NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2015
PRIMARY 4

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

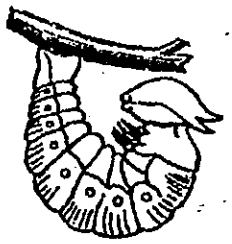
Booklet A		**/ 60**
Booklet B		**/ 40**
Total		**/ 100**

Name: _____ **(** **)** **Class: P 4** _____

Date : 30 October 2015 **Parent's signature:** _____

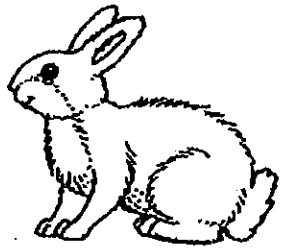
Section A: (30 x 2 marks = 60 marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is **NOT** a living thing?

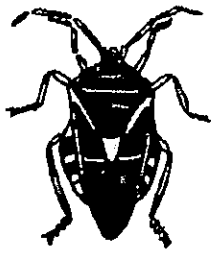

(1)

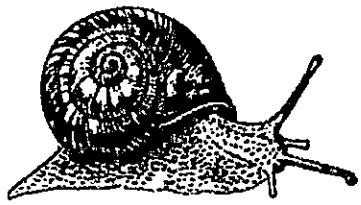

(2)

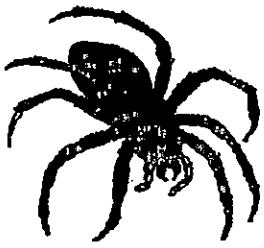

(3)


(4)

2. Which one of the animals shown below is an insect?

(1)


(2)


(3)


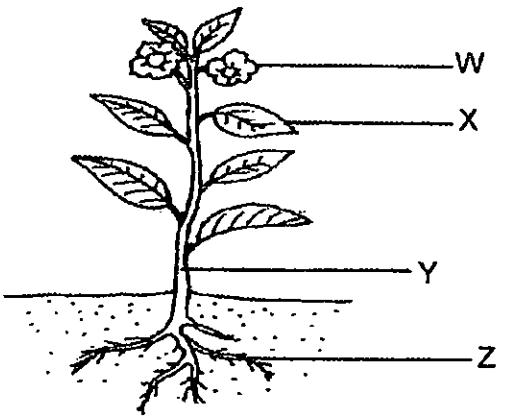
(4)


3. The diagram below shows a dining chair.

Metal is used to make the legs of the chair because it _____.

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

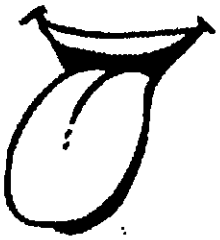
4. The diagram below shows a plant.



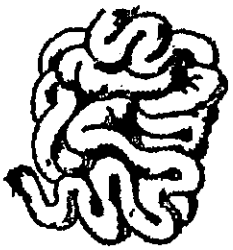
Which part holds the plant firmly to the ground?

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

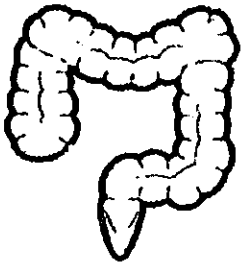
5. In which part of the digestive system is food absorbed into the blood?

(1) 

Tongue

(2) 

Small intestine

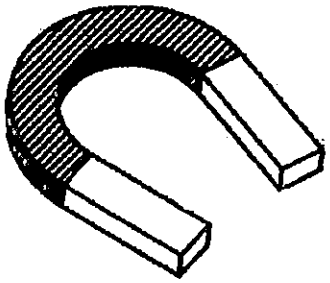
(3) 

Large intestine

(4) 

Stomach

6. Which one of the following can be attracted by a horseshoe magnet as shown below?

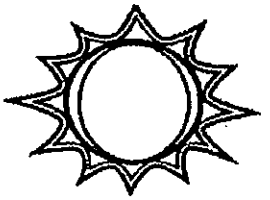


(1) iron tray
(2) silver tray
(3) plastic tray
(4) wooden tray

7. Which of the following is **NOT** a source of light?

(1) 

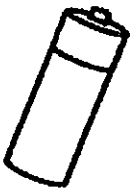
a lit bulb

(2) 

the sun

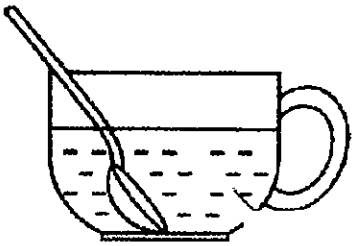
(3) 

a bottle of fireflies

(4) 

a battery

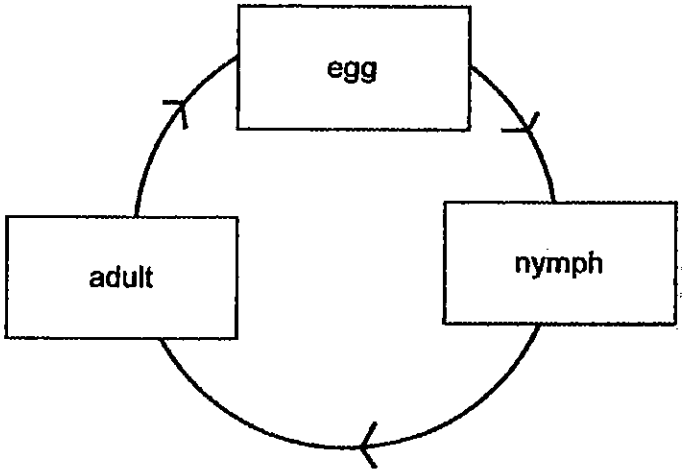
8. Eva places a spoon in a cup of cold tea. The spoon becomes colder after a while.



Which one of the following explains this?

(1) The cold tea loses heat to the spoon.
(2) The spoon loses heat to the cold tea.
(3) The cold tea gains heat from the cup.
(4) The spoon gains heat from the cold tea.

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



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

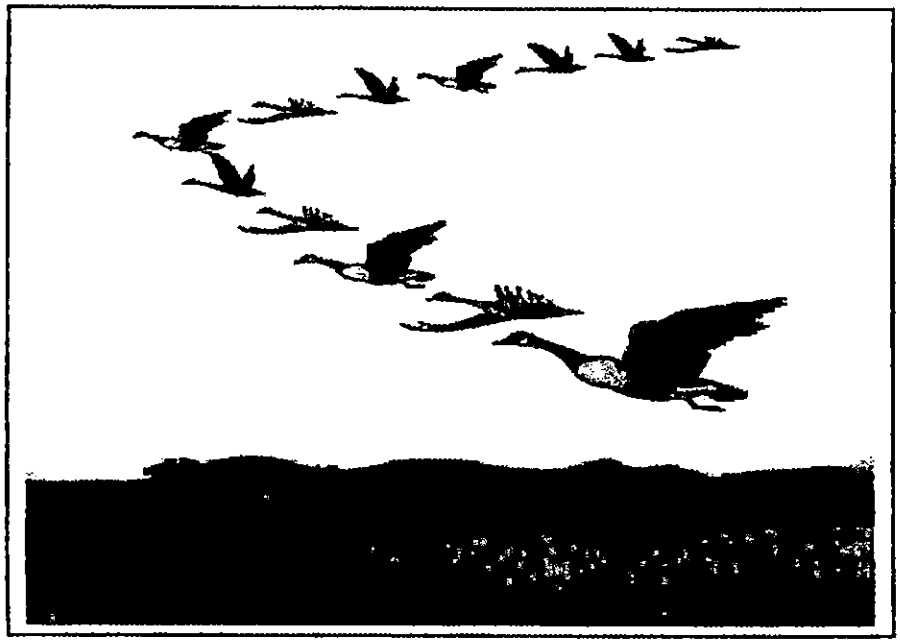
(1) beetle
(2) chicken
(3) mosquito
(4) grasshopper

10. Matter is anything that has mass and occupies space.

Which one of the following is matter?

(1) heat
(2) clouds
(3) thunder
(4) shadow

11. The diagram below shows a flock of geese travelling to other warmer places with abundance of insects and small fishes before winter sets in.



What characteristics of living things are shown in this behavior?

A Living things respond to changes.
B Living things need food to survive.
C Living things need sunlight to survive.
D Living things travel to warmer places to reproduce.

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

12. The table below shows the characteristics of three animals, X, Y and Z. A tick (✓) shows the presence of the characteristics.

Characteristics	X	Y	Z
Has feathers	✓		✓
Can fly	✓		
Lay eggs	✓	✓	✓

What could **X**, **Y** and **Z** be?

	X	Y	Z
(1)	parrot	butterfly	eagle
(2)	bat	guppy	platypus
(3)	eagle	platypus	ostrich
(4)	butterfly	bat	guppy

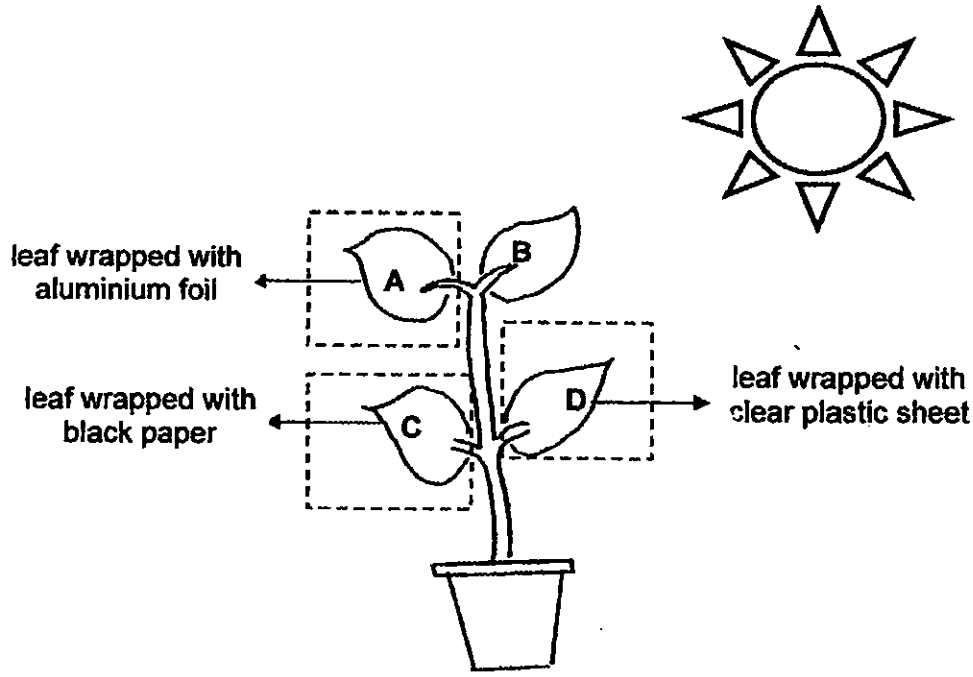
13. John is participating in a toy competition. He has decided to create a toy for young children to play with on the beach and in the sea. The table below shows the properties of four materials, A, B, C and D.

Properties	A	B	C	D
Light	Yes	No	No	Yes
Sink in water	No	Yes	No	Yes

Based on the table, which material is most likely to be used by John to make the toy?

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

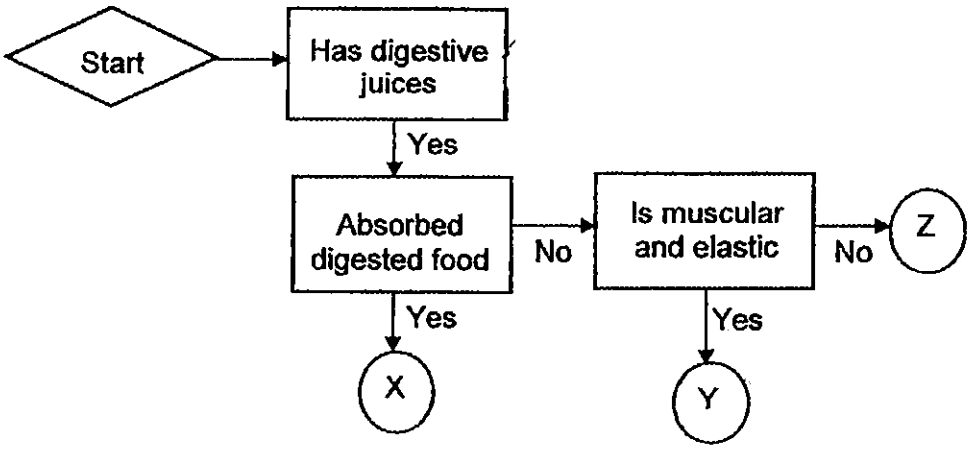
14. Eunice has a potted plant in her garden. She remembered that her Science teacher taught her that the leaves of the plant trap sunlight to make food. She wraps three of the leaves with different materials and pierced a few very tiny holes in all the materials for air to enter.



Which leaf/leaves would most likely not be able to make food for the plant?

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

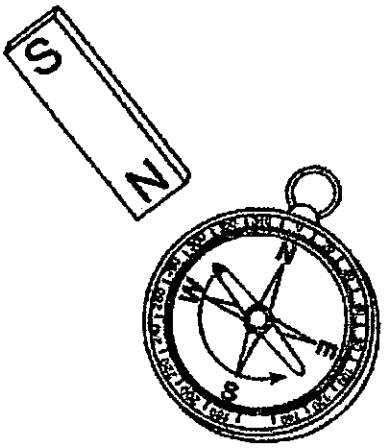
15. The flow chart below represents the organs in the human digestive system.



Which of the following best represents organs X, Y and Z?

	X	Y	Z
(1)	small intestine	gullet	stomach
(2)	small intestine	stomach	mouth
(3)	stomach	gullet	large intestine
(4)	large intestine	stomach	small intestine

16. The diagram below shows a magnet and a compass. Jasmine brought the magnet near to the compass and observed that the compass needle moved away from the magnet as shown by the arrow in the diagram.



Which of the following best explains her observation?

(1) The magnet attracted the needle which is magnetic.
(2) The N-pole of the needle was repelled by the N-pole of the magnet.
(3) The N-pole of the needle was attracted by the N-pole of the magnet.
(4) The needle which is magnetic moved and pointed to the N-S direction.

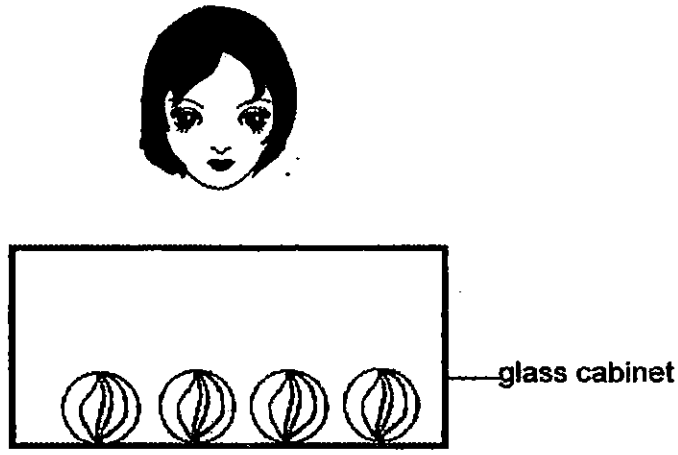
17. Jerald's teacher gave him three different objects wrapped with black paper and told him to use a magnet to interact with the objects. Jerald recorded his observations in the table below for every object that the magnet is in contact with.

Objects	Observations
P	It moved away from the magnet.
Q	It did not move.
R	It moved towards the magnet.

Based on the above observations, which of the following are most likely objects P, Q and R?

	P	Q	R
(1)	plastic ruler	magnet	steel rod
(2)	magnet	steel rod	plastic ruler
(3)	steel rod	magnet	plastic ruler
(4)	magnet	plastic ruler	steel rod

18. Four identical marbles are placed in a glass cabinet. Sally looks at them from the top of the cabinet and is able to see all the marbles.

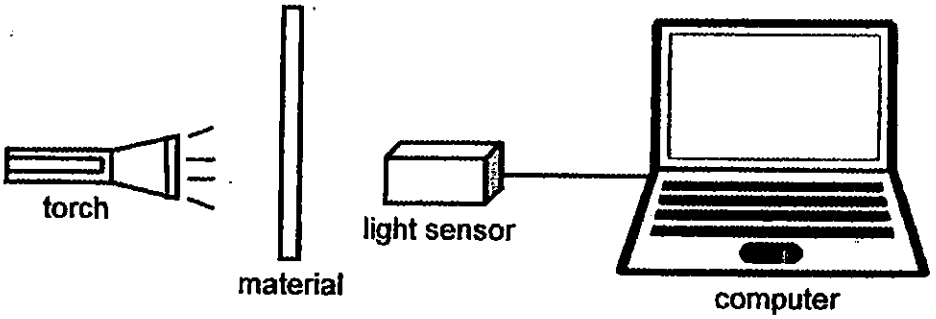


Which of the following explains why Sally can see all the marbles?

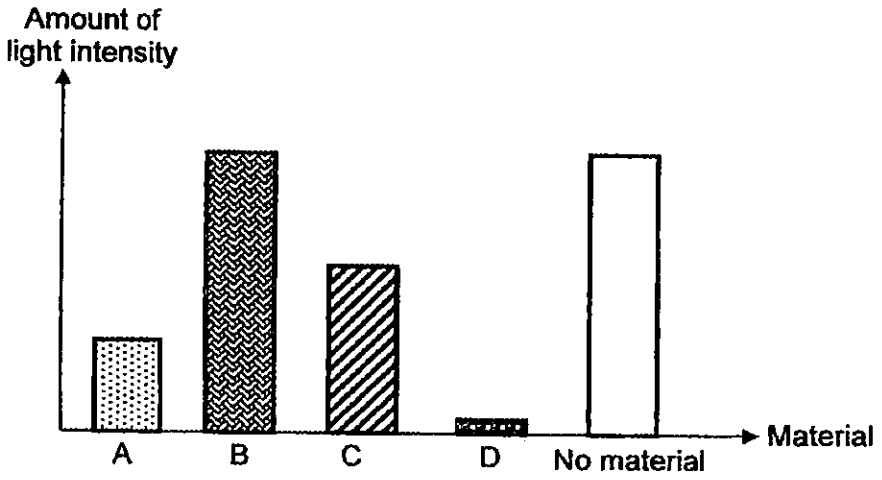
A Light travels in all directions.
B The marbles give out light which enters into her eyes.
C The glass cabinet is transparent and the reflected light from the marbles can pass through the glass cabinet to enter her eyes.

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

19. Tom carried out an investigation on four different materials. He placed each material between a torch and a light sensor and recorded the amount of light passing through each material.



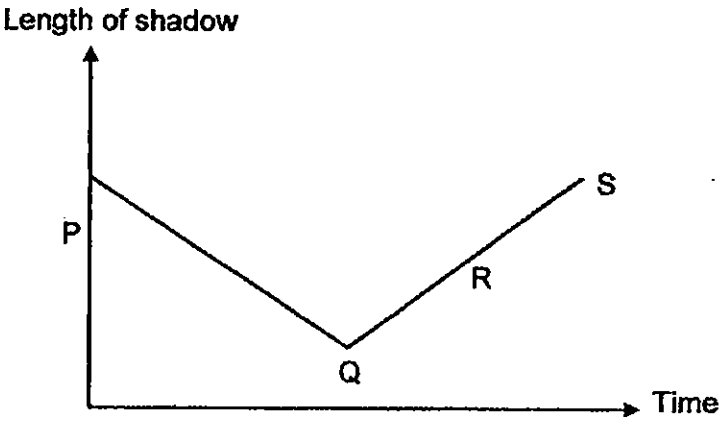
He plotted a bar graph to represent the amount of light intensity recorded as shown below.



Which material should Tom choose to make a fish tank?

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

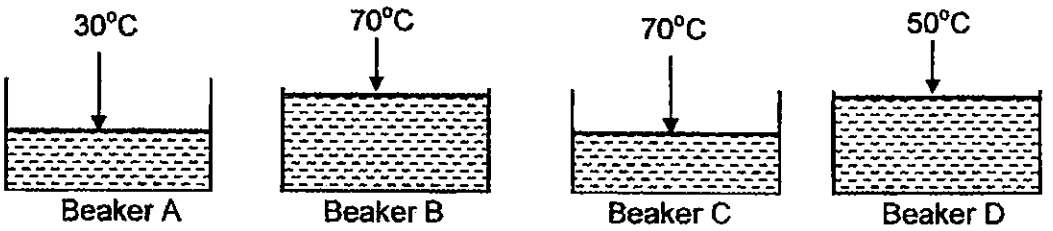
20. Mrs. Tan placed an object under the Sun over an 8-hour period and observed the shadow of the object. Based on her observations, she plotted a line graph to represent the relationship between the length of the shadow and the time of the day as shown below.



Which part of the graph represents noon time?

(1) P
(2) Q
(3) R
(4) S

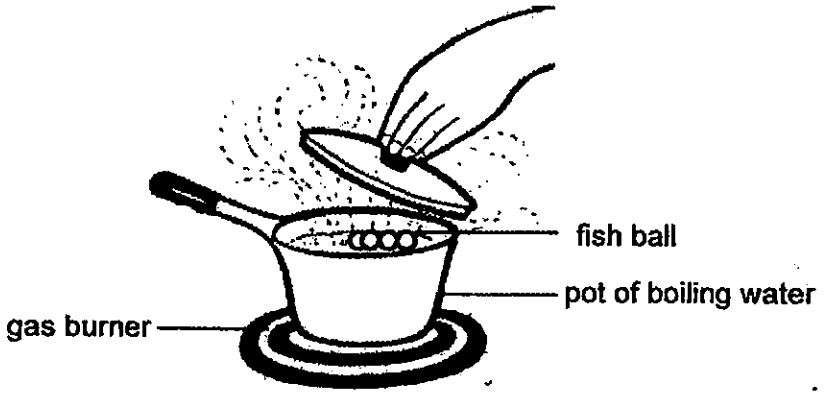
21. There are four beakers of water, A, B, C and D, with different set-ups as shown below.



Which of the following two set-ups should be used to find out if the amount of water affects the amount of heat in the beaker of water?

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

22. Jones heated a pot of tap water over a burner until it boils. Then he took out some fish balls from the refrigerator and put them into the pot of boiling water.



Which of the following statements correctly describes what happened to the temperature of water when Jones added the fish balls?

(1) It increased as the fish balls lost heat to the water.
(2) It decreased as the water lost heat to the fish balls.
(3) It decreased as the water gained heat from the fish balls.
(4) It remained the same as the water has reached the boiling point.

23. Mrs. Lee conducted an experiment to find out the heat conductivity of four cups made of different materials, A, B, C and D. She poured equal amounts of hot water from a kettle into the cups and recorded the temperature of the water at four equal intervals over a period of 20 minutes in the table as shown below.

	Temperature (°C)			
Cup	**5 mins**	**10 mins**	**15 mins**	**20 mins**
A	65	55	50	40
B	65	50	45	30
C	65	55	50	45
D	65	60	55	50

Based on the results in the table, which cup should Mrs. Lee use to serve ice cream for her guests so that the ice cream will melt the slowest?

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

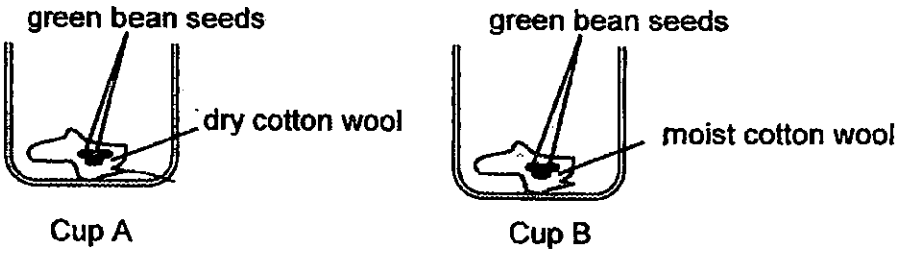
24. The table below shows the comparisons between the life cycles of a frog and a chicken.

	Description	Frog	Chicken
A	Has a 3-stage life cycle?	No	Yes
B	Feed on a lot of leaves when young?	No	No
C	Spends part of its life cycle in water?	Yes	Yes
D	Resembles its parent in many ways when young?	Yes	No

Which of the following comparisons between the life cycles of the two organisms is/are **not** correct?

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

25. Joe placed two cups of green bean seeds, cup A and cup B, in the kitchen. After three days, the seeds in cup B grew but the seeds in cup A did not grow.

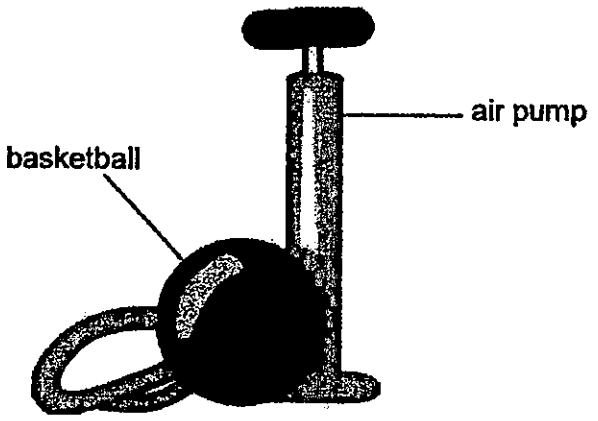


Cup A Cup B

His father explained to him that the seeds in cup A did not grow because they did not get any_____.

(1) soil
(2) light
(3) water
(4) warmth

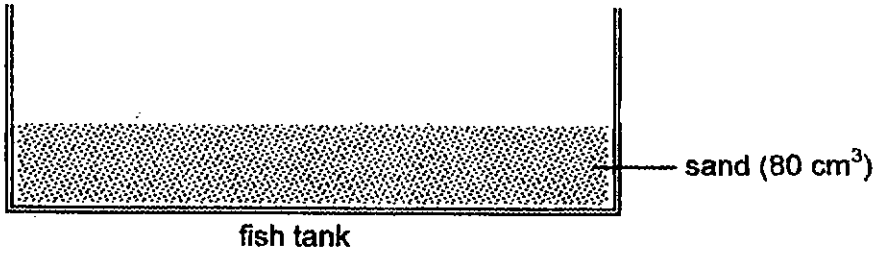
26. The flattened basketball becomes bigger when air is pumped into it.



What does this tell us about air?

(1) Air has mass.
(2) Air cannot be seen.
(3) Air occupies space.
(4) Air cannot be compressed.

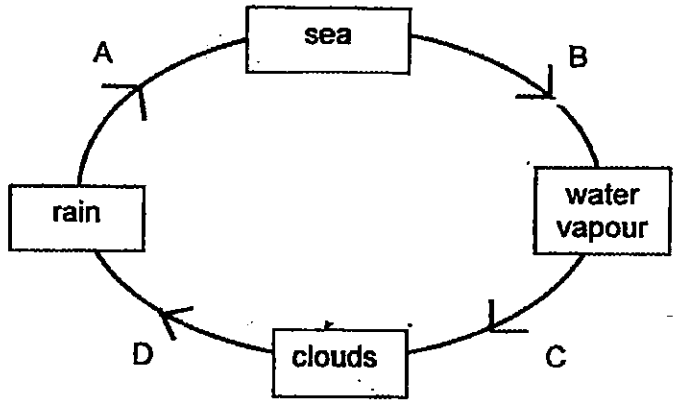
27. Ken bought a new fish tank. He filled it with sand up to 80 cm^3 as shown in the diagram below.



The next day, he poured 100 cm^3 of water into the tank. What will be the water level in the tank with the sand?

(1) 100 cm^3
(2) 180 cm^3
(3) More than 180 cm^3
(4) Between 100 cm^3 and 180 cm^3

28. The diagram below represents the water cycle.



At which stage does the water change from liquid stage to gaseous state?

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

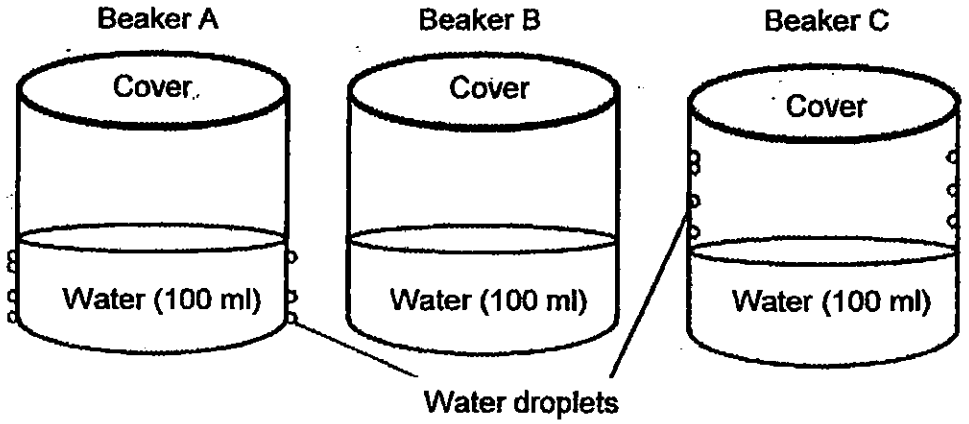
29. Although about 70% of the Earth's surface is covered with water, it is still important to educate people to conserve water in Singapore. What are the possible reason(s) to conserve water?

A Not all of the Earth's water is fresh water.
B Water cannot be recycled and will soon run out.
C Water is important for the survival of all living things.
D Singapore is surrounded by sea but the seawater cannot be used directly.

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

30. Three beakers of water at different temperatures were placed in a room with the room temperature of 30°C.

The diagram below shows what happened after some time.



Which one of the following options correctly shows the temperature of the water in the beaker?

	Beaker A	Beaker B	Beaker C
(1)	80°C	30°C	5°C
(2)	5°C	30°C	80 °C
(3)	30°C	5°C	80°C
(4)	5°C	80°C	30°C

NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2015
PRIMARY 4

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

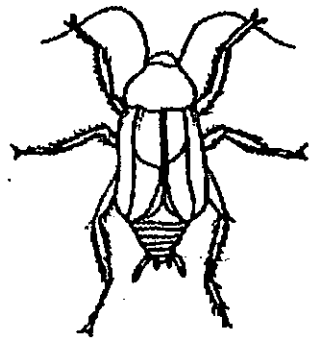
Section B		**/ 40**

Name: _____ ( ) **Class: P 4** _____

Date : 30 October 2015 **Parent's Signature:**_____

Section B: (40 marks)
Write your answers to questions 31 to 44. The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Look at the diagram below and tick (✓) the correct box(es).



It is an insect because it _____. [2]

☐ can fly

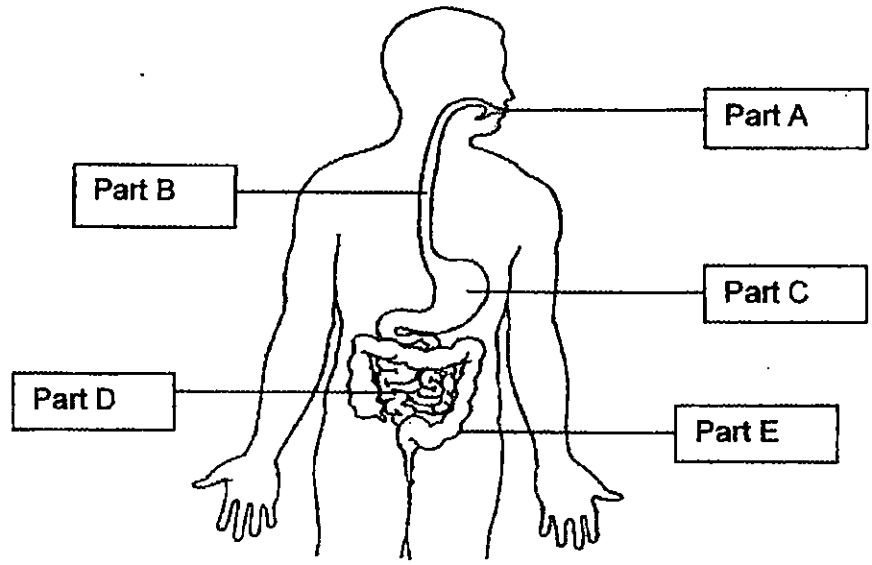
☐ has 6 legs

☐ has feathers

☐ has 3 body parts

Score	2

32. The diagram below shows the human digestive system.



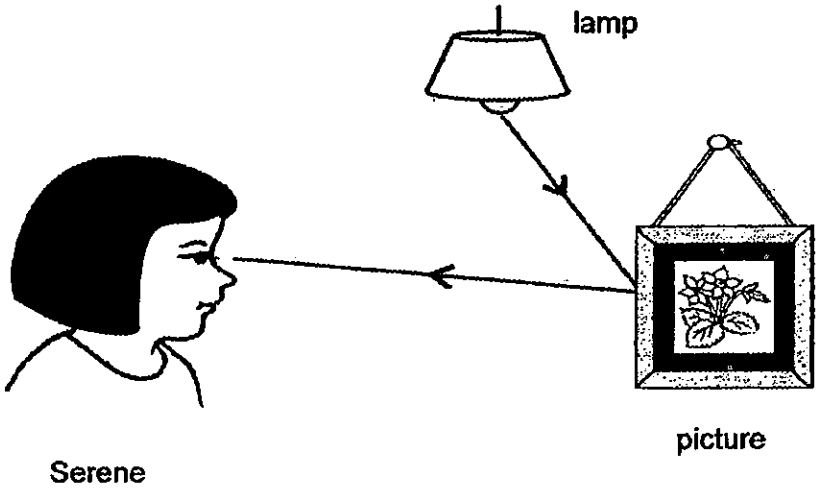
Identify the parts where digestion does not take place

(a) Part _____ [1]

(b) Part _____ [1]

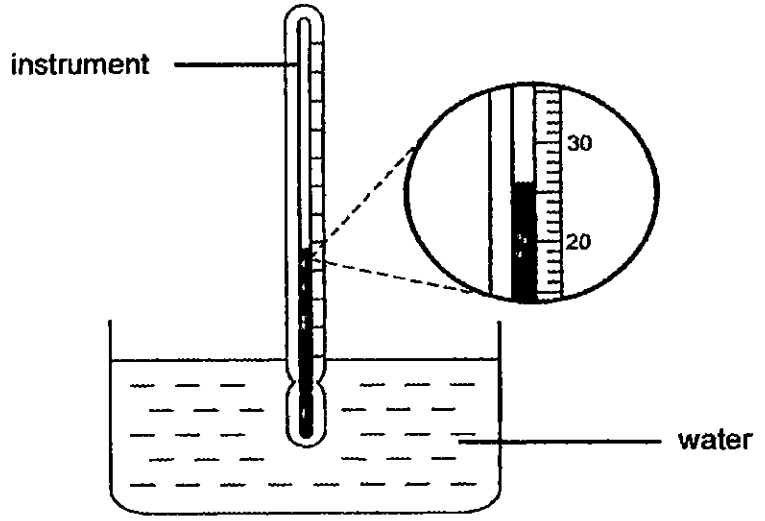
Score	2

33. The diagram below shows how Serene sees the picture.



The _____ from the lamp is _____ by the picture and enters Serene's eyes. [2]

34. Jane used an instrument to measure the temperature of water in a plastic container.



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

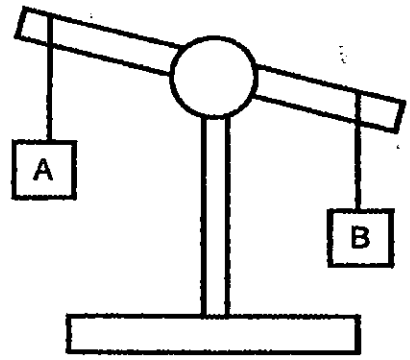
_____

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

_____ °C

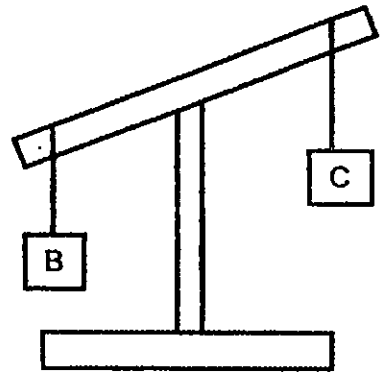
Score	4

35. Ali compares the mass of three boxes.
Study the diagrams below and tick (✓) the correct box for part (a) and (b).



(a) Box A _____ Box B. [1]

- ☐ is lighter than
- ☐ has the same mass as
- ☐ is heavier than

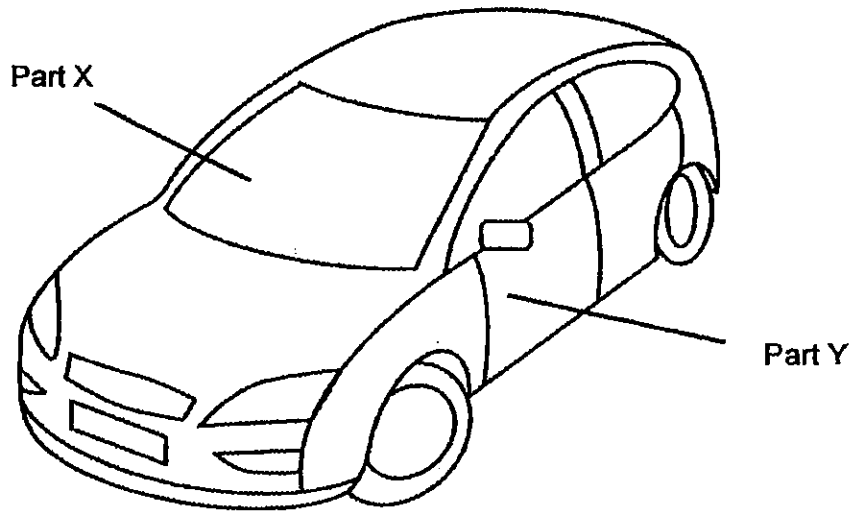


(b) Box B _____ Box C. [1]

- ☐ is lighter than
- ☐ has the same mass as
- ☐ is heavier than

Score	2

36. The diagram below shows a car.



(a) What material should Part **X** be made of? Explain your answer. [2]

_____

_____

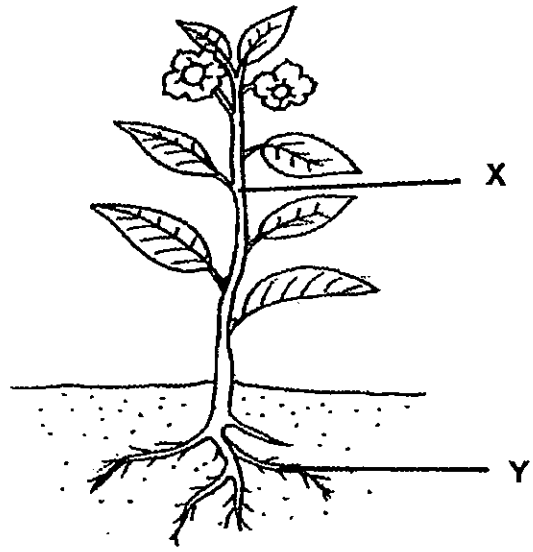
(b) Name two properties of the material which Part **Y** is made of. [2]

_____

_____

Score	4

37. The diagram below shows a plant.



(a) State 2 functions of part X. [2]

i) _____

_____

ii) _____

_____

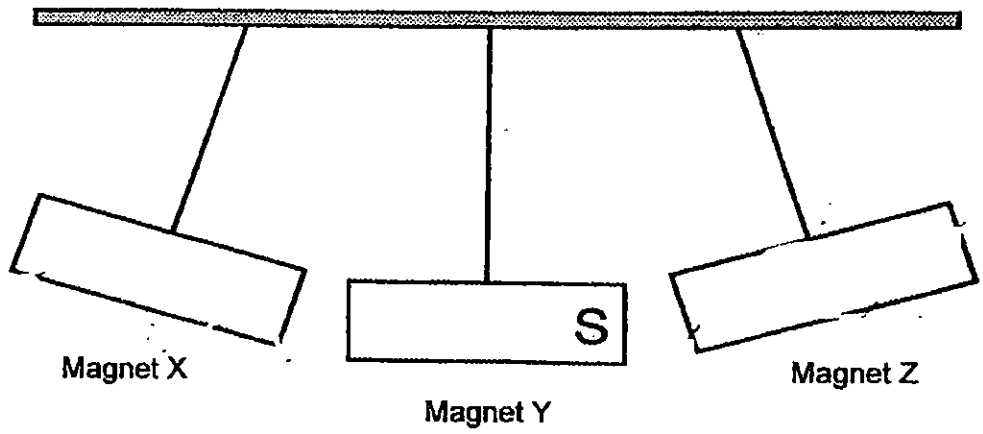
(b) What will happen to the plant after some time if Part Y is removed from the plant? Explain. [1]

_____

_____

Score	/ 3

38. The diagram below shows what happens when 3 magnets, X, Y and Z, are suspended.



(a) In the diagram, **label** the poles of Magnets X and Z, with the letters 'N' and 'S'. [2]

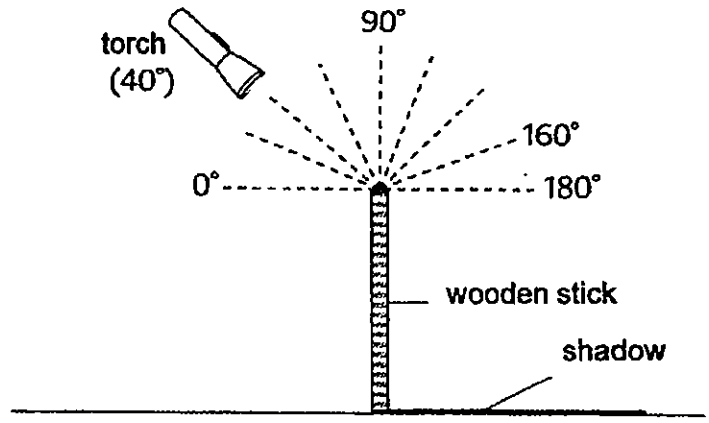
(b) What will happen to magnets X and Z if Magnet Y is removed from the set-up? [1]

_____

_____

Score	/ 3

39. An experiment was set up in a dark room as shown in the diagram. A torch was shone at an upright wooden stick from different angles. The length of the shadow formed at different angle was recorded in the following table.



Angle of Torch (°)	Length of Shadow (cm)
40	20
50	16
60	12
70	8
80	4
90	2
100	4
110	8
120	**A**
130	**B**
140	20

(a) What are the likely values for A and B? [1]

A : _____ cm

B : _____ cm

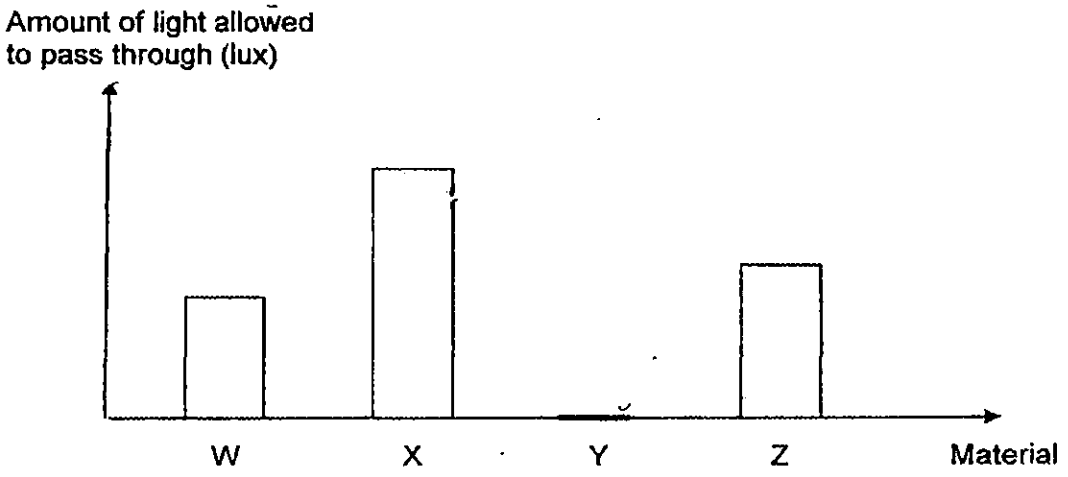
(b) What is the relationship between the angle of the torch and the length of the shadow? [2]

_____

_____

Score	/ 3

40. Lee Wee wanted to find out how much light could pass through the 4 different types of materials, namely W, X, Y and Z. The amount of light that passed through each material was measured using a light sensor and the findings are shown in the graph below.



(a) Arrange the 4 materials, W, X, Y and Z, according to their degree of transparency in the boxes below. [1]

Transparent ⟶ **Opaque**

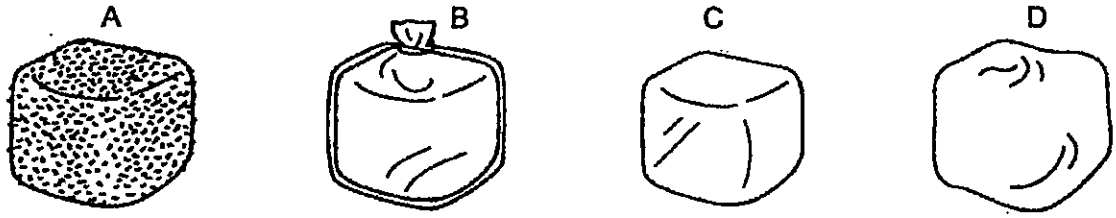
(b) From the graph, which material, W, X, Y or Z, should Lee Wee choose for making a safe for keeping the valuables? Why? [2]

_____

_____

Score	3

41. Ms Lim wanted her students to find out which is the best material to slow down the melting rate of ice. She conducted an experiment with her class as shown in the diagram below. She wrapped ice blocks A, B and D with different materials and leave ice block C unwrapped. She then left them in the open to melt completely.



sawdust | plastic bag | uncovered ice | thin cloth

(a) Based on Ms Lim's experiment, identify the variables in her experiment.

Put a tick (✓) in the correct boxes below. [2]

Variables	Variable changed (Independent Variable)	Variable measured (Dependent Variable)	Variable kept the same (Constant Variable)
Material used to wrap the ice block			
Size of ice block at the start of the experiment			
Time taken for the ice to melt completely			
Location of the experiment			

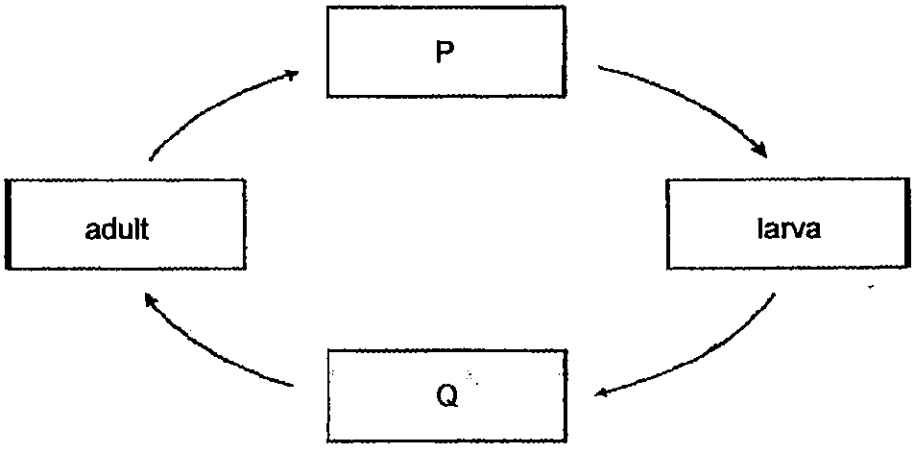
(b) Which ice block, A, B, C or D, will take the shortest time to melt completely? Explain why it is so. [1]

_____

_____

Score	3

42. The diagram below shows the stages in the life cycle of a ladybug. The ladybug has a similar life cycle as the mealworm beetle.



(a) Identify stages **P** and **Q** in the life cycle. [1]

P _____ **Q** : _____

(b)

Larva

Adult

Based on the pictures above, state **1 observable similarity** and **1 observable difference** between the larva and the adult stages of the ladybug. (Do not compare the size, shape, colour and pattern) [2]

Similarity: _____

_____

Difference: _____

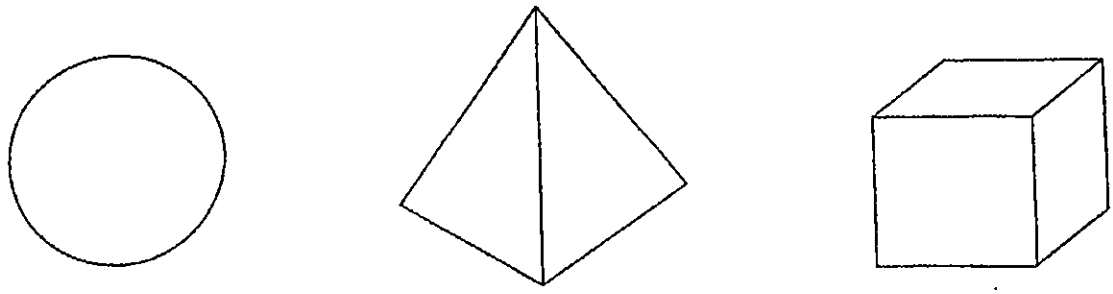
_____

(c) Besides the mealworm beetle, name another insect which undergoes similar stages in their cycle. [1]

_____

Score	4

43. Jennifer moulded a piece of plasticine into a sphere, a pyramid and a cube, one at a time. She measured the mass and the volume of each shape.



Sphere Pyramid Cube

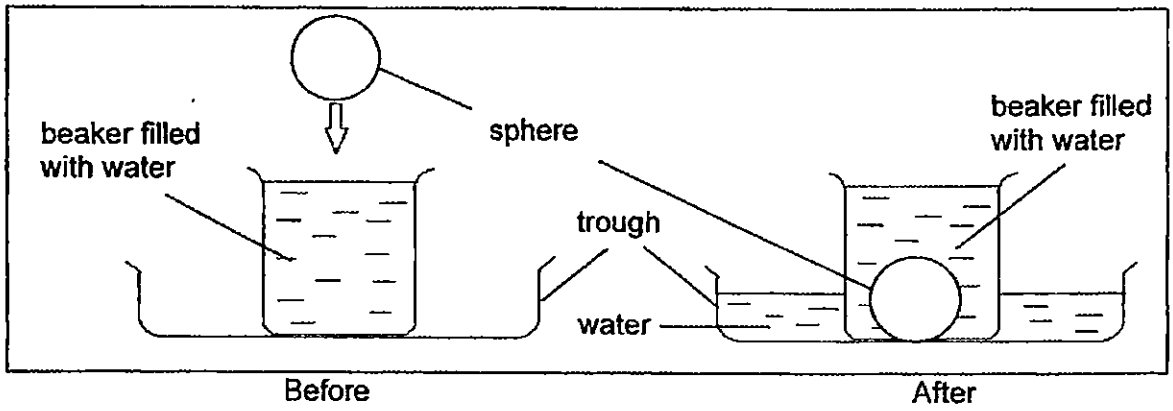
At the end of the experiment, Jennifer drew the following conclusions.

X : Plasticine can be compressed.
Y : The mass and volumes of the sphere, pyramid and cube are similar.

(a) Which of Jennifer's conclusions, X or Y, is incorrect? Explain. [1]

(b) What property of the plasticine was changed when it was being moulded? [1]

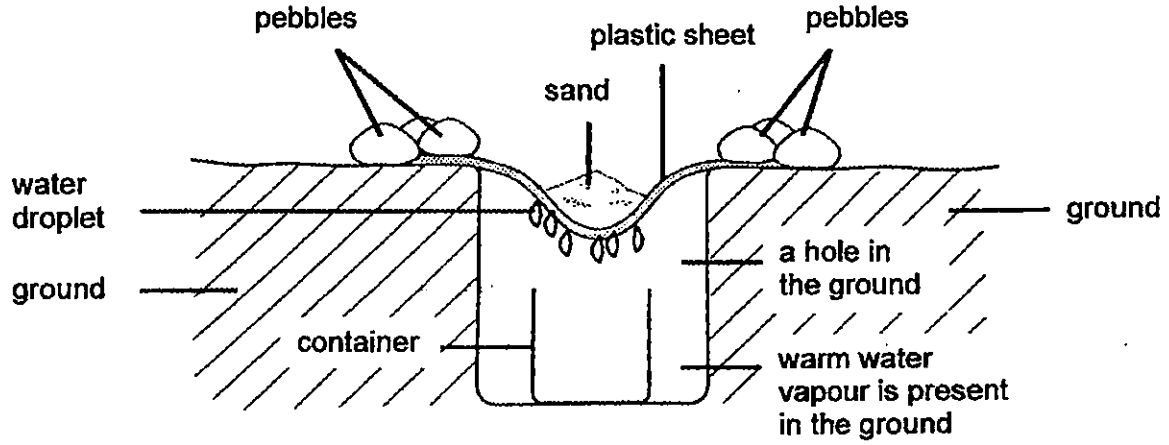
(c) Jennifer decided to take the experiment a step further. She prepared a beaker full of water. She then dropped the sphere gently into the beaker and noticed that some water overflow from the beaker to the trough as shown in the diagram.



Based on the diagrams above, what does the experiment show about the property of the sphere? [1]

Score 3

44. Ian was stranded in a desert. The temperature of the desert was high in the day and low at night. He managed to find a container, a plastic sheet, some pebbles and sand, and came up with an idea to use them to obtain some water for survival. He dug a hole in the ground and set everything up as shown in the diagram below.



(a) The next morning, Ian found some water in the container. Explain how the water droplets were formed? [2]

(b) State one function of the plastic sheet in the set-up? [1]

(c) What knowledge did Ian make use of to obtain the water in the desert? Put a tick (√) against the correct answer(s). [1]

	Knowledge required by Ian	Tick
i.	Melting	
ii.	Boiling	
iii.	Evaporation	
iv.	Condensation	

End of paper

Score	/ 4

EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : NAN HUA PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	1	2	4	2	1	4	2	4	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	3	1	2	2	2	4	3	2	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	4	4	3	3	4	2	3	2

Q31. It has 6 legs Q31. It has 3 body parts.

Q32a. Part B Q32b. Part E

Q33. Light , reflected

Q34a. Thermometer Q34b. 26°C

Q35a. is lighter than Q35b. is heavier than

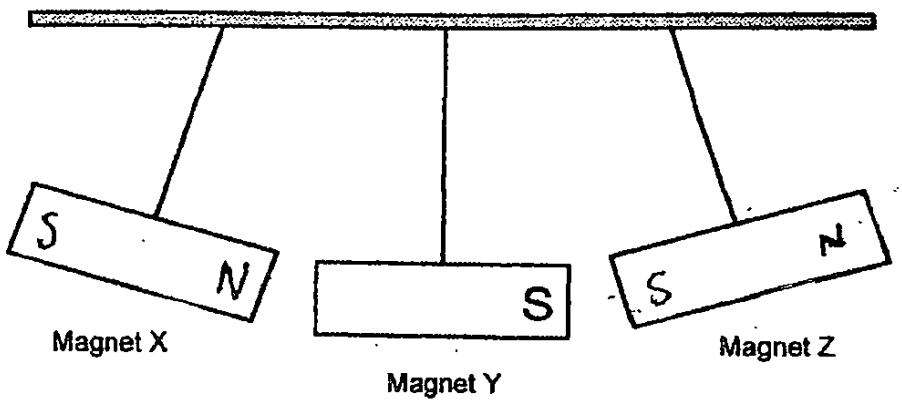
Q36a. Part X is made of glass. Glass allows all (most) light to pass through so the river can see the road.

Q36b. Hard and strong / not reflexible.

Q37a (i) It transports food and water to the rest of the plant.
Q37a (ii) It supports the leaves for the leaves to trap sunlight.

Q37b. The plant will fall as it is unable to hold itself firmly to the ground.

Q38a. **SEE PICTURE** Q38b. Magnet X and Z will attract to each other.



Q39a. A: 12cm Q39a. B: 16cm

Q39b. When the angle of the torch increases between 40° and 90°, the length of the shadow decreases. When the angle of the torch increases between 90° and 180°, the length of the shadow decreases .

Q40a. X S W Y

Q40b. Material Y. It is opaque and does not allow any of the light to pass through, hence the valuables could not be seen.

Q41a. **SEE PICTURE .** Q41b. Block C. There is no material around the ice to slow down the transfer of heat from the surrounding to the ice.

Variables	Variable changed (Independent Variable)	Variable measured (Dependent Variable)	Variable kept the same (Constant Variable)
Material used to wrap the ice block	✓		
Size of ice block at the start of the experiment			✓
Time taken for the ice to melt completely		✓	
Location of the experiment			✓

Q42a. P: Egg Q: Pupa

Q42b. Similarity : Both have six legs.
Q42b. Difference : The adult has wings but the young does not has wings.

Q42c. Butterfly.

Q43a. X is incorrect. The plasticine is a solid and solids cannot be compressed.

Q43b. The shape of the plasticine.

Q43c. The sphere has a definite volume.

Q44a. The water vapour condenses when it loses heat upon touching the cooler surface of the plastic sheet.

Q44b. To allow water vapour to condense. To prevent the water vapour from escaping into the air.

Q44c. Evaporation Q44c. Condensation

THE END