**St Hilda's Primary School**
**Primary 4**
**Science**
**Term 2 Weighted Assessment, 2024**

| | |
|---|---|
| Section A | 20 |
| Section B | 15 |
| Total Score | 35 |

Name: _____ (  )

Class: P4 / _____
Duration: 45 minutes
Total no. of pages: 14

Date: 3 May 2024

**Section A: 20 Marks**

Parent's Signature: _____

For questions 1 to 10, write your answer (1, 2, 3 or 4) in the bracket provided.
[2 marks each]

1 Which one of the following is a matter?

(1) air
(2) heat
(3) shadow
(4) lightning

(  )

2 Which one of the following statements is true for both solids and liquids?

(1) They are states of matter.
(2) They have fixed shapes.
(3) They can be compressed.
(4) They do not have fixed volumes.

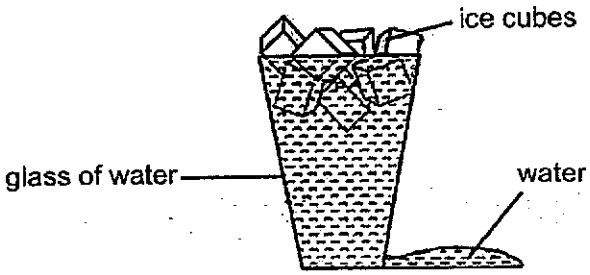
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| | |
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| SCORE | 4 |



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3 Lana filled a glass with water to the brim. She then dropped some ice cubes into the glass of water as shown in the diagram below.




After dropping the ice cubes into the glass of water, she noticed that some of the water flowed out of the glass.
Based on the diagram above, this shows that the ice cubes _____.

(1) have mass
(2) occupy space
(3) have definite shape
(4) can be compressed

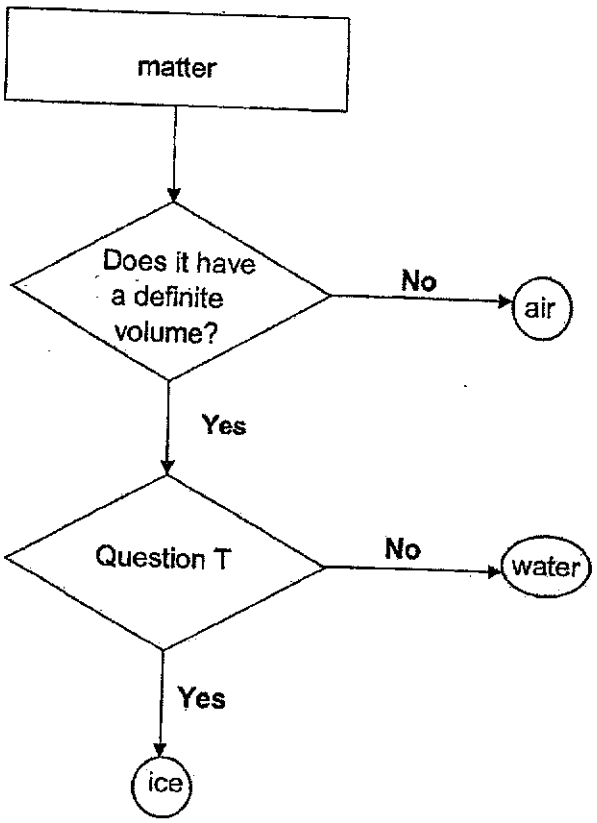
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| SCORE | 2 |
|---|---|



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4 Study the flowchart below.




What is Question T?

(1) Does it have mass?
(2) Does it occupy space?
(3) Does it have a definite shape?
(4) Can it be compressed?

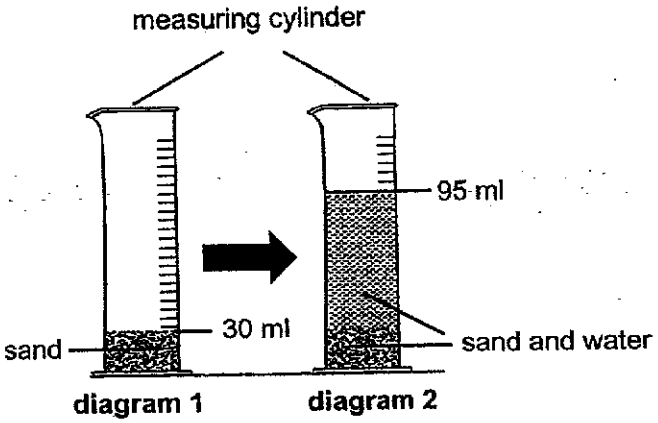
(  )

SCORE 2



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5 Peter measured 30 ml of sand in a measuring cylinder as shown in diagram 1. He then poured 70 ml of water into the same measuring cylinder as shown in diagram 2.




He observed that the total volume of the water and sand was only 95 ml as shown in diagram 2.
What can Peter conclude from his observation?

(1) Sand has a definite shape.
(2) Sand can be compressed and have no definite volume.
(3) Water can be compressed to occupy the air spaces.
(4) Water can occupy the air spaces between the sand particles.

( )

| SCORE | 2 |
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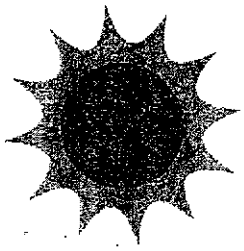
6 Which of the following is **not** a source of heat?

(1)



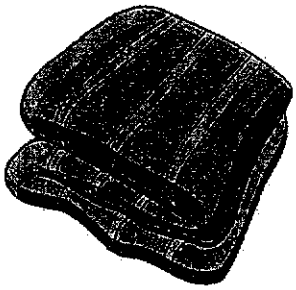
hot coffee

(2)



Sun

(3)



blanket

(4)



fire

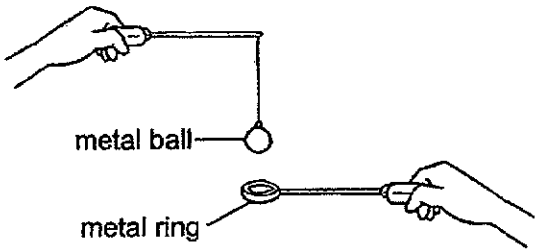
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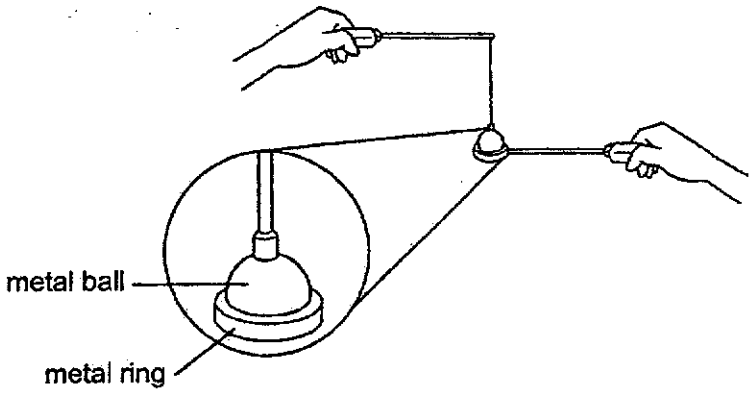


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7 Siti tried to put the metal ball through the metal ring.




However, the metal ball was not able to pass through the metal ring as shown below.




What should she do to make the ball pass through the ring?

(1) Heat the ring for a while.

(2) Heat the ball for a while.

(3) Heat both the ring and the ball.

(4) Put the ring in cold water for a while.

(  )

| SCORE | / 2 |
|---|---|



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8 Kai Ling ordered a bowl of ice cream. She placed a metal spoon in the ice cream.




Which of the following statements is true?

(1) The ice cream loses heat to the metal spoon.
(2) The ice cream loses heat to the surrounding air.
(3) The metal spoon gains heat from the ice cream.
(4) The ice cream gains heat from the surrounding air.

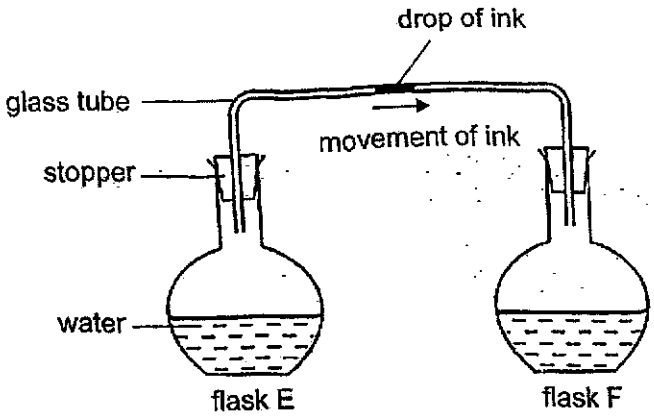
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| SCORE | / 2 |
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9 A drop of ink was placed in the middle of a glass tube connecting two identical flasks, E and F, as shown in the diagram below. Both flasks contained the same volume of water but at different temperatures.




Jesper noticed that the drop of ink moved towards flask F within three minutes. Based on his observation above, which of the following shows the possible temperature of the water in flasks E and F respectively?

| | Temperature of water (°C) | |
|---|---|---|
| | **flask E** | **flask F** |
| (1) | 20 | 20 |
| (2) | 90 | 90 |
| (3) | 90 | 20 |
| (4) | 20 | 90 |

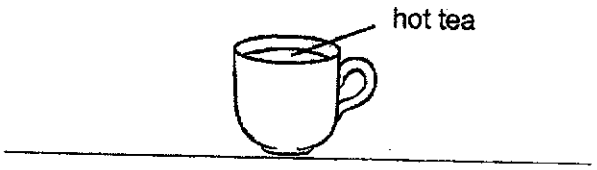
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| SCORE | / 2 |
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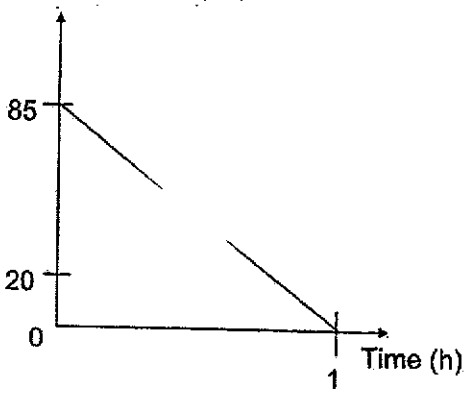
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**10** Muthu left a cup of hot tea on the dining table.

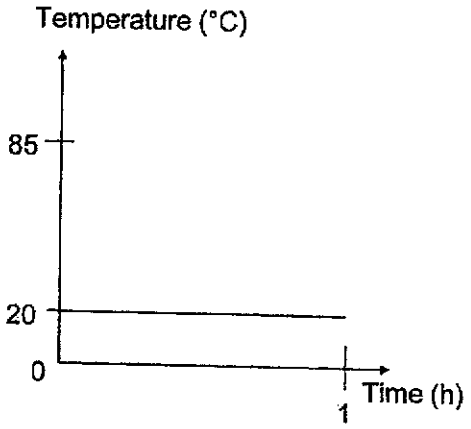



Which graph shows the correct changes in the temperature of the hot tea over one hour?

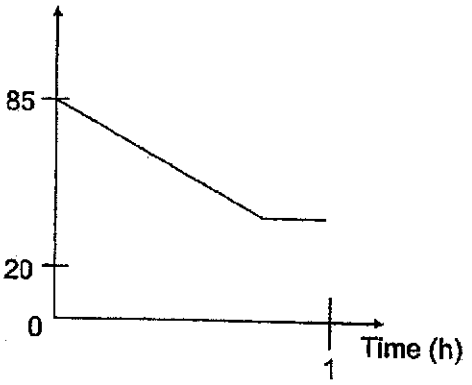
(1)



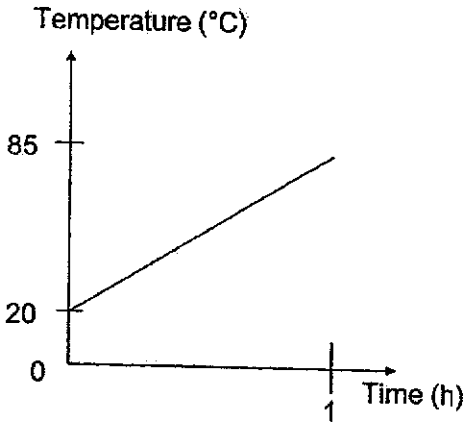

(2)




(3)




(4)




( )

| SCORE | 2 |
|---|---|



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**Section B: 15 marks**

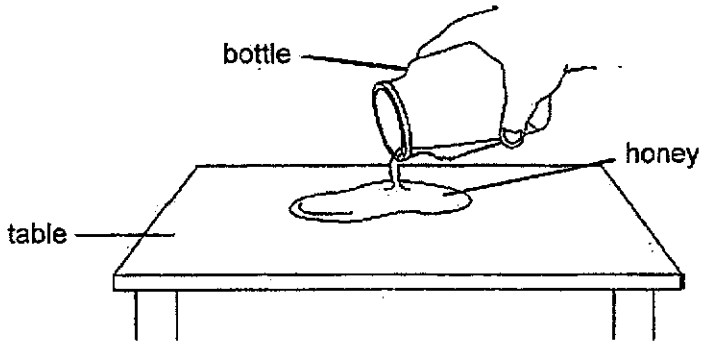
For questions 11 to 14, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

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**11** Choose the correct words from the box below to fill in the blanks in **(a)** and **(b)**.

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

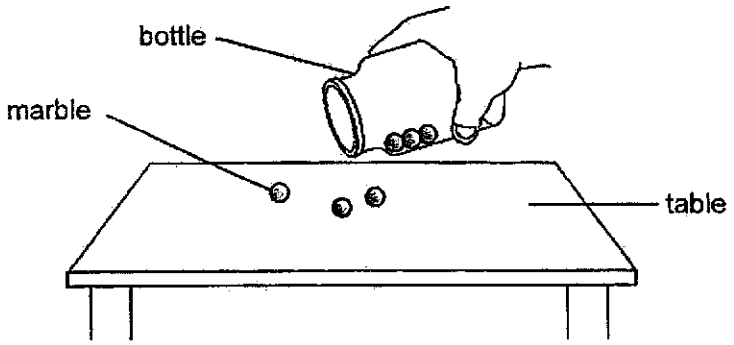
**(a)** Ben poured all the honey from a bottle onto a table as shown below.




The volume of honey remains the same but its shape changes. [1]

This shows that honey is a _____.

**(b)** Ben emptied some marbles from a bottle onto a table as shown below.




The shape and volume of the marbles remain the same. [1]

This shows that a marble is a _____.

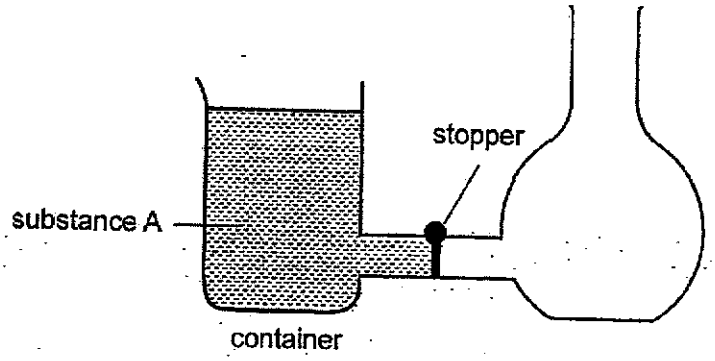
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| SCORE | / 2 |
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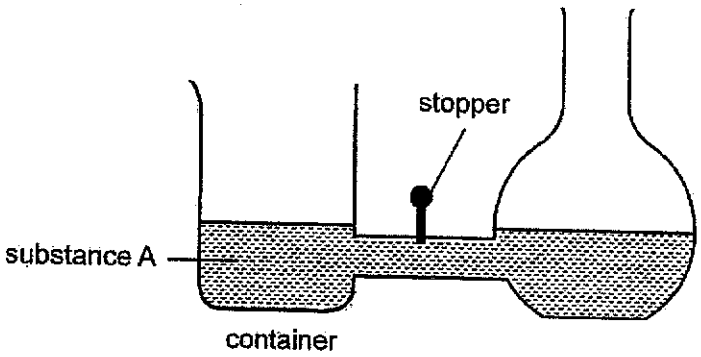


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Ben poured substance A into a container as shown below.




When the stopper is pulled up, substance A flows to the remaining part of the container as shown below.




(c) What is the state of matter of substance A? [1]

_____

(d) Ben concluded that substance A has a fixed volume and occupies space. Based on his observations, state **another** property of substance A. [1]

_____

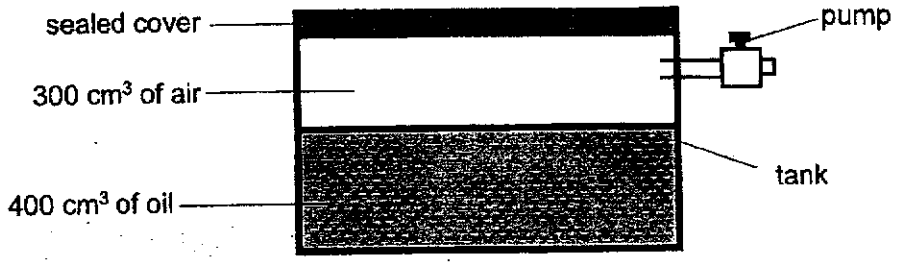
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| SCORE | / 2 |
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**12** The tank shown below is filled with 400 $cm^3$ of oil and 300 $cm^3$ of air. The tank has a sealed cover that does not allow any substance to enter or escape from the tank.




Shawn pumped another 100 $cm^3$ of air into the tank through the pump.

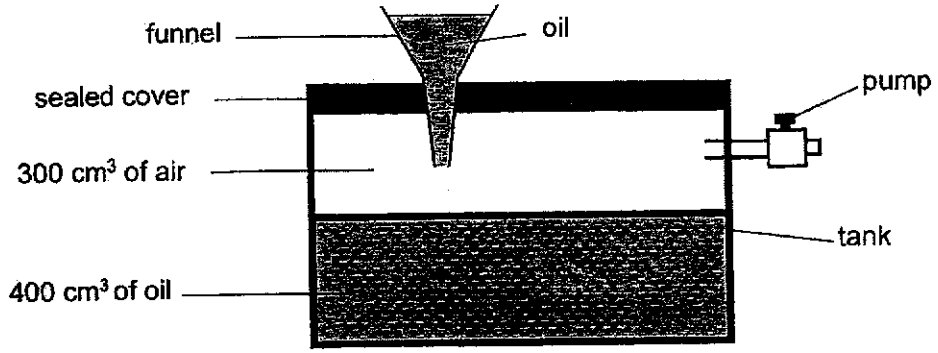
**(a)** What will be the final volume of air in the tank? [1]

_____ $cm^3$

**(b)** What is the property of air that allows Shawn to pump another 100 $cm^3$ of air into the tank? [1]

_____

Shawn made an opening in the sealed cover to insert a funnel to pour more oil into the tank. However, he noticed that the oil dripped in very slowly.




**(c)** Give a reason why the oil dripped very slowly into the tank in the set-up above. [1]

_____

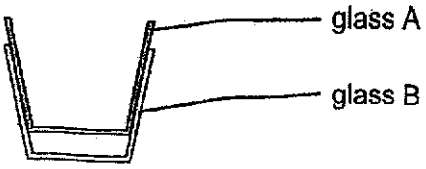
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| SCORE | 3 |
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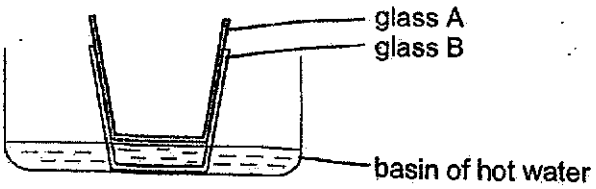


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13 Jiaming wanted to separate glasses A and B, which were stuck together as shown below.

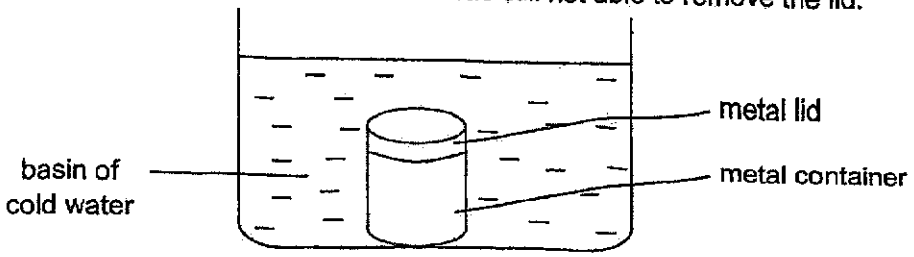



Jiaming then placed both glasses into a basin of hot water for 30 seconds. After that, he was able to remove glass A more easily.




(a) Explain why Jiaming was able to remove glass A from glass B more easily. [2]

Jiaming had difficulty removing the metal lid from the empty metal container. He then placed the whole container with lid into a basin of cold water as shown below. However, he found out that he was still not able to remove the lid.



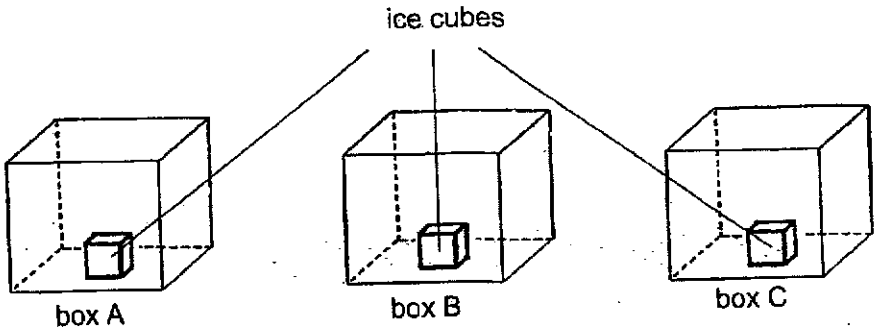

(b) Using **only** the basin of cold water, suggest how Jiaming can remove the metal lid. Explain your answer. [2]

| SCORE | / 4 |
|---|---|



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14 Ali had three similar boxes made of different materials. He put similar ice cubes into each box as shown in the diagram below.




The table below shows the time taken for each ice cube in the box to melt completely.

| Box | Time taken for ice cubes to melt completely (min) |
|---|---|
| A | 10 |
| B | 30 |
| C | 20 |

**(a)** Circle the correct answers. [2]

Material of box A is the ( *best* / *poorest* ) conductor of heat.

The ice cube in box A takes the ( *shortest* / *longest* ) time to melt.

The ice cube in box A ( *gains* / *loses* ) heat the ( *slowest* / *fastest* ) from the warmer surroundings.

**(b)** Ali wanted to keep his hot drinks as warm as possible over a long time. [2]
Which box A, B or C would be the most suitable to store his hot drinks?
Explain your answer.

_____

_____

_____

**END OF PAPER**

| SCORE | / 4 |
|---|---|



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# ST. HILDA'S PRIMARY SCHOOL
## TERM 2 WEIGHTED ASSESSMENT, 2024
### Simplified Answer Key

**Section A**

| | | | |
|---|---|---|---|
| 1. | 1 | 6. | 3 |
| 2. | 1 | 7. | 1 |
| 3. | 2 | 8. | 4 |
| 4. | 3 | 9. | 3 |
| 5. | 4 | 10. | 3 |

**Section B**

**This simplified answer key only provides a reference and the key concepts have been bolded. Variation of students' answers have been accepted if they have shown conceptual understanding.**

| | |
|---|---|
| 11(a) | liquid |
| (b) | solid |
| (c) | liquid |
| (d) | A does **not have a definite shape**. |
| 12 (a) | 300 $cm^3$ |
| (b) | **Air** can be **compressed**. |
| (c) | **Air occupies space** in the tank and **cannot escape**. |
| 13 (a) | Glass B **gained heat from hot water** and **expanded more** than glass A. |
| (b) | Place **only the metal container in the cold water**.The metal container will **lose heat to the cold water** and **contract**. |
| 14 (a) | Material of box A is the ( *best* / *poorest* ) conductor of heat.<br>The ice cube in box A takes the ( *shortest* / *longest* ) time to melt.<br>The ice cube in box A ( *gains* / *loses* ) heat the ( *slowest* / *fastest* from the warmer surroundings. |
| (b) | Box B. The ice cube in box B took the **longest time to melt.** Box B is the **poorest conductor of heat.** The hot drink in box B will **lose heat the slowest** to the surroundings. |



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