



PRIMARY 4 MID-YEAR EXAMINATION 2015

Name : _____ () Date: 15 May 2015

Class : Primary 4 () Time: 8 a.m. – 9.45 a.m.

Duration: 1h 45min

Parent's Signature : _____ Marks: _____ / 60

**SCIENCE
BOOKLET A**

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

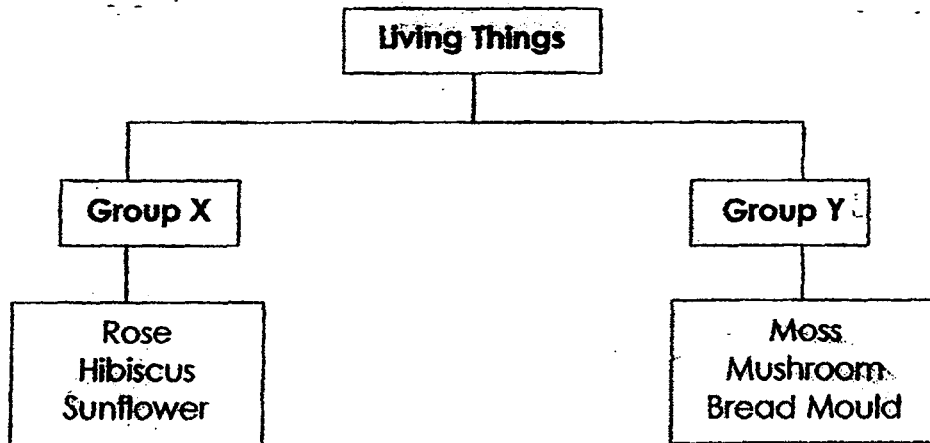
Follow all instructions carefully.

Answer all questions.

Section A (30 x 2 marks)

For each question, choose the most suitable answer and shade its corresponding oval (1, 2, 3 or 4) in the optical answer sheet.

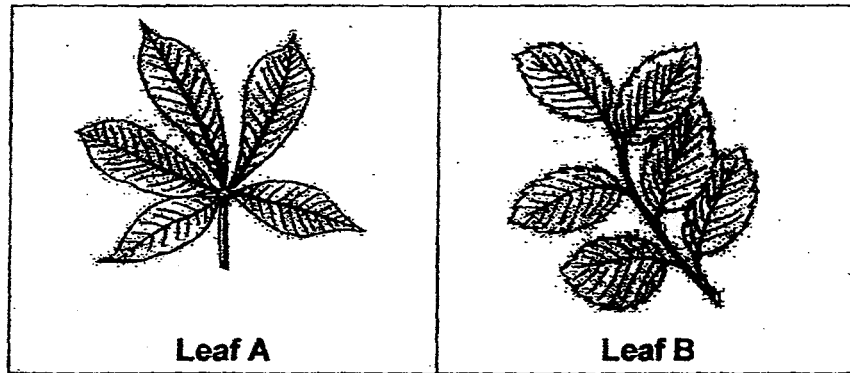
1. Study the classification chart below.



How are the living things above classified?

	Group X	Group Y
(1)	Has stem	No stem
(2)	Grow on land	Grow in water
(3)	Has chlorophyll	No chlorophyll
(4)	Reproduce by seeds	Reproduce by spores

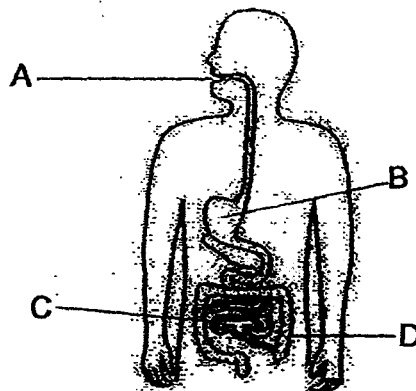
2.



Which of the following best describes the leaves above?

- (1) Both have smooth edges.
- (2) Both have parallel veins.
- (3) Leaf A has parallel veins while Leaf B has network veins.
- (4) Leaf A has smooth edges while Leaf B has toothed edges.

3. A, B, C and D are parts of the human digestive system shown below.



Where does digestion end?

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

4. A wooden crate is sometimes used to store fruits, instead of a cardboard box. Why?

- (1) It is light.
- (2) It is strong.
- (3) It is flexible.
- (4) It is waterproof.

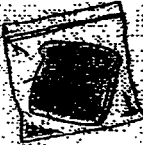
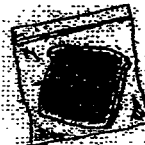
5. Tom wants to make a temporary magnet using the stroking method as shown below.



Which material of nail should Tom use?

- (1) Zinc
 - (2) Steel
 - (3) Copper
 - (4) Aluminium
6. A green bean has just sprouted. Which of the following conditions are necessary for its germination?
- A: Air
 - B: Water
 - C: Sunlight
 - D: Fertiliser
- (1) A and B only
 - (2) C and D only
 - (3) A, B and C only
 - (4) A, B, C and D

7. Susan puts 4 slices of bread in sealed plastic bags and places them in different locations as shown below.

			
In a garden	In a cupboard	In a classroom	In a freezer
Set-up A	Set-up B	Set-up C	Set-up D

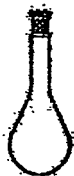
Which 2 set-ups should Susan use to find out if bread mould needs light to grow?

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

8. Which of the following is not matter?

- (1) Book
- (2) Light
- (3) Slime
- (4) Dough

9.



Container X
300 cm³



Container Y
500 cm³

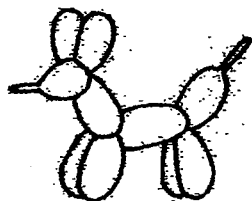


Container Z
800 cm³

Look at the three containers above. Which container(s) can hold 500 cm³ of air?

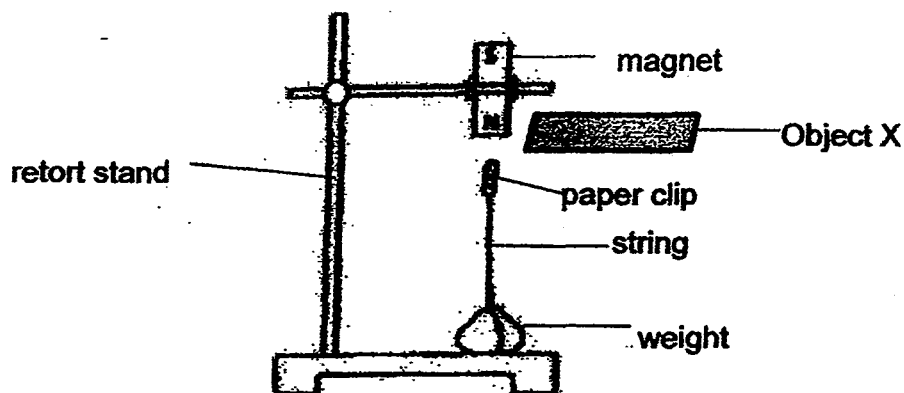
- (1) Y only
- (2) Z only
- (3) Y and Z only
- (4) X, Y and Z

10. A clown is making some balloon sculptures. He fills them with some air. He then twists, squeezes and bends them into the balloon sculptures shown below.



Which property of air allows the clown to make these balloon sculptures?

- (1) Air has mass.
 - (2) Air occupies space.
 - (3) Air is a mixture of gases.
 - (4) Air has no definite shape.
11. Minah conducted the following experiment. Initially, the paper clip was suspended in the air. However, the paper clip fell when she placed Object X between the magnet and the paper clip.

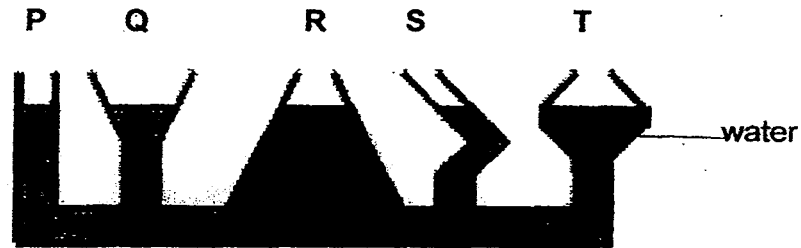


What is Object X ?

- (1) A sheet of iron
- (2) A sheet of glass
- (3) A sheet of paper
- (4) A sheet of plastic

- 12 Peter pours 300ml of water into a communicating vessel with the parts, P, Q, R, S and T, as shown in the diagram below. He then used a syringe to remove 100ml of water from the part, R.

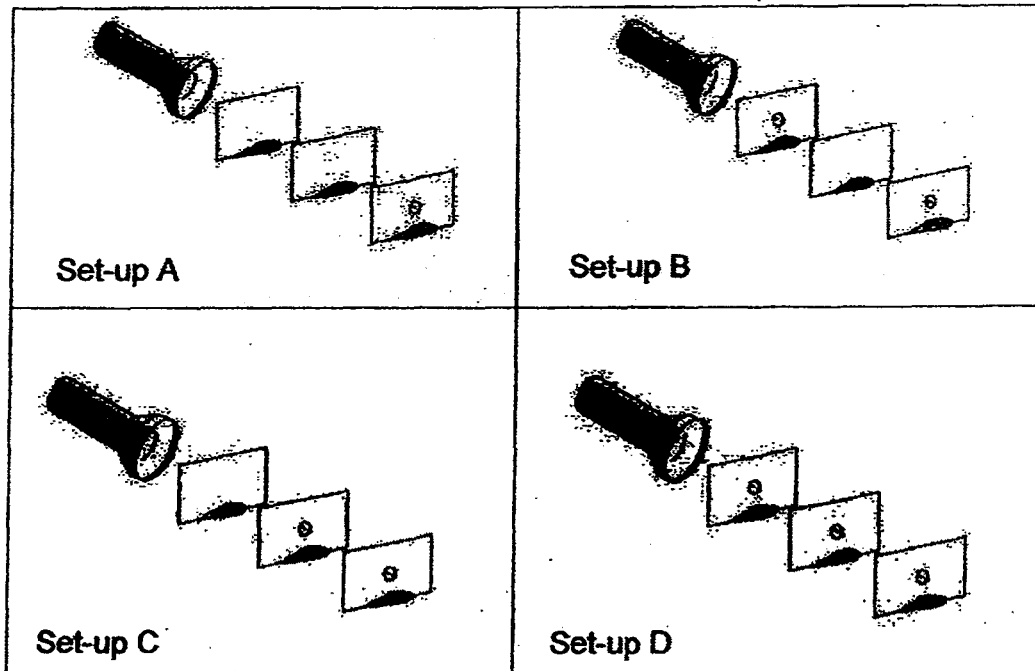
What is the change in water level of the parts, P, Q, R, S and T ?



Communicating Vessel

Water level of the parts					
	P	Q	R	S	T
(1)	Unchanged	Unchanged	Decreased	Unchanged	Unchanged
(2)	Decreased	Decreased	Decreased	Decreased	Decreased
(3)	Increased	Increased	Increased	Increased	Increased
(4)	Unchanged	Unchanged	Increased	Unchanged	Unchanged

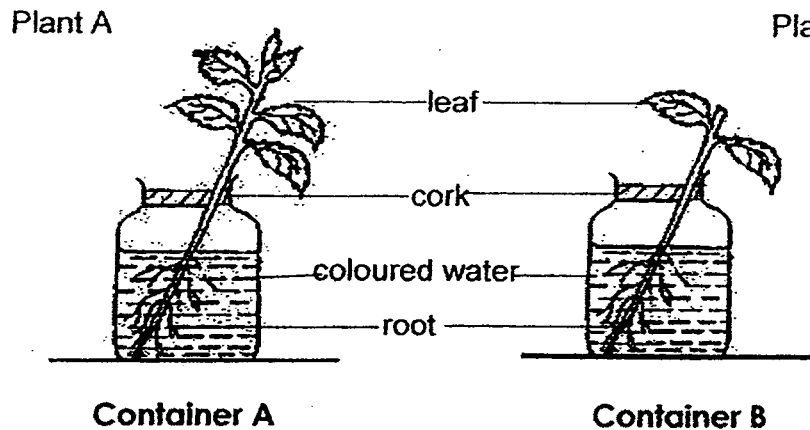
- 13 The following set-ups have 3 pieces of cardboard and a torch each. The torch is shone onto the 3 pieces of cardboard. Some of the pieces of cardboard have a hole in them.



In which set-up would light pass through the last piece of cardboard?

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

14. Fanny places 2 similar plants, Plant A and Plant B, in a container each. She trims off some leaves from Plant B. She gives each plant an equal volume of water. She then records the volume of water left in the containers for seven days in the table below.

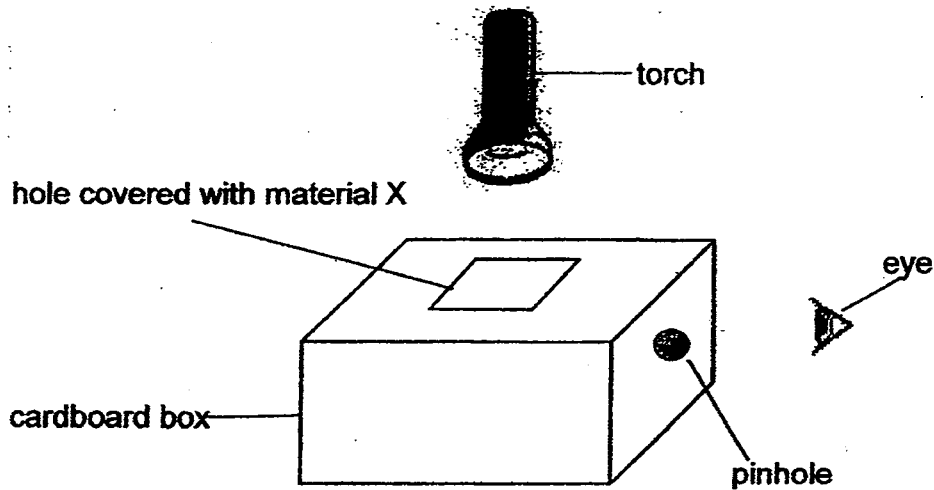


	Volume of water left in the container (ml)			
	Day 1	Day 3	Day 5	Day 7
Container A	500	450	400	350
Container B	500	495	490	485

What is the aim of Fanny's experiment?

- (1) To find out if plants need water to make food.
- (2) To find out if the stem of a plant absorbs water.
- (3) To find out if the roots affect the volume of water taken in by plants.
- (4) To find out if the number of leaves affects the volume of water taken in by plants.

15. The diagram below shows a cardboard box placed in a dark room. Light is shone from a torch through the hole covered with material X. The eye is able to see the ball placed inside the box clearly through the pinhole.



What could material X be ?

- (1) cloth
- (2) cardboard
- (3) clear plastic
- (4) tracing paper

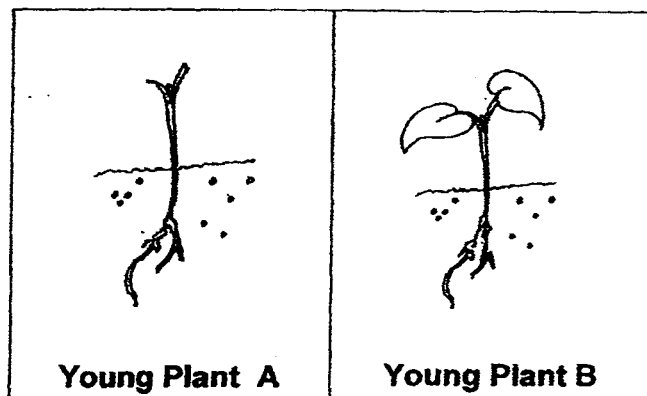
16.

			
caterpillar	cockroach nymph	mosquito larva	mealworm larva

What is a common characteristic among the young of these insects?

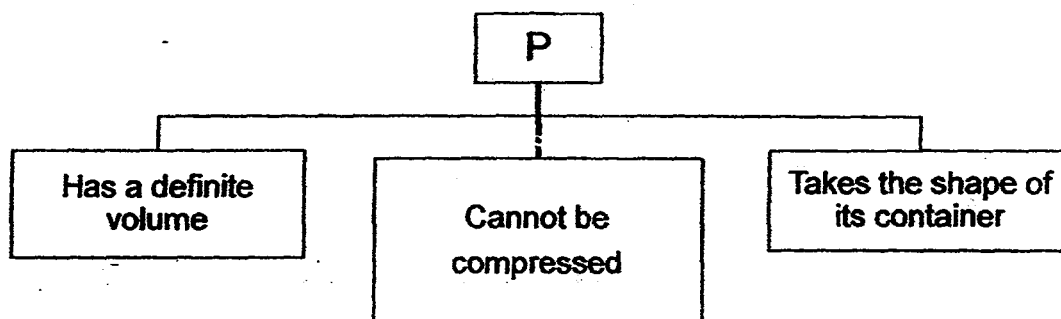
- (1) All live on land.
- (2) All do not eat or drink at this stage.
- (3) All have four stages in their life cycles.
- (4) All moult a few times before they grow into the next stage.

17. Yan planted 2 similar young plants as shown in the diagrams below. She cut the leaves of Young Plant A.



What would happen to the young plants after two weeks?

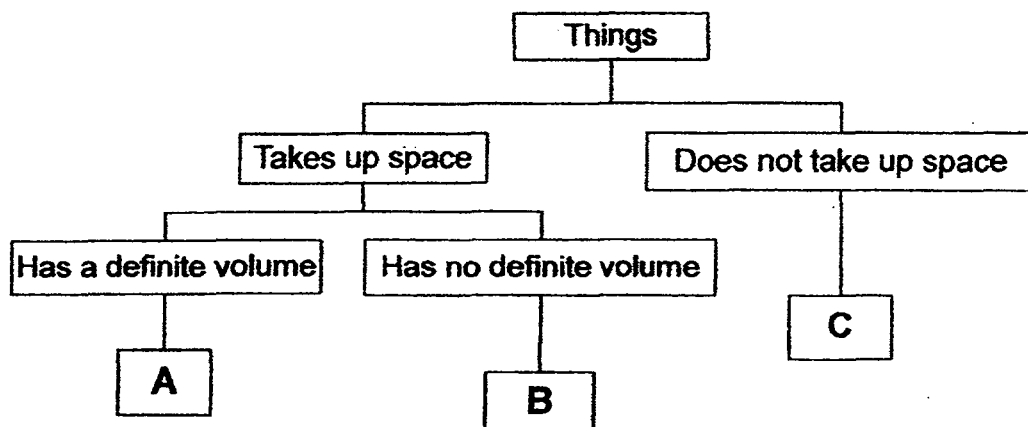
- (1) Both young plants will die.
 - (2) Both young plants will grow into adult plants.
 - (3) Young Plant A will die but Young Plant B will grow into an adult plant.
 - (4) Young Plant A will grow into an adult plant without leaves but Young Plant B will die.
18. The diagram below shows the properties of P.



Which of the following is P?

- (1) Air
- (2) Book
- (3) Water
- (4) Balloon

19. Study the classification chart below.



What are represented by A, B and C ?

	A	B	C
(1)	water	jelly	light
(2)	pencil	oxygen	sound
(3)	book	milk	air
(4)	oil	carbon dioxide	pen

20. A data logger is used to measure the amount of light that can pass through an object. Objects that do not block light will show the highest reading. The table below shows the result when light was shone on three objects, A, B and C.

Object	Reading on the data logger (lux)
A	1000
B	0
C	200

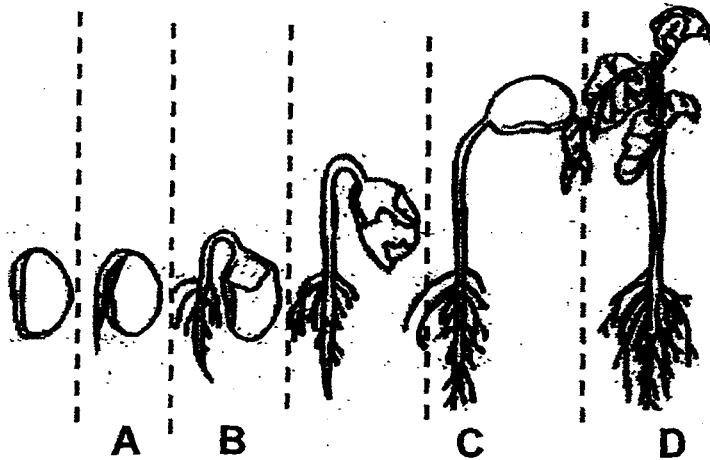
Based on the result, which of the following are represented by the objects, A, B and C?

	A	B	C
(1)	coloured plastic sheet	frosted glass	cloth
(2)	clear glass	cardboard	tracing paper
(3)	aluminium foil	clear plastic	writing paper
(4)	metal sheet	ceramic tile	cellophane paper

21. What is the similarity between a life cycle of a mosquito and a life cycle of a frog?

- (1) Both have 3 stages in their life cycles.
- (2) Both have 4 stages in their life cycles.
- (3) Their young look different from their parents.
- (4) Their young moult before they develop into the adult stage.

22. The diagram below shows the stages, A, B, C and D, of a germinating seed.



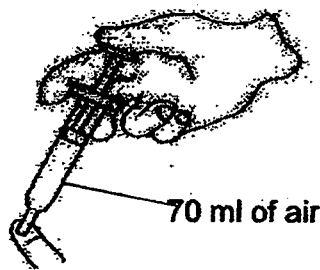
Which stage shows the start of germination?

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

23. Four children are having a discussion about light. Whose statement is true?

- (1) Peter : We can see without light when our eyes are used to the darkness.
- (2) Henry: I can see a book because it reflects light from the sun to my eye.
- (3) Sarah: The Sun gives out light in the day while the moon gives out light in the night.
- (4) Noah : I can see water in a glass bottle because light can pass through all materials.

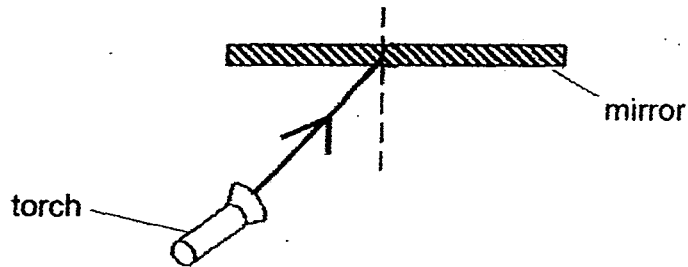
24. Betty fills a syringe with 100ml of air when she pulls its plunger. Then she covers the tip of the syringe with her finger. She pushes the plunger till it can no longer be pushed as shown below. It stops at 70 ml.



What can Betty conclude from this experiment?

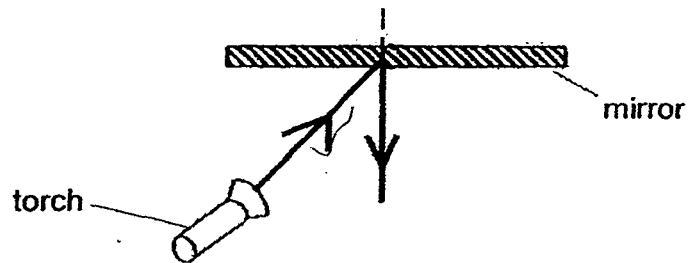
- (1) Air has mass.
- (2) Air takes up space.
- (3) Air has definite shape.
- (4) Air can be compressed.

25. Muthu shone a torch at a mirror from an angle as shown below.

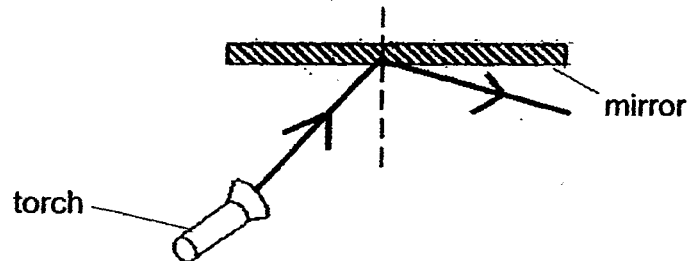


Which diagram shows the correct path of the reflected light ?

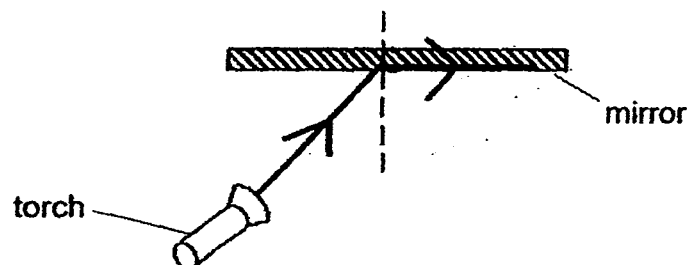
(1)



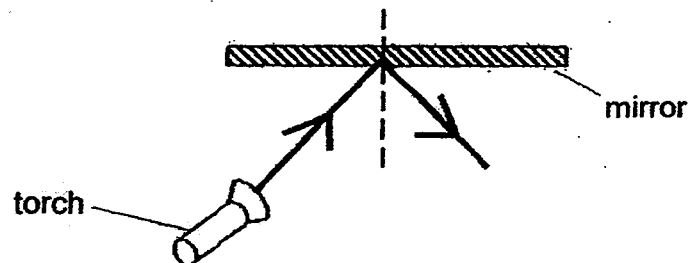
(2)



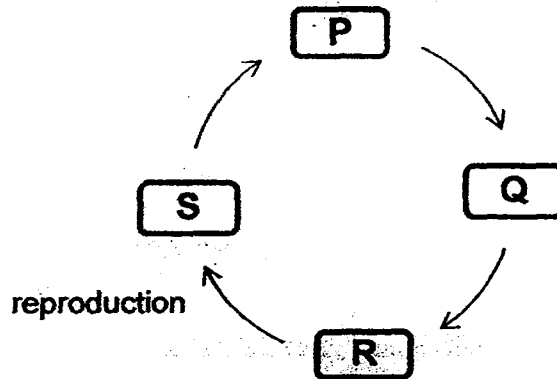
(3)



(4)



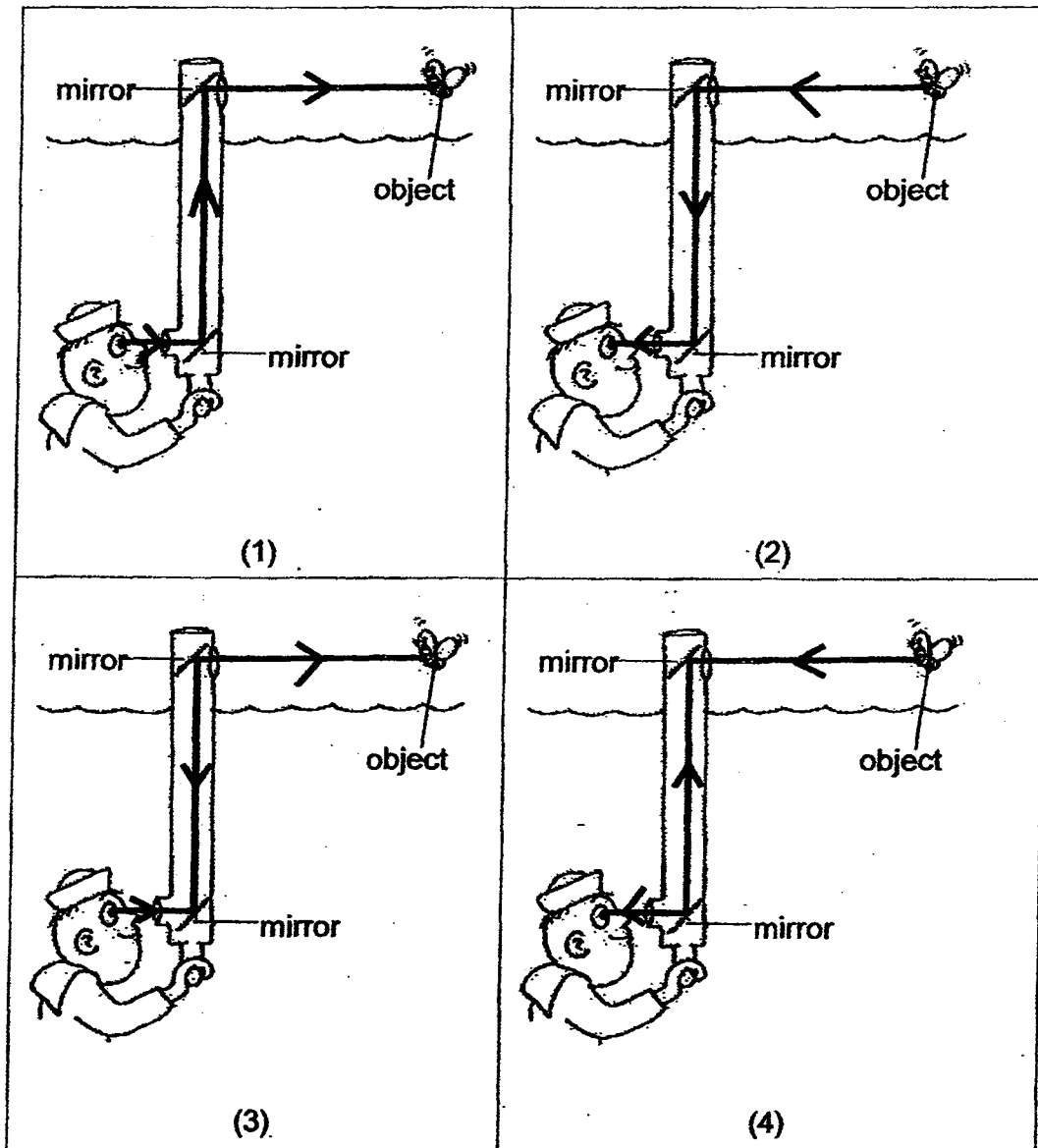
26. The diagram below shows P, Q, R and S, the four stages in the life cycle of a beetle and when reproduction occurs.



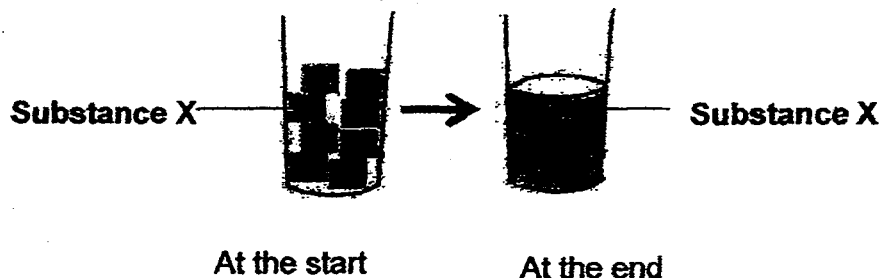
Which stages are represented by P, Q, R and S respectively?

	P	Q	R	S
(1)	Egg	Larva	Pupa	Adult
(2)	Larva	Pupa	Adult	Egg
(3)	Pupa	Adult	Egg	Larva
(4)	Adult	Egg	Larva	Pupa

27. Sailor Tom could see the object using a periscope in his submarine. Which of the following shows the correct reflection of light in his periscope?

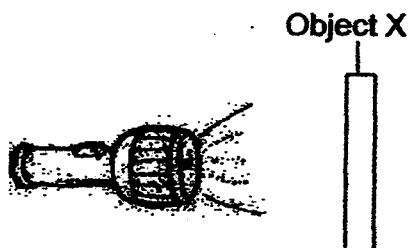


28. Kelly put Substance X in a clear container and left it on a table. About an hour later, she noticed that Substance X had changed as shown in the diagram below. Which of the following best describes the change in Substance X?



	At the start	At the end
(1)	Definite volume	Does not have a definite volume
(2)	Does not have a definite volume	Definite volume
(3)	Definite shape	Does not have a definite shape
(4)	Does not have a definite shape	Definite shape

29. Serene conducted an experiment in a dark room as shown below. She placed Object X in front of a torch and only some light passes through it.



What material is Object X made of ?

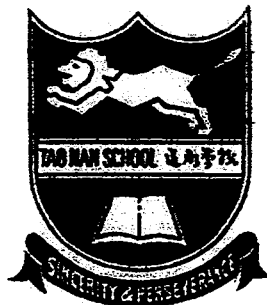
- (1) Cardboard
- (2) Frosted glass
- (3) Aluminium foil
- (4) Wooden plank

30. Mrs Tan wanted to find out which type of soil is suitable for growing plants. She prepared three pots of plants, Pot P, Pot Q and Pot R, with the conditions shown below.

	Pot P	Pot Q	Pot R
Type of plant	Rose	Balsam	Sunflower
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sandy soil	Clay soil
Amount of soil	1500 cm ³	1500 cm ³	1500 cm ³
Volume of water given every day	100 ml	100 ml	100 ml

This experiment is **NOT** a fair test. Why?

- (1) The type of soil is different.
- (2) The type of plant is different.
- (3) The volume of water is the same.
- (4) The material of the pots is the same.



PRIMARY 4 MID-YEAR EXAMINATION 2015

Name : _____ () Date: 15 May 2015

Class : Primary 4 () Time: 8 a.m. – 9.45 a.m.

Duration: 1h 45min

Parent's Signature : _____ Marks: _____ / 40

SCIENCE BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn-over this page until you are told to do so.

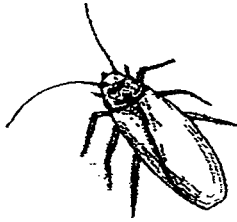
Follow all instructions carefully.

Answer all questions.

Section B (40 marks)

Write your answers in the spaces provided.

31. Study Animal X and Animal Y below:



Animal X

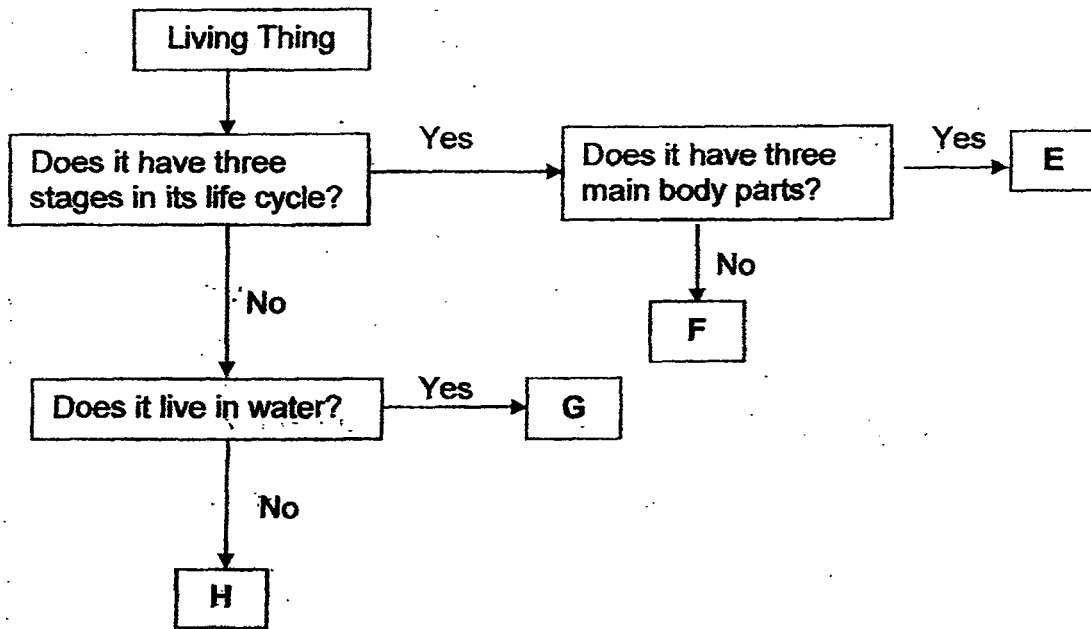


Animal Y

- (a) Based on the pictures above, state one similarity between Animal X and Animal Y. (Do not mention their colour, shape or size) [1]

- (b) Based on the pictures above, state one difference between Animal X and Animal Y. (Do not mention their colour, shape or size) [1]

32. Study the flowchart below.



(a) State one similarity between G and H. [1]

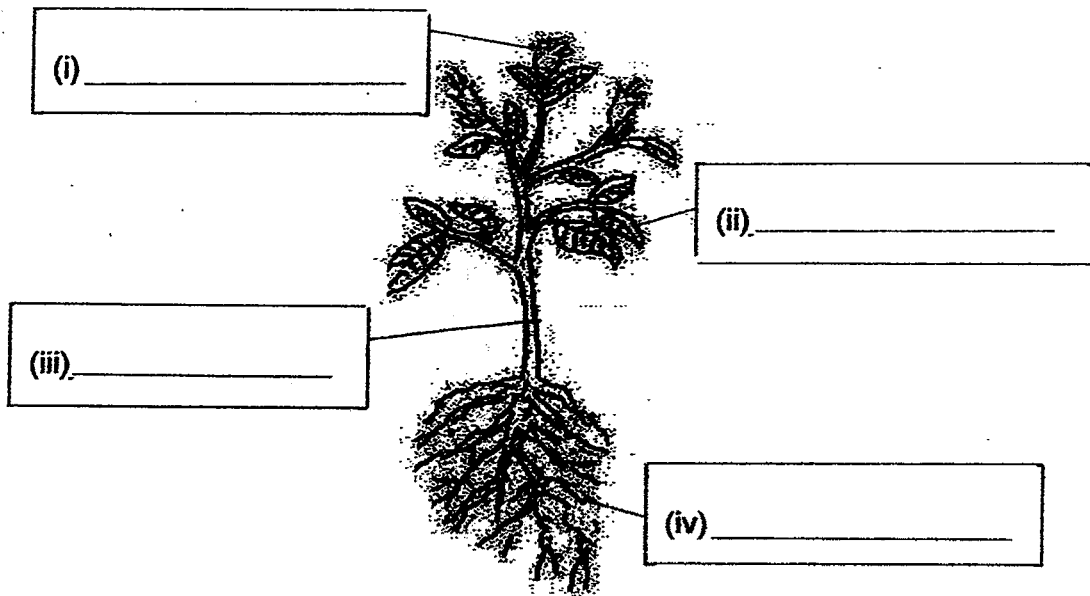
(b) State one difference between E and F. [1]

(c) List all the characteristics of G. [1]

33. Study the plant below.

(a) Label the parts of the plant.

[2]



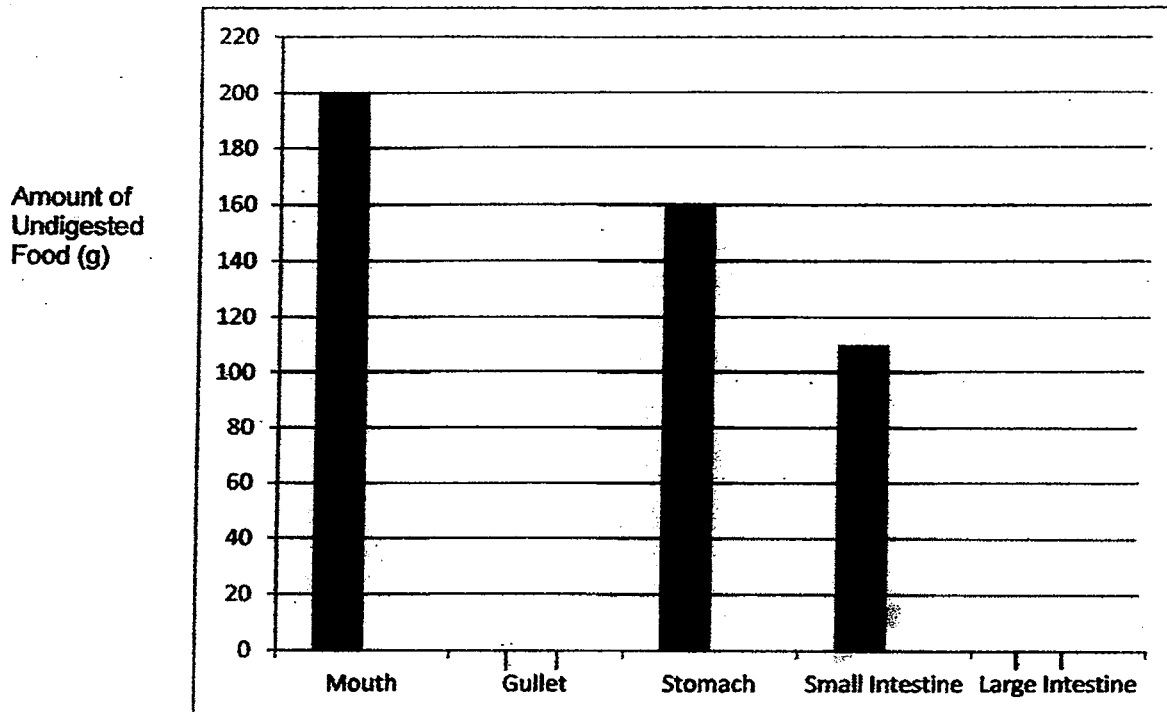
(b) Which part of the plant makes food ?

[1]

(c) Name the process when the plant makes its own food.

[1]

34. Draw and complete the bar graph to show the amount of undigested food in the gullet and in the large intestine of the human digestive system. [2]



35. An electromagnet is used to separate magnetic and non-magnetic objects as shown in the picture below.

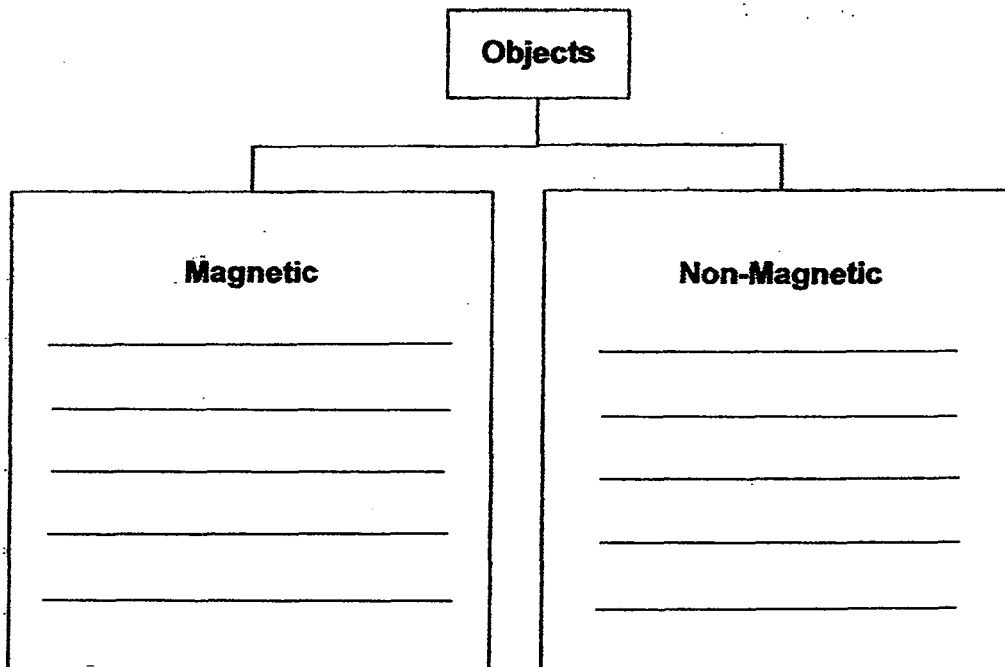


The list of objects to be separated is as follows :

rubber shoe	ceramic mug	iron rod	styrofoam cup
steel spoon	nickel coin	aluminium foil	copper wire

- (a) Classify the objects in the classification chart below.

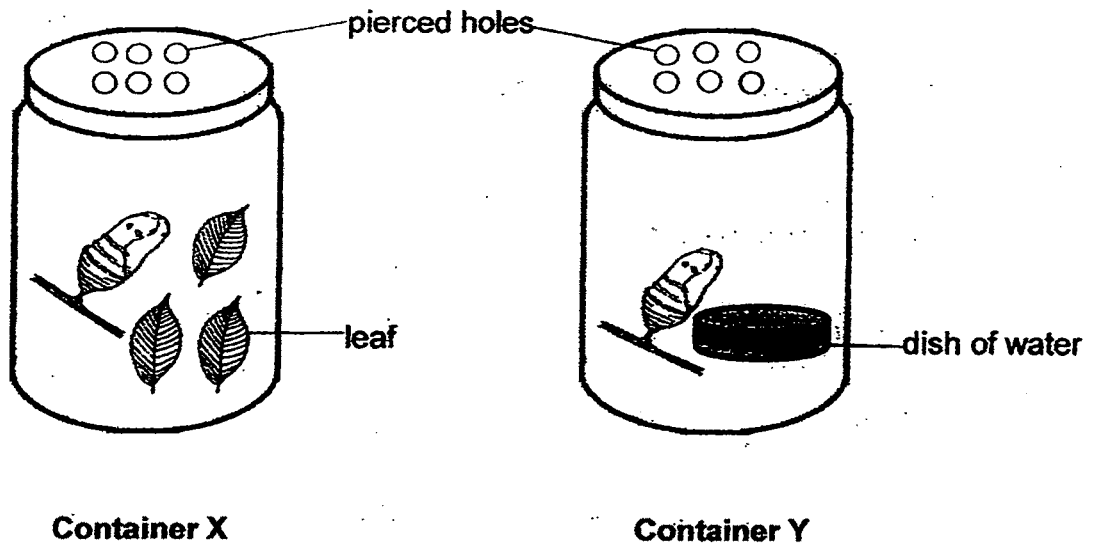
[2]



- (b) Will the electromagnet be able to separate the objects into metallic and non-metallic objects effectively? Explain your answer.

[2]

36. Warren wanted to observe the development of the young of butterflies. He kept them in two containers as shown below.



- (a) At which stage of the life cycle of butterflies are these two young at? [1]

- (b) In which container/s will the young of the butterflies change into an adult butterfly? [1]

- (c) Explain your answer for (b). [2]

37. Bobby wanted to find out if temperature would affect the number of days before a seed germinates. He planted 5 seeds in each pot, A, B, C, D and E. He placed the pots in different locations.

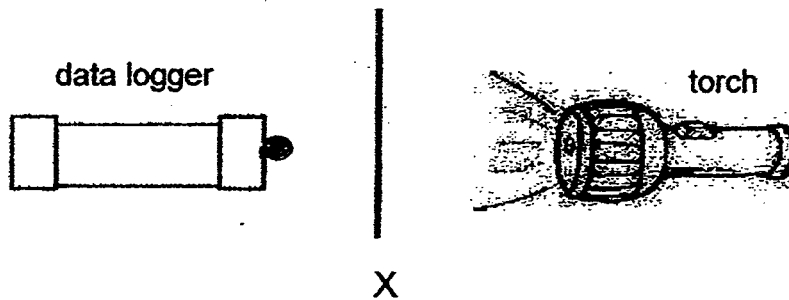
Pot	A	B	C	D	E
Temperature (°C)	15	20	25	30	35
Number of days before germination	28	25	18	12	8

- (a) From the above results, state the relationship between the temperature and the number of days before germination. [1]

- (b) Name one variable which should be kept constant in order for it to be a fair test. [1]

- (c) Which part of the seedling helps it to make its own food? [1]

38. Nathan conducts an experiment as shown below.



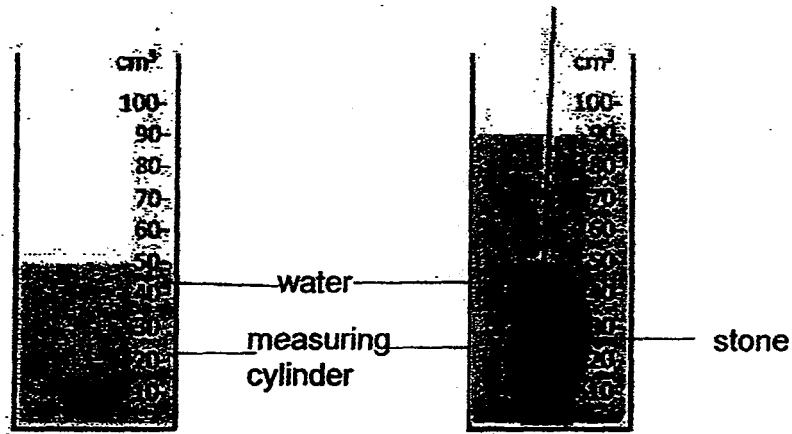
When no paper is placed at position X, the data logger shows a reading of 1000 lux. When a sheet of thin paper is placed at X, the reading becomes 450 lux.

- (a) Based on the readings, identify one property of the sheet of thin paper? [1]

- (b) Explain why there is a decrease in the reading on the data logger. [1]

- (c) What type of material can Nathan use so that the reading on the data logger remains at 1000 lux? [1]

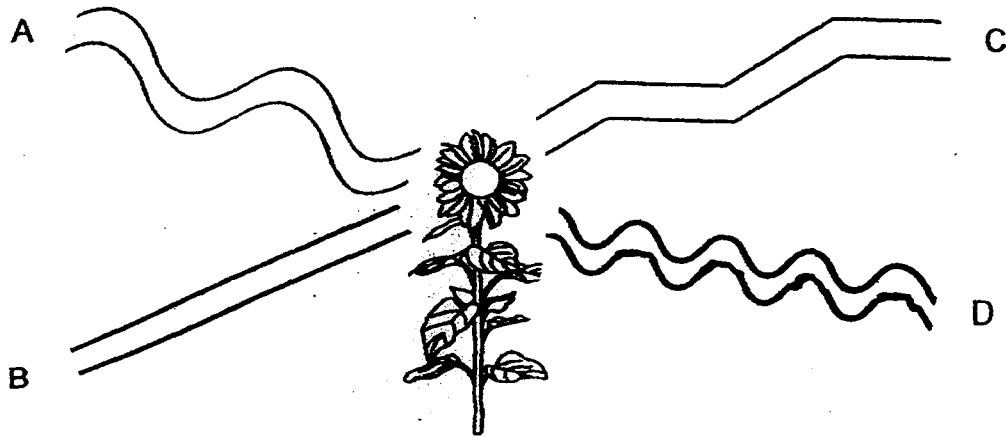
39. Jane wanted to measure the volume of a stone. She lowered the stone into a measuring cylinder with some water as shown in the diagram below.



Using the information from the above diagram, complete the table below.

Volume of water	_____ cm ³	[½]
Volume of water and the stone	_____ cm ³	[½]
Volume of the stone	_____ cm ³	[1]

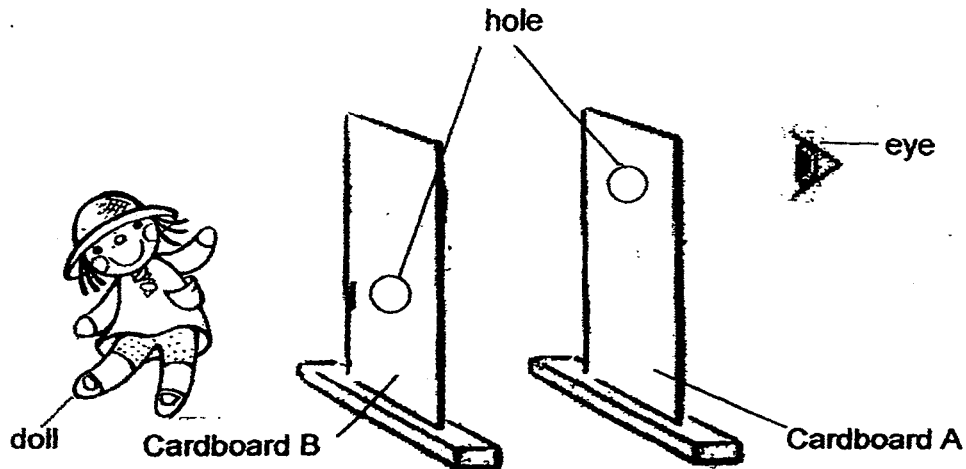
40. Aisha uses 4 different tubes, A, B, C and D, to look at a flower as shown below.



- (a) Which of the tubes, A, B, C and D, would allow Aisha to see the flower ? [1]

- (b) Explain your choice in (a). [2]

41. Jane set up an experiment with a doll and two pieces of cardboard, as shown below. There was a hole each on Cardboard A and Cardboard B.



- (a) Why was Jane unable to see the doll ? [1]

- (b) Jane removed Cardboard B. She replaced it with another piece of material of the same size. Although there was no hole in this piece of material, Jane was able to see the doll. Explain why Jane could see the doll. [1]

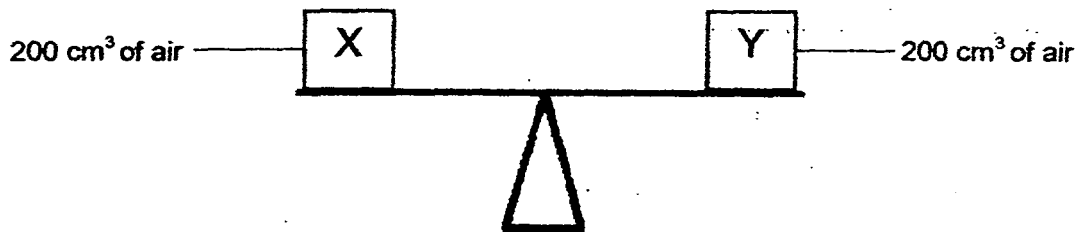
42. At an open sea fish farm, a number of fish died. A researcher investigating their death, collected information about micro-organism X floating on the water and oxygen level in the water as shown in the table below.

Day	1	3	5	7
Mass of micro-organism X (unit/m ²)	50	70	100	150
Number of dead fish	10	50	120	200
Oxygen level in the water (unit/l)	10	8	5	2

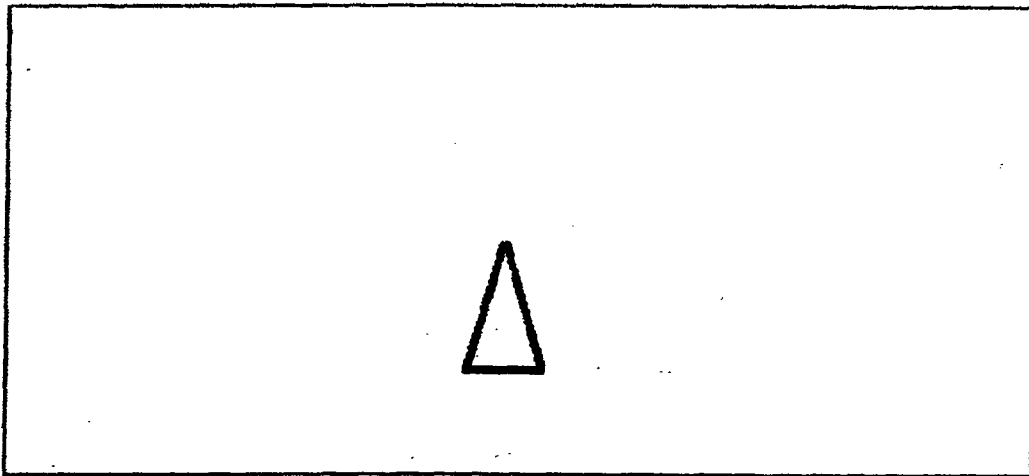
- (a) Based on the table above, what is the relationship between the mass of micro-organism X and the number of dead fish? [1]

- (b) The researcher found that the fish had died due to micro-organism X and no other factors. Based on the table, explain how micro-organism X caused the death of the fish. [1]

43. Johnny had two identical containers, X and Y, of equal capacity, 200 cm^3 . He placed them on a beam balance as shown below.



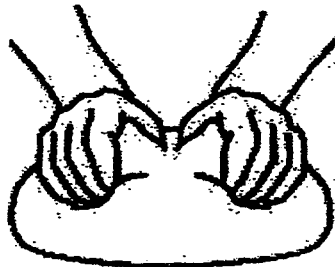
- (a) If Johnny pumped another 100 cm^3 of air into Container X, draw and label how the beam balance would look below. [1]



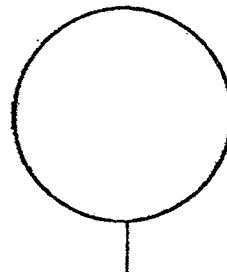
- (b) Explain your answer in (a). [1]

- (c) What would be the volume of the air in Container X after Johnny had pumped 100 cm^3 of air into it? Explain your answer. [2]

44. - Lala played with 200g of plasticine. She kneaded all the plasticine to make a ball of plasticine as shown below.



200 g of plasticine



ball of plasticine

She made four statements about the plasticine below. Tick (✓) the correct boxes to indicate whether each statement is 'True', 'False' or 'Not Possible To Tell'.

[2]

	True	False	Not Possible To Tell
The plasticine is a solid.			
The volume of the ball of plasticine is smaller than that of the 200g of plasticine.			
The ball of plasticine can bounce while the 200g of plasticine cannot.			
The mass of the 200g of plasticine is the same as that of the ball of plasticine.			

EXAM PAPER 2015
 LEVEL : PRIMARY 4
 SCHOOL : TAO NAN
 SUBJECT : SCIENCE
 TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
4	4	3	2	2	1	2	2	4	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	2	4	4	3	4	3	3	2	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	2	4	4	2	2	3	2	2

Q31a Both animal X and Animal Y have eyes.

Q31b. Animal X has three pairs of legs while Animal Y has two pairs of legs.

Q32a. Both G and H do not have three stages in their life cycles.

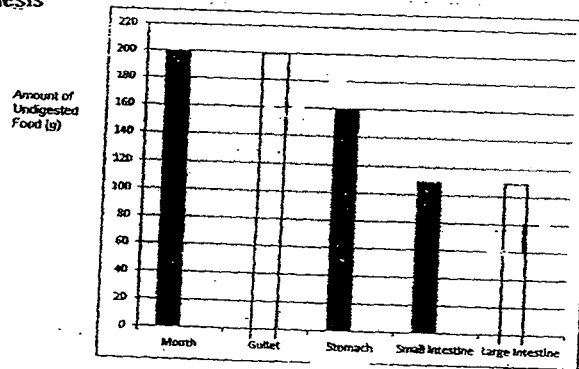
Q32b. E has three main body parts while F does not have three main body parts.

Q32c. G does not have three stages in his life cycle and lives underwater.

Q33. i) Flower Q33ii) leaves Q33iii) stem Q33iv) roots

Q33 b. The leaf Q33c. Photosynthesis

Q34. See picture



Q35a. Magnetic – iron rod, steel spoon, nickel coin

Q35a Non – magnetic – rubber shoe, ceramic mug, Styrofoam cup,

Aluminum foil, copper wire

Q35b. No. Aluminium and copper are also metal but they are non magnetic. Hence, the electromagnet will not be able to get attracted.

Q36a. They are at the pupal stage. Q36b. Container Y & X

Q36c. Both, because they are at the pupa stage and will not be eating or drinking.

Q37a. C → The higher the temperature is, the faster the seed will germinate.

Q37b. The type of seed used. Q37c. C → Leaves

Q38a. It allows some light to pass through it.

Q38b. The thin piece of paper only allowed some light to pass through it and not all the light.

Q38c. Nathan can use clear plastic.

Q39. Volume of water → 50cm³

Q39. Volume of water and the stone → 90cm³

Q39 Volume of the stone → 40cm³

Q40a. B

Q40b. Light can only travel in a straight line and tube B is the only straight tube.

Q41a. The holes are not at the same height and light can only travel in a straight line.

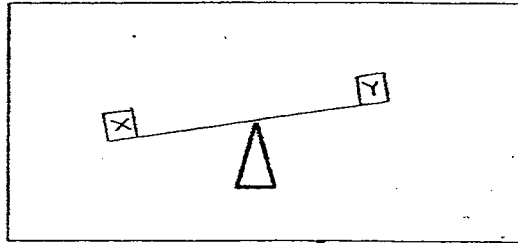
Q41b. The material is transparent.

Q42a. The heavier the mass of Micro – organism, the bigger the number of dead fish.

Q42b. The fish might not have enough oxygen in the water as micro- organism might have taken in most of the oxygen.

Q43a. SEE PICTURE

- (a) If Johnny pumped another 100 cm^3 of air into Container X, draw and label how the beam balance would look below. [1]



Q43b. Air has mass and more air was added into Container X which made it heavier.

Q43 C $\rightarrow 200 \text{ cm}^3$ the air can be compressed.

Q44. The plasticine is a solid $\rightarrow$ TRUE

Q44. The volume of the ball of plasticine is smaller than the 200g of plasticine. $\rightarrow$ FALSE

Q44. The ball of plasticine can bounce while the 200g of plasticine cannot. $\rightarrow$ Not possible to tell

Q44. The mass of the 200g of plasticine is the same as that of the ball of plasticine. $\rightarrow$ TRUE

THE END