

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

**SEMESTRAL ASSESSMENT 2
2010**

BOOKLET A

Date : 29 October 2010

Duration : 1 h 45 min

Name : _____ ()

Class: Primary _____ ()

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

Booklet A consists of 19 printed pages including this cover page.

Section A (30 x 2 marks = 60 marks)

For each question from 1 to 40, 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.

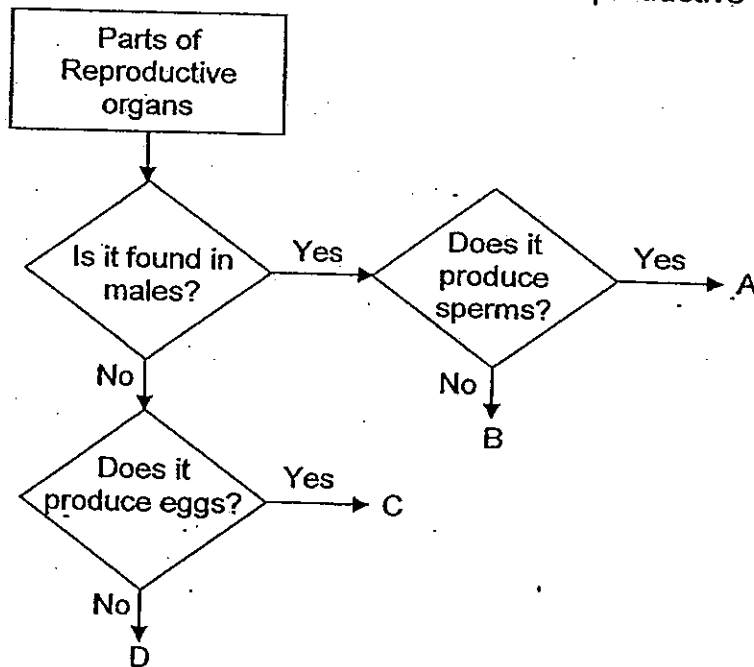
1. Four pupils made the following statements about leaves.

- Abigail: Leaves are all green.
 Brandon: Leaves contain chloroplasts.
 Cheryl: Leaves help plants to make food.
 Damien: Leaves have stomata to take in water from the air.

Which of the pupils have made the correct statements?

- (1) Abigail and Brandon only
 (2) Abigail and Cheryl only
 (3) Brandon and Cheryl only
 (4) Cheryl and Damien only

2. Study the classification chart on human reproductive system below.



Which of the following correctly identifies organs A, B, C and D?

	A	B	C	D
(1)	womb	ovary	testis	penis
(2)	ovary	womb	penis	testis
(3)	penis	testis	womb	ovary
(4)	testis	penis	ovary	womb

3. Which of the following organs are **not** parts of the respiratory system?

- A Gullet
- B Nose
- C Heart
- D Air sacs
- E Windpipe

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

4. Which of the following statements correctly describes an artery **only**?

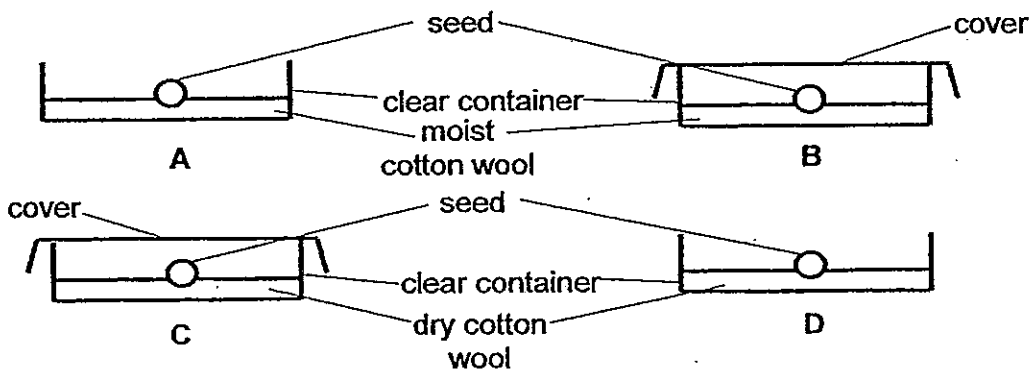
- A It has thick muscular wall
- B It carries blood to the heart
- C It carries blood away from the heart
- D It is connected to the heart by capillaries

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

5. Which one of the following correctly pairs the part of a plant cell to its function?

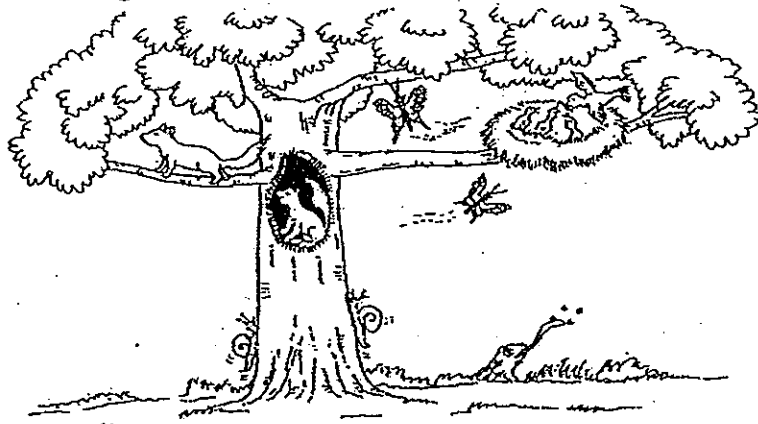
	Cell part	Function
(1)	nucleus	It is where cell activities take place
(2)	cytoplasm	It controls the activities in a cell
(3)	chloroplast	It helps the plant to photosynthesise
(4)	cell membrane	It gives the cell a regular shape

6. Glenn wanted to study if water is needed for germination to take place. Which of the following set-ups should he use to ensure a fair test?



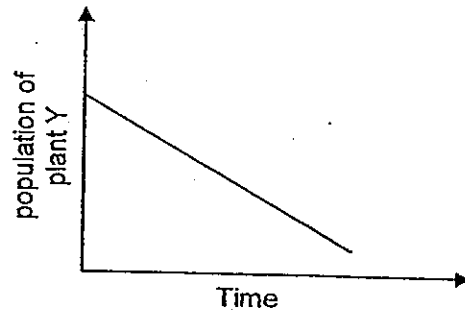
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

10. The diagram below shows a tree habitat. How many populations can be found in this diagram?

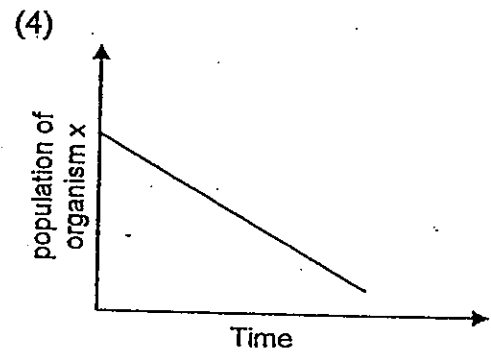
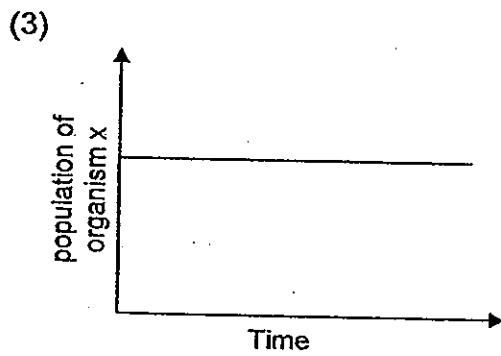
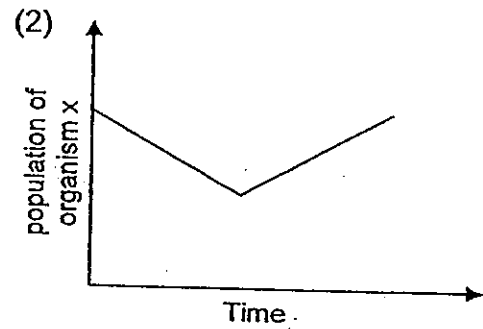
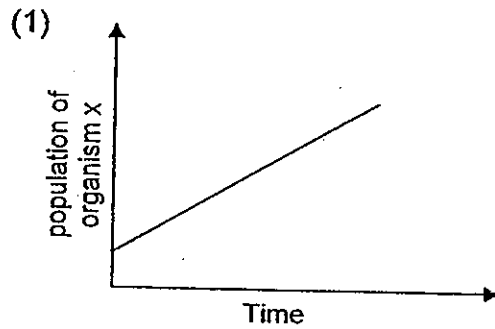


- (1) 9
(2) 6
(3) 5
(4) 4
11. Xian Wei used a clean toothpick to scratch the inner cheeks of his mouth. He then spread the scrapings on a petri dish filled with nutrient agar. He sealed the dish and checked it for growth after 2 days. He discovered a few groups of different bacteria growing on the agar.
- If only the scrapings had been added to the nutrient agar and nothing else, what can he conclude about the condition in his mouth?
- (1) There were no bacteria in his mouth.
(2) His mouth is a habitat for the bacteria.
(3) The bacteria could not grow in his mouth.
(4) The bacteria in his mouth came from the toothpick.

12. Organism X is usually found living and reproducing on plant Y. After a few months, the population of plant Y changed as shown in the graph below.



Which one of the following graphs correctly predicts the effect of the change of population Y on the population of organism X?



13. Wuarn Yu found a crab in a habitat. Which one of the following groups of organisms will she be likely to find in the same habitat?

- (1) grasshopper, turtle and ant
- (2) snail, water beetle and seagull
- (3) fish, water hyacinth and termite
- (4) prawns, coconut tree and sea stars

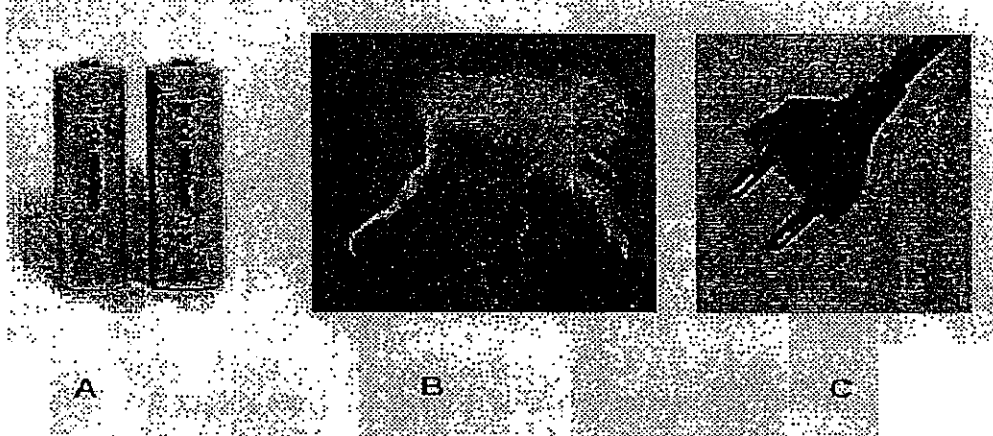
16. Study the classification table below.

X	Y
Gold coin	Rubber eraser
Glass mirror	Plastic tablecloth
Ceramic plate	Cotton shirt
Wooden chopstick	Nylon sock

Which of the following headings best represents X and Y?

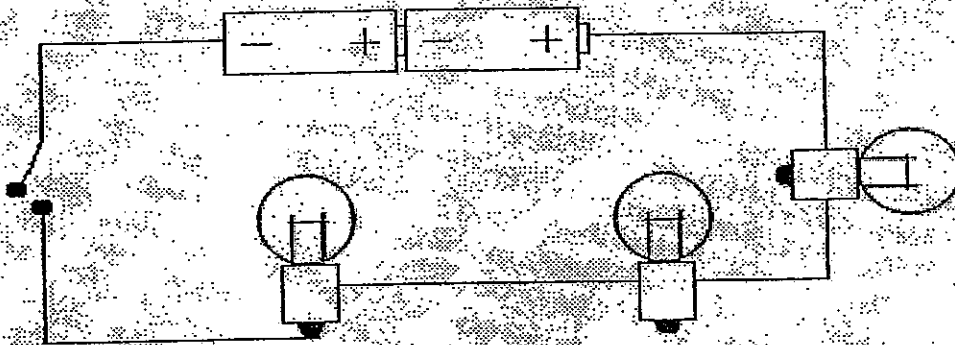
	X	Y
(1)	Float on water	Sink in water
(2)	Not flexible	Flexible
(3)	Breaks easily	Does not break easily
(4)	Does not allow light to pass through	Allows light to pass through

17. Which of the following is/are source(s) of electricity?



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

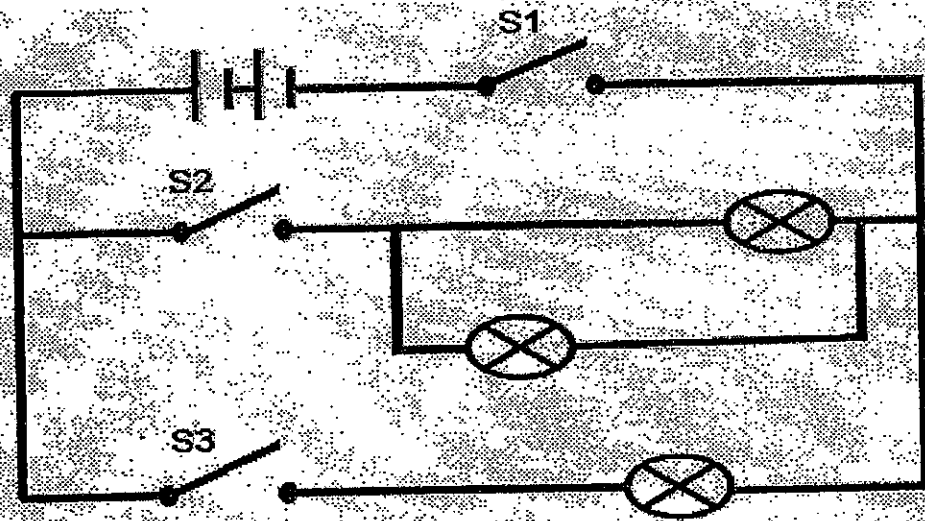
18. Study the diagram below.



How many bulb(s) will light up when the switch is closed?

- | | | | |
|-----|---|-----|---|
| (1) | 1 | (2) | 2 |
| (3) | 3 | (4) | 0 |

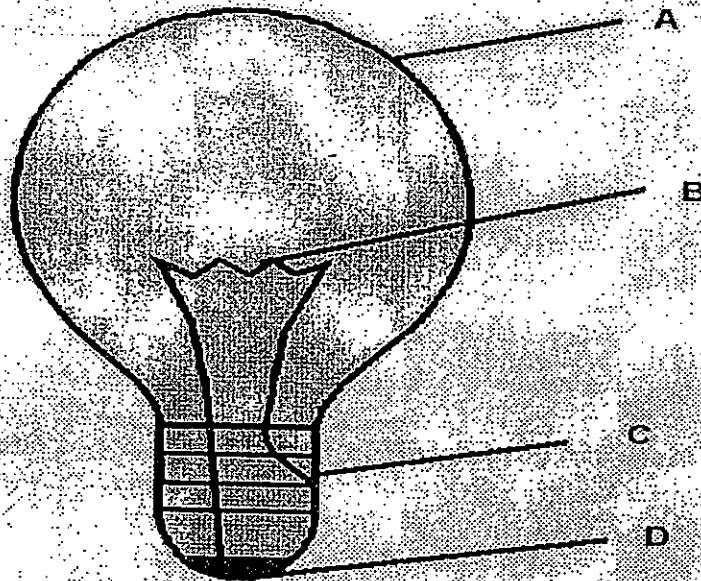
19. Study the circuit diagram below.



Which of the switches should be closed in order for only 2 of the light bulbs to be lighted?

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

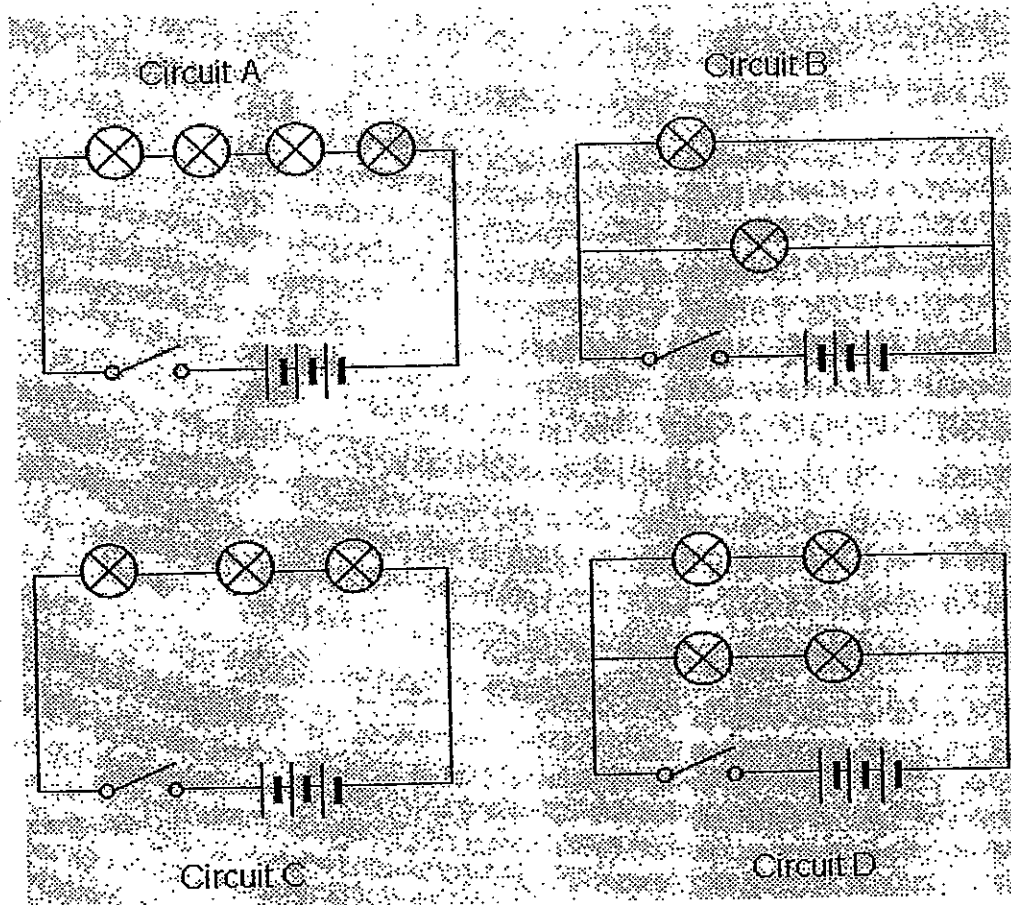
20. The diagram below shows the different parts of a light bulb.



Which of the following parts has electric current flowing through it when a battery is connected to light the bulb?

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

21. Study the circuit diagrams below.

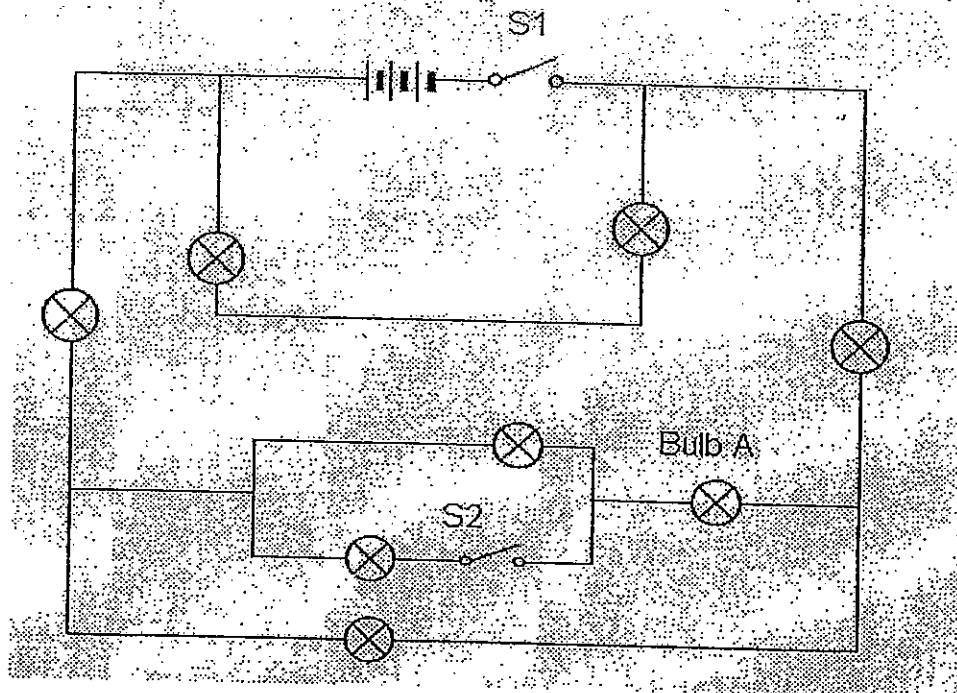


Arrange these circuits in order of brightness of the bulbs when the switches are closed, starting from the **brightest** to the **dimmest**.

- (1) ACBD
- (3) BDAC

- (2) BDCA
- (4) DBAC

22. Tommy set up the following circuit as shown below.

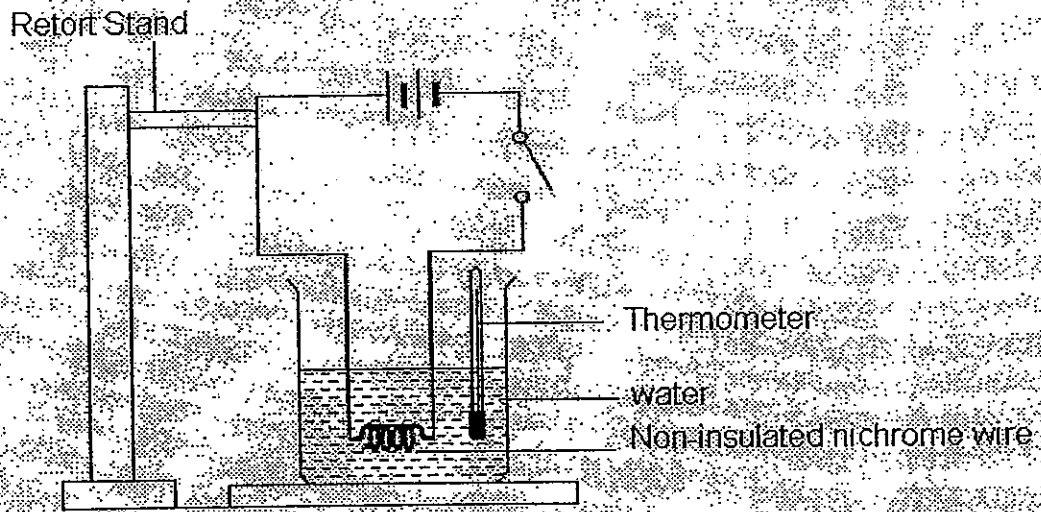


Before he closed switches S1 and S2, he realised that bulb A had fused. How many bulbs will light up when Tommy closes switches S1 and S2?

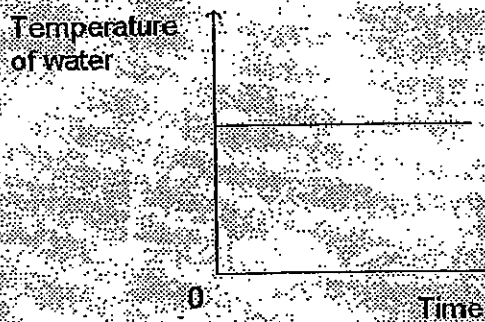
- (1) 3
- (3) 5

- (2) 2
- (4) 7

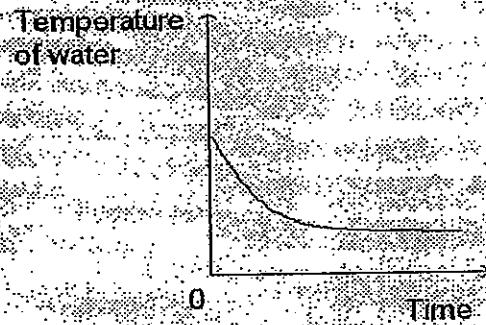
23. Marie set up the circuit shown below. Nichrome is a type of metal.



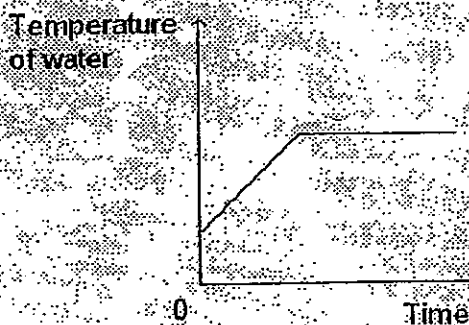
Marie closed the switch and placed a thermometer inside the beaker to measure the temperature of the water. Which one of the following graphs correctly shows how the temperature of water would change until the water boiled?



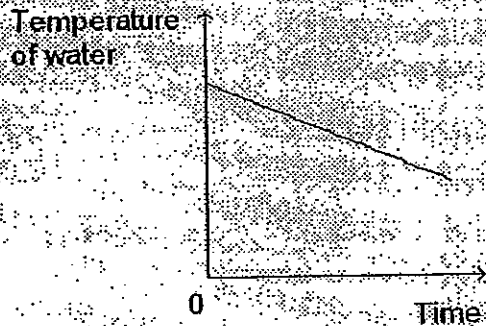
(1)



(2)

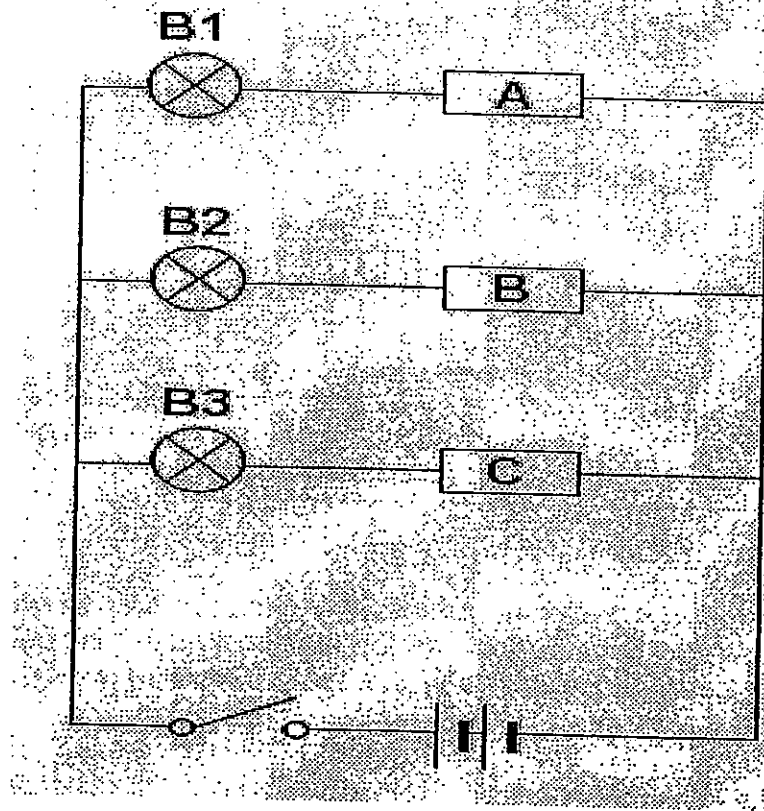


(3)



(4)

24. Mark set up the circuit as shown below.



The wires were connected to the objects A, B and C as shown in the table below.

A	B	C
Iron nail	Plastic bottle cap	Rubber band

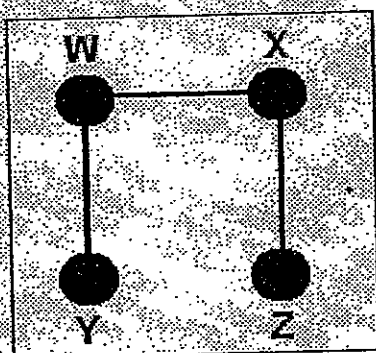
Which of the following shows correctly if the bulb(s) will light up when Mark closes the switch?

	B1	B2	B3
(1)	Light up	Light up	Do not light up
(2)	Light up	Do not light up	Do not light up
(3)	Light up	Light up	Light up
(4)	Do not light up	Do not light up	Light up

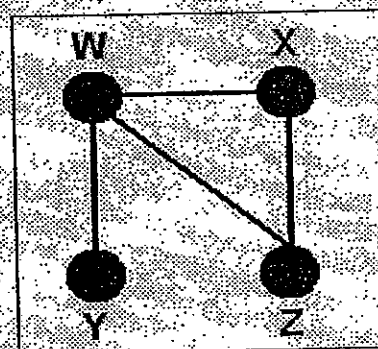
25. Ryan tested a circuit card and recorded his result in the table below.

Clips tested	Observation of bulb of circuit tester
W and X	Lights up
W and Y	Fails to light up
W and Z	Lights up
X and Y	Fails to light up
X and Z	Lights up
Y and Z	Fails to light up

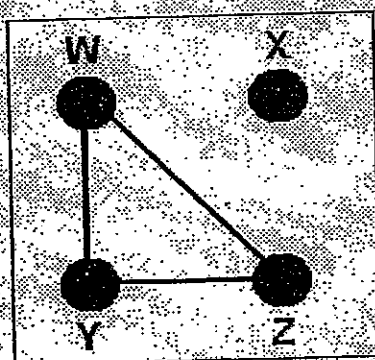
Which of the following diagrams shows how the wires are connected at the back of the circuit card?



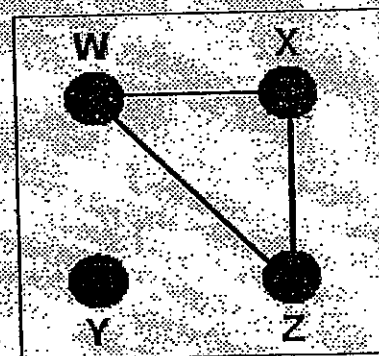
(1)



(2)



(3)



(4)

26. Serene and her friends were discussing some of the possible methods of saving electricity at home. Some of the methods that were discussed are stated below.

- A Turn on the water heater only when showering.
- B Remove the plug from the socket unless it is in use.
- C Using a fan instead of the air-conditioner on a warm day.
- D Avoid opening the doors of the refrigerator unless necessary.

Which of the following are effective methods to conserve electricity in a household?

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

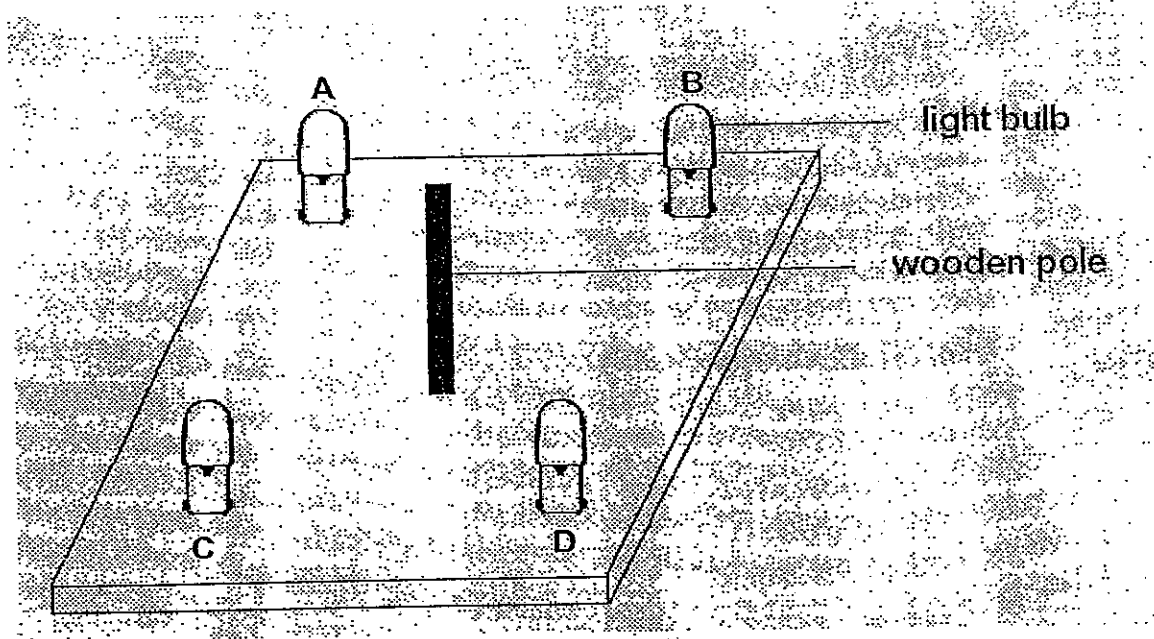
27. Weiting tested 4 different materials, A, B, C and D under different conditions. The following table shows the results of her test.

Material	Expands quickly when heated	Allows electricity to flow through
A	Yes	No
B	No	No
C	Yes	Yes
D	No	Yes

Which of the following is/are suitable material(s) which can be used to make a casing for outdoor electrical wall sockets?

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

28. Scott set up an experiment in a dark room as shown below.



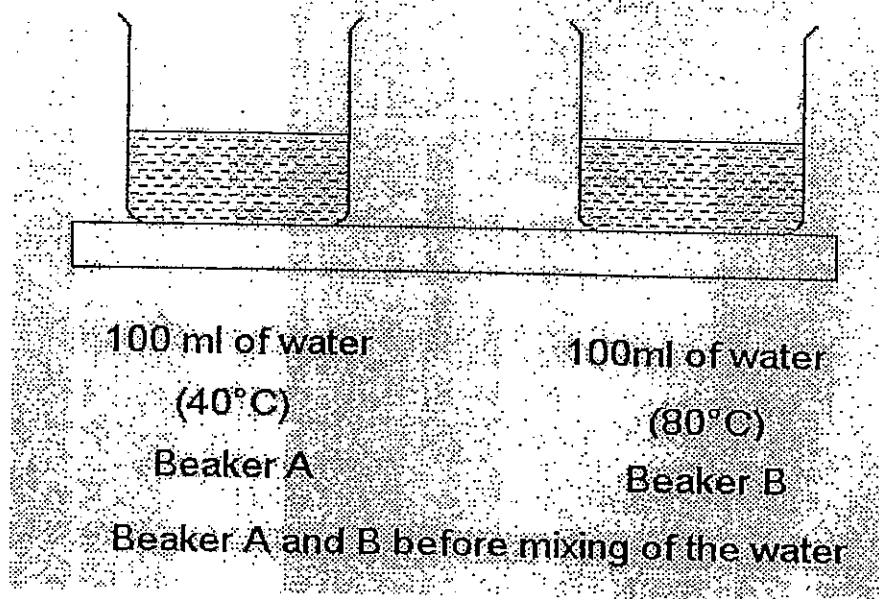
He connected four light bulbs ~~are connected~~ to a circuit board as shown above with a wooden pole attached to the centre of the board. He recorded the number of shadows of the wooden pole formed on the board when different bulbs were switched on. His results are shown below.

Bulbs that were switched on	A	B and C only	A and C only
No. of shadows of wooden pole formed	1	0	2

Based on the results he had obtained, which of the following shows the correct number of shadows of the wooden pole formed when different bulbs were switched on?

	A and D only	A, B, C and D only
(1)	0	0
(2)	1	4
(3)	2	2
(4)	2	4

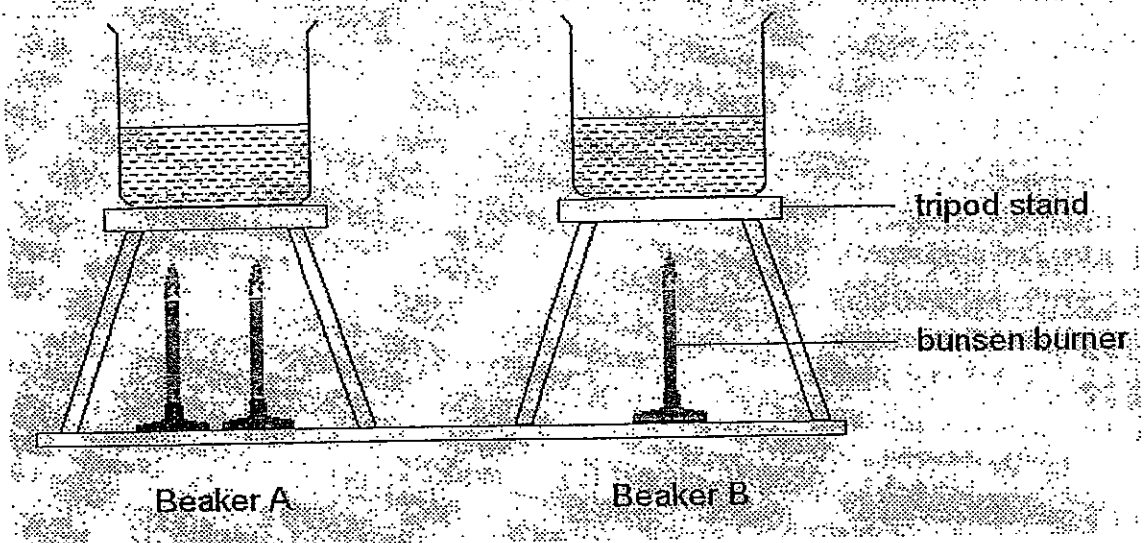
29. Michael set up an experiment using the 2 beakers as shown below.



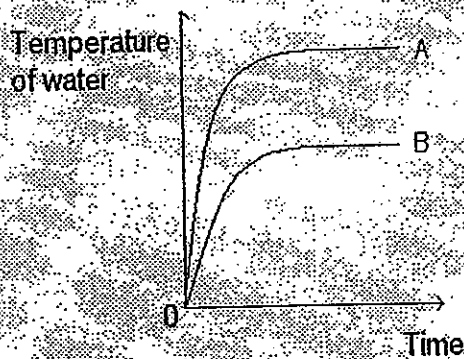
Michael poured all the water in beaker B into beaker A, stirred and started a timer. He recorded the temperature at the 3rd minute. He then recorded the temperature again at the ~~20th~~ ^{20th} minute. Which of the following correctly shows the temperature of the water in beaker A?

	Temperature of water 3 minutes after mixing	Temperature of water 20 minutes after mixing
(1)	40° C	30° C
(2)	40° C	35° C
(3)	65° C	35° C
(4)	55° C	70° C

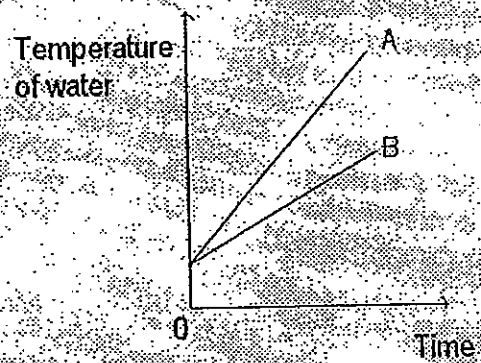
30. Darren set up the experiment as shown below.



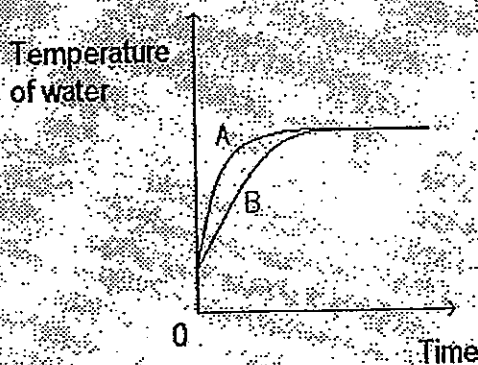
Both the beakers were filled with an equal amount of water from the tap. The bunsen burners are supplying heat to the water till the water boiled. Which of the following graphs shows correctly how the temperature of the water in the 2 beaker changes after some time?



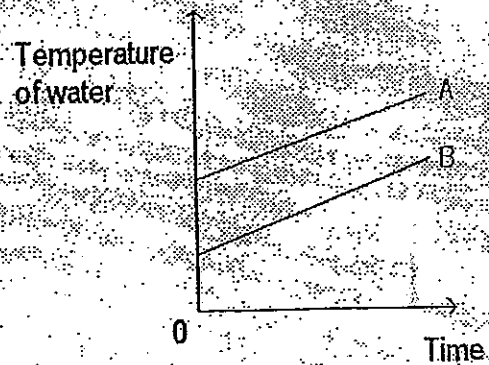
(1)



(2)



(3)



(4)

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

**SEMESTRAL ASSESSMENT 2
2010**

BOOKLET B

Date : 29 October 2010

Duration : 1 h 45 min

Name : _____ ()

Class: Primary _____ ()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature:

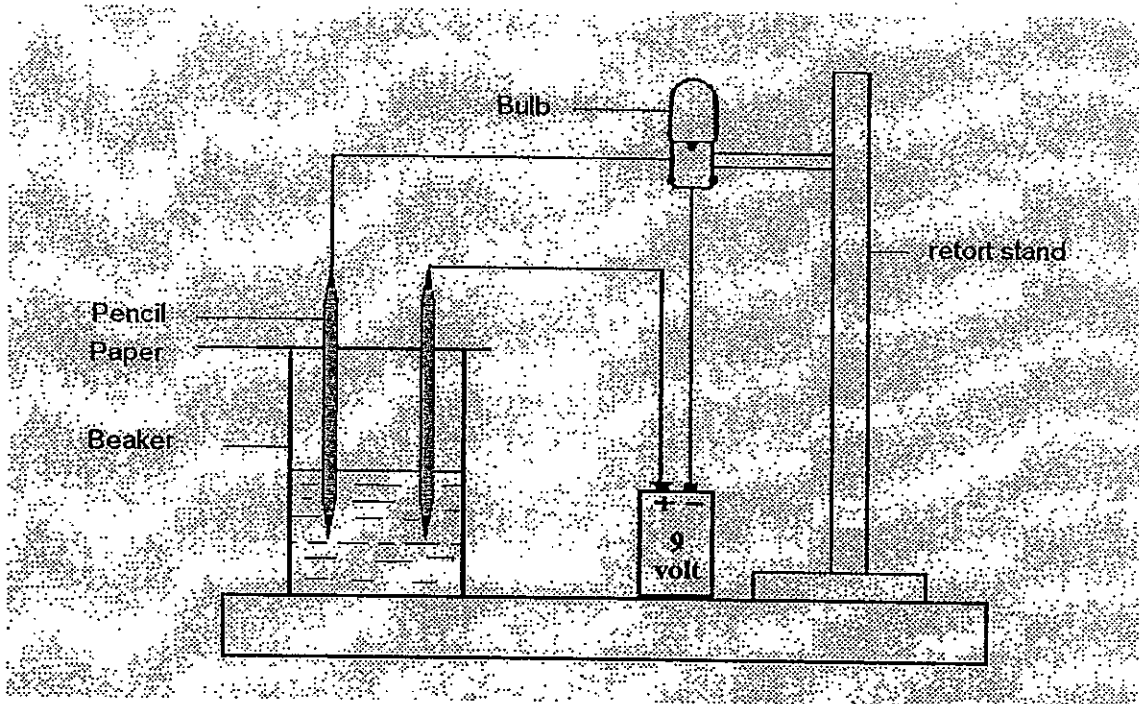
**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Booklet B consists of 16 printed pages including this cover page.

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

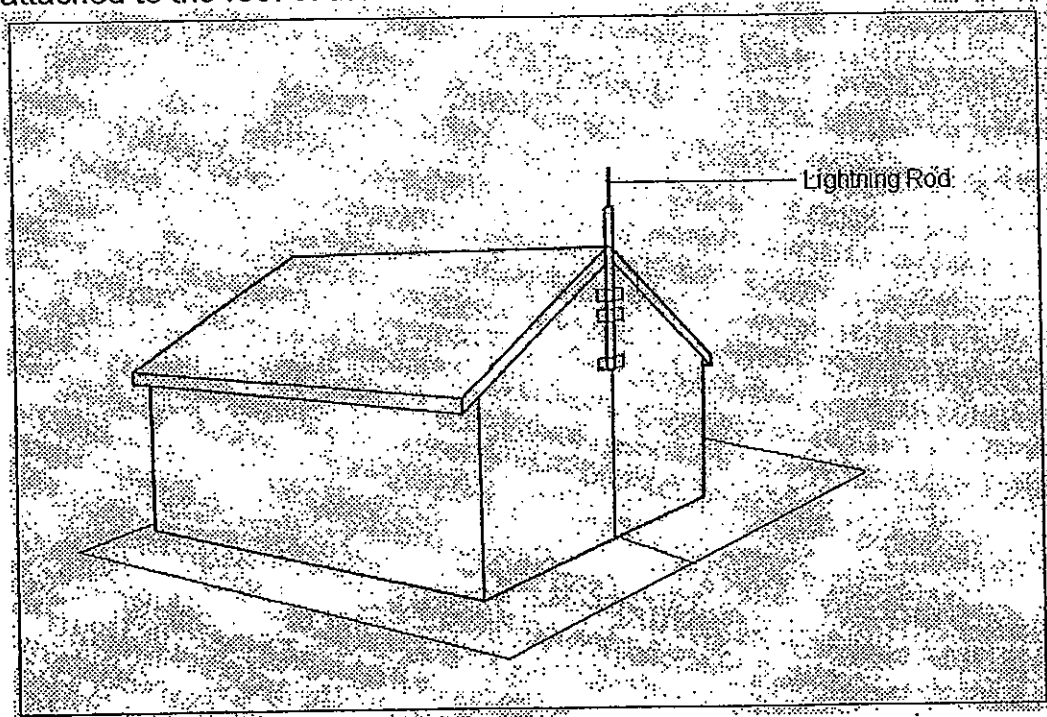
31. Alan set-up an experiment as shown in the diagram below. Two pencils were poked through a sheet of paper and placed on top of a beaker. The battery and the light bulb are connected by wires. The bulb lighted up when liquid P was added into the beaker. Alan repeated the experiment several times.



- (a) Based on the experiment, what can Alan conclude about the property of liquid P? [1]

- (b) Suggest a reason why the experiment was repeated several times. [1]

32. The diagram below shows a typical household with a lightning rod attached to the roof of the house.

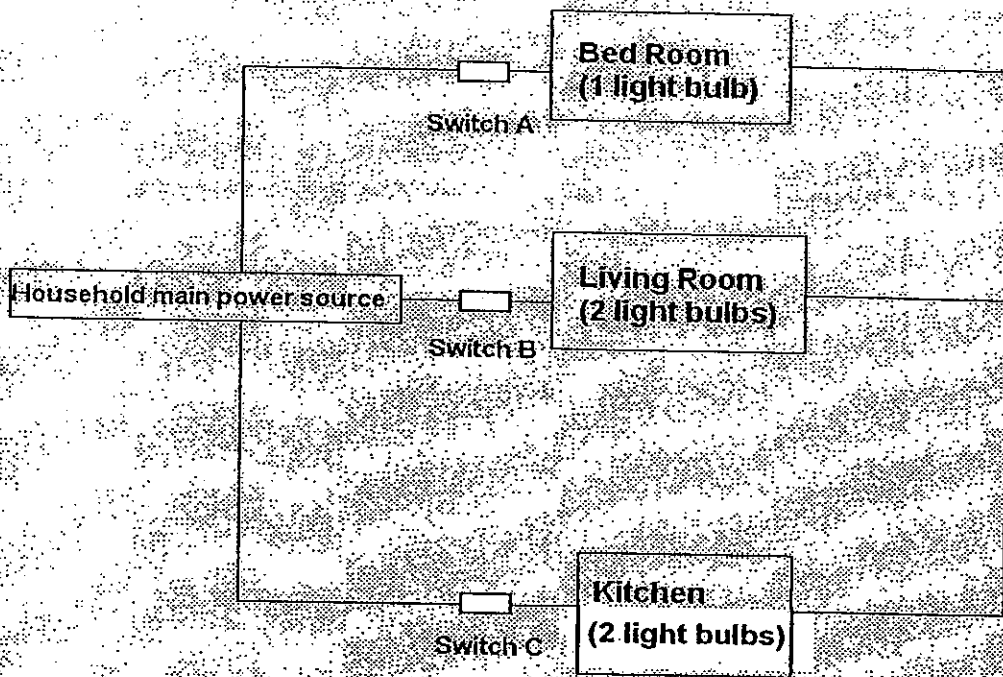


The purpose of attaching such a rod is to prevent damage to the house as well as electrical appliances by diverting the lightning to the ground.

- (i) Suggest a material which is suitable for making lightning rods. [1]

- (ii) Based on your answer in (i), explain your choice. [1]

33. The diagram below shows a layout of the circuit in a house. The bulbs in all 3 rooms are new and similar.

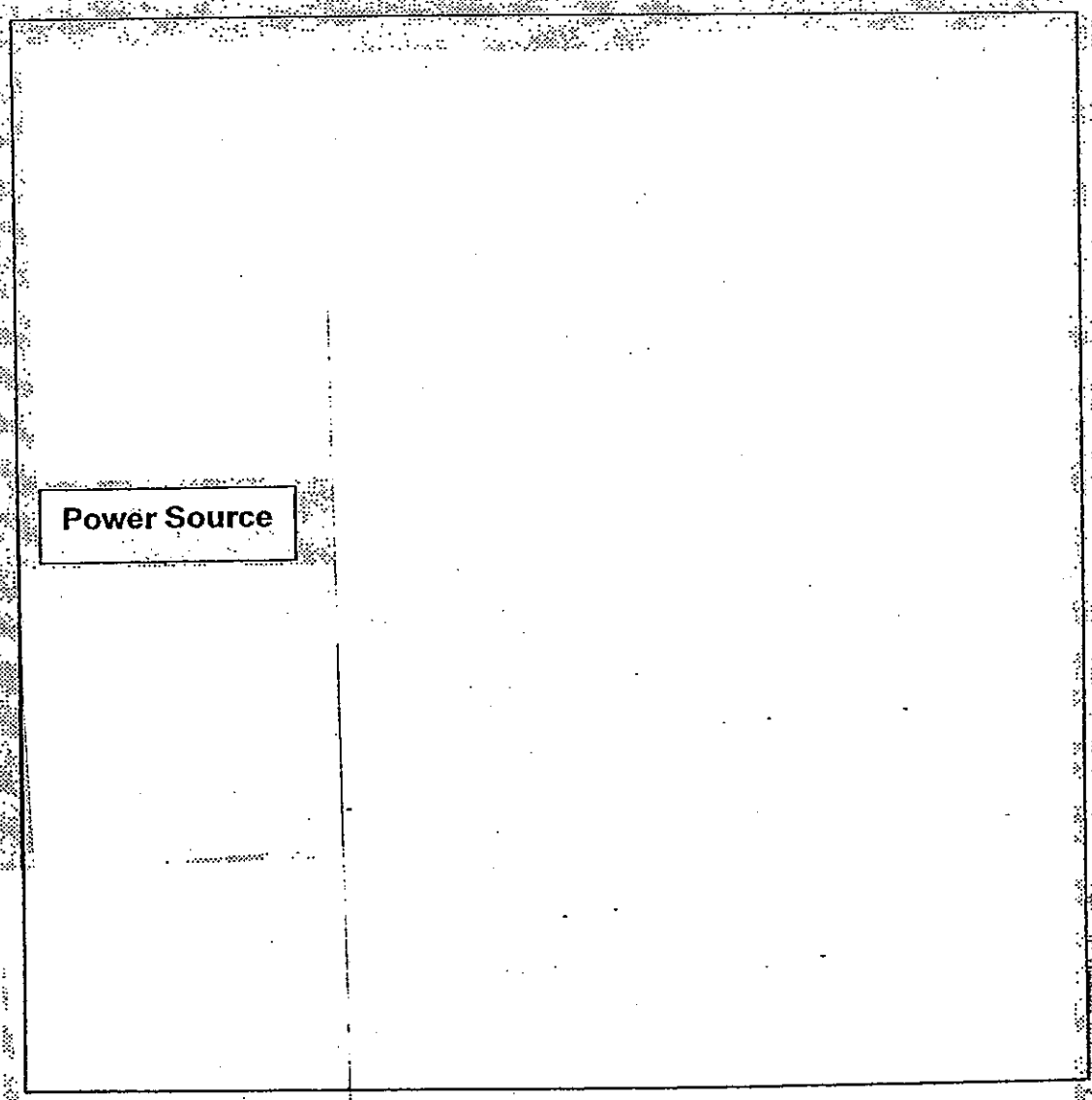


- (i) State an advantage of the arrangement of the lightings in the house. [1]

The living room and the kitchen had 2 light bulbs each. It was noticed that the bulbs in the kitchen were brighter as compared to the bulbs in the living room.

- (ii) Explain the above observation by giving a possible reason based on the arrangement of the light bulbs in each room. [1]

(iii) Using the space provided below, use symbols to complete the circuit diagram of the whole house. [2]



34. Jason wanted to find out if the number of batteries would affect the brightness of the bulb. He set up an experiment as shown below. Figure 1 shows the set up with one battery. The data logger was used to record the brightness of the bulb.

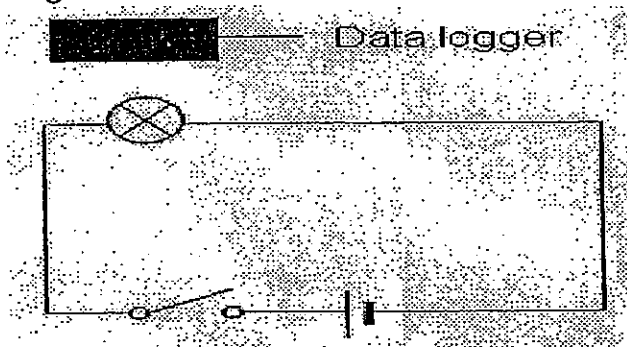


Figure 1

Jason recorded the results he obtained and plotted a graph as shown in figure 2.

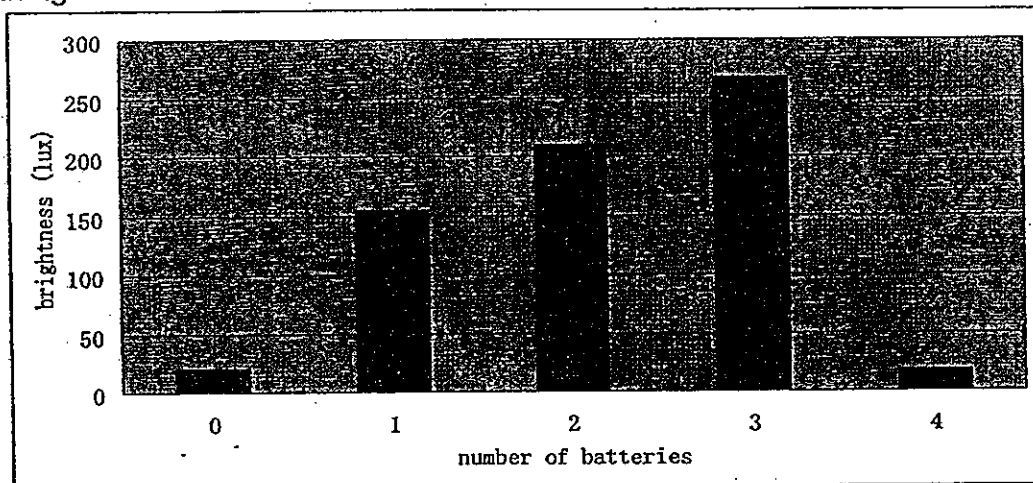
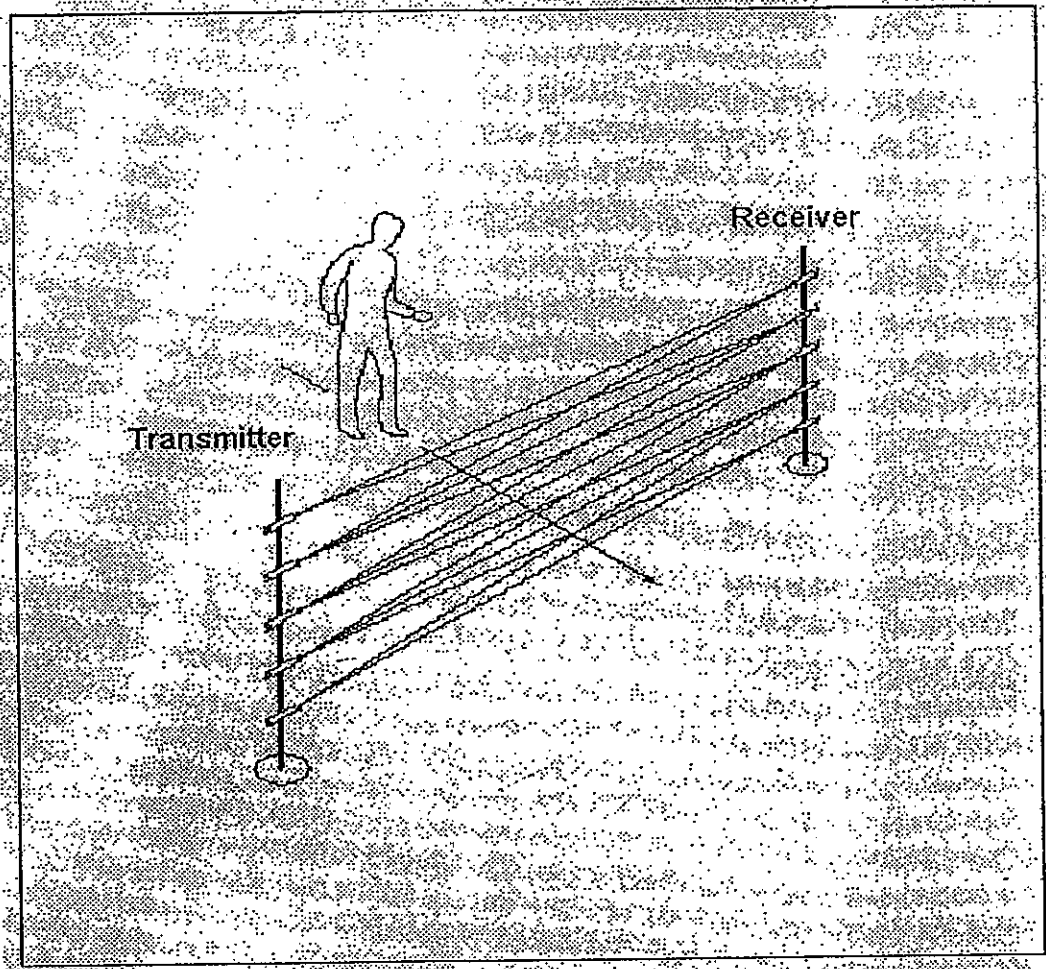


Figure 2

- (a) Based on the graph in Figure 2 suggest a possible reason why there was a reading on the data logger when there was no battery. [1]

- (b) The readings of the data logger dropped significantly when the fourth battery was added. Suggest a possible reason for the drop in the recordings by the data logger. [1]

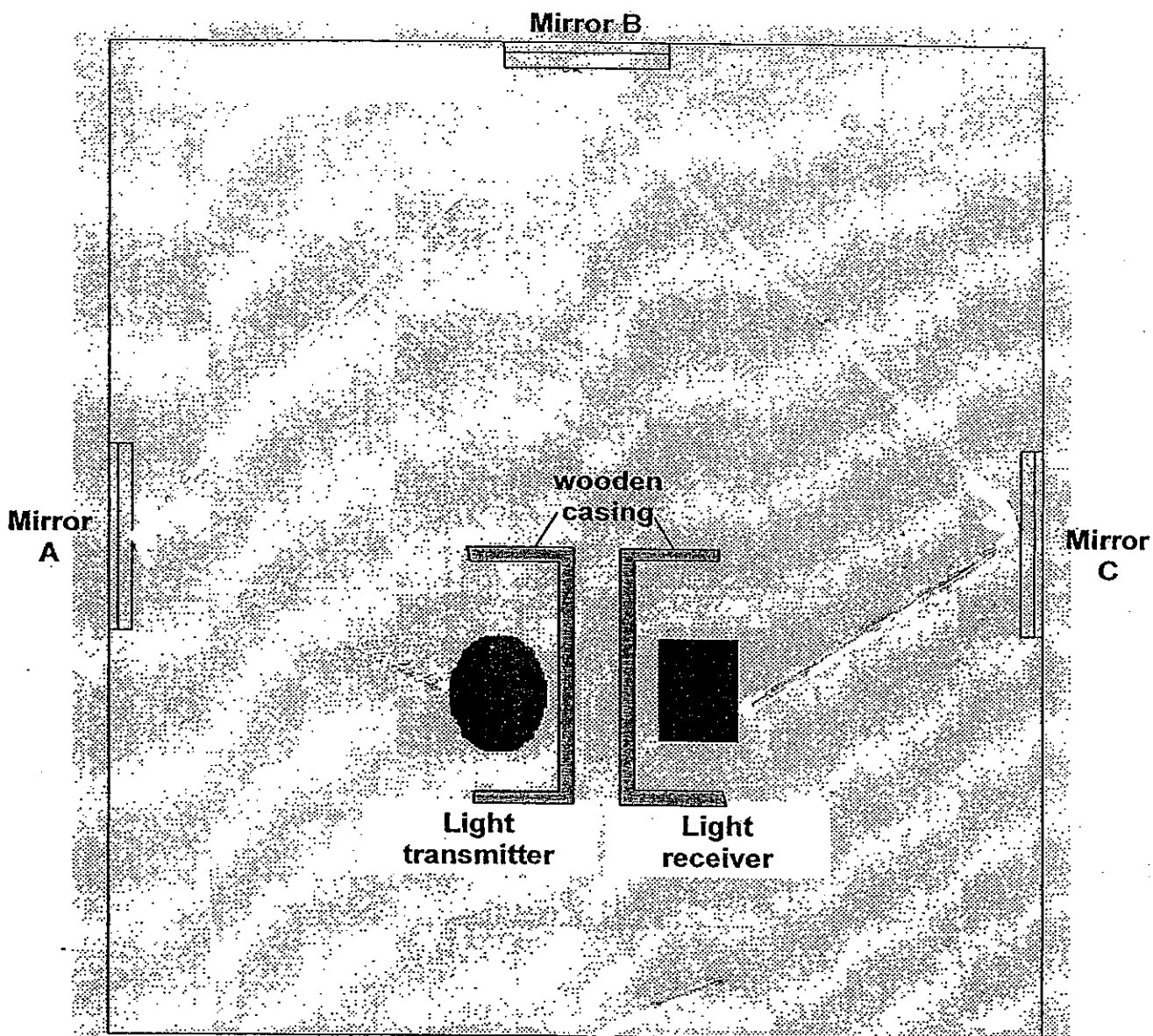
35. The diagram below shows a security set up used in banks. The light transmitter sends out a continuous light signal which is received by the light receiver. The entire set-up is connected to an alarm system.



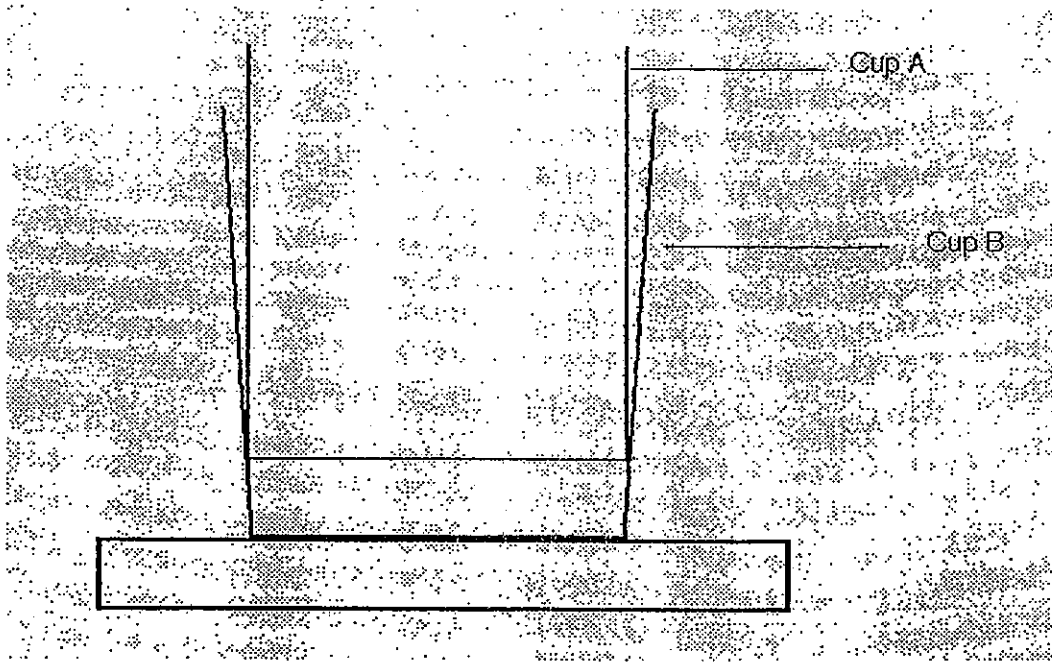
- (a) Explain how the alarm is triggered when a person walks past the security set-up. [2]

- (b) The diagram below shows a set-up which consist of the light transmitter and the light receiver. The mirrors A, B and C are used to reflect light from the light transmitter to the light receiver.

Draw a light ray to show how the light from the light transmitter reaches the light receiver. [1]



36. Tom found 2 metal cups in the kitchen that were stuck to each other. The figure is as shown below.



Tom was unable to pull the cups apart no matter how hard he tried.

Suggest a method of how he can pull the cup apart and explain how your method will work. [2]

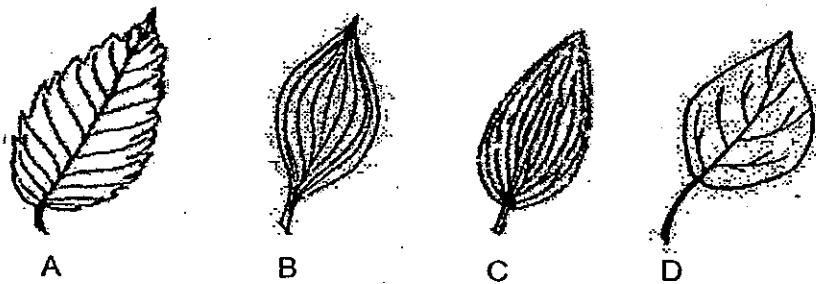
37. Shirleen scratched 2 objects, P and Q, against one another. She noticed that scratch marks could be observed on P but not on Q.

(a)(i) What property of P and Q was she testing? [1]

(ii) How was object Q different from object P based on the property you have stated in (i)? [1]

(a) State one variable that should be kept the same to ensure a fair test. [1]

38. Study the diagrams of the leaves below.

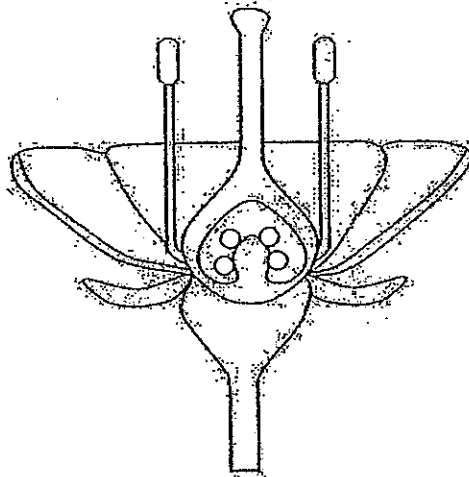


Classify leaves A, B, C and D in the classification table below.

- (i) Give a suitable heading for the columns in the table. [1]
 (ii) Classify the leaves correctly based on the heading given in (i) [1]

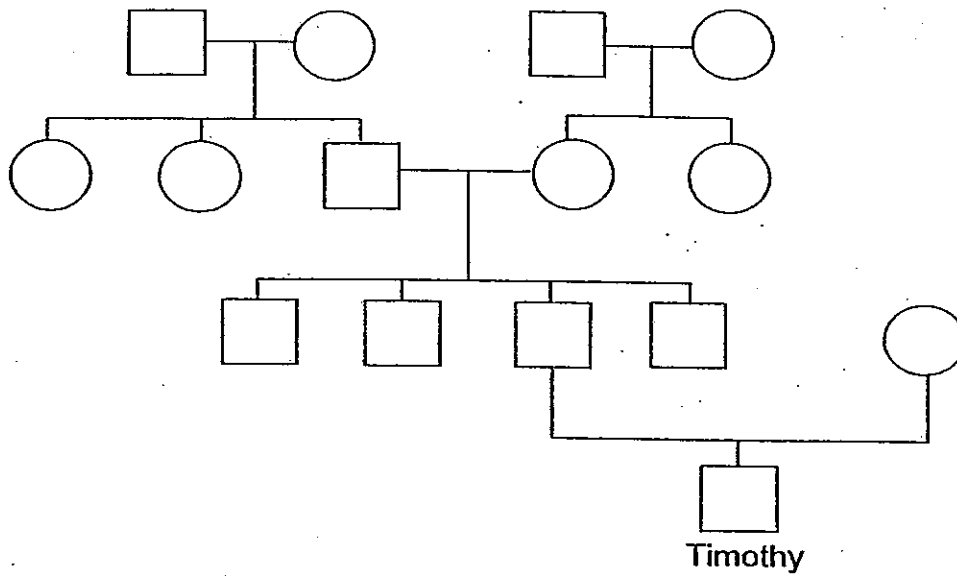
Type of leaves	
(i)	(i)
(ii)	(ii)

39. The diagram below shows the male and female parts of a flower.



- (a) Label and identify the part of the flower where **pollen is produced** and where the **pollen will land** after pollination. [1]
- (b) For the above flower, would the fruit formed after fertilisation contain 4 seeds? Explain your answer. [1]
-
-

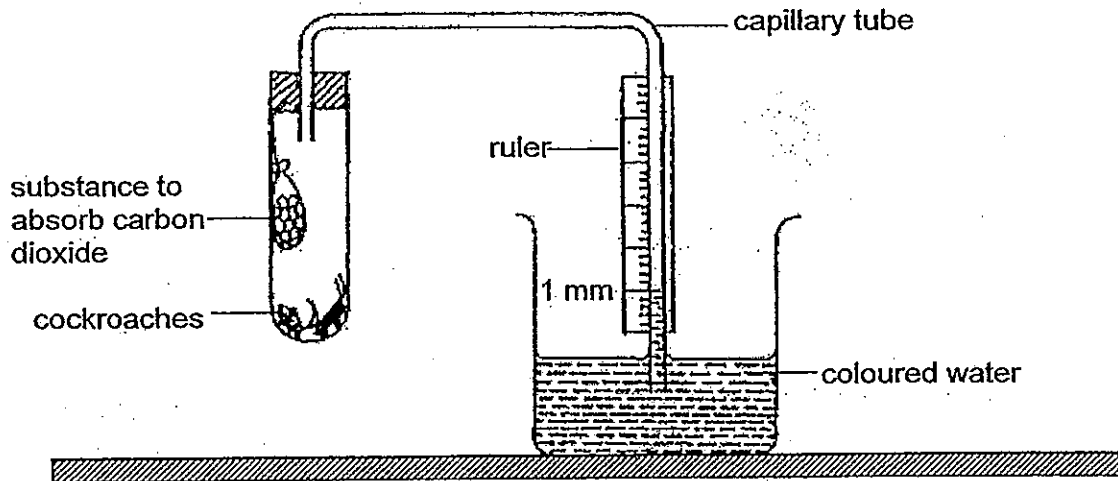
40. Study Timothy's family tree below.



Based on the information provided in Timothy's family tree, tick the appropriate columns in the table given below. [2]

	Statements	True	False	Not possible to tell
(i)	Timothy has 4 uncles and no aunts.			
(ii)	Timothy's mother was an only child.			
(iii)	Timothy's paternal grandfather has 2 siblings.			
(iv)	There are 3 generations in this family tree.			

41. Kimberley set up an experiment to study the respiration of small animals.



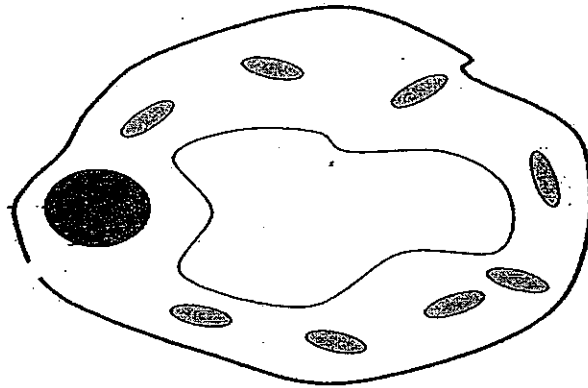
- (a) What would be the reading (in mm) shown on the ruler after she has carried out her experiment for 1 day? [1]

- (b) (i) How should the control set-up for the experiment be different from the set-up shown above? [1]

- (ii) Explain your answer in (i) [1]

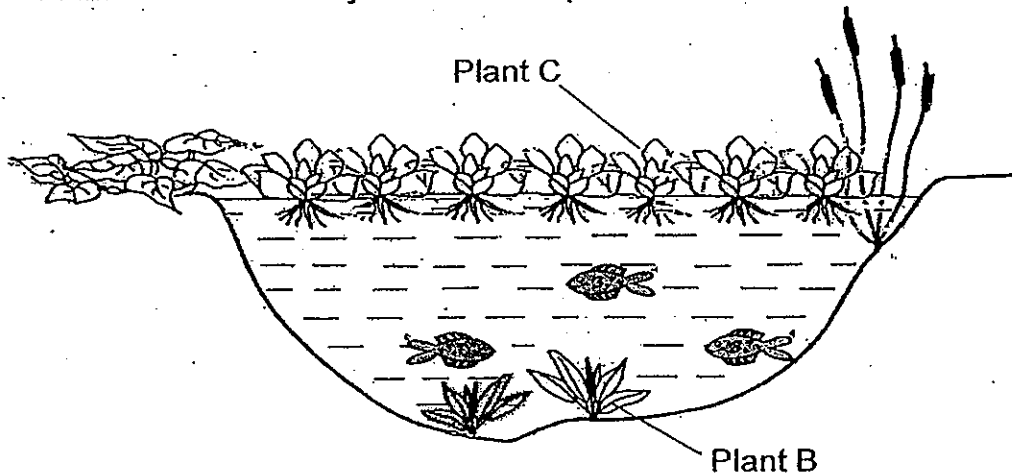
- (c) Would her experiment work if she used ants instead of cockroaches? Explain your answer. [1]

42. Vanessa was given a cell from a multicellular organism to look at under the microscope. Her teacher had removed one part from the cell. She drew the cell she observed but could not identify it.



- (a) **Label and identify** the part of the cell that contains genetic material. [1]
- (b) Name the part of the cell that was removed. [1]
- _____
- (c) Other than the part that was removed, what other observation about the cell allowed Vanessa to confirm the type of organism the specimen was taken from? [1]
- _____
- _____
- (d) Predict what would happen to the cell if it was placed in a petri dish of pure water for a day. [1]
- _____
- _____

43. The diagram below shows the conditions found in a pond community. Plants C were recently added to the pond.



- (a)(i) What would happen to plant B after several months? [1]

- (ii) Explain your answer in (i). [1]

- (b) When all the plants were removed and more fishes were added to the pond, it was observed that the fishes swam closer to the surface of the water. Explain why they behave this way. [2]

44. Tarleton carried out an experiment to find out what type of soil is suitable for growing rose plants. Before the experiment, he drew up a table to record the materials used.

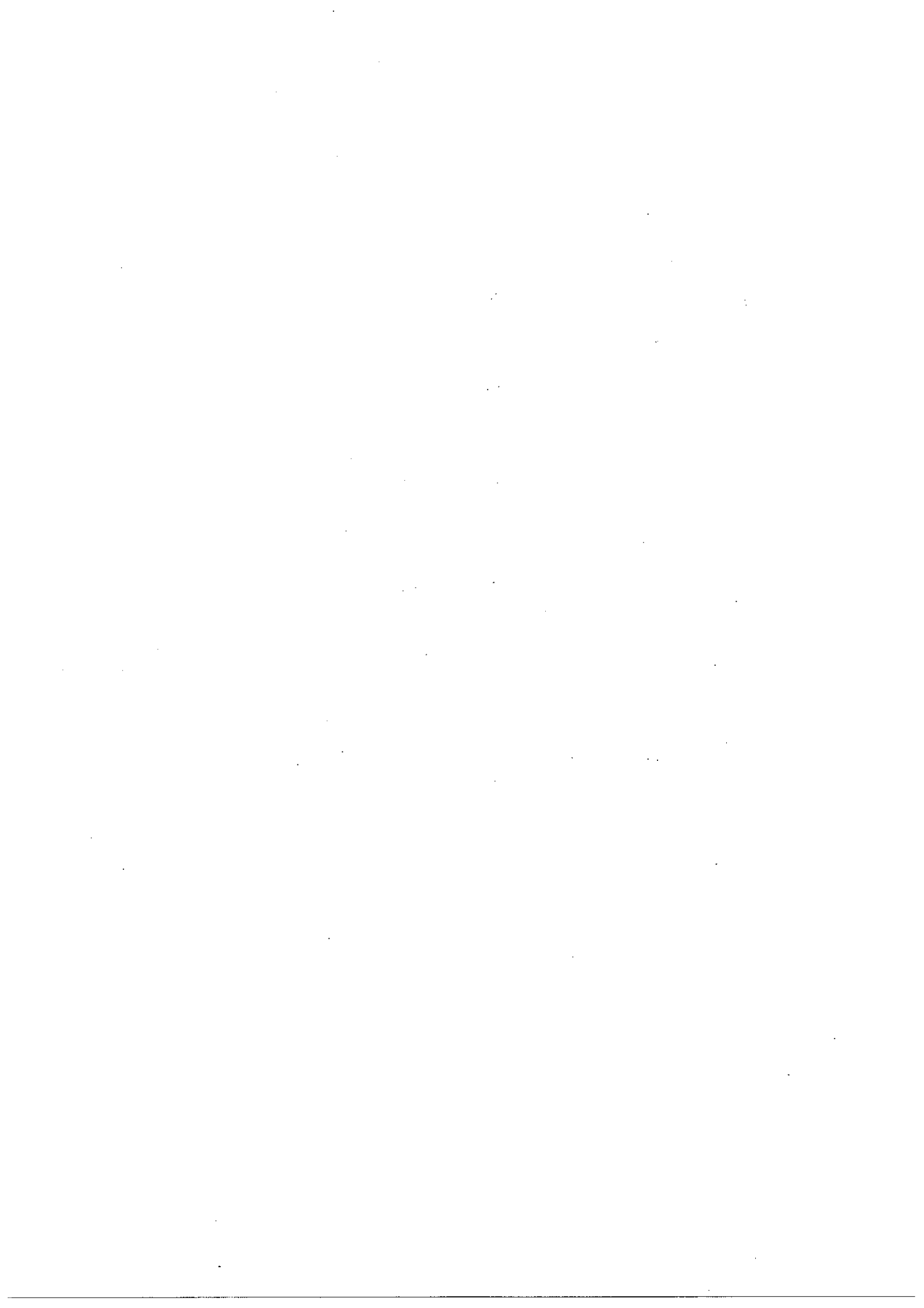
(a) Fill in the blanks in his table below to help Tarleton carry out a fair experiment. [3]

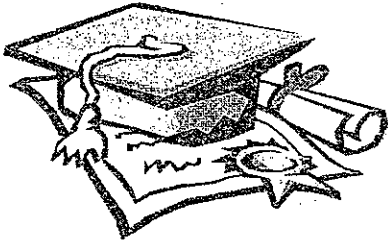
	No. of pots	Size of pot (cm ³)	Type of soil	Amount of water used to water the plants daily (cm ³)
Set-up 1	1		Clayey	
Set-up 2	1			100
Set-up 3	1	500		

(b) Tarleton wanted to ensure that his results are reliable. However, he does not have enough time to repeat his experiment. What should he do to ensure reliability of his results? [1]

—————END OF PAPER—————

Setters: Mr Low Kiah Wee
Ms Yasmeen Mohamad



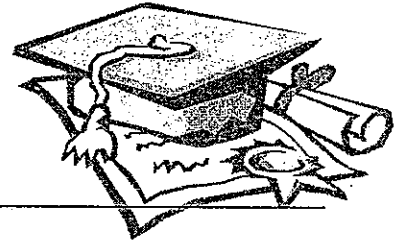


ANSWER SHEET

EXAM PAPER 2010

**SCHOOL : NANYANG PRIMARY
SUBJECT : PRIMARY 5 SCIENCE**

TERM : SA2



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

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

31)a) Conductor of electricity. b) ensure results are reliable.

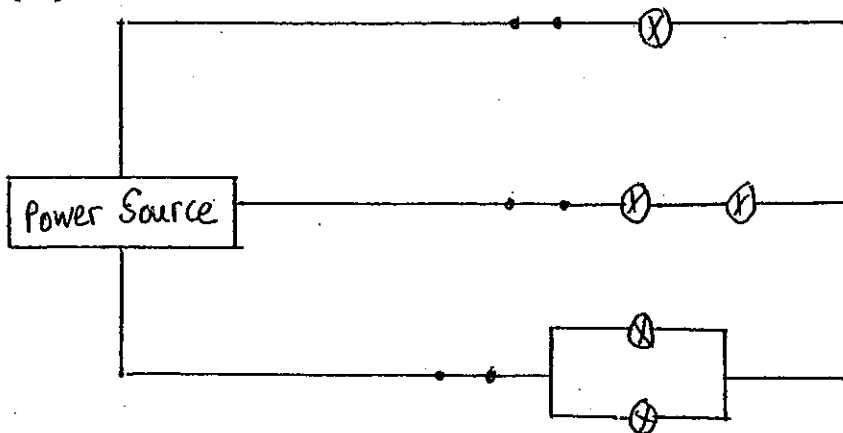
32)i) Any metal.

ii) Metal is a good conductor of electricity($\frac{1}{2}$) it will conduct the lightning away from the house.($\frac{1}{2}$)

33)i) Bulbs can be controlled individually.

ii) Bulbs in living room arranged in series($\frac{1}{2}$) bulbs in kitchen arranged in parallel($\frac{1}{2}$).

iii)

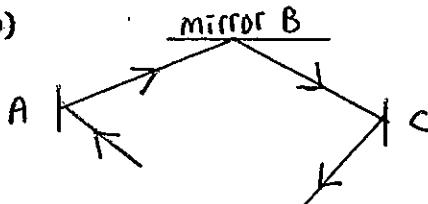


34)a) Data logger detected light from the surroundings.

b) Bulb fused as there were too batteries added.

35)a) When a person walks past the set-up, his body would block (1) the light signals. When the receiver cannot receive any light signal (2), it triggers the alarm.

b)



36) Immerse cup B in hot water (1). When it is heated up, it will expand (1) making it possible to pull the cups apart.

OR) Pour cold water/ice in cup A (1). When it is cooled, it will contract (1) making it possible to pull the cups apart.

37) a) i) Hardness.

ii) Object Q is harder than object P.

b) Amount of strength used to scratch object.

38) i) network veins
A, D

parallel veins
B, C

OR) jagged edge
A

entire edge
B, C, D

39) a) stigma (centre) anthers (side)

b) Yes, there are 4 ovules and when all are fertilised, they will become 4 seeds.

40) i) Not

ii) Not

iii) T

iv) F

41) a) 1mm---6mm

b) i) Should not have cockroaches.

ii) Allow her to conclude that the movement of water is due to the cockroaches taking in oxygen.

c) Yes, ants respire too.

42) a) nucleus.

b) cell wall.

c) It has chloroplasts ($\frac{1}{2}$) and only plant cells have them ($\frac{1}{2}$).

d) It would burst.

43) a) i) They would die.

ii) Plant C blocks out the sunlight ($\frac{1}{2}$) and plant B cannot make food ($\frac{1}{2}$).

b) Without water plants to give out oxygen during photosynthesis and more fishes, there would be less ($\frac{1}{2}$) dissolved ($\frac{1}{2}$) oxygen in the water fishes have to swim to the surface ($\frac{1}{2}$) to get oxygen from the surrounding air ($\frac{1}{2}$) / air above.

44) a) 500

100

500

Sandy

Garden

100

(1)

(1)

(1)

b) 3 pots per set-up.