CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2013
PRIMARY FOUR

SCIENCE

BOOKLET A

Name: _____( )

Class: Primary 4 - _____

Date: 24 October 2013

30 questions

60 marks

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of 21 printed pages, excluding cover page.

Booklet A (30 × 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 your answer on the Optical Answer Sheet.

(60 marks)

1. Mimosa plants close their leaves quickly when touched.

This shows that the mimosa is a living thing because it can _____.

(1) grow

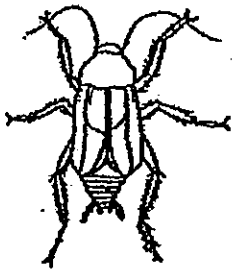
(2) take in air

(3) reproduce

(4) respond to changes

2. Which one of the animals shown below is **NOT** an insect?

(1)



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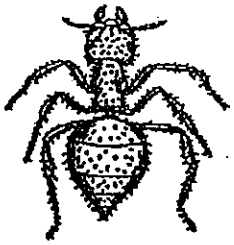

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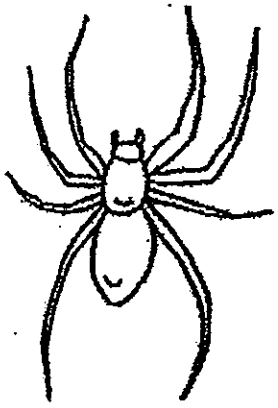
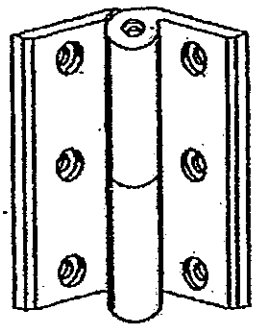


(4)

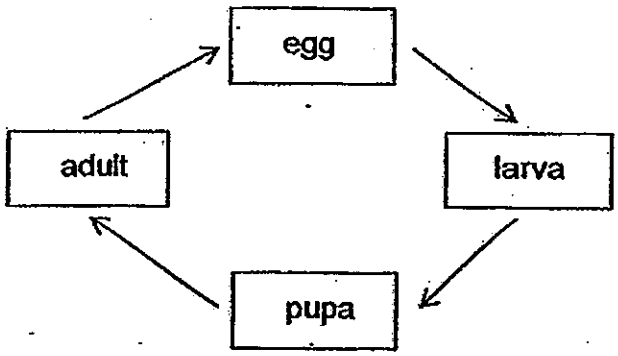
3. The diagram below shows a door hinge.



Iron is used to make door hinges because iron _____.

(1) is strong
(2) is flexible
(3) sinks in water
(4) conducts heat well

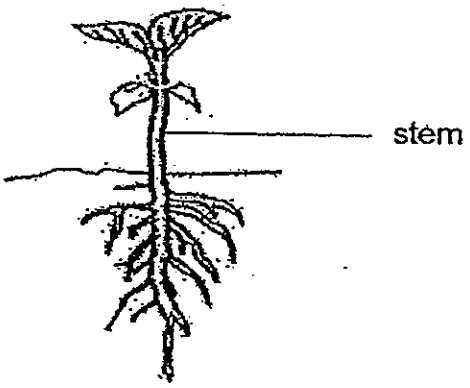
4. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle shown above?

(1) frog
(2) chicken
(3) butterfly
(4) cockroach

5. The diagram below shows a young plant.



The stem helps the plant to _____.

(1) make food
(2) grow upright
(3) absorb water
(4) absorb nutrient

6. Which one of the following shows the correct order when food moves through some parts of the digestive system?

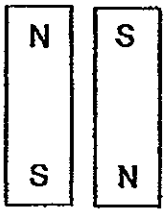
(1) small intestine → stomach → large intestine
(2) stomach → small intestine → large intestine
(3) large intestine → small intestine → stomach
(4) stomach → large intestine → small intestine

7. Which one of the following properties is true for both shadow and sand?

(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes.
(4) They have fixed volumes.

8. In which one of the following will the two magnets push each other away?

(1)



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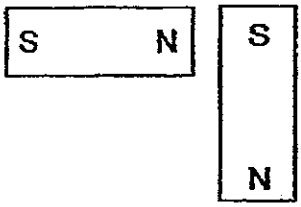
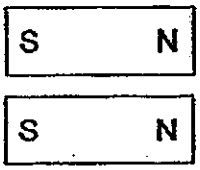


(3)



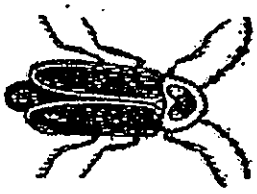
(4)

9. Which one of the following is a source of light?

(1)

the moon

(2)



a firefly

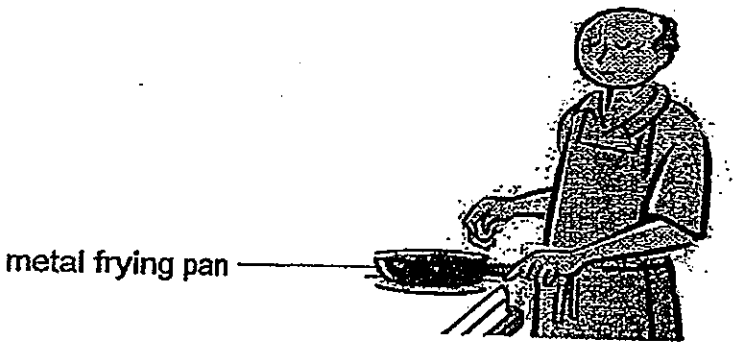
(3)

a mirror

(4)

a cup of coffee

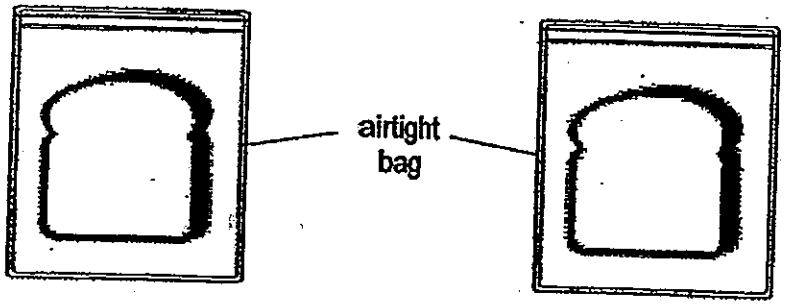
10. Mr Johari wants to fry an egg. He heats his metal frying pan on the stove and cracks an egg.



The egg becomes cooked after a while. Which one of the following explains this observation?

(1) The egg gains heat from Mr Johari.
(2) The frying pan loses heat to the stove.
(3) The egg gains heat from the frying pan.
(4) The frying pan gains heat from the egg.

11. Tony had two pieces of bread, P and Q. He toasted Bread P and sprinkled some drops of water on Bread Q. He placed Bread P and Bread Q in an airtight bag each and left them in the kitchen for five days.



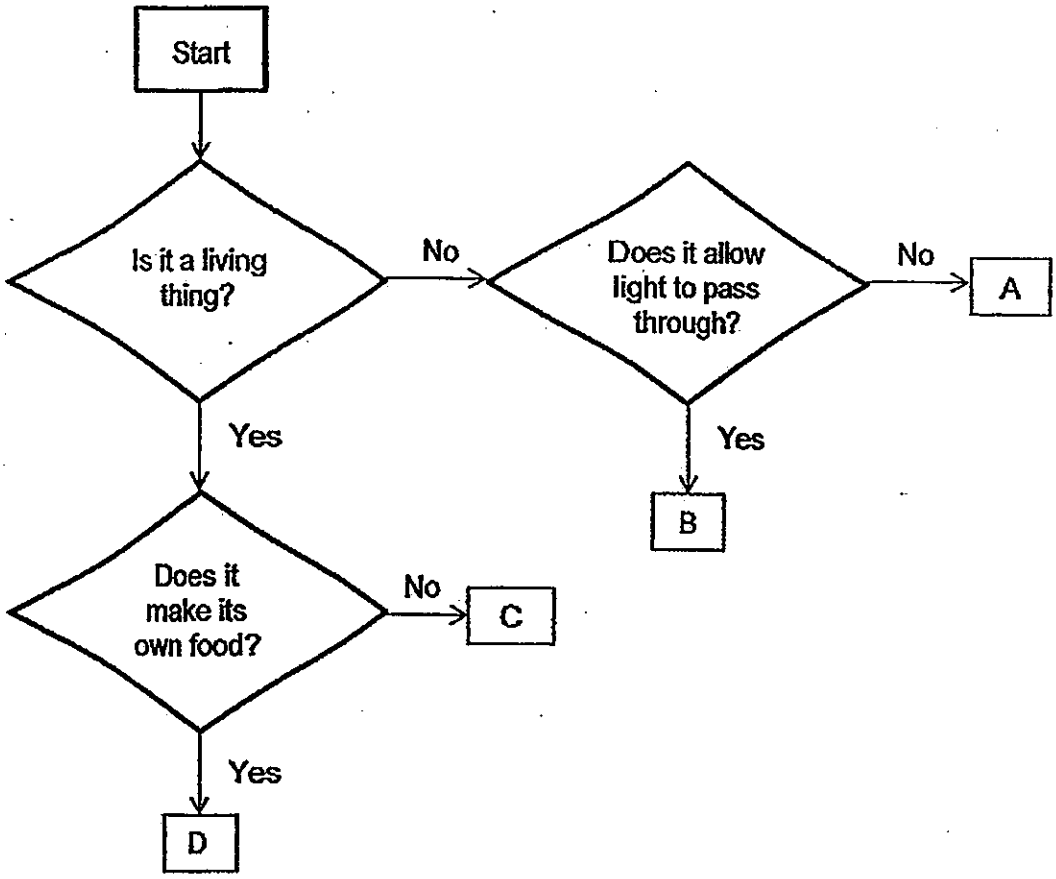
Bread P (toasted)

Bread Q (sprinkled with water)

What can Tony observe after five days?

(1) Mould had grown on both pieces of bread.
(2) Mould had grown on Bread Q but not on Bread P.
(3) Mould had grown on Bread P but not on Bread Q.
(4) No changes were observed on both pieces of bread.

12. Study the flowchart below carefully.



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

	A	B	C	D
(1)	egg	glass	bird	whale
(2)	straw	newspaper	bird's nest fern	hydrilla
(3)	leather bag	wooden table	frog	mushroom
(4)	car key	window pane	mushroom	rain tree

13. Ali grew four similar plants W, X, Y and Z in 4 similar pots. He placed the pots under different conditions as shown in the table below.

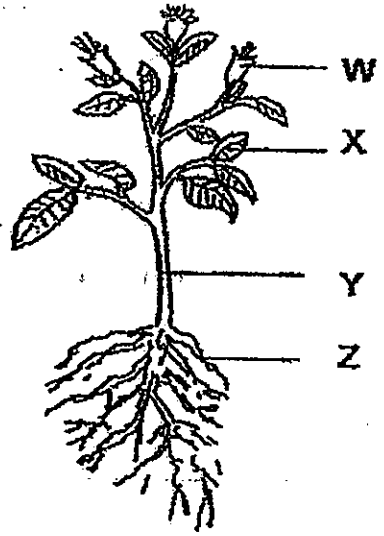
	Conditions			
Plant	Air	Water	Sunlight	Fertiliser
W	×	✓	✓	×
X	✓	×	✓	✓
Y	✓	✓	✓	×
Z	✓	✓	×	✓

Key:
✓ Condition present
× Condition not present

Which one of the following plants will live the longest?

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

14. The picture below shows a plant. Different parts of the plant are labelled W, X, Y and Z.



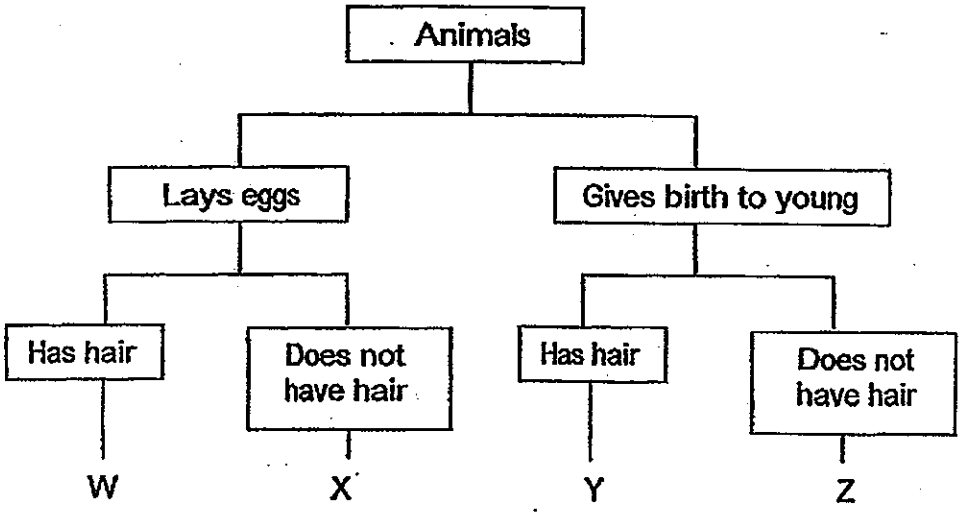
The plant will not be able to make food if part _____ is completely removed.

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

15. The following table gives information on four animals, A, B, C and D, based on two characteristics. A tick (✓) shows that the animal has the characteristic.

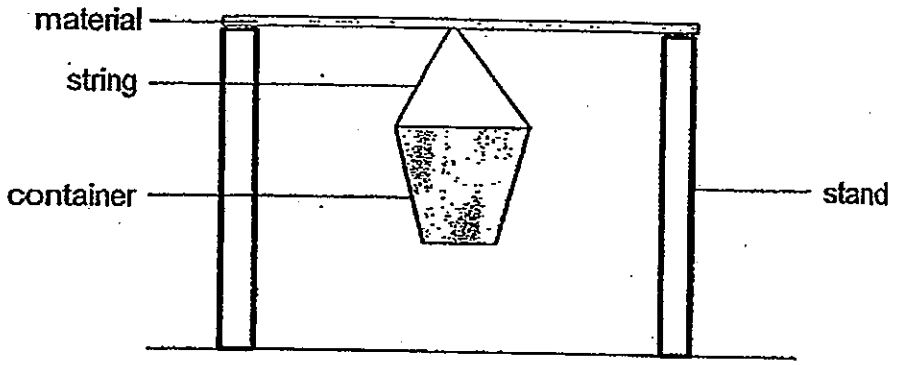
Characteristic	A	B	C	D
Reproduces by laying eggs		✓		✓
Has hair as an outer covering	✓	✓		

From the information above, where do animals B and C belong in the classification chart below?



	Animal B	Animal C
(1)	X	Z
(2)	Y	W
(3)	Z	Y
(4)	W	Z

16. Susan set up an experiment to test the strength of four different types of materials.



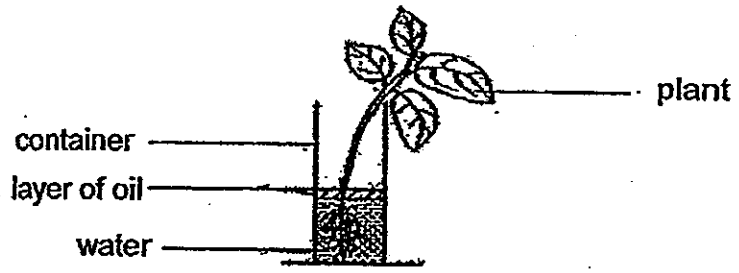
She put in similar marbles, one at a time, into the container until the material breaks. She recorded her observations in the table below.

Materials	Number of marbles needed to break the material
A	12
B	6
C	1
D	10

Based on her results, which material is the strongest?

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

17. Mingxuan set up an experiment. He placed a plant in a container filled with 200 ml of water. He placed a layer of oil on the water and left the set-up next to the window for one day.



At the end of the experiment, he observed that the water level in the containe had decreased. What is the likely aim of his experiment?

(1) To find out if the roots take in water.

(2) To find out if the plant can take in air.

(3) To find out if the plant can make food.

(4) To find out if more water is lost through evaporation.

18. The table below shows how some materials can be classified.

Magnetic metals	Non-magnetic metals
iron	copper
nickel	lead
silver	gold

Which one of the above materials has been classified wrongly?

(1) gold

(2) silver

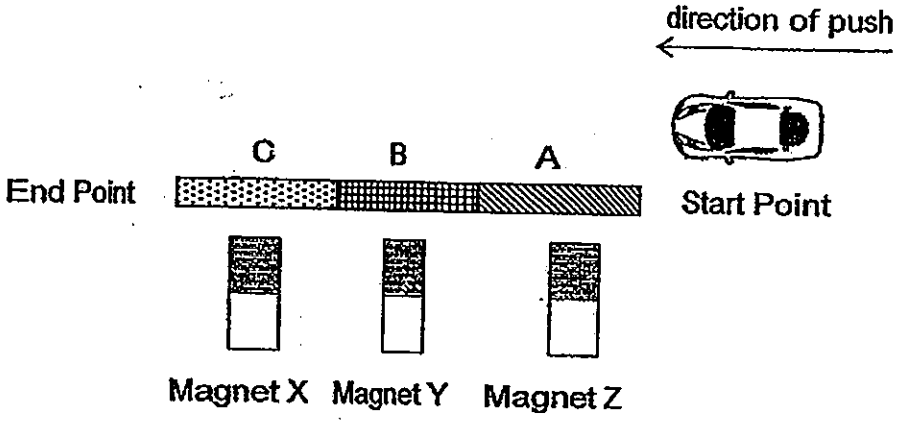
(3) nickel

(4) copper

19. John carried out an experiment using a magnet and three different types of materials. The magnet was brought near each material and he recorded his observations in the table below.

	Material A	Material B	Material C
The material was attracted to the magnet	Yes	Yes	No

He then placed the three materials, A, B and C, on a flat surface and a steel toy car at the start point as shown below.



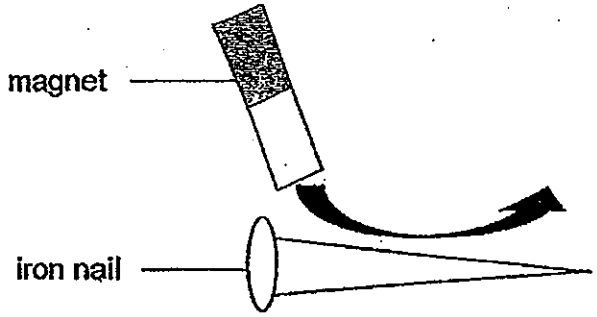
John gave the toy car a push. Which magnets X, Y or Z can stop the toy car from moving?

(1) Magnet X only
(2) Magnets Y and Z only
(3) Magnets X, Y and Z
(4) None of the magnets

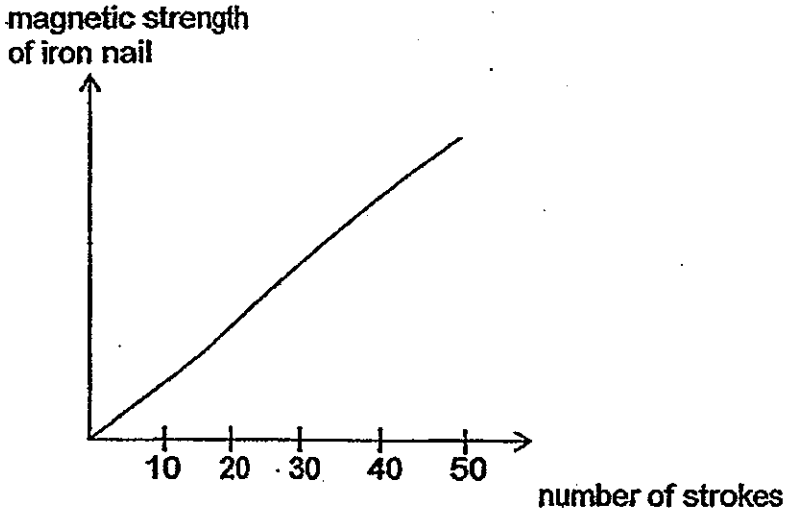
20. The table below shows the function of four human body systems. Which body system has its function incorrectly stated?

	Body system	Function
(1)	skeletal	To give shape to the body
(2)	digestive	To break down food into simple substances
(3)	respiratory	To take in oxygen and remove carbon dioxide
(4)	muscular	To protect our main organs

21. Michael carried out an experiment to test the magnetic strength of an iron nail when given a certain number of strokes. He stroked the iron nail with the north pole of a magnet and in the same direction.



He recorded his results in the graph below.



Based on the results in the graph, what can Michael conclude?

(1) The magnetic strength of the iron nail depends on the pole of the magnet.

(2) The magnetic strength of the iron nail decreases when the number of strokes increases.

(3) The magnetic strength of the iron nail increases when the number of strokes increases.

(4) The magnetic strength of the iron nail remains the same throughout the experiment.

22. Jason placed mealworm beetles, A, B, C and D, into four different containers. Each mealworm beetle was at a different stage of growth. He placed 10 g of food in each container and recorded the amount of food left after 3 days. He recorded his results in the table below.

Mealworm beetle	Amount of food left in container (g)
A	10
B	5
C	2
D	10

Which mealworm beetle(s) is/are likely to be in the pupal stage?

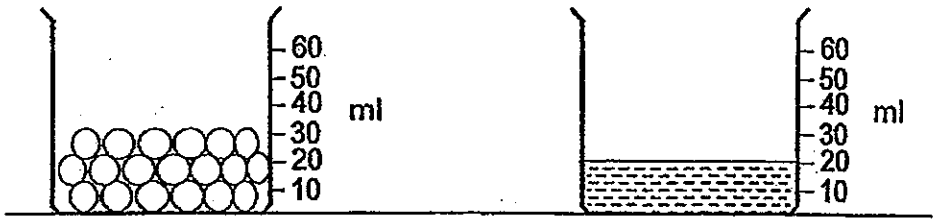
(1) C only

(2) A and B only

(3) A and D only

(4) None of the above

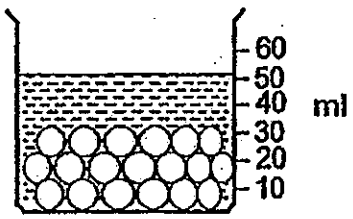
23. The diagram below shows two beakers F and G. Eric filled Beaker F with some beads and poured water into Beaker G. He then poured all the water from Beaker G into Beaker F.



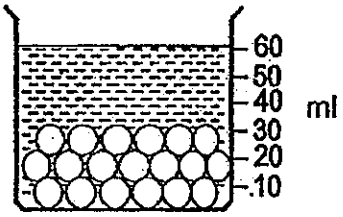
Beaker F Beaker G

Which of the following diagrams shows the likely water level in Beaker F after Eric poured the water from Beaker G into it?

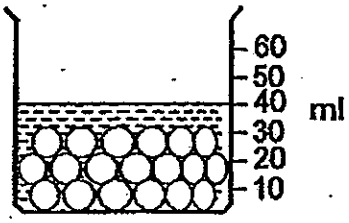
(1)



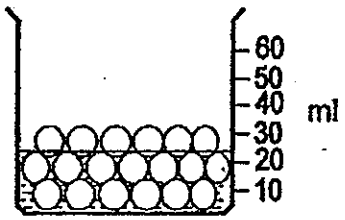
(2)



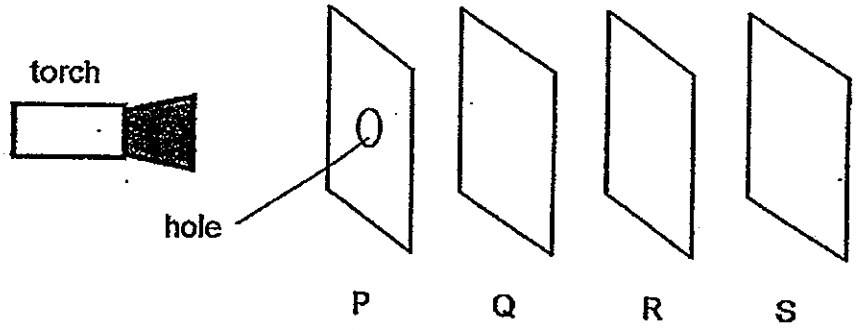
(3)



(4)



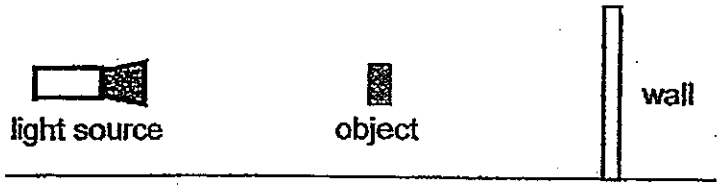
24. Jean carried out an experiment shown below in a dark room. She arranged sheets P, Q, R and S in a straight line. When the torch was switched on, she could see a bright spot of circular light on sheet R only.



Which one of the following correctly describes the properties of sheets P, Q, R and S?

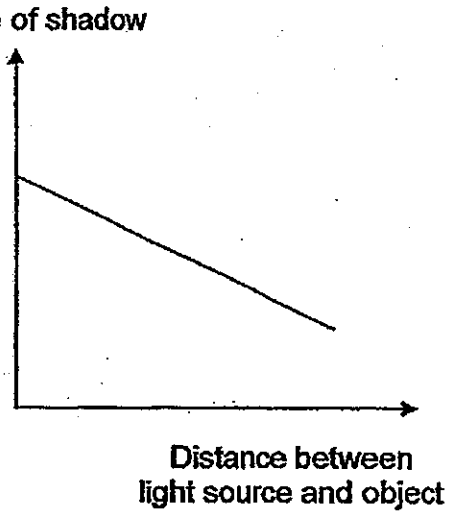
	Allow(s) the most light to pass through	Do/Does not allow light to pass through	Not possible to tell
(1)	P and Q	S	R
(2)	P and Q	R	S
(3)	P	R and S	Q
(4)	Q	P and R	S

25. An object is placed between a light source and a wall as shown.



Which of the following graphs correctly shows how the size of a shadow changes with the distance between the light source and the object?

(1)



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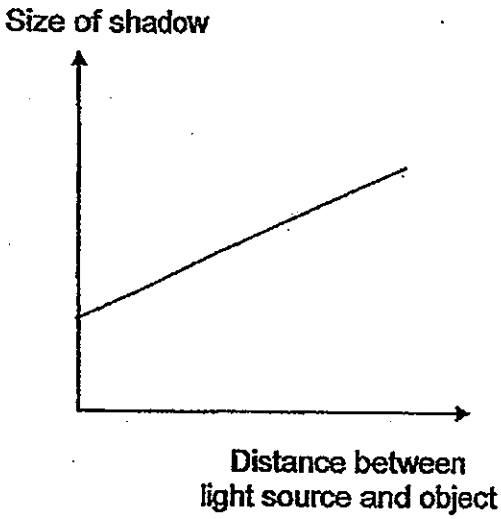
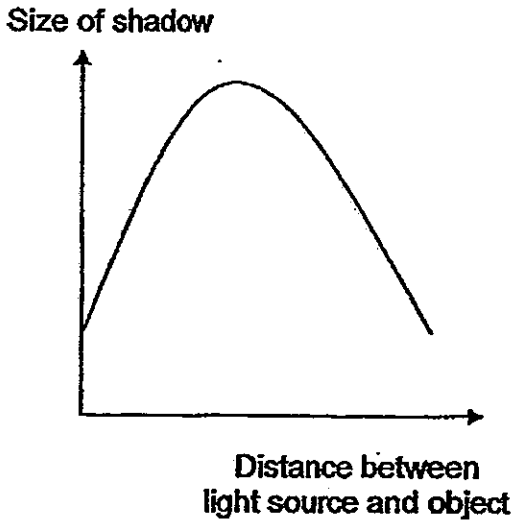


(3)



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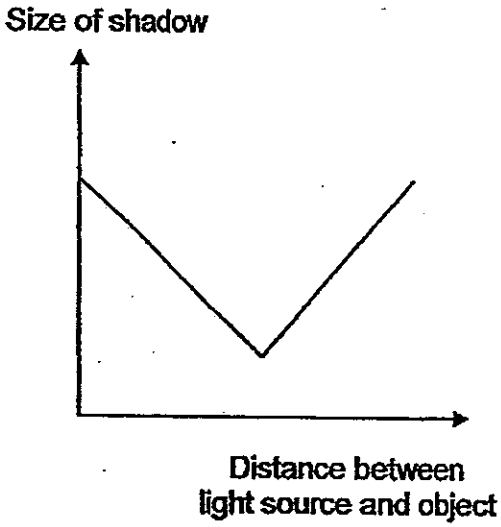
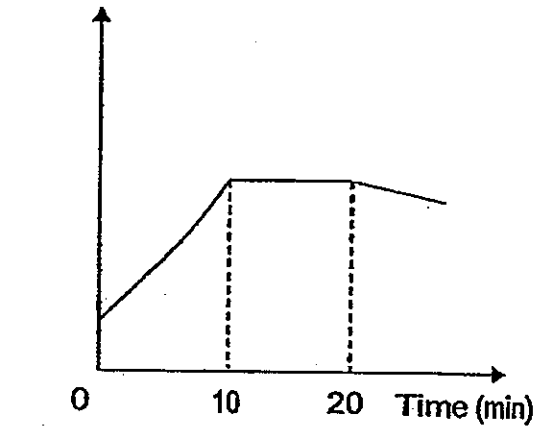
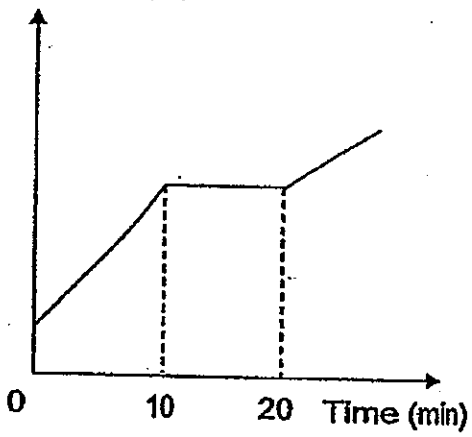


26. Mrs Tan heated a pot of water on the stove for 10 minutes until it started to boil. She continued to boil the water for 10 minutes before adding a packet of instant noodles into the water. Which of the following graphs shows the changes in the temperature of the water?

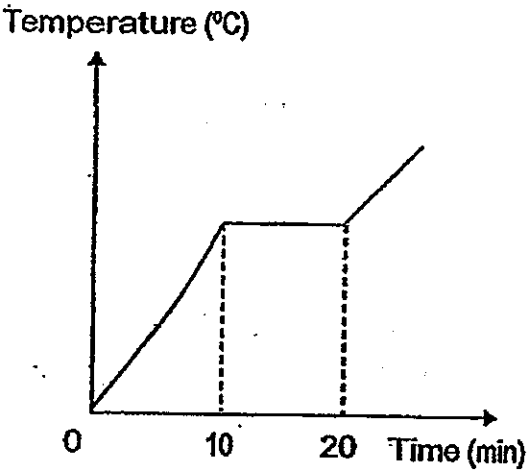
(1)



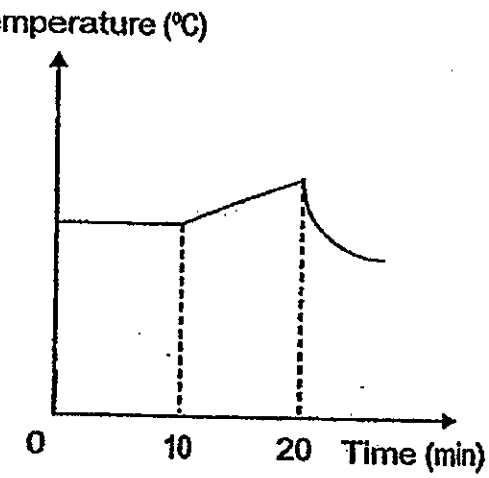
(2)



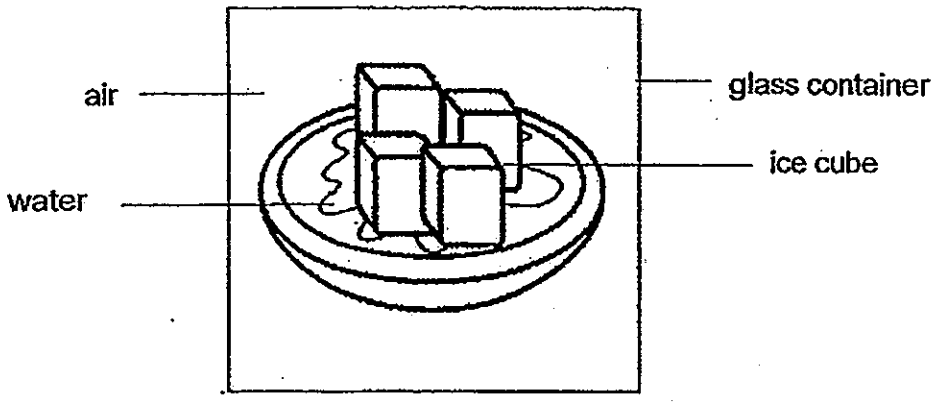
(3)



(4)



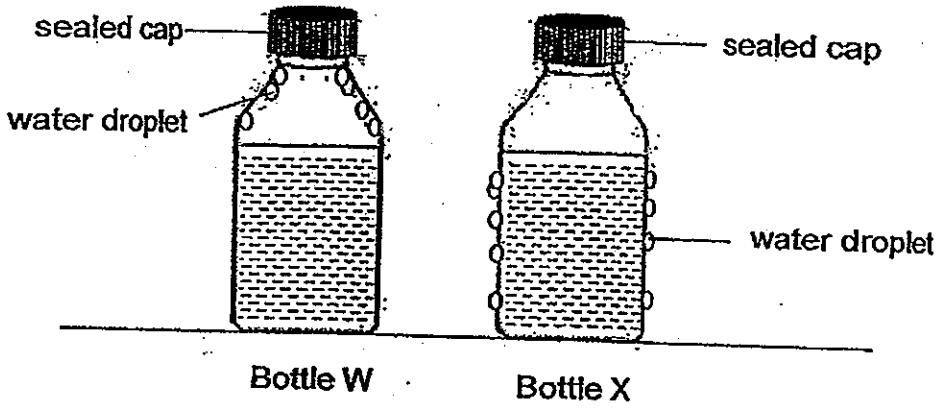
27. The diagram below shows a plate of ice cubes placed in a sealed glass container.



Which one of the following correctly shows the change in temperatures of the water and ice cubes in the glass container five minutes later?

	Temperature (°C)	
	water	ice cubes
(1)	increase	decrease
(2)	decrease	increase
(3)	no change	no change
(4)	increase	no change

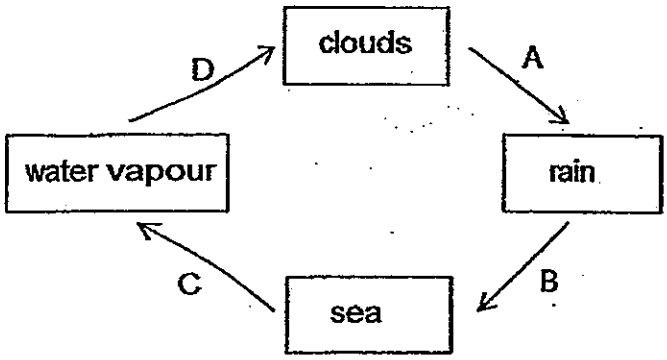
28. Xiao Ming sealed two similar glass bottles W and X, and left them on the table. After some time, he noticed water droplets were formed on the bottles as shown below.



Based on the diagrams above, what can bottles W and X contain?

	Bottle W	Bottle X
(1)	iced water	hot water
(2)	hot water	iced water
(3)	hot water	tap water
(4)	iced water	tap water

29. The diagram below shows the water cycle.



Based on the diagram above, which of the following shows the correct changes in states?

	Gaseous to liquid state	Liquid to gaseous state
(1)	D	A
(2)	A	C
(3)	B	A
(4)	D	C

30. Emma has four similar towels G, H, J and K. She poured the same amount of water on each towel. She folded each towel a different number of times and left them to dry under the sun. She recorded her observations on the time taken for each towel to dry in the table below.

Towel	Number of folds	Time taken for towel to dry (min)
G	1	10
H	2	20
J	3	30
K	4	40

From the table, we can infer that _____.

A the rate of evaporation increases on a windy day

B the exposed surface area affects the rate of evaporation

C when the number of folds increases, the time taken for the towel to dry is shorter

D the higher the temperature of the surroundings, the time taken for the towel to dry is shorter

(1) A only

(2) B only

(3) C and D only

(4) B, C and D only

End of Booklet A

CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 2
2013
PRIMARY FOUR

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 4 - _____

Date: 24 October 2013

Parent's Signature: _____

Booklet A	60
Booklet B	40
Total	100

14 questions

40 marks

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 13 printed pages, excluding cover page.

Booklet 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.

(40 marks)

31. David observed and grouped some things as shown in the table.

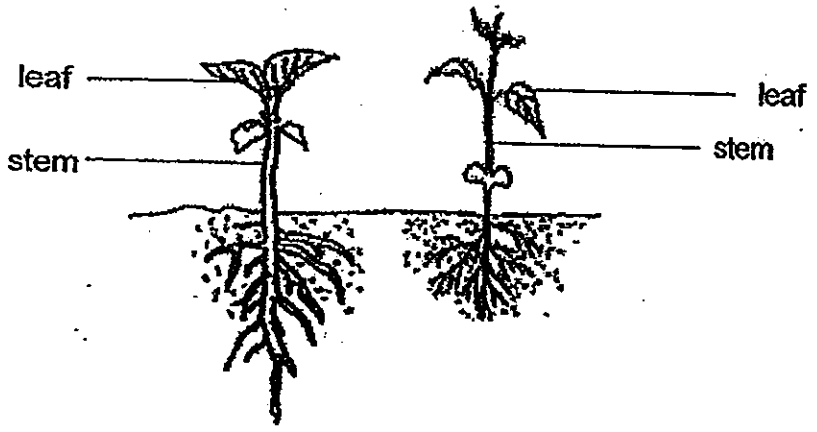
A	B
cat	table
fern	eraser
bacteria	calculator

What are the suitable headings for A and B? [2]

Group A: _____

Group B: _____

32. The diagram below shows two plants.



Plant C Plant D

(a) What is one difference between the stem of Plant C and the stem of Plant D? [1]

The stem of Plant C is _____ than the stem of Plant D.

(b) The leaves of both plants help the plants to make _____ in the presence of light. [1]

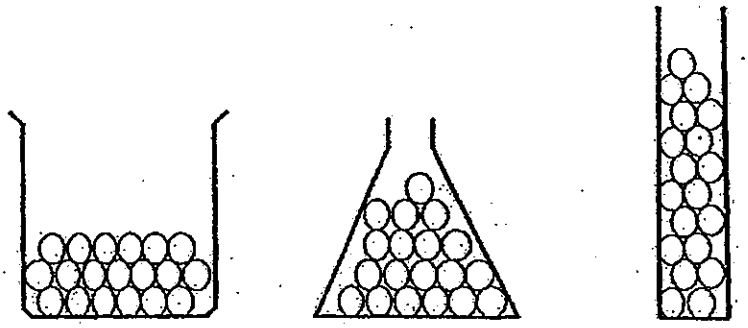
(Go on to the next page)

SCORE	4

33. Choose the correct words from the box to fill in the blanks below for part (a) and part (b).

solid	liquid	gas

(a) Raju placed the same number of marbles into each container as shown below.



The shape and volume of each marble remain the same even though the containers are different.

This shows that a marble is a _____. [1]

(b) Ling Ling's cat spilled some milk onto the floor as shown below.

The volume of milk remains the same but its shape changes.

This shows that milk is a _____. [1]

(Go on to the next page)

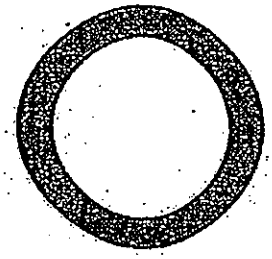
SCORE	/ 2

34. Joanne shines a torch at her mother's wedding ring and a shadow is formed on the wall.

torch

side view of wedding ring

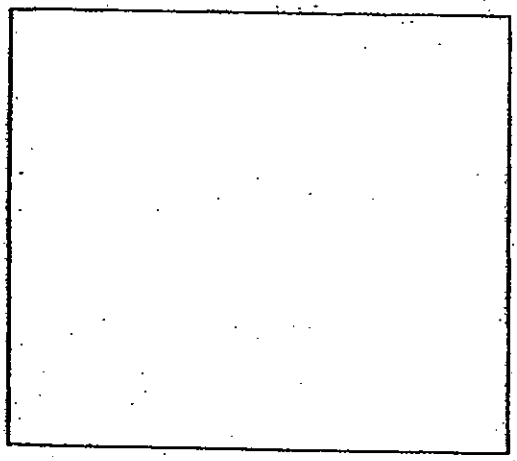
wall



Front view of wedding ring

(a) A shadow is formed when light is _____ by an object. [1]

(b) Draw the shadow of the wedding ring that is formed on the wall. [1]



(c) Explain how Joanne is able to see the wedding ring. [1]

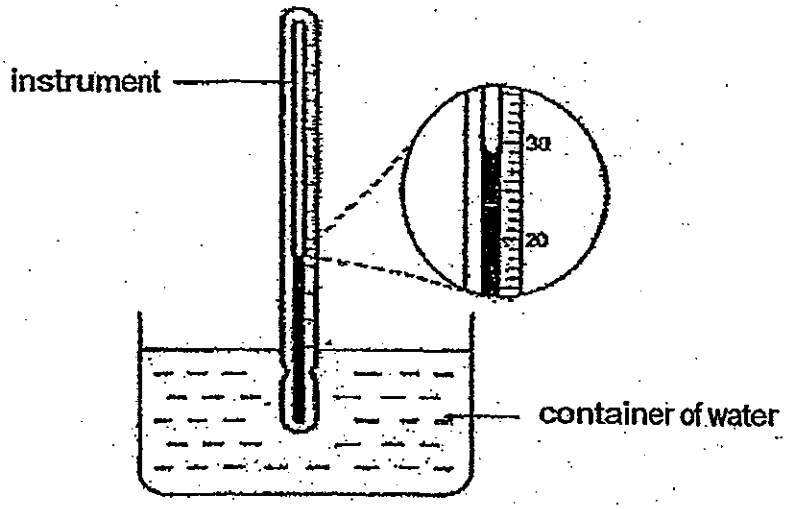
_____

_____

(Go on to the next page)

SCORE	
	3

35. Casey used an instrument to measure the temperature of water in a container.



(a) What is the instrument called? [1]

_____

(b) What is the temperature of the water in the container? [1]

_____ °C

(c) What can Casey do to the set-up to get a higher temperature reading? [1]

_____

_____

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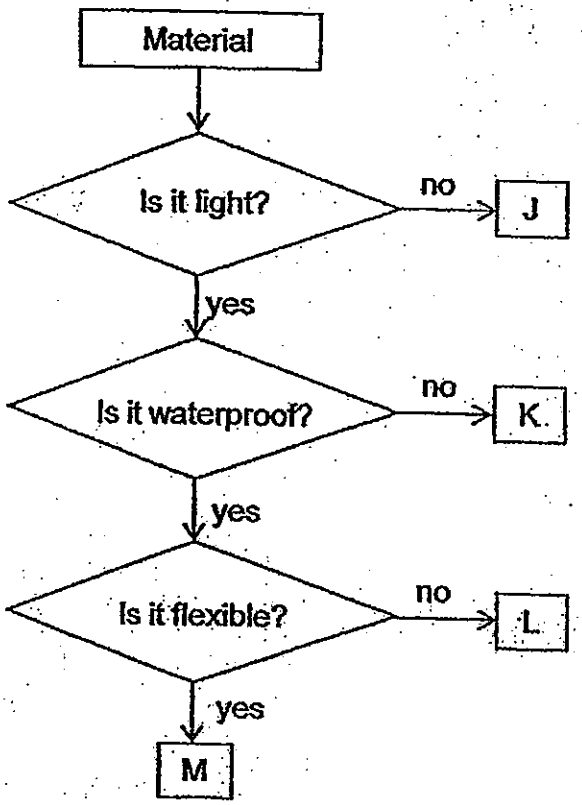
SCORE	3

36. The flowchart below shows the properties of some materials, J, K, L and M.



(a) Which material, J, K, L or M, could sponge be made of? [1]

_____

(b) How are materials K and L similar? [1]

_____

_____

(c) Which material is most suitable for making a raincoat? Explain why. [1]

_____

_____

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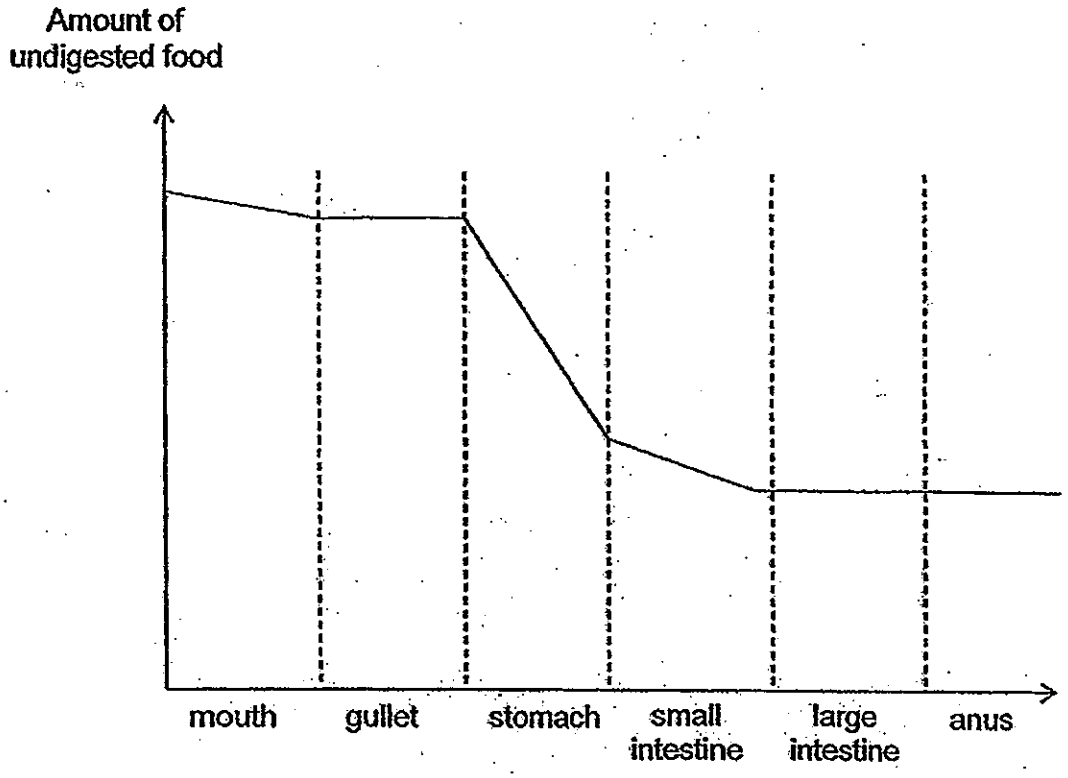
SCORE	
	3

37. The diagram below shows the amount of undigested food left in our digestive system as food travels from our mouth to our large intestine.



(a) What is produced in the mouth, stomach and small intestine to cause a change in the amount of undigested food? [1]

_____

(b) Look at the parts of the diagram at the gullet, large intestine and anus. What can you conclude about digestion here? [1]

_____

_____

(c) At which part of the digestive system would there be many blood vessels to absorb the digested food? [1]

_____

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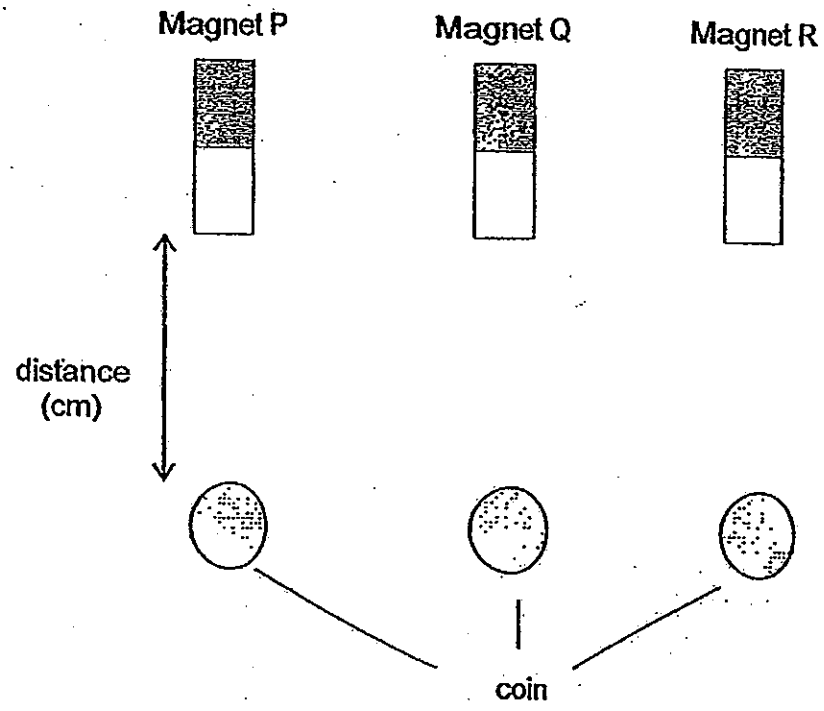
SCORE	/3

38. Donald wanted to test the strength of three different bar magnets. He set up an experiment using three similar bar magnets and three similar nickel coins as shown below.



He observed that the magnets attracted the coins from different distances as recorded in the table below.

Magnet	Distance at which the magnet attracted the coin (cm)
P	3
Q	6
R	8

(a) Which is the strongest magnet? [1]

_____

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

_____

_____

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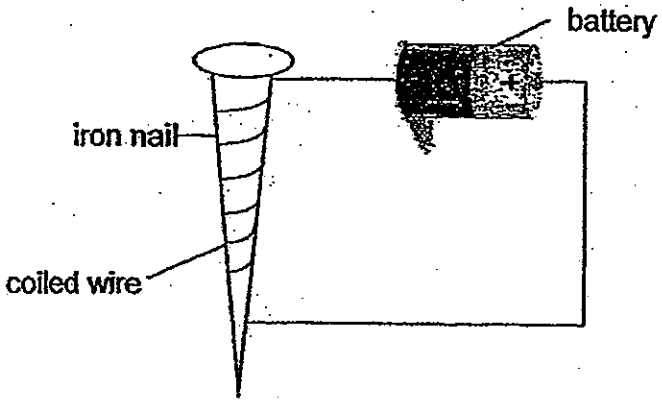
SCORE	2

39. Julian conducted an experiment using an iron nail, wires and a battery as shown in the set-up below.



(a) What would happen to the iron nail?. [1]

_____

_____

(b) What would happen to the iron nail if Julian were to add one more battery to the set-up? [1]

_____

_____

(c) Julian replaced the iron nail with a wooden chopstick. After the circuit was connected, he placed some iron filings near the chopstick. Can the chopstick attract the iron filings? Explain your answer. [1]

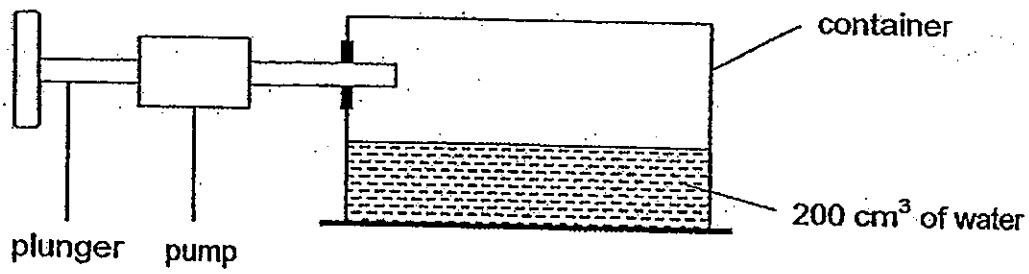
_____

_____

(Go on to the next page)

SCORE	/ 3

40. The diagram below shows a container with a capacity of 450 cm^3. It contains 200 cm^3 of water. A pump is connected to it and when the plunger is pushed all the way into the pump, it allows 50 cm^3 of air to enter the container.



(a) What is the volume of air in the container before the pump is connected to it? [1]

_____

(b) When the pump is connected to the container and the plunger is pushed all the way into the pump, what is the volume of air in the container now? [1]

_____

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

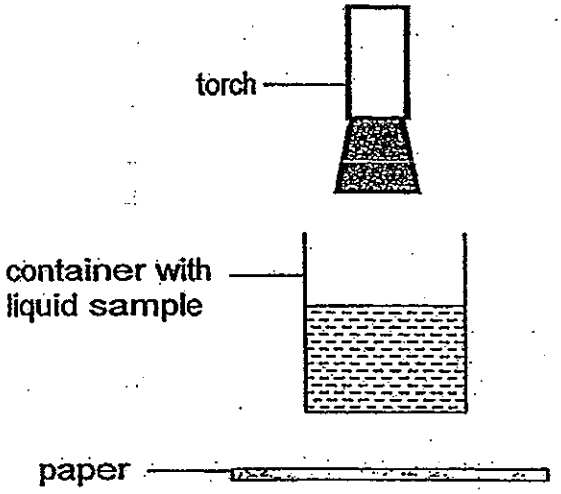
_____

_____

(Go on to the next page)

SCORE	3

41. Jonathan collected three samples of liquids X, Y and Z from different sources. He placed each liquid in a container. He shone a torch through each container of liquid and placed a sheet of paper below the container as shown in the diagram below.



Jonathan observed how much light fell on the sheet of paper when each of the three liquid samples X, Y and Z was in the container. He recorded his observations in the table below.

Liquid Sample	Observation
X	Bright patch of light on paper
Y	No light on paper
Z	Dim patch of light on paper

(a) What is the aim of Jonathan's experiment? [1]

_____

_____

(b) Which liquid sample is the muddiest? Why? [1]

_____

_____

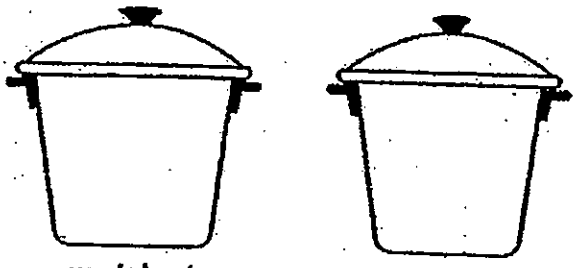
(c) State one variable that must be kept constant for the experiment to be a fair test. [1]

_____

(Go on to the next page)

SCORE	
	3

42. Siti bought a metal pot and a clay pot. She poured the same amount of water at 85°C into each pot. She recorded the temperature of the water in both pots for the next 50 minutes as shown in the table below.



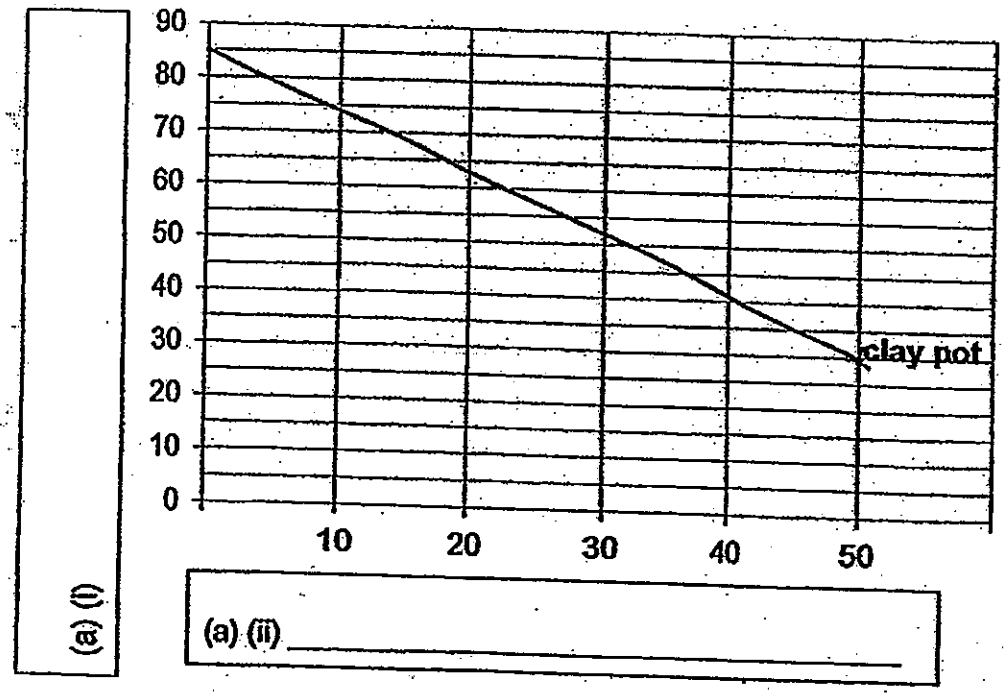
metal pot clay pot

Time (min)	Temperature of water in metal pot (°C)	Temperature of water in clay pot (°C)
0	85	85
10	60	75
20	40	62
30	35	52
40	30	40
50	30	30

Using the readings from the table,

(a) fill in the boxes below to label the axes (i) and (ii), [1]

(b) plot the graph for the metal pot [1]



(Go on to the next page)

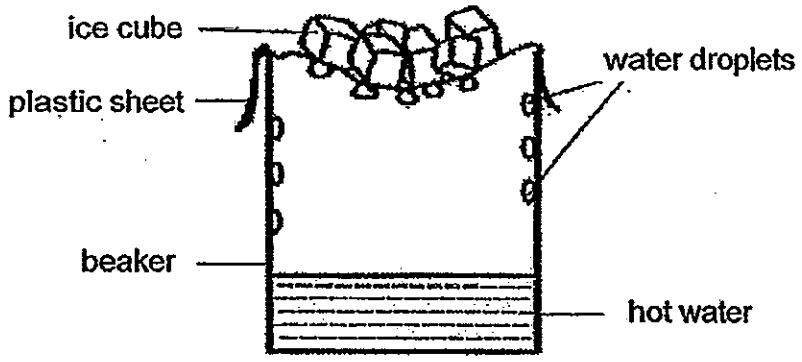
SCORE 2

42. (c) Based on her results, which of the two pots was a better conductor of heat? Explain why. [1]

_____

_____

43. The diagram below shows a set-up that represents the water cycle.



(a) Explain how the water droplets are formed inside the beaker. [2]

_____

_____

_____

(b) What can be done to the set-up to increase the amount of water droplets formed? Explain your answer. [2]

_____

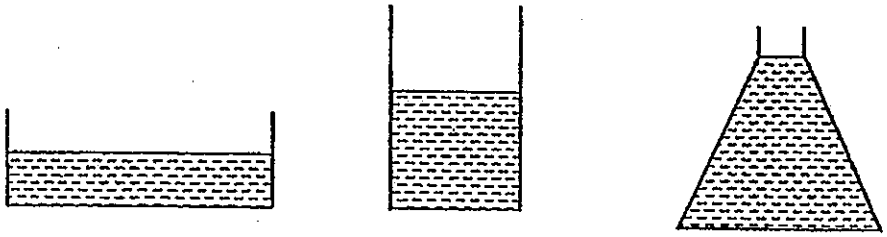
_____

_____

(Go on to the next page)

SCORE	5

44. Daniel set up an experiment to investigate one of the factors that affects the rate of evaporation. He poured equal amount of water into each of the 3 containers, A, B and C, as shown in the diagram below.



Container A Container B Container C

He placed the 3 containers in the Science Room. He recorded the amount of water at the start and at the end of the experiment in the table below.

Container	Volume of water at the start (cm^3)	Volume of water left (cm^3)
A	100	30
B	100	60
C	100	80

(a) What was the factor of evaporation that Daniel was trying to investigate in this experiment? [1]

_____

(b) What were the two variables that were kept constant in this experiment? [2]

_____

_____

(c) What is the relationship between the size of the opening of the containers and the amount of water left in the containers? [1]

_____

_____

End of Booklet B

SCORE	4

Answer Ke

EXAM PAPER 2013
SCHOOL : CATHOLIC HIGH SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

2

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

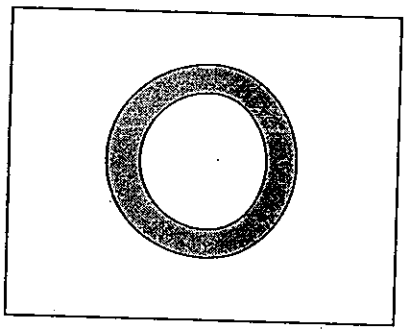
Section B
Q31
Group A: Living things
Group B: Non-living things

Q32
a)

b) thicker; food

Q33
a) Solid
b) Liquid

Q34
a) Blocked
b)



c) Light from the torch reflected off the wedding ring and entered her eyes.

Q35
a) Thermometer
b) 29°C
c) Heat the water/ Add boiling water

Q36
a) Material K
b) There are both light materials
c) Material M. It is light, waterproof and flexible

Q37
a) Digestive Juice
b) No digestion takes place at these parts
c) The small intestine

Q38
a) Magnet R
b) Magnet R attracted the coin at the furthest distance

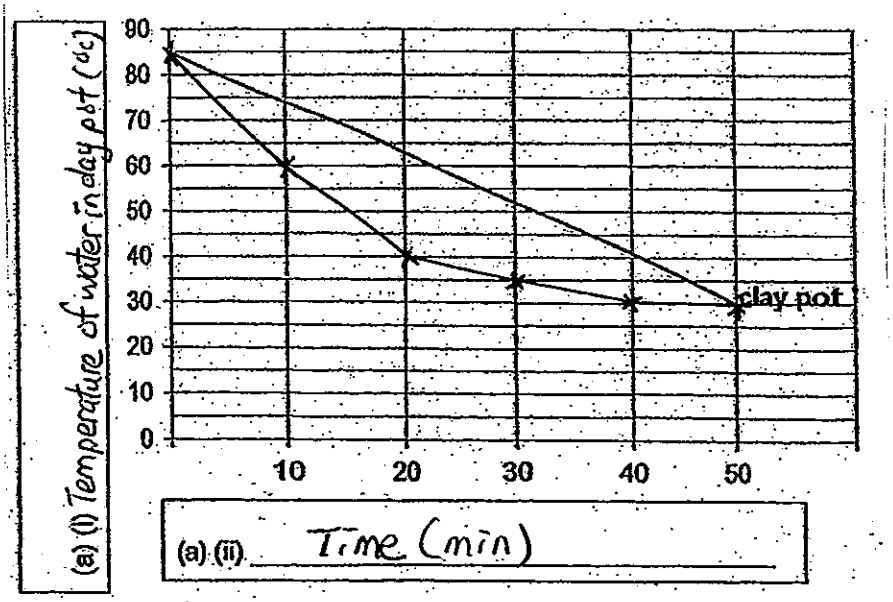
Q39
a) It will become magnetised/ It will become a temporary electro-magnet
b) The iron nail will become stronger.

c) No. The wooden chopsticks are non-magnetic material and it cannot be magnetised

Q40
a) 250cm^3
b) 250cm^3
c) Air can be compressed/ Air does not have a definite volume

Q41
a) To find which liquid sample is the cleanest/clearest/most transparent
b) Liquid Y. It does not allow light to pass through so it is the muddiest.
c) The size of the container/ The amount of liquid sample/ The distance of the torch from the container/ Brightness of the torch

Q42
ai) Temperature of water in clay pot (°C)
aii) Time (min)
b)



c) Metal Pot. The water in the metal pot took a shorter time to cool down. The metal pot lost heat faster than the clay pot.

Q43
a) Hot water evaporates to form water vapour. The hot water vapour touches the cool underside of the plastic sheet and loses heat, condensing to form water droplets
b) Method 1: Place ice cube on plastic sheet. It will make the plastic sheet cooler and more water vapour will condense, increasing the number of water droplets formed.
Method 2: Pour more hot water into the beaker. More hot water evaporates to form more water vapour forms which condenses into more water droplets

Q44
a) Exposed surface area of the matter
b) Volume of the water; location of the set-up; Temperature of water; Material of container; same type of water; duration of experiment; same humidity.
c) As the size of the opening of the container increases, the amount of water left in the container decreases.