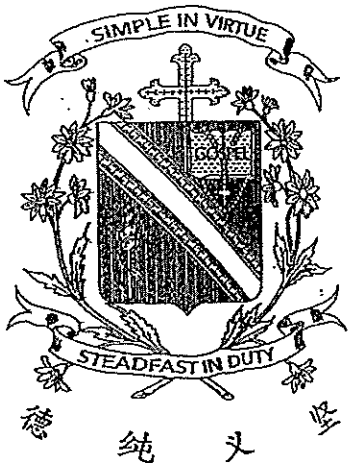
Name : _____( )

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4
Semestral Assessment 1 - 2014
SCIENCE

BOOKLET A

15 May 2014

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

30 questions
60 marks

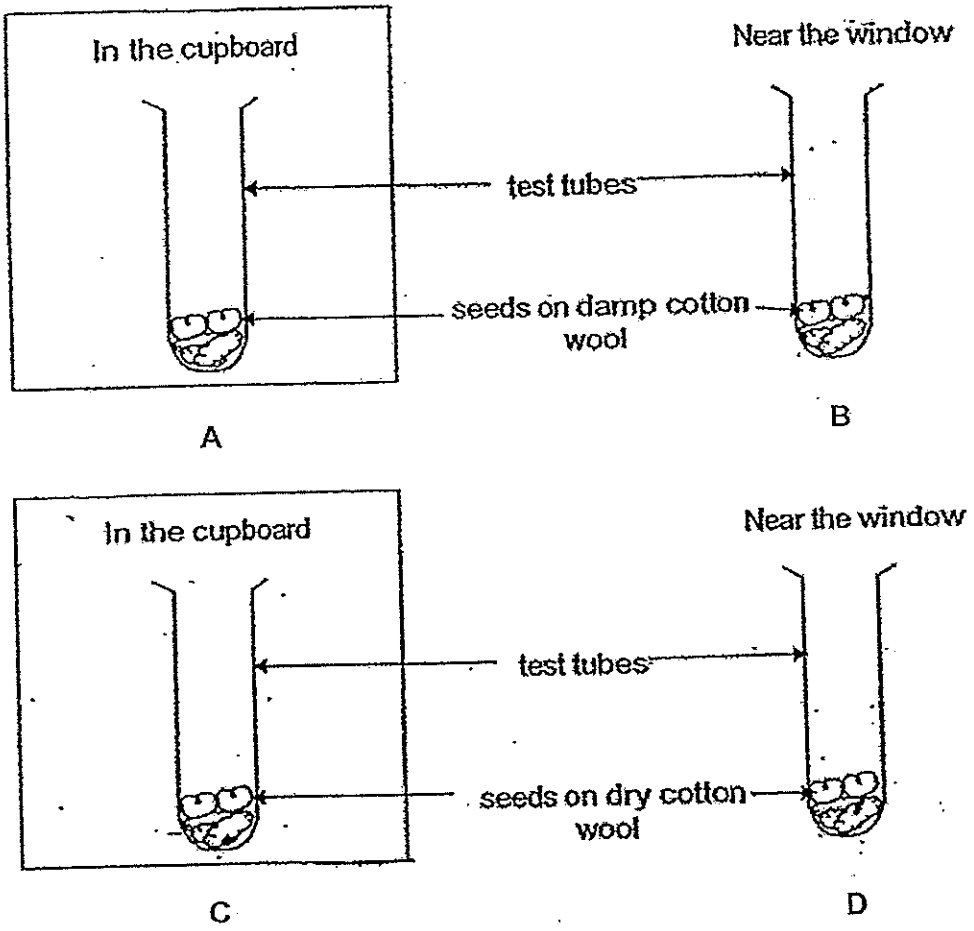
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 21 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.

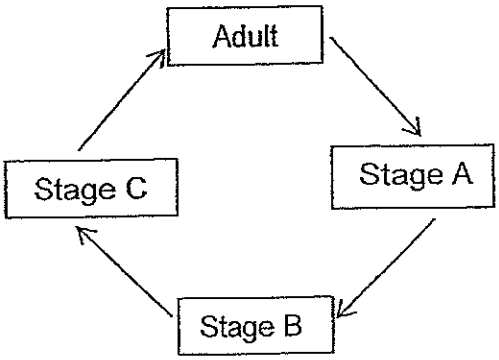
1. Sandra has 4 set-ups, A, B, C and D, as shown below.



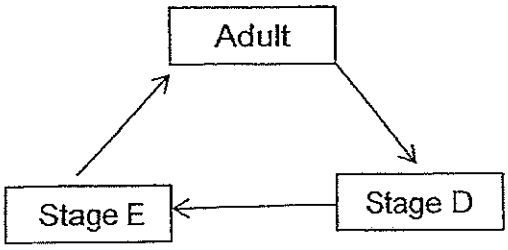
Which of the set-ups shown above should Sandra use to find out if moisture and light are needed for germination?

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

2. The diagram below shows the life cycles of two animals, A and B.



Life Cycle of A



Life Cycle of B

Which of the following pairs of animals identify animals, A and B, respectively?

	Animal A	Animal B
(1)	Dragonfly	Guppy
(2)	Chicken	Snake
(3)	Frog	Penguin
(4)	Beetle	Grasshopper

3. Study the classification table below.

Group X	Group Y
Duckweed	Lotus
Water hyacinth	Water lily

Which one of the following sets of headings best represent Group X and Group Y respectively?

	Group X	Group Y
(1)	Floating plants	Fully-submerged plants
(2)	Fully-submerged plants	Partially-submerged plants
(3)	Floating plants	Partially-submerged plants
(4)	Partially-submerged plants	Floating plants

4. Janissa did a study on 3 animals, P, Q and R. She recorded her findings on the table as shown below.

Findings	Animal P	Animal Q	Animal R
Young resembles the adult.	√	√	X
Gives birth to young alive.	X	X	X
3 stages in the life cycle.	√	√	X
Breathes through lungs	√	X	X

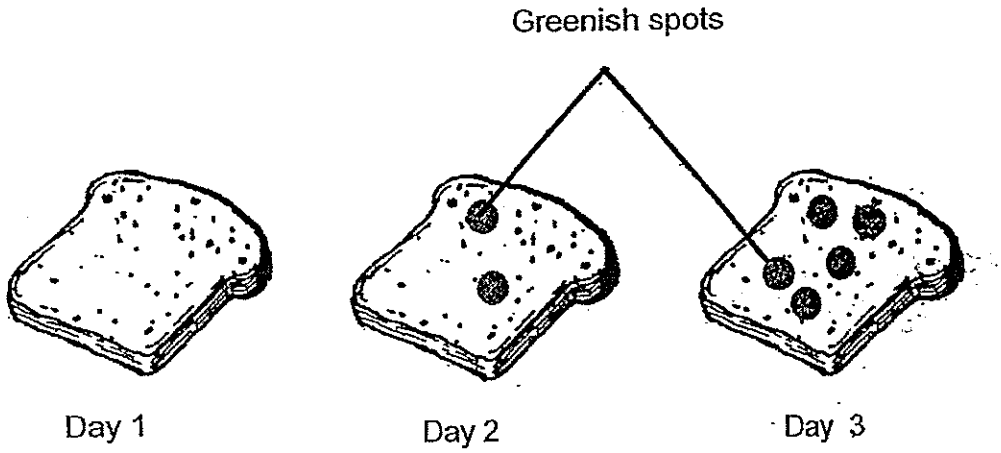
What one of the following can animals, P, Q and R be?

	Animal P	Animal Q	Animal R
(1)	Chick	Cockroach	Lizard
(2)	Lizard	Mosquito	Beetle
(3)	Chick	Lizard	Butterfly
(4)	Lizard	Cockroach	Beetle

5. Which one of the following statement about flowers and leaves is correct?

(1) All flowers and leaves are edible.
(2) Flowers always give out a better smell than leaves.
Flowers can grow into fruits while leaves can make food.
All flowers are brightly coloured while all leaves are green.

6. The diagram below shows how a piece of bread looked like over a period of three days.



Which of the following statements are true?

A The bread was toasted.

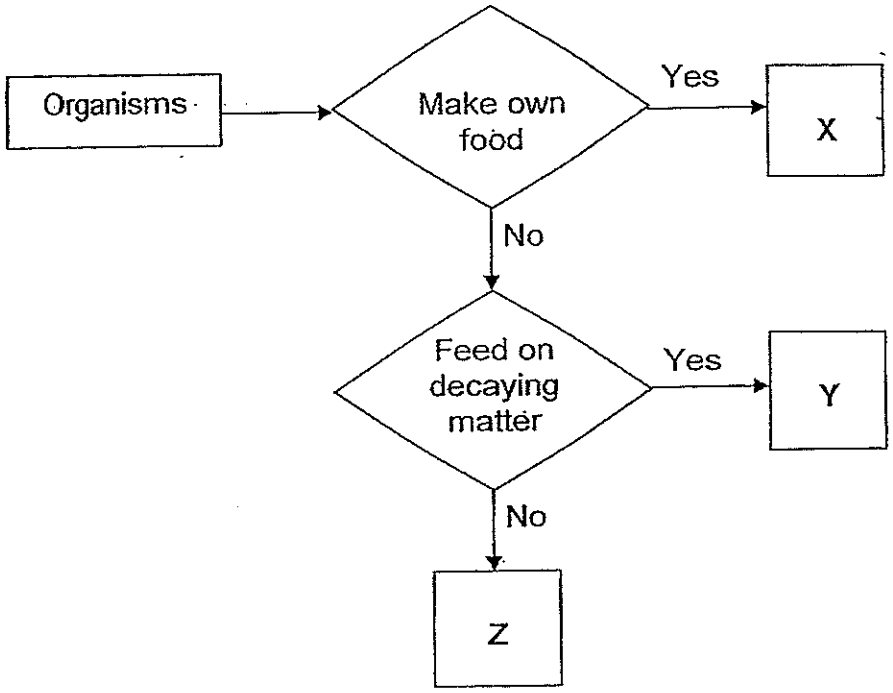
B The greenish spots belongs to a group called fungi.

C The greenish spots came from the spores in the air.

D The greenish spots obtained its nutrients from the air to grow

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

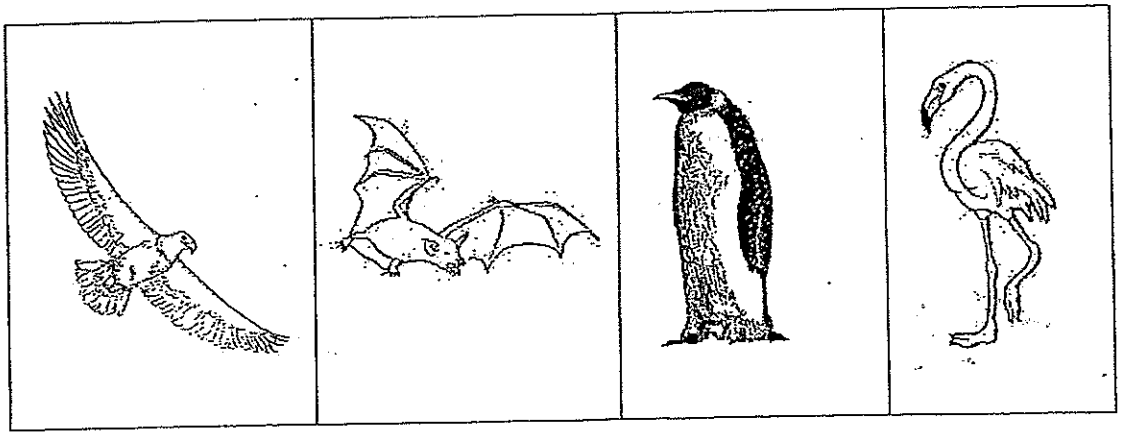
7. Study the flowchart below carefully.



Which of the following can be represented by X, Y and Z respectively?

	X	Y	Z
(1)	Human	Bacteria	Butterfly
(2)	Grass	Bird's nest fern	Toad
(3)	Staghorn fern	Toadstool	Dragonfly
(4)	Moss	Mushroom	Duckweed

8. The diagram below shows some animals.



eagle bat penguin flamingo

Which one of the animals does **not** belong to the same group as the rest?

(1) bat
(2) eagle
(3) penguin
(4) flamingo

9. The diagram below shows the top view of the leaves of a plant.

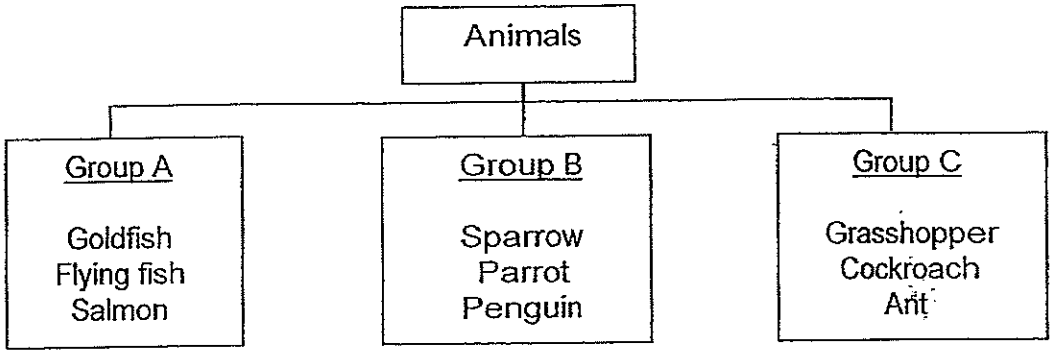
leaves

Which of the following describe(s) why the leaves are spread out?

A To trap more sunlight
B To store more food for the plant
C To absorb more water when it rains
D To take in more air from the surrounding

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

10. Study the classification chart below.



Classify the animals, X, Y and Z , in the correct group above.

Animal X

Animal Y

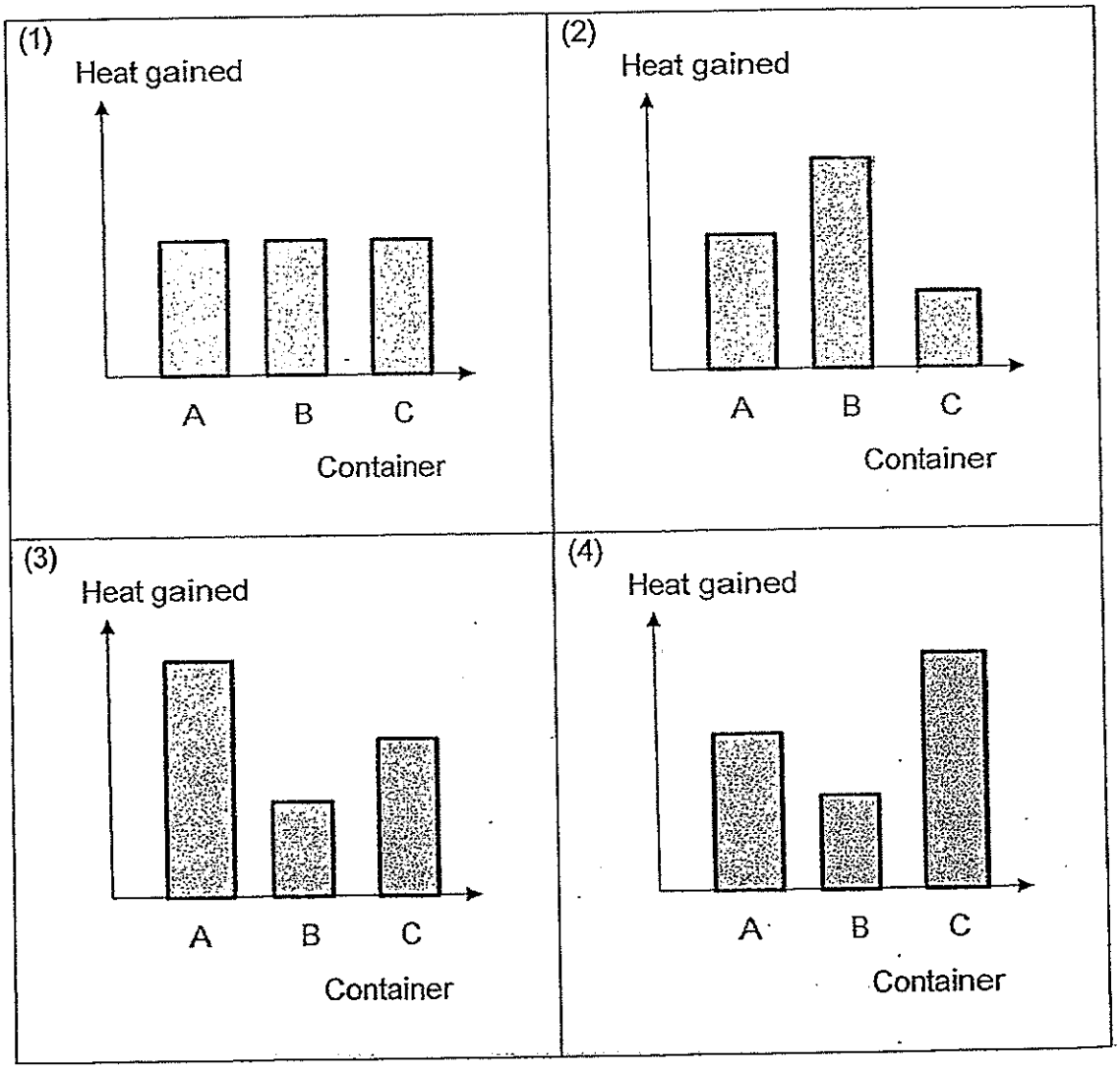
Animal Z

	Group A	Group B	Group C
(1)	Y	X	Z
(2)	Z	X	Y
(3)	X	Z	Y
(4)	Z	Y	X

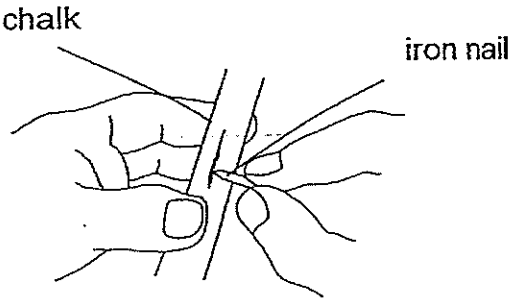
11. Three containers of water were heated together at the same time for 10 minutes. The table below shows the amount of water in each container and the temperature of the water before and after they were heated.

Container	Amount of water (ml)	Starting Temperature (°C)	Ending Temperature (°C)
A	300	28	70
B	500	28	70
C	200	28	70

Which of the following graph shows the amount of heat gained by the water in the containers after 10 minutes of heating?



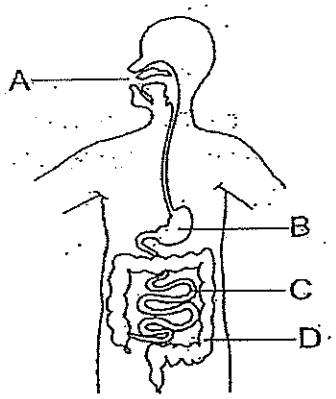
12. Carol can scratch a chalk easily with an iron nail. However, she could hardly leave a scratch mark on the iron nail with the chalk.



This shows that the iron nail is _____ than the chalk.

(1) lighter
(2) harder
(3) stronger
(4) more flexible

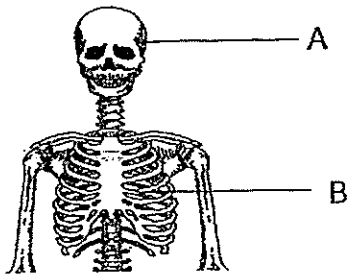
13. Study the diagram below carefully.



Digestive juices are mixed with the food to help to digest it faster. At which parts, A, B, C and D, are digestive juices being mixed with the food?

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

14. The diagram below shows the human skeletal system.

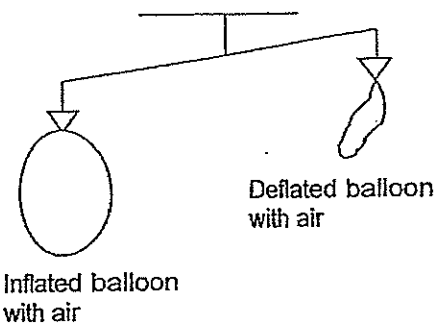


Which of the following statement is correct about A and B?

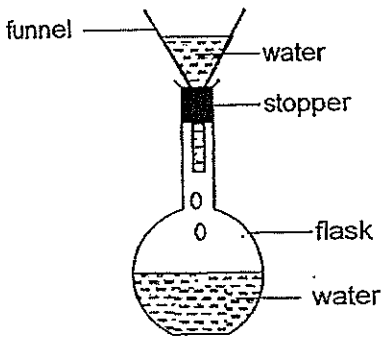
(1) They give us our body shape.
(2) They protect our internal organs.
(3) They enable us to stand upright.
(4) They enable the body to respond to changes around it .

15. Which of the following experiments correctly demonstrates the properties of matter?

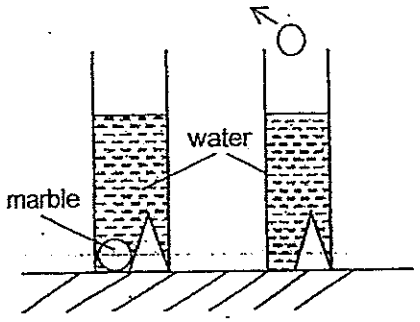
(A)



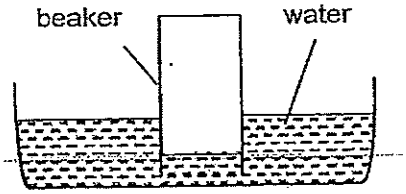
(B)



(C)

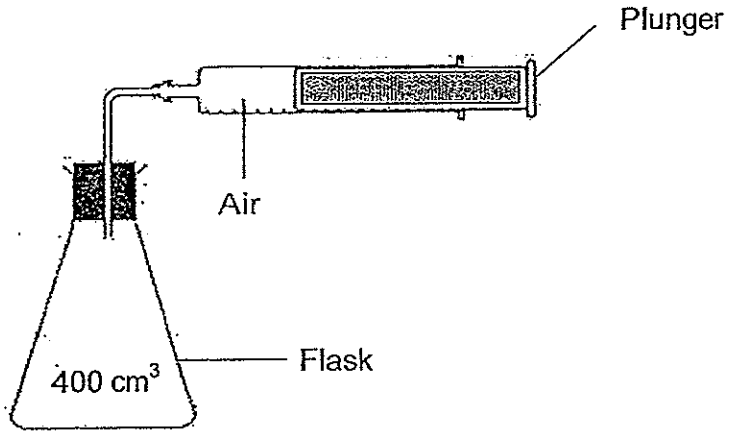


(D)



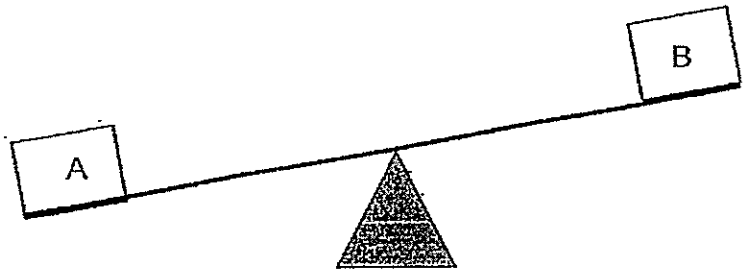
(1) A and B
(2) B and C
(3) C and D
(4) A and D

16. A flask has a capacity of 400cm^3. 100cm^3 of air is pumped into the flask. The final volume of air in the container is _____ cm^3.



(1) 100
(2) 300
(3) 400
(4) 500

17. Jenny set up the experiment below and concluded that _____.



(1) Object A is larger than object B.
(2) Object A has a greater mass than object B.
(3) Object A has a larger volume than object B.
(4) Object A occupies more space than object B.

18. Object A was placed into the displacement can as shown below. When Object A was lowered into the can, water displaced was collected by the measuring cylinder as shown in Diagram 1. This process was repeated using 3 other objects, B, C and D, and the volume of water collected was measured for each object.

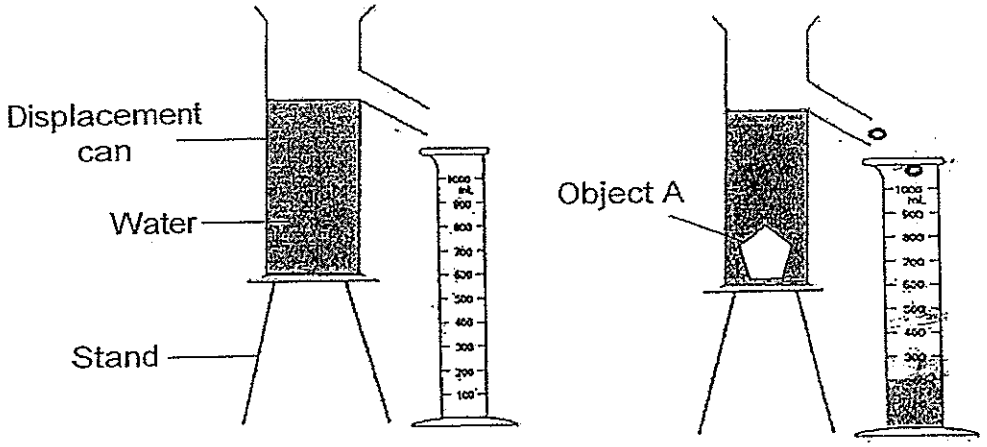
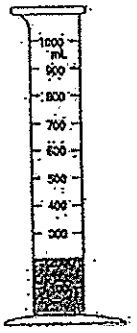


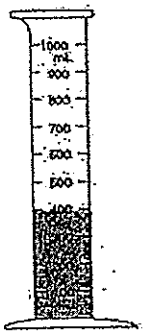
Diagram 1

Based on the volume of water collected for each of the 4 objects, A, B, C and D, which cylinder shows the object that occupies the most space?

(1)



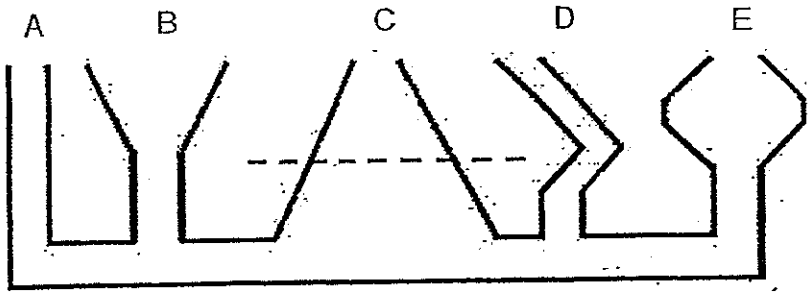
(2)



(3)

(4)

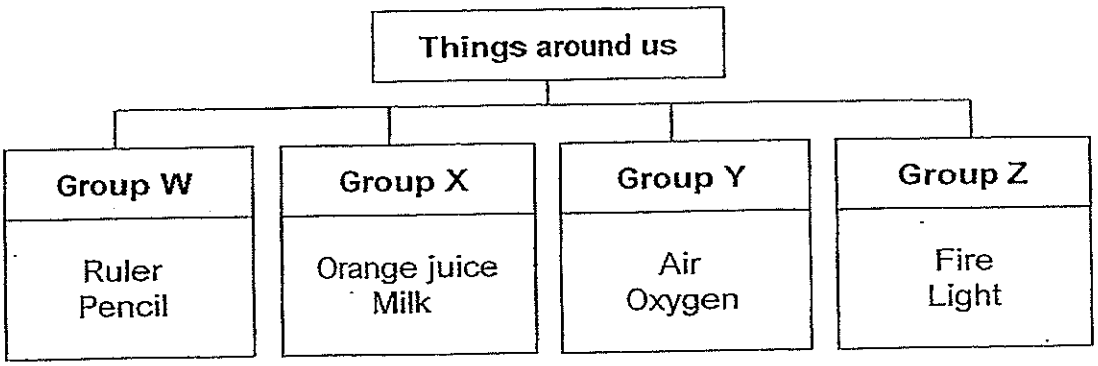
19. Alex poured some water into the communication vessel as shown below.



If Alex poured the water till it reached the dotted line shown in C, what would his observation of the water level be in the vessel?

(1) The water level in C is the lowest.
(2) The water level is the highest in A.
(3) The water level is the same in A, B, C, D and E.
(4) The water levels in A and D are higher than that in B and E.

Refer to the classification diagram below and answer questions 20 and 21.



20. Plasticine can be placed in Group _____.

(1) W
(2) X
(3) Y
(4) Z

21. What are the suitable headings for the classification diagram?

	Group W	Group X	Group Y	Group Z
(1)	Liquid	Solid	Non-matter	Gas
(2)	Non-matter	Liquid	Gas	Solid
(3)	Solid	Liquid	Gas	Non-matter
(4)	Solid	Gas	Non-matter	Liquid

22. Two bar magnets are shown in the diagram below.

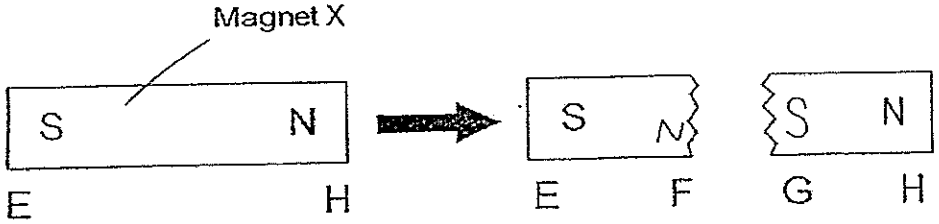
Magnet A Magnet B

Which of the statement(s) are definitely true about the Magnets, A and B?

A Both magnets can attract an iron nail
B Both magnets have North and South poles.
C Magnet A has a stronger magnetic strength than magnet B.

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

23. E and H are the poles of Magnet X. Jean accidentally broke the magnet into two pieces.



Which one of the following represents the poles of E, F, G and H correctly?

	E	F	G	H
(1)	S	S	N	N
(2)	S	N	S	N
(3)	S	-	-	N
(4)	S	N	N	N

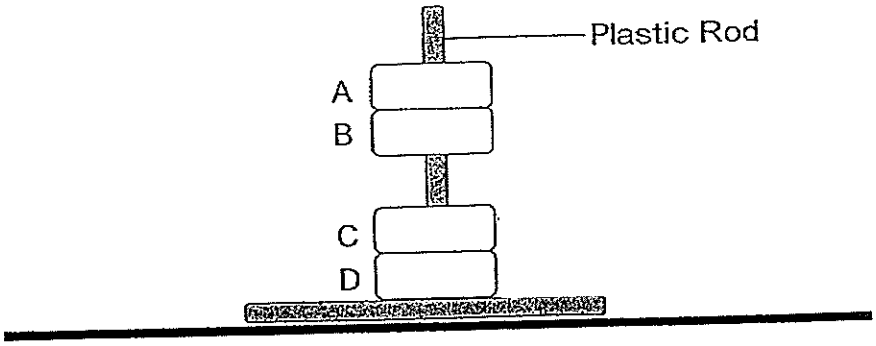
24. Some metals are classified according to their magnetic properties in the table below.

Magnetic material	Non-magnetic material
Iron	Gold
Steel	Silver
Copper	Aluminium

Which metal is classified incorrectly?

(1) Iron
(2) Silver
(3) Copper
(4) Aluminium

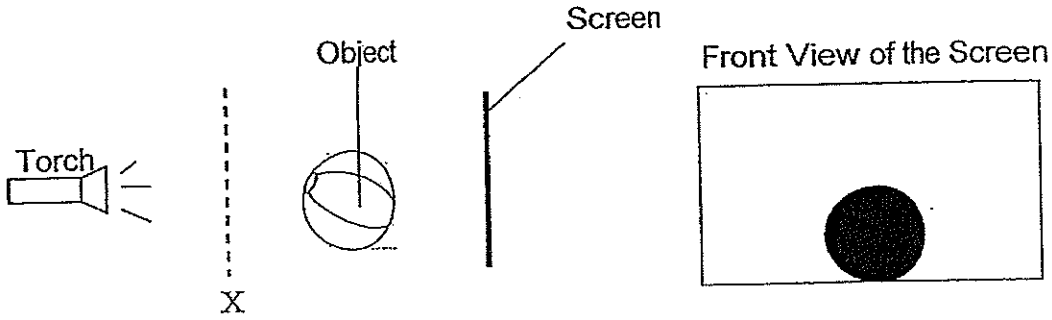
25. In the set-up below, A, B, C and D, are four rings which pass through a smooth plastic rod.



Which one of the following shows the possible materials of the four rings?

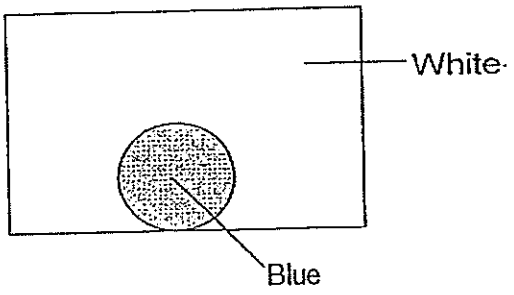
	A	B	C	D
(1)	Steel	Magnet	Copper	Wood
(2)	Wood	Magnet	Steel	Magnet
(3)	Steel	Magnet	Magnet	Wood
(4)	Magnet	Steel	Wood	Magnet

26. When an object is placed between the light source and the white screen, a shadow was cast on the white screen as shown below.

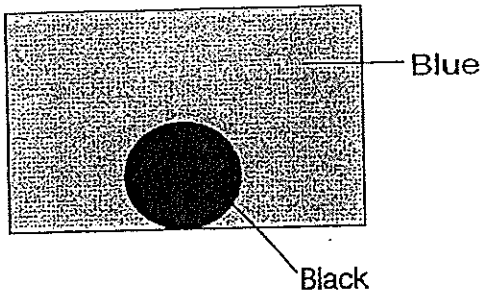


If a clear blue plastic sheet was at position X, what would be observed on the white screen?

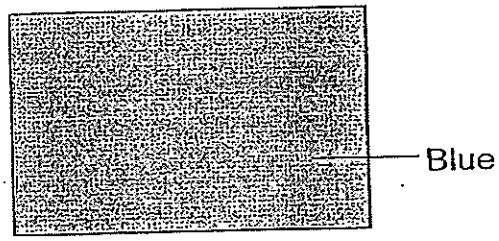
(1)



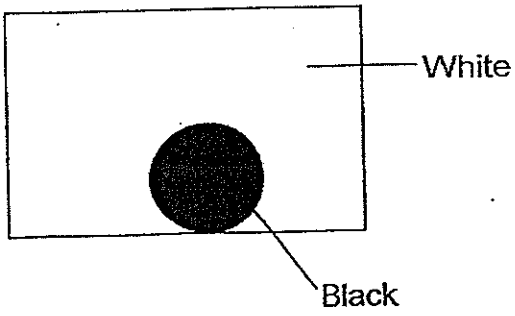
(2)



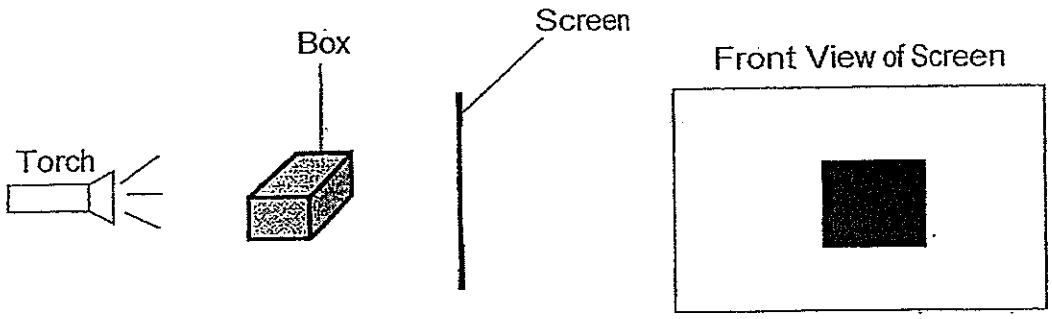
(3)



(4)



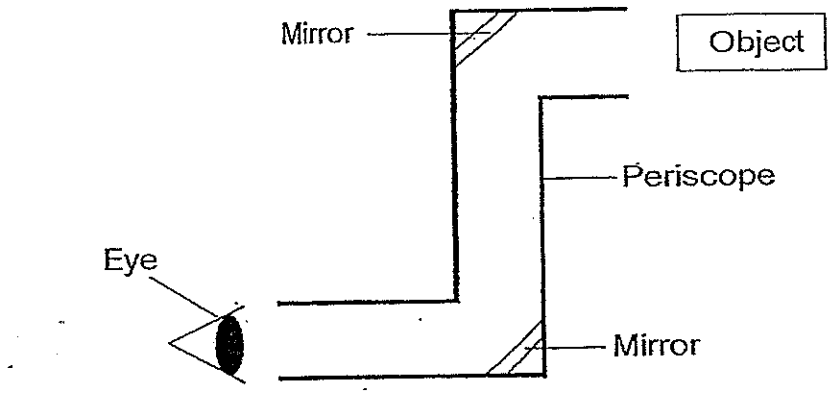
27. Jane placed a box between a torch and a screen as shown below.



What would she observe about the shadow when she moved the torch further from the box?

(1) There was no change at all.
(2) The shadow decreased in size.
(3) The shadow increased in size.
(4) The shadow became square in shape.

28. The diagram below shows a periscope.

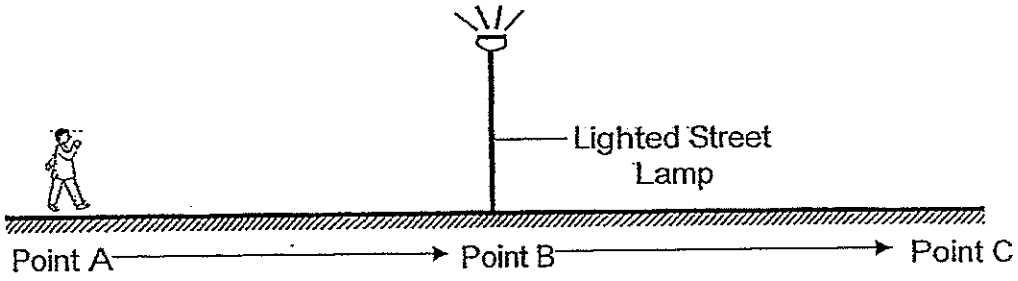


Which of the following statements about light correctly describe why we can see the image of an object through a periscope?

A Light can bend.
B Light can be reflected.
C Light travels in a straight line.
D Light is given out by all objects.

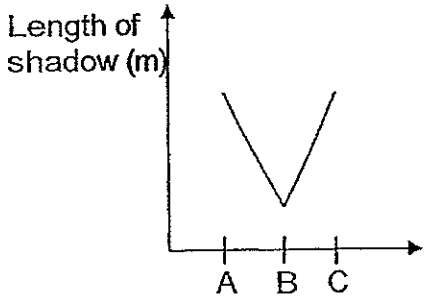
(1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

29. Jason was walking along a street with a lighted street lamp from point A to point C as shown in the diagram below.

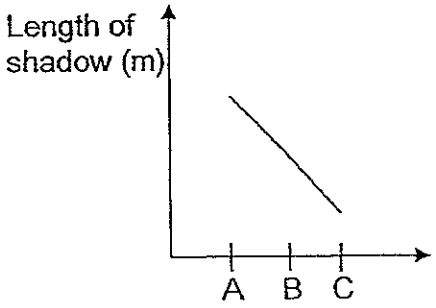


Which one of the following graphs shows the change in the length of Jason's shadow as he walked from point A to C?

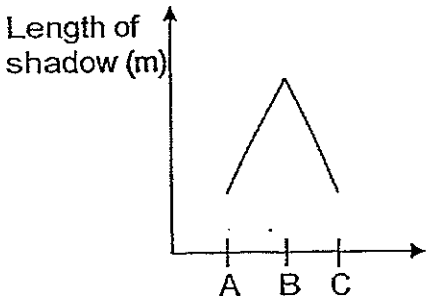
(1)



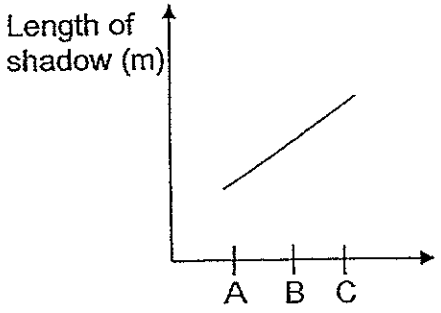
(2)



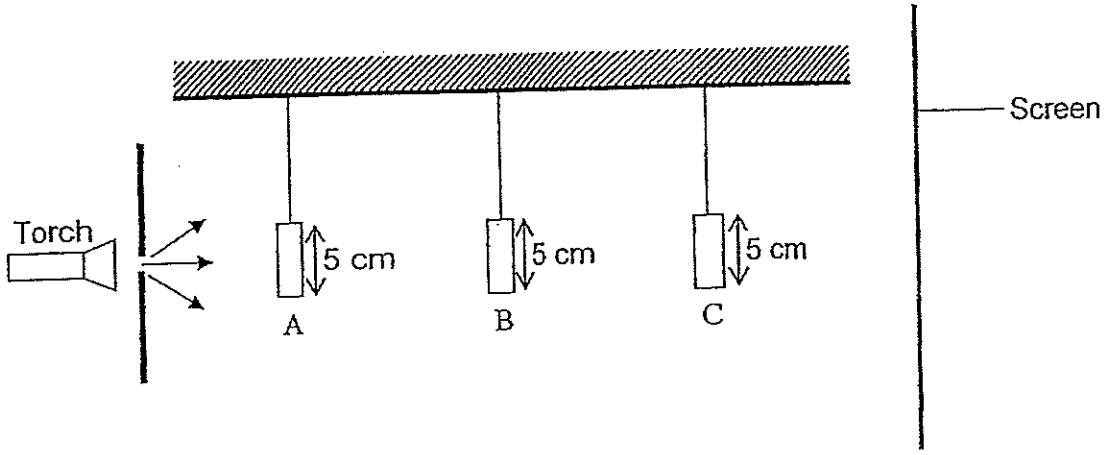
(3)



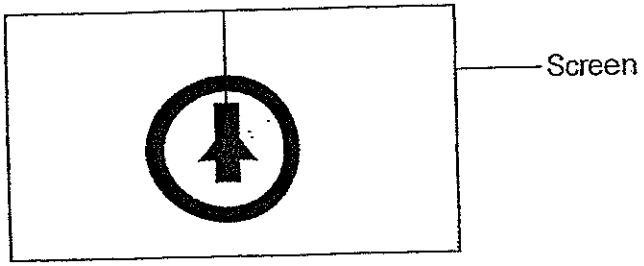
(4)



30. The set-up below shows light shining on three shapes, A, B and C, made of cardboard. They are placed at different distances from the torch.



The diagram below shows what was seen on the screen.



Which one of the following correctly shows what shapes, A, B and C, are likely to be?

	A	B	C
(1)	Ring	Triangle	Rectangle
(2)	Ring	Rectangle	Triangle
(3)	Triangle	Rectangle	Ring
(4)	Rectangle	Ring	Triangle

END OF SECTION A

Name :_____ ( )

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 4

Semestral Assessment 1 – 2014

SCIENCE

BOOKLET B

15 May 2014

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 paper consists of 16 printed pages.

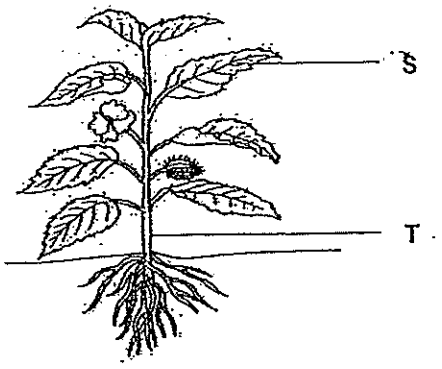
Parent's Signature/Date

Section B: 40 marks

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

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

31. The diagram below shows a flowering plant.



(a) State two functions of Part T that ensure the survival of the plant. [2]

(i) _____

_____

(ii) _____

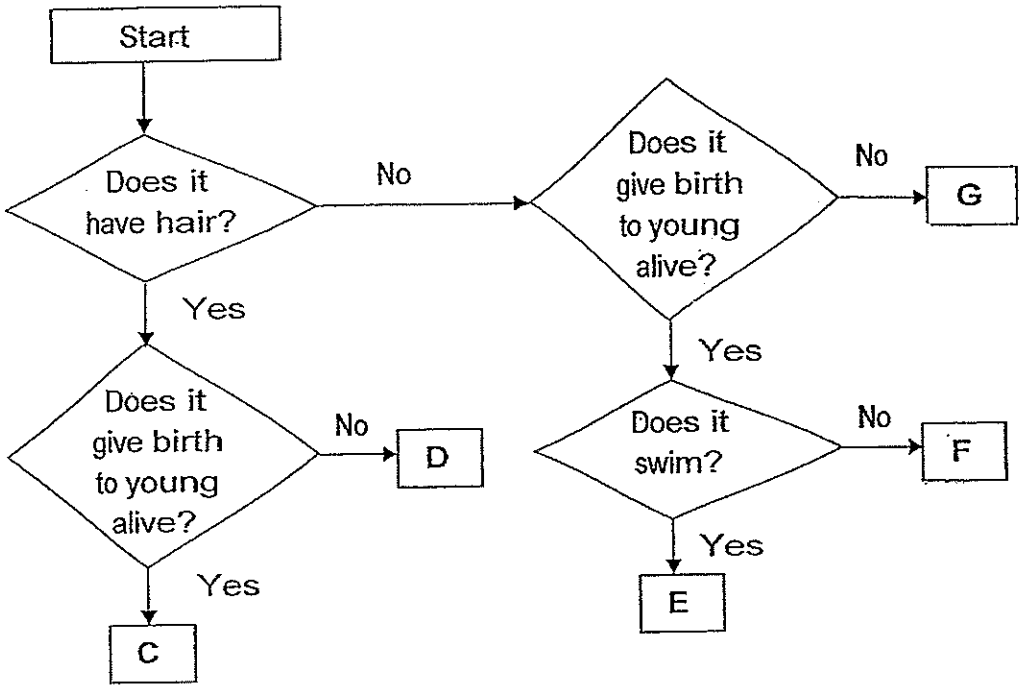
_____

(b) What will happen to the plant if all of S are removed? Explain your answer. [1]

_____

_____

32. Study the flowchart below.



Based on the flowchart above, answer questions (a) to (c).

(a) Identify the letter that represents each of the following animals. [1]

(i) Penguin : _____

(ii) Guppy : _____

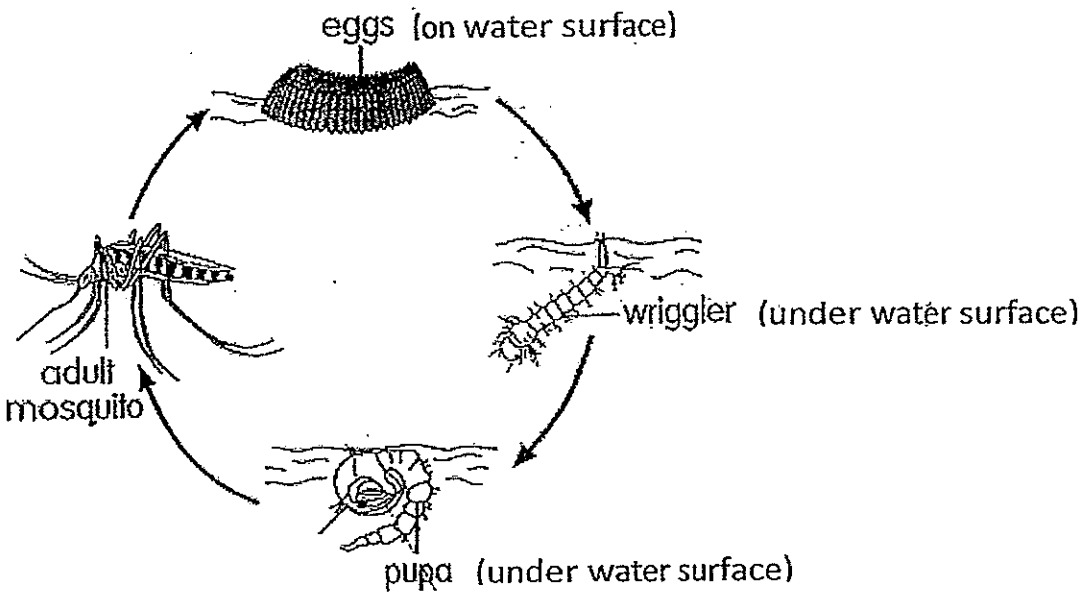
(b) Give an example of animal D. [1]

_____

(c) State the difference between animal C and animal E? [1]

_____

33. The diagram below shows the life cycle of the mosquito.



(a) At which stage of the life cycle of the mosquito is harmful to humans? [1]

_____

(b) Based on what you can observe from the diagram, suggest an effective way of preventing the breeding of mosquitoes. [1]

_____

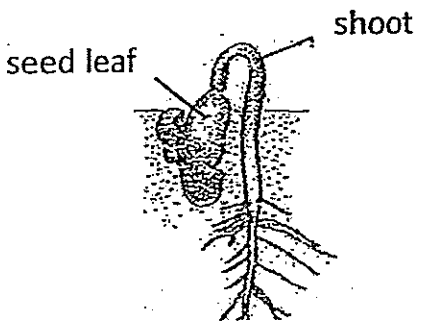
_____

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

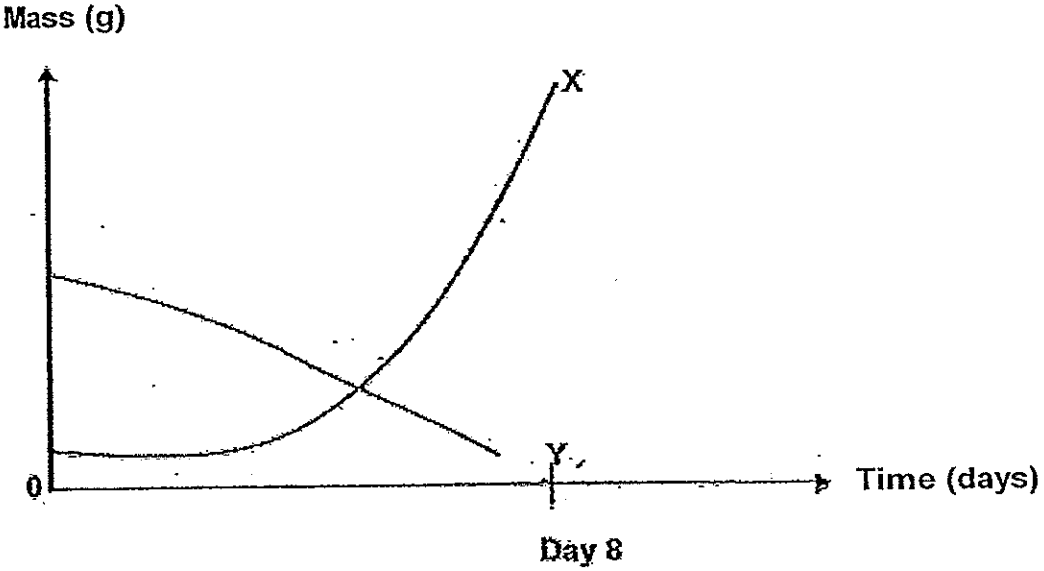
_____

_____

34. Samuel carried out an experiment on a seed growing into a seedling as shown below.



In the graph below, the two curves show the changes in the mass of the seed leaf and the shoot during the experiment.



(a) Which curve, X or Y, shows the changes in the mass of the seed leaf during the experiment? Explain your answer. [1]

_____

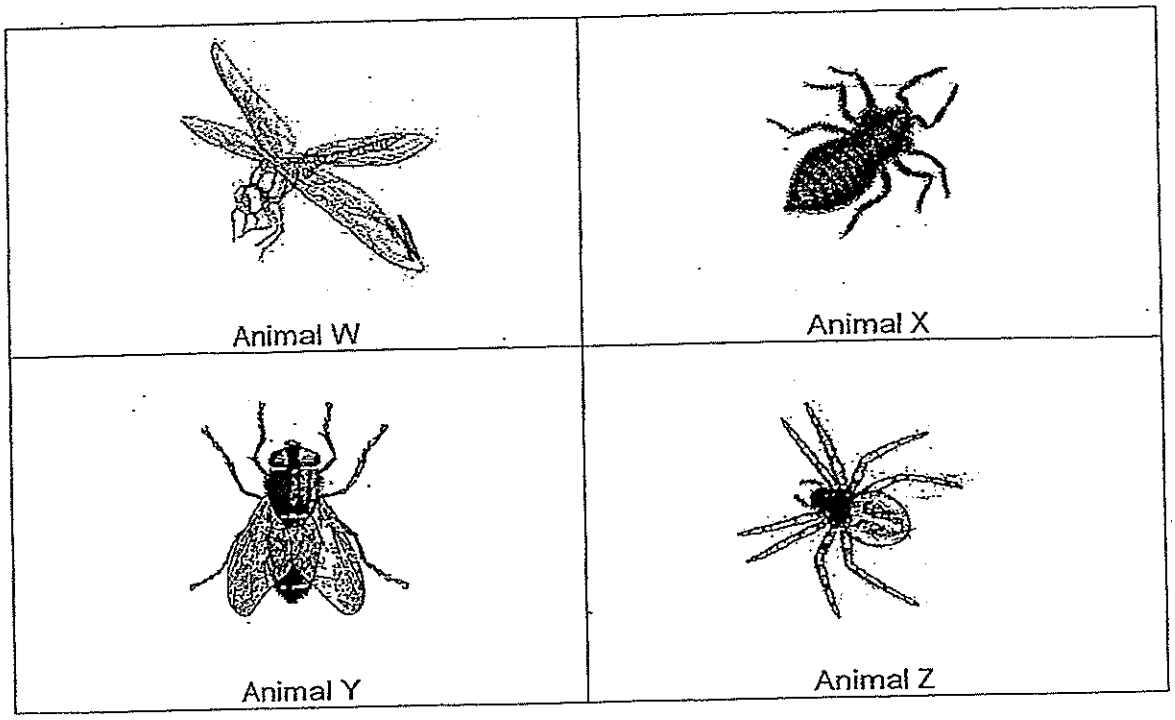
_____

(b) Is light important to the seeding after Day 8? Explain your answer. [1]

_____

_____

35. The pictures below shows four animals, W, X, Y and Z.



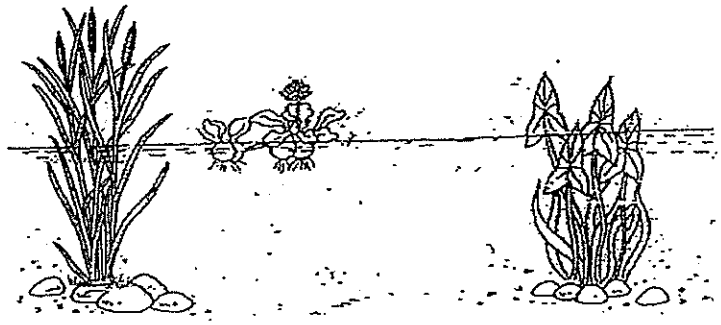
Based on the pictures above, answer the following questions:

Which animal(s) shown is/are not insects?
Write the correct letter(s), W, X, Y and/or Z, in the box provided.

Give two reasons to support your answer [3]

Animal(s) _____ is /. are **NOT** (an) insect(s).	
Reason 1	
Reason 2	

36. The pictures below show two plants, A and B, which grows in the pond.

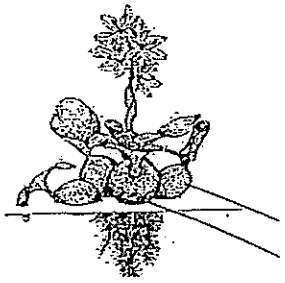


Plant A Plant B

(a) Based on what you can see from the pictures, how is Plant A different from Plant B? [1]

_____

_____



Plant C

(b) Plant C can also be found in the pond. It has air sacs which help it to stay afloat on water. How does this help the plant to survive? [1]

_____

_____

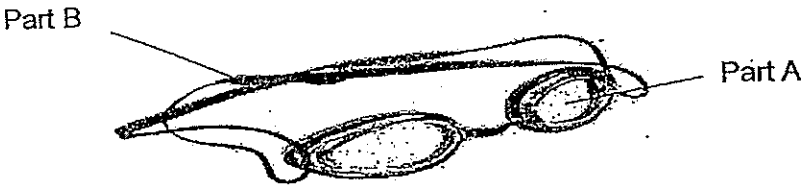
(b) Will Plants, A, B and C, survive if they are planted on land? Explain your answer. [1]

_____

_____

37. Alice conducted 3 different types of tests to find out the properties of four materials, W, X, Y and Z. The results were recorded in the table below.

Type of test conducted	Material W	Material X	Material Y	Material Z
Is it flexible?	No	Yes	Yes	No
Is it waterproof?	Yes	No	No	Yes
Does it break easily?	Yes	No	Yes	No



(a) Based on the table above, which material, X, Y or Z, would be the best to make part A of the goggles? [0.5]

_____

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

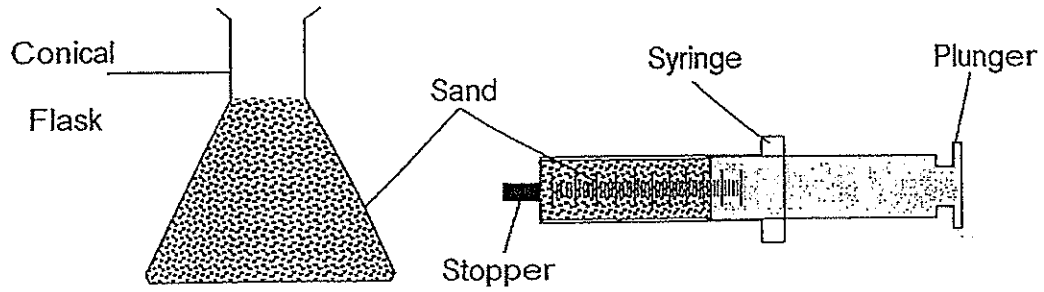
_____

_____

(c) Can the same material you have stated in (a) be used to make part B of the goggles? Explain why. [0.5]

_____

38. Leonard wanted to find out about the properties of sand. He conducted 2 experiments as shown below.



Experiment 1 Experiment 2

He conducted each experiment twice and recorded his observations in the table below.

		1st	2nd
Experiment 1	Does it take the shape of the container?	Yes	Yes
Experiment 2	Can the plunger be depressed (pushed in)?	No	No

Based on his observations, he concluded that sand is a liquid.

(a) List down two properties of a liquid that made him arrive at this conclusion. [2]

Property 1: _____

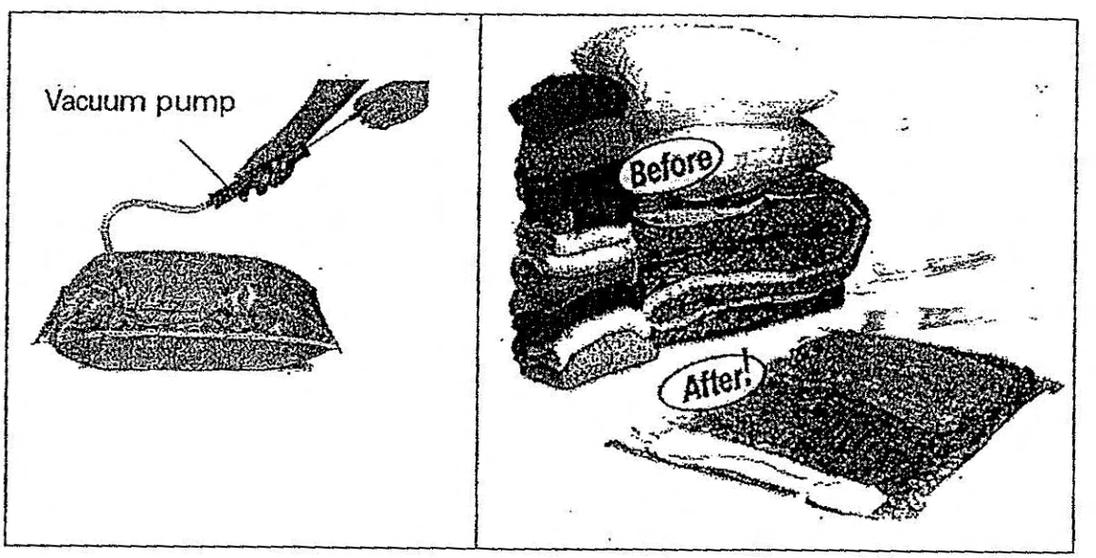
Property 2: _____

(b) Do you agree with his conclusion? Explain. [2]

_____

_____

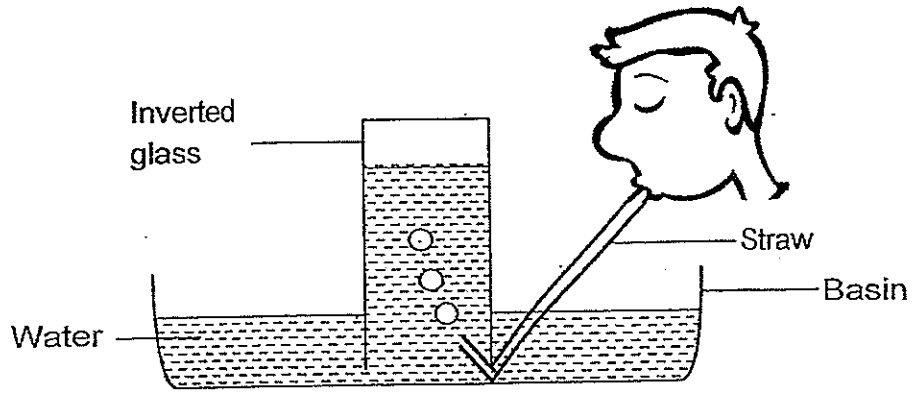
39. Shop P provides special packaging services for tourists. Clothing purchased by tourists is stored into vacuumed storage bags. The vacuum storage bag is made of strong plastic. All the air in the vacuum storage bag is removed by a vacuum pump after clothes have been put into the bag. The diagram below shows how the clothes are being packed after using the vacuum pump and storage bag.



(a) What happened to the total mass of the storage bag with clothing after it had been vacuum-pumped? Explain your answer. [1]

(b) State one advantage of using this method of packing. [1]

40. Jack set up the experiment as shown below.



He took a deep breath and blew into the straw.

(a) What would Jack observe about the water level in the inverted glass when he blew into the straw? [1]

_____

_____

(b) Give an explanation for your answer in (a). [2]

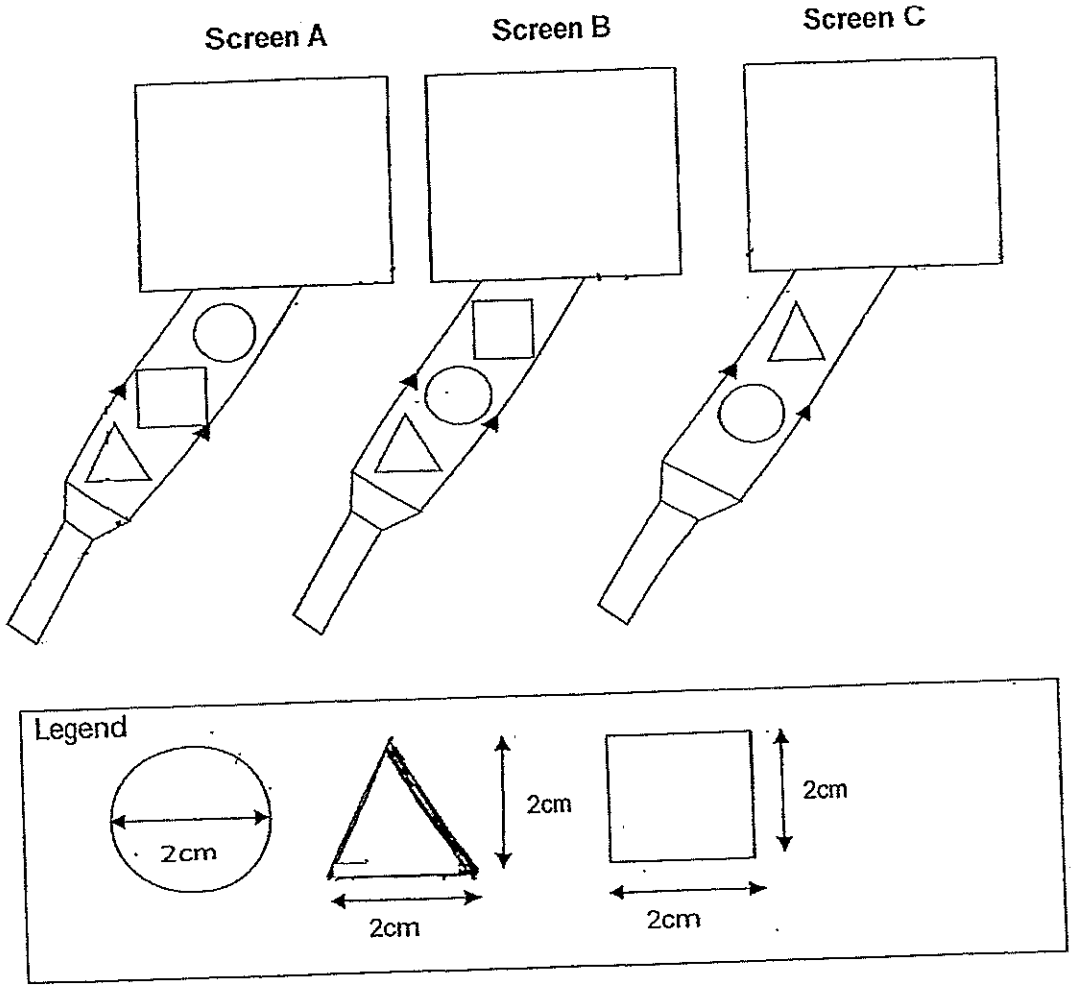
_____

_____

_____

41. The diagram below shows different shapes, a triangle, a square and a circle, placed between a screen and a torchlight.

Shape	Material the shape is made from
Triangle	Frosted glass
Square	Cardboard
Circle	Clear plastic sheet



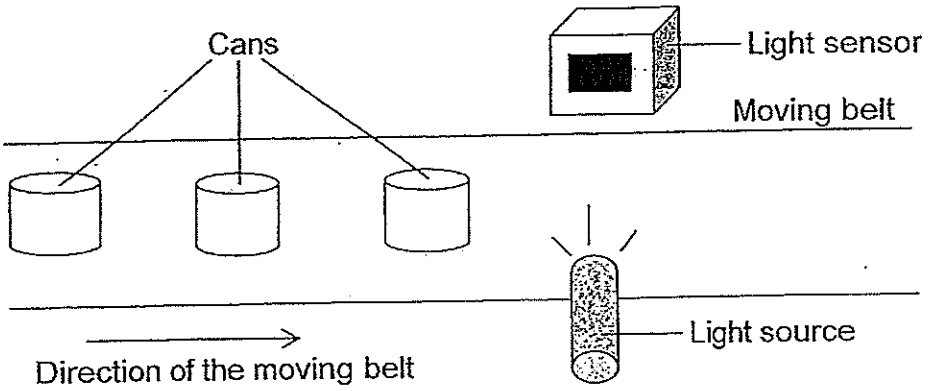
(a) Draw the shadows formed on **Screens, A, B and C,** when the torchlight is switched on. [1.5]

(b) How are shadows formed? [0.5]

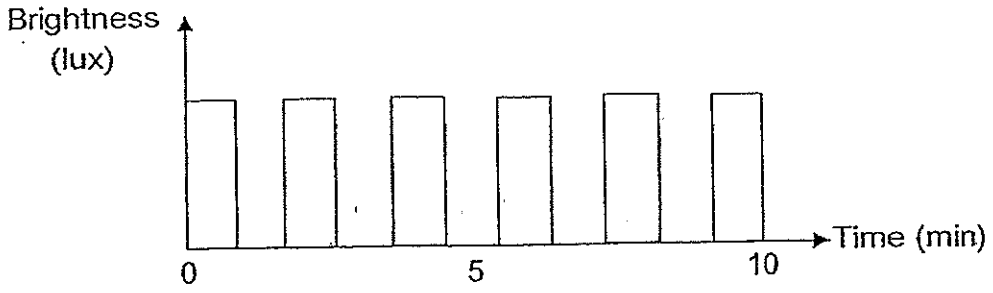
_____

_____

(c) Factory X uses a light sensor to count the number of identical cans on a moving belt.



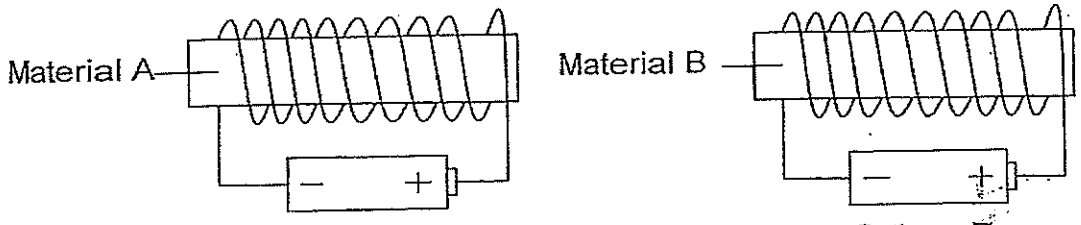
The belt moves at a constant speed. As the cans pass between the light source and the sensor, they block light from reaching the sensor. The data recorded is shown in the graph below.



(i) From the graph, how many cans can be counted in 10 minutes? [1]

(ii) With the same set of equipment as show in the diagram in (c), how can Factory X use this setup to count more cans in 10 minutes? [1]

42. Zoe conducted an experiment with two different materials, A and B, as shown in the two set-ups below. She ensured that the batteries and wires are in working condition before the experiment.



Set-up A Set-up B

(a) Zoe observed that A could attract some iron paper clips but B could not when the batteries are connected. Explain her observation. [1]

_____

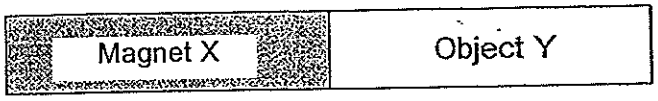
_____

(b) Without adding any additional batteries, what can Zoe do such that Set-up A can attract more paper clips? [1]

_____

_____

43. Jessica observed that Magnet X and Object Y were attracted to each other as shown below.



(a) Based on this observation only, give a reason why Jessica **cannot** conclude that Object Y is a magnet. [1]

_____

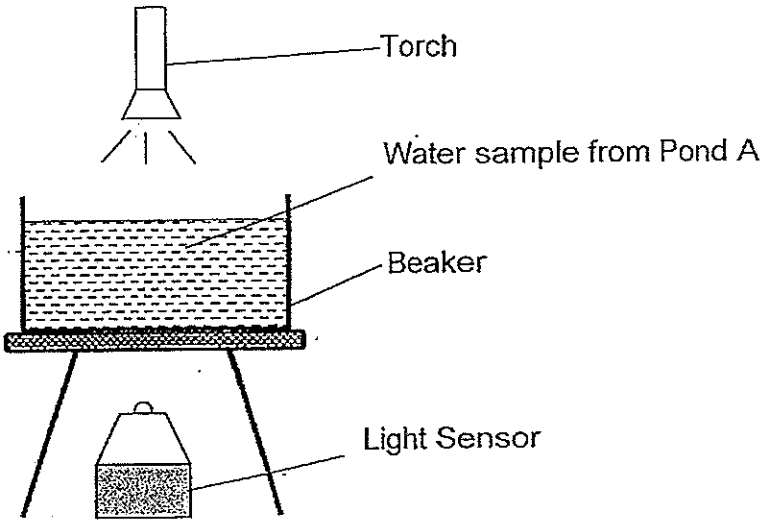
_____

(b) Using only Magnet X and Object Y, what should Jessica do to confirm whether Object Y is a magnet? Explain your answer. [2]

_____

_____

44. Plants need as much sunlight as possible to grow well. Zoe wants to find out which pond provides the best condition for water plants to grow. She took water samples from Pond A, B and C, and conducted an experiment with the set-up below using the water samples. The experiment was conducted in a dark room.



The results were recorded in the table below.

Water samples from Pond	Amount of Light Detected (lux)		
	1st Reading	2nd Reading	3rd Reading
A	120	118	121
B	74	72	69
C	235	235	231

(a) In which pond, A, B or C, would water plants grow best? [1]

_____

(b) Name one variable Zoe should keep constant in this experiment. [1]

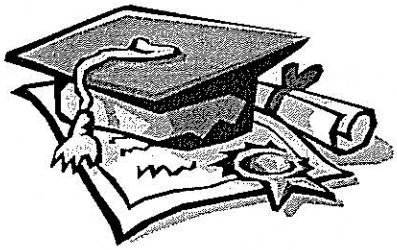
_____

(c) Why did Zoe repeat the experiment 3 times? [1]

_____

_____

END OF PAPER



ANSWER SHEET

EXAM PAPER 2014
SCHOOL : CHIJ
PRIMARY : P4
SUBJECT : SCIENCE
TERM : SA1

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

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

31)a)i)The stem transports mineral salts and water to all parts of the plant.
ii)The stem holds the plant upright to reach for sunlight to make food.
b)The plant will die, as only the leaves can make food.

32)a)i)G. ii)E.
b)An example of Animal D is a platypus.
c)Animal C has hair, but animal E does not have hair.

33)a)The adult stage.
b)Remove all the stagnant water.
c)Mosquitos can lay egg in even small puddles of water, and it must be still so if we remove all still water we can prevent mosquito breeding.

34)a)Curve Y, the mass of seed leaf is reduced, provided stored food for the seedling as it grows.
b)Yes, When adult leaves are grown, the seedling needs light to make food.

35)Z
1)Animal Z has 8 legs but insects have 6 legs.
2)It does not have three body parts.

36)a)Plant A's leaves spread out higher for sunlight but not plant B.
b)Plant C will be able to absorb more sunlight.
c)No, they will not have enough water.

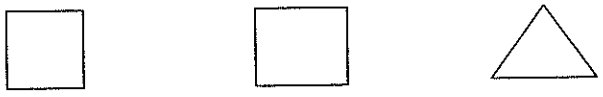
37)a)Material Z.
b)When the user is swimming, he or she must see were he or she is swimming to, or else they may get hurt, and the lens may break and hurt the user. But Z is not flexible, waterproof, and does not break easily.
c)No, Part B needs to be flexible to pull over user's head.

38)a)1)Liquid takes the shape o any containers.
2)Liquid cannot be compressed.
b)I do not agree with Leonard. Sand is a solid. A grain of sand has a definite shape.

39)a)The total mass reduces as air has mass and when air is pumped out, the bag will be lighter.
b)You can pack a lot of clothes in one bag.

40)a)The water level in the glass drops.
b)Air that Jack blew into the water has definite volume and occupies space. Water in the glass will be pushed out and water level drops.

41)a) A B C



b)When Light is blocked by an opaque object.
c)i)5 cans
ii)Make the belt move faster.

42)a)A is a magnetic material but B is not.
b)Increase the number of coils around A.

43)a)Object Y can be a magnetic object only.
b)Flip the object to the other side. If it shows repulsion, like poles Repel.

44)a)Pond C.
b)The distance of the torch and the water's beaker.
c)To make sure the data collected is reliable.