Name : _____ ( )

Class : Primary _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

慈 纯 义 学

Primary 5
First Semestral Assessment – 2009
SCIENCE

BOOKLET A

14th May 2009

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

30 questions
60 marks

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

This booklet consists of 19 printed pages.

Section A : (30 x 2 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.

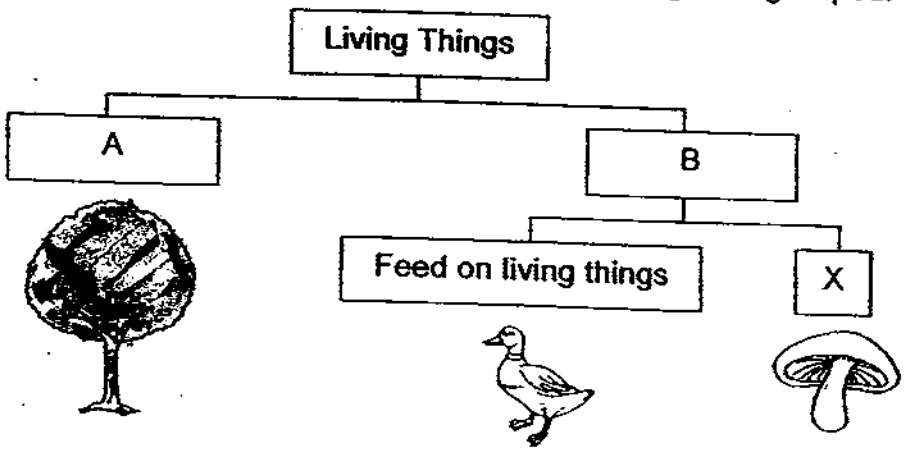
P3 1. Some animals are classified into four groups, A, B, C and D, as shown below.

Group A	Group B	Group C	Group D
Prawn	Penguin	Cat	Guppies
Crab	Eagle	Sheep	Snake

The animals are grouped according to their _____.

(1) movement
(2) body covering
(3) number of limbs
(4) X method of reproduction

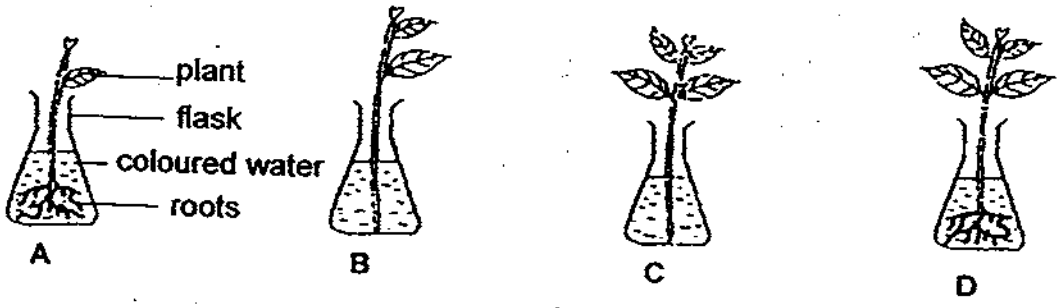
2. The classification chart below shows how some living things are grouped.



Which one of the following best represents A, B and X?

	A	B	X
(1)	Reproduce from seeds	Do not reproduce from seeds	Reproduce from spores
(2)	Cannot move freely	Can move freely	Feed on dead matter
(3)	Make their own food	Feed on decaying matter	Do not make their own food
(4)	Has chlorophyll	Has no chlorophyll	Feed on decaying matter

3. Connie wanted to find out if water can travel to the leaves without any roots. She set up the experiment with four identical flasks using the same type of plant. Each flask contained the same amount of coloured water.



Which of the two above set-ups should she use in order to conduct a fair test?

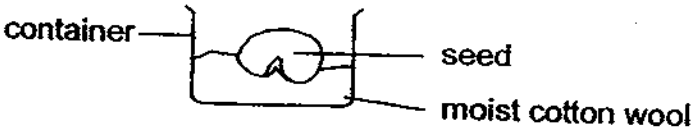
(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

4. John saw an animal for the first time in the zoo. He concluded that it was a mammal. Which of the following characteristics should this animal have in order to be classified as a [redacted]?

A It has hair on its body.
B Its young feeds on its milk.
C It breathes through its skin and lungs.

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

5. A group of pupils grew some green bean seeds which were placed in various positions in identical containers with moist cotton wool. Each set-up was given the same amount of water daily. When the green bean seeds germinated, the pupils observed that the roots emerged first. They drew the direction of the root growth from Day 1 to Day 4 in the table shown below.



Seed position	Day 1	Day 2	Day 3	Day 4
	↓	↓	↓	↓
	→	↘	↘	↓
	←	↙	↙	↓
	↑	↗	↘	↓

Legend:	
→	Indicates the direction of the growth of the roots, e.g. towards the right

Which one of the following statements best describes the growth of the roots observed by the pupils from Day 1 to Day 4?

(1) All the roots are growing downwards eventually by Day 4.
(2) The roots are growing in the direction in which the seed was placed.
(3) Half the roots are growing upwards and half are growing downwards.
(4) The roots are growing in the same direction in which they grew on Day 1.

6. Stomata are tiny openings found on the surfaces of leaves.
Which of the following are the functions of the stomata?

A They allow excess water vapour to escape.
B They store excess food made by the leaves.
C They help to trap sunlight for photosynthesis.
D They enable the exchange of gases to take place during photosynthesis and respiration.

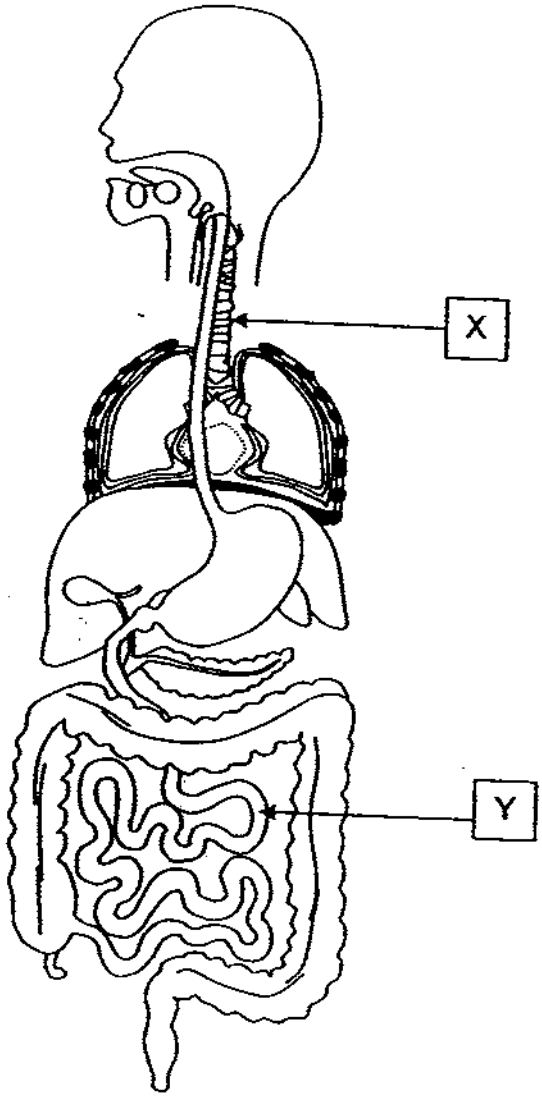
(1) A and D only
(2) B and C only
(3) B, C and D only
(4) A, B, C and D

7. The picture below shows May blowing a trumpet.

Which of the following correctly describes what happens to her ribs, diaphragm and chest when she blows into the trumpet? breathe out

	Ribs	Diaphragm	Chest
(1)	Move in and downwards	Move downwards	Bigger
(2)	Move in and downwards	Move upwards	Smaller
(3)	Move out and upwards	Move downwards	Bigger
(4)	Move out and upwards	Move upwards	Smaller

8. Look at the diagram below.

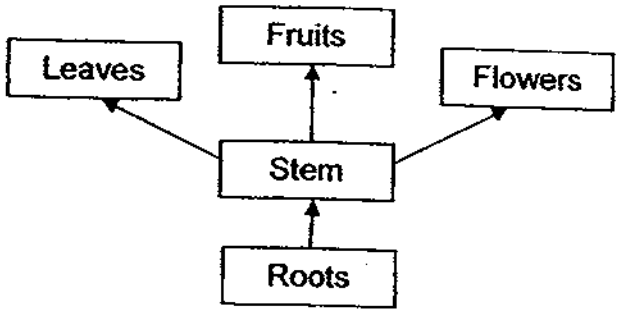


Which of the following are the correct functions of the parts labelled X and Y?

	X	Y
(1)	To allow food to travel to the stomach	To absorb water from digested food
(2)	To allow blood to travel to the heart	To absorb water from undigested food
(3)	To allow air to pass to the lungs	To absorb nutrients from digested food
(4)	To distribute nutrients to all parts of the body	To absorb nutrients from undigested food

9. Which one of the following concept maps correctly shows the direction of transport of water in a plant?

(1)



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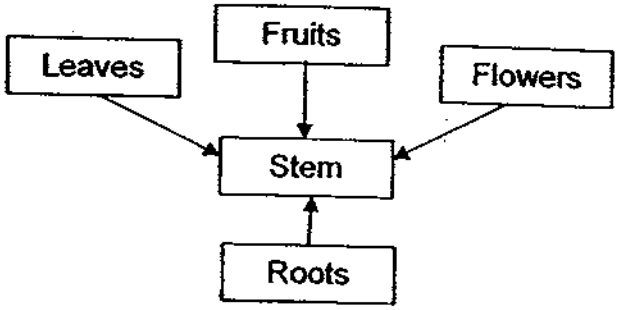

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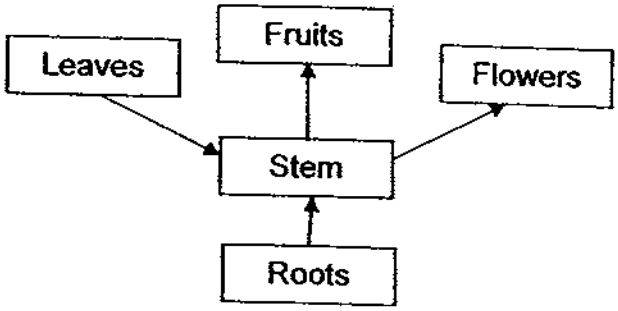

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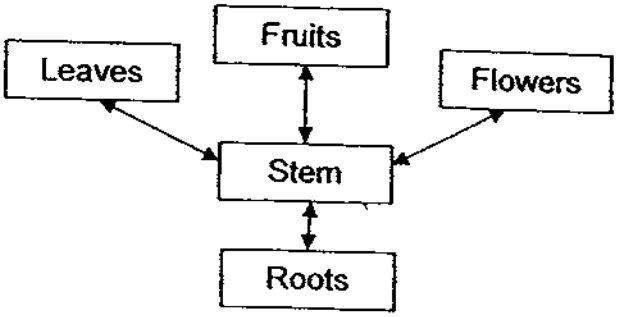
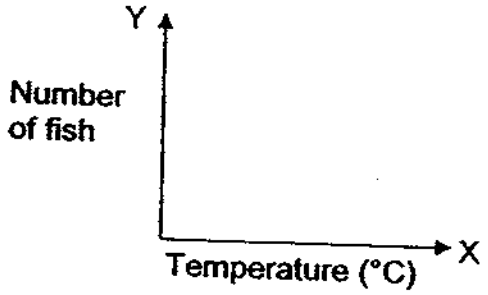


10. Some pupils placed a group of freshwater fish of the same kind in a tank. They wanted to find out whether the temperature of water would affect the rate of movement of the gill covers. The results are shown in the table below.

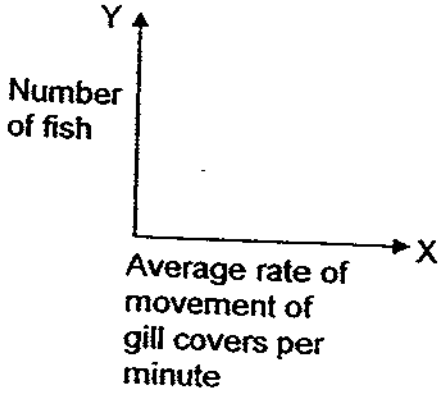
Group	Number of fish in a tank	Temperature (°C) of water	Average rate of movement of gill covers per minute
1	5	10	15
2	5	20	25
3	5	22	30
4	5	24	50
5	5	26	60
6	5	30	57
7	5	34	49

Which of the following labelled axes (X and Y) should be used to show the relationship between the two variables?

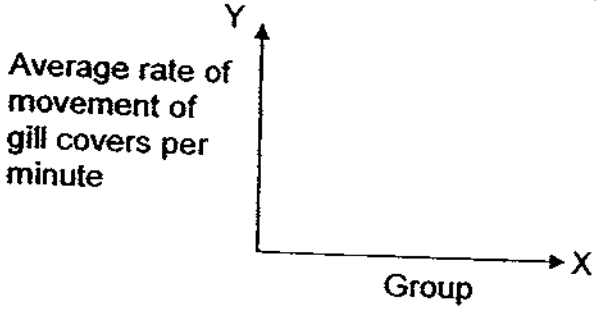
(1)



(2)



(3)



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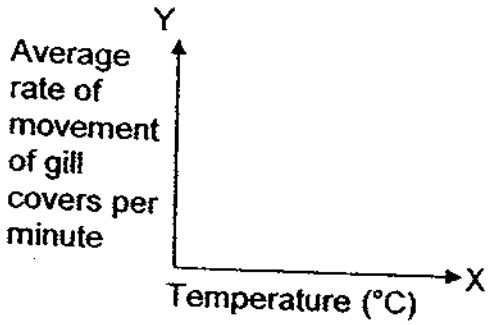
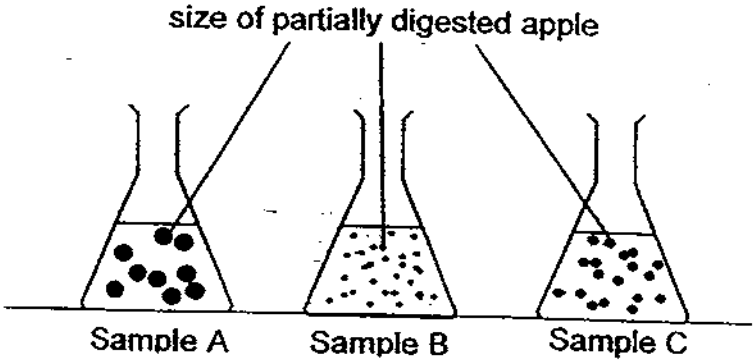


11. Bao Mei ate an apple and three samples of the partially digested apple were taken from three different parts of her digestive system.



If Sample C was taken from her stomach, which part of the digestive system could Samples A and B be taken from respectively?

	Sample A	Sample B
(1)	Gullet	Small intestine
(2)	Gullet	Large intestine
(3)	Small intestine	Large intestine
(4)	Small intestine	Gullet

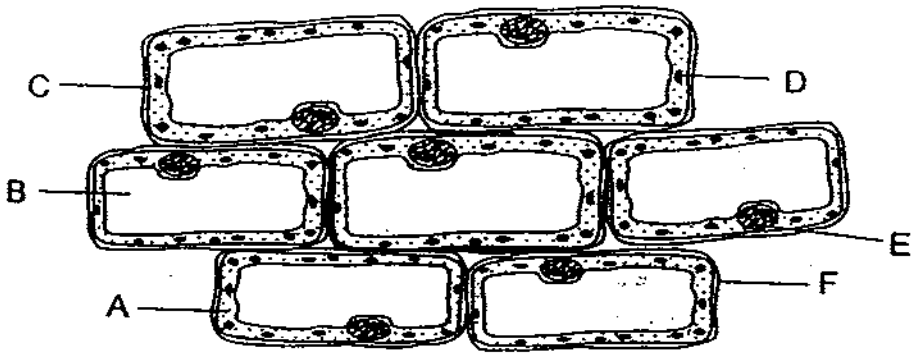
12. The list below shows the different parts of our circulatory system.

A Arteries
B Heart
C Veins
D Other parts of the body

Arrange the list in the order of how blood is transported in our circulatory system.

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

13. Hasim observed cells of the hydrilla leaf using a microscope. The cells are shown in the diagram below. Parts of the cells are labelled as A to F.



Which of the following parts of the plant cells (A to F) have been matched correctly to the information provided in the table?

	Where the plant gets its traits from	Where light energy is being trapped	Controls the entry of substances into the cell	Also found in animal cells
(1)	A	D	F	A, C, F
(2)	B	E	C	B, D, E
(3)	E	D	C	A, C, E
(4)	D	E	F	B, E, F

14. With reference to the picture below, which of the following statements about the animal are true?

A Each of its cells has a cell wall.
B It has tissues that are made up of cells.
C It has cells that carry out different functions.
D It is bigger than a rat because its cells are much larger.

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

15. The table below describes the stages of the life cycle of four animals.

Description	Animal A	Animal B	Animal C	Animal D
The young resembles the adult.	✓	×	✓	×
It has three stages in its life cycle.	✓	✓	×	×
The young goes through a process called moulting.	×	✓	×	✓

Which one of the following animal is likely to be a beetle?

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

16. Sally was given four different objects, P, Q, R and S. She scratched the four objects one against the other. She then wrote down her observations as follows:

R could scratch P.
Q could scratch S.
P could scratch Q.

Based on her observations, which one of the following statements is correct?

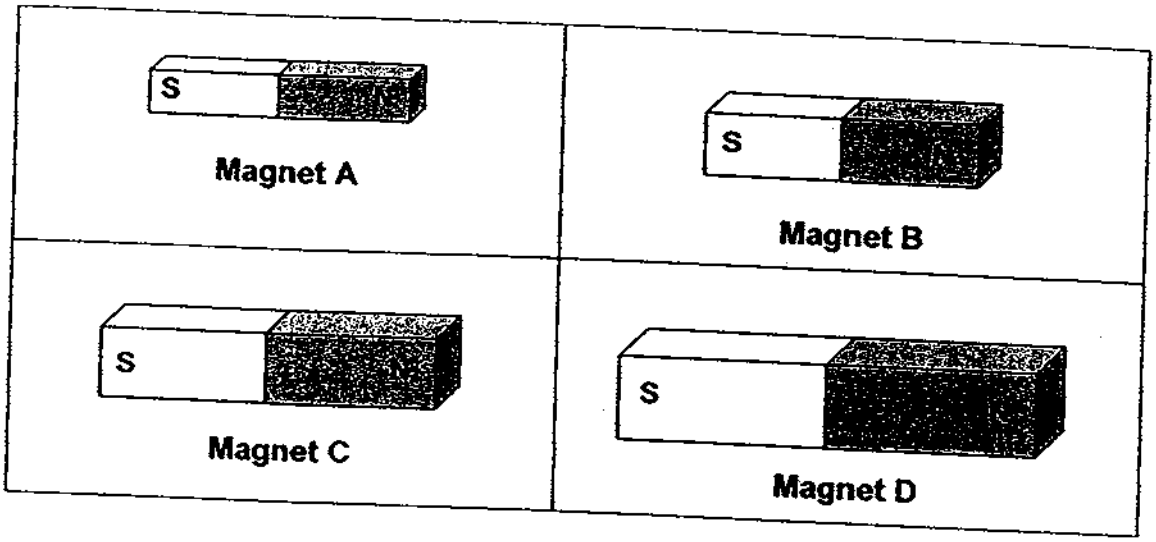
(1) R is harder than Q.
(2) S is harder than P.
(3) S is harder than R.
(4) P is the hardest of the four objects

17. Soo Lee wants to demagnetize a magnet. Which of the following methods can she use?

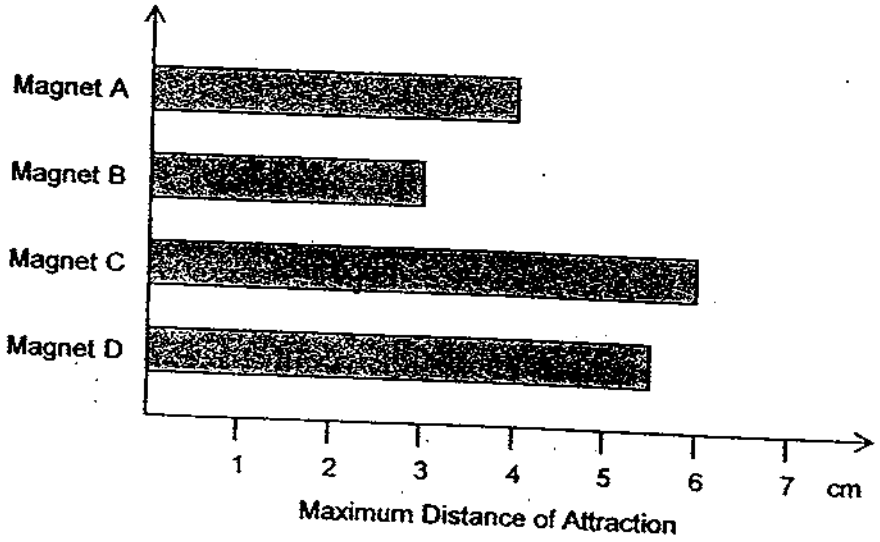
A Heating the magnet over a flame.
B Passing electricity through the magnet.
C Dropping the magnet on the floor several times.
D Stroking the magnet with a non-magnetic material.

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

18. Esther made use of four bar magnets of different sizes to carry out an experiment. Her aim was to determine the maximum distance of attraction between each magnet and some paper clips.



She drew a bar graph to show the results of her experiment.

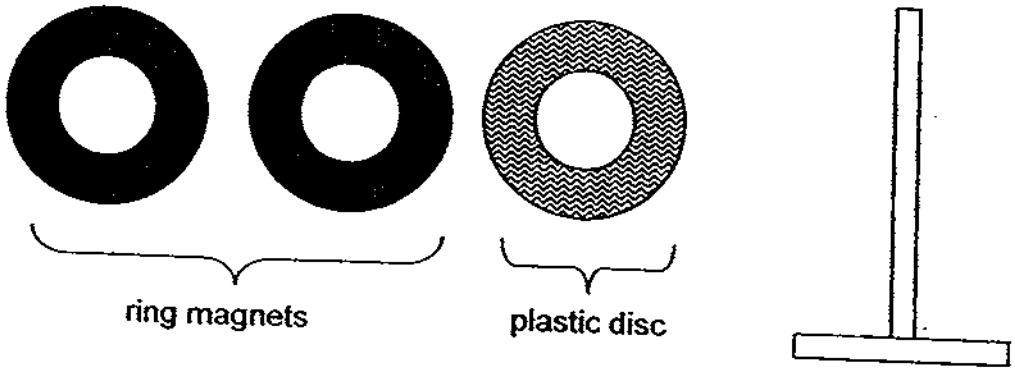


Using the bar graph, which of the following statements are <u>true</u>?

A Magnet C is stronger than Magnet D.
B Magnet A can attract more paper clips than Magnet B.
C The bigger the size of the magnet, the stronger the magnet.
D Only Magnet A is able to attract paper clips that are placed 4cm away from the magnet.

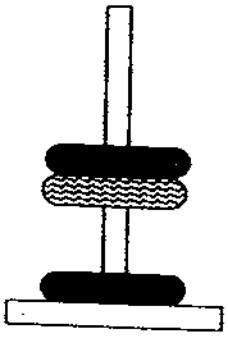
(1) A and B only
(2) B and C only
(3) B and D only
(4) A, B and C only

19. The diagram below shows three discs, each with a hole in the centre. One of the discs is a light-weight plastic disc and the other two are ring magnets.

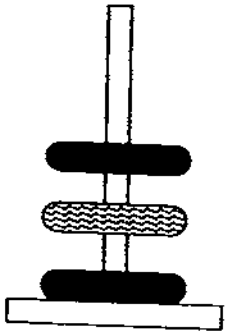


When the three discs are slotted through the wooden stand, which of the following are possible observations?

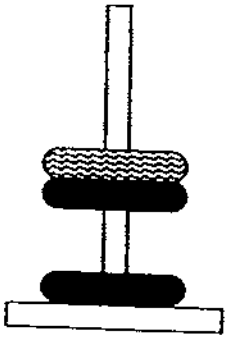
(A)



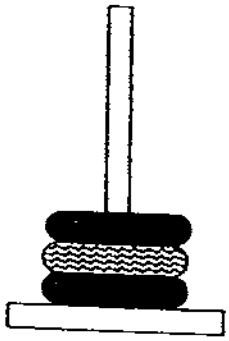
(B)



(C)



(D)



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

20. Pei Hua filled a glass to the brim with water. When he put in two cubes of ice, some of the water overflowed. This shows that _____.

(1) water has definite volume
(2) ice cubes occupied space
(3) ice cubes have a definite shape
(4) ice cubes increase its volume when melted

21. Below is a table showing the melting and boiling points of various substances.

Substance	Melting Point	Boiling Point
U	0°C	100°C
V	32°C	80°C
W	10°C	120°C
X	15°C	150°C
Y	20°C	110°C
Z	44°C	175°C

Which of the substances given above are in their liquid state at room temperature of 29°C?

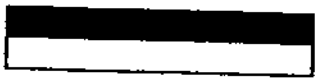
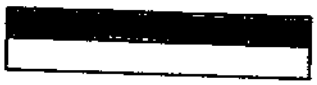
(1) Substances V and Z only
(2) Substances U, V and Z only
(3) Substances V, Y and Z only
(4) Substances U, W, X and Y only

22. Which of the following statements about heat is true?

A Heat is a hot substance.
B Heat is a form of energy.
C Heat is the same as temperature.
D Heat can flow from a colder place to a hotter place.

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

23. A bimetallic strip is made of two different types of metal. The diagram below shows how two bimetallic strips, X and Y, look like before and after heating for five minutes.

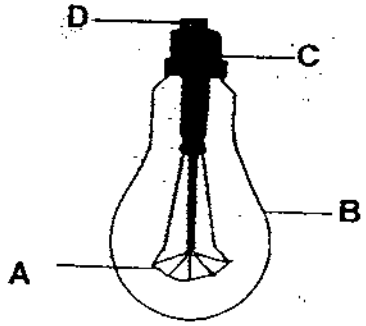
	Bimetallic strip X	Bimetallic strip Y
Before heating		
After heating		

Legend: Metal A Metal B Metal C

Based on the set-up shown above, which one of the following statements is most likely to be correct?

(1) Metal A expands the least.
(2) Metal B expands the most.
(3) Metal B and C have the same rate of expansion.
(4) Metal A expands less than Metal C but more than Metal B.

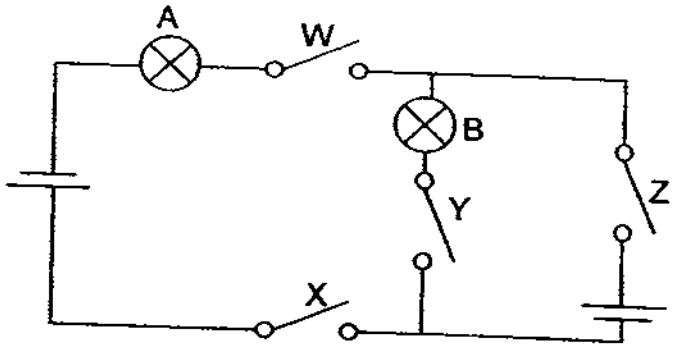
24. A picture of a light bulb is given below.



Which part(s) of the bulb can conduct electricity?

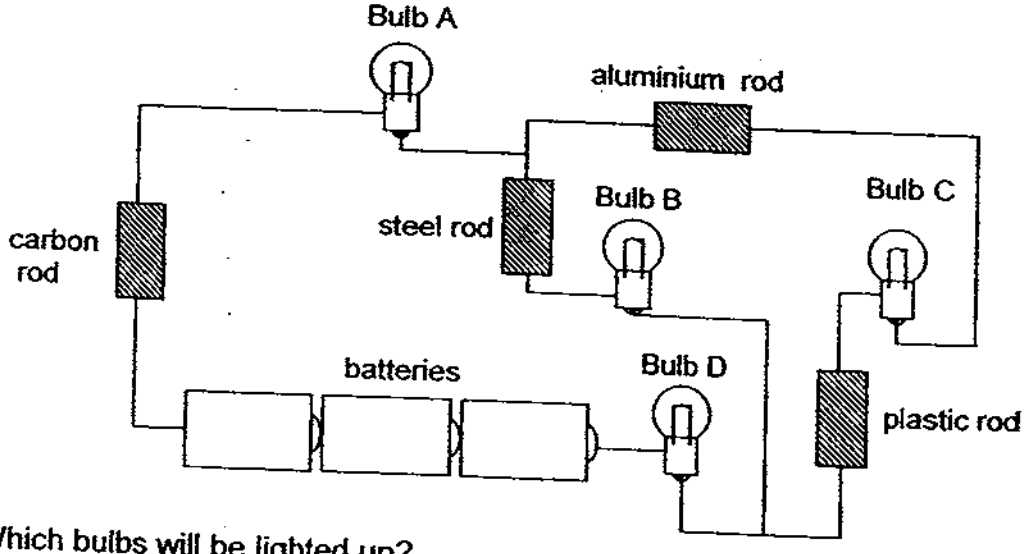
(1) A only
(2) C only
(3) D and C only
(4) A, C and D only

25. In the circuit below, which of the switches should be left open and which should be closed so that only bulb A lights up?



	Switch W	Switch X	Switch Y	Switch Z
(1)	Closed	Closed	Open	Open
(2)	Open	Closed	Closed	Closed
(3)	Closed	Closed	Open	Closed
(4)	Open	Closed	Open	Closed

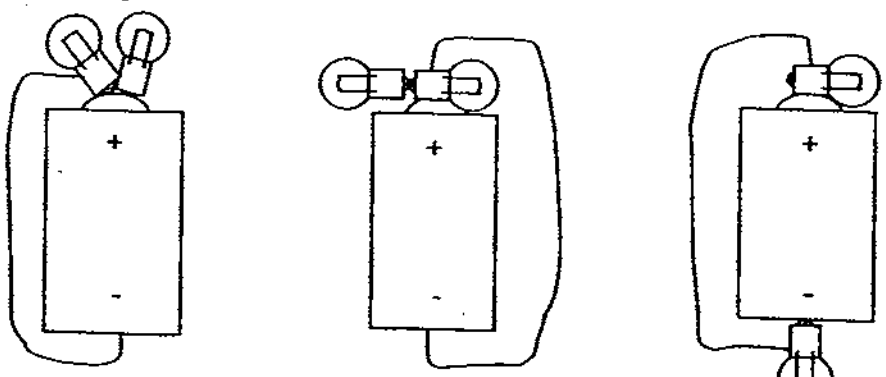
26. The diagram below shows four objects namely, aluminium rod, carbon rod, steel rod and plastic rod, which are connected to the circuit.



Which bulbs will be lighted up?

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

27. Look at the diagrams below.

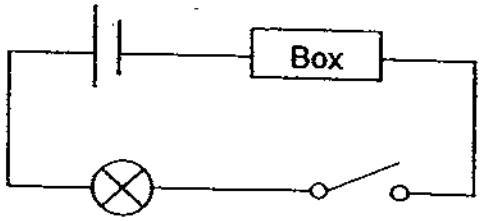


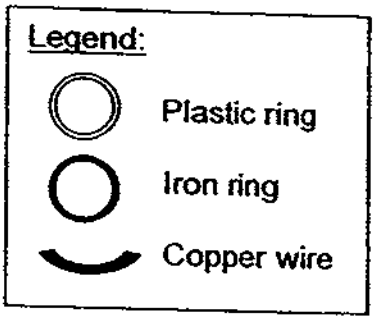
A B C

Which one of the above circuit arrangements will enable both bulbs to light up?

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

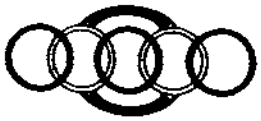
28. A circuit is set up as shown below with a box connected to it. When the switch is closed, the bulb will light up.

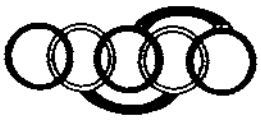


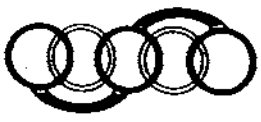


Which one of the following is placed in the box?

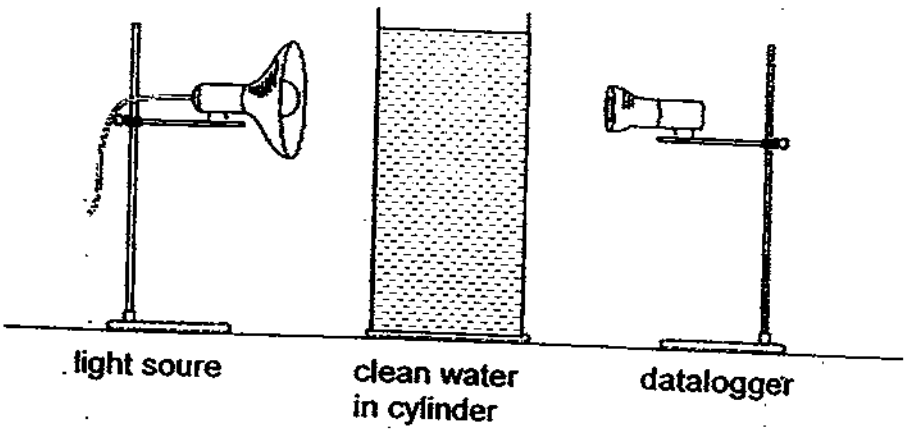
(1) 

(2) 

(3) 

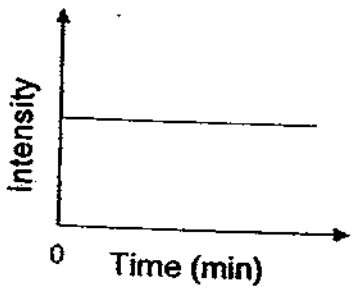
(4) 

29. The diagram below shows a cylinder filled with clean water. On the left of the cylinder is a light source and on the right of the cylinder is a datalogger that measures the intensity (brightness) of light as it passes through the water. One minute after the light is turned on, a mixture of garden soil and clay is poured into the cylinder.

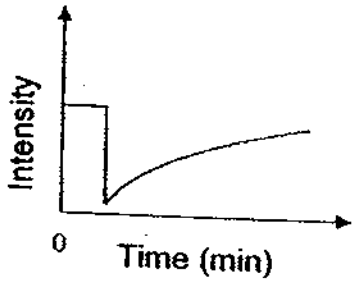


Which one of the graphs shows the probable change in light intensity recorded throughout the experiment <u>after the light is turned on</u>?

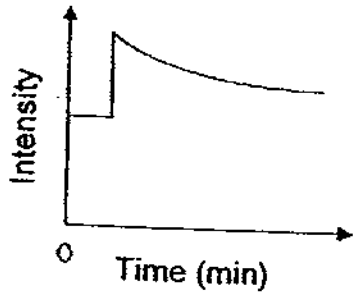
(1)



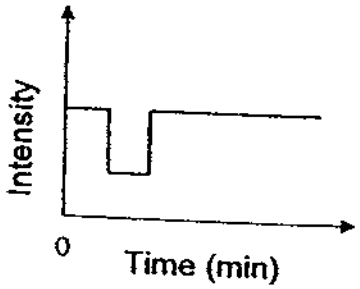
(2)



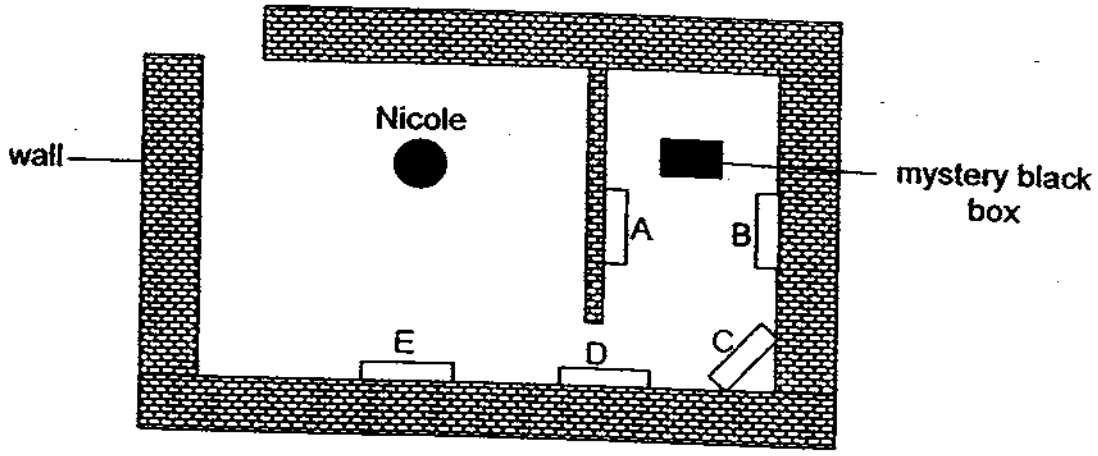
(3)



(4)



30. In the diagram below, Nicole wanted to use only two mirrors to help her to see the mystery black box that was placed behind a wall.



From her position in the diagram, which of the following two mirrors (A to E) would enable her to view the mystery black box behind the wall?

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

~~ End of Section A ~

Name : _____ ( )

Class : Primary _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 学

Primary 5
First Semestral Assessment – 2009
SCIENCE

BOOKLET B

14th May 2009

Booklet A	60
Booklet B	40
Total	100

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 booklet consists of 17 printed pages.

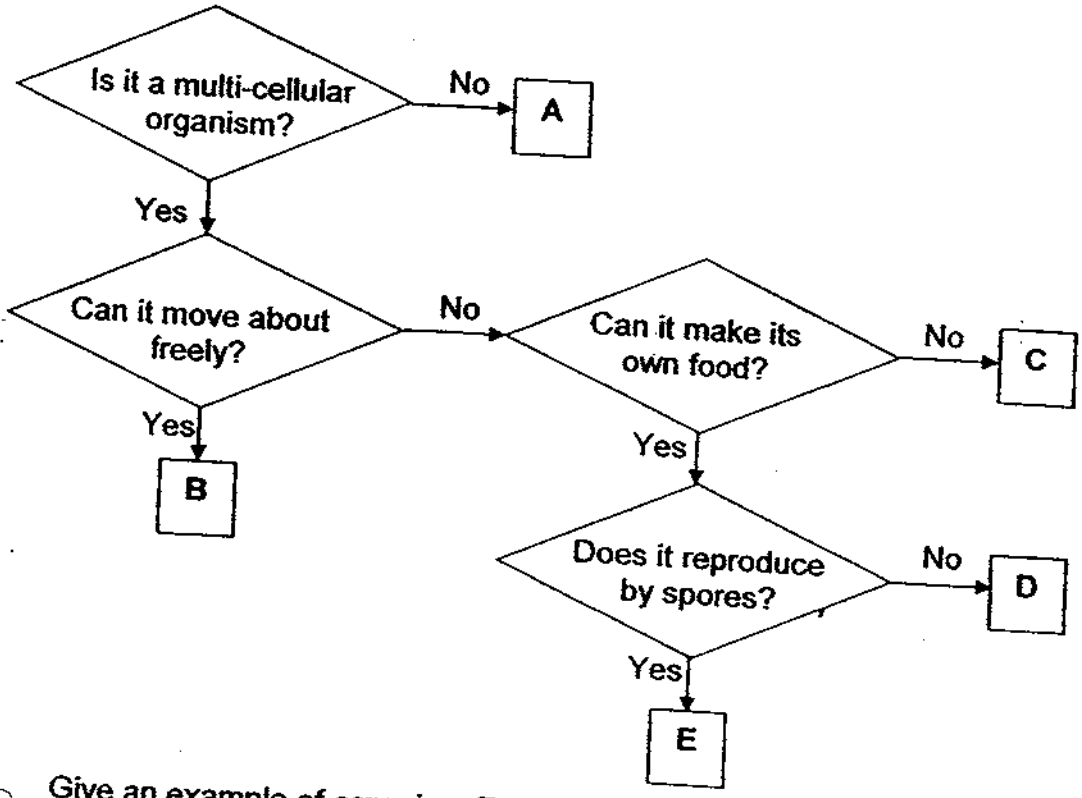
Parent's Signature/Date

Section B : (40 marks)

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

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

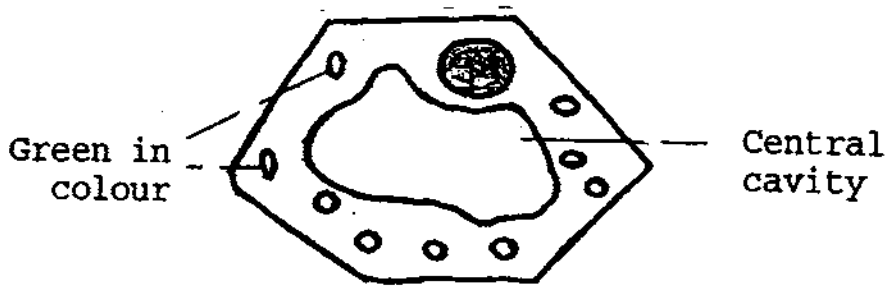
31. Study the flowchart below.



(a) Give an example of organism E. [1]

(b) What characteristic(s) does / do organisms B and D have in common? [1]

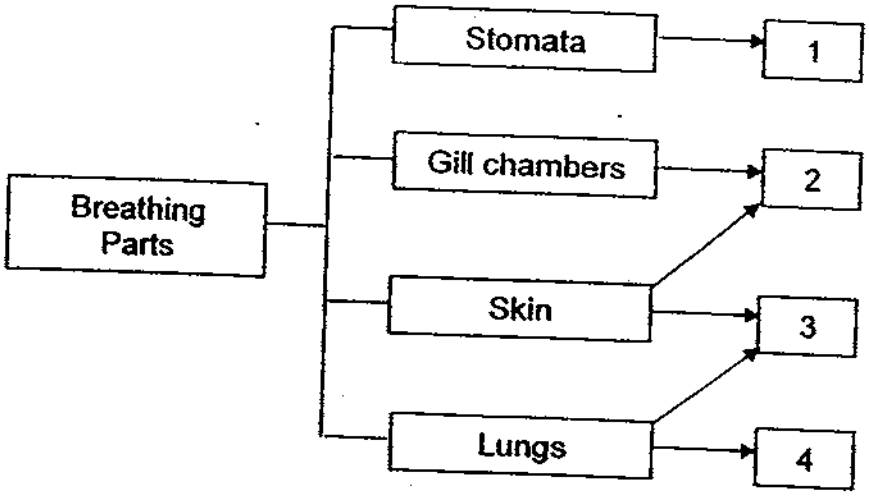
32. During one of the Science Practical lessons, Issac observed a cell from a multi-cellular organism under the microscope. He drew out the cell that he had seen and he wrote down some descriptions as shown in the picture below. He was unable to identify the type of cell as he realised that a part of the cell was missing.



(a) In the picture above, draw and label the part of the cell that was missing. [1]

(b) Identify the type of organism the cell was taken from. Other than the part of the cell that was missing, explain what other observation could allow Issac to make the identification. [1]

33. Study the classification chart below.



Where would you place the following organisms in the classification chart? [2]
Fill in the blanks with the corresponding numbers (1, 2, 3 or 4).

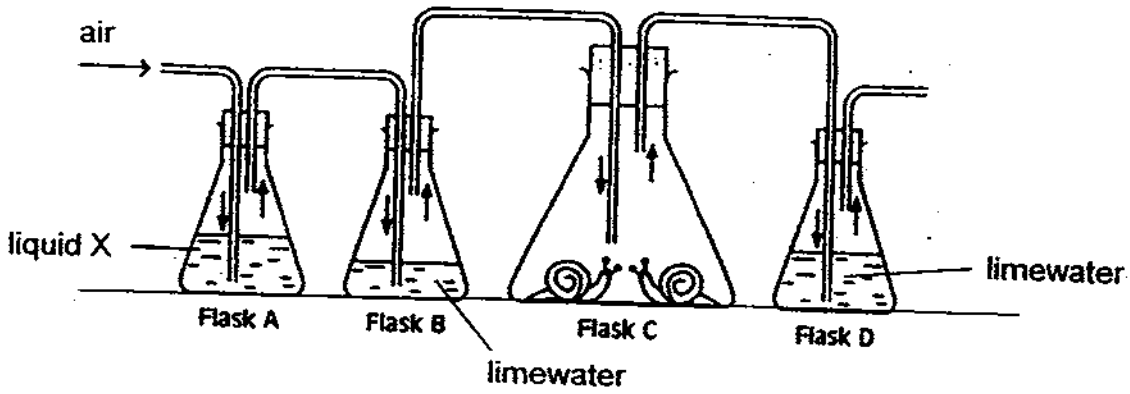
(a) Mudskipper : _____

(b) Whale : _____

(c) Frog : _____

(d) Mimosa : _____

34. Michelle set up the following apparatus to show that a gas is given off by the snails.



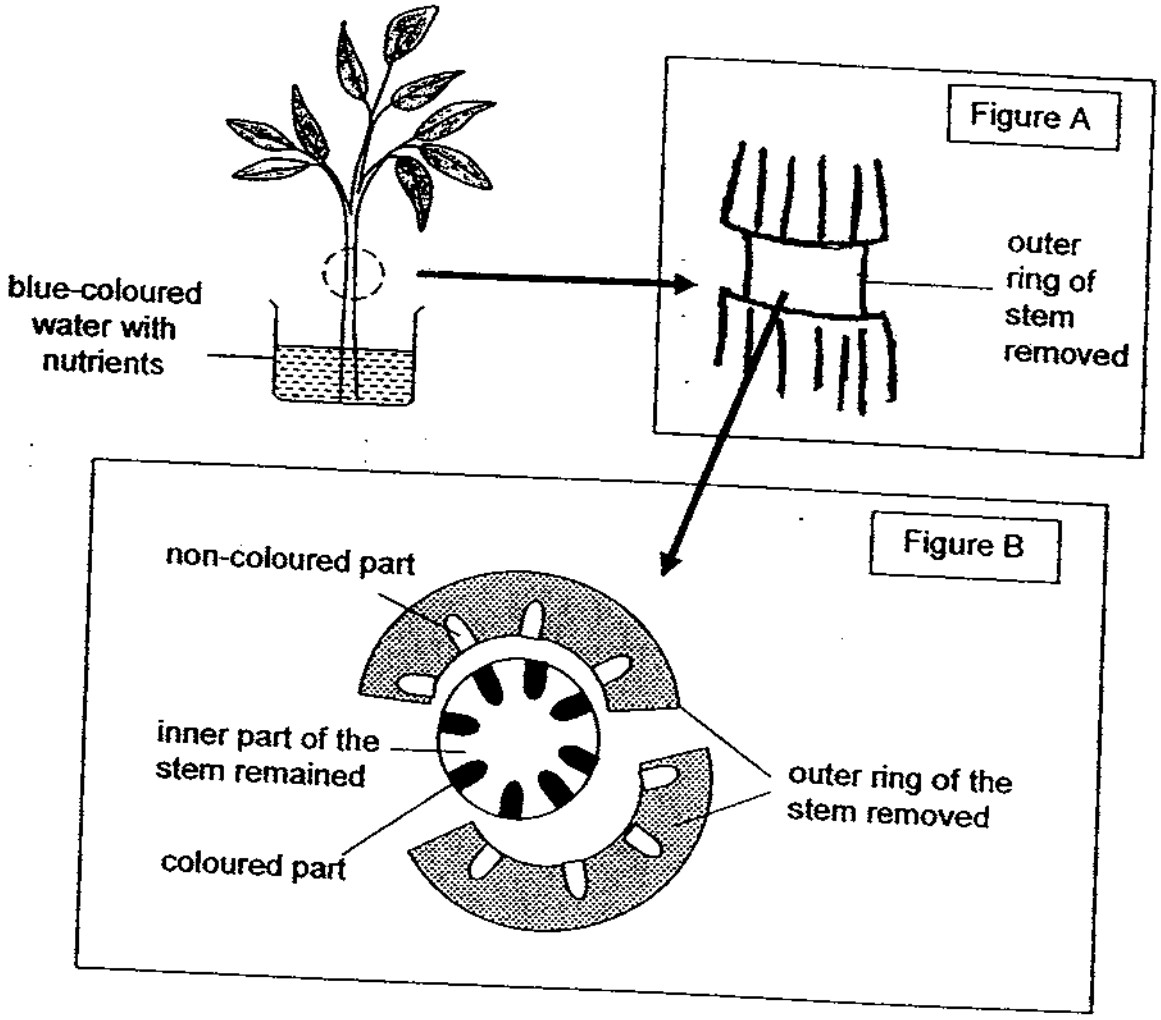
Air from the surrounding is passed through Liquid X in Flask A before it flows into the limewater in Flask B. The limewater remains clear. The air then flows into Flask C which has two snails.

(a) What is the purpose of passing the air from the surrounding into Liquid X in Flask A? [1]

(b) What will happen to the limewater in Flask D after some time? Give a reason for your answer. [2]

(c) From the experiment above, what can you conclude about the air that is breathed out and the surrounding air? [1]

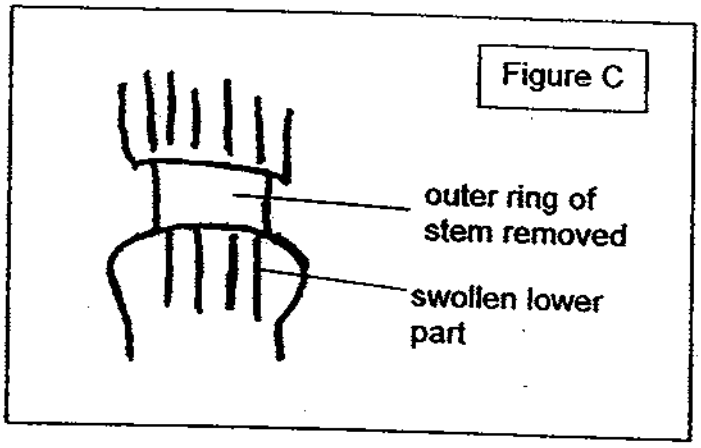
35. Sammy placed a healthy plant that has pale green leaves in a basin of blue-coloured water with nutrients for its growth. After one day, he removed the outer ring of a portion of the stem. Both the side view and cross-sectional view of the stem are shown in Figure A and B respectively.



(a) What would Sammy observe about the leaves after a day? [1]

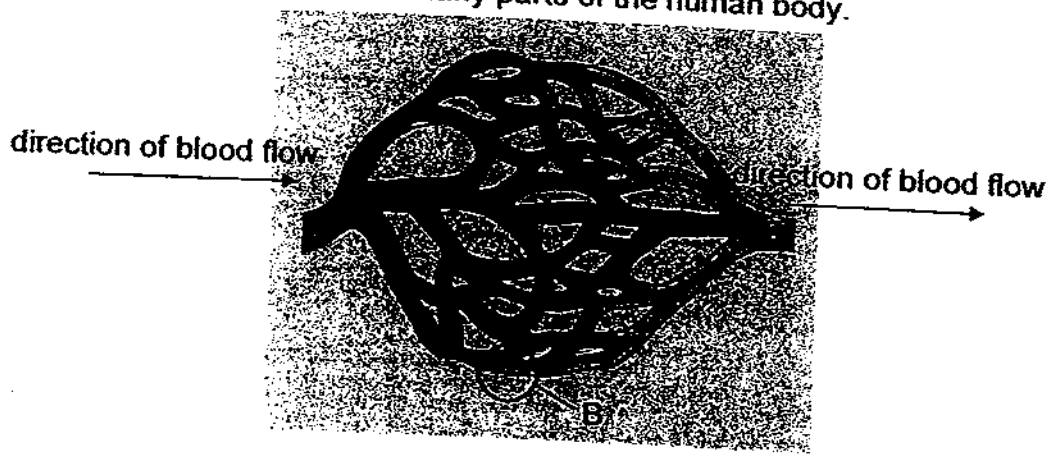
(b) Explain the reason for the observation he made in (a). [1]

(c) After a day, Sammy drew his observation of the stem as in Figure C but he was told by his teacher that he should not draw the lower part of the stem swollen.



Explain why upper part of the stem should be swollen instead. [2]

36. The diagram below shows the direction of blood flow and blood vessels A, B, C that are typically found in many parts of the human body.



(a) Which organ does the blood in blood vessel C eventually flow to before flowing to the lungs? [1]

(b) The amount of oxygen and carbon dioxide in blood vessel A are different from blood vessel C. Identify another difference between the blood flowing in blood vessel A and blood vessel C. [1]

(c) Blood vessel B has thinner walls than blood vessel A. Explain why B has thinner walls. [2]

37. Jerry was given three objects, A, B, C, wrapped in paper. The objects were of similar size. He held a magnet about two centimetres away from each one of them as shown in the diagram below. He recorded his observations in the table.

Object	Observation
A	It remained still.
B	It moved away from the magnet.
C	It moved towards the magnet.

(a) Which one of the objects (A, B or C) could be made of copper? [1]

(b) What material could object C be made of? [1]

(c) Without using any new apparatus or materials, Jerry repeated the experiment and was able to make object B move towards the magnet. Describe what he did to make object B move towards the magnet. [1]

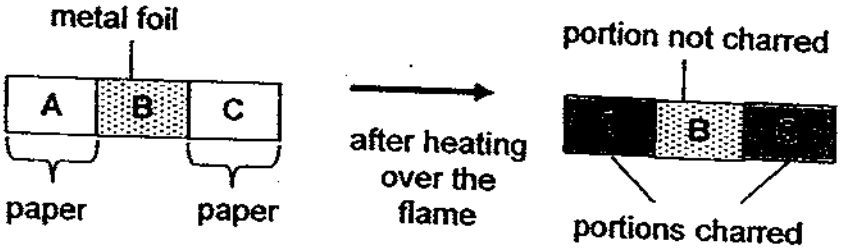
38. Tom carried out two separate experiments as shown below. In the first experiment, he carried out the following steps:

Step 1: Wrap a piece of paper tightly around the whole length of the wooden rod.

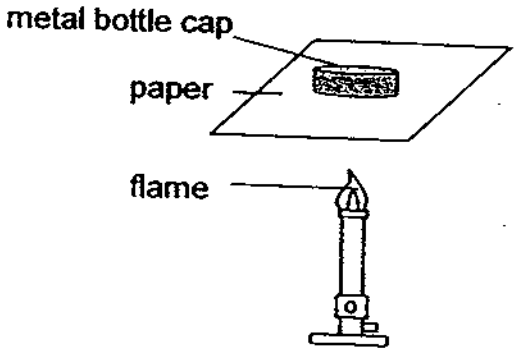
Step 2: Wrap a piece of metal foil around the middle portion of the wooden rod.

Step 3: Heat the entire length of the wooden rod to and fro over a flame for a few minutes.

After the metal foil had been removed, he observed that both parts A and C of the wooden rod were charred while B remained unaffected. He sketched his observations as shown below.



In the second experiment, Tom placed a piece of paper over a flame and the paper charred and caught fire quickly. However, when he placed a metal bottle cap on a piece of paper and held the paper over a flame, he realised that the paper was not charred at all after a minute.



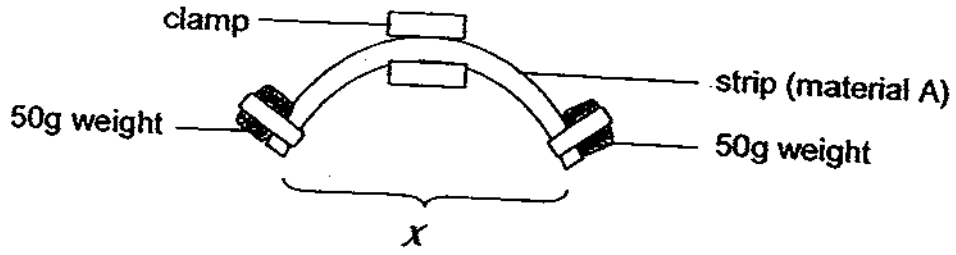
(a) Suggest what Tom would observe about the paper if he were to repeat the second experiment using a plastic bottle cap instead of a metal bottle cap.

[1]

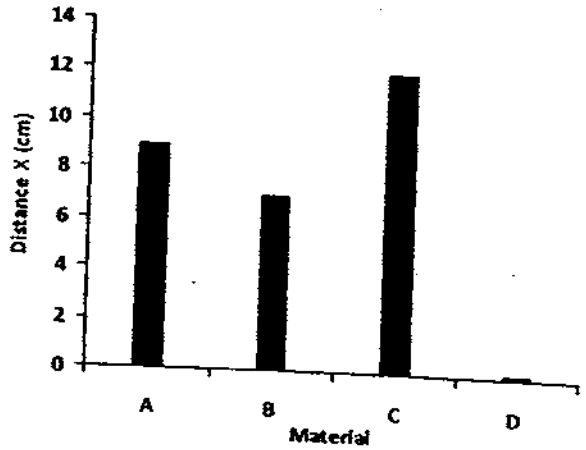
(b) Explain your answer in (a). [1]

(c) From the two separate experiments, explain what can Tom conclude about the property of metal which prevent the piece of paper from getting charred? [1]

39. Mei Mei conducted an experiment on four different strips of materials, A, B, C and D. In the set-up as shown below, she clamped one of the strips (material A) in the middle and she taped a 50g weight to each end of the strip. She measured the distance X.



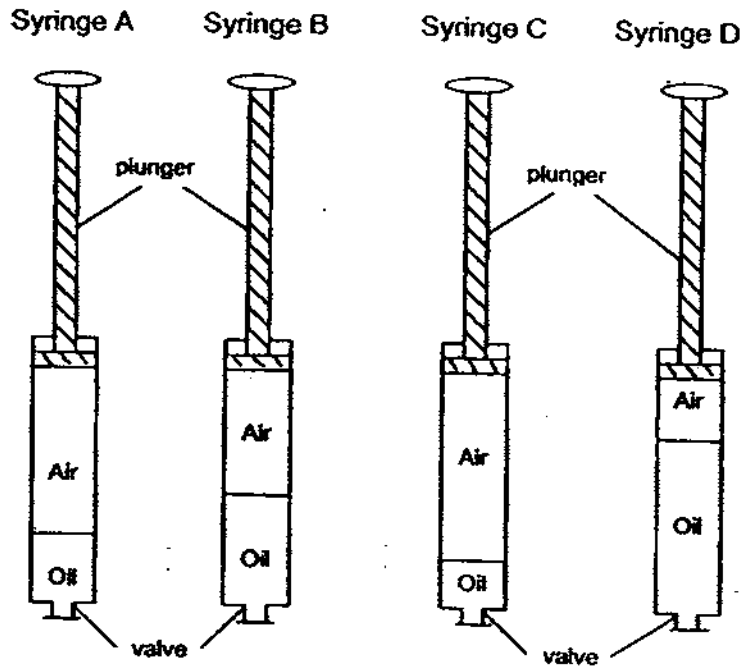
Using the same set-up, she repeated the experiment with strips made of material B, C and D and she recorded the results in the graph shown below. She observed that the length of the strips remained the same during the experiment.



(a) What property of the strips of material was Mei Mei trying to find out? [1]

(b) Based on the graph above, which material (A, B, C or D) is most suitable for making a pair of chopsticks? Explain why? [2]

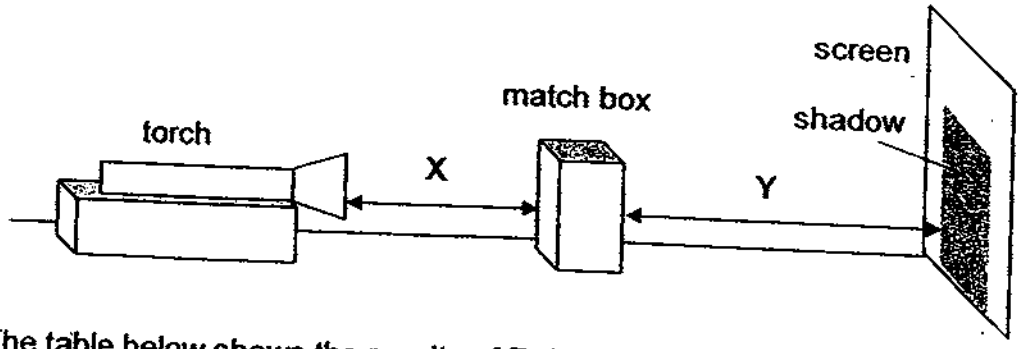
40. The syringes in the picture below are similar in size. Each of them is filled with different amount of oil and the valve is sealed as shown in the picture.



(a) In which syringe does the plunger move the longest distance when it is pushed in? [1]

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

41. Rajah placed a matchbox in front of a screen and a torch behind it as shown below. He wanted to find out if the distance of the matchbox from the torch (X) would affect the size of the shadow cast by the matchbox on the screen.



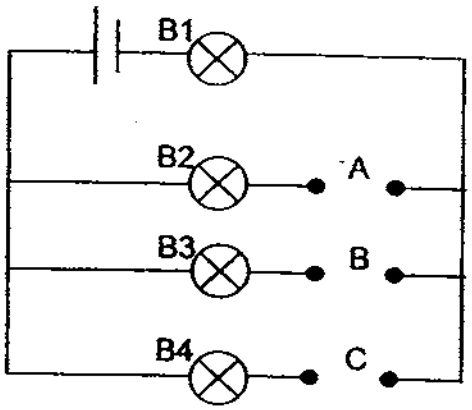
The table below shows the results of Rajah's experiment.

Distance between the torch and the screen	Distance X	Length of shadow
50 cm	15 cm	20 cm
50 cm	20 cm	10 cm
50 cm	5 cm	40 cm
50 cm	10 cm	30 cm

What is the relationship between the distance Y to the size of the shadow formed?

[2]

42. Suzy set up a circuit as shown in the diagram below.



She placed three rods, L, M and N (made of unknown materials) at positions, A, B and C in the circuit respectively.

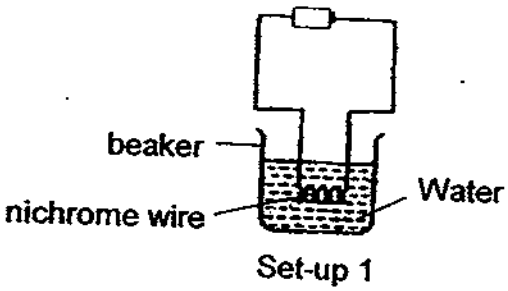
She recorded the results of her experiment in the table as below.

Position where the rod is placed			Did the bulb light up?			
A	B	C	A	B2	B3	B4
L	M	N	No	No	Yes	No

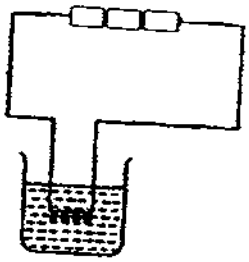
Based on the results, Suzy made the following statements. Put a tick (✓) in the appropriate boxes to indicate whether each of the statements is 'True', 'False' or 'Not Possible To Tell'. [2]

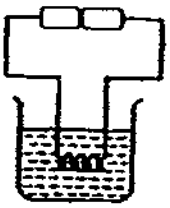
	Statement	True	False	Not Possible To Tell
(a)	M is made of copper.			
(b)	If B1 fused, B3 will not light up.			
(c)	If B2 is removed, B4 will light up.			
(d)	L and N are electrical insulators.			

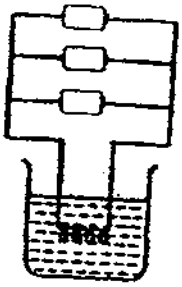
43. Study the four set-ups below. The batteries used in the circuits are brand new and the coils of nichrome wires are of the same length. The four beakers used are similar and they contain the same volume of water at room temperature.



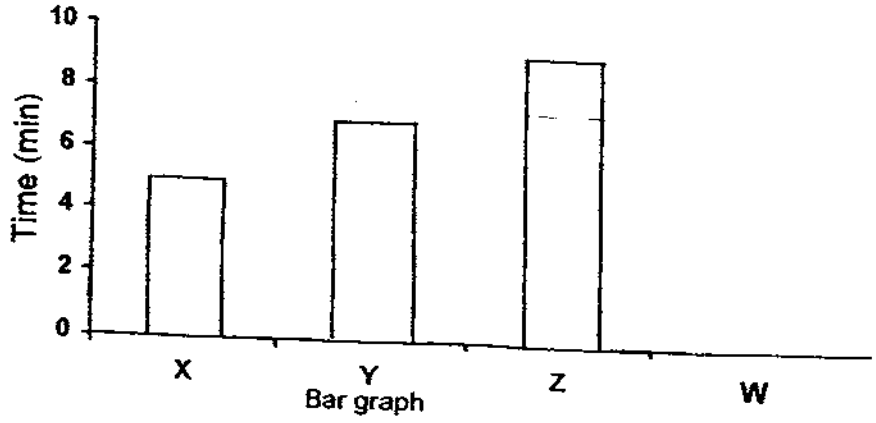
Set-up 1


Set-up 2


Set-up 3


Set-up 4

The circuits are switched on for a period of time until the temperature of the water registered at 60°C. The time taken for the temperature to reach 60°C for each set-up is presented in the bar graphs below.



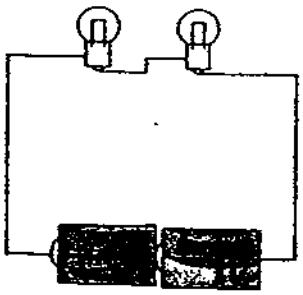
(a) Draw a bar graph (at the space identified as W) that would represent the time taken for the temperature of the water in Set-up 4 to reach 60°C. [1]

(b) Match the following bar graphs to the set-ups that they represent. [2]

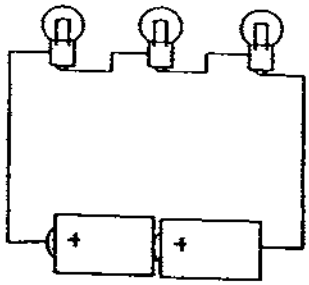
Bar graph X - Set-up _____

Bar graph Y - Set-up _____

44. Nicky was given two circuits as shown below. All the bulbs and the batteries are in good working condition.



Circuit A



Circuit B

(a) In which circuit will the bulbs light up more brightly? [1]

(b) Give a reason for your answer in (a). [1]

(c) What is the disadvantage of arranging the bulbs in the way shown in Circuit A and Circuit B? [1]

(d) How should Nicky re-arrange the bulbs and batteries in Circuit A to overcome the disadvantage that you have mentioned in (c)? Draw the circuit diagram in the space provided below. [1]

~~ End of Paper ~~

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : CHIJ PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

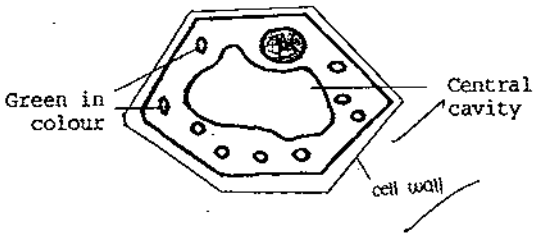
TERM : SA1

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

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

31)a)The example of organism E is bird nest fern.
b)They are multi-cellular organism.

32)a)



b)The presence of chloroplasts in the drawing indicate the cell was taken from plant.

33)a)2 b)4 c)3 d)1

34)a)To remove any traces of carbon dioxide from the surrounding air.
b)It will turn chalky. Because the snail breathe in oxygen and give out carbon-dioxide. So, the air that we breathe out goes to flask D.
c)Both types of air contains carbon dioxide.

35)a)The leaves will be blue in colour.
b)The water carrying tubes in the stem carried the blue water to the leaves causing them to turn blue.
c)The upper part of the stem should be swollen because the removal of food-carrying tubes in the outer ring stops the transport of food from leaves to the lower part of the stem. The accumulation of the food made by the leaves cause the upper part of the stem to be swollen.

36)a)Heart.

b)The blood in A carries more digested food while the blood in C carries more waste materials.

c)It has thin walls so that digested food, dissolved oxygen and water from the blood can pass through the walls easily to other parts of the body.

37)a)Object A.

b)It could be made of magnetic materials.

c)Jerry change the side of object B in order for it to move toward the magnet.

38)a)The plastic bottle cap will be charred too.

b)The plastic cap is a poor conductor of heat and is unable to conduct beat away from the paper.

c)Metal is a good conductor of heat, hence it is able to conduct heat away from the paper preventing it from being burnt.

39)a)She is trying to find out whether is it flexible.

b)C, the distance X is the least, therefore it is least flexible.

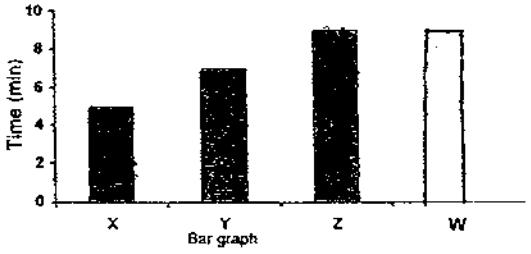
40)a)The syringe is C.

b)Syringe C has the most amount of air and since air can be compressed, the plunger in syringe C will move the longest distance.

41)The Y is, the bigger the size of the shadow longer.

42)a)Not b)T c)F d)T

43)a)



b)X: 2 Y: 3

44)a)Circuit A will light up more brightly.

b)There are fewer bulb in circuit A, therefore current used will be more for each bulb, causing it to light up brightly.

c)When one bulb fosse, the rest of the bulb cannot light up.

d)