TOPICAL TEST 1A:

30

Section A (10 x 2 marks)

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write the answers in the brackets provided.

1. Which of the following is a/are heat gain process(es)?

   A: Melting
   B: Evaporation
   C: Condensation
   D: Freezing

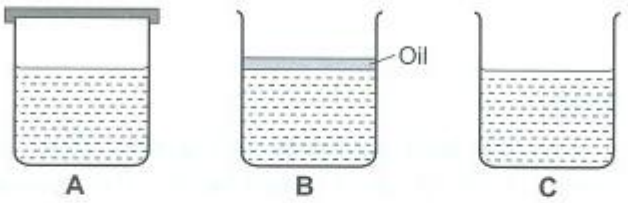
   (1) A only
   (2) A and B only
   (3) C and D only
   (4) B, C and D only ( )

2. Mrs Lim placed some hot steamed buns on a dry plate and covered it with a plastic cover as shown below.

After a few minutes, she noticed some tiny water droplets on the inner surface of the plastic cover. Which of the following statements explains her observation?

(1) Warm water vapour from the steamed buns condensed on the inner surface of the plastic cover.
(2) Warm water from the plate rose and condensed on the inner surface of the plastic cover.
(3) Warm water vapour from the air inside the plastic cover condensed on the outer surface of the plastic cover.
(4) Warm water vapour from the air outside the plastic cover condensed on the inner surface of the plastic cover. ( )

3. Ah De placed an equal amount of water into 3 identical beakers. He covered Beaker A with a plastic lid, poured a layer of oil into Beaker B and left the water in Beaker C exposed. He then placed all the 3 beakers in the school field.



Which of the following shows what happened several hours later?

(1) 

(2) 

(3) 

(4) 

( )

4. The diagram below shows Sally in Korea during winter.

When Sally breathes out or speaks, 'white clouds' seem to come out of her mouth. This is because of the change in states of water from _____.

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

( )

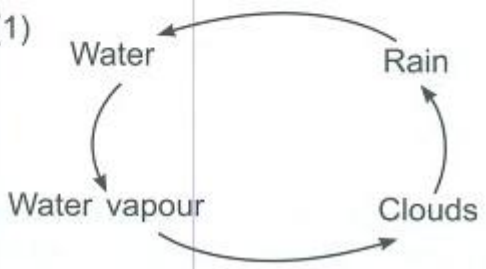
5. Jia Li was told to list the differences between the freezing and evaporation of water. In which of the following comparisons did she make a mistake?

	Evaporation	Freezing
(1)	No heat is needed.	Heat is needed.
(2)	Heat is gained by the water.	Heat is lost by the water.
(3)	Takes place at any temperature.	Takes place at a fixed temperature.
(4)	Changes from a liquid to a gas.	Changes from a liquid to a solid.

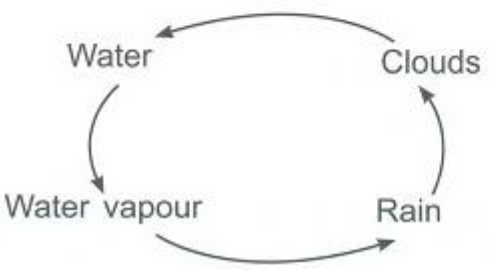
( )

6. Which of the following diagrams correctly represents the water cycle?

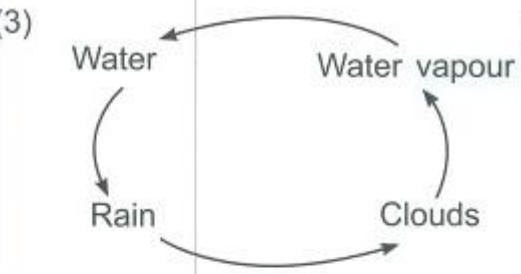
(1)



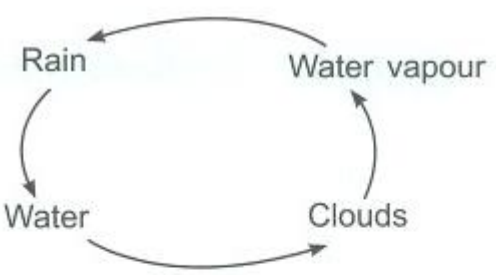
(2)



(3)



(4)



( )

7. Sam prepared four set-ups under different conditions to investigate if wind speed affects the rate of evaporation of water. He filled four containers each with 100 cm^3 of water.

Container	Exposed surface area of water in the container (cm^2)	Temperature of surrounding (°C)	Wind speed (km/h)
A	40	28	10
B	50	30	15
C	50	30	10
D	60	28	18

Which two containers should he use to ensure a fair test?

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

( )

8. Four similar towels, each having a surface area of 100 cm^2, were soaked with 50 ml of water and left to dry on a laundry line. Different number of folds were made to each towel as is recorded in the table below.

Towel	Number of fold(s) made
A	1
B	2
C	3
D	4

Which of the following best represents the time taken for the towels to dry, starting from the towel that dries in the shortest time to the one that took the longest time.

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

( )

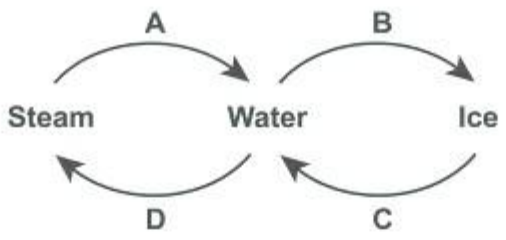
9. The boiling and freezing points of four liquids, A, B, C and D, are given in the table below.

Liquid	Boiling Point (°C)	Freezing Point (°C)
A	120	–90
B	310	90
C	75	–10
D	80	20

Which of them would be a suitable liquid for use in a thermometer to measure both the boiling and freezing points of water?

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

10. The diagram below shows the states of water and some processes that water go through.



Which one of the following sets shows the correct processes represented by the arrows?

	A	B	C	D
(1)	Evaporation	Melting	Condensation	Freezing
(2)	Condensation	Freezing	Melting	Boiling
(3)	Melting	Boiling	Evaporation	Freezing
(4)	Boiling	Evaporation	Freezing	Melting

( )

Section B (10 marks)

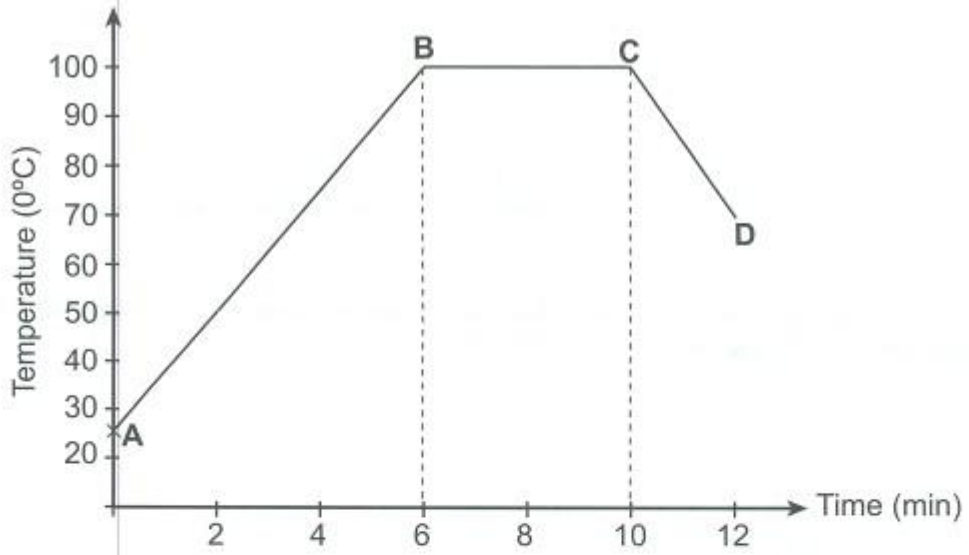
Read each question carefully and write the answers in the spaces provided.

11. Ben poured some boiling water into his mug to make a cup of tea. As he was pouring the hot water into the mug, he noticed some 'white clouds' forming above the cup.

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

(b) What will Ben observe if he placed a metal spoon above the mug of hot tea? (1m)

12. Mimi heated some water which was at room temperature in a beaker until it boiled. She then cooled the water. She recorded her results in the graph as shown below.

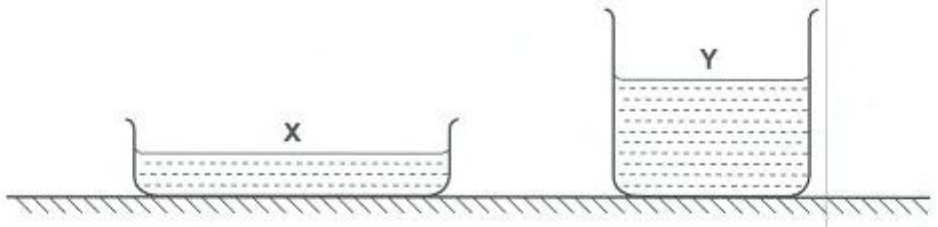


(a) For how long did the water boil? (1m)

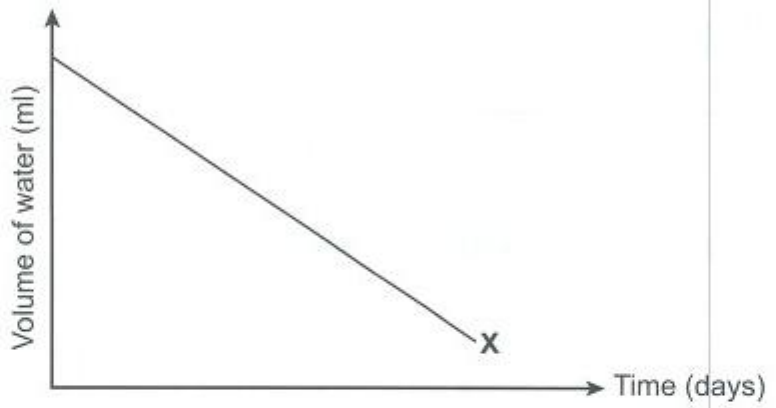
(b) Which part(s) of the graph, AB, BC or CD show(s) that the water was gaining heat? (1m)

(c) What could Jenny have done to the beaker of water at Point C? (1m)

13. Jacob filled Container X and Container Y with the same amount of water. He placed both containers near a window and monitored the amount of water left in each container over a period of time.



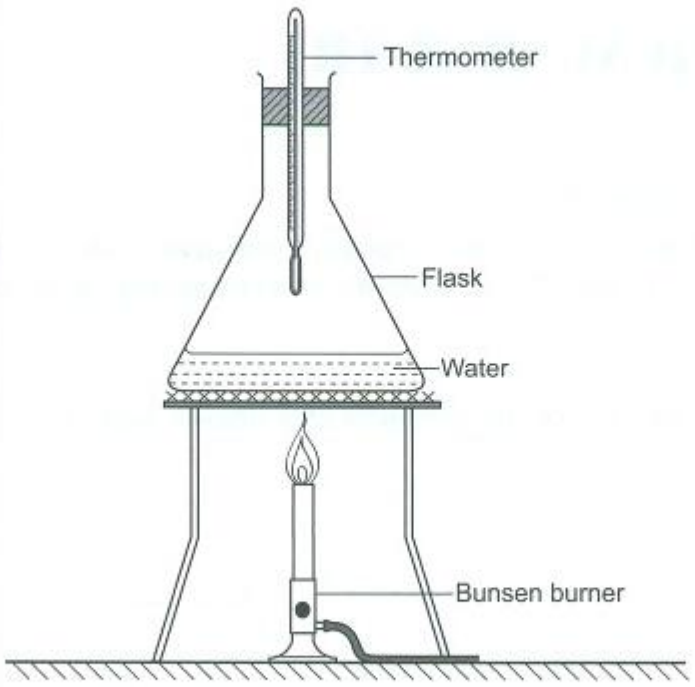
Line X in the graph below shows the relationship between the time and the amount of water left in Container X.



(a) In the graph above, **draw** and **label** Line Y to shows the relationship between the time and the amount of water left in Container Y. (1m)

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

14. Liming carried out an experiment as shown in the set-up below.



She filled a conical flask with 150 ml of water and allowed it to boil and noted its temperature.

Next she added 5 g of salt into the water and again measured its temperature when the water boiled. She repeated the experiment using different amounts of salt and recorded the results in the table shown below.

Amount of salt added (g)	0	5	15	20
Temperature at which the water boils (°C)	100	101	104	105

(a) What was the aim of Liming's experiment? (1m)

_____

_____

(b) State the relationship between the amount of salt added and the boiling point of the water? (1m)

_____

_____

(c) What would be left in the conical flask if Liming continued to heat the solution until it dried up? (1m)

_____

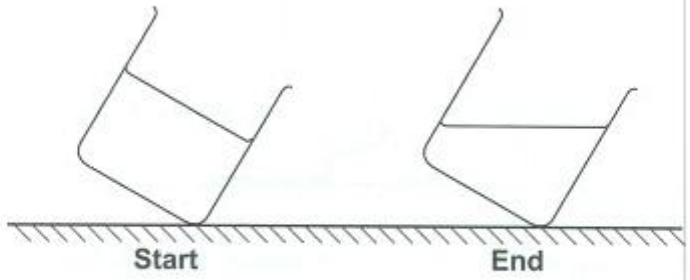
TOPICAL TEST 1B:

30

Section A (10 x 2 marks)

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write the answers in the brackets provided.

1. The diagram below shows the contents of a beaker before and after a process had taken place.

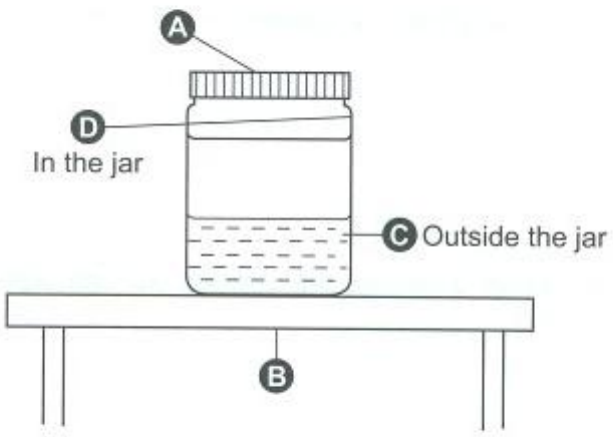


The process that took place in the diagram above was _____.

(1) freezing
(2) condensation
(3) melting
(4) evaporation

( )

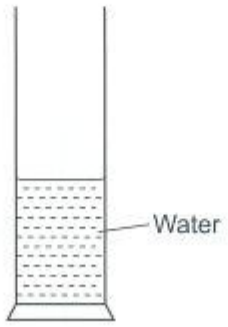
2. Cheryl poured some ice-cold water into a jar, covered it with a metal lid and placed it on a table as shown below. At which of the following parts would she observe tiny water droplets after one minute?



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

( )

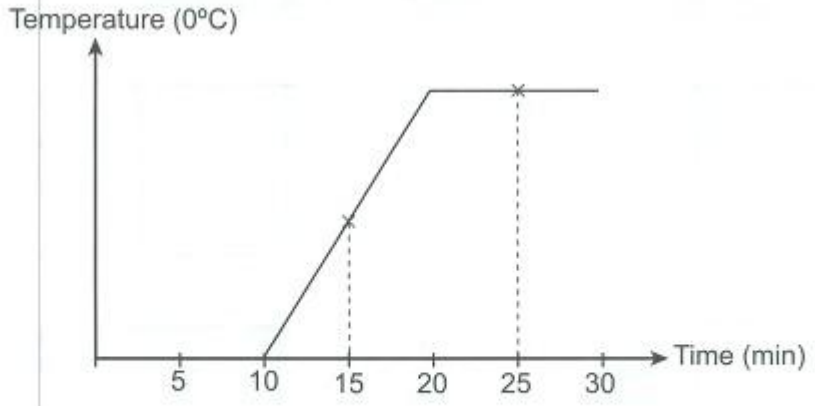
3. Study the diagram below.



If Alex wants the water in the container to dry up faster, he should _____.

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

4. Jia En heated a beaker of ice cubes for 30 minutes until he observed there was no more water left in the beaker. The graph below shows the temperature changes of the content in the beaker against time.

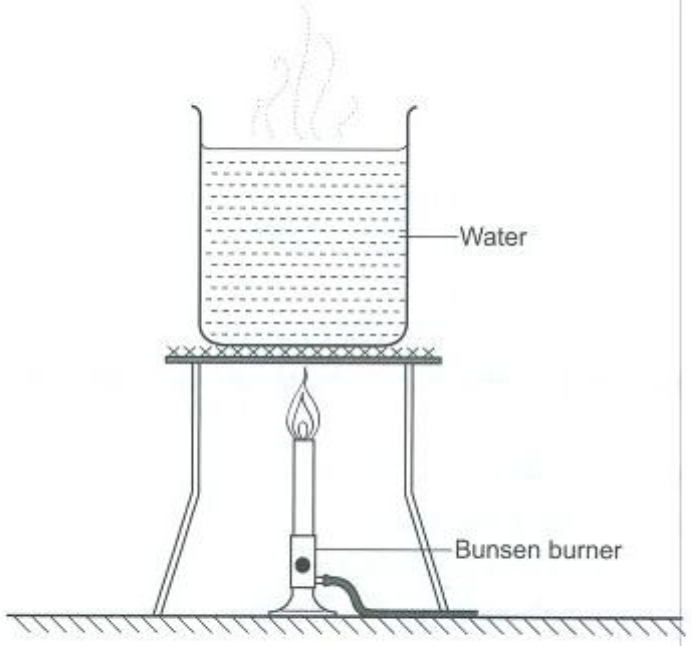


What was the state of matter found in the beaker at the 15th and 25th minute?

	At the 15th minute	At the 25th minute
(1)	Solid only	Liquid only
(2)	Liquid only	Gas only
(3)	Solid only	Liquid and gas
(4)	Liquid only	Liquid and gas

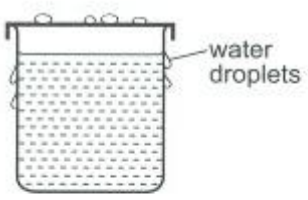
( )

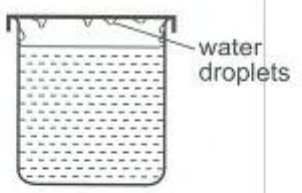
5. Judy heated a beaker of water as shown in the diagram below.



She then removed the beaker of water from the heat source, covered it with a metal lid and placed the beaker with the lid on a table.

After 3 minutes, which of the following can be observed?

(1)


(2)


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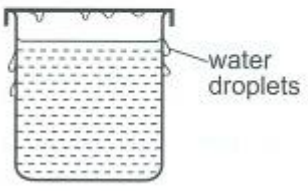

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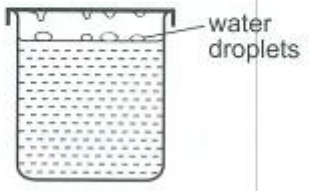
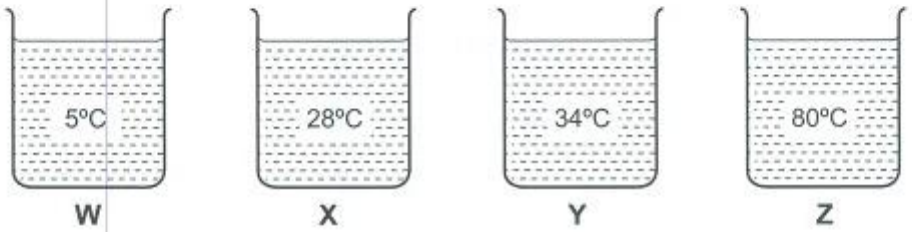


( )

6. Four containers of water were placed on a table, in a classroom. The temperature of the water in each container is shown in the diagram below.

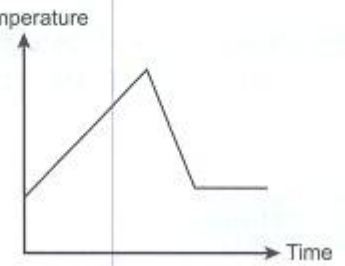


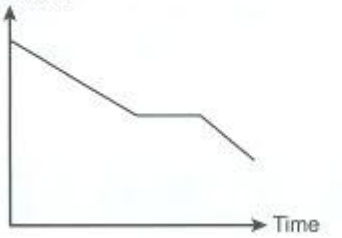
On which container would you see droplets of water forming on the outer surface?

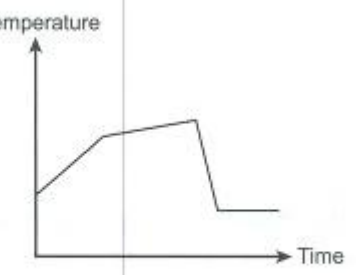
(1) W (2) X
(3) Y (4) Z ( )

7. Darren 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 correctly represents his data?

(1)


(2)


(3)


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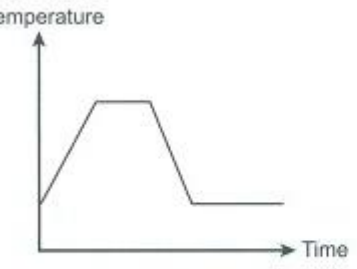
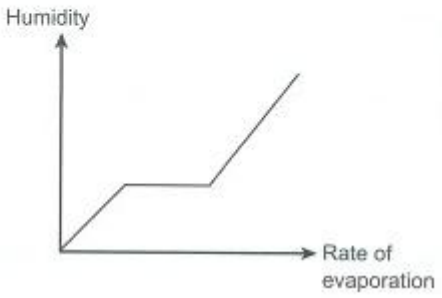


( )

8. Which of the following graphs describes the relationship between the humidity level and the rate of evaporation?

(1)


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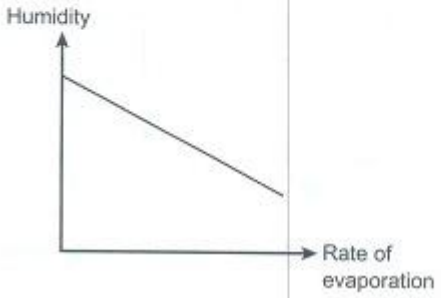
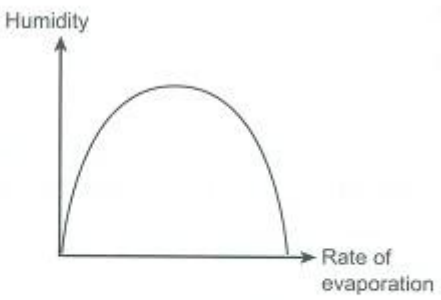
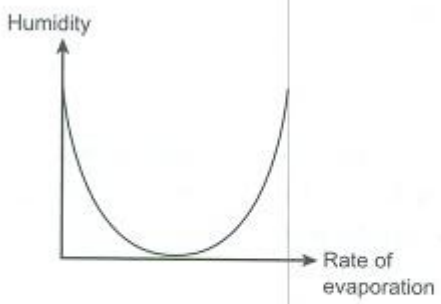


(3)


(4)


( )

9. Four similar wet towels A, B, C and D were hung in 4 different places for 2 hours with conditions shown below. A tick (✓) shows that the condition was present.

Towel	Sunny	Windy	Humid
A	✓		
B	✓	✓	
C		✓	
D			✓

Which of the following options correctly shows the towels arranged from the most wet to the least wet after 2 hours?

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

( )

10. Joseph wanted to find out the rate of evaporation at two different locations of his neighbourhood. He emptied a 100 ml bottle of water at each location to create 2 puddles. He then observed the 2 puddles of water and noticed that Puddle A dried up faster than Puddle B.

Which of the following are possible reasons for this?

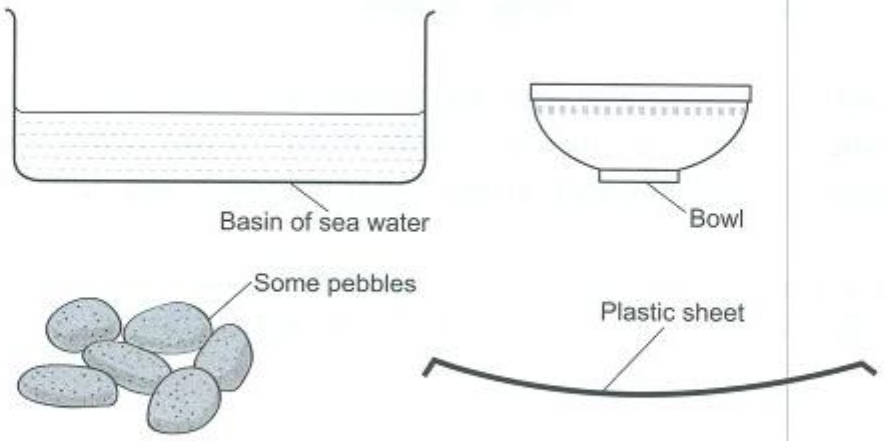
A: Puddle B has a smaller exposed surface area than Puddle A.
B: Puddle B was under the shade while Puddle A was under direct sunlight.
C: Puddle B was in the path of wind while Puddle A was not.

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

Section B (10 marks)

Read each question carefully and write the answers in the spaces provided.

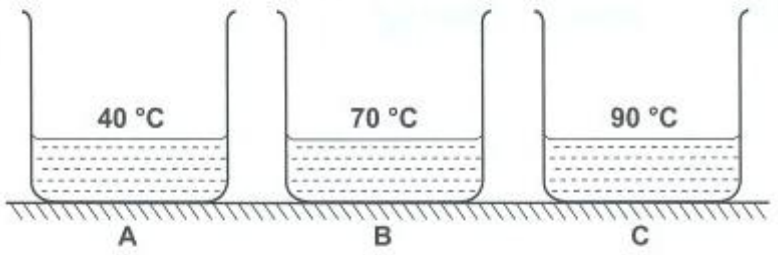
11. Desalination is a process to obtain fresh water from sea water.



(a) With the given apparatus above, **draw** and **label** in the space provided how fresh water can be obtained. (2m)

(b) Name 2 processes that occurred in your set-up when the sea water became fresh water. (1m)

12. Sammi carried out an investigation by measuring an equal volume of water of different temperatures and poured the water into three identical beakers. The 3 beakers were left uncovered on a table next to a window as shown below.



(a) What is the aim of Sammi's experiment? (1m)

_____

_____

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

_____

_____

13. Jonas carried out a test by weighing his towel before and after washing. Next, he hung the towel out to dry.

(a) Jonas's towel weighed more after washing. Why is this so? (1m)

_____

_____

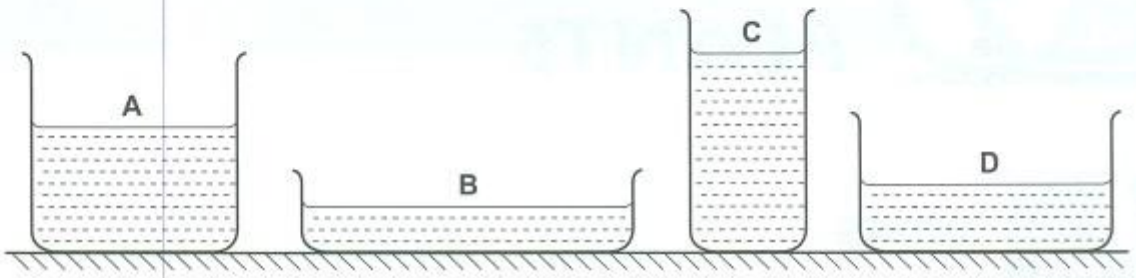
After hanging the towel up, Jonas weighed the towel every 10 minutes and recorded the results in the table below.

Time (min)	Mass of towel (g)
0	700
10	670
20	650
30	610
40	580
50	550
60	550

(b) How long did it take for the towel to dry? Explain your answer. (1m)

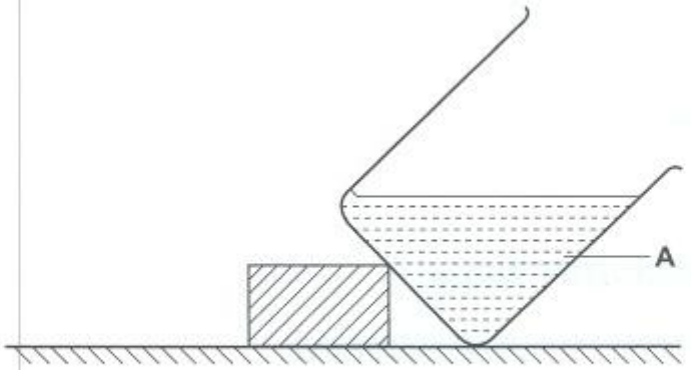
(c) Jonas repeated the experiment the next day but the towel dried faster. Give one possible reason why the towel dried faster when he repeated the experiment. (1m)

14. Tiffany conducted an experiment to find out which container allows water to evaporate the fastest. She poured 200ml of water into each of the four containers, A, B, C and D, as shown below and placed them at the same location.



(a) Arrange the containers in order of the rate of evaporation of water, starting with the one that evaporates the slowest. (1m)

Tiffany tilted Container A as shown in the diagram below.



(b) How will the rate of evaporation be affected? Explain your answer. (1m)