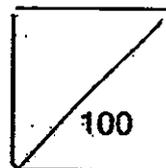




HENRY PARK PRIMARY SCHOOL
2013 SEMESTRAL EXAMINATION 2
SCIENCE
PRIMARY 4

Duration of Paper: 1 h 45 min



Name: _____ ()

Parent's Signature _____

Class: Pr 4 _____

Booklet A (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 of the following statements is true about all liquids and gases?

- (1) They can be seen.
- (2) They can be compressed.
- (3) They have definite volume.
- (4) They have no definite shape.

()

2. Christopher learnt that matter is anything that has mass and occupies space. He wrote down a list of things shown below.

Matter			
Air	Sunlight	Sand	Oil
Water	Pebble	Plasticine	Music

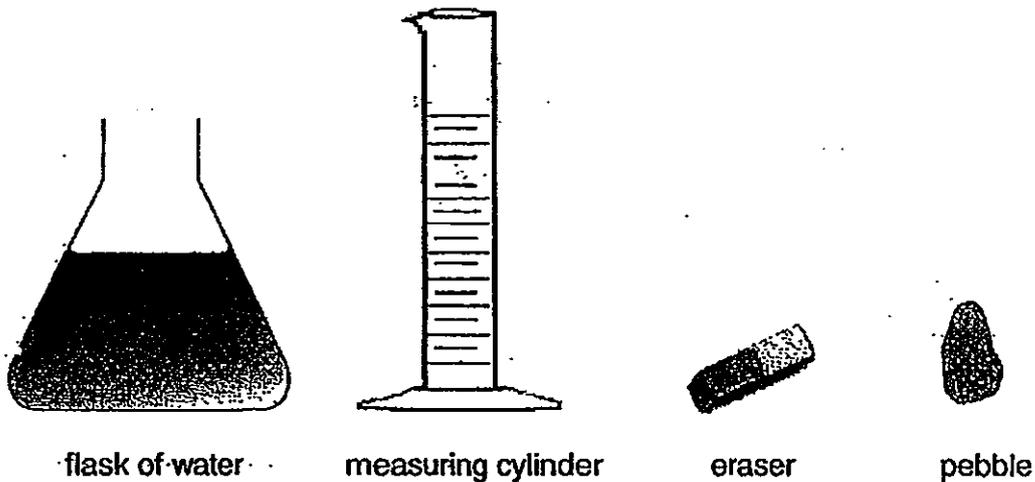
How many things, from the table above, should NOT be in his list?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

()



3. Grace is provided with the following apparatus and materials.

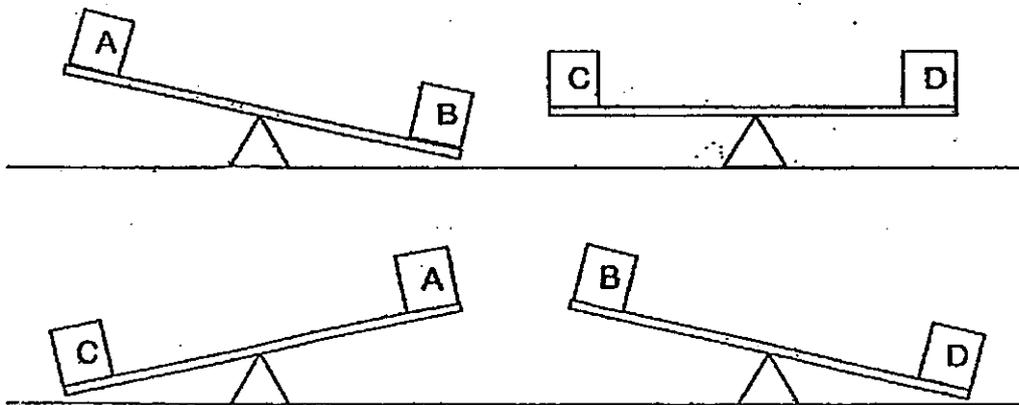


Using only the apparatus and materials provided above, which one of the following statements cannot be tested to see if they are correct or incorrect?

- (1) The eraser and stone sinks in water.
- (2) Water does not have a definite shape.
- (3) The pebble has a greater mass than the eraser.
- (4) The eraser has a greater volume than the pebble.

()

4. The diagrams below show what happens to a lever balance each time two objects are placed on it.



Which object, A, B, C or D, has the least mass?

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

()



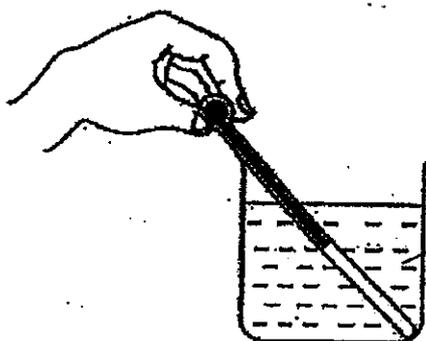
5. Which one of the following processes does not need heat energy?

- (1) Baking a cake.
- (2) Ironing clothes.
- (3) Melting butter on a plate.
- (4) Setting jelly in a refrigerator.

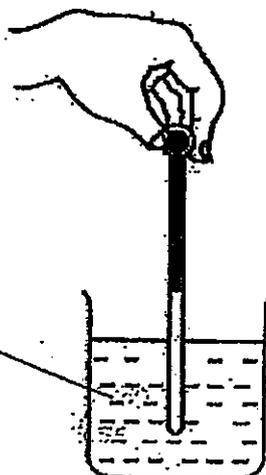
()

6. Sabrina wants to measure the temperature of hot water in a beaker. Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

(1)

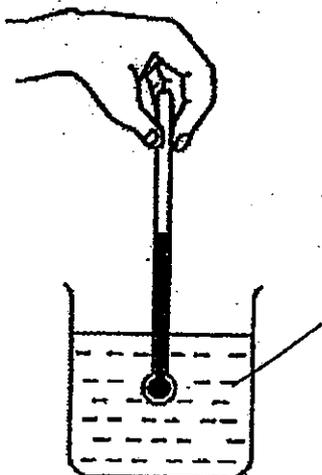


(2)

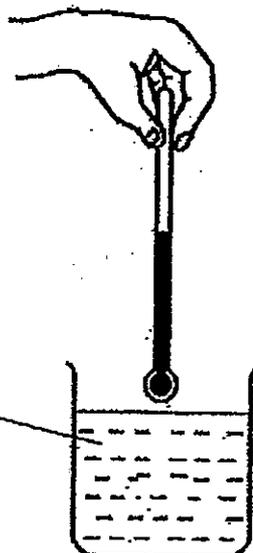


hot water

(3)



(4)

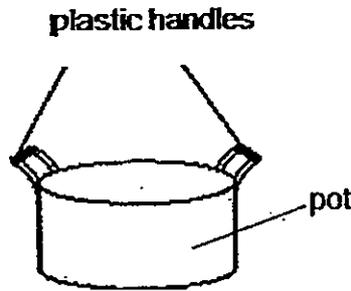


hot water

()



7. Peter heated some soup in the pot shown below.

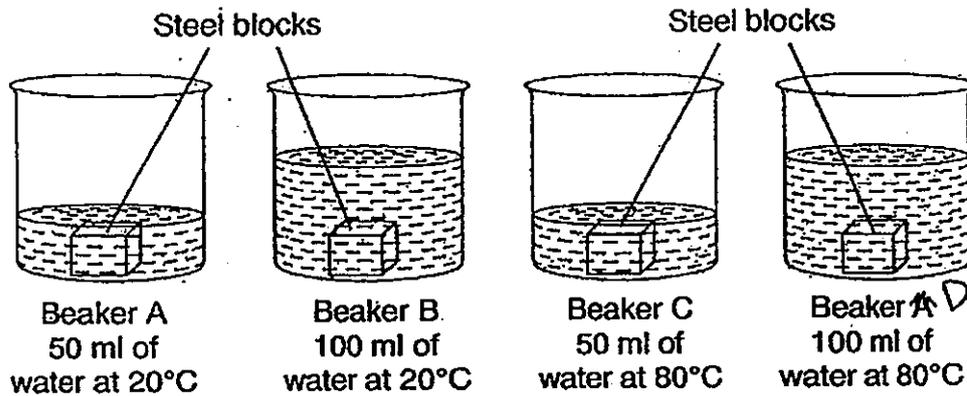


He is able to hold the pot of hot soup using the plastic handles. This is because plastic is a _____.

- (1) heavy material
- (2) flexible material
- (3) poor conductor of heat
- (4) good conductor of heat

()

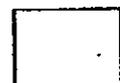
8. Four identical blocks of steel were heated to a temperature of 80°C. Each block of steel was then dropped into a beaker of water as shown in the diagram below. Each beaker contained a different amount of water at a different temperature.



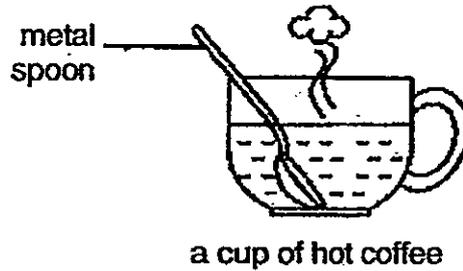
In which beakers would the temperature of water increase after 5 minutes?

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

()



9. Glenn places a metal spoon in a cup of hot coffee.



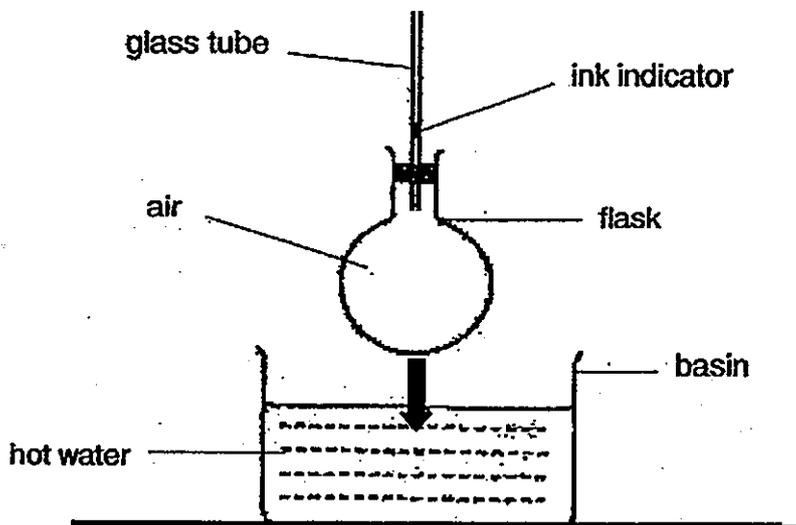
The spoon becomes hotter after a while.

Which one of the following explains this?

- (1) The cup loses heat to the hot coffee.
- (2) The spoon loses heat to the hot coffee.
- (3) The hot coffee gains heat from the spoon.
- (4) The spoon gains heat from the hot coffee.

()

10 The diagram below shows a flask and a basin of hot water.



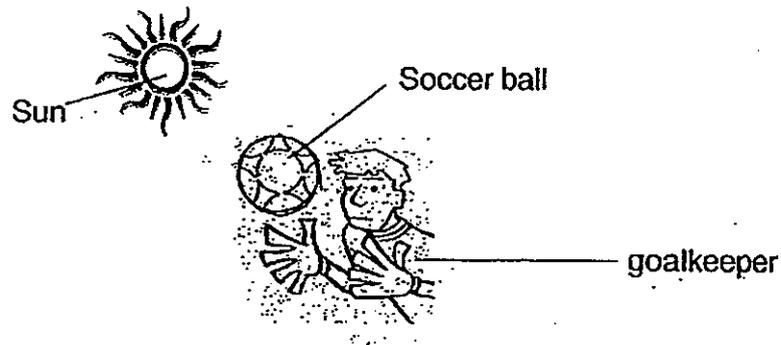
An amount of air is trapped in the flask, marked by the ink indicator. When the flask is lowered into the hot water, Lin Fang observed that the ink indicator fall first and then rise. Which one of the following reasons explains Lin Fang's observation?

- (1) The flask expands before the air expands.
- (2) The flask expands first and then contracts.
- (3) The air is compressed first and then expands.
- (4) The downward movement of the flask causes the indicator to fall before the air expands.

()



11. The diagram below shows a goalkeeper catching a soccer ball on a sunny day.

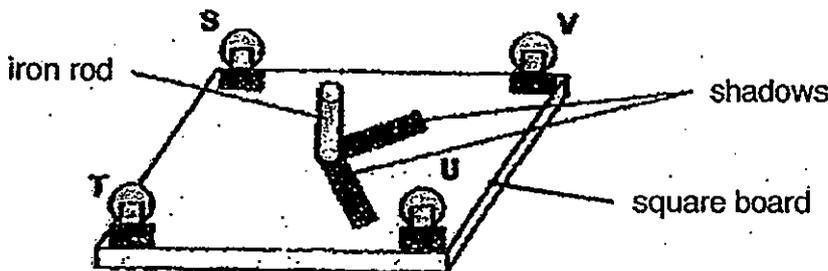


Which of the following correctly shows the path of light that makes it possible for the goalkeeper to see the soccer ball?

- (1) From the sun to the goalkeeper to the soccer ball.
 - (2) From the sun to the soccer ball to the goalkeeper.
 - (3) From the soccer ball to the sun to the goalkeeper.
 - (4) From the soccer ball to the goalkeeper to the sun. ()
12. Which one of the following groups consists of light sources only?

- (1) Sun, star, lightning
- (2) Earth, mirror, burning candles
- (3) Firefly, campfire, caterpillar
- (4) Burning candles, moon, shining torch ()

13. An iron rod is placed in the centre of a square board as shown below. Four identical bulbs S, T, U and V, connected to batteries and switches beneath the board, are placed at each corner of the board.

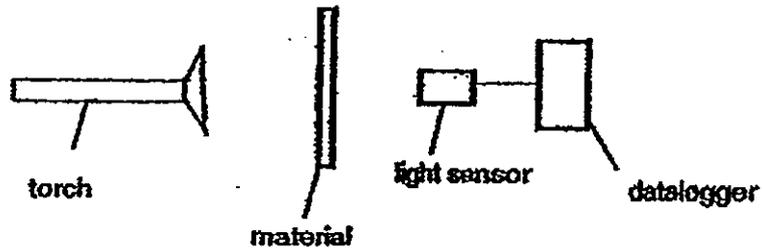


Which of the bulbs have to be switched on such that the shadows of the iron rod shown in the diagram above can be formed?

- (1) S and T
- (2) S and U
- (3) T and V
- (4) U and V ()



14. The diagram below shows the set-up for Daniel's experiment. He used different materials, X, Y and Z, for his experiment. He conducted the experiment with each material 3 times.



He recorded the readings from the datalogger as shown below.

<u>Materials</u>	<u>Amount of light passing through the material (lux)</u>		
	<u>1st try</u>	<u>2nd try</u>	<u>3rd try</u>
X	1500	1524	1510
Y	700	710	705
Z	15	20	18

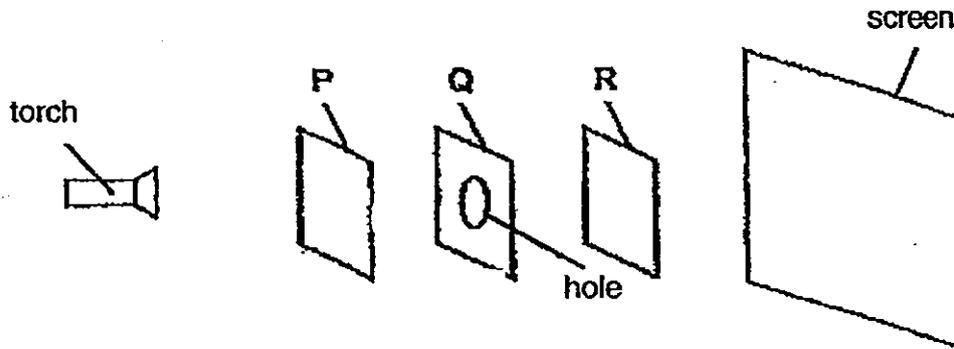
Based on the results, which of the following statements is the correct conclusion for his experiment?

- (1) X does not allow light to pass through.
- (2) Y allows the most light to pass through.
- (3) X allows less light to pass through than Y.
- (4) Y allows more light to pass through than Z.

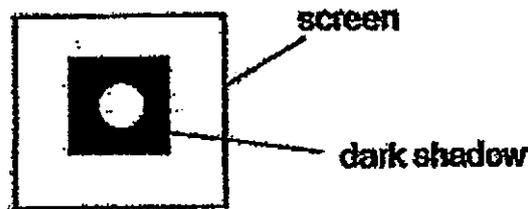
()



15. The experiment shown below was carried out in a dark room. Objects, P, Q and R are each made of different materials. Object Q has a hole on it.



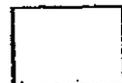
When the torch was switched on, a shadow was formed on the screen as shown below.



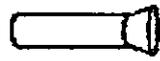
Which of the following most likely represent P, Q and R?

	P	Q	R
(1)	Wood	Tracing paper	Clear glass
(2)	Clear plastic	Wood	Tracing paper
(3)	Clear glass	Wood	Clear plastic
(4)	Tracing paper	Clear glass	Wood

()



16. The set-up below shows light shining on a wooden ball.



torch



wooden ball



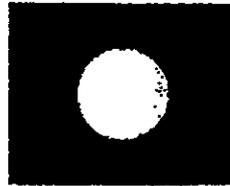
screen

Which one of the following would likely be seen on the screen?

(1)



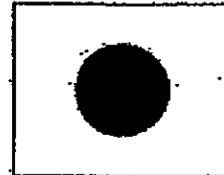
(2)



(3)



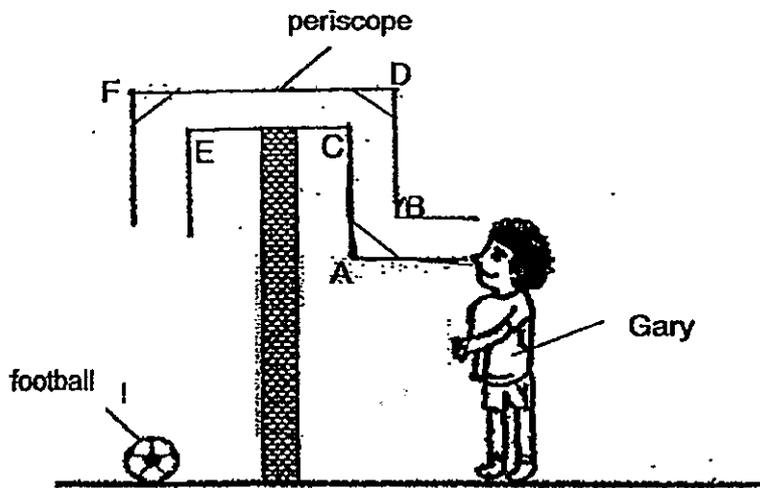
(4)



()



17. Gary accidentally kicked his football over to his neighbour's garden which was separated by a wall. He decided to make a periscope to enable him to see where his football was.



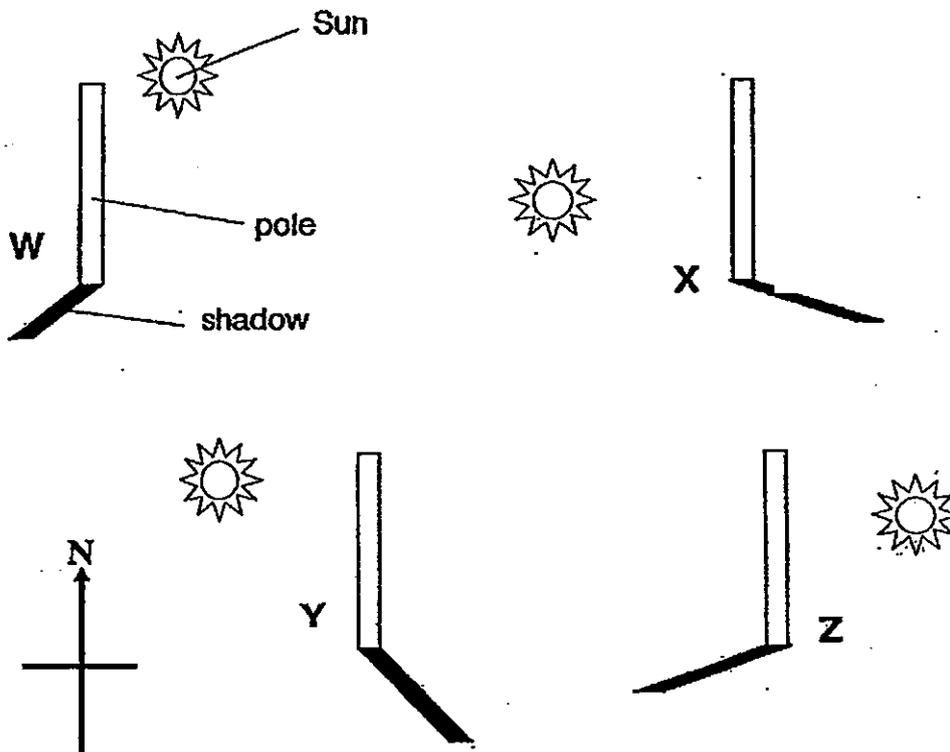
He wanted to place some mirrors in the periscope tube so that he would be able to see the football on the other side of the wall. Which positions should he place the mirrors?

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

()



18. The diagram below shows the shadows of a pole cast at different times of the day.



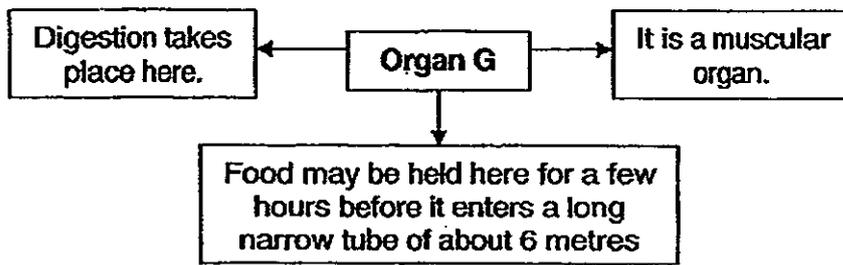
Arrange the shadows in order of time, starting with the one cast at the earliest time of the day from 8am to 6pm.

	<u>8am</u>	<u>11am</u>	<u>3pm</u>	<u>6pm</u>
(1)	Z	W	Y	X
(2)	Z	Y	X	W
(3)	X	Y	W	Z
(4)	X	Z	Y	W

()



19. The concept map below shows the characteristics of organ G.

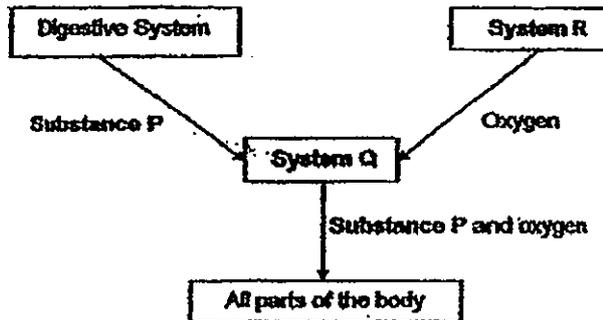


What is organ G?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

()

20. The diagram below shows how some systems in the human body work with one another.



Which of the following is best represented by P, Q and R in the diagram above correctly?

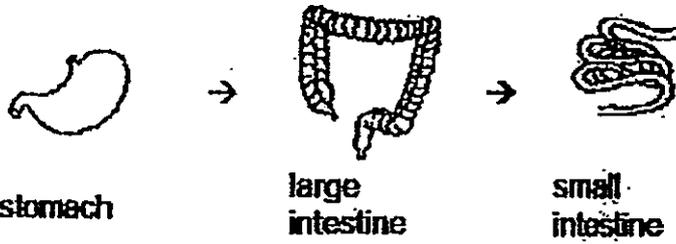
	Substance P	System Q	System R
1	Digested food	Respiratory	Circulatory
2	Digested food	Circulatory	Respiratory
3	Undigested food	Muscular	Respiratory
4	Undigested food	Respiratory	Muscular

()

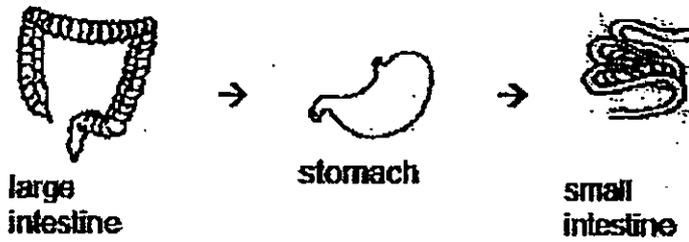


21. Which one of the following shows the correct order when food moves through some parts of the digestive system?

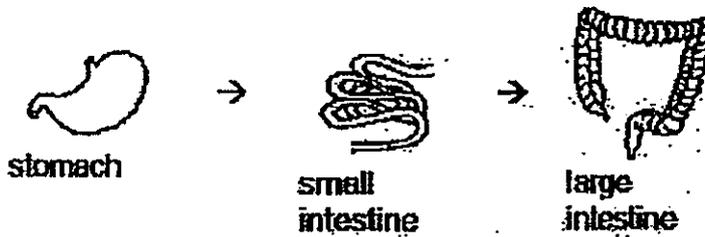
(1)



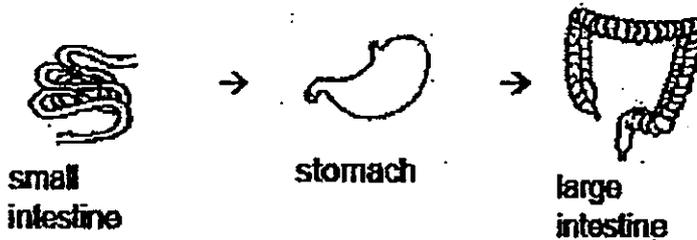
(2)



(3)



(4)



()

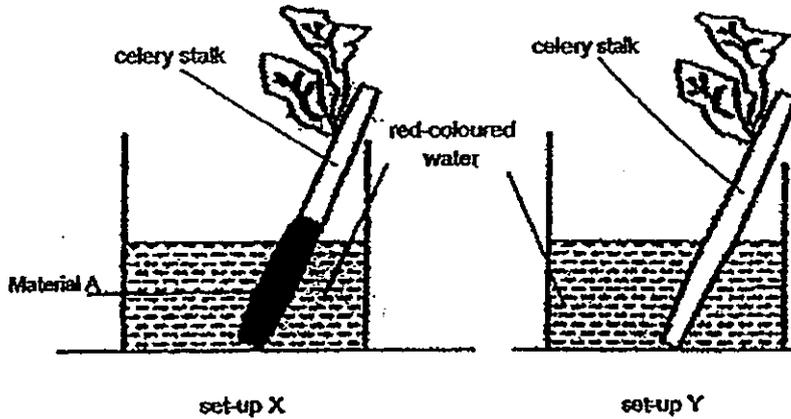
22. Which one of the following is the function of a leaf on a plant?

- (1) Holds plant upright
- (2) Makes food for the plant
- (3) Takes in water for the plant
- (4) Takes in nutrients for the plant

()



23. Jennifer set up an experiment with 2 similar celery stalks as shown below. The lower part of the celery stalk in set-up X was wrapped up with material A before placing it into the beaker of red coloured water. The celery stalk in set-up Y was not wrapped with any material.



Two days later, she recorded her observations of the two celery stalks in the table below.

Set-up	Observation
X	Leaves were yellowish and dried up
Y	Leaves were red but not dried up.

Which of the following statements is/are TRUE based on her observations?

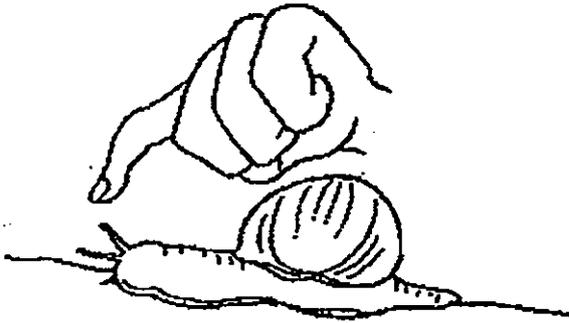
- A: The coloured water can pass through material A in set-up X.
- B: Material A had prevented the celery stalk from taking in the coloured water.
- C: The coloured water is carried by the tubes in the celery stalk to the leaves in set-up Y.

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

()



24. A snail hides itself in its shell when touched.



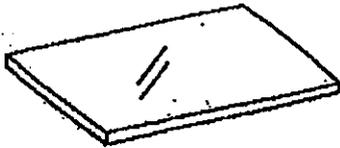
This shows that the snail is a living thing because it can _____.

- (1) die
- (2) grow
- (3) respond
- (4) reproduce

()

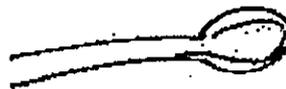
25. Which one of the following objects can be bent easily without breaking?

(1)



A sheet of glass

(2)



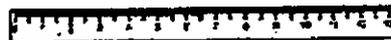
A wooden spoon

(3)



A towel

(4)

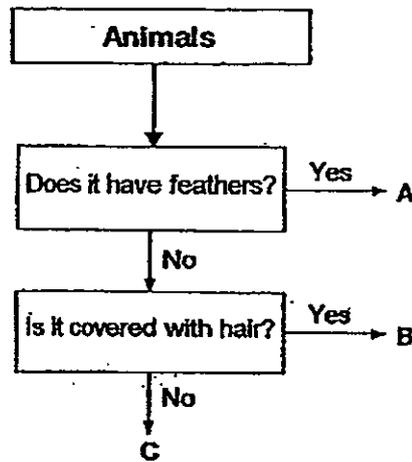


A metal ruler

()



26. The flowchart below shows characteristics of some animals.

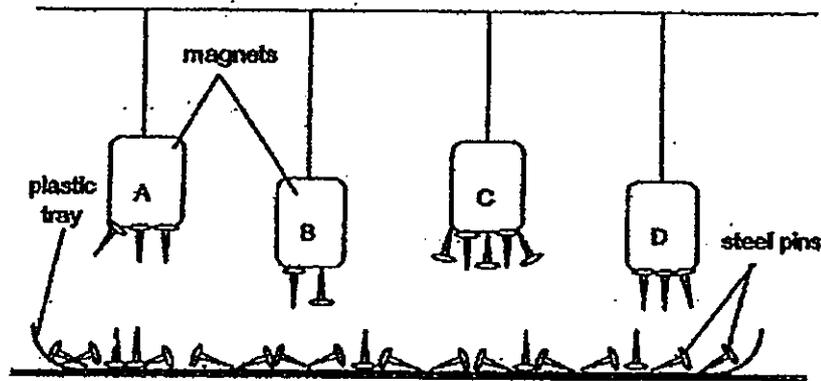


Which one of the following groups of animals best describes animal A, B and C?

	A	B	C
1)	Emu	Monkey	Goldfish
2)	Swan	Penguin	Tiger
3)	Whale	Sparrow	Snake
4)	Dolphin	Tortoise	Frog

()

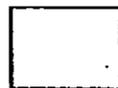
27. A, B, C and D are magnets of the same size hanging from strings of two different lengths as shown in the diagram below. A plastic tray of steel pins is placed below the magnets and different number of pins are attracted to the magnets.



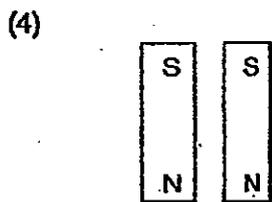
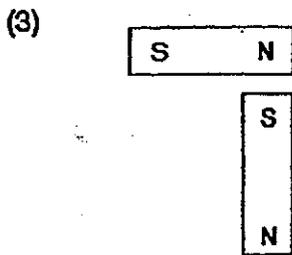
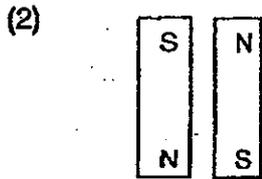
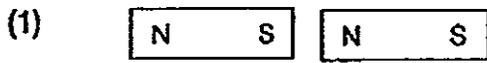
Based on the diagram above, arrange the magnets A, B, C and D, starting with the strongest to the weakest.

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

()

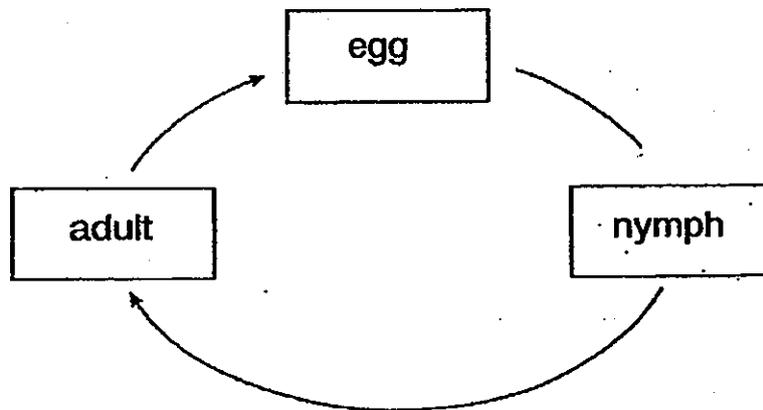


28. In which one of the following arrangements will the two magnets repel each other?



()

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



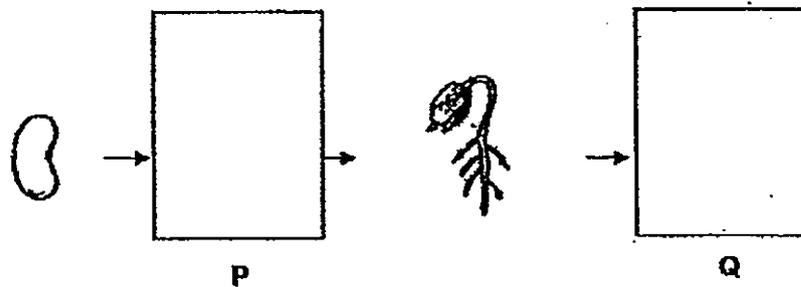
Which animal is likely to have the life cycle as shown above?

- (1) frog
- (2) beetle
- (3) butterfly
- (4) cockroach

()



30. The diagram below shows the growth of a young plant from a seed with two missing stages P and Q.



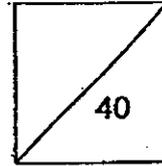
Which one of the following shows the correct stages for P and Q?

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

()



**HENRY PARK PRIMARY SCHOOL
2013 SEMESTRAL EXAMINATION 2
SCIENCE
PRIMARY 4**



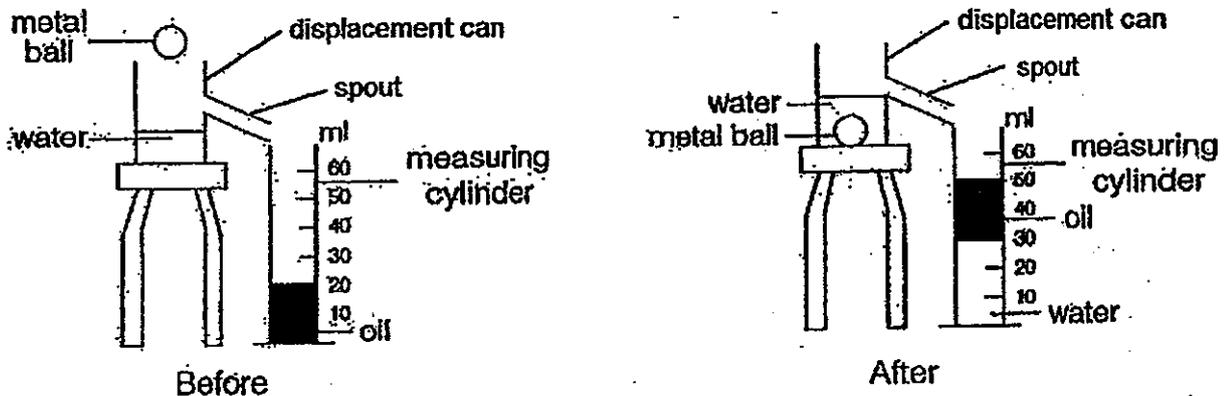
Name: _____

Class: Pr 4 _____

Booklet B (40 marks)

Write your answers to questions 31 to 44 in the spaces given.

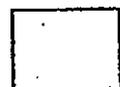
31. A metal ball was lowered into the displacement can as seen below. Some water flowed out from the spout into the measuring cylinder containing some oil.



a) What is the volume of the oil? (1m)

b) What is the volume of the metal ball? (1m)

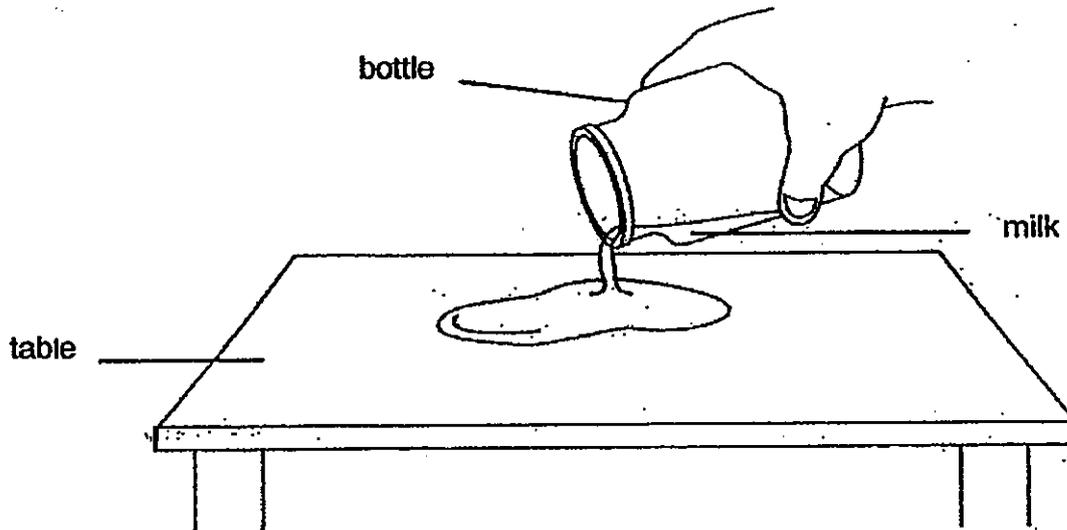
c) Explain how the volume of the metal ball is being measured in this setup. (1m)



32. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas
-------	--------	-----

(a) Benny pours milk from a bottle onto a table as shown below.

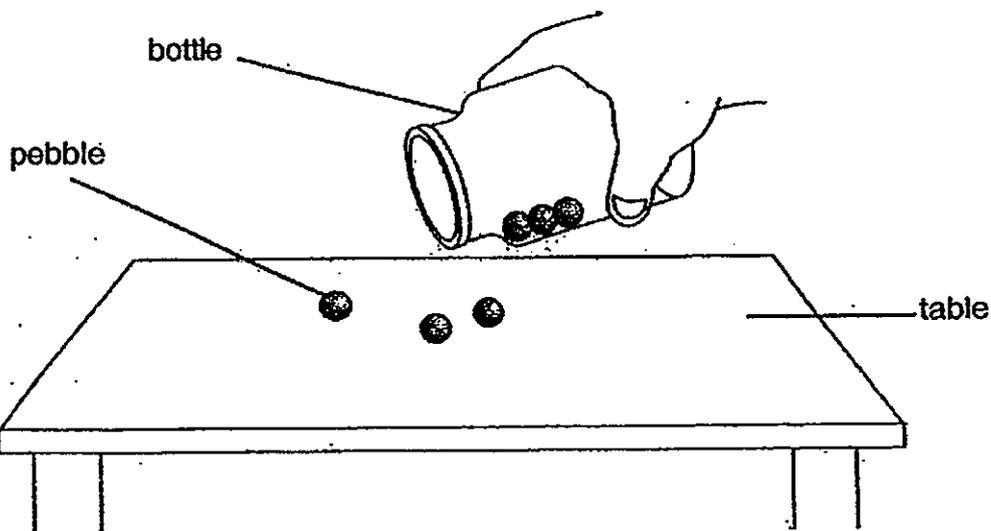


The volume of milk remains the same but its shape changes.

This shows that milk is a _____.

(1m)

(b) Benny pours some pebbles from a bottle onto a table as shown below.



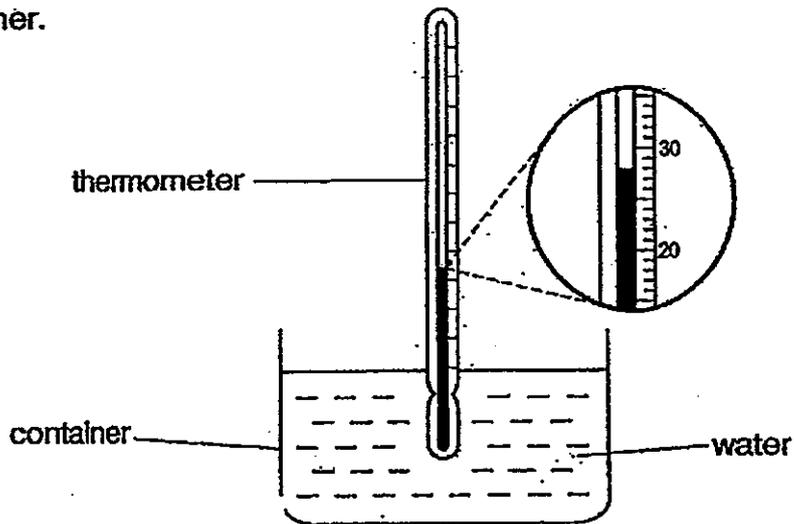
The shape and volume of the pebbles remain the same.

This shows that a pebble is a _____.

(1m)



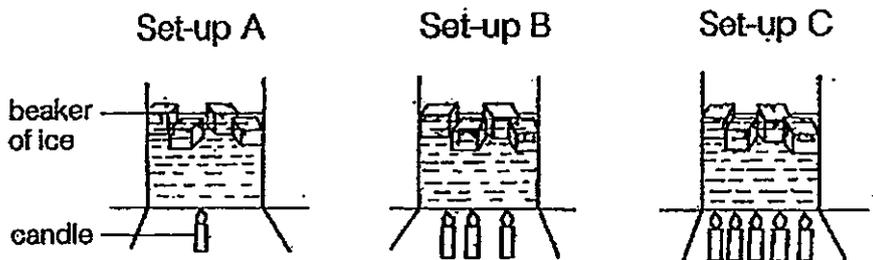
33. Doris used a thermometer to measure the temperature of the water in the container.



- a) What is the temperature of the water in the container? (1m)
- _____ °C
- b) Explain why the temperature of water would decrease when the container is placed in an air-conditioned room. (1m)



34. Elaine used three identical beakers and some identical candles to set up the experiment as shown below to find out how the amount of heat would affect the time taken for the ice to melt in the beaker of water.



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

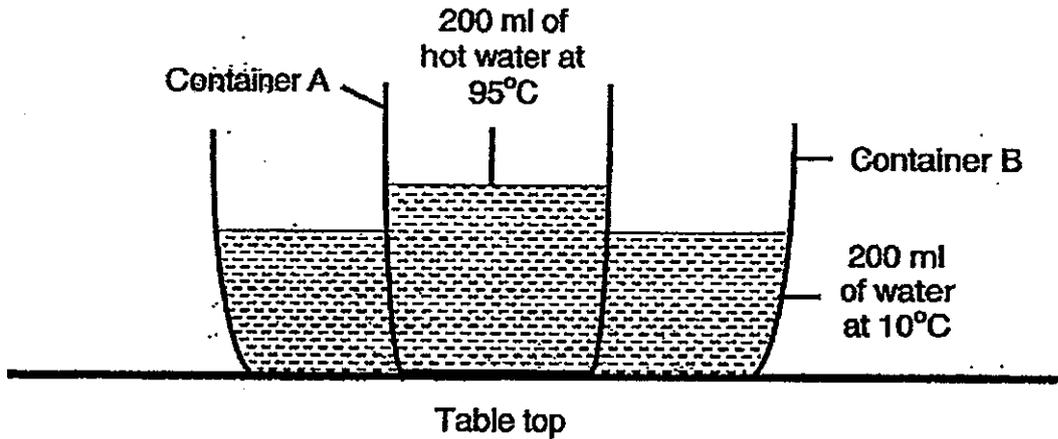
Set-up	Number of candles used	Time taken for ice to melt completely (mins)
A	1	12
B	3	7
C	5	4

a) Besides keeping the candles and the beakers the same, name 2 other variables that should be kept the same for a fair experiment. (2m)

b) Based on the results above, state how the number of candles affects the time taken for the ice to melt in the beaker of water completely. (1m)



35. Peter filled Container A with 200 ml of hot water at 95°C and then placed it into Container B which contained 200 ml of cold water at 10°C . He then left the set-up on a table in a room and the room temperature was 30°C .

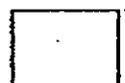


- a) Will the temperature of water in Container A and B, increase or decrease, after 10 minutes? (2m)

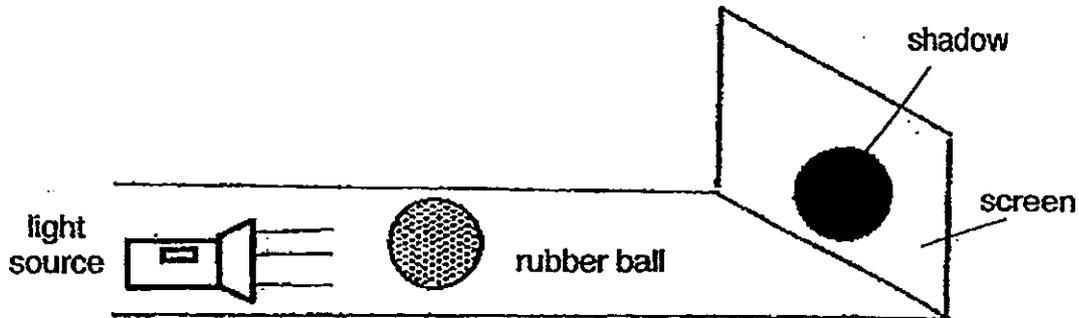
Temperature of water in Container A: _____

Temperature of water in Container B: _____

- b) Give a reason for your answer in (a) (2m)



36. Jeremy set up the following experiment as shown below.



- a) Based on the above set-up, suggest what Jeremy can do to cast a bigger shadow of the rubber ball on the screen. (1m)

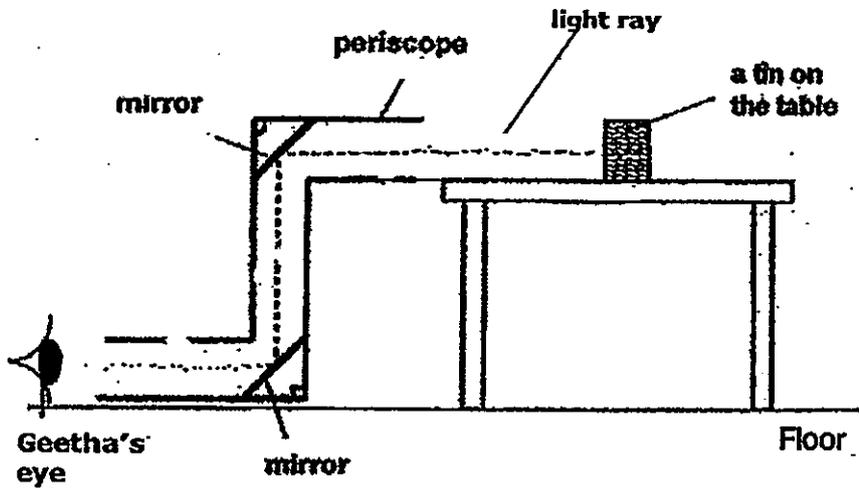
- b) Jeremy wants to investigate how the size of the rubber ball affects the size of its shadow. (2m)

Name the independent and dependent variable for his experiment.

Independent variable: _____

Dependent variable: _____

37. Geetha placed a tin on the table and used a periscope which she had constructed to see it.

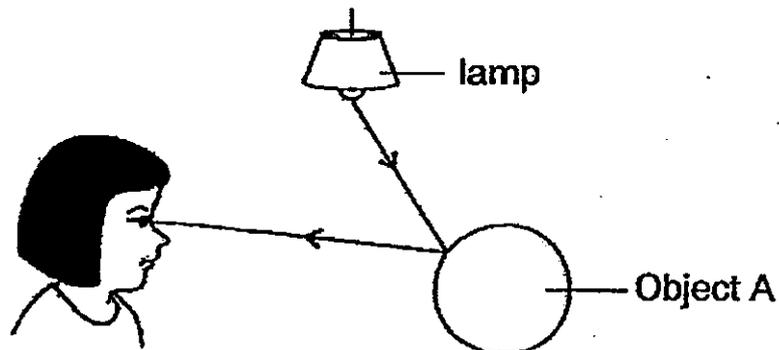


Using her periscope, Geetha was able to see the tin on the table although she was lying down on the floor.

a) In the diagram above, **DRAW THREE** arrowheads on the light rays (dotted lines) to show how Geetha was able to see the tin on the table. (1m)

b) Which property of light does the above setup show? (1m)

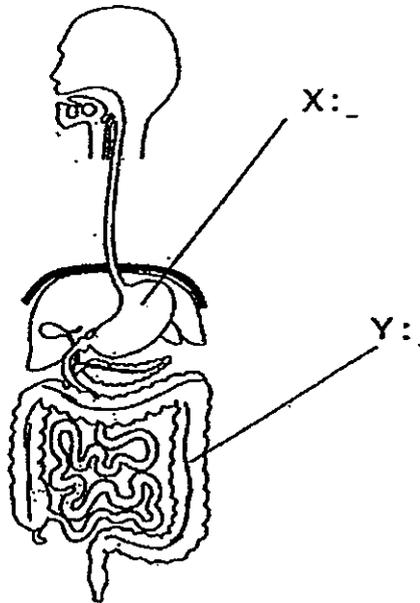
c) The diagram below shows how Kelly sees object A.



The _____ from the lamp is _____ by object A and enters Kelly's eye. (2m)



38. The diagram below shows the human digestive system.



- a) Name the labelled parts, X and Y, as shown in the diagram above. (1m)
- b) What happens to the undigested food in part Y? (1m)



39. Sandra eats 100g of food during her tea break at 3.00pm. The table below shows the amount of food left undigested by 3 different parts of the digestive system (stomach, small intestine and mouth) at different times.

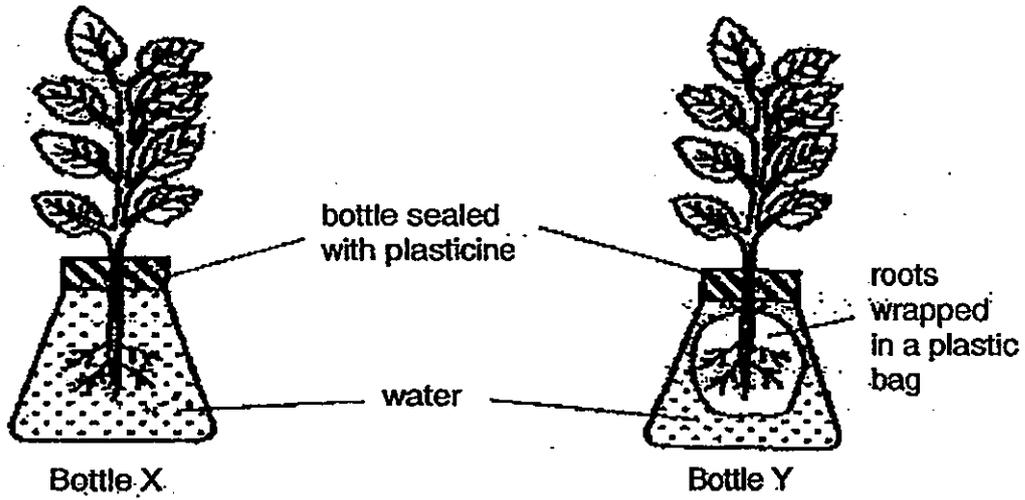
Amount of undigested food in X at 3.30pm (g)	Amount of undigested food in Y at 4.30pm (g)	Amount of undigested food in Z at 5.30pm (g)
99	50	16

- a) Part Y most likely represents the _____ (1m)
of the digestive system.
- b) What can be found at parts X, Y and Z of the digestive system to help with the digestion of food? (1m)

- c) In which part (X, Y or Z) would digested food be absorbed into the blood stream? (1m)



40. Elaine and Sarah carried out an experiment on the plants as shown below. They observed the water level in both bottles daily.

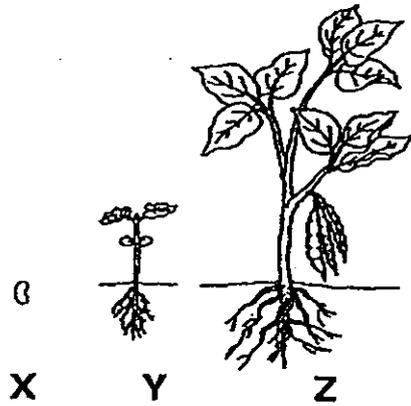


a) After a few days, what happened to the water level in Bottle X? Explain your answer. (1m)

b) What will happen to the plant in Bottle Y after 5 days? Explain your answer. (1m)



41. The diagram below shows the stages in the life cycle of a plant.



a) Choose the correct words from the box to answer the question below.

egg	seed	young plant	adult plant
-----	------	-------------	-------------

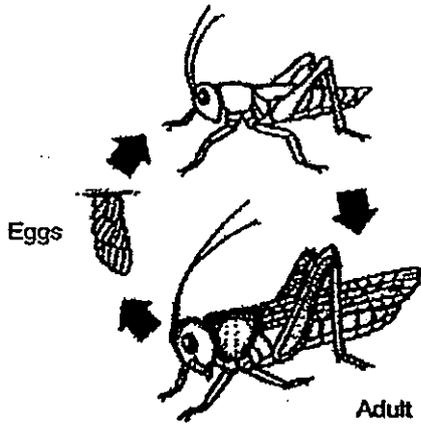
Name the stages Y and Z in the life cycle of the plant.

(2m)

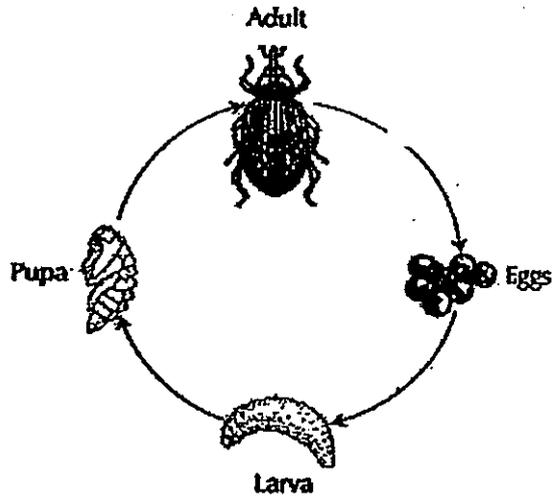
Y: _____

Z: _____

4. b) The diagrams below show the 3-stage life cycle of a grasshopper and the 4-stage life cycle of a mealworm beetle.



Life cycle of a grasshopper



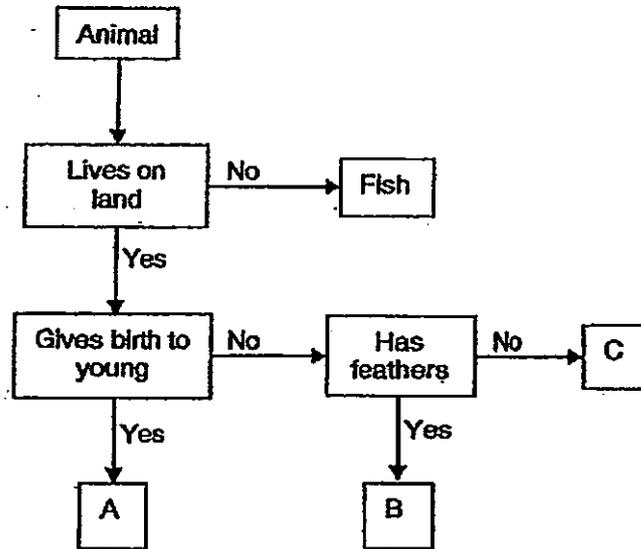
Life cycle of a mealworm beetle

i) State **ONE difference** between the two life cycles shown above. (1m)
 (Do not compare physical appearance and number of stages)

ii) Name another animal that has a similar life cycle to a mealworm beetle. (1m)



42. The flowchart below shows the characteristics of some animals.

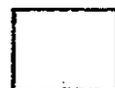


- a) Using the flowchart, complete the table below with the letter that best represents the given animals. (2m)

Animal	Letter
Eagle	
Snake	

- b) Based on the flowchart, state ONE similarity between Animal A and Animal B. (1m)

- c) Based on the flowchart, state ONE difference between Animal B and Animal C. (1m)

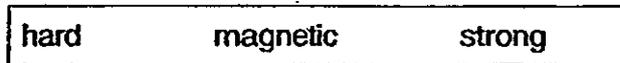


43. Angie places a magnet near a steel rod. The steel rod moves towards the magnet.



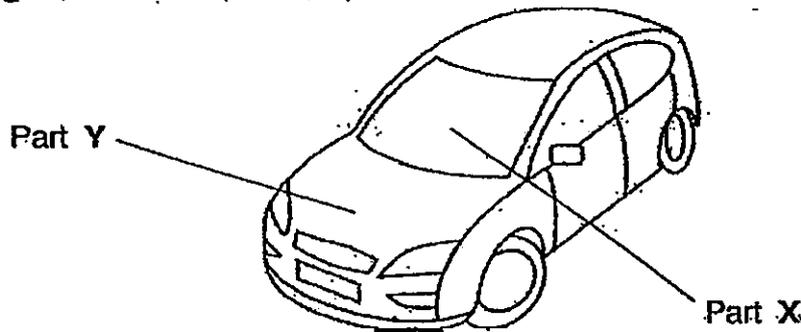
(a) The magnet exerts a _____ on the steel rod. (1m)

(b) Choose the correct word from the box to answer the question below.



Angie's observation shows that steel is a _____ material. (1m)

44. The diagram below shows a car.



(a) Part X is made of glass because it allows _____ to _____ to _____ (1m)
pass through so that the driver can see the road.

(b) Part Y is made of _____ because Y has to be _____ (1m)
strong.

End of Booklet B

Setter: Mr Nelson Tong



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : HENRY PARK

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

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

Q31a) 20ml

Q31b) 30cm³

Q31c) The metal ball is a solid, thus, it takes up space when it is placed in the displacement can, and as the metal ball is heavier than water, the metal ball sinks while the water level rises, go through the spout and into the measuring cylinder.

Q32a) liquid

Q32b) solid

Q33a) 28

Q33b) The water will lose heat to the air.

Q34a) The size of the ice cubes and the temperature of the ice cubes at first.

Q34b) The more candles are lighted, the shorter time it takes for the ice cubes to melt as the ice cubes will gain heat from the candles.

Q35a) Container A: Decrease

Container B: Increase

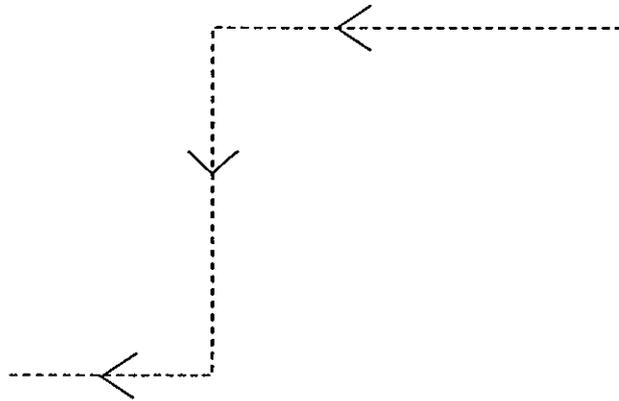
Q35b) The 200ml of hot water at 95°C in container A will lose heat to the 200ml of water at 10°C in container B as well as the surrounding air while the 200ml of water at 10°C in container B will gain heat from the 200ml of hot water at 95°C in container A.

Q36a) Move the rubber ball nearer to the light source.

Q36b) Independent variable: The size of the rubber ball

Dependent variable: Size of the shadow

Q37a)



Q37b) Light can be reflected.

Q37c) The light from the lamp is reflected by object A and enters Kelly's eye.

Q38a) X: Stomach

Y: Big intestine

Q38b) The water gets absorbed and the undigested food moves on to the anus to be passed out.

Q39a) Stomach

Q39b) Digestive juices

Q39c) Part Z

Q40a) The water level decreased. The roots took in the water.

Q40b) The plant will dry up. The roots of the plant are wrapped in a plastic bag, thus it cannot absorb water.

Q41a) Y: young plant

Z: adult plant

Q41bi) A mealworm beetle has a pupa stage in its life cycle while a grasshopper does not.

Q41bii) Butterfly

Q42a) Eagle: B

Snake: C

Q42b) They both live on land.

Q42c) Animal B has feathers while Animal C does not.

Q43a) pull

Q43b) magnetic

Q44a) light

Q44b) metal