

Name:

Class:

/65

## HEAT UNIT TEST

1. Define and give an example of the following. (2 marks each)

a) convection -

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b) conduction -

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c) radiation -

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2. Different substances are made of different particles, so they have different melting and boiling temperatures. In the chart, write the melting and boiling point for a substance other than the one given. (2 marks)

| SUBSTANCE | MELTING POINT (Celsius) | BOILING POINT (Celsius) |
|-----------|-------------------------|-------------------------|
| Water     | 0 °                     | 100 °                   |
|           |                         |                         |

3. List the 3 states of matter. Explain in detail the characteristics of each state. (6 marks)

State of matter

Characteristic

a) \_\_\_\_\_  
\_\_\_\_\_

b) \_\_\_\_\_  
\_\_\_\_\_

c) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Explain with concrete details and examples the differences between *heat* and *temperature*. (3 marks)

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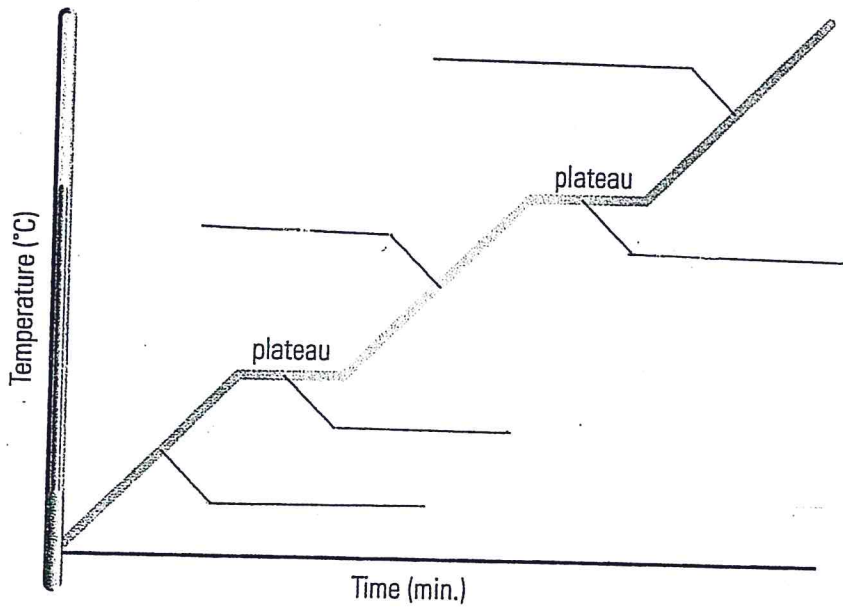
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5. Properly fill out the graph below. Choose your answer from the list below. (5 marks)



A graph of a change of state is called a **heating curve**.  
The flat part of the curve, where the substance is melting or boiling, is called a plateau.

gas warming

solid warming

liquid warming

solid melting

liquid vapourizing  
(boiling)

6.

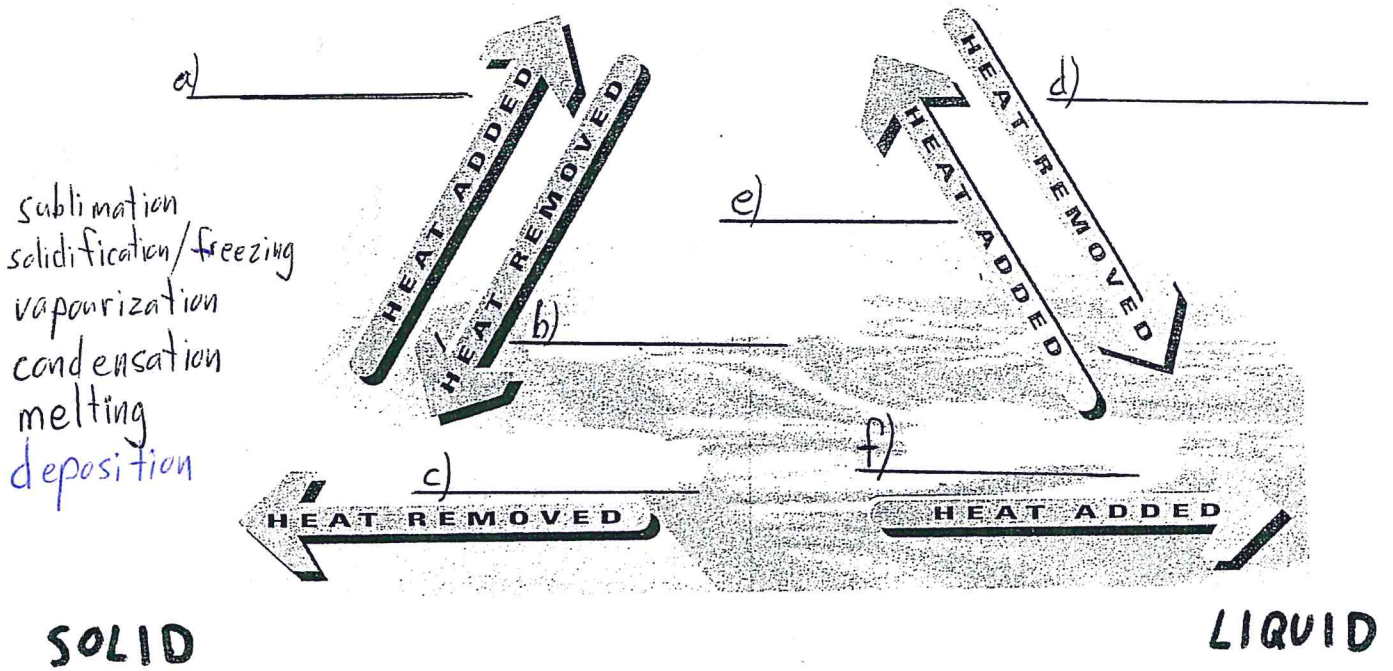
Use this list to fill in the following chart. Choose the most appropriate answer. Write the entire answer not just the number. (14 marks)

1. coldest temperature possible (absolute freezing)
2. surface of the sun
3. comfortable bath water
4. ice cream
5. air in a refrigerator
6. freezing water
7. hot tea
8. inside of the sun
9. boiling water
10. oven temperature for cooking a pizza
11. hottest day recorded on earth's surface
12. comfortable room temperature
13. healthy human's body temperature
14. coldest weather recorded on earth's surface

TABLE OF TEMPERATURES

| TEMPERATURE    | EXAMPLE |
|----------------|---------|
| -273 °C.       |         |
| -89 °C.        |         |
| -10 °C.        |         |
| 0 °C.          |         |
| 7 °C.          |         |
| 20 °C.         |         |
| 37 °C.         |         |
| 40 °C.         |         |
| 58 °C.         |         |
| 80 °C.         |         |
| 100 °C.        |         |
| 160 °C.        |         |
| 6000 °C.       |         |
| 15 000 000 °C. |         |

The diagram shows the relationship between heat and changes in "states of matter."  
 7. Fill in the blanks using the **GAS** list. (6 marks)



8. Fill in the blanks with the words given. (8 marks)

**The six changes of state**

- sublimation
- condensation
- melting
- evaporation
- freezing
- boiling
- solidification
- vaporization

\_\_\_\_\_ is the change from a solid to a liquid.

\_\_\_\_\_ is the change from a liquid to a gas.

Slow vaporization is called \_\_\_\_\_. Fast vaporization is called \_\_\_\_\_.

\_\_\_\_\_ is the change from a gas to a liquid.

\_\_\_\_\_ or \_\_\_\_\_ is the change from a liquid to a solid.

\_\_\_\_\_ is \_\_\_\_\_ the change from a solid directly to a gas.

|  |
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|  |
|  |
|  |

9. **TRUE - FALSE QUESTIONS** (1 mark each)

- \_\_\_\_\_ - 1. Heat flows from an area of low heat to an area high in heat.
- \_\_\_\_\_ - 2. The Kelvin temperature scale is designed for use in scientific experiments.
- \_\_\_\_\_ - 3. The freezing point of water is 0 Celsius and water will expand when frozen by almost 9% in volume.
- \_\_\_\_\_ - 4. Touching a hot stove is an example of convection.
- \_\_\_\_\_ - 5. The faster the molecules of a substance are moving, the higher the temperature.
- \_\_\_\_\_ - 6. When heat is added to an object, particles move faster and take up more space. (expand)
- \_\_\_\_\_ - 7. Particles move faster in hot water than in cold water.
- \_\_\_\_\_ - 8. A glass of water is heated from 10 degrees Celsius to 40 degrees Celsius, therefore the number of particles of water in the glass would have changed.
- \_\_\_\_\_ - 9. In the Kelvin temperature scale each degree Kelvin equals one degree Celsius and the Kelvin scale has no negative numbers.
- \_\_\_\_\_ - 10. Water freezes at 273 K and boils at 373 K.

10. Explain what the term "*Absolute Freezing*" means. Be detailed. (3 marks)

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11. In your own words please explain how a thermometer works. (2 marks)

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