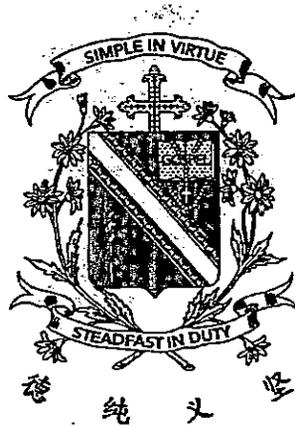


Name: _____ (.)

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5
Semestral Assessment 1 – 2015
SCIENCE
BOOKLET B
14 May 2015

Total Time for Booklets A and B: 1 hour 45 minutes

14 questions
40 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This paper consists of 16 printed pages.

Booklet A	60
Booklet B	40
Total	100

Section B (40 marks)

For questions 31 to 44, write your answers in this booklet.

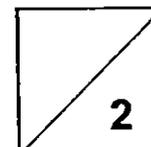
The number of marks available is shown in the brackets at the end of each question or part question.

31. Study the characteristics of four things, P, Q, R and S, shown below.

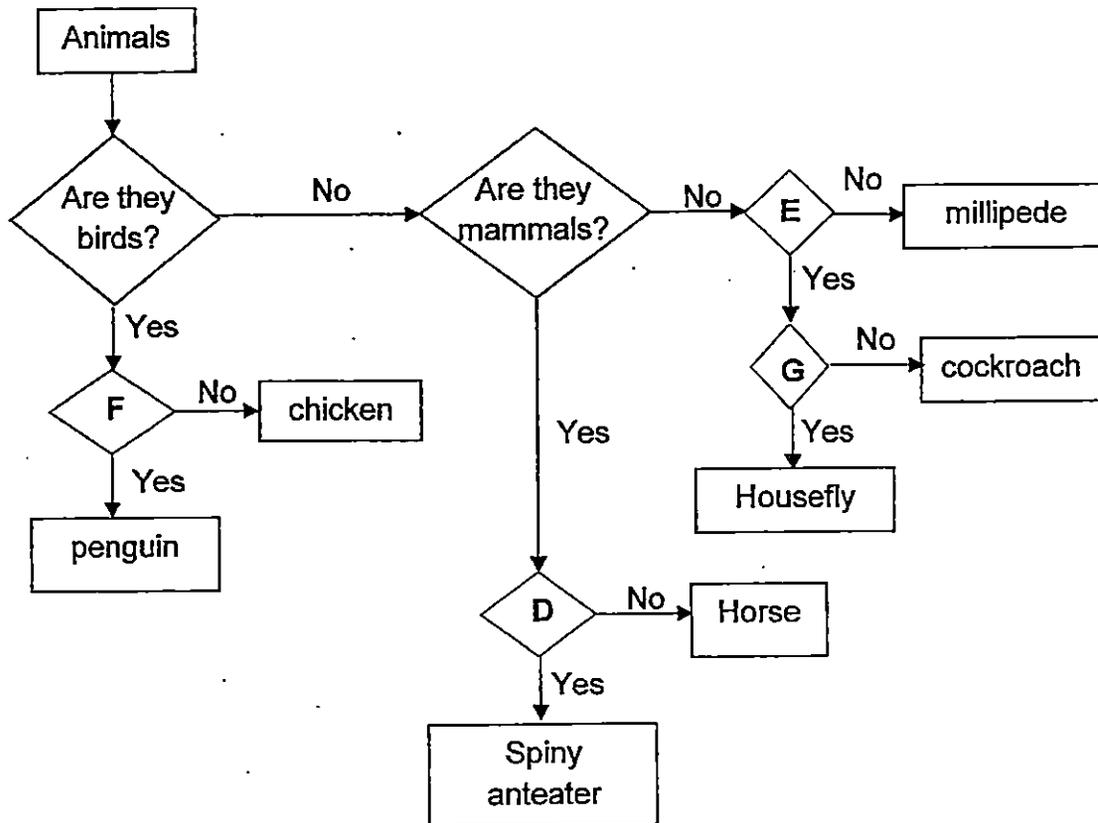
Thing	Responds to changes	Moves from place to place on its own	Able to reproduce	Makes its own food
P	√			
Q	√	√	√	
R	√	√		
S	√		√	√

Based on the information given in the table above, indicate whether each of the following statements is True (T), False (F) or Not Possible to Tell (NP) in the space provided. [2]

	Statement	T/F/NP
(a)	S is most likely a plant.	
(b)	Q and S reproduce by laying eggs.	
(c)	P and R do not need food to survive.	
(d)	P, Q, R and S are all alive since they respond to changes.	



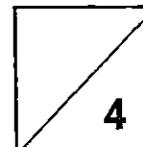
32. Study the flow chart on animals below.



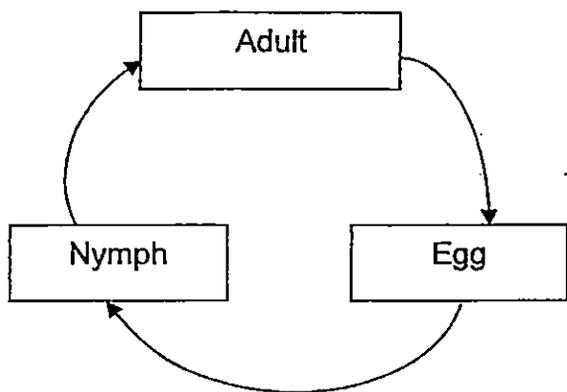
Each of the letters, D, E, F and G, in the flow chart represents a question.

Write the letter, D, E, F or G, in the correct boxes below to indicate the question they represent. Each letter can only be used once. [4]

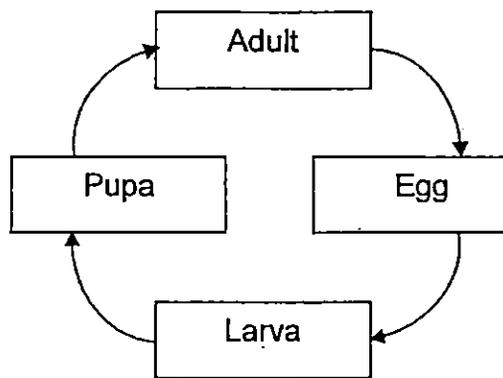
Questions	Letter
Can they swim?	
Are they insects?	
Are they reptiles?	
Do they lay eggs?	
Do they have many legs?	
Do they have a larval stage in their life cycle?	



33. The diagrams below show the life cycles of two animals.



Life cycle of Animal A

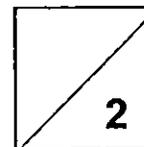


Life cycle of Animal B

Based on the diagrams above, list one similarity and one difference between the life cycles of Animal A and Animal B. [2]

Similarity:

Differences:

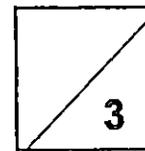


34. Kartika observed some cells from plants and animals under the microscope. She recorded her observations in the table below.

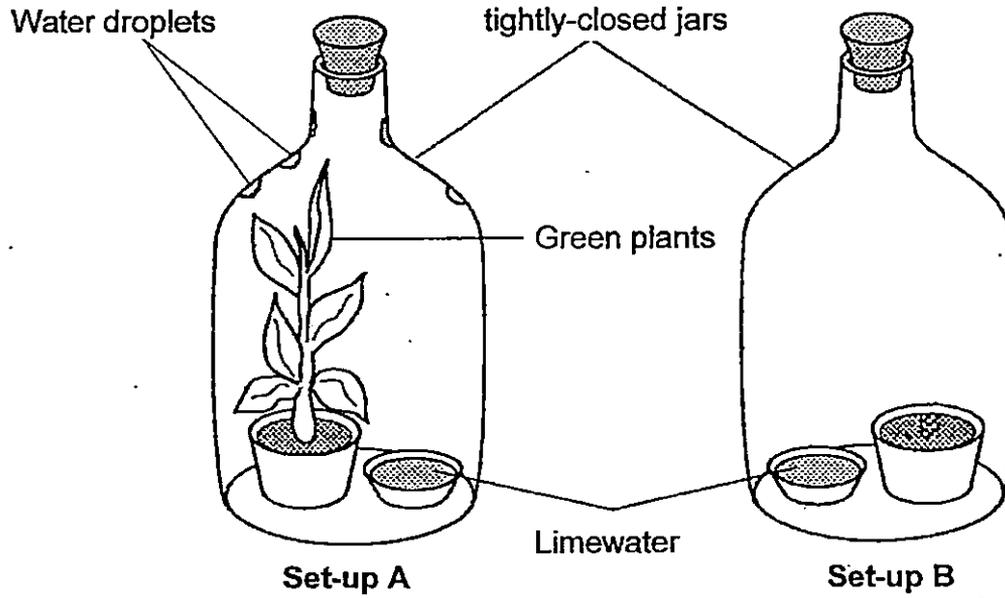
	Cell A	Cell B	Cell C
Nucleus	Yes	Yes	Yes
Cell Wall	Yes	No	No
Chloroplast	No	No	No
Cell Membrane	Yes	No	Yes

- (a) Her teacher said she made an error in one of her observations. For which cell, A, B or C, was the wrong observation made? Explain why. [1]

- (b) Which cell is most likely taken from the bulb of an onion? Explain why. [2]



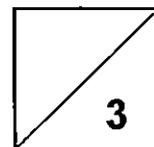
35. Qiaoyi set up an experiment as shown below.



The two set-ups, A and B, are placed in a locked cupboard for two days. After two days, she observed that the limewater in beaker A has turned very chalky while the limewater in beaker B has turned slightly chalky.

(a) Name the process that happened which caused the limewater in dish A to turn chalky. [1]

(b) Explain why the lime-water in set-up B has turned only slightly chalky as compared to the lime-water in set-up A. [2]

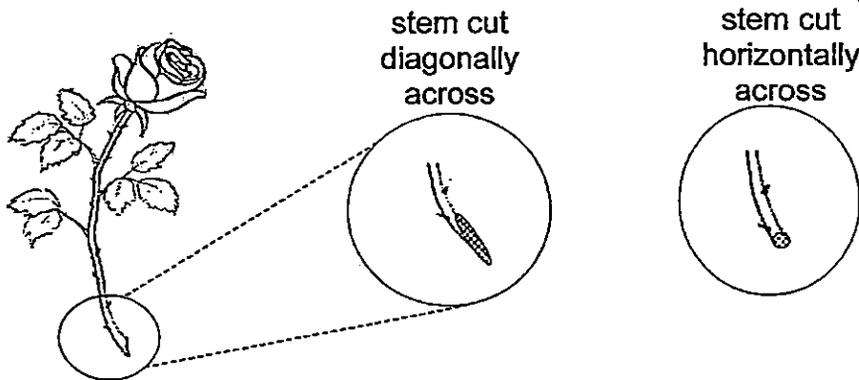


36. The plant and human transport system transport materials around the body.

(a) List two differences between the plant and human circulatory system. [2]

Difference:

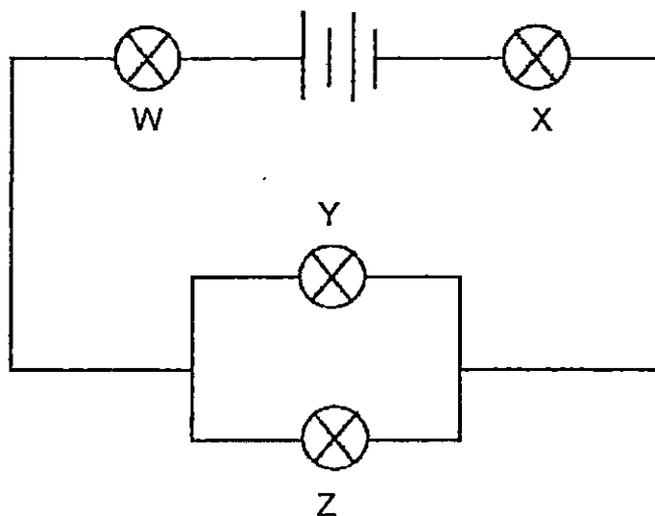
Difference:



If you look closely at the stems of flowers immersed in vases of water in a flower shop, you would notice that the ends are cut diagonally rather than horizontally across.

(b) Suggest a reason why the ends of the flower stems were cut diagonally. [1]

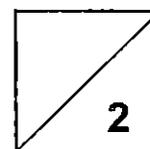
37. Helen set up a circuit as shown below.



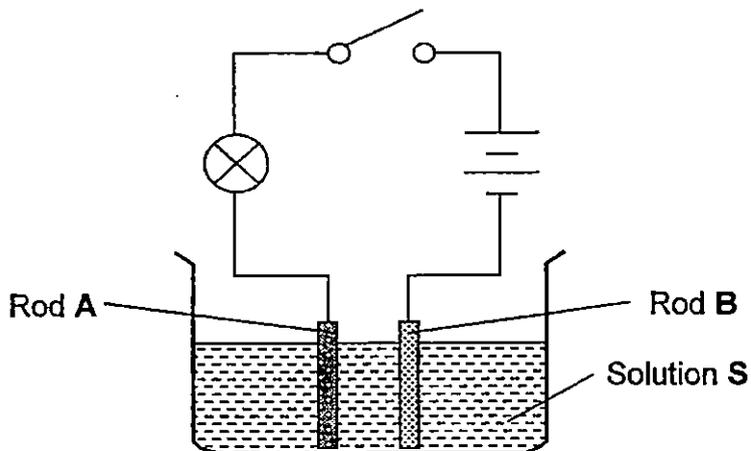
- (a) Fill in the table below with a \checkmark to show the type of arrangement of the bulbs in the circuit. [1]

Bulbs	Parallel	Series	Not possible to tell
Y and Z			
W and X			

- (b) If one of the bulbs fuses, what is the maximum number of bulbs that will remain lit? Give a reason for your answer. [1]



38. Harry set up an electrical circuit as shown below. He then dipped Rod A and Rod B into a beaker containing Solution S. The bulb lit up when the circuit was closed.



- (a) Based on the result of the experiment above, state a common property of Rod B and Solution S. [1]

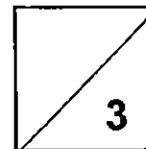
Harry then replaced Rod A and B with Rod X and Y respectively and conducted the experiment again. The results are shown in the table below.

Rod	Rod	Did the bulb light up?
X	B	No
A	Y	Yes

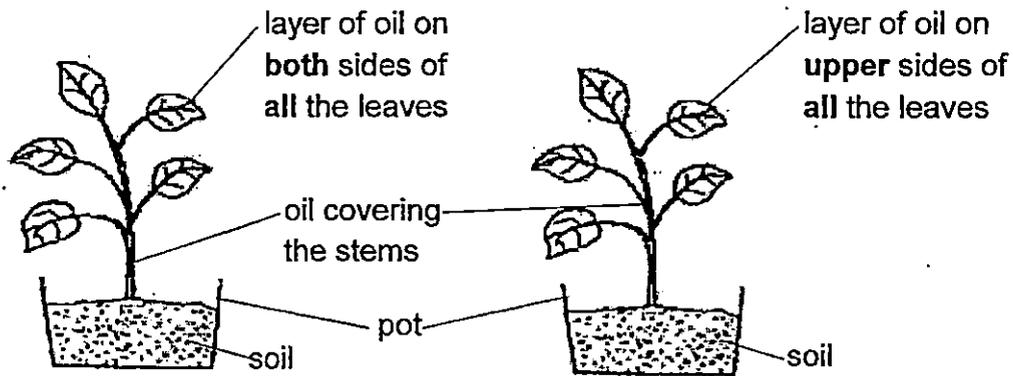
- (b) Name a suitable material that Rod X and Rod Y could be made of. [2]

Rod X: _____

Rod Y: _____



39. Dillon wanted to find out the effect of a layer of oil on the surfaces of a plant. He placed 2 similar plants, A and B, each in identical pots with an equal amount of soil. He then covered the leaves and stems of plants, A and B, with oil as shown below and placed them beside an open window.



- (a) After a few weeks, Dillon made some observations of plants, A and B. Write down his observations in the table below and explain why.

Plant A:

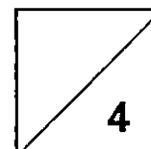
Observation: [1]

Explanation: [1]

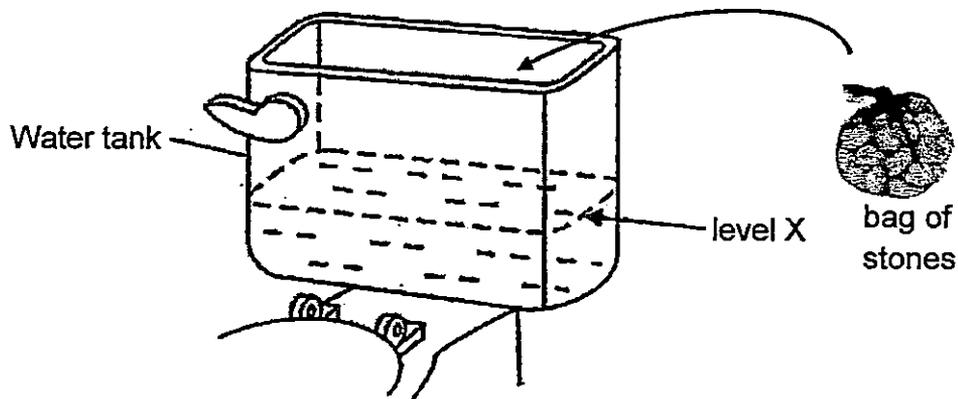
(b) **Plant B:**

Observation: [1]

Explanation: [1]



40. A water tank used for flushing a toilet bowl is shown below. The flushing and re-filling system is **not shown** in the diagram.



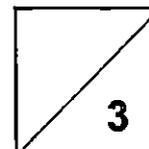
Each time after flushing, water enters and re-fills the tank. The water will stop filling the tank when the water reaches level X.

Wen Xin put a plastic bag filled with stones into the water tank after the water was filled to level X.

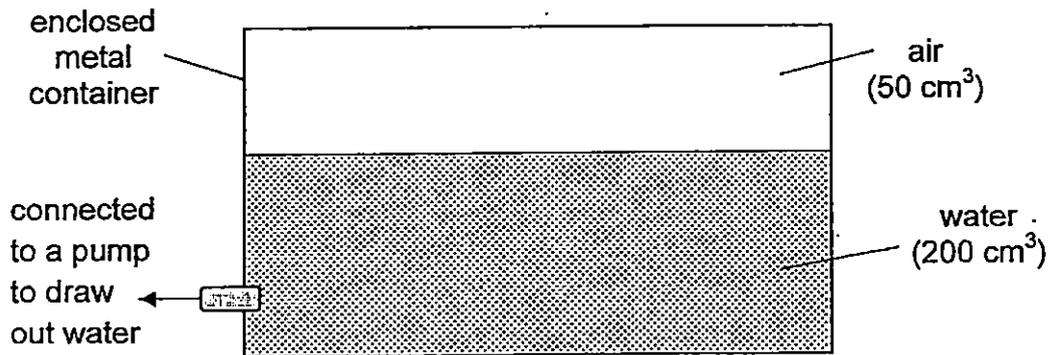
- (a) What will Wen Xin observe about the water level as she places the bag of stones into the tank? [1]

- (b) Wen Xin suggests that putting the bag of stones into the tank will allow her to use lesser water to flush the toilet bowl. Explain how this helps to reduce the amount of water used.

[2]



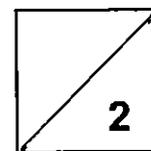
41. The diagram below shows an enclosed metal container with 200 cm^3 of water and 50 cm^3 of air.



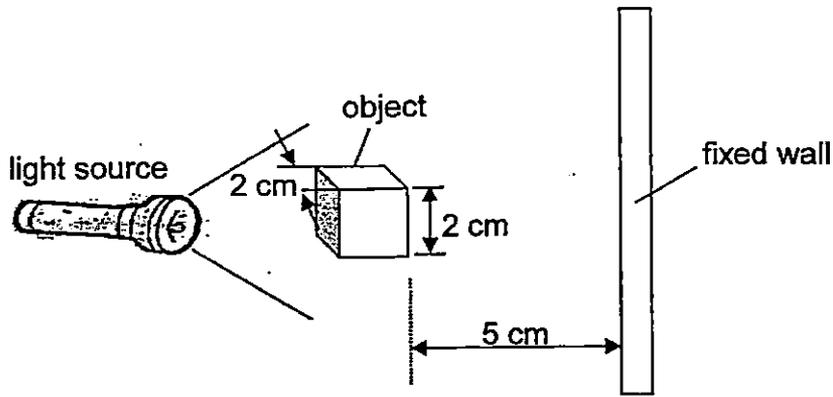
Elinor used a pump to remove 30 cm^3 of water from the container.

- (a) What will be the volume of air in the container after the water was removed? [1]

- (b) Explain your answer in (a). [1]



42. Minghua placed an opaque object 5 cm away from the wall as shown below.



He measured the height of the shadow cast on the wall. He repeated the experiment by decreasing the distance between the object and the fixed wall.

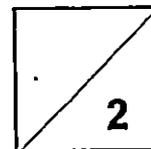
Distance between the object and the fixed wall (cm)	Height of shadow (cm)
5	6
4	5
3	4
2	3

- (a) What is the aim of Minghua's experiment?

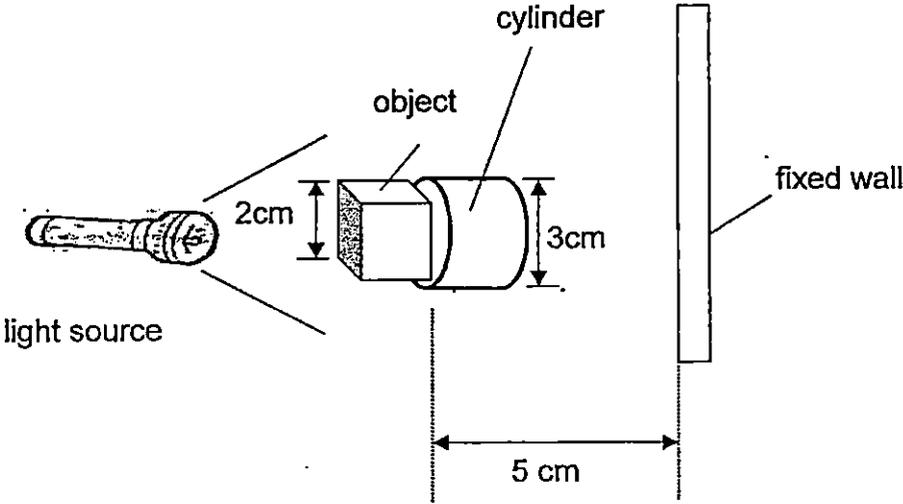
[1]

- (b) Based on the results given in the table above, how would the distance between the object and the fixed wall affect the height of shadow?

[1]

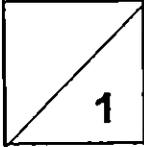
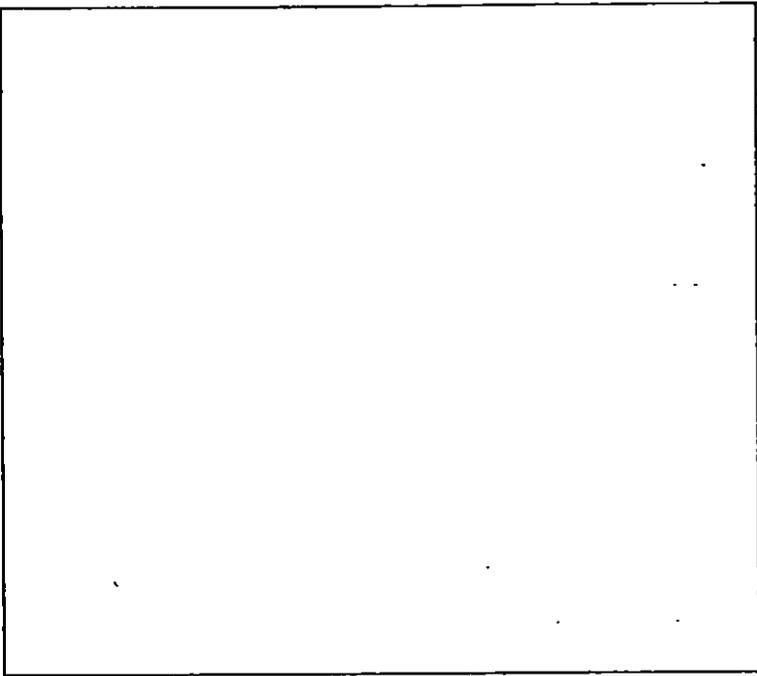


(c) Minghua then placed a wooden cylinder directly behind the object as shown below.

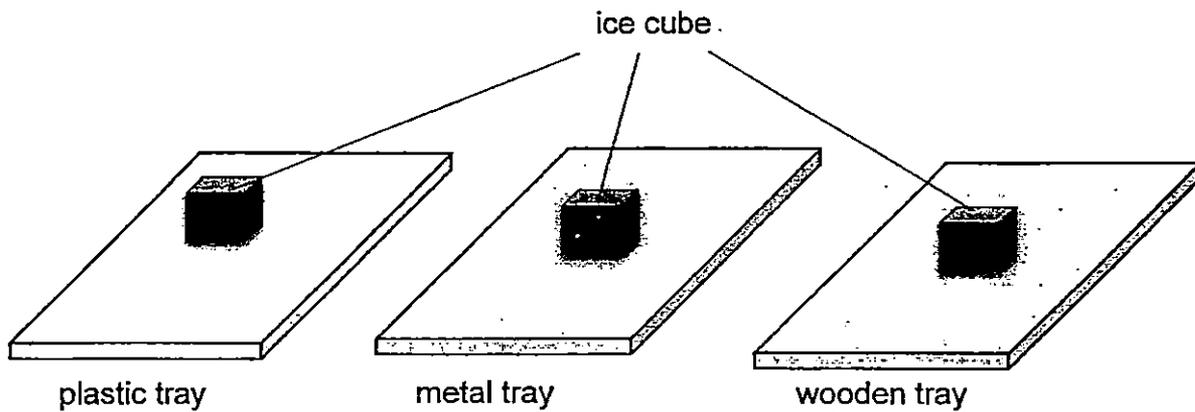


Draw the shadow cast on the screen in the space below.

[1]



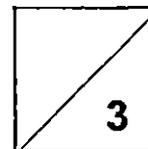
43. Ken placed a piece of ice cube on each of the three similar sized trays in a room as shown below.



- (a) Based on the diagram above, write down the item that gain heat or lose heat when the ice cubes are on the trays. [2]

Item	Gain or lose heat
Ice cube	
Plastic tray	
Metal tray	
Wooden tray	

- (b) Ken needs to thaw his frozen chicken quickly. Which tray should Ken choose? Explain your answer. [1]

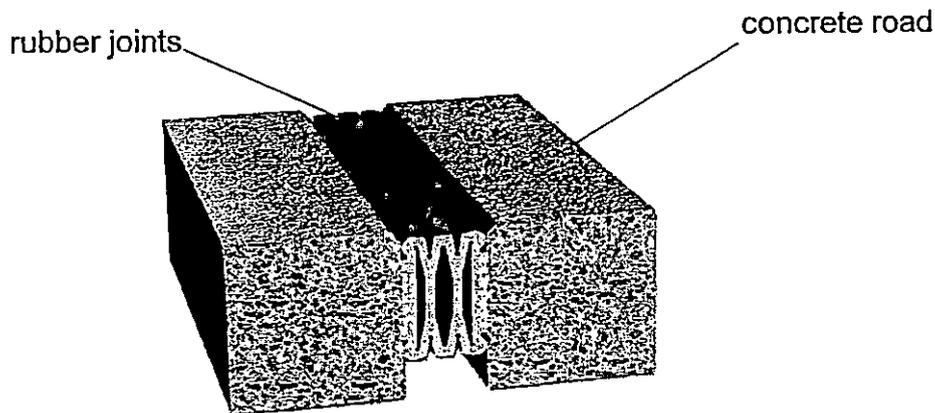


44. Ahmad conducted an experiment by heating three rods, A, B and C, made of different materials for 30 minutes. The rods were of the same size. He recorded the lengths of each rod before and after the heating in the table below.

Material	Length before heating (mm)	Length after 30 minutes of heating (mm)
A	200	204
B	200	210
C	200	222

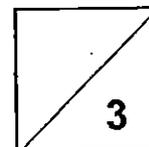
- (a) Based on the results of his experiment, what could Ahmad conclude about the effect of heating on different materials? [1]

The concrete roads on Singapore have rubber joints in-between them.



- (b) Why are the rubbers joints in-between the concrete road necessary in our country? [2]

END OF PAPER





LEVEL : PRIMARY 5
SCHOOL : CHIJ ST NICHOLAS GIRLS SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
3	4	3	2	4	3	4	2	2	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
1	3	2	4	3	3	2	4	4	3
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
4	1	1	2	1	1	3	2	4	4

Q31a. T.

Q31b. NP

Q31c. T

Q31d. F

Q32. Can they swim - F -

Q32. Are they insects - E

Q32. Do they lay eggs - D

Q32. Do they have a larval stage in their life cycle - G

Q33. Similarity : They hatch from fertilized eggs.

Q33. Difference : - The life cycle of Animal A has only three stages while the life cycle of Animal B has four stages.

Q34a. Cell B. All cells have cell membrane but B did not have.

Q34b. Cell A. Cell A is the only plant cell and an onion bulb cell is a plant cell. Cell A also has a nucleus, cell wall and a cell membrane but does not have a chloroplast because the bulb of an onion does not need to make food.

Q35a. Respiration

Q35b. For set-up A, the plant in set - up A respired, taking in more oxygen and giving out more carbon dioxide than set up B ,causing the lime - water in set-up A to absorb more carbon dioxide and become more chalky. However, for set up B, there is no plant to give out carbon dioxide but there is still air in the set up B and the air has carbon dioxide for the lime water to absorb. Thus, the lime water in set-up B turned less chalky than that in set up A.

Q36a. Difference : Plant transport system does-not transport oxygen, carbon dioxide and waste materials but a human transport system does.

Q36a. Difference : Materials in plant transport system move in two directions but in human system, it moves in a circular direction

Q36b. The surface area of the stem in contact with the water in the vase when cut diagonally across is greater than the surface area of the stem in contact with the water in the vase when cut horizontally so the stem when cut diagonally across can absorb more water at a faster rate.

Q37a. Bulb Y and Z – Parallel Q37a. W and X : Series

Q37b. 3. If bulb Y fuses, there is still a closed circuit so the electric current can still flow through bulbs W, X and Z. Thus, the maximum number of bulbs that will remain lit when one bulb fuses is 3 bulbs.

Q38a. Both are electrical conductors.

Q38b. Rod X : Plastic Rod Y : Metal

Q39a. Plant A, observation : Plant A will die

Q39a. Observation : The oil on both leaves prevented air from entering the stomata so Plant A will die.

Q39b. Plant B, observation : Plant B will still survive.

Q39b. Explanation : Since the oil is on the upper sides of the leaves, the stomata which is on the underside of the leaves can still perform the gaseous exchange so plant B will still survive after the experiment.

Q40a. The water level will rise.

Q40b. The plastic bag with stones will take up some space in the tank, causing lesser water to fill up to level.

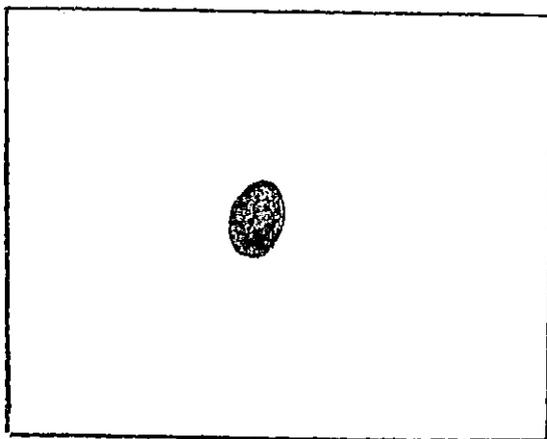
Q41a. 80cm^3

Q41b. Air has no definite volume. When 30cm^3 of water is removed, the air in the container will take up the space left by the water.

Q42a. To find out is the distance between the object and the fixed wall will affect the height of shadow cast on the fixed wall.

Q42b. The greater the distance between the object and the fixed wall, the taller the shadow.

Q42c. **SEE PICTURE**



Q43a. Ice cube – gain heat
Q43a. Plastic tray – lose heat
Q43a. Metal tray – lose heat
Q43a. Wooden tray – lose heat

Q43b. The metal tray will conduct heat to the frozen chicken faster.

Q44a. Different materials expand differently when heated.

Q44b. Singapore weather is very hot. On hot days, when the concrete road expands, the rubber joints will allow space for the expansion so the road will not be buckled easily.

THE END