# MARIS STELLA HIGH SCHOOL (PRIMARY)

## P5 WEIGHTED ASSESSMENT 1

## SCIENCE

## 4 MARCH 2021

NAME: _____ (  )

CLASS: Primary 5 (  )

8 questions

20 marks

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

**Total: _____ / 20**

**Parent's Signature: _____**

For each question from 1 to 5, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write the number in the brackets provided.

(10 marks)

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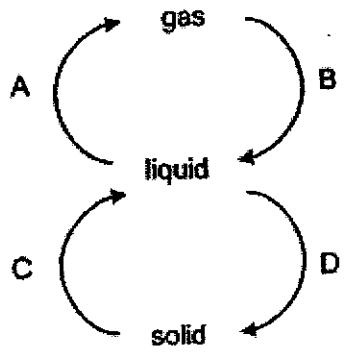
1 Study the diagram below. A, B, C and D represent processes involved in the changes of state of matter.




Which one of the following processes represents melting?

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

( )

2 The table below shows the melting and boiling points of two substances, K and L.

| Substance | Melting point (°C) | Boiling point (°C) |
|---|---|---|
| K | 30 | 90 |
| L | 60 | 80 |

At which temperature will both substances K and L exist as a gas?

(1) 25 °C
(2) 65 °C
(3) 85 °C
(4) 95 °C

( )

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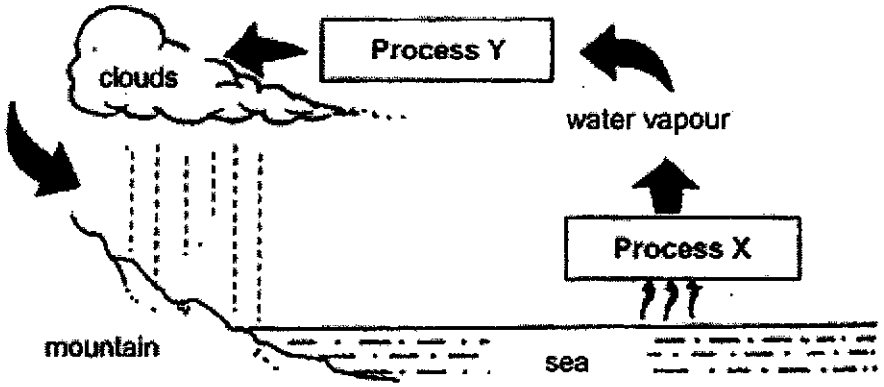
3 The diagram below shows the water cycle.

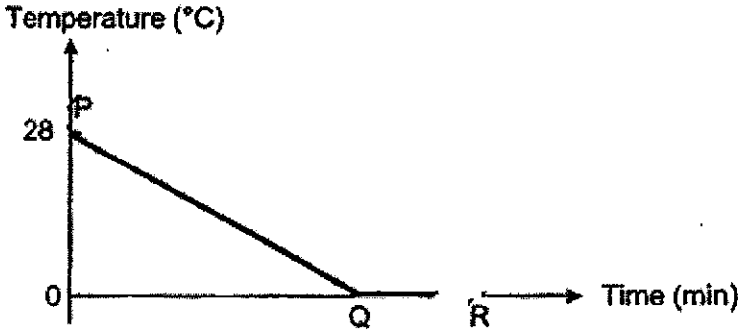



Which of the following is correct about processes X and Y?

| | Process X | Heat transfer during process Y |
|---|---|---|
| (1) | evaporation | heat gain |
| (2) | evaporation | heat loss |
| (3) | condensation | heat gain |
| (4) | condensation | heat loss |

( )

4 The graph below records the change in the temperature of water in a beaker when placed in the freezer.




Based on the graph, which of the following statements is correct?

(1) Melting took place from Q to R.
(2) The water started to freeze at P.
(3) Ice and water were observed from Q to R.
(4) No heat gain or loss took place from Q to R.

( )

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5 Sam filled three containers of the same material each with equal amount of water in different conditions. The amount of water left in each container is shown in the table below.

Some information is missing.

| Container | Exposed surface area ($cm^2$) | Temperature of surrounding (°C) | Amount of water left after 8 hours ($cm^3$) |
|---|---|---|---|
| A | 100 | *X* | 540 |
| B | 100 | 60 | 500 |
| C | 50 | 60 | *Y* |

Which of the following could *X* and *Y* be?

| | *X* | *Y* |
|---|---|---|
| (1) | 20 | 450 |
| (2) | 30 | 580 |
| (3) | 60 | 540 |
| (4) | 70 | 500 |

( )

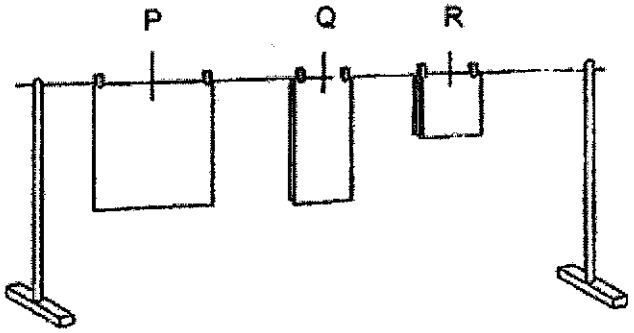
**End of Booklet A**

**Go on to Booklet B**

For questions 6 to 8, write your answers in this booklet. The number of marks available is shown in brackets [ ] at the end of each question or part question. (10 marks)

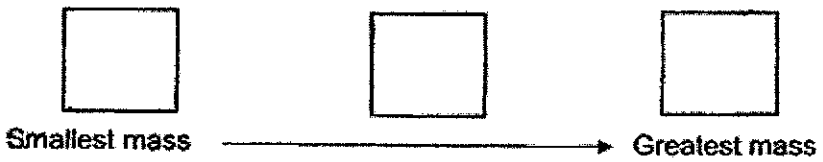
6 (a) State a similarity between boiling and evaporation. [1]

Sam hung three identical towels, P, Q and R, to dry on a sunny and windy day. The towels were equally wet and had the same mass at the start of the experiment.




Sam measured the mass of the towels after one hour.

(b) Arrange the towels, P, Q and R, in order of increasing mass after one hour. [1]




(c) Explain your observation for towel R. [1]

(d) Sam observed that the towels took a longer time to dry when there was no wind present. Explain why. [1]

4

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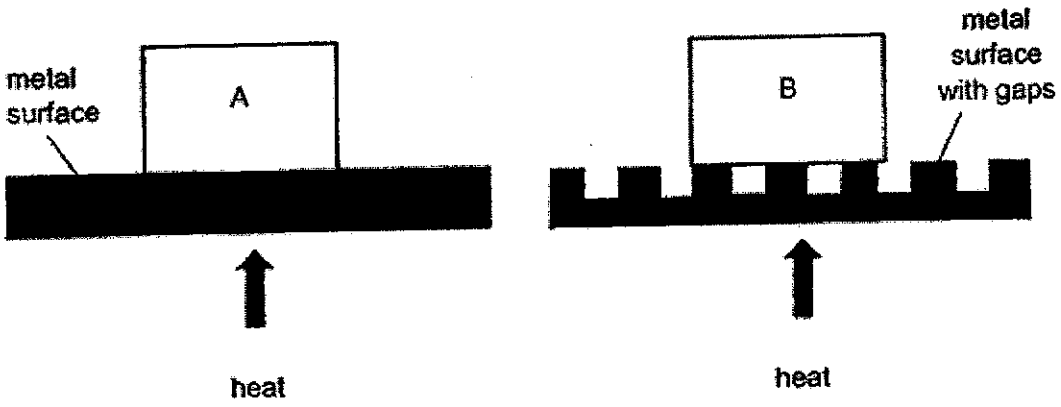
7 Janice wanted to find out if different types of metal surface will affect the rate of melting of ice. She placed two rectangular blocks of ice, A and B, on two different surfaces. The surfaces were heated from the bottom.




(a) Which ice, A or B, will completely melt first? Explain why. [1]

(b) Tick (✓) the variable(s) which must be kept the same for a fair test. [1]

- ☐ Type of surface
- ☐ Temperature of surrounding
- ☐ Volume of ice at the start of the experiment

(c) What can Janice do to make ice A melt faster? [1]

3

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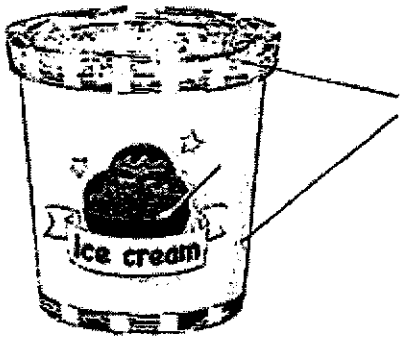
8 John placed a tub of ice cream from the freezer onto a table. After a short time, a thin layer of white solid was formed on the surface of the tub.




(a) Name two processes that caused the white solid to form. [1]

(i) _____

(ii) _____

(b) Explain how the processes named in (a) caused the white solid to form. [1]

_____

_____

_____

(c) The white solid cannot be seen after a while. Explain why. [1]

_____

_____

**End of Booklet B**

| | 3 |
|---|---|

SCHOOL : MARIS STELLA HIGH SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2021 WA1

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## SECTION A

| Q 1 | Q2 | Q3 | Q4 | Q5 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 2 | 3 | 2 | | | | | |
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## SECTION B

| | |
|---|---|
| Q6) | a)Both are a heat gain process.<br>b)P,Q,R<br>c)Towel R had the smallest exposed surface area in contact with the surroundings, thus it gained heat the slowest and the water on it evaporated the slowest, resulting in R having the greatest mass after one hour.<br>d)The presence of wind increases the rate of evaporation. Water on the towels gains heat slower and evaporate slower in the absence of wind, hence taking a longer time to dry. |

| | |
|---|---|
| Q7) | a)Ice A. Ice A had greater exposed surface area in contact with the metal surface than Ice B. As the amount of exposed surface area increases, the rate of evaporation increases, thus Ice A gained heat more quickly and melted faster than Ice B.<br>b)Temperature of surrounding, volume of ice at the start of the experiment<br>c)She can decrease the thickness of the metal surface. |
| Q8) | a)(i)Condensation<br>(ii)Freezing<br>b)Warmer water vapour from the surrounding air loses heat to the cooler surface on the tub and condenses to form water droplets before freezing into the white solid.<br>c)The white solid gained heat from the surroundings and melted to form water droplets. |
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