



**HENRY PARK PRIMARY SCHOOL**

**SEMESTRAL EXAMINATION I**

**2007**

**SCIENCE**

**PRIMARY 4**

**BOOKLET A**

**Name:** \_\_\_\_\_ ( )

**Class:** Primary 4 \_\_\_\_\_

**30 Questions  
60 Marks**

**Total Time for Booklets A and B: 1 h 40 min**

**DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

**READ AND FOLLOW INSTRUCTIONS CAREFULLY.**

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.

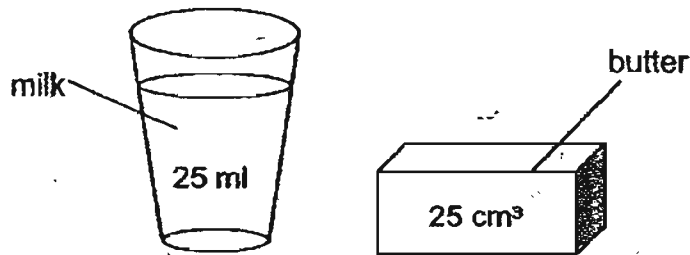
1. Air is matter because it \_\_\_\_\_.

- A: has mass
- B: occupies space
- C: cannot be compressed

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

( )

2. A glass of milk has the same volume as a block of butter.



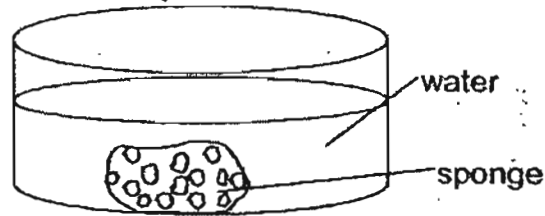
They both \_\_\_\_\_.

- (1) can be compressed
- (2) have definite shapes
- (3) have the same amount of matter
- (4) take up the same amount of space

( )



3. Kelly observed that bubbles were released when she squeezed a sponge in water.

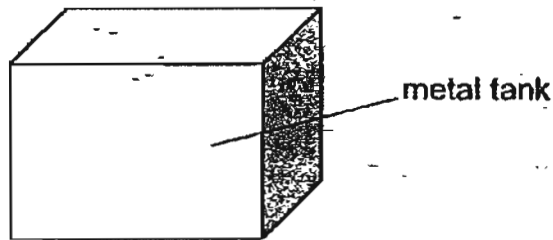


Which one of the following statements **correctly** explains why it happened?

- (1) Air trapped in water was released.
- (2) Air trapped in the sponge was released.
- (3) Water trapped in the sponge was released.
- (4) Water absorbed by the sponge was released.

( )

4. The metal tank below has a capacity of  $1000 \text{ cm}^3$ .

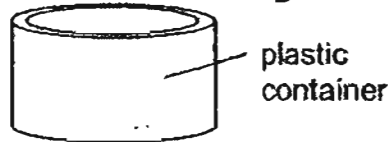


It can be filled with \_\_\_\_\_.

- (1)  $1200 \text{ cm}^3$  of water
- (2)  $1200 \text{ cm}^3$  of petrol
- (3)  $1200 \text{ cm}^3$  of oxygen
- (4)  $1200 \text{ cm}^3$  of rice grains

( )

5. Sally puts four substances into round, plastic containers. Which of the following does **not** take the shape of its container?



- A. oil
- B. sand
- C. marbles
- D. chicken soup

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

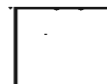
( )

6. In the morning, Julia noticed water droplets on the outside of the cars even though it did not rain the night before.

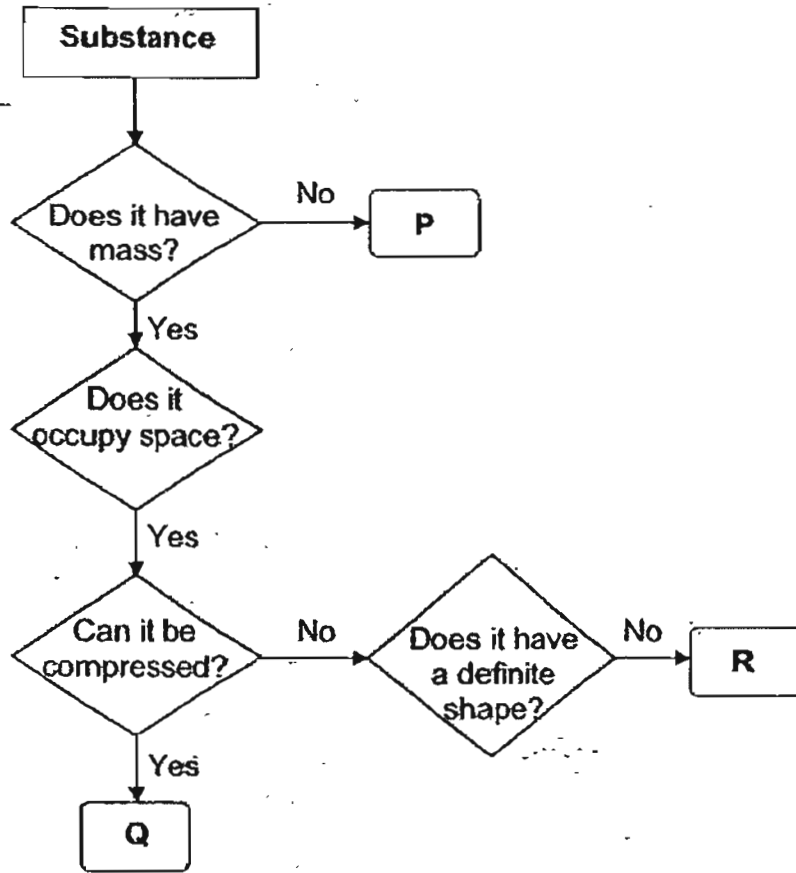
Which one of the following statements explains what happened?

- (1) Water vapour on the cool car condensed from the air.
- (2) Water vapour from the air condensed on the cool car.
- (3) Water droplets on the warm car evaporated to the air.
- (4) Water droplets from the warm air evaporated on the car.

( )



7. Study the flow chart of some substance below.



Which one of the following correctly identifies substances P, Q and R?

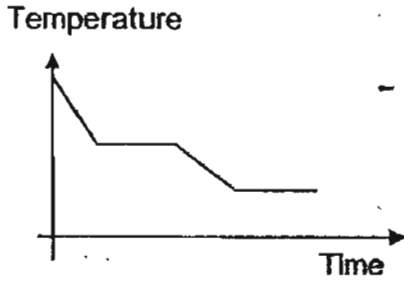
	P	Q	R
(1)	music	nitrogen	coffee
(2)	violin	bread	jelly
(3)	radio	oxygen	petrol
(4)	fire	petals	jam



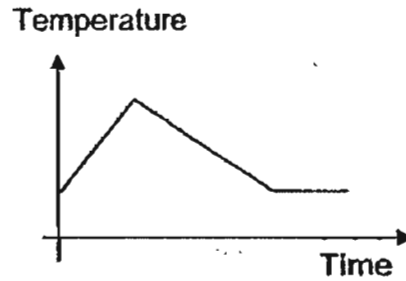
8. Ali heated some tap water in a beaker. He allowed it to boil for 5 minutes and then left it in the beaker to cool to room temperature. He recorded the temperature at 5-minute intervals.

Which one of the following graphs would correctly represent his data?

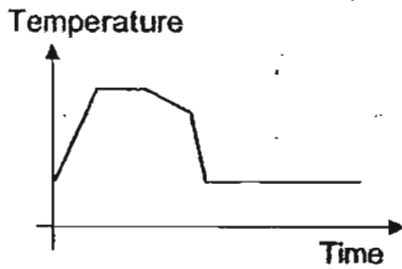
(1)



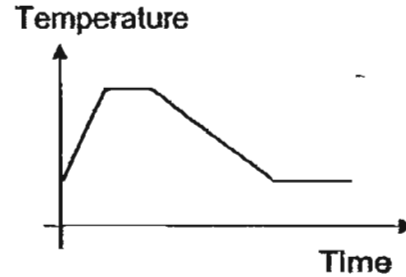
(2)



(3)



(4)



( )

9. Water will \_\_\_\_\_ at the temperature of 0°C.

- A. melt
- B. freeze
- C. evaporate
- D. condense

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

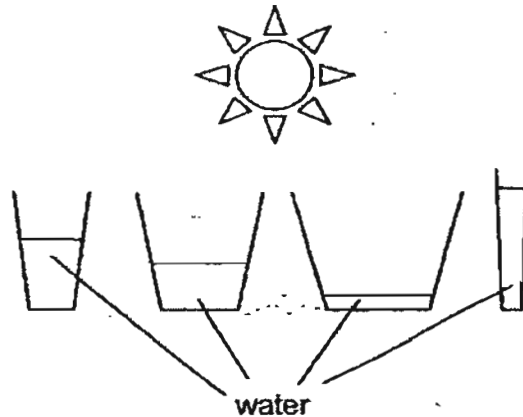
( )



10. In the Earth's water cycle, when water vapour condenses it

- (1) gains heat and flows to the sea
- (2) loses heat and falls to the Earth
- (3) loses heat and becomes clouds
- (4) gains heat and forms water bodies

11. Selma set up the experiment as shown below. She poured equal amounts of water into four different glass containers and placed them under the sun.



She was testing the effect of the \_\_\_\_\_ on the rate of evaporation of water.

- (1) heat from the sun
- (2) size of the container
- (3) area of exposed surface
- (4) amount of water vapour in the surroundings

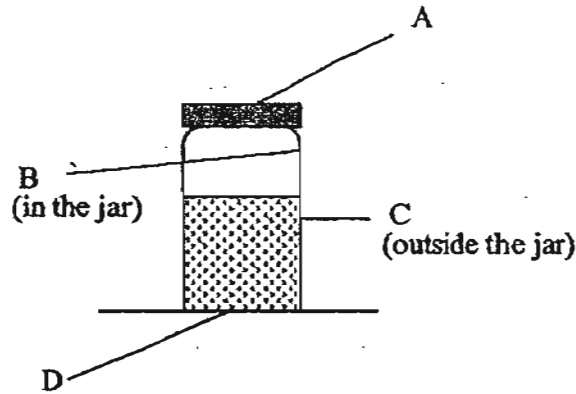
12. Jim added some hot water into a beaker of ice. Which of the following statement is correct?

- A. The ice gains heat and melts faster
- B. The hot water loses heat and melts the ice.
- C. The ice changes from solid state to liquid state.

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



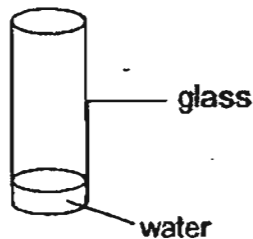
13. Mary poured some icy cold soft drink in a jar, covered it with a metal lid and placed it on a table with a thin glass top as shown below. At which of the following parts would she observe tiny water droplets after 5 minutes?



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

( )

14. Su Lin wants the water in the glass to dry up as quickly as possible.



She should \_\_\_\_\_

- (1) add salt to the water
- (2) pour the water on a flat tray
- (3) cover the mouth of the glass
- (4) put the glass of water in the freezer

( )





15. When the weather is very cold, 'white clouds' seem to be coming out of our mouths when we speak and breathe out. This is because of the change in the states of water from

- (1) gas to solid
- (2) liquid to gas
- (3) gas to liquid
- (4) solid to liquid

( )

16. Which one of the following ways best describes water conservation?

- (1) Reusing unclean water for drinking.
- (2) Washing our dishes under a running tap
- (3) Letting the water run while brushing our teeth.
- (4) Using the water collected from washing vegetables to wash the toilet

( )

17. Which of the following are some causes of water pollution?

- A: Oil spills
- B: Deforestation
- C: Rubbish thrown from a ship
- D: A gardener uses insecticide near a pond

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

( )

18. Which of the following conditions must be present for water cycle to continue to take place?

- A: There must be light
- B: There must be heat
- C: There must be wind
- D: Water must change state

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

( )



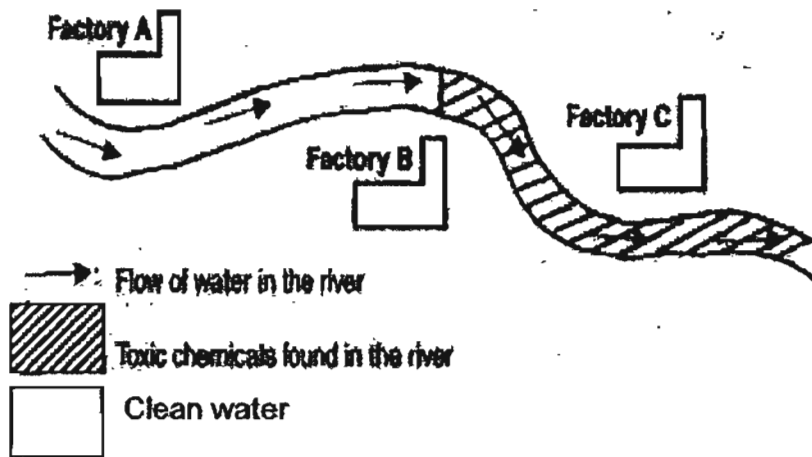
19. Countries that face water shortage can \_\_\_\_\_.

- A: reuse water
- B: recycle water
- C: obtain water from seawater
- D: build more reservoirs to collect rainwater

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

( )

20. A group of scientists discovered that certain stretches of the river were polluted with toxic chemicals. Which factory(ies) is/are most likely responsible for the water pollution?



- (1) Factory A
- (2) Factory B
- (3) Factory C
- (4) Not possible to tell

( )

21. Why is the water cycle important to living things?

- (1) It causes the evaporation of water.
- (2) It provides oxygen for living things.
- (3) It provides carbon dioxide for plants.
- (4) It ensures that living things have a continuous supply of fresh water.

( )



22. A girl observed that a fruit was thorny and had an unpleasant smell. ~~Which of the following senses helped her to make these observations?~~ **Name all the that can help.**

- A: Sense of smell
- B: Sense of sight
- C: Sense of taste
- D: Sense of touch

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

( )

23. Samy made some statements about the plant shown below.



Which of the following statement(s) he made was/were correct?

- A: It can reproduce.
- B: It can move on its own.
- C: It does not need food to stay alive.

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

( )



24. Plants spread their branches and leaves to get as much \_\_\_\_\_ as possible.

- A: food
- B: water
- C: sunlight

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

( . )

25. Animal B lives in water. It does not lay eggs. Its young feed on the mother's milk. Animal B belongs to the group of \_\_\_\_\_

- (1) fish
- (2) insects
- (3) reptiles
- (4) mammals

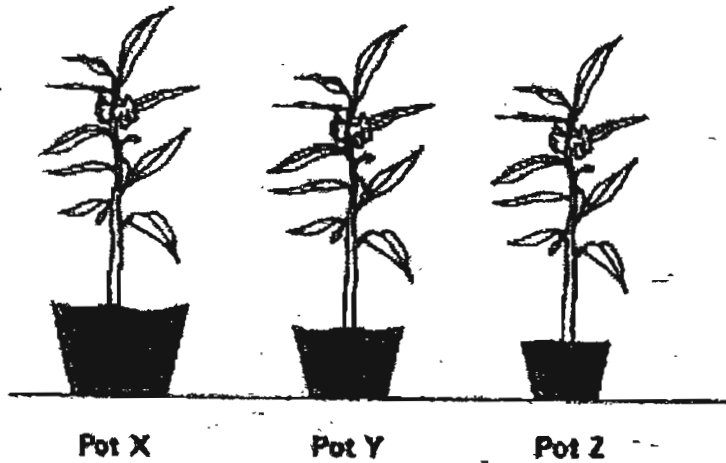
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26. Gordon wanted to find out what type of soil was suitable for growing roses. He planted 3 rose plants of similar size in three pots, X, Y and Z.

	Pot X	Pot Y	Pot Z
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sand	Clay
Amount of water used everyday	250 cm <sup>3</sup>	300 cm <sup>3</sup>	350 cm <sup>3</sup>

The three plants were placed in the garden as shown below.



Gordon's father told him that he had not carried out a fair test as not all the controlled variables were kept the same. Which of the following should be kept the same?

- A: Type of soil
- B: Size of pot
- C: Amount of water

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

27. Some drivers along a road noticed a fire engine and gave way to it. What senses did all these drivers use to come to this decision?

- A: Sense of sight
- B: Sense of touch
- C: Sense of smell
- D: Sense of hearing

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

( )

28. The table below show the number of seedlings planted in a plot of land over a period of 2 weeks.

Days	Number of seedlings
1	80
6	63
10	41
14	28

What could have caused the changes in the number of seedlings over the 2 weeks?

- A: A drop in the supply of water to these seedlings.
- B: A decrease in the number of animals feeding on the seedlings.
- C: Regular rainfall resulting in the plants getting enough water
- D: Lack of nutrients in the soil

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

( )



29. The table below shows four households, A, B, C and D trying to save water over a period of 4 months. The table shows how much water each household had been using each month.

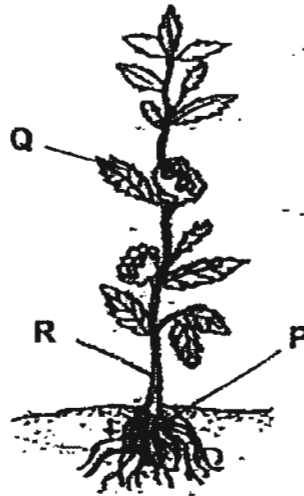
Which family appears to have been the **least effective** in its attempts to save water over the 4 months?

Household	Amount of water used each month (m <sup>3</sup> )			
	January	February	March	April
A	17 m <sup>3</sup>	17 m <sup>3</sup>	18 m <sup>3</sup>	19 m <sup>3</sup>
B	15 m <sup>3</sup>	14 m <sup>3</sup>	15 m <sup>3</sup>	14 m <sup>3</sup>
C	18 m <sup>3</sup>	19 m <sup>3</sup>	15 m <sup>3</sup>	14 m <sup>3</sup>
D	16 m <sup>3</sup>	16 m <sup>3</sup>	15 m <sup>3</sup>	15 m <sup>3</sup>

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

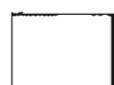
( )

30. Study the diagram carefully and identify correctly parts P, Q and R of the plant.



	P	Q	R
(1)	Stem	Fruit	Leaf
(2)	Root	Leaf	Stem
(3)	Leaf	Stem	Fruit
(4)	Fruit	Flower	Root

( )





HENRY PARK PRIMARY SCHOOL

SEMESTRAL EXAMINATION I

2007

SCIENCE

PRIMARY 4

BOOKLET B

Name: \_\_\_\_\_ ( )

Class: Primary 4: \_\_\_\_\_

16 Questions  
40 Marks

Total Time for Booklets A and B: 1 h 40 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

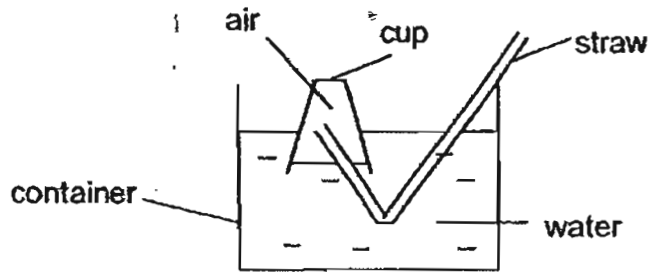
READ AND FOLLOW INSTRUCTIONS CAREFULLY.



## PART 2 (40 marks)

Write your answers to questions 31 to 46 in the spaces given.

31. Kim sets up an experiment as shown in the diagram below.



- a) What happens to the water level in the cup when Kim sucks out some air through the straw? (1m)

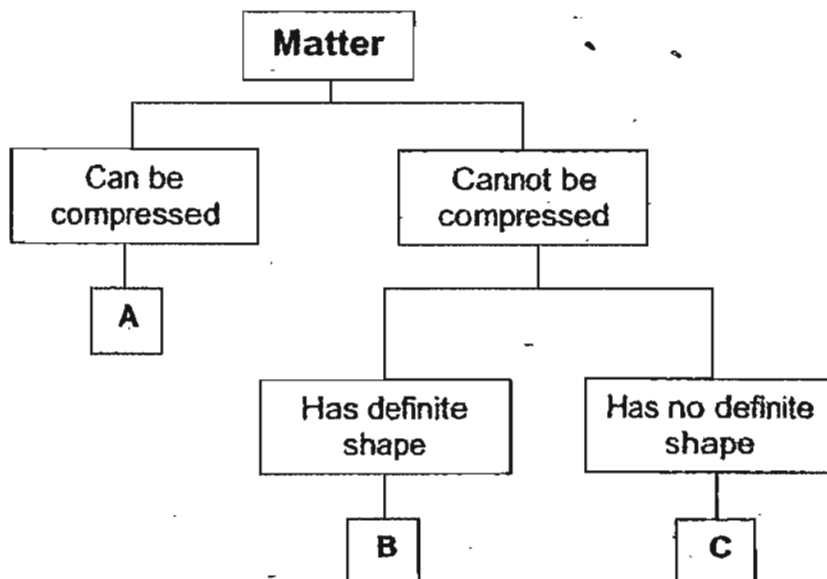
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- b) Explain your answer in (a). (1m)

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32. Joan classified three types of matter, A, B and C according to their properties below.



a) Look at the following two items. State if they represent A, B or C from the chart above.

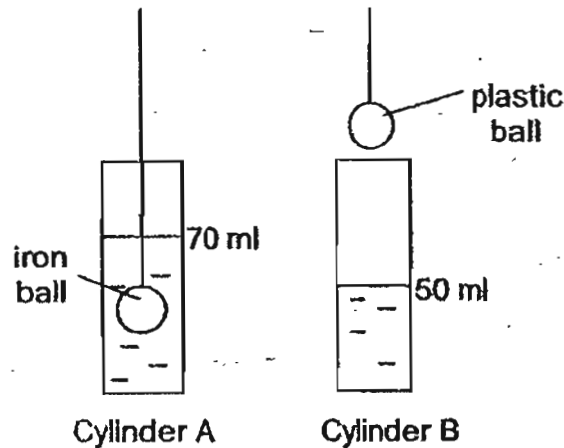
i) Rock : \_\_\_\_\_ (1m)

ii) Sea water : \_\_\_\_\_ (1m)

b) When water from the sea evaporates, which matter in the chart above (A, B, or C) will it be classified in? (1m)

\_\_\_\_\_

James poured 50 ml of water into each measuring cylinder. He lowered an iron ball into cylinder A until it is fully submerged but not touching the bottom of the cylinder. He repeated the same action with a plastic ball. Both the iron and plastic balls have the same shape and size.



He recorded the water levels in the table below.

	Water level (ml)	
	Before the ball was put inside	After the ball was put inside
Cylinder A	50	70
Cylinder B	50	

a) What will be the water level in Cylinder B after the ball was put inside? Complete the table above with your answer. (1m)

b) He lowered the iron ball until it touched the bottom of Cylinder A. Predict if the water level would be higher, lower or remain the same. (1m)

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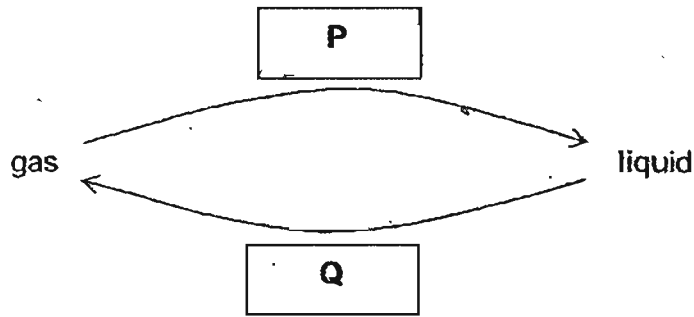


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c) Which property (shape, size, mass or volume) of the iron and plastic balls is tested in this activity? (1m)

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34. Kim drew a concept map to show the effect of heat gain and loss on the state of water.



a) State what Process P is. (1m)

---

b) Process Q happens at any temperature. State what Process Q is. (1m)

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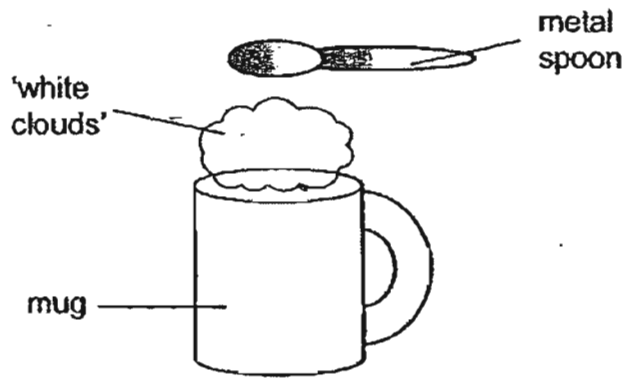
c) State whether heat is gained or lost during Process P. (1m)

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d) Name the gas produced during Process Q. (1m)

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35. When Ben poured boiling water into his mug he noticed 'white clouds' forming above the water.



a) Explain how the 'white clouds' were formed. (1m)

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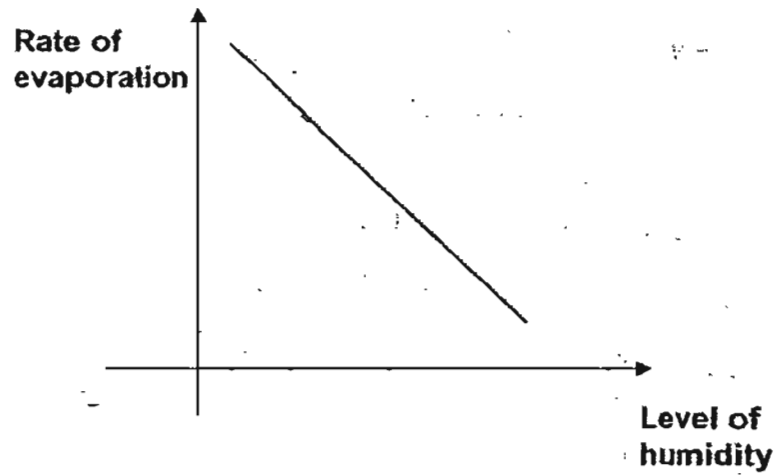
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b) What happens if Ben places a metal spoon above the cup? (1m)

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36. The graph below shows the relationship between the rate of evaporation and the amount of water vapour in the air (humidity).



a) Based on the graph, explain how the level of humidity affects the rate of evaporation. (1m)

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b) Name 2 conditions that could speed up the rate of evaporation of a puddle of water by a roadside. (1m)

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

37. In the spaces below state one similarity and one difference between the processes of **evaporation** and **boiling**. (2m)

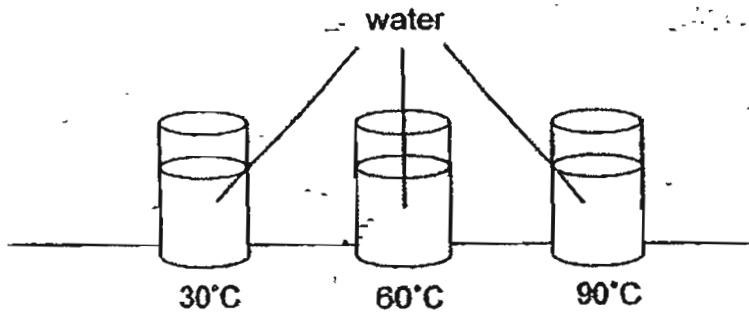
Similarity: \_\_\_\_\_

\_\_\_\_\_

Difference: \_\_\_\_\_

\_\_\_\_\_

38. Sami wanted to find the effect of temperature of water has on rate of evaporation. He measured an equal volume of water of different temperatures. He poured the water carefully into three identical glasses. The 3 glasses are left uncovered and placed on a table next to a window. The set up of his experiment is shown below.



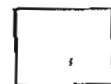
a) What is the test variable in the above experiment? (1m)

\_\_\_\_\_

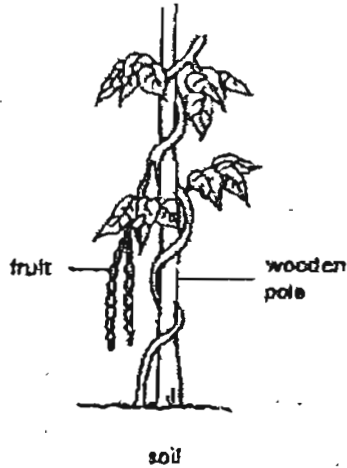
b) What should Sami measure at the end of the experiment to make a conclusion? (1m)

\_\_\_\_\_

\_\_\_\_\_



39. The diagram shows a bean plant growing in a garden.



a) Describe the type of stem the bean plant has. (1m)

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b) How does the bean plant stay upright? (1m)

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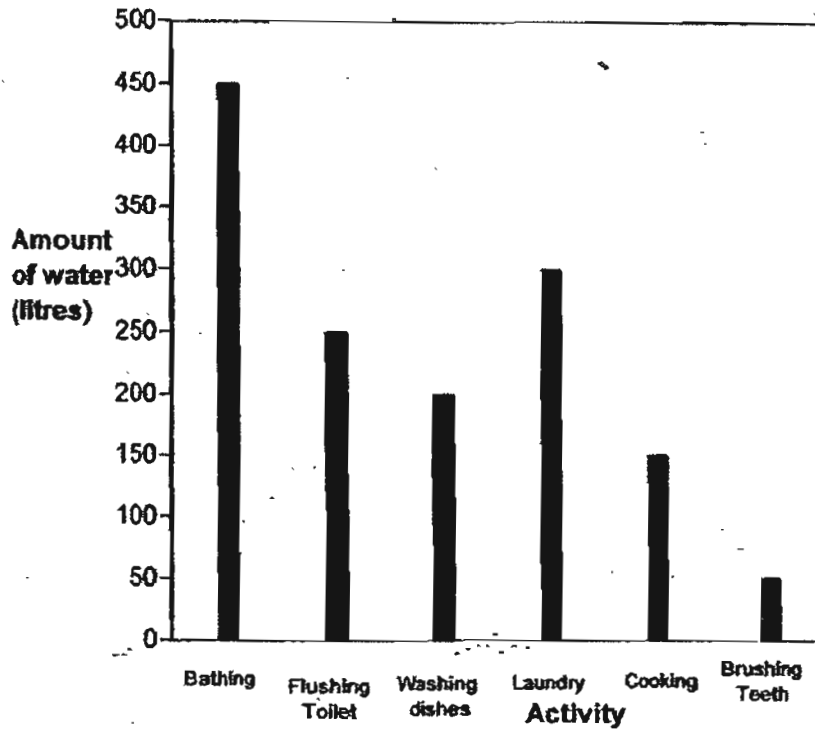
c) Why does the bean plant have to stay upright? (1m)

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40. The bar graph below shows the amount of water used daily for different activities by the Smith family. Study the graph and answer the questions that follow.



a) Which activity uses the least amount of water?

(1m)

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---

b) Suggest one way the Smith family could reduce the amount of water used for bathing.

(1m)

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41. In the table below, write down the sense organ and the sense used to detect each of the activities.

	Activity	Sense Organ	Sense
(a)	Fragrance of a baked cake coming from the kitchen		
(b)	Pulling one's hand away after touching a hot kettle of water		

(1m)

(1m)

42. The table below shows two ponds with different conditions. Study the table and answer the questions.

Pond A	Pond B
Water is dark and cloudy	Water is clear
Toxic substance and stench are present	Toxic substance and stench are not present
Litter is present on surface of water	Water surface is litter-free

a) Which pond is suitable for growing plants?

(1m)

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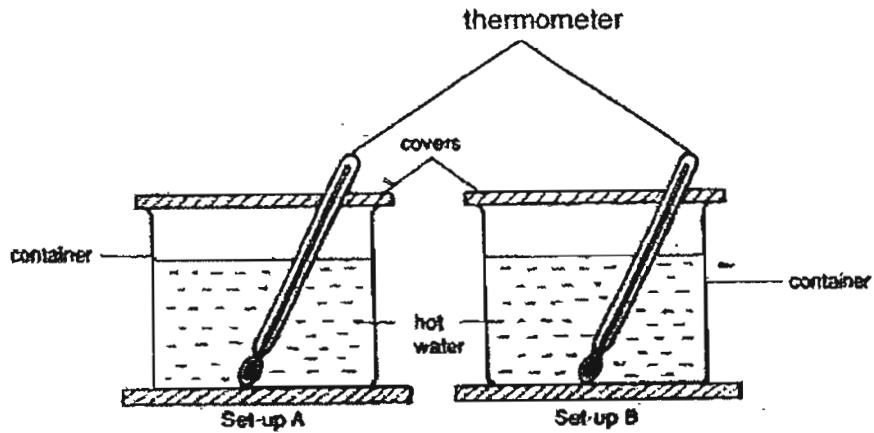
b) Explain your answer in (a).

(2m)

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He wanted to find out which container kept the water hot for a longer period of time.

a) State two variables that Kamal needs to keep the same for his test to be a fair one. (2m)

i) \_\_\_\_\_

ii) \_\_\_\_\_

b) State a suitable hypothesis for the above experiment. (1m)

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

c) The process of removing salt from sea water to get fresh water is called \_\_\_\_\_ (1m)

44. The table below shows some characteristics of 4 different types of plants, W, X, Y and Z.

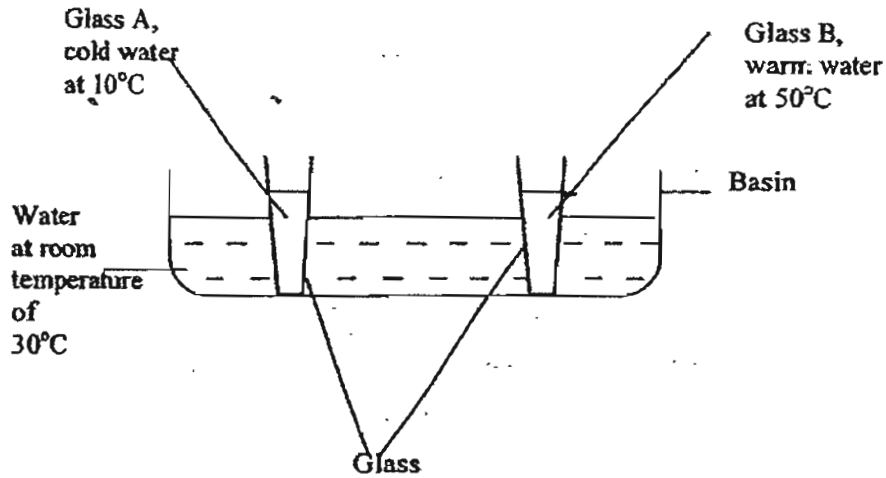
	has woody stem	has non-woody stem
bears fruit	W	X
does not bear fruit	Y	Z

Write down in the spaces provided if the following statements refer to plants W, X, Y or Z. (2m)

(i) Has no bark and is a flowering plant - \_\_\_\_\_

(ii) Has bark and it reproduces from seeds - \_\_\_\_\_

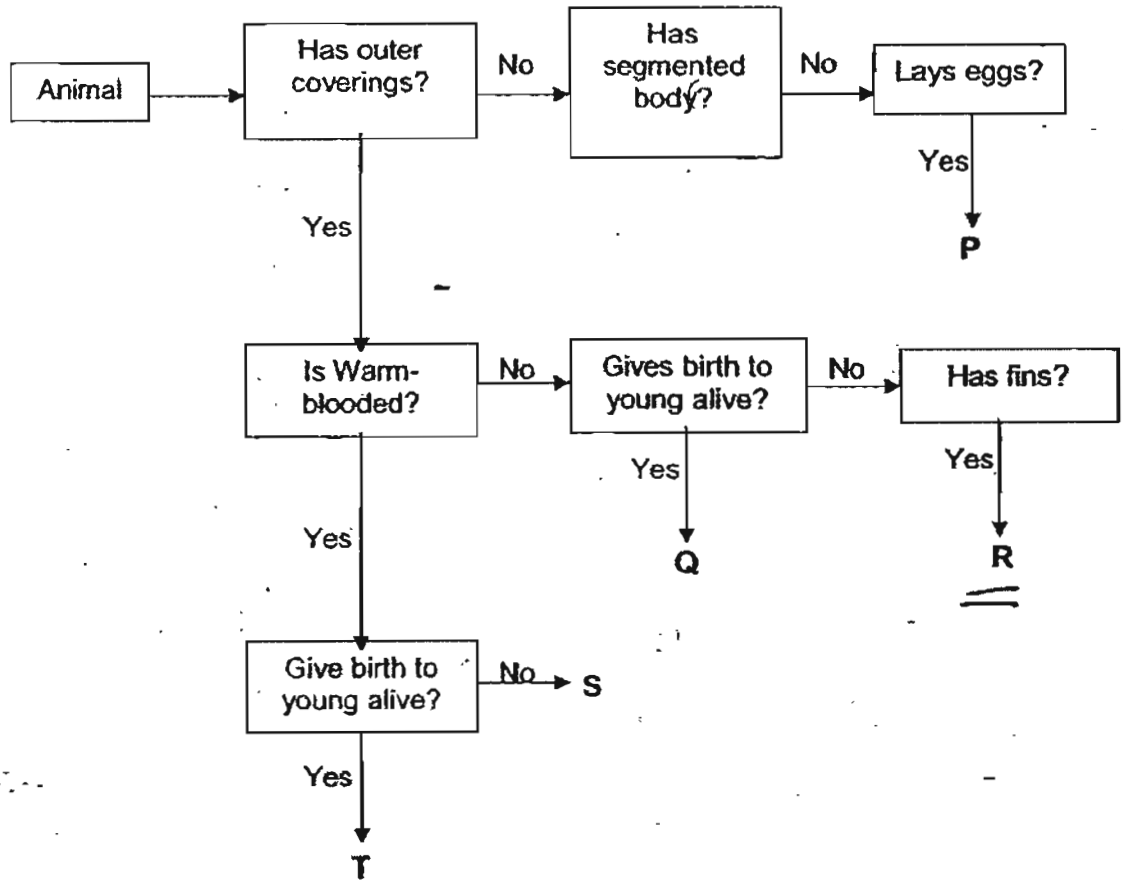
2 identical glasses, A and B, with equal amounts of water, were left in a basin of water at a room temperature of 30° C. The set up is shown in the diagram below.



Put a tick in the correct boxes to show what will be observed in the above set up over a period of 6 hours. (2m)

Temperature of water in Glass A drops	<input type="checkbox"/>
Temperature of water in Glass B drops	<input type="checkbox"/>
Water level in Glass B remains the same	<input type="checkbox"/>
Temperature of water in Glasses A and B reach the same level after 6 hours	<input type="checkbox"/>

46. Study the flowchart below.



Based on the diagram, state two differences between animals R and T. (2m)

(i) \_\_\_\_\_

\_\_\_\_\_

(ii) \_\_\_\_\_

\_\_\_\_\_

Setters: Ms Rebecca Lo and Mr Francis Chia



# ANSWER SHEET

HENRY PARK PRIMARY SCHOOL - PRIMARY 4 SCIENCE 2007  
SEMESTRAL ASSESSMENT (1)

1. 2  
2. 4  
3. 2  
4. 3  
5. 3  
6. 2  
7. 1  
8. 4  
9. 4  
10. 3  
11. 3  
12. 4  
13. 1  
14. 1  
15. 1  
16. 1  
17. 4  
18. 4  
19. 4  
20. 2  
21. 4  
22. 4  
23. 3  
24. 2  
25. 4  
26. 4  
27. 2  
28. 2  
29. 1  
30. 2
- 31) a) The water level will go up.  
b) Water goes in and takes the space previously occupied air.
- 32) a) i) B ii) C  
b) A
- 33) a) 10  
b) The water level will remain unchanged in the water level.  
c) The property is volume.
- 34) a) Condensation  
b) Evaporation  
c) Heat lost  
d) water vapour
- 35) a) The water vapour condenses in the cooler air surrounding it.  
b) There will be water droplets on the metal spoon.
- 36) a) The higher the humidity the slower it evaporate.  
b) i) The bigger the exposed surface area, the faster the rate of evaporation.  
ii) The higher the wind, the faster the rate of evaporation.
- 37) Similarity: The greater the level of humidity the slower the rate of evaporation.

Difference: Evaporation takes place at any temperature while boiling takes place at 100°C

- 38) a) The temperature of water.  
b) How many ml water are there left.
- 39) a) Non woody.  
b) Twins around the wooden pole as a support.  
c) So that the leaves could get sunlight to make food.
- 40) a) Brushing teeth.  
b) Take a quick shower instead of a bath.
- 41) a) nose, sense of smell.  
b) skin, sense of touch.
- 42) a) Pond B.  
b) Pond B water is clear, no toxic substance and stench and the water surface is litter free.
- 43) a) i) He have to make water the same volume.  
ii) He have to make the water the same temperature for the experiment.  
b) same location.  
c) desalination.
- 44) i) X ii) W
- 45) ✓ × ✓
- 46) i) Animal R lays egg while animal T give birth alive.  
ii) T is not a warm blooded while Animal R is warm blooded.

---end---