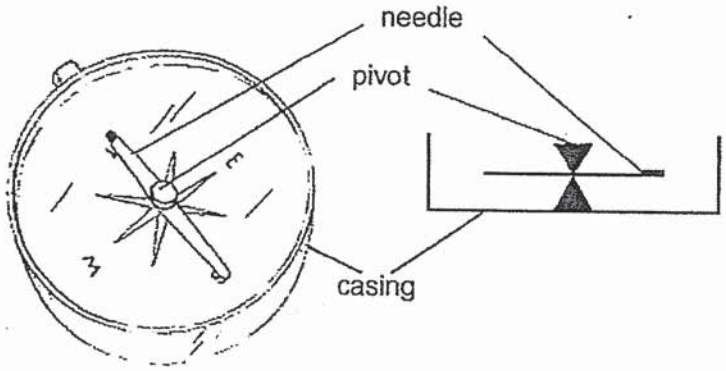
Based on Paul's observations, which of the following object(s) is/are magnet(s)?

(1) U only
(2) V only
(3) T and S only
(4) T, V and S only

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14. The diagram shows a compass seen from different views.



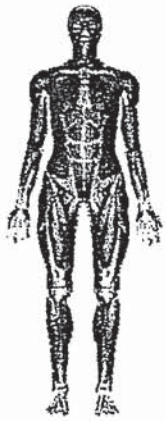
Which one of the following are possible materials of the different parts of the compass?

	Pivot	Needle	Casing
(1)	copper	steel	plastic
(2)	steel	iron	plastic
(3)	plastic	iron	steel
(4)	iron	copper	steel

15. The diagrams show the skeletal and muscular systems in a human body.



Skeletal System



Muscular System

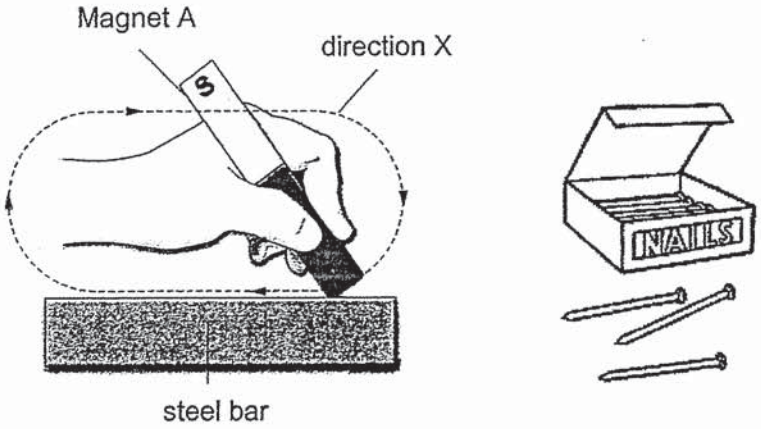
How do both systems work together in a human body?

(1) Enable movement in the body
(2) Supply oxygen to the whole body
(3) Get rid of waste materials in the body
(4) Transport digested food around the body

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16. Josh used the stroke method to make the steel bar into a temporary magnet. He then placed the temporary magnet near a box of nails and found that it could only attract three nails.



Which of the following actions done to the temporary magnet will make it attract more nails?

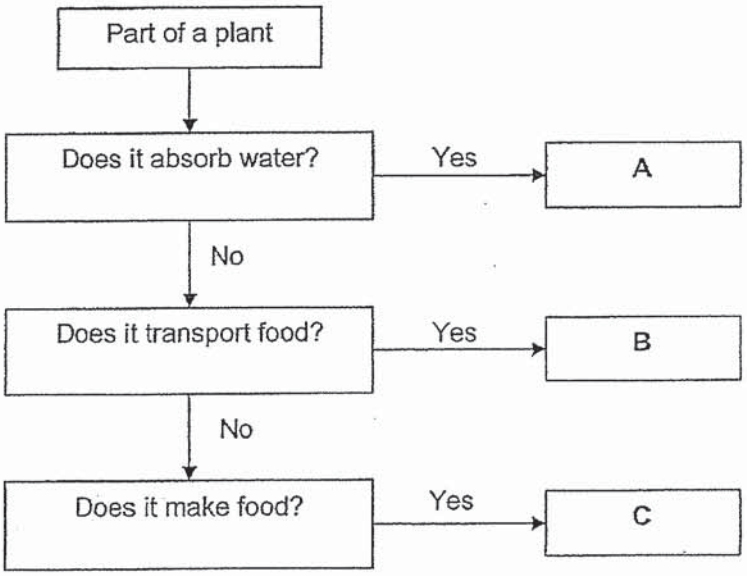
A Bring it nearer the box of nails.
B Use a hammer to hit it several times.
C Stroke it more times with Magnet A using the North pole in direction X.
D Stroke it more times with Magnet A using the South pole in direction X.

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

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17. Study the flowchart.



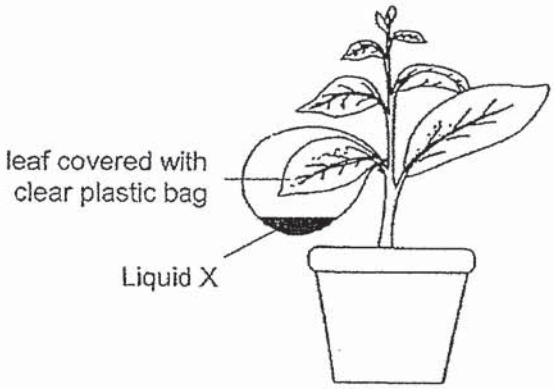
Which of the following represents A, B and C?

	A	B	C
(1)	roots	food-carrying tubes	leaves
(2)	water-carrying tubes	leaves	food-carrying tubes
(3)	roots	food-carrying tubes	water-carrying tubes
(4)	food-carrying tubes	water-carrying tubes	leaves

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18. Sam wanted to find out if there is a change in the amount of carbon dioxide given out by plants at different times of the day. He tied a clear plastic bag with Liquid X to a leaf of a plant and placed the following set-up near a window.



The table shows how Liquid X reacts to the amount of carbon dioxide in the air inside the plastic bag.

Amount of carbon dioxide	decreases	remains the same	increases
Colour of Liquid X	purple	red	yellow

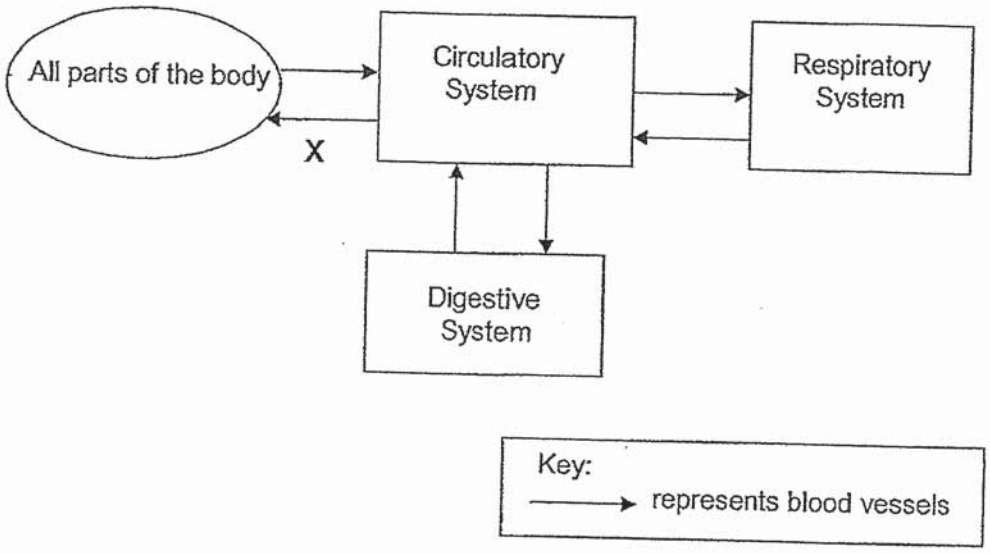
Which of the following states the correct colour of Liquid X at 1 pm and 1 am?

	1 pm	1 am
(1)	yellow	purple
(2)	red	yellow
(3)	purple	yellow
(4)	purple	red

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19. The diagram shows how the respiratory, circulatory and digestive systems of the human body work together.



What substances used by the body are transported in X?

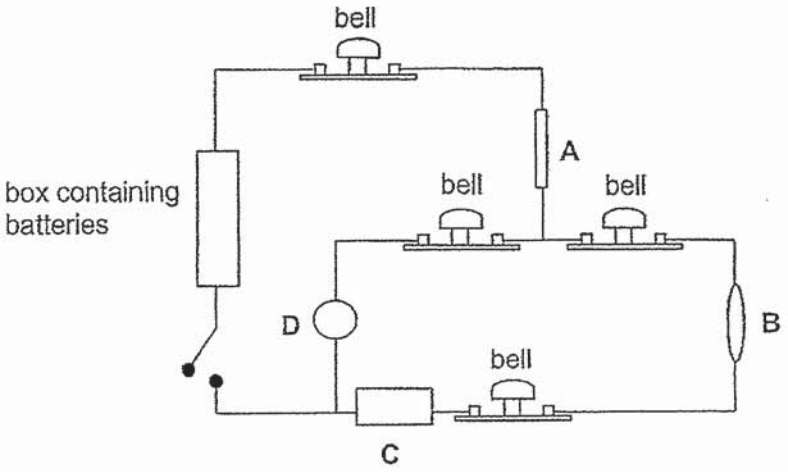
A water
B oxygen
C digested food
D carbon dioxide

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

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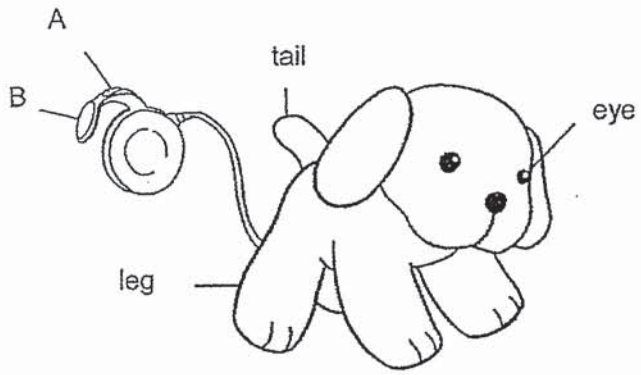
20. Brandon set up a circuit as shown. He was told that only one of the objects, A, B, C or D, in the circuit was an electrical insulator.



When he closed the switch, he observed that only three bells in the circuit rang. Which of the objects, A, B, C or D, is an electrical insulator?

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

21. Devi has a toy dog that works on batteries.



The table below shows her observations when A and/or B was switched on.

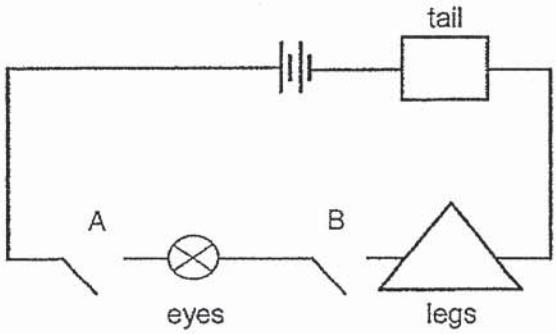
Switched on	Eyes	Tail	Legs
A and B	lit up	moves	move
A only	lit up	did not move	did not move
B only	did not light up	moves	move

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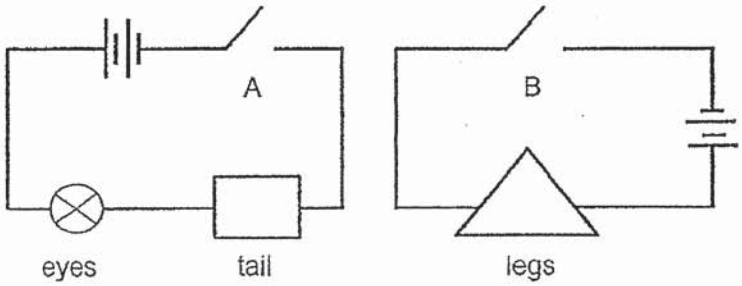
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Which of the following shows the correct circuit(s) in the toy dog?

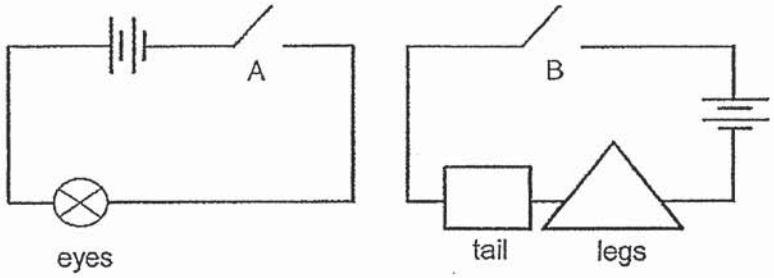
(1)



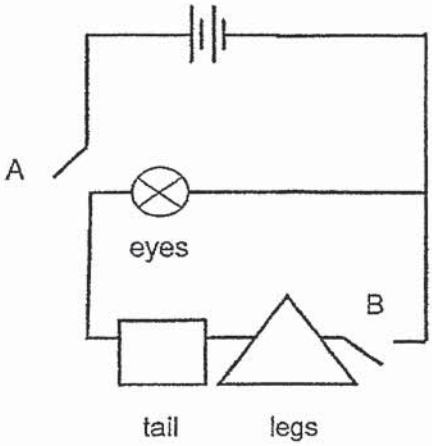
(2)



(3)



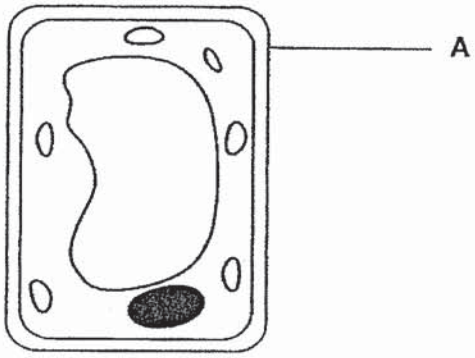
(4)



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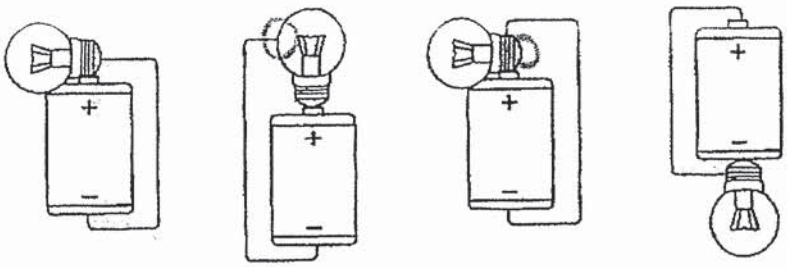
22. The diagram shows a cell.



What would happen if Part A was removed?

(1) The cell will not have a regular shape.
(2) The cell will not be able to make food.
(3) Genetic information of the cell will be lost.
(4) Substances cannot move in and out of the cell.

23. Study the circuits.



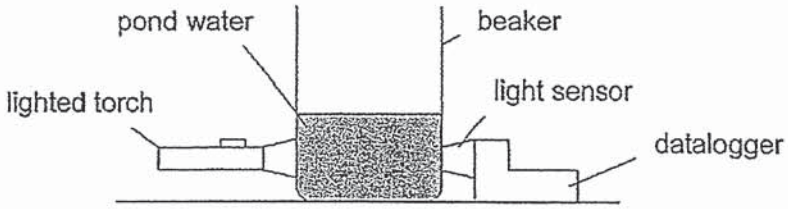
In which of the two circuits will the bulbs light up?

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

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24. Mingzhe wanted to investigate the clarity of the water from ponds A, B, C and D. He set up the experiment as shown.



He recorded the amount of light detected by the light sensor which is connected to a datalogger.

	Pond A	Pond B	Pond C	Pond D
Amount of light detected (units)	1400	2000	500	1000

Which of the following shows the correct order of the pond water from the least to the most cloudy?

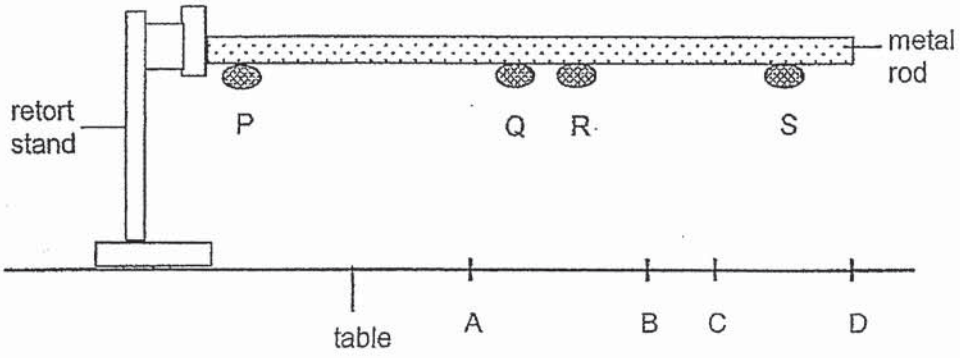
(1) A, B, C, D

(2) B, A, D, C

(3) C, D, A, B

(4) D, C, B, A

25. The diagram shows a metal rod with four similar pieces of wax, P, Q, R and S, attached to it.



When a lighted candle was placed on the table, the wax fell off the rod in the following order, R, Q, S and P.

Where was the lighted candle placed?

(1) A

(2) B

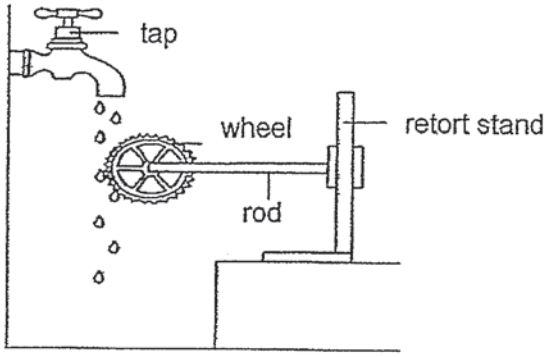
(3) C

(4) D

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26. Emma placed a wheel directly below a tap and turned it on. Water from the tap caused the wheel to spin.



Which of the following actions would make the wheel spin faster?

A Use a longer rod

B Increase the water flow from the tap

C Use a similar wheel of a smaller mass

D Increase the height of the tap from the ground

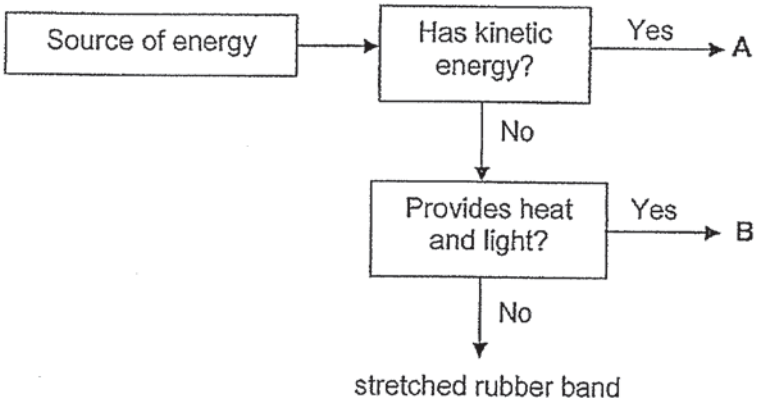
(1) A and C

(2) A and D

(3) B and D

(4) B, C and D only

27. Study the flowchart. A and B are sources of energy.



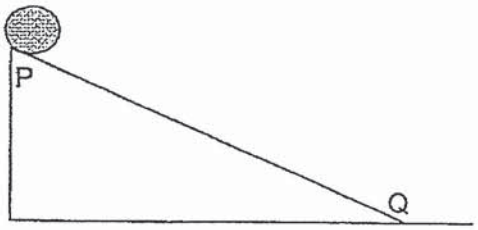
What can A and B be?

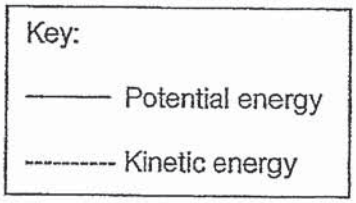
	A	B
(1)	wind	running water
(2)	running water	Sun
(3)	Sun	fossil fuels
(4)	fossil fuels	wind

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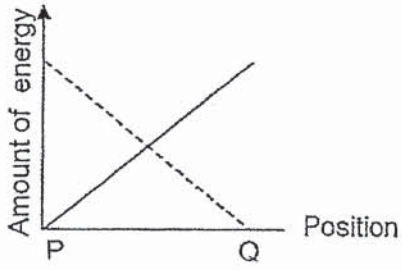
28. A ball is released on a ramp from position P as shown in the diagram.



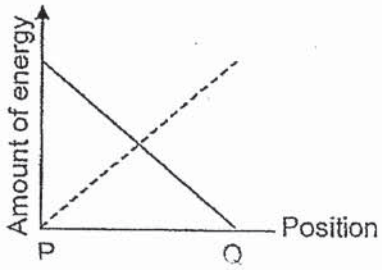


Which graph shows the change in potential energy and kinetic energy of the ball from Position P to Q?

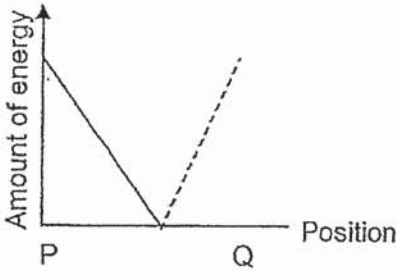
(1)



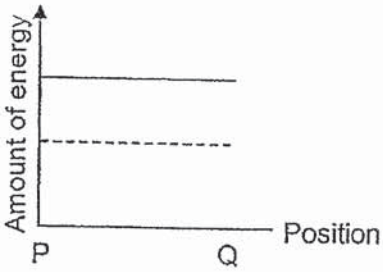
(2)



(3)



(4)



End of Booklet A

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2019)

PRIMARY 5

SCIENCE

BOOKLET B

Thursday **31 October 2019** **1 hr 45 min**

Name: _____ ( ) Class: 5.( ) Parent's Signature: _____

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 13 questions in this booklet.

4 Answer ALL questions.

5 The marks are given in the brackets [ ] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	56	
B	44	
Total	100	

This question paper consists of 17 printed pages (inclusive of cover page).

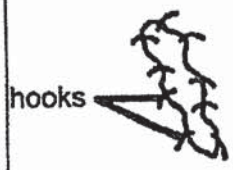
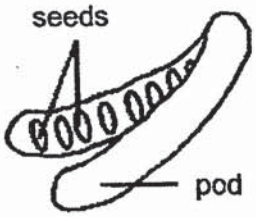
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For questions 29 to 41, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

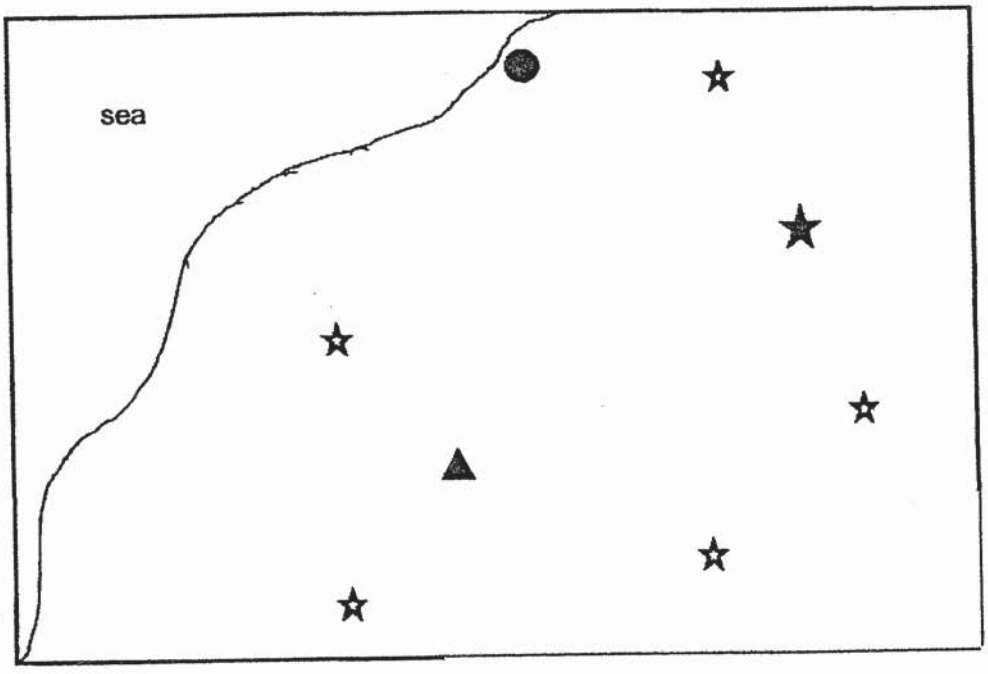
(44 marks)

29. Study the diagram of the fruits from plants X, Y and Z.

	Plant X	Plant Y	Plant Z
Fruit			
Parent plant represented by	★	▲	●
Young plant represented by	☆	△	○

(a) The map shows the location of parent plants X, Y and Z.

Using symbols from the table, draw on the map the likely locations of five young plants for each of the parent plants, Y and Z. The locations of young plants of X has been done for you. [1]



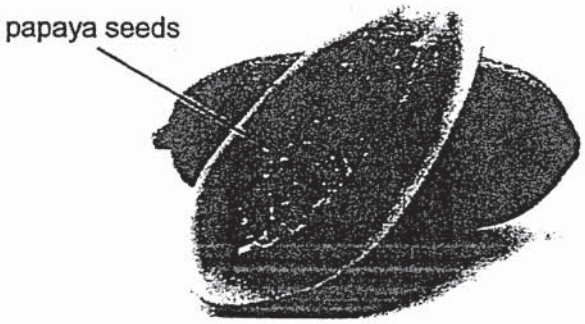
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(b) Explain how the dispersal of the fruit of Plant X is different from that of the dispersal of the papaya seeds. [1]



(c) Why are seeds dispersed far away from their parent plant? [1]

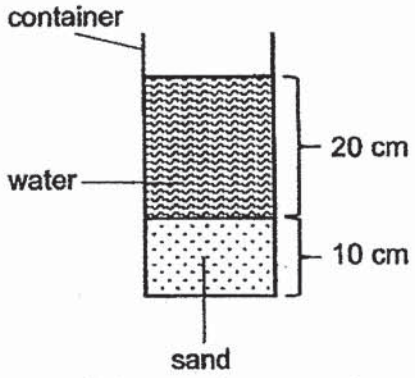
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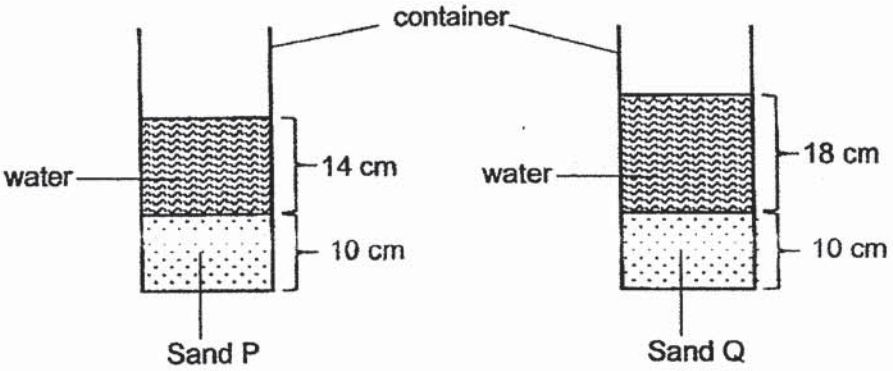
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30. Mark conducted an experiment by pouring water into two identical containers containing Sand P and Q. A sample of his set-up is shown.



After 30 minutes, the results of his experiment are shown in the diagrams below.



(a) Explain clearly what caused the difference between the water level in the two containers containing Sand P and Q. [2]

_____

_____

_____

(b) Matter occupies space and has mass. Other than these properties, which other property of liquid is shown in this experiment? [1]

_____

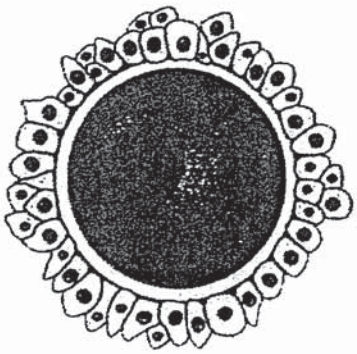
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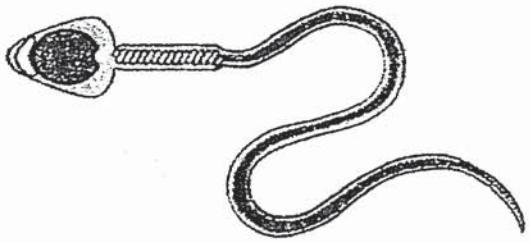
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31. The diagram shows the cells responsible for human reproduction.



Cell A

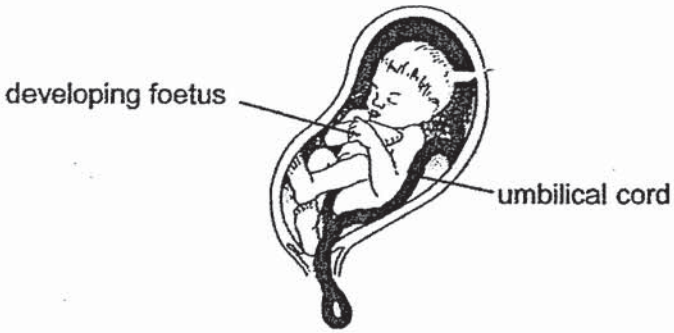


Cell B

(a) Name cell A and cell B and the parts that produce them. [2]

Cell	Name of the cell	Part that produces it
A		
B		

Study the diagram.



(b) State a function of the umbilical cord. [1]

_____

_____

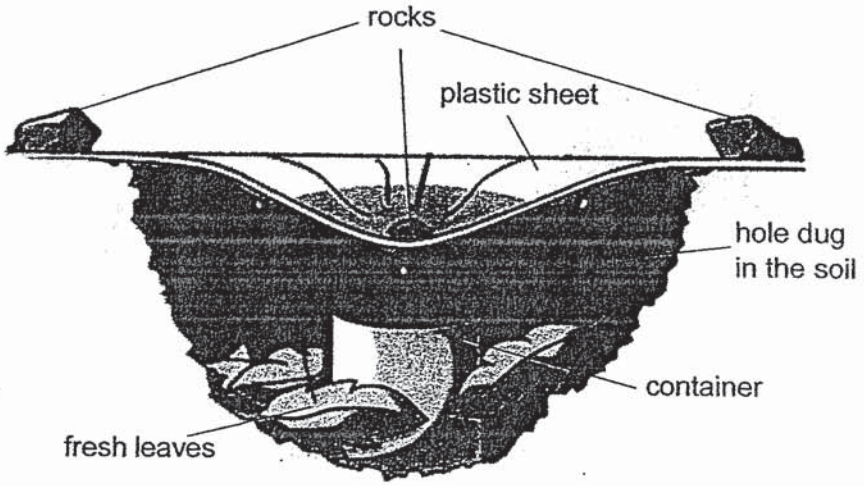
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32. Oliver and Paul were lost in the forest. Oliver made a solar still using materials found in the forest, as shown in the diagram, to collect drinking water.



(a) Describe how the solar still helps Oliver obtain drinking water. [2]

_____

_____

_____

(b) Oliver realised that the collection of water was taking too long. What could Oliver do to the solar still to increase the speed of the collection of water? [1]

_____

_____

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Paul then wanted to find out if the material of the sheet in the solar still affects the rate at which water was collected.

(c) Complete the table by placing a (✓) next to the variables that are to be kept the same. [1]

Variables	Keep the same
Number of fresh leaves	
Size of sheet	
Location of the solar still	
Type of sheet	

(d) Paul used his T-shirt to replace the plastic sheet in the solar still. He realised no water was collected in the container. Using the property of materials, explain why. [1]

_____

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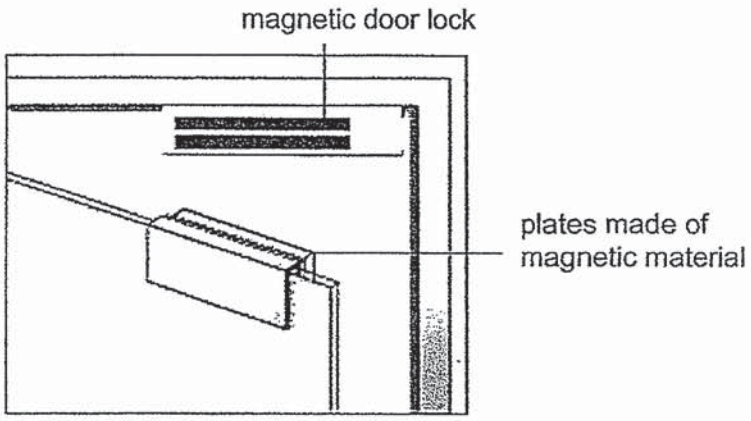
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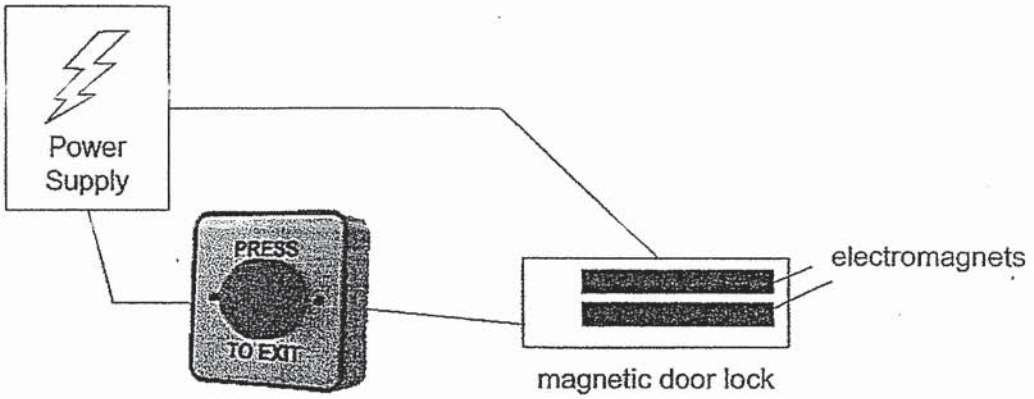
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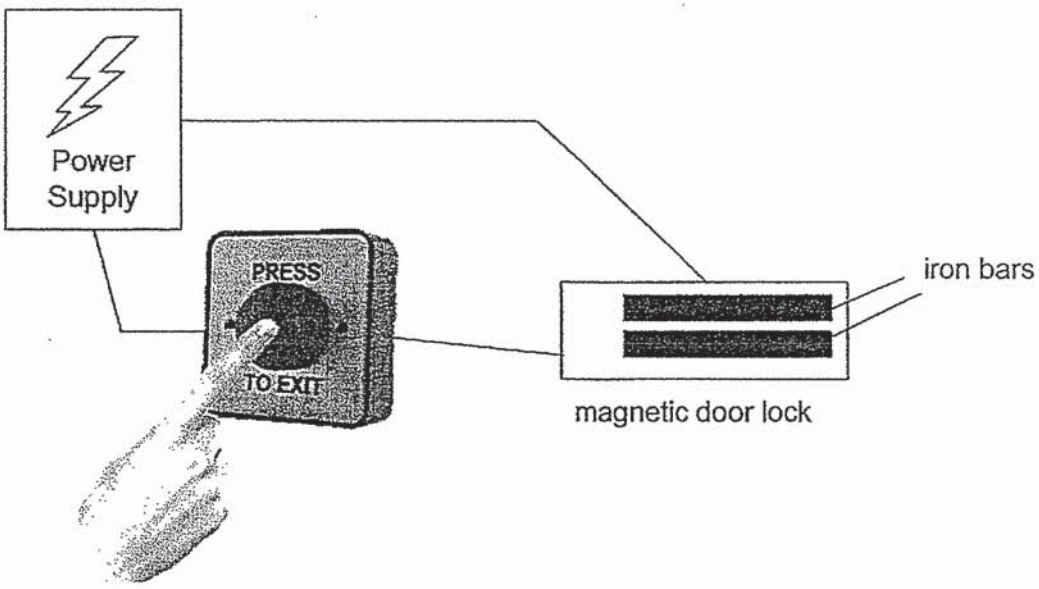
33. The diagram shows a magnetic door lock. It is commonly used in buildings for security purposes. If you are in the room, there is usually a button for you to press to exit the room.



The simplified setup of the circuit of the magnetic door lock is shown below.



When the button is pressed, the circuit changes as shown in the diagram below and the door opens.



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(a) Explain clearly how the door opens when the button is pressed. [2]

(b) During a fire, electrical power is cut off. How will a magnetic door lock help people inside the room escape? [1]

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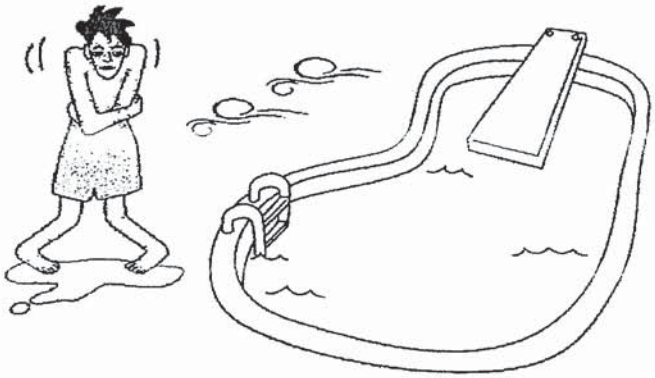
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34. (a) State whether heat is gained or lost during the following processes by filing in the table with "gain heat" or "lose heat". [1]

Processes	Gain / Lose Heat
Evaporation	
Condensation	
Freezing	
Melting	

(b) Jimmy was swimming in the pool in the afternoon. [2]



When he came out of the pool, he felt cold. As he started walking, a strong ~~wing~~ blew and he felt colder. Explain clearly why.

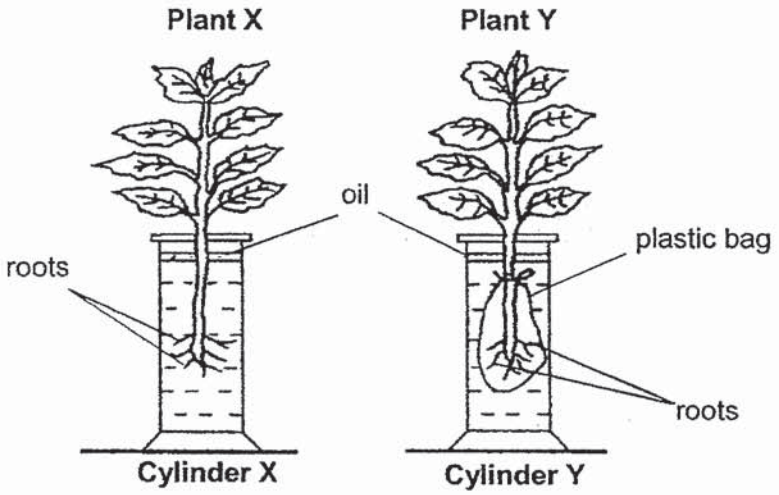
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35. Farhan carried out an experiment on two plants, X and Y as shown.



He recorded the volume of water in cylinders X and Y on Day 1 and Day 2 in the table.

	Volume of water on Day 1 (ml)	Volume of water on Day 2 (ml)
Cylinder X	100	90
Cylinder Y	100	100

(a) From the table, what do you observe about the volume of water in Cylinder X from Day 1 to Day 2?

[1]

_____

(b) Farhan predicted that Plant Y will wither and die within two weeks. Do you agree with him? Explain why.

[1]

_____

_____

(c) What is the purpose of the layer of oil in the containers? [1]

_____

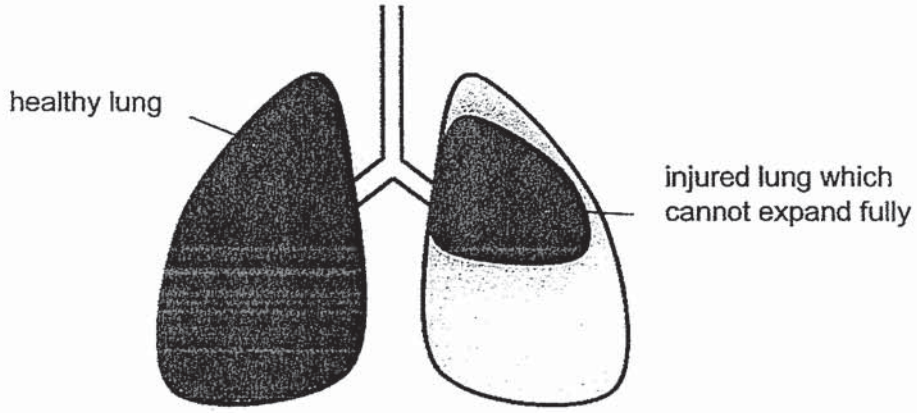
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36 When someone has an injured lung, that lung cannot expand fully. The diagram shows the lungs of a person with a healthy lung and an injured lung.



(a) Describe how oxygen in the surrounding air enters the lungs. [1]

_____

_____

(b) Name the two gases that are exchanged in the lungs when a person breathes. [1]

_____

(c) A person with an injured lung breathes more quickly than a person with healthy lungs. Explain why this happens, based on the function of lungs. [1]

_____

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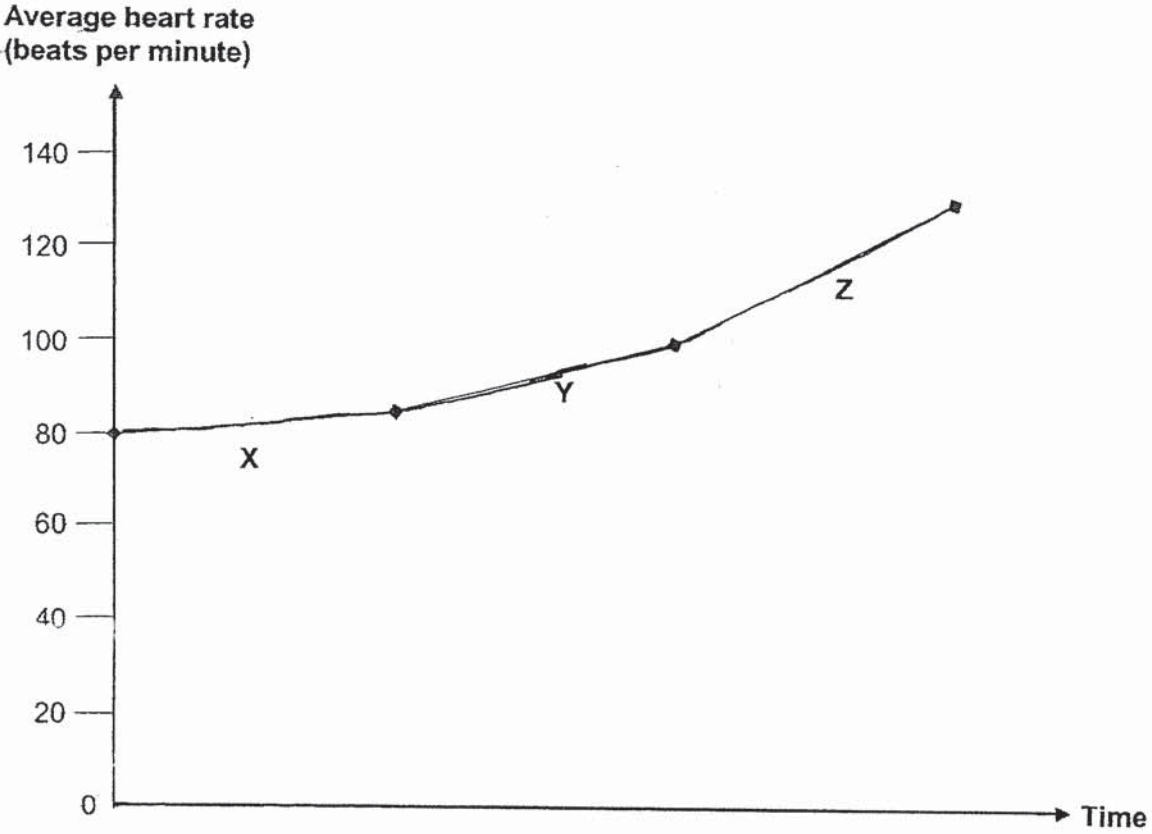
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37. Tom wanted to find out how different types of activities affect his average heart rate. He carried out Activity X, followed by Y, then Z. Activity X was the least vigorous and Z was the most vigorous. He plotted a graph to show his average heart rate during the activities.



(a) State the relationship between the type of activities and his average heart rate. [1]

_____

_____

(b) Explain why Tom's average heart rate increased when he exercised vigorously. [2]

_____

_____

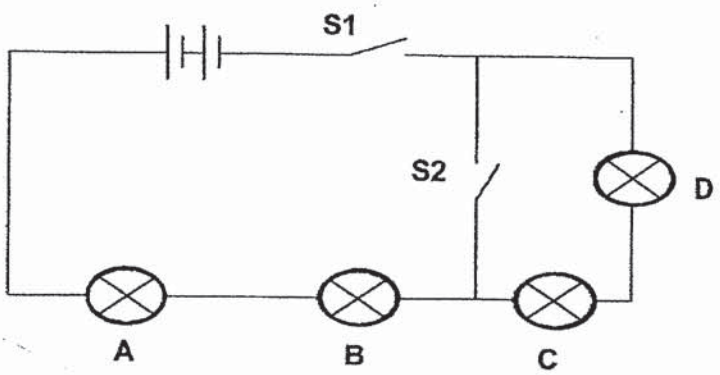
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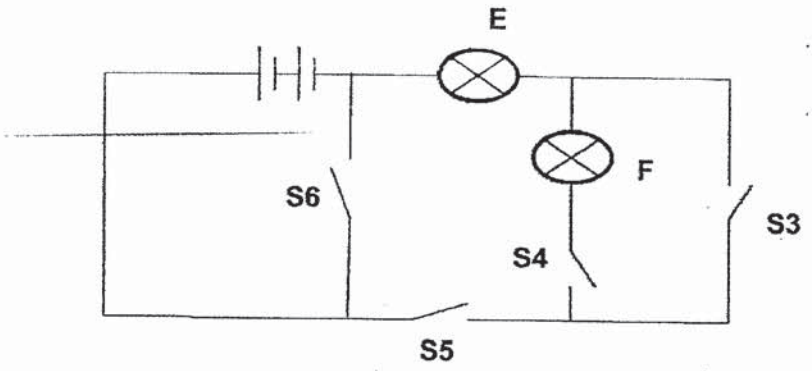
38. Sophie set up Circuit 1 with identical batteries and bulbs.



(a) Put ticks (✓) in the boxes to show the bulbs that will light up based on the information provided on the switches. [2]

Switch		Will the bulb light up?			
S1	S2	A	B	C	D
open	open				
open	closed				
closed	open				
closed	closed				

(b) Sophie set up Circuit 2 as shown below.



Identify the least number of switch(es) Sophie must close in order for both bulbs to light up at the same time. Name the switch(es). [1]

(c) Draw a circuit diagram, using wires, bulbs E and F, and two batteries, such that the bulbs are brighter than those in Circuit 2. [1]

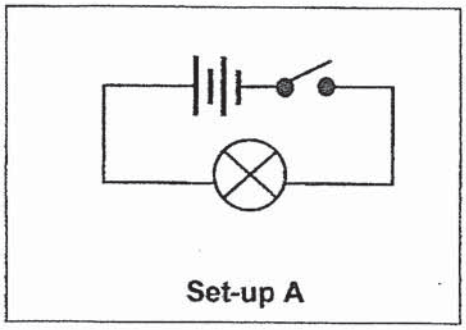
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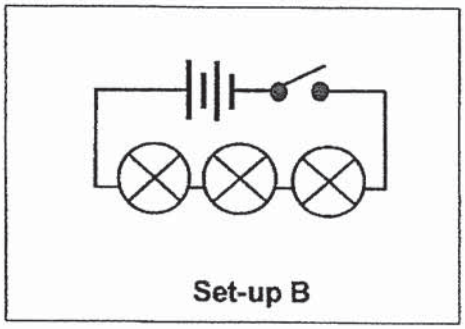
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39. Jordan wants to find out if the number of batteries affect the brightness of the bulbs. He sets up the experiment as shown using similar batteries and bulbs.

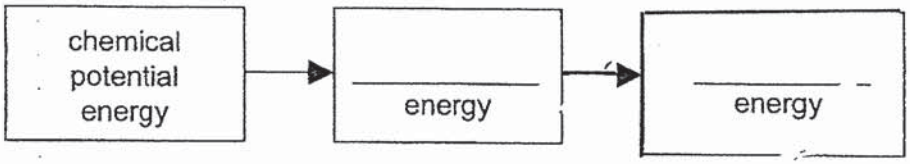


Set-up A



Set-up B

(a) For set-ups A and B, state the main energy changes when the switch is closed. [1]



(b) Explain clearly why Jordan could not test the aim of his experiment. [2]

_____

_____

(c) If he corrected his set-ups and conducted the test again, how would using similar batteries ensure a fair test? [1]

_____

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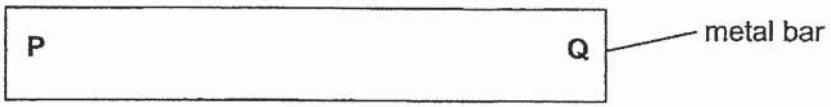
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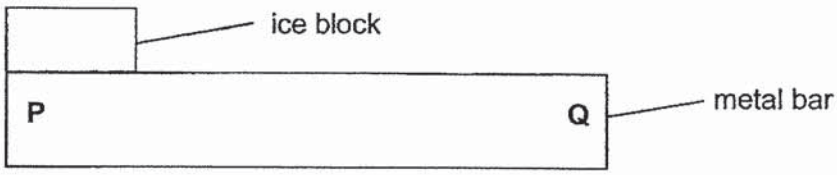
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40. The diagram shows a metal bar at room temperature of 30°C.



Guang Jie placed an ice block at end P as shown.



(a) Ten minutes later, the temperature of the metal bar at end P decreased. Explain why. [1]

_____

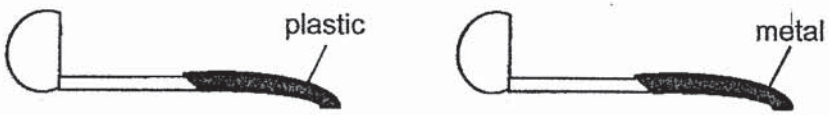
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(b) After the ice block had melted completely, the temperature of the metal bar gradually increased to room temperature of 30°C. Explain why. [1]

_____

_____

Guang Jie wanted to stir a pot of boiling soup with a ladle. Ladles A and B are of the same size.



Ladle A **Ladle B**

(c) Which ladle should he use so that he does not burn his hand? Explain clearly why. [2]

_____

_____

_____

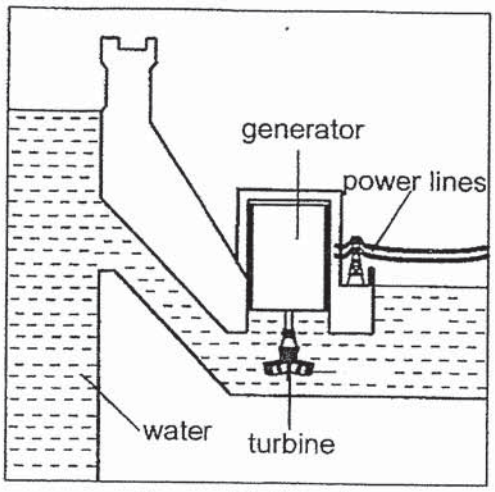
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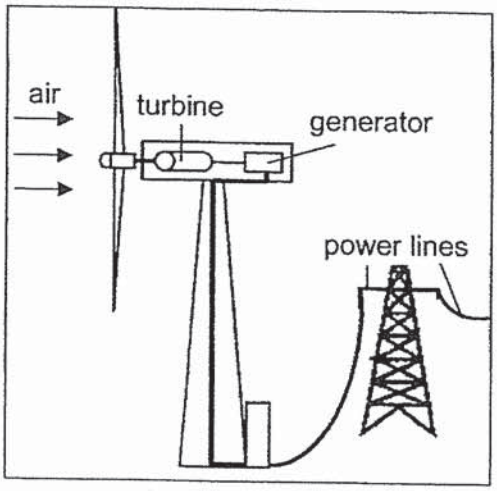
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41. The diagrams show two power stations.



Power Station A



Power Station B

(a) What is the source of energy for each of the power stations? [1]

(i) Power Station A: _____

(ii) Power Station B: _____

(b) What is the advantage of using Power Station A as compared to a power station that uses fossil fuels to produce electricity? [1]

_____

_____

(c) An island has a large number of Power Station B which provides most of its electricity needs. However, the island also has power stations that use fossil fuels. Give a reason why. [1]

_____

_____

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ANSWER KEY

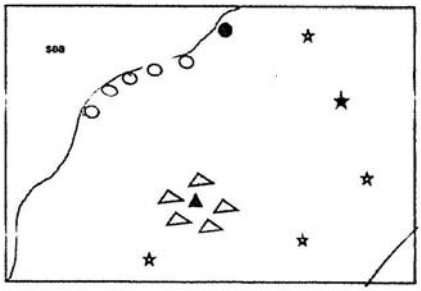
YEAR : 2019
LEVEL : PRIMARY 5
SCHOOL : ANGLO-CHINESE SCHOOL
SUBJECT : SCIENCE
TERM : SA2

BOOKLET A

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

BOOKLET B

Q29 (a)



(b) X is dispersed by hooking / attaching / clinging onto the fur of animals while papaya seed are eaten/swallowed by animals and then passed put in their droppings.

(c) To reduces overcrowding and competition for light, water , nutrients, and space.

Q30 (a) There was more air space in sand P than in sand Q. The water could fit n the tiny air spaces in the sand and sand P had more air spaces as a result having more water occuping the space previously occpied by the air.

(b) Liquids have no definite shape.

Q31 (a)

Cell	Name of the cell	Part that produces it
A	Egg cell	Ovary
B	Sperm cell	Testis

(b) The umbilical corb trasports water, digested food and oxygen to foetus.

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Q32 (a) The fresh leaves lose water through the leaves as water vapour. The water vapour come in contact with the cooler under side of the plastic sheet and lose heat, condensess to form tiny water droplets. The water droplets dripped into the container.

(b) Solar increase the speed of the collection of water and greater temperature different and add more water vapour.

(c)

Variables	Keep the same
Number of fresh leaves	✓
Size of sheet	✓
Location of the solar still	✓
Type of sheet	

(d) Paul's T-shirt absorbs the water.

Q33 (a) Electric current cannot flow throught the circuit , electomagnet is demagnetised to become iron bars do not attract plate made of magnetic material.

(b) Without electrical power, the circuit will be open the electro-magnet will be demagnetised so the door will be opened.

Q34 (a) Evaporation → Gain heat
Condensation → Lose heat
Freezing →Lose heat
Melting → Gain heat

(b) Jummy flet cold as the water droplets on hi body gained heat from evaporated. When a strong wind blew and the rate of evaporation increased causing Jimmy lost heat.

Q35 (a) he volume of water decreased.

(b) Yes, I agree. The roots in plant Y cannot absorb water and thus the plant will wither.

(c) The ensure that any loss in water is due to the plants absorbing the water and not due to other things.

Q36 (a) Air enters the mouth and travels down the wind pipe and to the lungs.

(b) Carbon dioxide and oxygen

(c) The injured lung exchanges gases is lower / has a slower rate of gaseous exchange.

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Q37 (a) The more virgorous the activities is the higher his average heart rate.

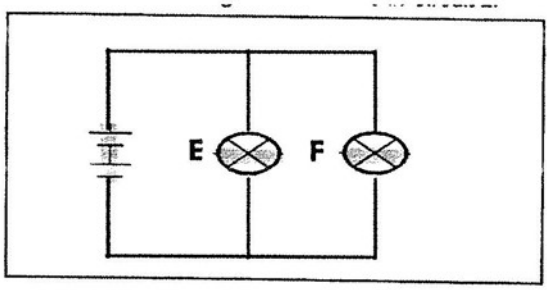
(b) Tom heart rate increases to pump blood containing oxygen and digested food to the muscles faster for more respiration to release more energy.

Q38 (a)

Switch		Will the bulb light up?			
S1	S2	A	B	C	D
open	open				
open	closed				
closed	open	✓	✓	✓	✓
closed	closed	✓	✓	✓	✓

(b) S4 and S5

(c)



Q39 (a) Chemical potential energy → electrical energy → light energy

(b) He should have kept all the variables the same except for the number of batteries.

Q40 (a) End P lose heat to the ice cube. Thus the temperature of the metal bar ar End P decrease.

('he metal bar gained heat from the surrounding ultil it reach room emperature.

(c) Ladle A. Plastic is a poorer conductor of heat than metal so it will heat slower.

Q41 (a) (i) Running water

(ii) Moving wind

(b) Power station A uses a renewable sources of energy that does not run out.

(c) On same days, there are no wind. The only way to generate electricity is to burn fossil fuels.

END

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