

**NANYANG PRIMARY SCHOOL**

**PRIMARY 6 SCIENCE**

**CONTINUAL ASSESSMENT 1  
2013**

**BOOKLET A**

**Date : 7 March 2013  
Duration : 1 h 45 min**

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

**Class: Primary 6 ( )**

**Parent's signature: .....**

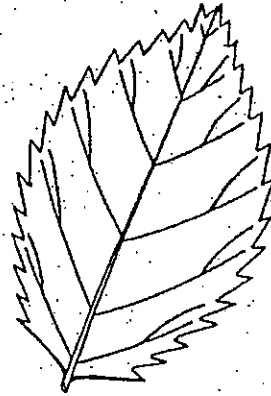
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

**Booklet A consists of 28 printed pages including this cover page.**

**Section A (15 x 2 marks = 30 marks)**

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

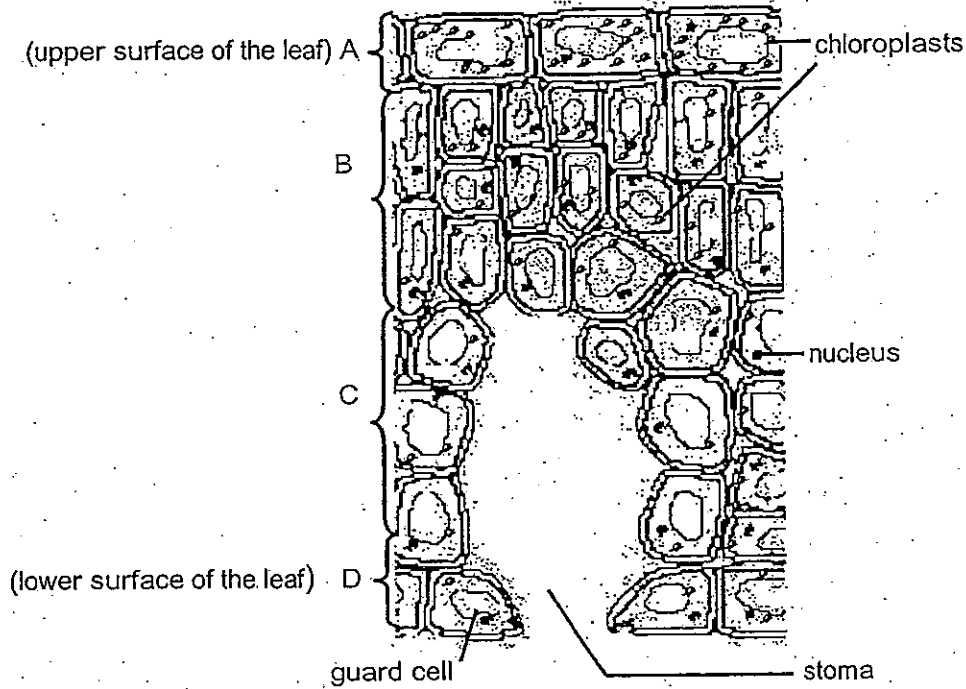
1. Study the diagram below carefully.



Which one of the following describes the leaf correctly?

	Leaf Shape	Leaf Edge	Vein Pattern
(1)	oval	jagged	network
(2)	oval	entire	parallel
(3)	round	jagged	network
(4)	round	entire	parallel

2. The diagram below shows the cross-section of a leaf. A, B, C and D represent the four layers that could be seen under the microscope.



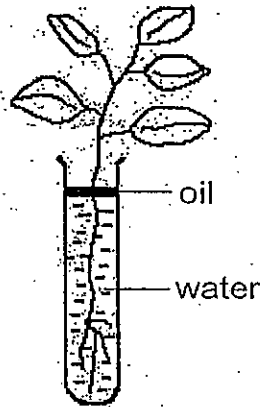
Which of the following statement(s) is/are correct?

- A. The cells in layer A contain many chloroplasts to enable the leaf to make food.
- B. All the cells in the four layers have a cell wall to prevent some substances from entering the cells.
- C. The guard cells in layer D control the size of the stoma to trap sunlight in order to carry out photosynthesis.

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

3. Da Ren put four similar plants in four different boiling tubes labeled A, B, C and D. He poured the same volume of water in each tube and marked the water level. He then added an equal amount of oil on the water surface for each tube.

Next, he coated the leaves of 3 of the plants with oil, as indicated below, and placed the four tubes under the sun.



Tube A	Tube B	Tube C	Tube D
oil is coated on both upper and lower surfaces of leaves	oil is coated only on upper surface of leaves	oil is coated only on lower surface of leaves	no oil is coated on the surfaces of the leaves

After six hours, he observed the water level in the four tubes.

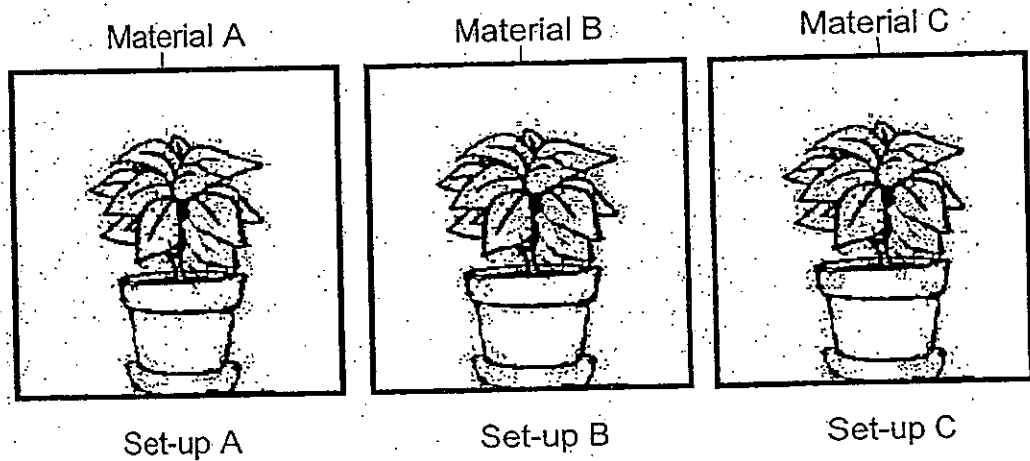
Which one of the following correctly shows the expected volume of water that would be left in the tubes, from the most to the least?

most  $\longrightarrow$  least

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

4. Mai wanted to find out how the material of a box affects the rate of photosynthesis in a plant.

She had set-ups, A, B and C, each with a box of the same dimension but made of different materials, A, B and C respectively. In each box, she put a similar well-watered plant. She measured the amount of carbon dioxide in the boxes at the start of the experiment.

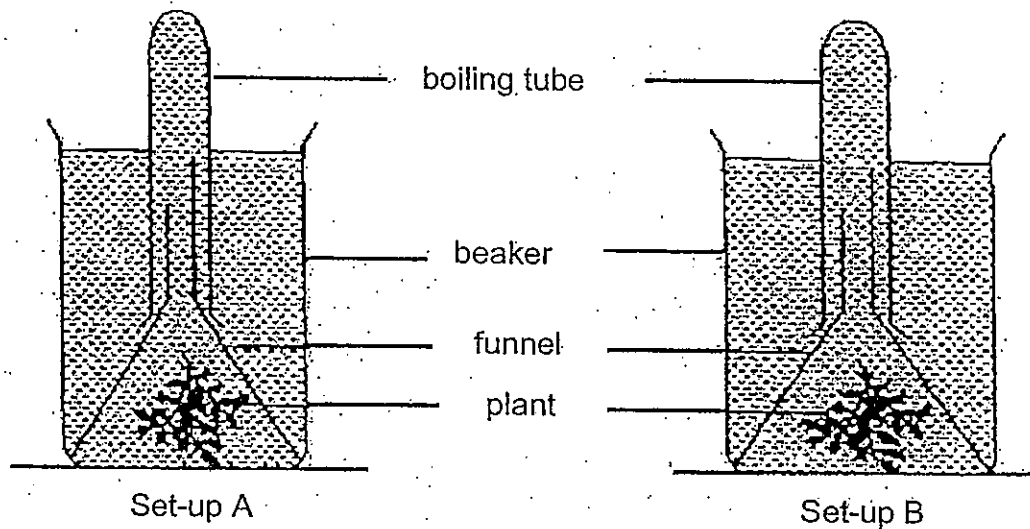


Four hours later, she found that the level of carbon dioxide in set-up A was the highest, followed by B, then C.

Which one of the following shows the most likely material of the boxes?

	Set-up A	Set-up B	Set-up C
(1)	clear plastic	frosted glass	wood
(2)	cardboard	tracing paper	glass
(3)	wood	clear plastic	frosted glass
(4)	glass	cardboard	tracing paper

5. Julian placed two similar aquatic plants in an inverted funnel and boiling tube, fully submerged in a beaker of water. He added baking soda to only one set-up, to increase the concentration of carbon dioxide in the water.



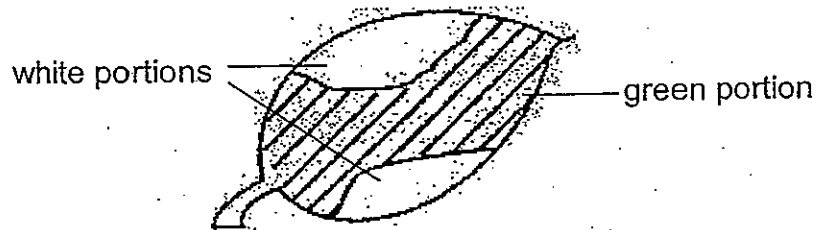
He placed the two set-ups in the sun and measured the height of the column of gas collected in the inverted boiling tube for each plant after 20 minutes. He recorded his readings in the table below.

	Set-up A	Set-up B
Height of column of gas collected (cm)	2	6

Which one of the following statements correctly identifies and explains the set-up which contained baking soda?

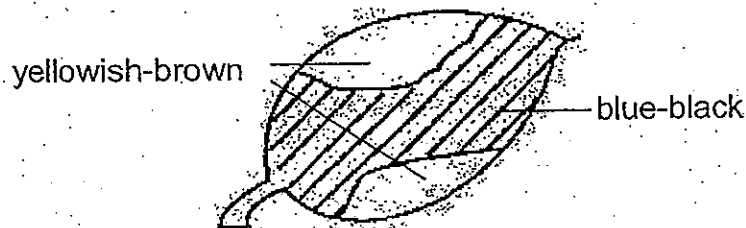
	Set-up	Explanation
(1)	A	The plant was able to photosynthesise at a faster rate because more carbon dioxide was supplied.
(2)	A	The plant respired at a faster rate because more carbon dioxide was supplied and had to be released.
(3)	B	The plant was able to photosynthesise at a faster rate because more carbon dioxide was supplied.
(4)	B	The plant photosynthesise at a slower rate because there was too much carbon dioxide.

6. A variegated leaf containing green and white portions was freshly plucked from a plant which had been left in the sun for a few hours.



A few drops of iodine solution were placed on the different portions of the leaf. When the yellowish-brown iodine solution comes into contact with starch, it would turn blue-black.

The following result was observed.



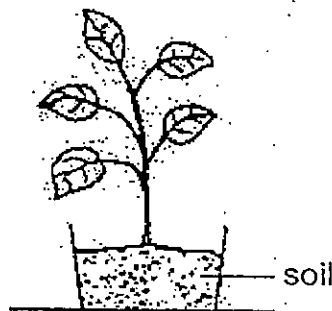
Which of the following give the correct explanation for the result obtained?

- A Starch is absent in the white portions of the leaf.
- B Starch is present in the green portions of the leaf.
- C The green portions of the leaf contain chlorophyll that can trap sunlight.
- D The starch in the leaf reacts with the iodine solution, turning it blue-black.

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

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

7. Bing Enn wanted to find out if the growth of plants would be affected when they are exposed to different coloured lights.



He set up four pots of plants with varying conditions as shown in the table below.

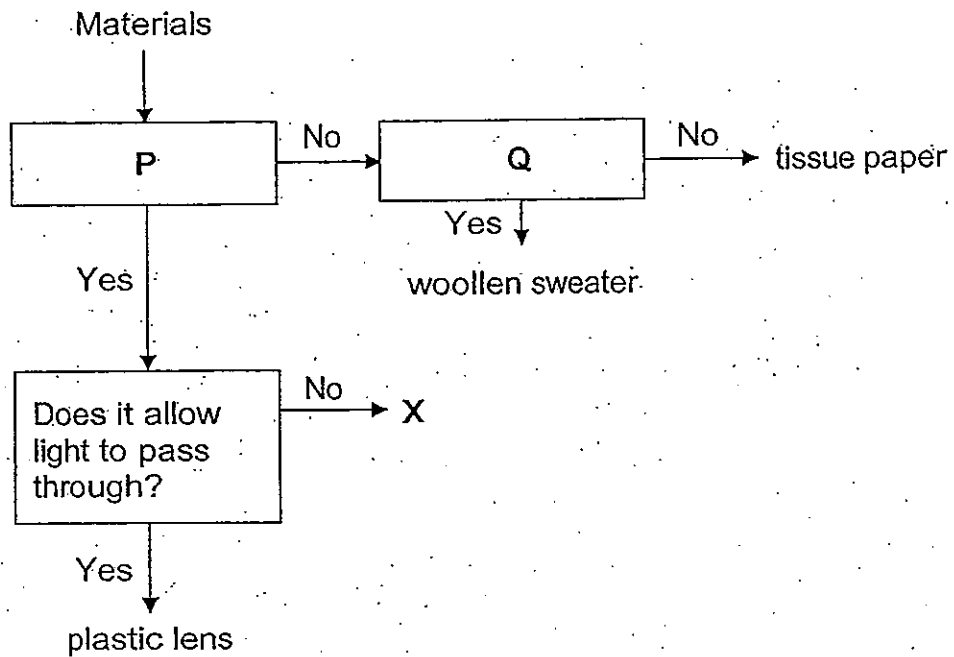
	Potted Plant			
	A	B	C	D
Water	40 ml	20 ml	40 ml	40 ml
Type of soil	loamy	sandy	loamy	sandy
Colour of light	green <i>white</i>	white	green	<i>white green</i>
Fertilizer added	none	5g	none	5g

Which one of the following plants should he use in his experiment?

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



8. In the flowchart below, P and Q represent questions while X represents an object.



Which of the following best represent questions P and Q and object X?

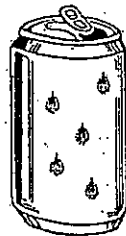
	P	Q	X
(1)	Is it man-made?	Is it flexible?	silver coin
(2)	Does it sink in water?	Can it be stretched?	handkerchief
(3)	Is it strong?	Is it flexible?	cotton shirt
(4)	Is it waterproof?	Can it be stretched?	ceramic pot

9. The table below shows the two processes, evaporation and condensation.

Which one of the following differences is **correct**?

	Evaporation	Condensation
(1)	causes the formation of dew	causes the formation of steam
(2)	requires heat gain by the liquid	requires heat loss by the gas
(3)	takes place when liquid is changed to gas	takes place when solid is changed to liquid
(4)	increases in rate when there is more water vapour in the air	increases in rate when there is less water vapour in the air

10. Two cans, X and Y, are placed side by side on a table. The diagram below shows the appearance of the cans after 5 minutes.



Can X

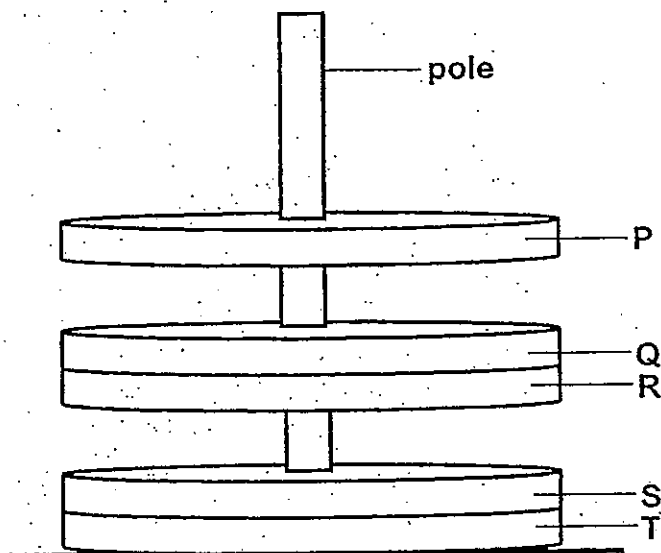


Can Y

Which one of the following explains **correctly** why there are more water droplets on can Y than can X?

- (1) The liquid in can Y is cooler so more water vapour from the surrounding condensed on the can.
- (2) The liquid in can Y is warmer so more water vapour from the surrounding condensed on the can.
- (3) The liquid in can X is warmer so more evaporation took place and less water droplets can be seen.
- (4) The liquid in can X is cooler so more evaporation took place and less water droplets can be seen.

11. Five rings, P, Q, R, S and T were slotted through a pole as shown in the diagram below.



Based on the set-up, which of the following conclusions have been matched correctly?

	Conclusion	True	False	Not possible to tell
A	Ring R is a magnet.	√		
B	All five rings are made of magnetic material.			√
C	The like poles of ring Q and ring R are facing each other.		√	
D	If rings Q and R are removed, ring P will be attracted to ring S.		√	

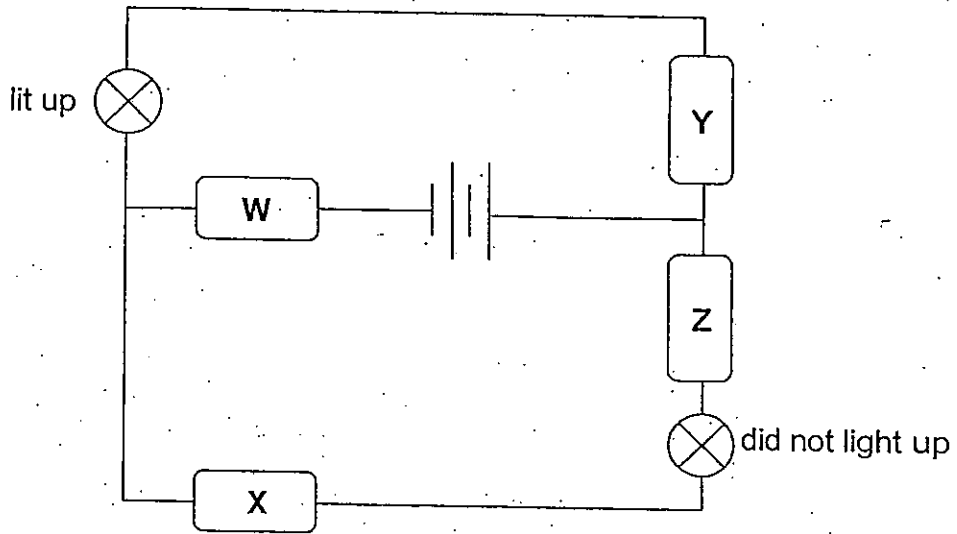
(5) A, B and C only

(3) B, C and D only

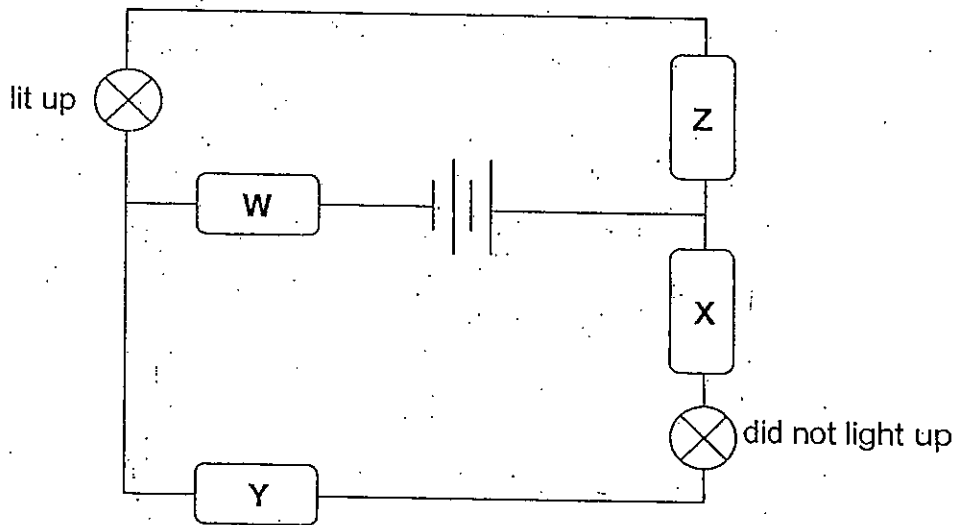
(2) A, C and D only

(4) A, B, C and D

12. Esther had 4 bars of different materials, W, X, Y and Z. She connected them in a circuit and recorded her observations as shown in the diagram below.



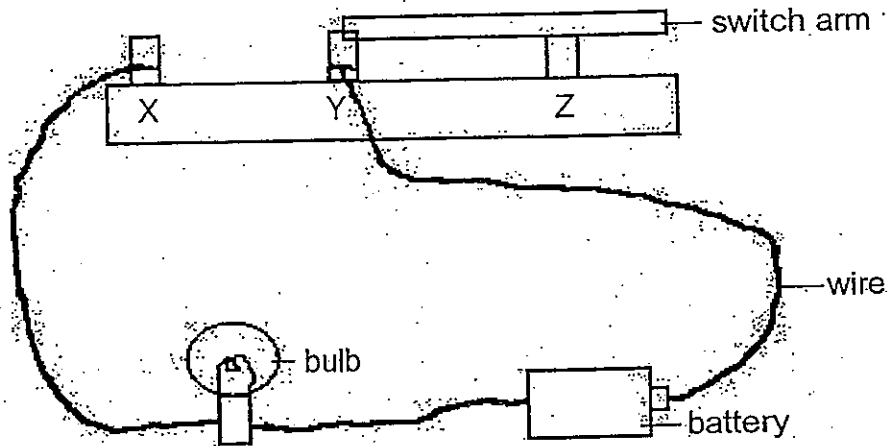
She then rearranged the positions of the 4 bars and recorded her observations again.



Based on her results, which one of the following shows the possible materials that bars W, X, Y and Z could be made of?

	Bar W	Bar X	Bar Y	Bar Z
(1)	aluminium	glass	copper	silver
(2)	plastic	rubber	glass	aluminium
(3)	glass	plastic	wood	silver
(4)	copper	wood	silver	rubber

13. Kenneth connected the circuit as shown below using a battery, a working bulb, a switch and some wires which are all in working condition. He observed that the bulb did not light up.



Which of the following should be done to get the bulb to light up?

- A. Swing the switch arm from point Z to X.
- B. Connect the wire from point Y to point Z.
- C. Connect one of the wires to the metal tip of the bulb instead of the metal casing.

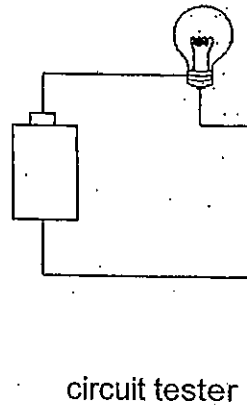
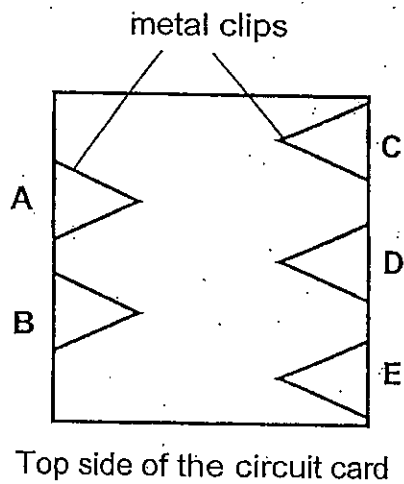
(1) C only

(2) A and C only

(3) B and C only

(4) A, B and C

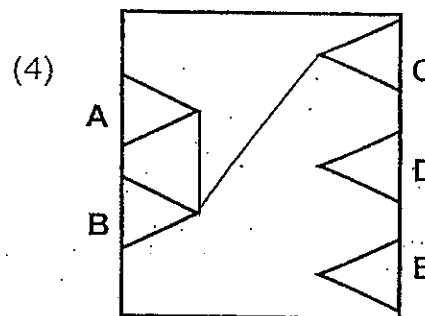
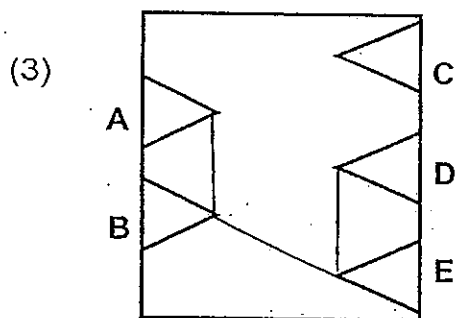
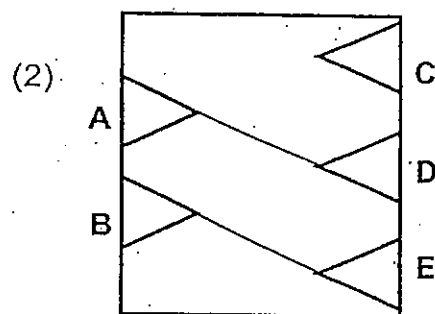
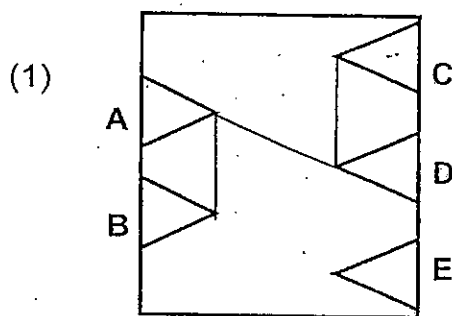
14. Yi Xin made a circuit card as shown in the diagram below. Some of the metal clips are connected with wires on the underside of the card.



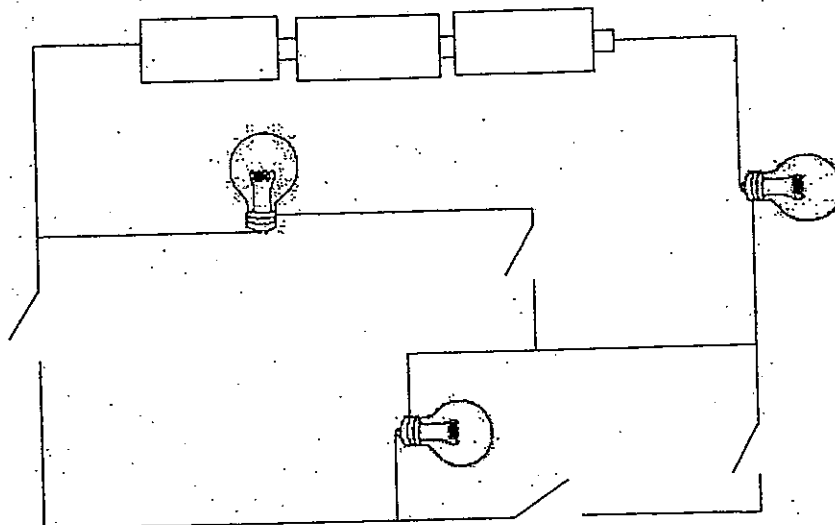
She connected the ends of a circuit tester to different paper clips and recorded the observations in the table as shown below.

Connecting		Lit up?
A	E	No
B	C	Yes
D	B	Yes
E	A	No

Which one of the following shows the possible wire connection on the underside of the circuit card?



15. Study the circuit shown below.



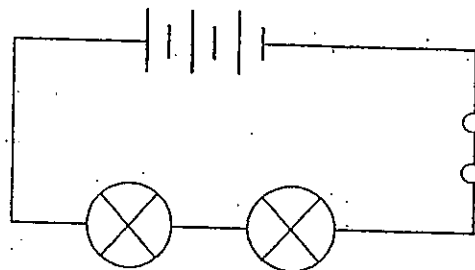
What is the least number of switches that must be closed for all the bulbs to light up?

- (1) 1 switch only
- (2) 2 switches only
- (3) 3 switches only
- (4) 4 switches

16. Two circuits, X and Y, are set up as shown in the diagram below. The bulbs in both circuits are both lit. All the batteries, bulbs and wires used are identical and are in proper working condition.



Circuit X



Circuit Y

Which one of the following will **not** be observed in the two circuits when the switches are closed?

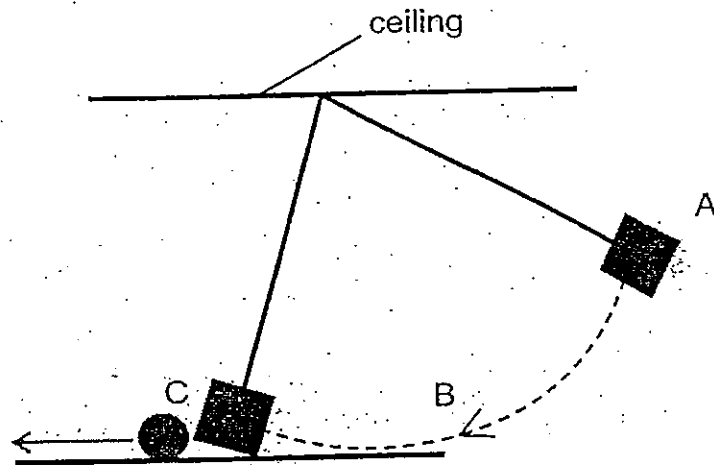
- (1) The two bulbs in Circuit Y have the same brightness.
  - (2) Each bulb in Circuit X is brighter than each bulb in Circuit Y.
  - (3) If one bulb was removed from Circuit X, the other bulb can continue to light up.
  - (4) If one bulb was removed from Circuit Y, the other bulb can continue to light up.
17. The following describes different situations to show forces in action.
- A Wringing of clothes
  - B A child writing on a piece of paper
  - C A person stepping on a pedal to cycle
  - D Construction workers picking up sandbags from the ground

Which one of the above situations involves **both** a push and pull force?

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



18. Tommy set up the experiment as shown below. When the square block was released from point A, it hit the metal ball, causing the ball to move in the direction as shown.



Which one of the following shows the correct main energy conversion that took place in the experiment?

	Point A	Point B	Point C
(1)	Gravitational potential energy of the block	→ Kinetic energy of block	→ Sound energy of ball
(2)	Elastic potential energy of the block	→ Kinetic energy of block	→ Kinetic energy of ball
(3)	Elastic potential energy of the block	→ Kinetic energy of block	→ Sound energy when the bob hits the ball
(4)	Gravitational potential energy of the block	→ Kinetic energy of block	→ Kinetic energy of ball

19. Rui Cong dropped 4 balls of the same size but of different masses onto 4 trays containing the same amount of fine sand. The balls were dropped from different heights as shown in figure A below.

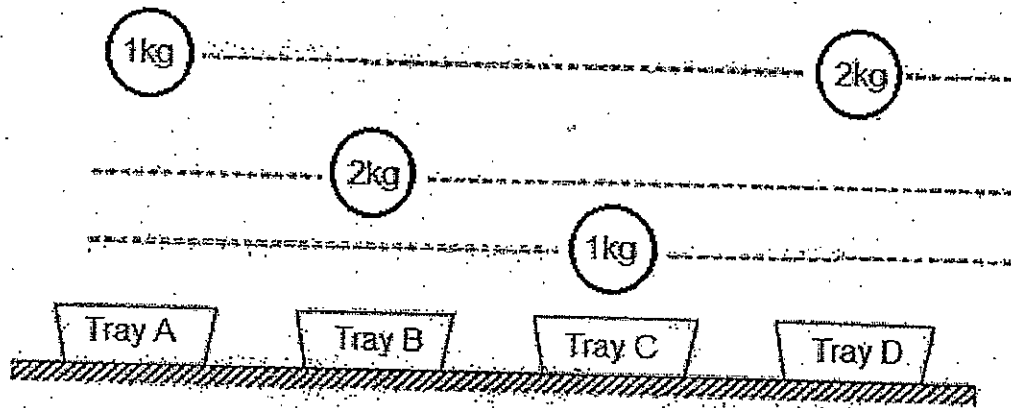


Figure A

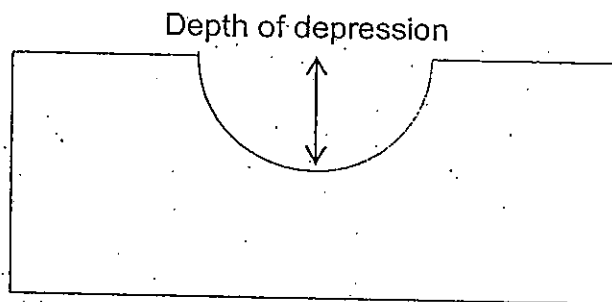
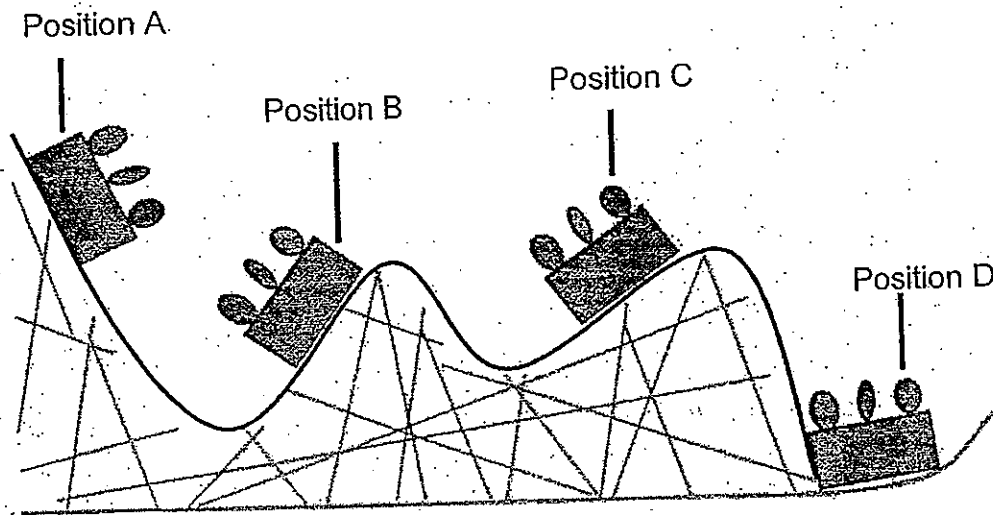


Figure B

Rui Cong measured the depths of the depression as shown in Figure B of each tray. Which one of the following correctly matches the depth of depression?

	Tray A	Tray B	Tray C	Tray D
(1)	2.0 cm	1.5 cm	1.0 cm	2.0 cm
(2)	2.5 cm	1.0 cm	0.8 cm	2.0 cm
(3)	2.0 cm	1.5 cm	1.0 cm	2.5 cm
(4)	2.0 cm	2.0 cm	1.0cm	2.0 cm

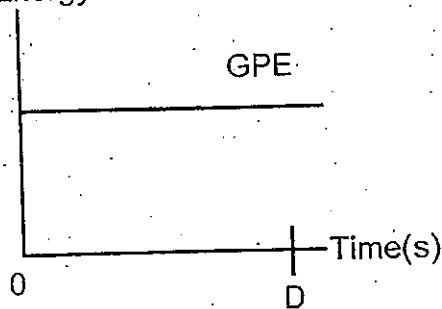
20. The diagram below shows part of a roller coaster ride. The roller coaster travels from position A to B to C and eventually comes to a stop at D.



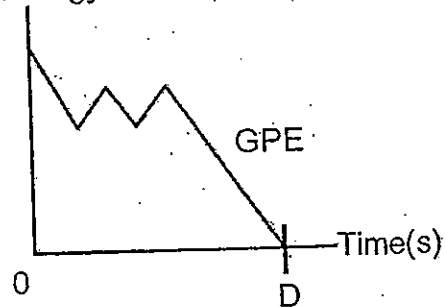
Marcus started recording the gravitational potential energy (GPE) and the kinetic energy (KE) of the roller coaster. Marcus added the values together and plotted a graph.

Which one of the following graphs correctly shows the sum of gravitational potential energy and kinetic energy from position A to D?

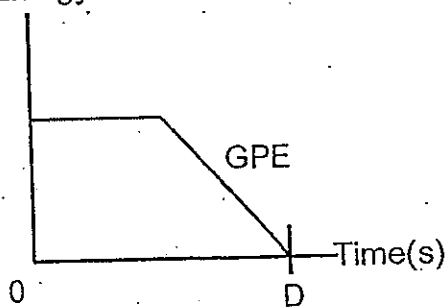
(1) Energy



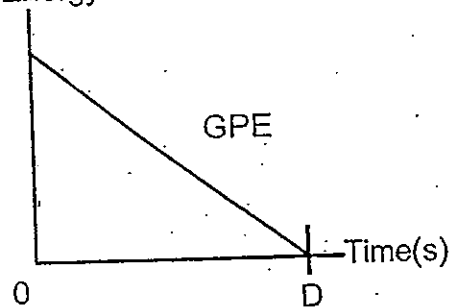
(2) Energy



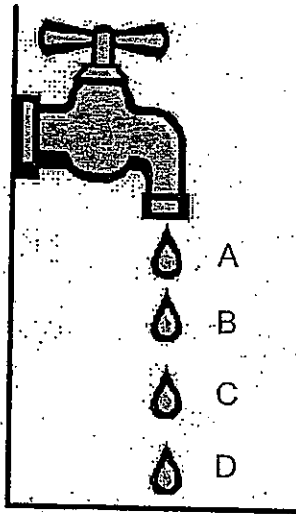
(3) Energy



(4) Energy



21. A droplet of water falls through the path as shown in the diagram below.

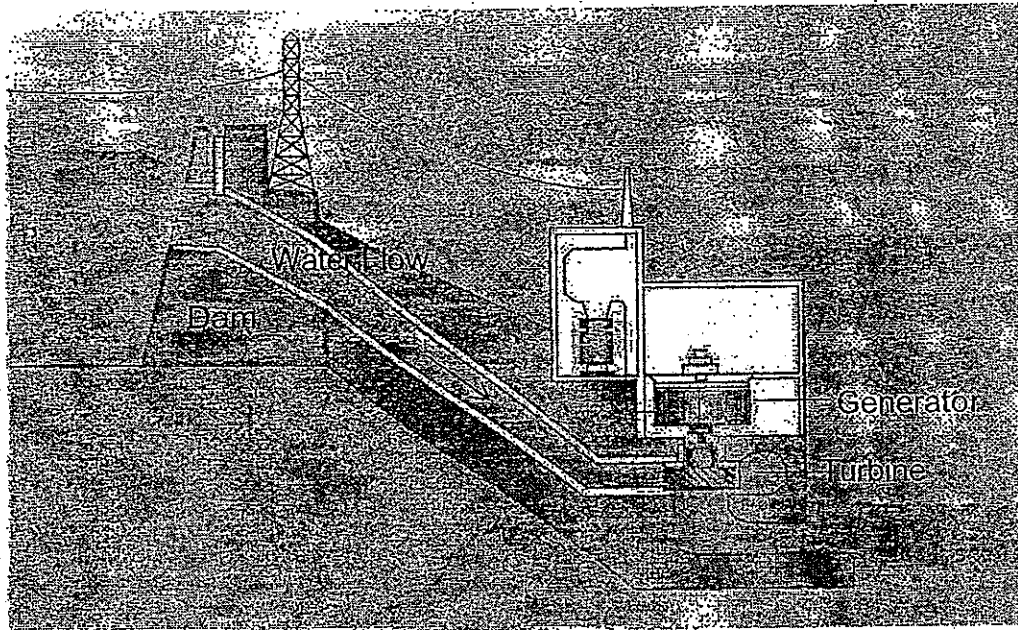


Based on the diagram, which position of the droplet possesses the greatest amount of kinetic energy?

- (1) A  
(3) C

- (2) B  
(4) D

22. The diagram below shows a hydroelectric power station.

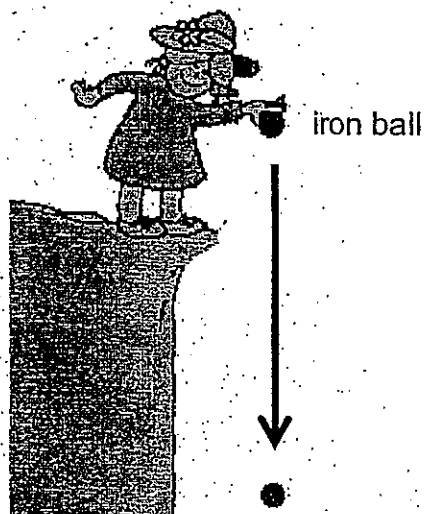


What is the advantage of using a hydroelectric power station instead of coal to generate electricity?

- A The usage of coal depends on the weather
- B This process can continue to sustain itself without the Sun
- C The usage of water in generating electricity does not cause pollution.

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

23. During a science lesson, Miss Huang showed her students a picture of a person releasing an iron ball from a cliff.



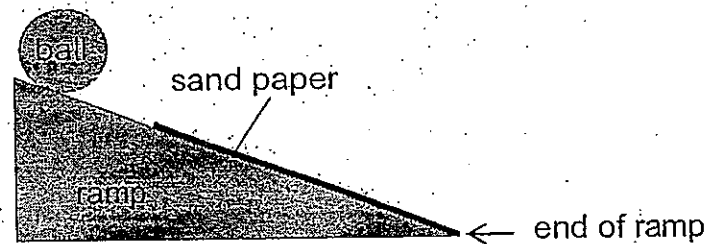
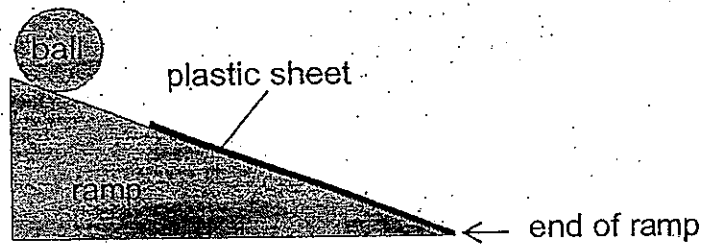
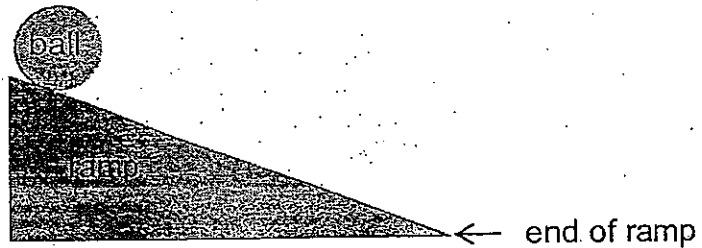
Her students gave the following reasons to explain why the ball dropped downwards:

- A The iron ball has mass
- B The iron ball dropped downwards due to Earth's gravity
- C The earth's magnetic field exert a force pulling the iron ball downwards:

Which of the following reasons is/are true?

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

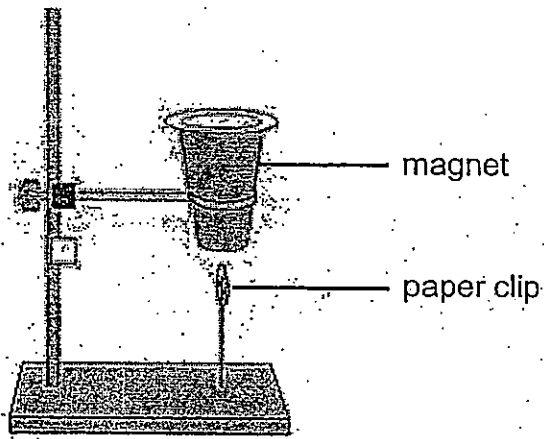
24. A group of students set up the experiment as shown in the diagram below. They wanted to find out how the different surfaces of the ramp affect the time taken for the ball to reach the end of the ramp. A ball is released from the top of the ramp and the students timed how long it took for the ball to reach the end of the ramp.



Which one of the following is most likely the correct timing recorded by the students?

	Time (normal surface) seconds	Time (plastic sheet) seconds	Time (sand paper surface) seconds
(1)	2.3	1.9	1.7
(2)	1.9	2.3	1.7
(3)	1.9	1.7	2.3
(4)	1.7	2.3	1.9

25. The picture below shows a paper clip being suspended in mid-air by a magnet.



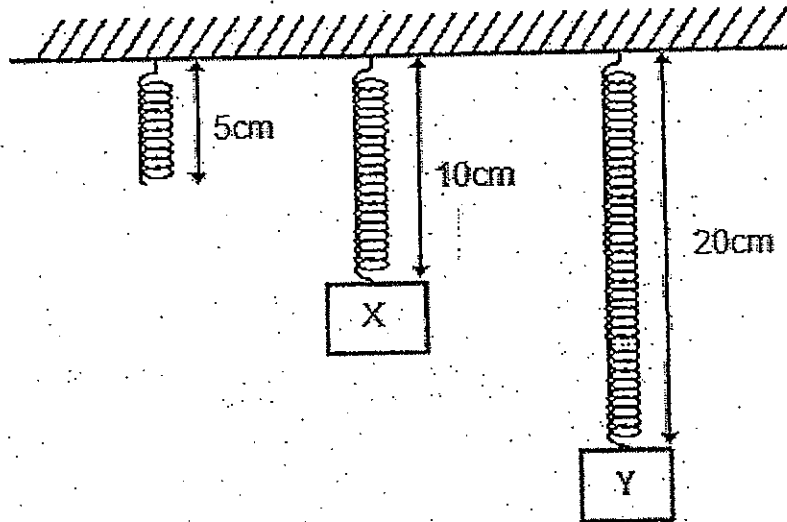
Which of the following statements about the paper clip is/are correct?

- A The paper clip was pulled by the magnet
- B The paper clip was pushed by the magnet
- C A weaker gravitational force is acting on the paper clip.
- D The magnetic force acting on the paper clip was greater than the gravitational force

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



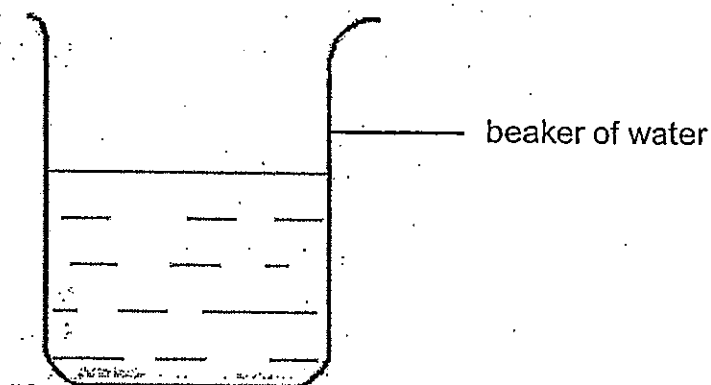
26. Judy wanted to find out how the length of a spring varies with different weights hung on it.



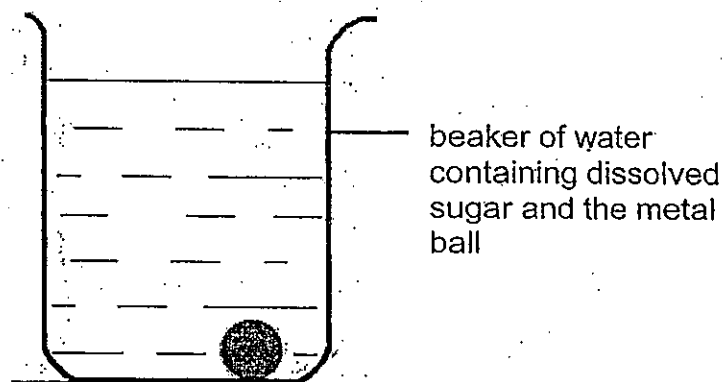
Based on the diagram above, which one of the following statements is true?

- (1) The mass of Y is the same as X.
- (2) The mass of Y is twice of X.
- (3) The mass of Y is thrice of X.
- (4) The mass of Y is four times of X.

27. The following diagram shows a beaker containing water and the total mass is 200 grams.



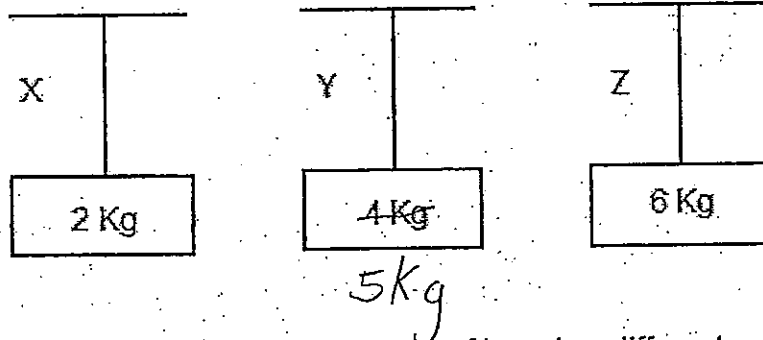
Mason poured 20 grams of sugar into the water and stirred it until it is completely dissolved. He also placed a metal ball which has a mass of 40 grams into the water as shown in the diagram below.



Which one of the following correctly shows the total mass of the beaker of solution and the metal ball?

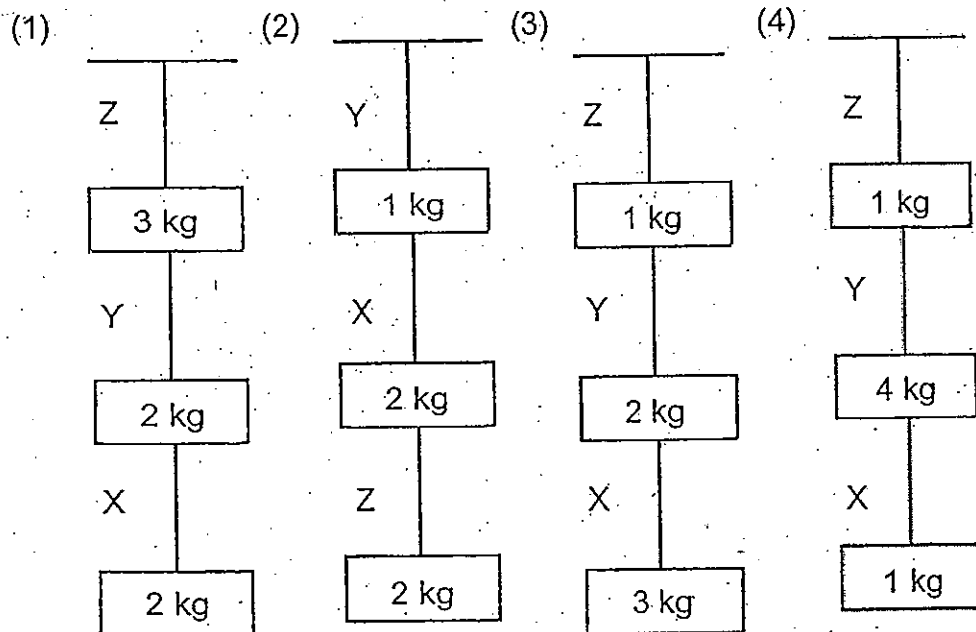
- |               |               |
|---------------|---------------|
| (1) 200 grams | (2) 220 grams |
| (3) 240 grams | (4) 260 grams |

28. Jonathan tested three types of string X, Y and Z by hanging weights from each string. He increased the weights until the string broke. The maximum weight that the strings could hold before breaking is shown below.



Jonathan then tried a few arrangements of hanging different weights.

Which one of the following arrangements would be possible?

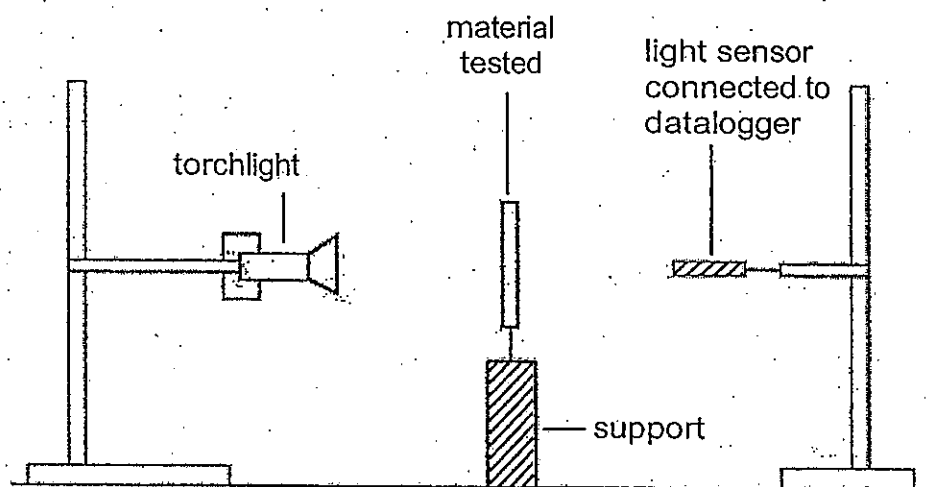


29. Substance X has a freezing point of 25°C and boiling point of 180°C.

Which one of the following correctly shows the state(s) of substance X at 30°C and at 200°C?

	30°C	200°C
(1)	solid	gas
(2)	solid	liquid
(3)	liquid	gas
(4)	liquid	liquid

30. Jamie set up the experiment below to find out how different materials allowed different amount of light to pass through. The torchlight was switched on and the datalogger recorded the results picked up by the light sensor.



The experiment was carried out in a lighted room which has a brightness of 80 lux.

Which one of the following set of results was possibly recorded by Jamie?

	Transparent material (lux)	Translucent material (lux)	Opaque material (lux)
(1)	220	320	65
(2)	320	220	80
(3)	310	80	220
(4)	300	195	40

-----End of Booklet A-----

**NANYANG PRIMARY SCHOOL**

**PRIMARY 6 SCIENCE**

**CONTINUAL ASSESSMENT 1  
2013**

**BOOKLET B**

**Date : 7 March 2013**

**Duration : 1 h 45 min**

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

Class: Primary 6 ( )

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature: .....

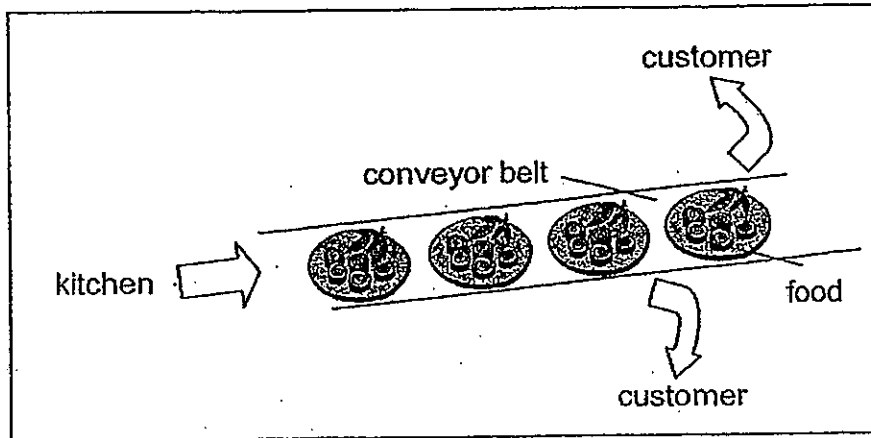
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.  
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet B consists of 18 printed pages including this cover page.

**Section B (40 marks)**

Write your answers to questions 31 to 44 in the spaces provided.  
Marks will be deducted for misspelt key words.

31. In some restaurants, there is a system where food from the kitchen is placed on a conveyor belt that moves past every table so that all the customers can be served.

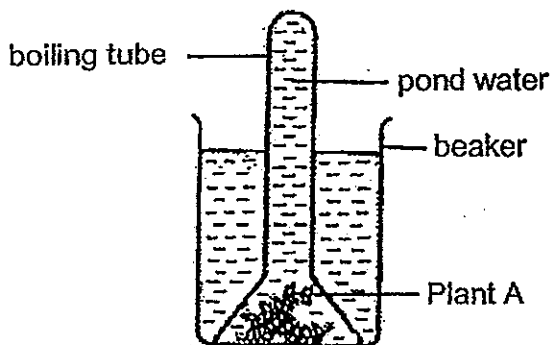


In plants, there is a similar system that has two separate tubes (Tube 1 and Tube 2) transporting essential substances to the entire plant.

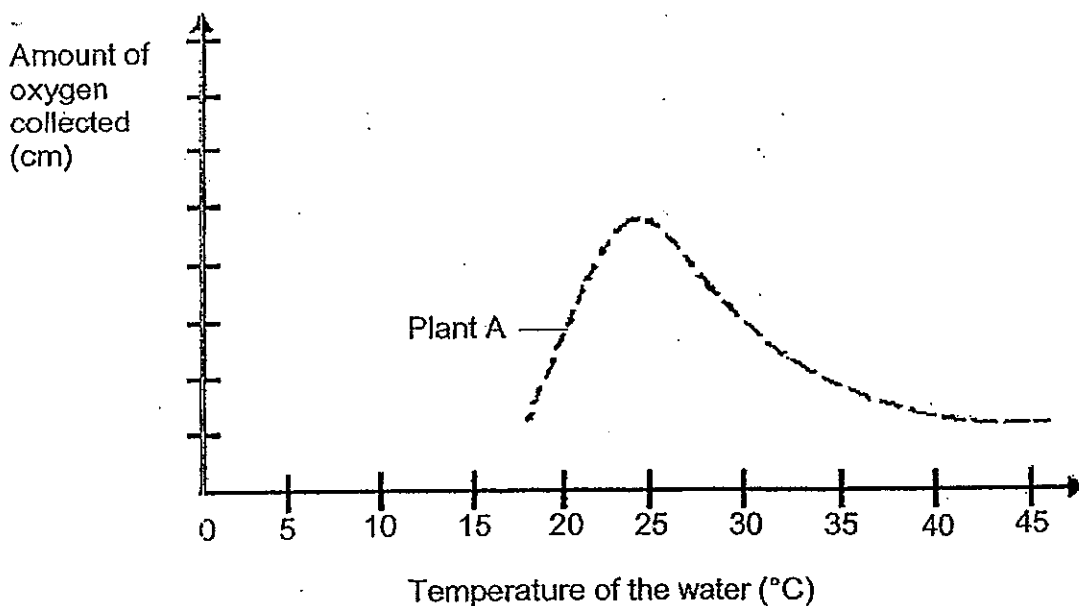
Fill in the table below to show the similarity between the transport system of the plant and the conveyor belt of the restaurant. [2]

Restaurant	Plant System	
	Tube 1	Tube 2
Conveyor Belt		
Kitchen		
Item being transported	water and mineral salts	
Customers		other parts of the plant

32. Wen Jin carried out an experiment to find out how the temperature of water affects the rate at which plant A carried out photosynthesis.



She prepared similar set-ups as above by varying the temperature of pond water at 5°C interval from 20°C to 40°C. She recorded the amount of oxygen collected in the boiling tube after 2 hours and plotted a graph to show the effect of the temperature of pond water on the rate of photosynthesis.



- (a) Describe the relationship between the temperature of the water and the rate of photosynthesis for plant A. [1]

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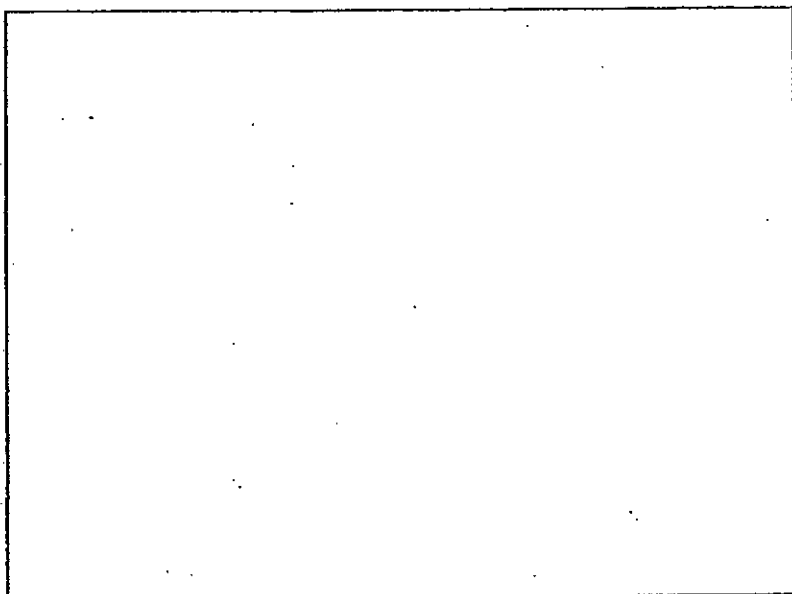
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- (b) State two other variables she should keep the same to ensure that it is a fair test. [1]

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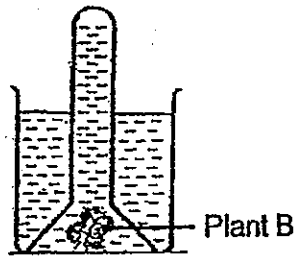
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- (c) Draw a control set-up that she can use for this experiment. [1]

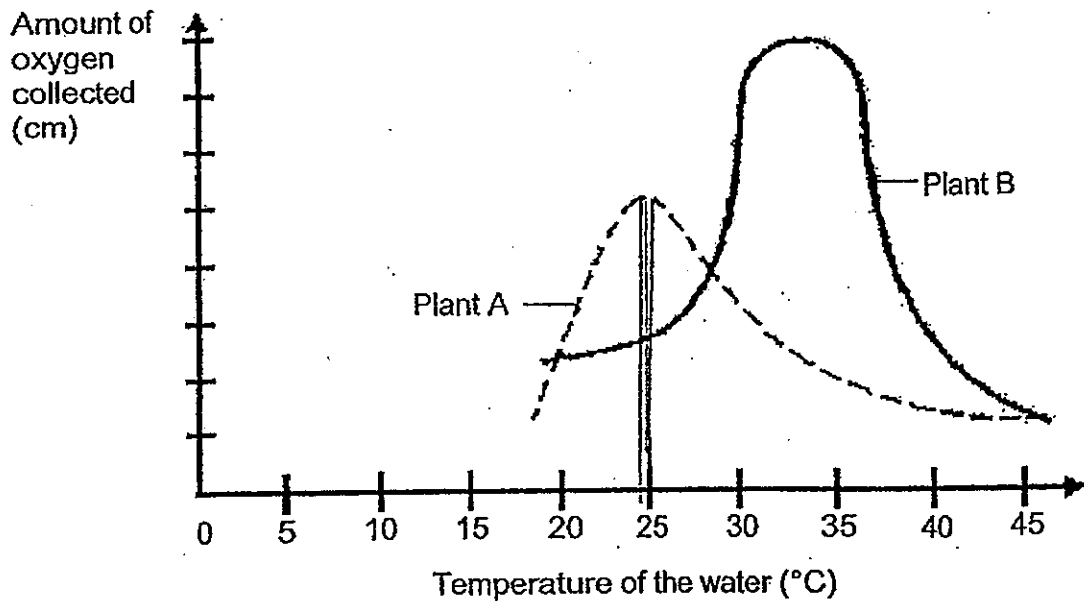




Wen Jin set up another experiment, similar to the one she conducted with plant A. This time, she used plant B.



She recorded the amount of oxygen collected in the boiling tube after 2 hours and plotted a graph to show the effect of the temperature of pond water on the rate of photosynthesis for the two plants, plant A and B.

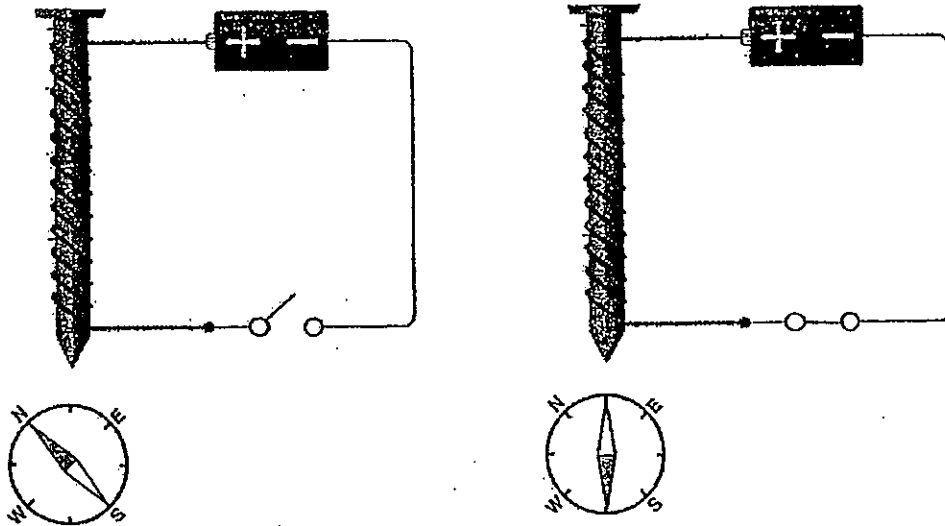


(d) State the temperature of water which the plant has the highest rate of photosynthesis. [1]

Plant A : \_\_\_\_\_

Plant B : \_\_\_\_\_

33. An electrical circuit was set up as shown in the diagram below. The copper wire was wound around a steel nail. When the switch was closed, the compass needle moved.



Explain why closing the switch could cause the compass needle to move in that direction. [2]

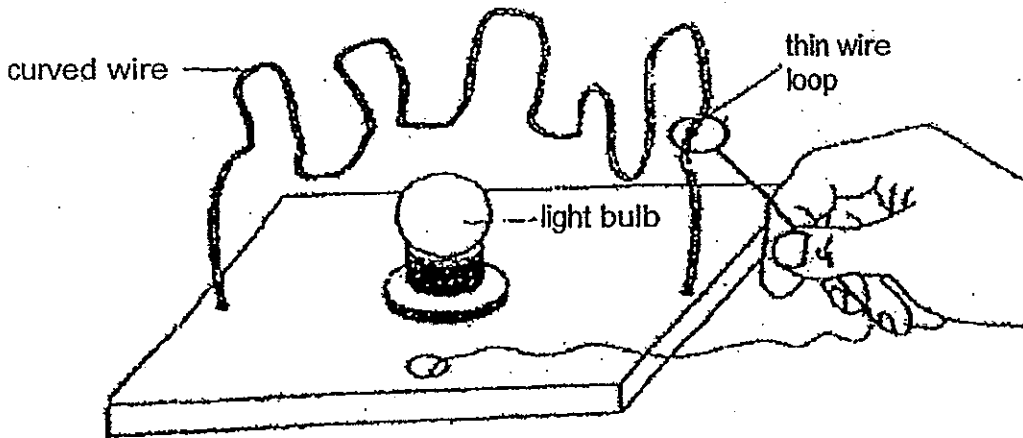
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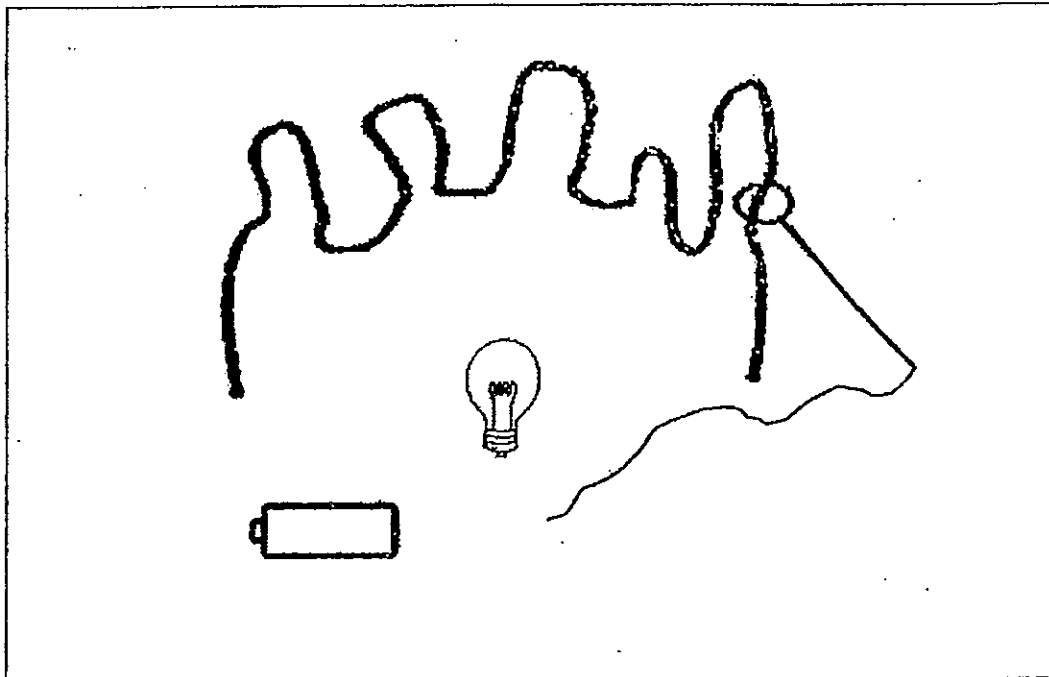
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34. The diagram below shows a game where the player has to guide the wire loop steadily along a curved wire from the starting point to the ending point, while making as little contact between the wire loop and the curved wire as possible.

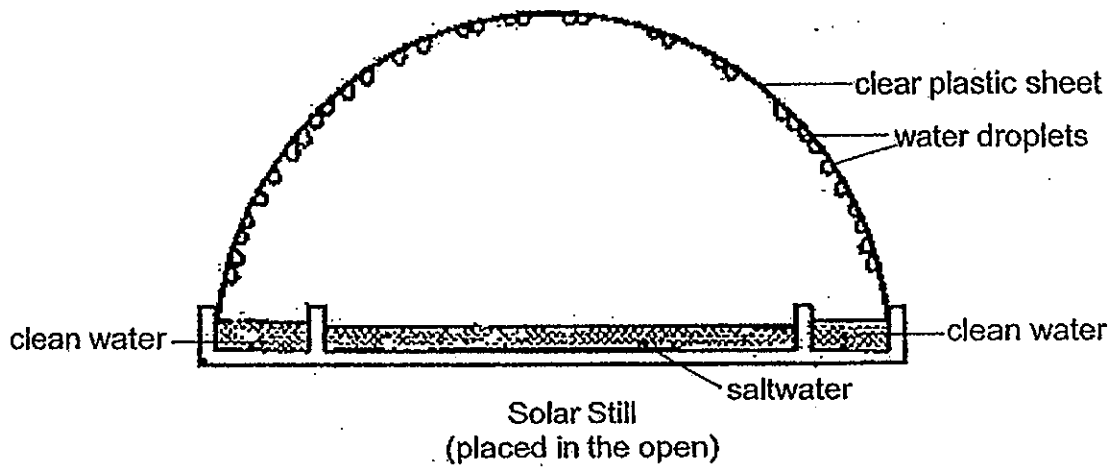
If contact is made between the wire loop and the curved wire, the bulb will light up.



- (a) Draw in the diagram below how the wires are connected to the electrical components in order for the game to work. [2]



35. A 'solar still' can supply freshwater in countries where drinkable water is not available.



- (a) Based on the diagram above, explain how clean water is obtained from the saltwater using the solar still. [2]

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- (b) Suggest how the volume of clean water produced using the solar still can be increased. [1]

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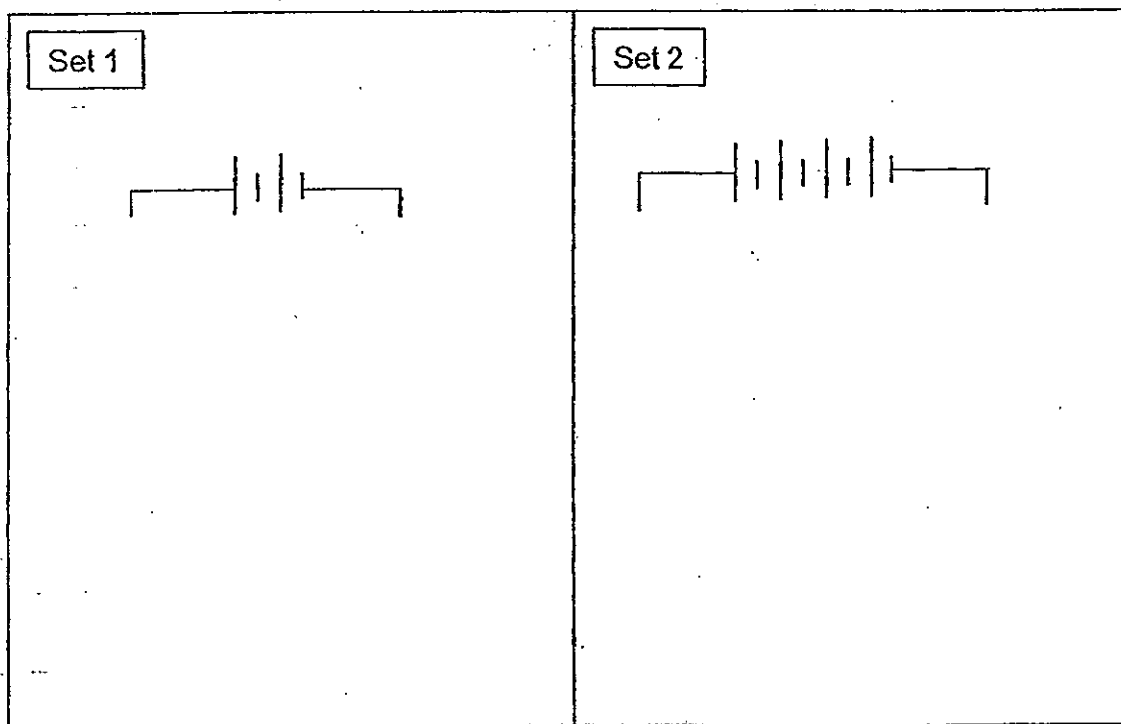
36 Mr Yusof set a task for his pupils. He gave them two sets of materials as shown below.

<u>Set 1</u>	<u>Set 2</u>
<ul style="list-style-type: none"> <li>• 2 batteries</li> <li>• 2 bulbs</li> <li>• some wires</li> </ul>	<ul style="list-style-type: none"> <li>• 4 batteries</li> <li>• 4 bulbs</li> <li>• some wires</li> </ul>

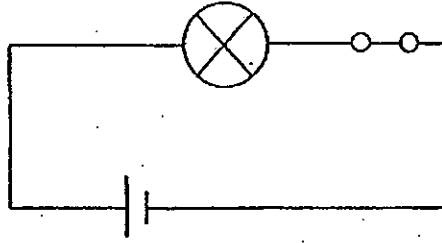
Using all the batteries and bulbs provided, they had to complete a circuit and ensure that the bulbs in Set 1 have the same brightness as those in Set 2.

The batteries in both circuits are connected in series.

Draw two **circuit diagrams** to show how the class should connect the electrical components given in each set. [2]

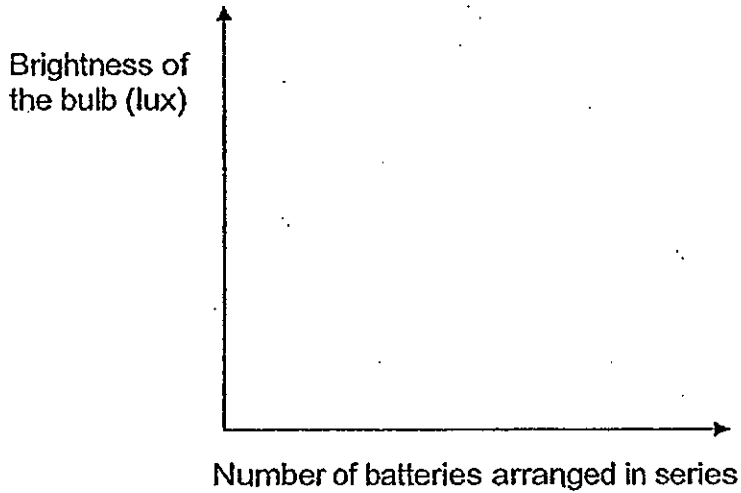


37. Keshia set up the circuit as shown below.



She added one battery at a time, in series, to the circuit, and measured the brightness of the bulb until she had used 4 batteries in total.

(a) Complete the graph below to show the relationship between the number of batteries arranged in series in the circuit and the brightness of the bulb. [1]



(b) When she added the 5<sup>th</sup> battery, the brightness of the bulb became zero. Explain why. [1]

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38. Sharon used a pinwheel (diagram 1) to setup the experiment as shown in diagram 2. The stove is turned on and the pinwheel starts to spin after sometime. *candle is lighted up*



Pinwheel

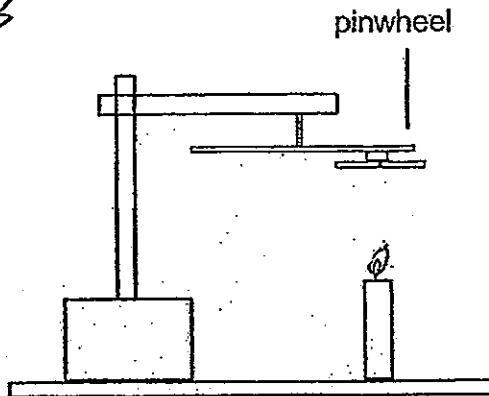
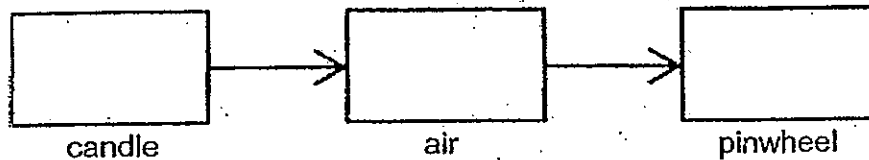


Diagram 2

- (ai) State the energy conversion that took place when the candle is lighted [1]



- (aii) Explain why the pinwheel started to spin after some time. [2]

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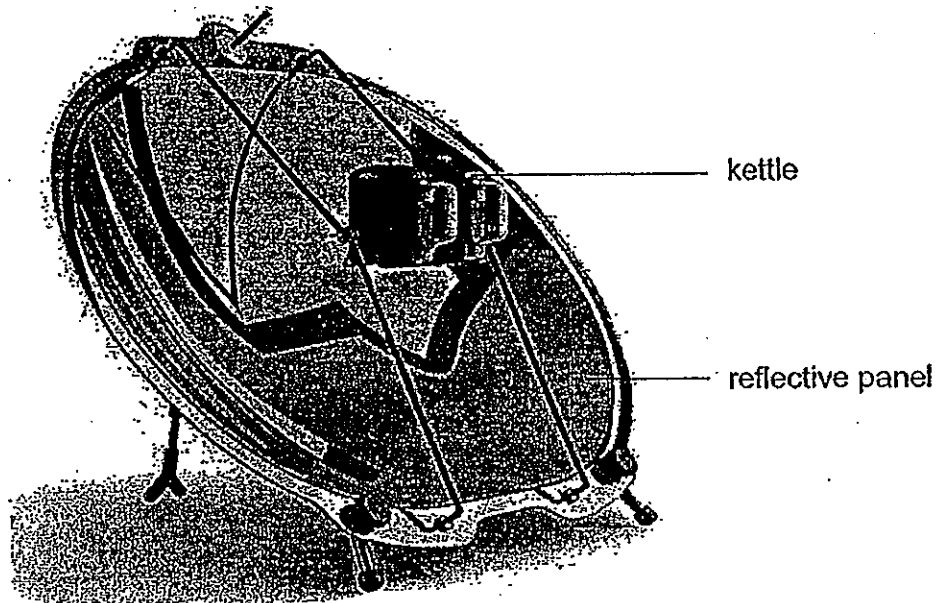
- (b) Using the same set-up, suggest a change that Sharon could make to the set-up to make the pinwheel spin faster. [1]

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39. In some parts of Argentina where temperatures could reach as high as 40 degrees Celsius, engineers developed a simple tool to tap energy from the sun to boil water. An example of the tool is as shown in the diagram below.



Tommy conducted an experiment by changing the surface area of the reflective panel. He recorded the results of his experiment as shown in the table below.

Surface area of reflective panel (cm <sup>2</sup> )	Time taken for the water to boil (minutes)
500	27
600	23
700	17
800	10
900	10

- a) State the aim of his experiment? [1]

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- b) Based on the results in the table above, what is the relationship between the surface area and the time taken for the water to boil? [1]

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ci) What is the advantage of painting the kettle black? [1]

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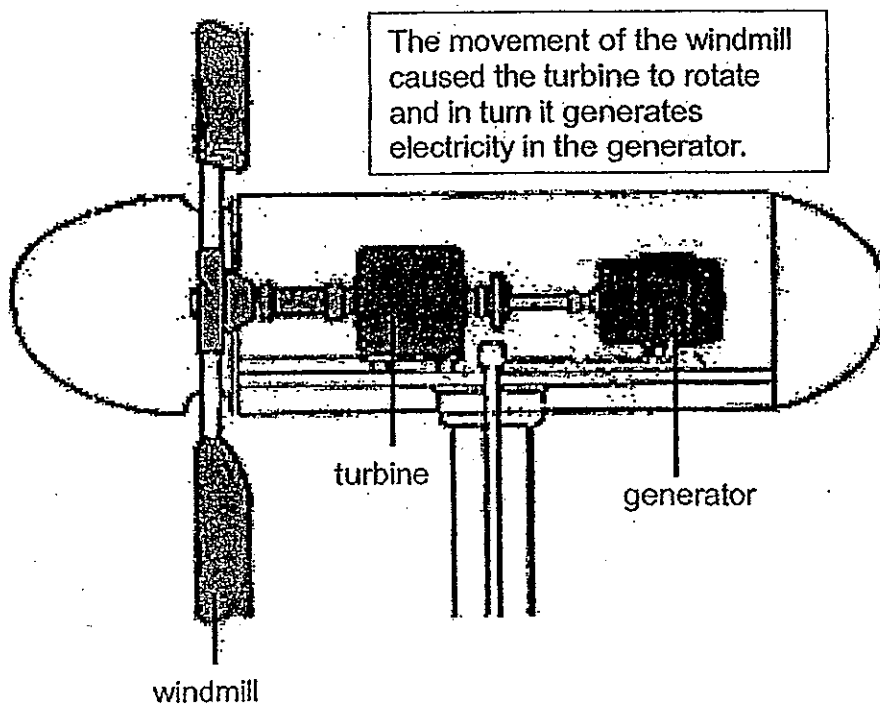
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cii) State one disadvantage of using this tool to boil water. [1]

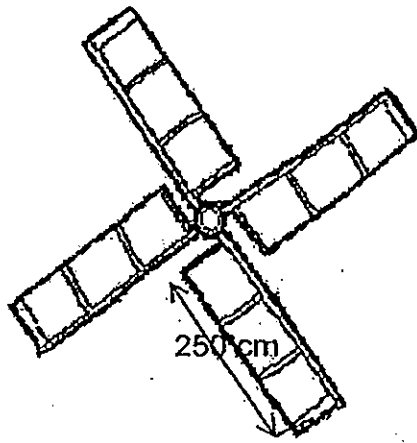
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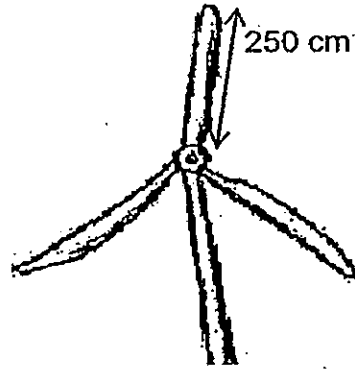
40. Scientists are constantly looking for various ways of making use of renewable source of energy. One form of making use of renewable energy is to make use of the windmill. The designs of the blades determine the efficiency of the windmill. The diagram below shows how a windmill generates electricity.



Two designs of the wind blade are as shown below.



Design A  
Mass of each blade = 20 kg



Design B  
Mass of each blade = 15 kg

- (a) Based on the design and information for each blade, which design should be used such that each windmill can generate as much electricity as possible within a specific time frame? Explain your choice. [2]

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- (b) State two reasons apart from the high cost why it is not ideal to generate electricity using windmills in Singapore. [2]

Reason 1:

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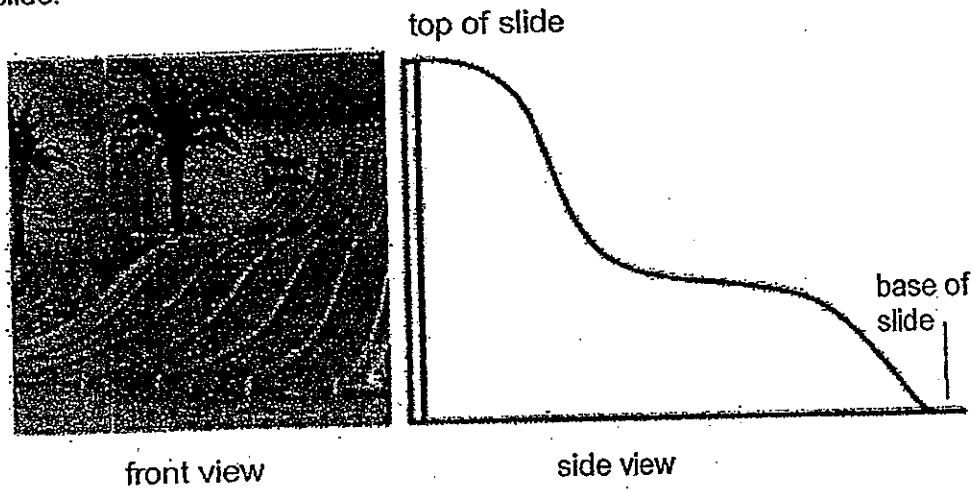
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Reason 2:

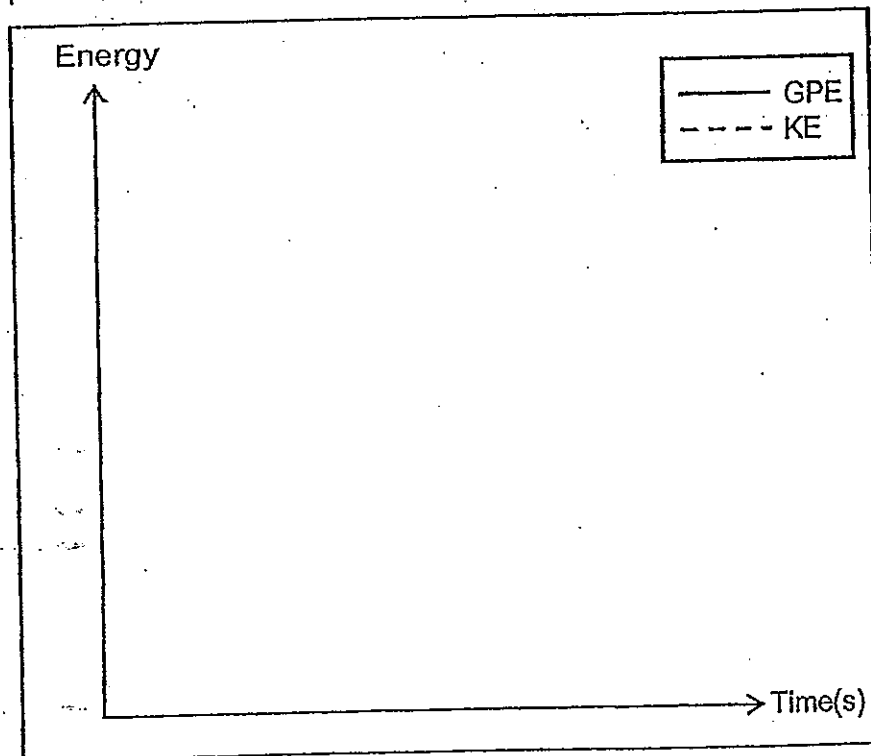
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41. The following diagram shows the front view and the side view of a water slide. A child will sit at the top of the slide and slide to the base of the slide.



- (a) Based on the diagram above, draw a graph in the space provided to show how the gravitational potential energy and kinetic energy of a boy varies as he slides down the slide over a period of time. Label the graph completely. [2]



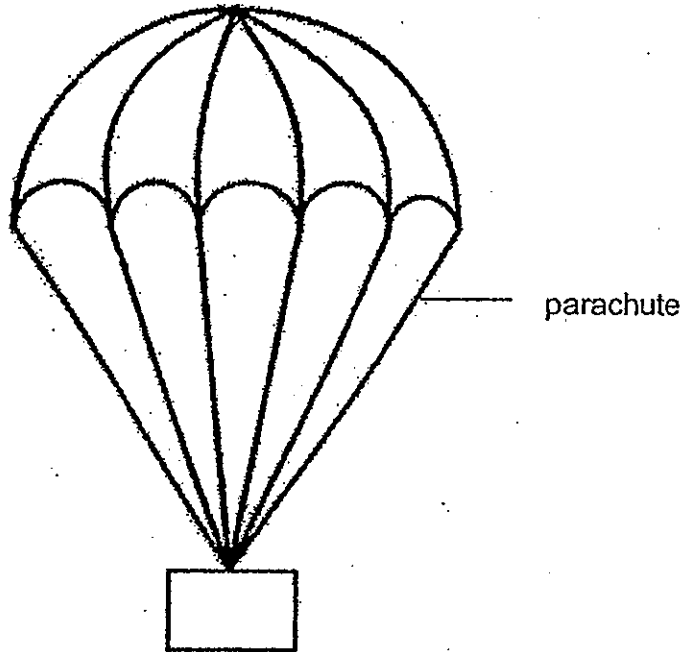
- (b) Explain why children splash themselves wet before going down the slide. [2]

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42. The diagram below shows an object held on by a parachute in the air.



- (a) In the diagram above, draw and label the main force(s) experienced by the object. [2]

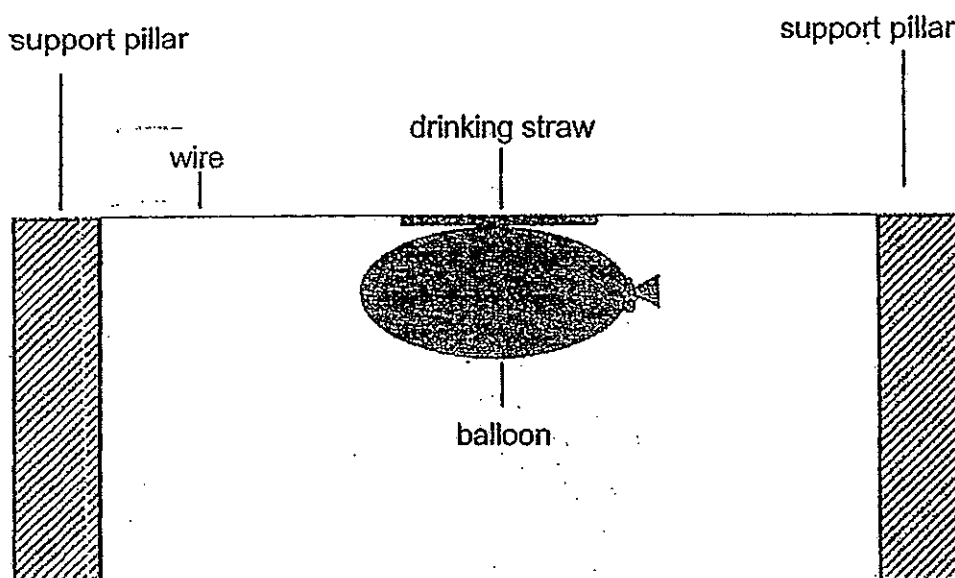
- (b) Janel wanted to find out the time taken for the object with parachute to land on the ground. She released the object from a fixed height and recorded the time taken for the object to land on the ground.

Without changing the object, suggest a change that Janel can make such that the object could stay in the air for a longer period of time. [1]

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43. Study the set-up shown in the diagram below.



Yiwei inflated a balloon and attached it to the drinking straw. The straw allows the set-up to move freely along the string. The clip on the balloon was released allowing the air to escape, *producing force X*

(a) In the diagram above, use an arrow to indicate the direction in which the balloon will move. [1]

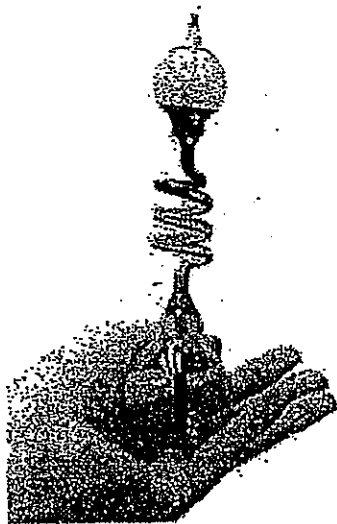
(b) Using the concept of forces, briefly explain the movement of the balloon. [1]

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44. The diagram below shows a "hand boiler". When a person touches the glass, the liquid starts to rise up.



The manufacturer of the "hand boiler" has to choose between two types of glass to use. The thickness of the glass is as shown in the table below.

	Glass X	Glass Y
Thickness of glass (mm)	2	3

Based on the information above, which glass should the manufacturer use to make the liquid rise up as fast as possible? Explain your answer.

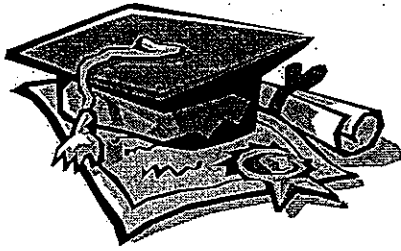
[2]

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-----End of Booklet B-----



# ANSWER SHEET

**EXAM PAPER 2013**

**SCHOOL : NANYANG**

**SUBJECT : PRIMARY 6 SCIENCE**

**TERM : CA1**

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

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

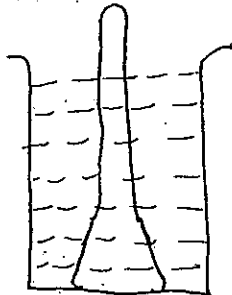
31)

Roots	Leaf
	Food
Other parts of the plant	

32)a) The rate of photosynthesis increased as the temperature of water increase. There after 25°C the rate of photosynthesis is decreased.

b) Moss of plants, number of leaves.

c)

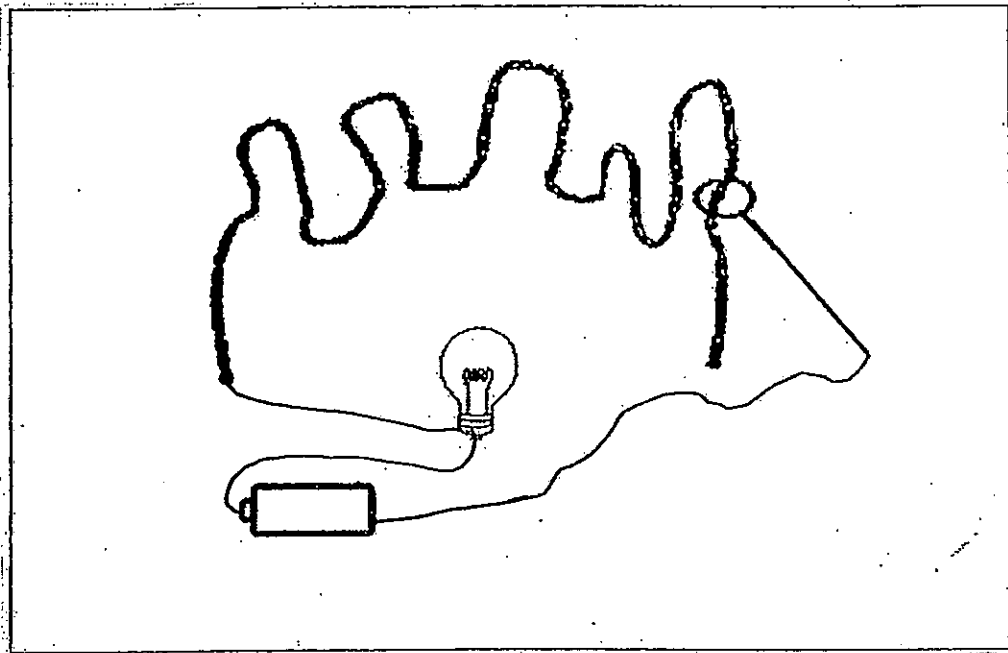


32)d)A: 25°C

B: 32°C

33)When the switch closed the steel nail will become an electromagnet. The compass needle also an magnet would get attracted to the electromagnet thus, the the compass needle would move towards the steel nail when the switch is closed.

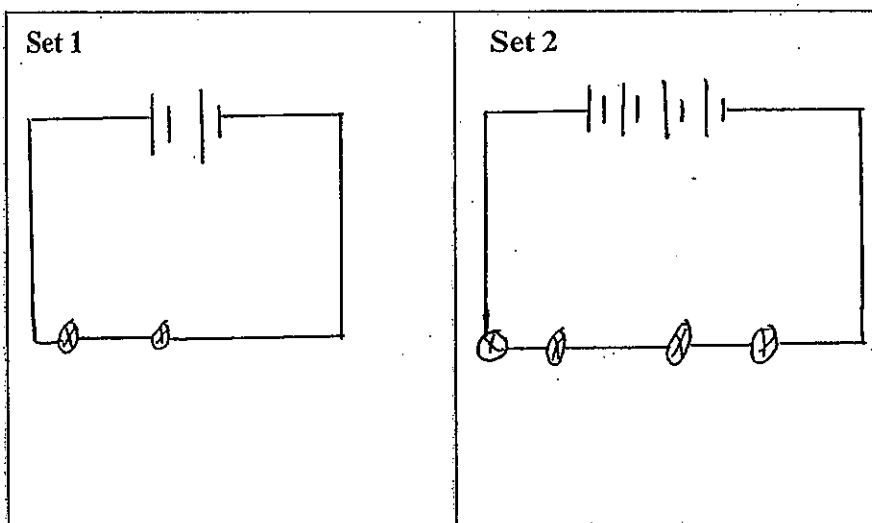
34)a)



35)a)Water from the salt water evaporate and condenses. When it comes into contact with the cool clear plastic sheet, forming water droplets. These droplets slide down the plastic sheet into the side trough for clean water.

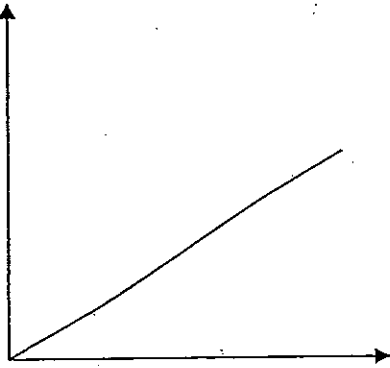
b)Place some ice cubes on the clear plastic sheet.

36)





37)a)



b)The bulb has fused.

38)a)i)Heat energy→Chemical energy→Kinetic energy

ii)The air above the candle gain heat and move upwards as hot air rises.

b)Move the pinwheel to the candle.

39)a)To see how the surface area of the reflective panel affects the time taken for the water to boil.

b)The larger the surface area of the reflective panel, the shorter the time taken for the water boil until 800cm<sup>2</sup> of the reflective panel.

c)i)The colour black absorbs more heat that other colours.

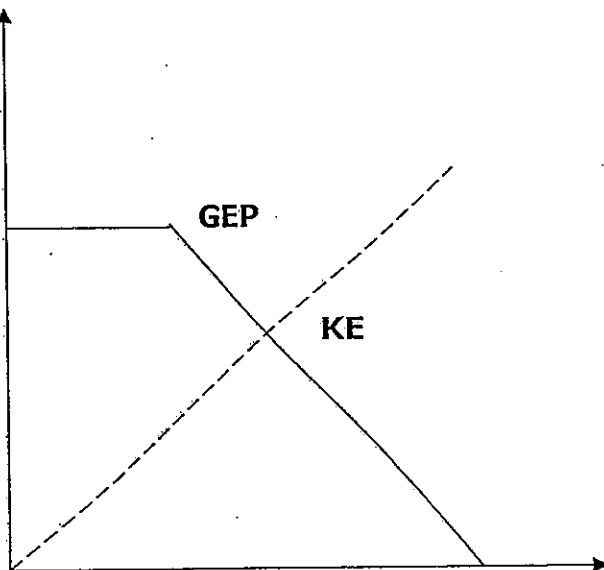
ii)It only works in the day.

40)a)Design B. The weight of the blade is lighter therefore it is able to spin faster generating more electricity.

b)1)Singapore does not have enough space.

2)Singapore does not have much wind.

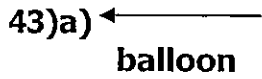
41)a)



41)b)Reduce friction between the slide and the body so that they can slide further.



b)She could increase the surface area of the parachute.



b)Force X push the balloon forward. Force X is greater than the frictional force between the movable case and the wire as such it move towards the left.

44)Glass X. It is less thick and heat can pass through more easily, thus, the manufacturer should use glass X.