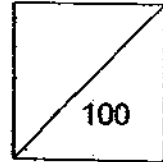




**HENRY PARK PRIMARY SCHOOL  
2009 SEMESTRAL EXAMINATION 2  
SCIENCE  
PRIMARY 4**

**Duration of Paper: 1 h 45 min**



Name: \_\_\_\_\_ (      )

Parent's Signature

Class: Pr 4 \_\_\_\_\_

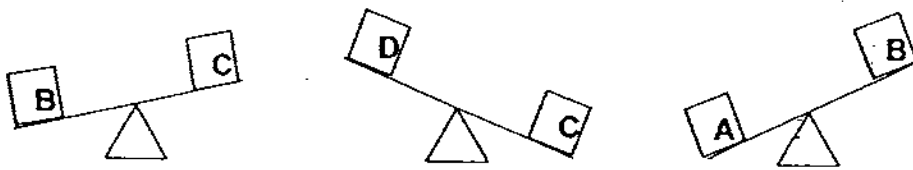
**PART 1 (60 marks)**

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 statements gives an accurate description of all matter?

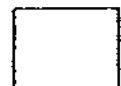
- (1) They have mass and occupy space.
- (2) They have mass and a definite volume.
- (3) They have definite shape and occupy space.
- (4) They have a definite volume and a definite shape. (      )

2. Jeremiah compared 4 objects A, B, C and D on balances as shown below.

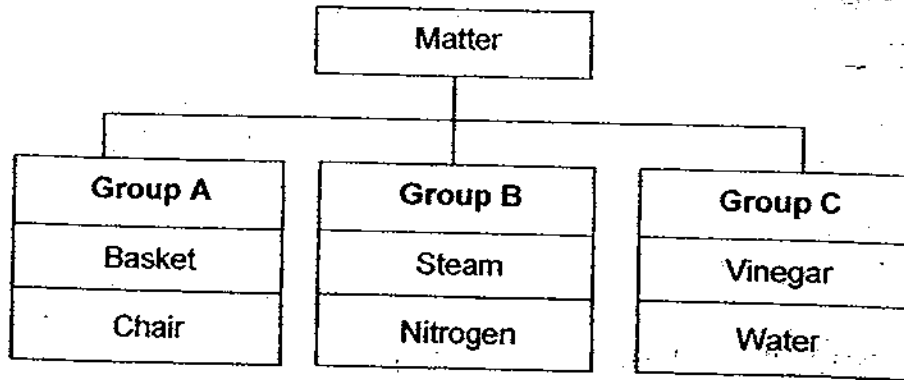


Which object has the greatest mass?

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



3. Study the classification table below.

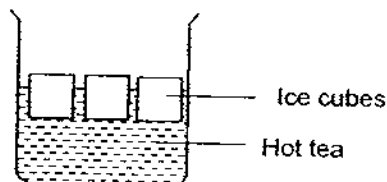


Which one of the following set of things can be added to the table above?

	Group A	Group B	Group C
(1)	Carbon dioxide	Oil	Ball
(2)	Ball	Oxygen	Water Vapour
(3)	Ice	Carbon dioxide	Milk
(4)	Plasticine	Oxygen	Sponge

( )

4. Some ice cubes were dropped into a beaker of hot tea.



Which of the following changes will most likely take place?

- A: The ice cubes decrease in volume.
- B: The hot tea and ice cubes change states.
- C: The hot tea loses heat and decrease in temperature.
- D: The ice cubes gain heat and increase in temperature.

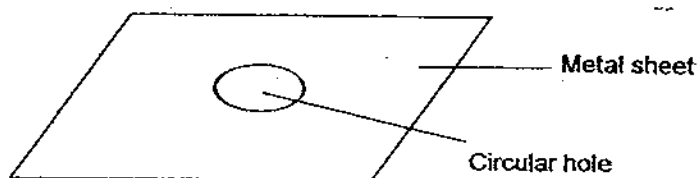
- (1) A and D only
- (2) A and C only

- (3) B and C only
- (4) B and D only

( )



5. A piece of metal sheet has a circular hole in the middle.



When the entire piece of metal sheet was heated evenly in an oven at high temperature for ten minutes, which one of the following describes and explains correctly what would happen?

	Observation	Explanation
(1)	The size of the hole remains the same	The entire metal sheet expanded equally throughout
(2)	The size of the hole increases	The entire metal sheet expanded equally throughout
(3)	The size of the hole increase	Only the area around the hole expanded
(4)	The size of the hole decreases	Only the area around the hole expanded

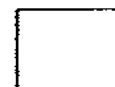
( )

6. Mohan wanted to find out which location, the Science laboratory, Music Room or the School Hall, has the highest room temperature. He placed a thermometer in each of the rooms.

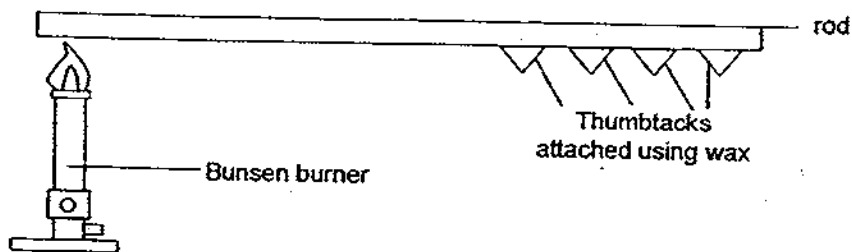
Which one of the following is the most important variable he must keep the same to ensure a fair test?

- (1) Type of thermometer used
- (2) Time of the day when the temperature is taken
- (3) Place where the thermometer is placed
- (4) Initial temperature of the thermometer

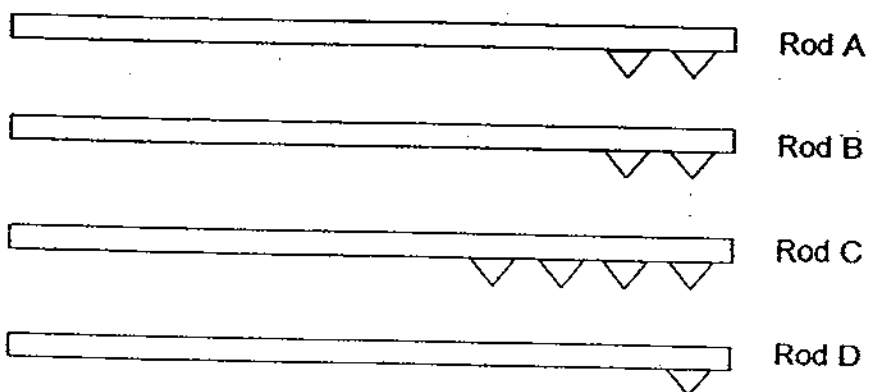
( )



7. Sally conducted an experiment using four identical rods A, B, C and D, made of different materials. She attached four thumbtacks to one end of each rod using the same amount of wax as shown below.



The four rods A, B, C and D, were heated with identical burners. After three minutes, the rods had the following results.



Based on the results above, which one of the following correctly arranges three of the rods, starting with the rod made of a material which is the best conductor of heat?

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

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

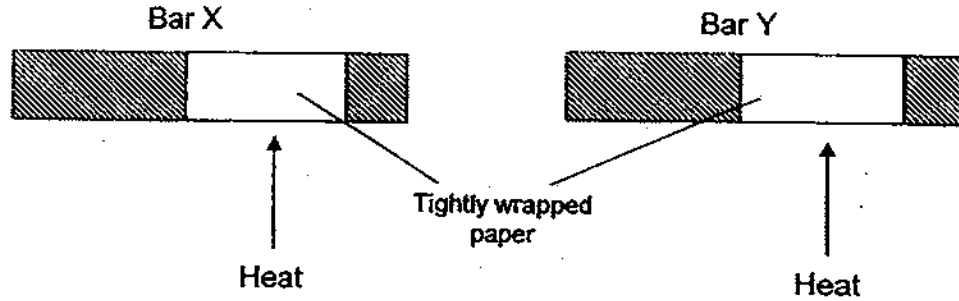
( )



8. Two bars, X and Y, of the same diameter, were wrapped tightly with paper as shown below.

Each bar was heated over the flame for the same duration.

The paper on Bar X was slightly burnt but the paper on Bar Y was not. Which set of materials are X and Y likely to be made of?



	Material of bar X	Material of bar Y
(1)	wood	iron
(2)	glass	wood
(3)	iron	steel
(4)	iron	wood

( )

9. Which of the following appliances produce heat that is useful?

- A: Iron
- B: Toaster
- C: Computer
- D: Television
- E: CD player

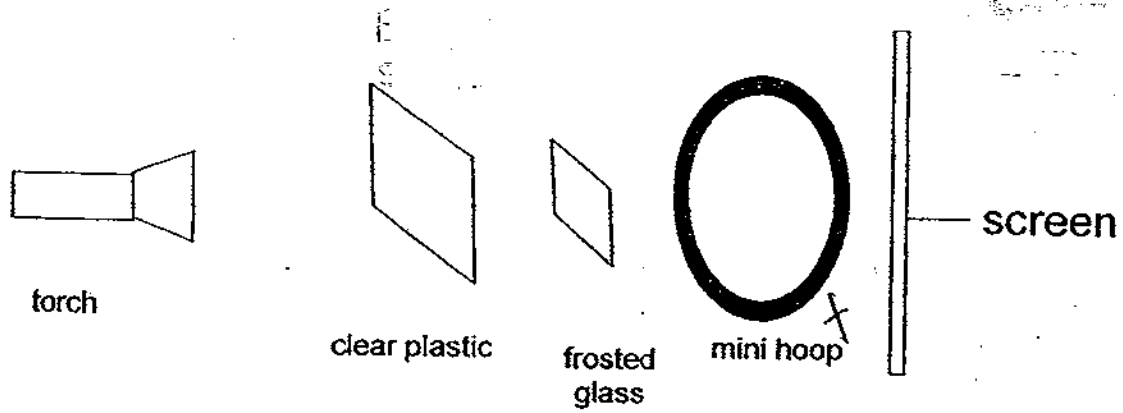
- (1) A and B only
- (2) C and D only

- (3) A, B and E only
- (4) C, D and E only

( )



10. Look at the set-up below

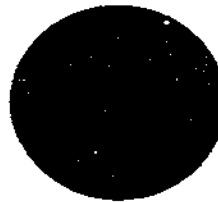


What would the shadow on the screen be like?

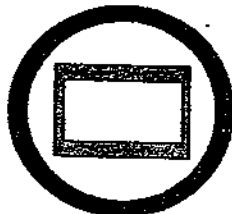
(1)



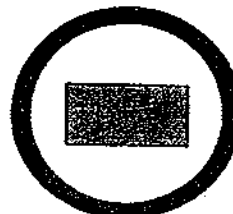
(2)



(3)



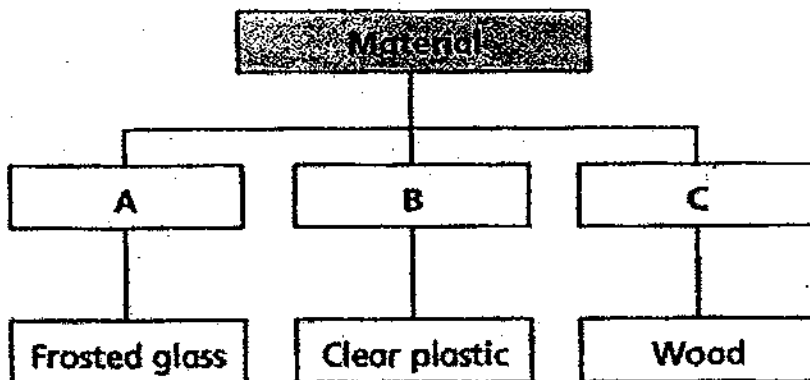
(4)



( )



11. The chart below shows the classification of some materials according to the amount of light they allow to pass through.



Which one of the following materials can be classified in Group A?

- (1) Clear glass
- (2) Rubber
- (3) Aluminium
- (4) Tracing paper

( )

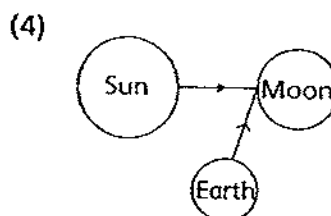
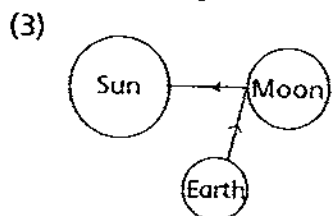
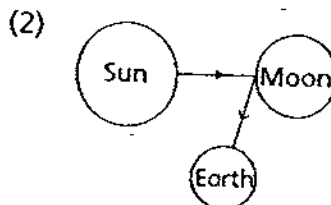
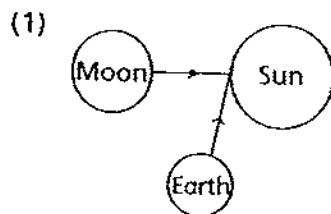
12. Which of the following statements about heat and light are true?

- A: Both are forms of energy.
- B: Both are usually found together.
- C: Both can be obtained from the sun.
- D: Both enable us to see things around us.

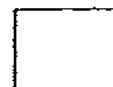
- (1) A only
- (2) C and D only
- (3) A, B and C only
- (4) B, C and D only

( )

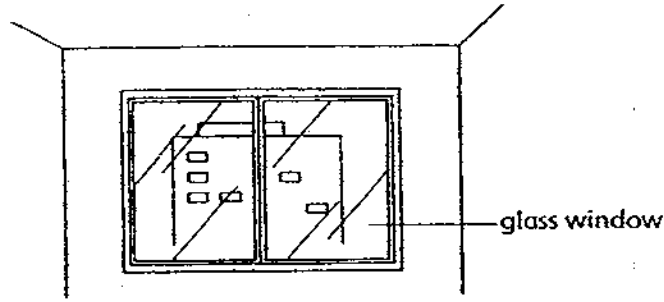
13. Which one of the following diagrams correctly shows how the light from the Sun is reflected by the Moon to the Earth?



( )



14. We are able to see objects outside a closed window because \_\_\_\_\_.

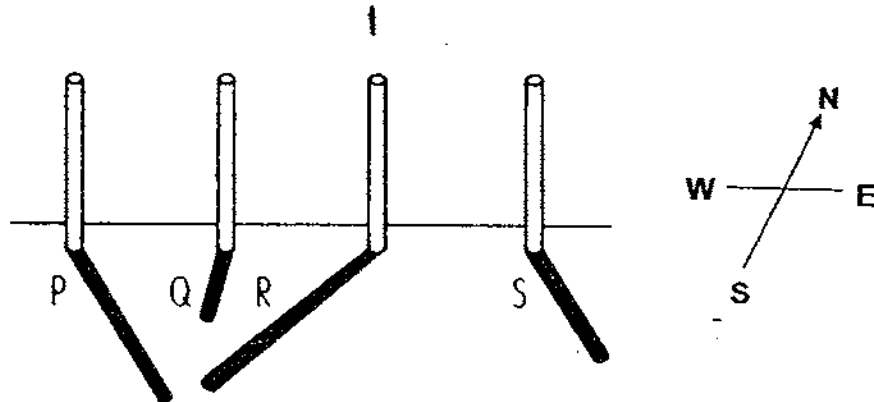


- A: the glass reflects light
- B: the glass allows light to pass through it
- C: the light that falls on the objects is reflected
- D: the light from our eyes falls onto the objects

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

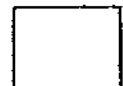
( )

15. 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 in the morning.



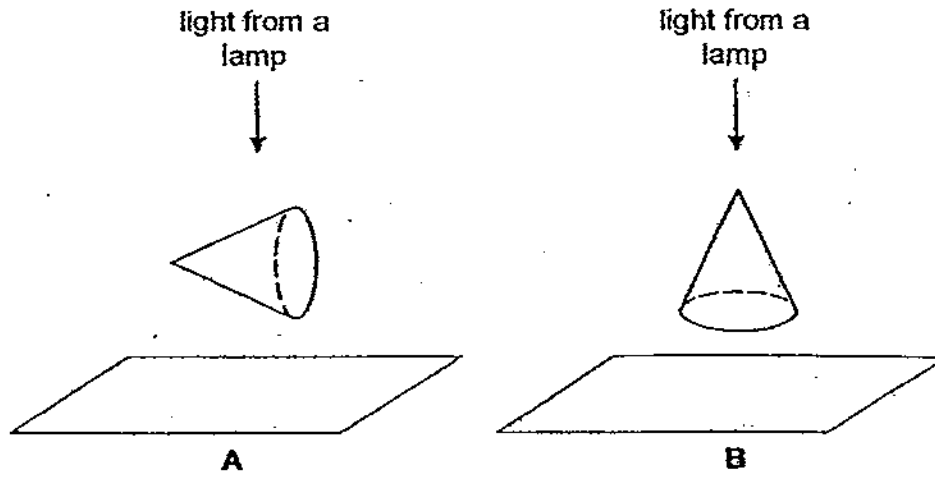
- (1) P, S, R, Q
- (2) P, S, Q, R
- (3) Q, R, S, P
- (4) R, Q, S, P

( )





16. Priscilla planned to study the shadows formed by two identical metal cones. The cones were placed in different positions directly under identical light sources in a dark room. Shadows were formed on screens A and B as shown below.



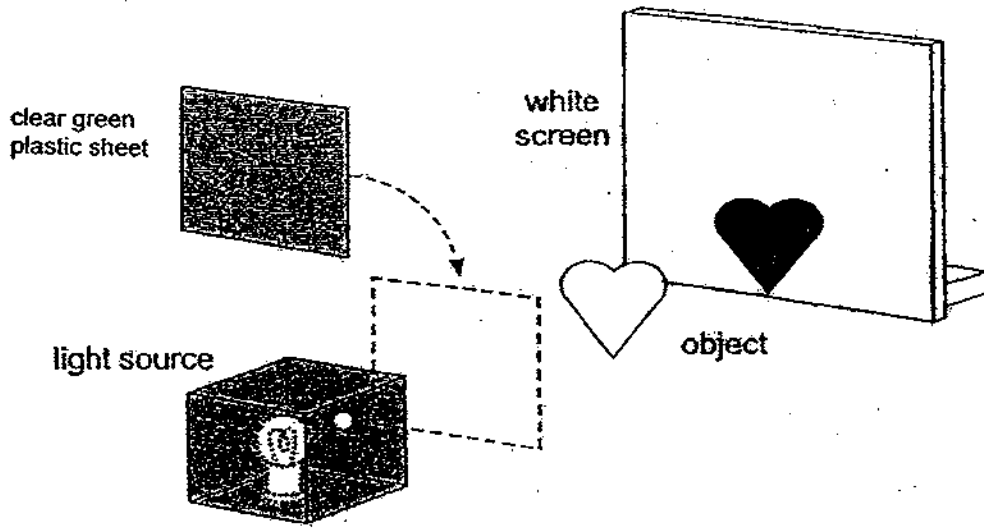
Which of the following shadows would be observed for each screen?

	Screen A	Screen B
(1)		
(2)		
(3)		
(4)		

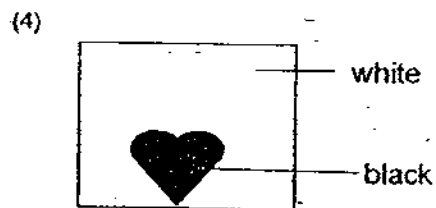
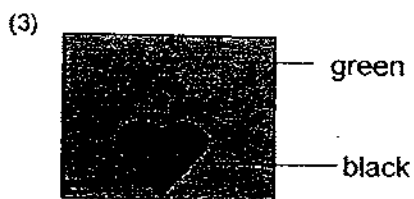
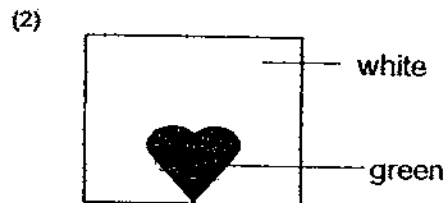
( )



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



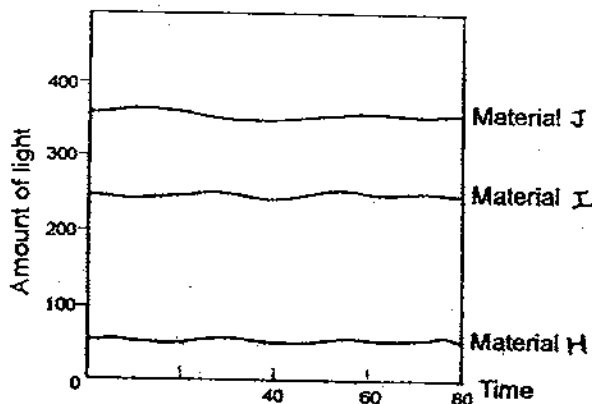
If a clear green plastic sheet was placed in front of the light source, what would be observed on the white screen?



( )



18. A datalogger was used to measure the amount of light passing through three different materials, H, I, J



Which of the following is most likely to be Material H, I and J?

	Material H	Material I	Material J
(1)	writing paper	cardboard	Tracing paper
(2)	cardboard	tracing paper	clear glass
(3)	writing paper	wooden plank	frosted glass
(4)	clear glass	frosted glass	cardboard

( )

19. Min Hui wants to find out which types of plants attract the most number of snails. She planted 3 different types of plants in her garden. There were 5 plants of each type. What are the variables she must keep the same to ensure a fair test?

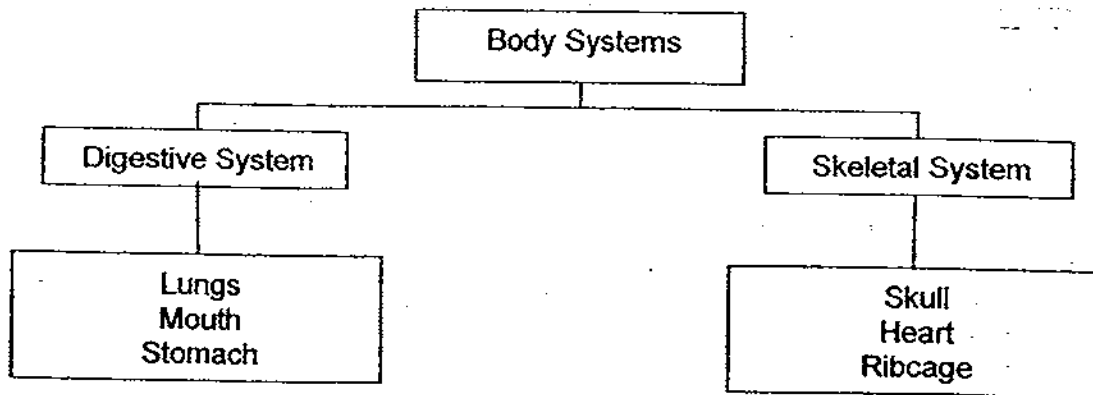
- A: The plot in which the plants are planted
- B: The amount of water given to the plants
- C: The number of snails found on the plants

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

( )



20. The classification chart below shows some body systems and their organs.



Which of the following organs have been classified wrongly?

- A: Lungs
- B: Heart
- C: Mouth
- D: Stomach

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

( )

21. Three pupils learning about systems made the following statements.

**Sally:** Our skeletal and muscular systems help us in our movement.

**Siti:** All of our body systems are equally important because they work together to carry out body functions in order for us to survive.

**Navin:** Our body can still function properly if our respiratory system breaks down because we still have the circulatory system to transport oxygen around our body.

Whose statement(s) is/are correct?

- (1) Siti only
- (2) Navin only
- (3) Sally and Siti only
- (4) Sally and Navin only

( )

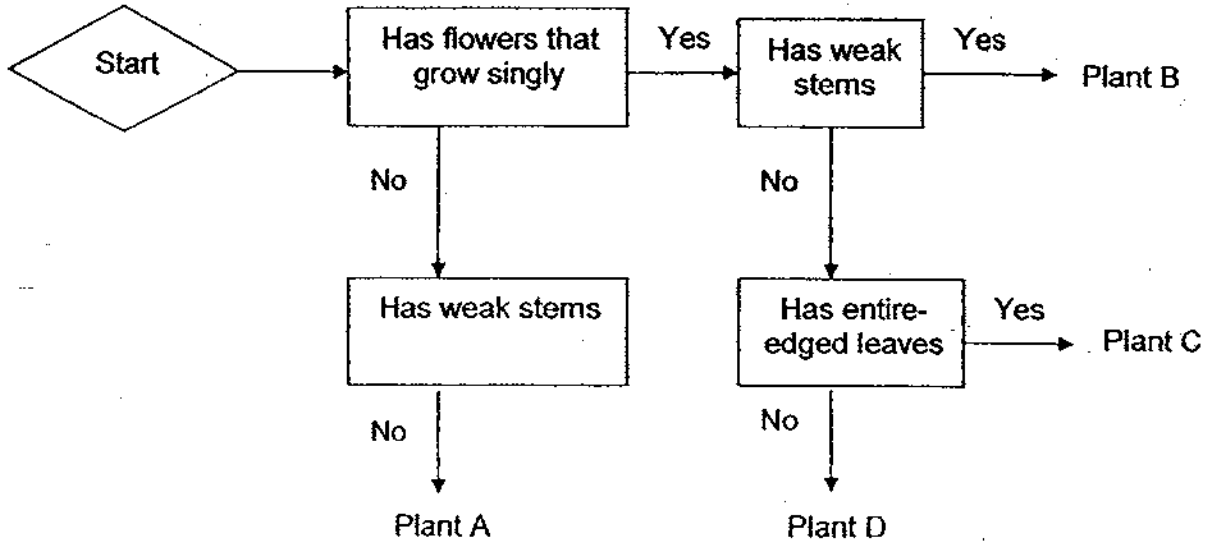


22. What will happen if the small intestine does not function properly?

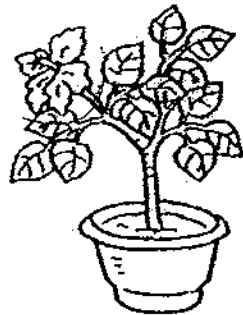
- (1) Food will not be able to reach the stomach.
- (2) Energy cannot be released by the body.
- (3) The body will not be able to absorb water from food.
- (4) Digested food cannot be absorbed by our body.

( )

23. The chart below shows the characteristics of Plant A, B, C and D.



Using the chart above, identify the plant below.

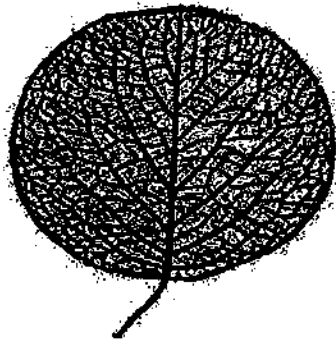


- (1) Plant A
- (2) Plant B
- (3) Plant C
- (4) Plant D

( )



24. The diagrams below show Leaf A and Leaf B.



Leaf A



Leaf B

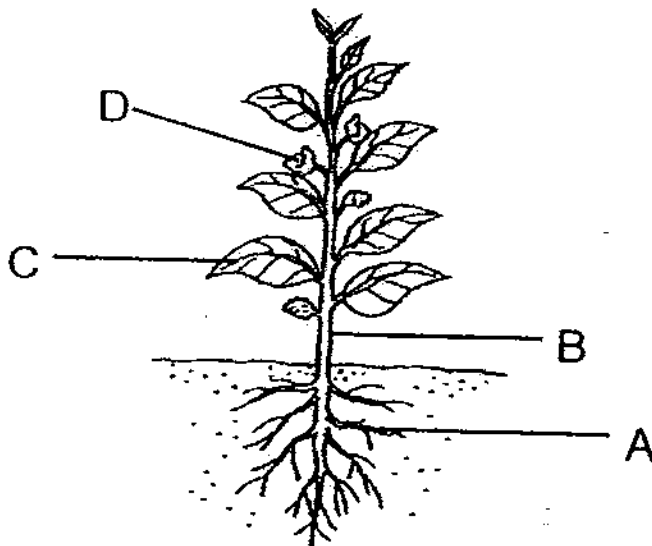
How is Leaf A different from Leaf B?

- A: In its edge
- B: In its shape
- C: In its vein patterns

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

( )

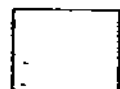
25. The diagram below shows a balsam plant.



Which part of the plant helps in the reproduction of the plant?

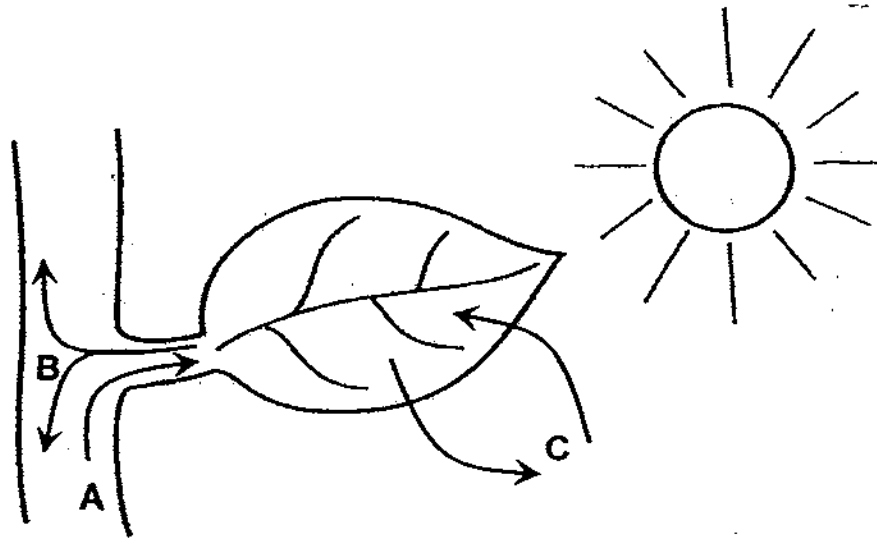
- (1) A
- (2) B
- (3) C
- (4) D

( )



26. The picture below shows a leaf in the process of making food.

The arrows represent the movement of substances A, B and C during the process.



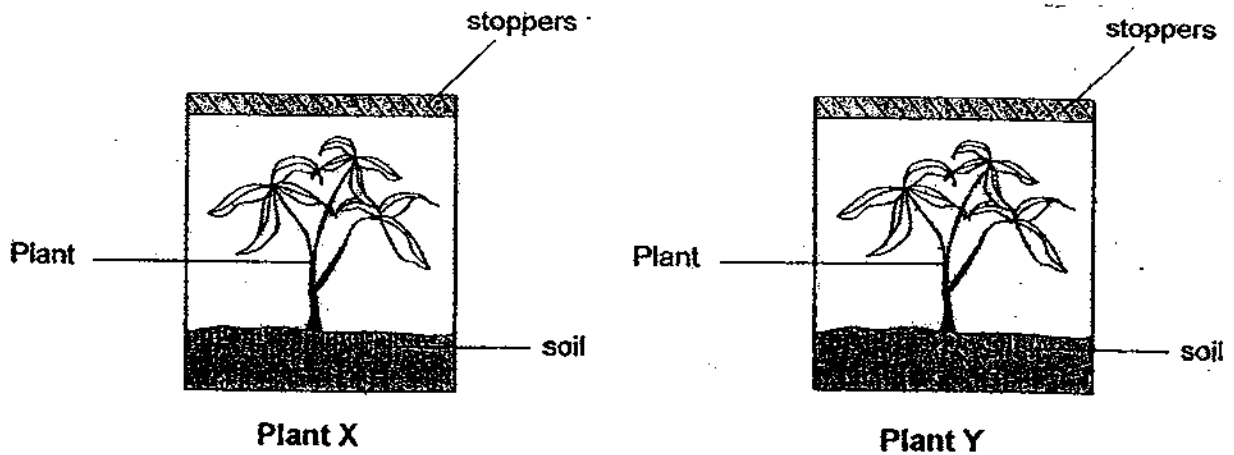
Which of the following correctly represents A, B and C respectively?

	A	B	C
<input checked="" type="checkbox"/>	Water	Food	Air
<input checked="" type="checkbox"/>	Water	Air	Food
<input checked="" type="checkbox"/>	Air	Food	Water
<input checked="" type="checkbox"/>	Food	Water	Air

( )



27. Micky conducted an experiment using two similar plants, X and Y as shown below.



The plants were watered and placed in the garden. After 5 days, he then recorded which plant was still alive.

What was Micky most likely trying to find out?

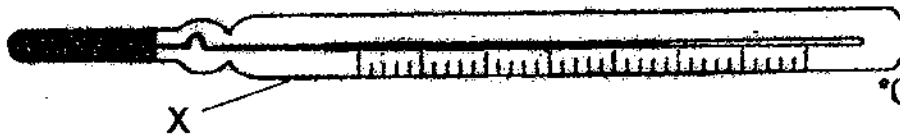
- (1) If the glass jar allowed light to pass through
- (2) If the plant is able to survive without its roots
- (3) If the plant is able to survive without its leaves
- (4) If water or food is more important to the survival of a plant

( )

28. The table below shows the characteristics of some materials.

Material	Flexible	Waterproof	Can see through	Able to withstand heat
A	Yes	Yes	No	No
B	Yes	No	No	No
C	No	Yes	Yes	Yes
D	No	No	No	Yes

Which material is most likely used to make Part X of a laboratory thermometer?



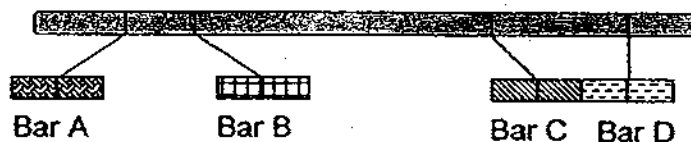
- (1) A
- (2) B
- (3) C
- (4) D

( )





29. The diagram below shows four metal bars of the same size tied to a pole.



Four pupils made the following statements.

- Sam: Bar A is a magnet.
- Xiaoli: Bar B is not a magnet.
- Teena: Bar C is made of a magnetic material.
- Gautam: Bar D is made of aluminium.

Whose statements are wrong?

- (1) Sam and Xiaoli only
- (2) Sam and Teena only
- (3) Xiaoli and Gautam only
- (4) Teena and Gautam only

( )

30. The table below describes the different stages of the life cycles of three animals.

Description	Animal X	Animal Y	Animal Z
Young resembles adult.	X	√	√
Young goes through a process called moulting.	√	X	√
Stops feeding for a period of time in its life cycle.	√	X	X

Which one of the following is correct?

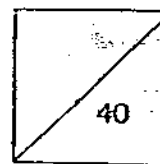
Animal X	Animal Y	Animal Z
<del>(1) Butterfly</del>	Whale	Dragonfly
<del>(2) Cockroach</del>	Tiger	Mosquito
<del>(3) Mosquito</del>	Goldfish	Butterfly
<del>(4) Beetle</del>	Zebra	Ladybird

( )

End of Part 1



HENRY PARK PRIMARY SCHOOL  
2009 SEMESTRAL EXAMINATION 2  
SCIENCE  
PRIMARY 4



Name: \_\_\_\_\_ (       )

Class: Pr 4 \_\_\_\_\_

**PART 2 (40 marks)**

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

31. a) Hermoine listed two similarities between liquid and gas.

- Both liquid and gas have mass.
- Both liquid and gas take up space.

i) State another similarity between liquid and gas.

(1m)

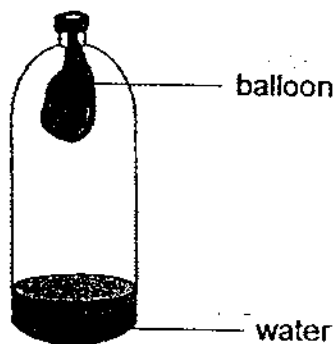
\_\_\_\_\_

ii) Which property of gas is not found in liquid and solid?

(1m)

\_\_\_\_\_

b) Ron inserted a balloon into a bottle partly filled with water as shown below.



When he blew into the balloon, he found it difficult to inflate it.

i) Explain why it was difficult for Ron to inflate the balloon in the bottle.

(1m)

ii) Without removing the balloon, suggest what Ron can do to inflate the balloon (by blowing the same way) more easily.

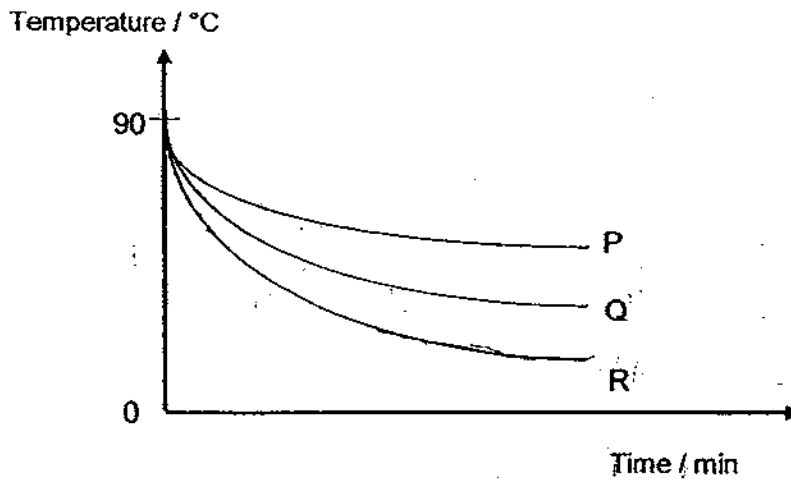
(1m)

\_\_\_\_\_

\_\_\_\_\_



32. Bob carried out an experiment to find out which type of cup was best for keeping coffee hot. He poured 200ml of coffee at 90°C into a plastic, metal and styrofoam cup of identical sizes. He recorded the changes in the temperature of the coffee in the three cups and plotted the graph as shown.



- a) Based on the graph above, which line, P, Q or R, represents the temperature changes of the coffee in the metal cup? (1m)

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- b) Use the information from the graph to explain your answer in (a). (1m)

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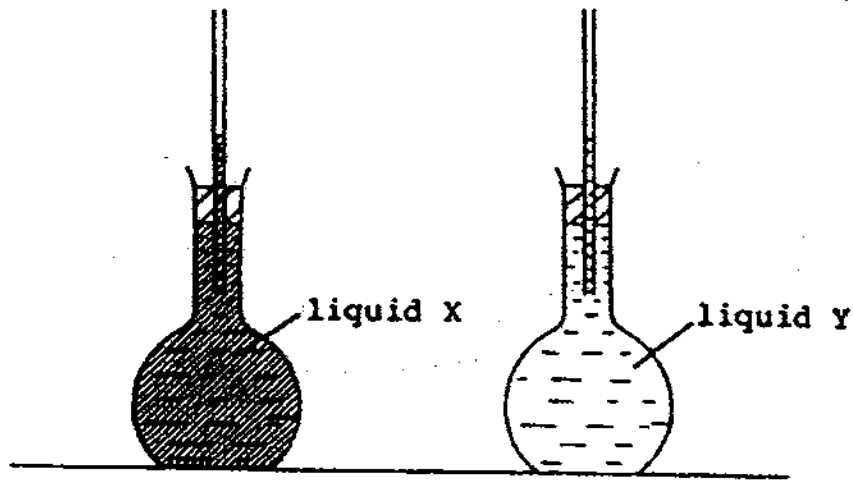
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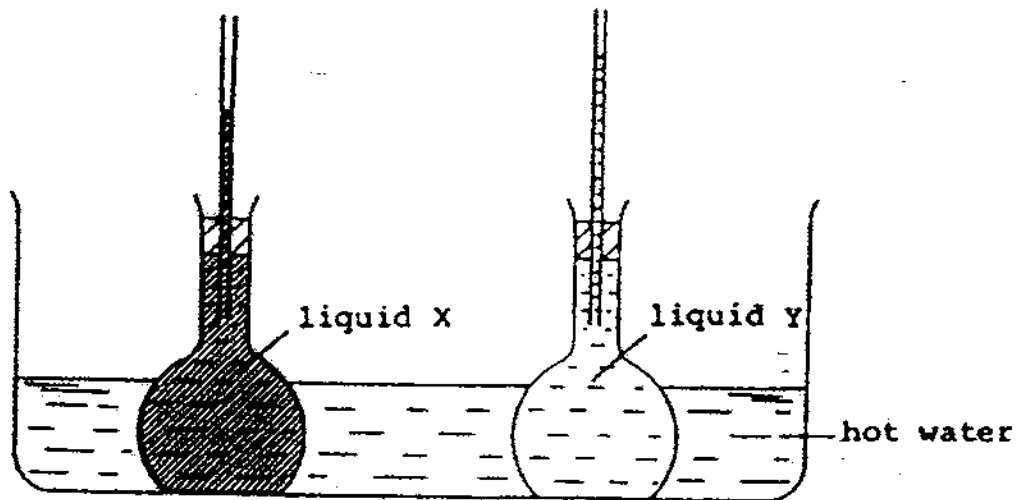


33. A group of P4 pupils conducted an experiment to compare the expansion of the two different liquids, X and Y. They filled one flask with liquid X and the other flask with liquid Y. The levels of the liquid in the glass tube were the same at the beginning.



At the beginning of the experiment

The flasks were then placed in a basin of hot water. After 50 seconds, the liquids rose in the tubes as shown in the diagram below.

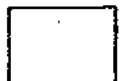


At the end of the experiment

- a) What is the purpose of using hot water in this experiment? (1m)

---

---



33. b) Based on the results of the experiment above, which properties of the liquids change when they were heated? Tick (✓) in the correct box. (1m)

	Properties	Tick (✓) if changed
(i)	Mass	
(ii)	State	
(iii)	Volume	
(iv)	Temperature	

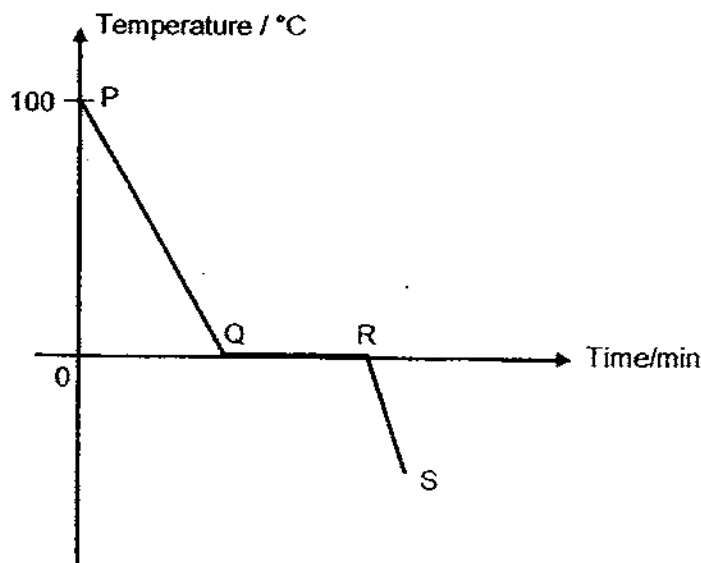
- c) From the results of this experiment, what conclusion can the pupils make about liquid X and Y? (1m)

---



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34. A beaker of boiling water was left to cool in a classroom. The changes in temperature of the water were recorded and shown in the graph below.



Based on the graph, identify if these statements are True or False by ticking in the correct column. (2m)

	Statements	True	False
(a)	The water has changed into solid state at RS.		
(b)	The water is gaining heat at PQ.		

- c) Nora holds a cube of ice in her hand. Her hand feels cold. Explain why her hand feels cold while holding the ice cube. (2m)

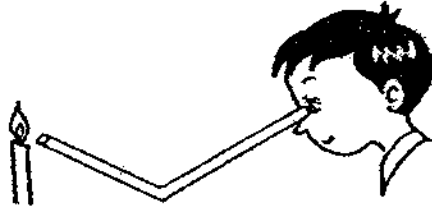
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35. Jeremy wants to look at the candle flame through the straw. However, he is unable to see the flame.



- a) Without cutting the straw, what must Jeremy do in order to see the candle flame through it? (1m)

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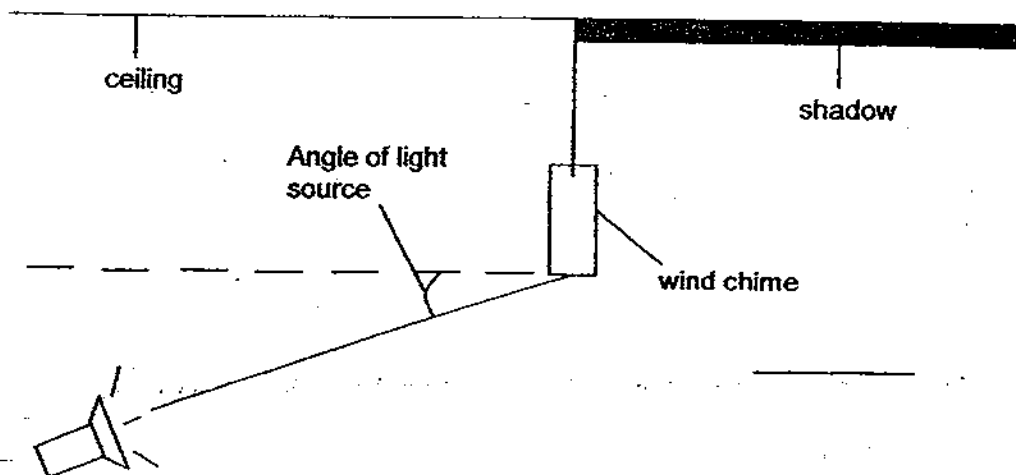
- b) From the above experiment, what can Jeremy conclude about the property of light? (1m)

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36. While keeping the distance between the wind chime and the torchlight the same, Christopher shone his torchlight at the wind chime from different angles as shown in the diagram below.



Christopher measured the length of each shadow formed. The table below shows his results.

Angle of light source (degree)	Length of shadow (cm)
40	35
50	30
60	25
70	20
80	15

a) Identify the independent and dependent variables for Christopher’s experiment. (1m)

Independent variable: \_\_\_\_\_

Dependent variable : \_\_\_\_\_

b) What can Christopher conclude from his experiment? (1m)

\_\_\_\_\_

\_\_\_\_\_

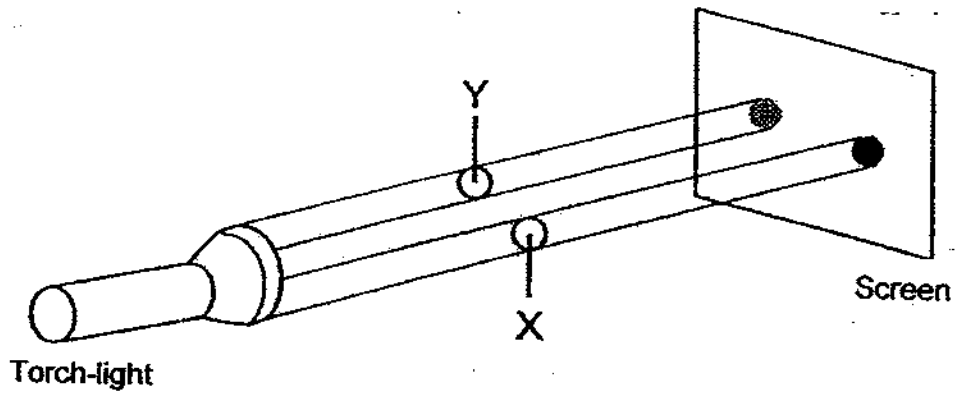
c) How can Christopher ensure that his results are reliable? (1m)

\_\_\_\_\_

\_\_\_\_\_



37. Jackie set up the experiment below. A torch was shown onto two objects as shown. Object X forms a dark shadow on the wall while Object Y forms a light shadow.



a) Identify which of the following Object X and Object Y are likely to be: (1m)

glass marble: \_\_\_\_\_

rubber ball: \_\_\_\_\_

b) Explain why Object X formed a darker shadow than Object Y. (1m)

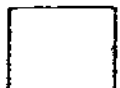
\_\_\_\_\_  
\_\_\_\_\_

c) What will the colour of the shadow of Object X be if red-light is shone through the torch? (1m)

\_\_\_\_\_  
\_\_\_\_\_

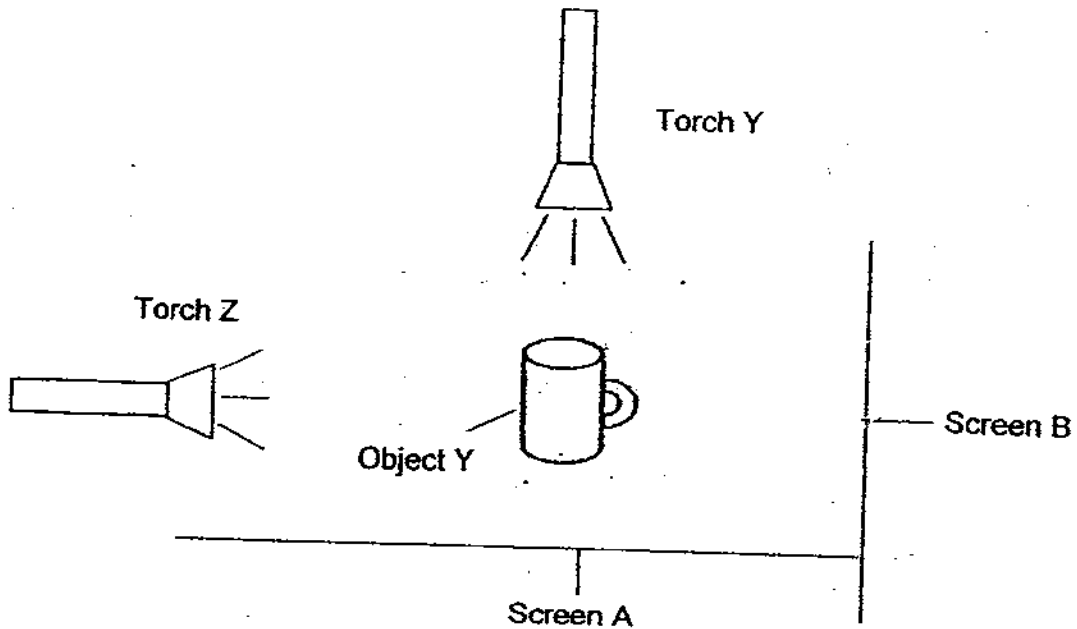
d) What must Jackie do to project more shadows of Object X and Y onto the screen? (1m)

\_\_\_\_\_  
\_\_\_\_\_





38. Shu Ling carried out the experiment below by placing Object Y between 2 light sources and 2 screens. She then drew the shadows formed on Screen A and B.



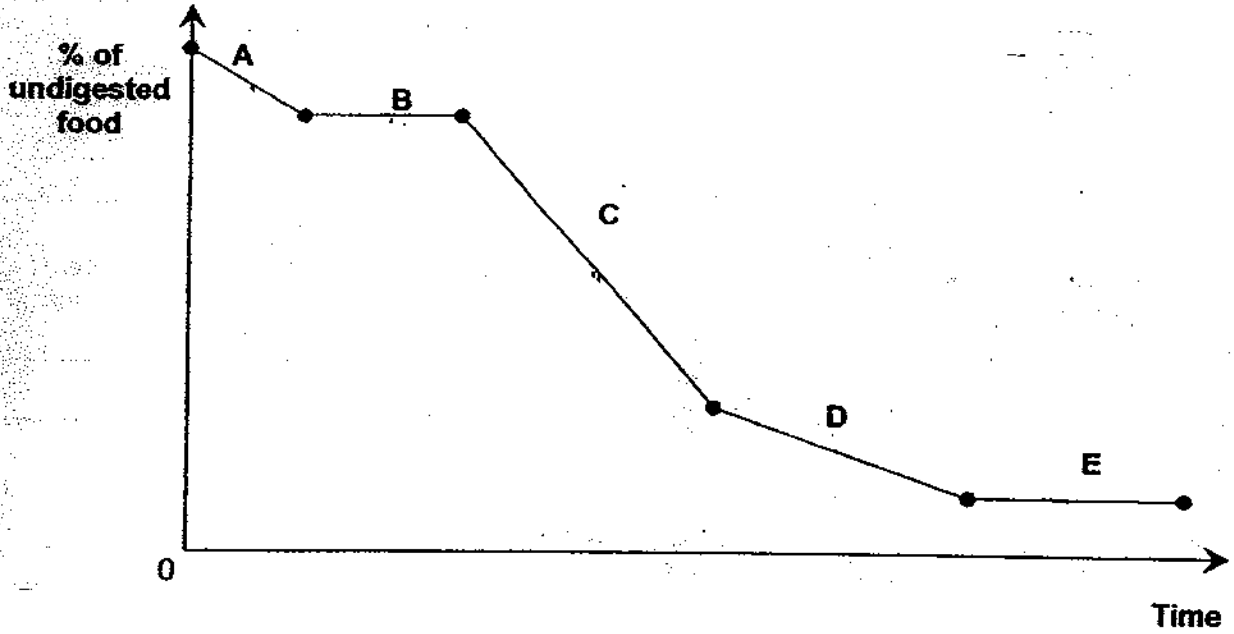
- a) Draw the shadows that will appear on Screen A and Screen B. (2m)

Screen A	Screen B

- b) Mark the new position of Object Y in the picture above with the letter X to show how Shu Ling can create a smaller shadow of Object Y on Screen B. (1m)



39. The graph below shows the percentage of undigested food at different parts of our digestive system. Line A represents digestion taking place at the mouth.



a) Which line, A, B, C, D or E shows food being digested the fastest? (1m)

\_\_\_\_\_

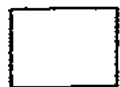
b) Which 2 lines (A, B, C, D, E) show no digestion taking place? (1m)

\_\_\_\_\_

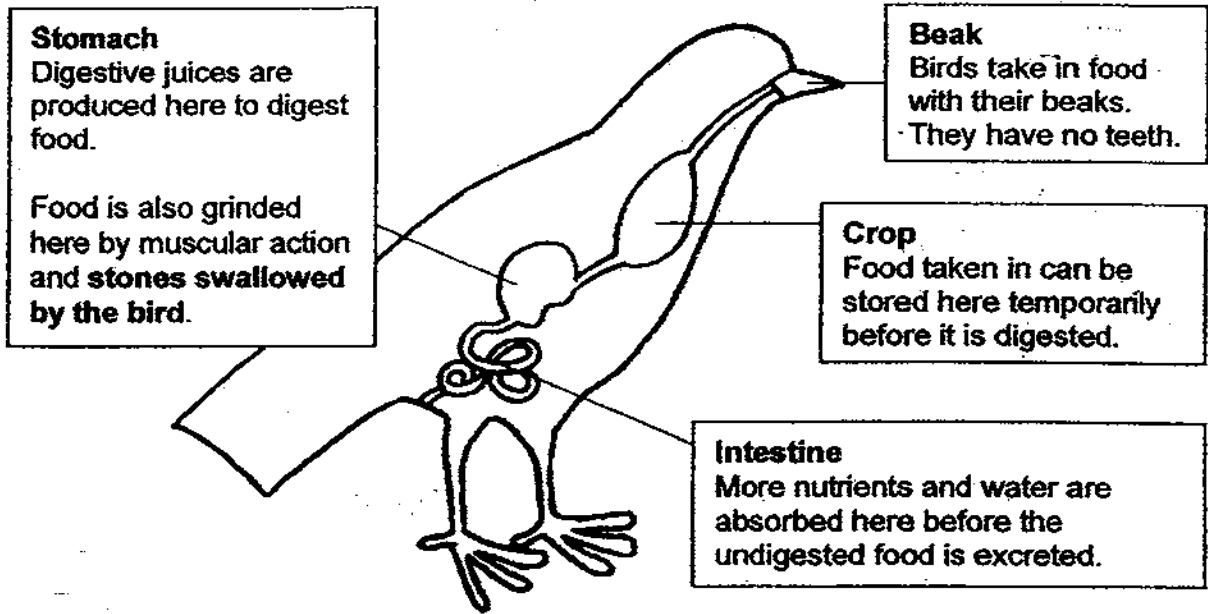
c) Explain why no digestion takes place at those organs represented by the lines in your answer in (b). (1m)

\_\_\_\_\_

\_\_\_\_\_



40. The picture below shows the digestive system of a bird.



a) Based on the information given, state ONE difference between the digestive systems of a bird and a human. (1m)

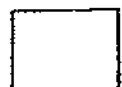
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b) Birds have to swallow stones as stated in the picture above. State a reason why humans need not do that. (1m)

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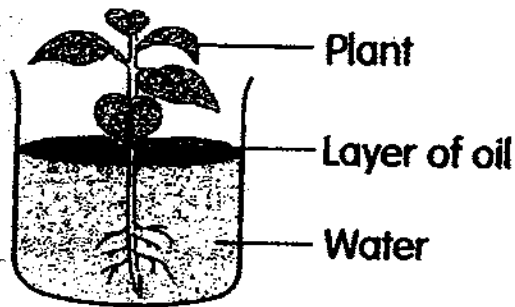
41. Tom carried out an experiment to find out if water is taken in by the roots or the leaves of a plant.

He placed 2 plants in 2 similar beakers, P and Q, each containing 200ml of water.

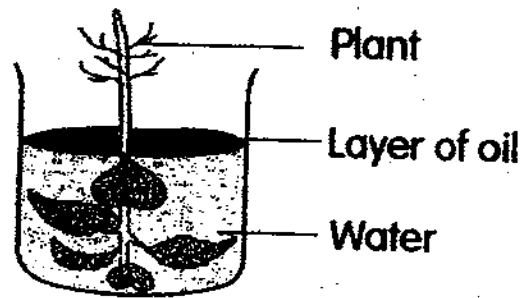
The plant in Beaker P is placed with its roots in the water, while the plant in Beaker Q is placed with its leaves submerged in the water.

He then poured a layer of oil over both beakers of water to prevent water from evaporating.

He recorded the amount of water left in the beakers over 5 days and recorded his data in a table.



Beaker P



Beaker Q

Number of days	Amount of water left in Beaker P (ml)	Amount of water left in Beaker Q (ml)
0	200	200
1	180	200
2	145	200
3	100	200
4	80	200
5	55	200

a) What is the relationship between the number of days and the amount of water in Beaker P? (1m)

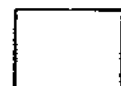
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b) What is the dependent variable in Tom's experiment? (1m)

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c) What can Tom conclude from this experiment? (1m)

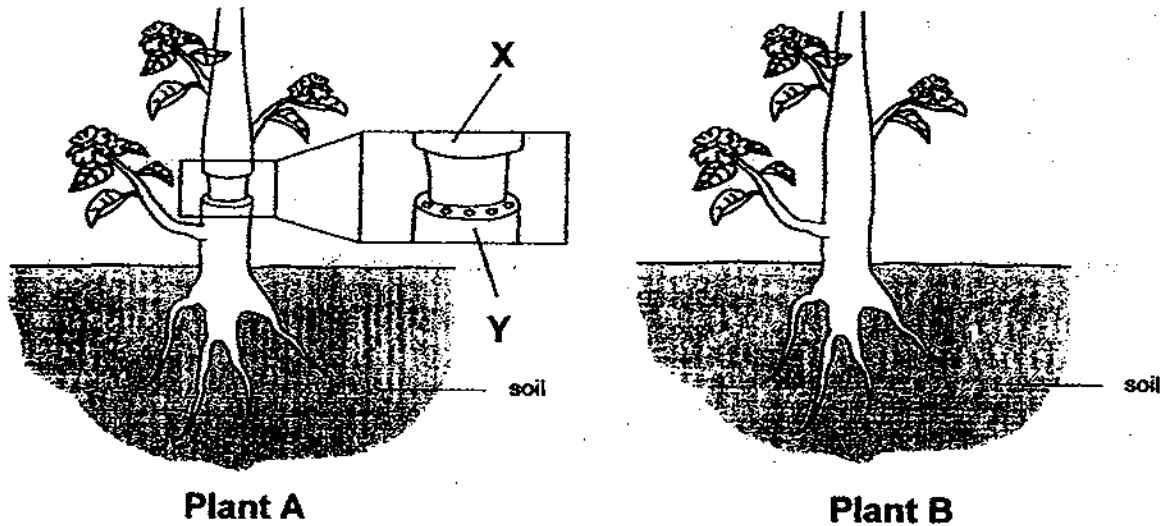
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42. Megan wanted to find out what would happen to a plant if part of its stem was removed.

She carried out the experiment with 2 similar plants, A and B. She removed the outer ring of the stem between positions X and Y of Plant A.

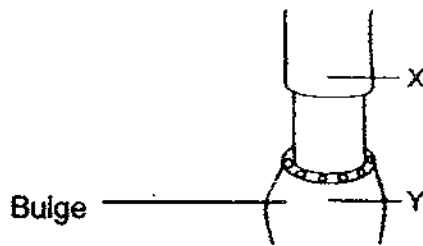
She then placed both plants in the garden and watered them every day for a week. She observed the plant every day.



a) Other than the type of plant and where they are placed, state 1 other variable that Megan must keep the same for a fair investigation. (1m)

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b) After 2 days, Megan noticed a bulge at the stem of Plant A as shown below.



i) Name the substance that could be causing the bulge. (1m)

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ii) Explain why the bulge formed. (1m)

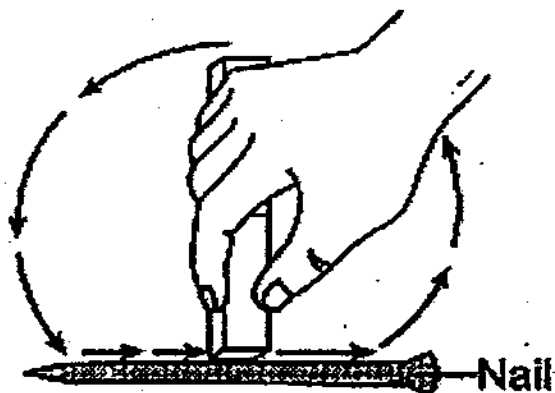
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43. Xiaoming carried out an experiment to find out how the strength of a magnet made using the stroking method is affected by the number of strokes.



He carried out the experiment 3 times, adding 10 strokes each time. He recorded his results in the table below.

Number of strokes	Number of paper clips attracted
10	3
20	5
30	6
40	8

- a) Based on the data above, what can Xiaoming conclude about his investigation? (1m)

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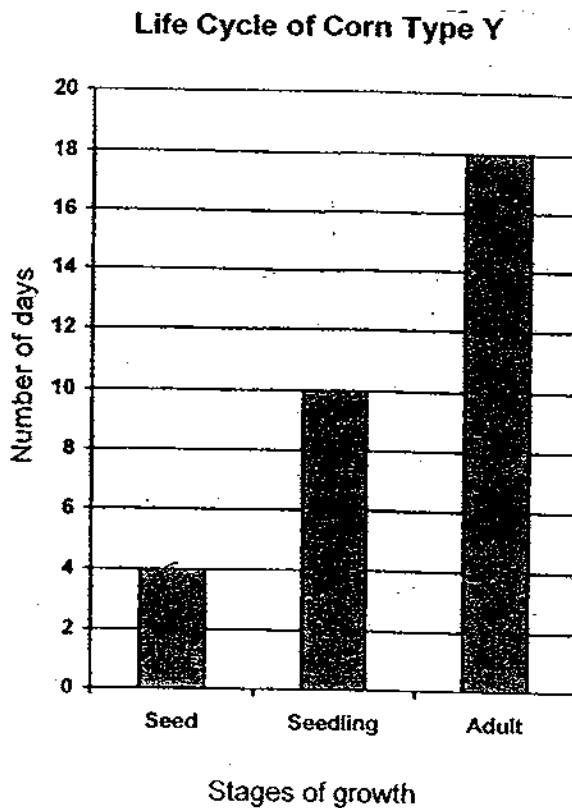
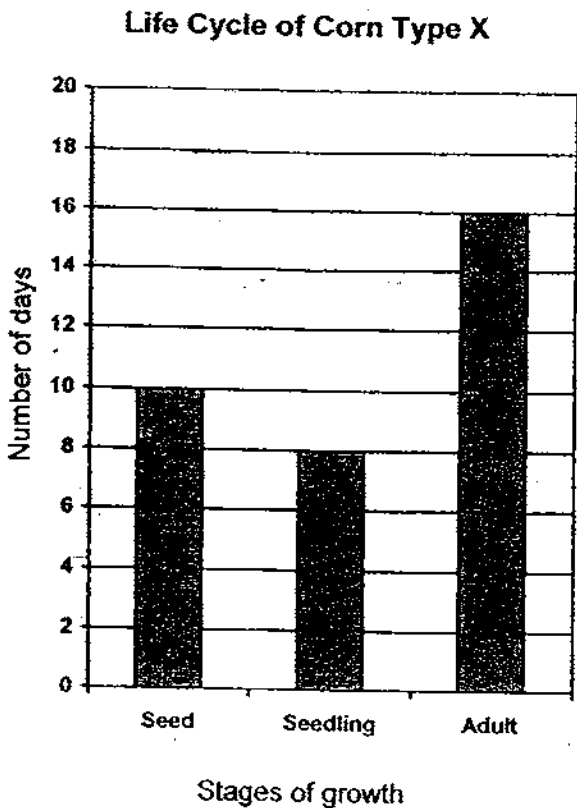
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- b) Predict the number of paper clips attracted if Xiaoming stroked the nail 50 times. (1m)

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44. The graphs below show the number of days taken for each stage of growth in the life cycle of 2 types of corn plant, Corn Type X and Corn Type Y.



- a) Farmer Tan wants to grow corn in his farm. He wants to harvest the corn as quickly as possible. (1m)

Which corn type, X or Y should he plant in his farm?

- b) Explain your answer in (a). (1m)

End of Part 2

Settlers: Ms Tan YH  
 Ms Kwok HM  
 Mrs Seow JJ



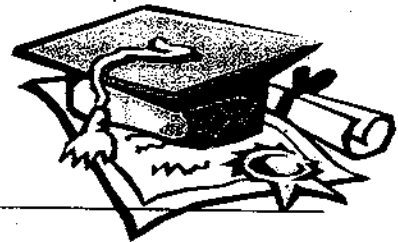


# ANSWER SHEET

## EXAM PAPER 2009

SCHOOL : HENRY PARK PRIMARY  
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2



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

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

31)a)i)Both liquid and gas does not have a definite shape.

ii)Air can be compressed.

b)i)There was air and water in the bottle which occupied space and prevented the balloon from inflating therefore, Ron was not able to inflate the balloon.

ii)He can cut a hole in the bottle.

32)a)R.

b)The temperature of the coffee was the lowest after the same period of time.

33)a)To provide heat for the liquids to expand.

b)iii, iv

c)Liquid Y gains from the hot water and expands more quickly than liquid X.

34)a)T b)F

c)The heat from Nora's hands loses heat to the ice cubes hence, her hands will feel cold.

35)a)He can bend the straw to make it straight.

b)Light travels in a straight line.

36)a)Angle of light source.

Length of shadow.

b)The Longer the angle of light source, the smaller the length of shadow.

c)He could test his experiment more than once.



37)a)Y

X

b)Object X is and opaque object while object Y is translucent.

c)Black.

d)Use more light source from different directions.

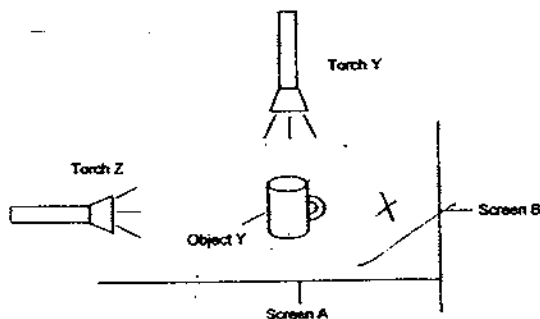
38)a)Screen A



Screen B



b)



39)a)C. b)B,E c)They do not produce digestive juices.

40)a)The human does not have a crop like the bird while the bird has a crop.  
b)Human have teeth to grind food.

41)a)As the number of days increases, the amount of water decrease.  
b)Amount of water left.

42)a)The type of soil given.  
b)i)The water.

ii)The water carrying tubes were cut off, the water could not reach the other parts of the plant hence, it stopped there and created bulge.

43)a)The higher the number of strokes used, the stronger the magnetism of the magnet.  
b)9 paper clips.

44)a)Y.  
b)It took the shortest time to be become an adult.