This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

Stage Exam 02

08DEC2023

Do NOT write in this box. Your MARK will be placed here.

Subject :	Chemistry
Class :	8A, 8B, 8C and 8E
Teacher :	Mrs. Dina Geha
Duration :	1 hour

Please write your answers on a lined sheet of paper, NOT on the question sheet.

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

I- Write true if the statement is true. If the statement is false, change the underlined term to make the statement true.

1. Different liquids usually have different boiling points.
2. Evaporation is a slow process.
3. The temperature of a liquid continues to rise once it reaches its boiling point.
4. Evaporation of water takes place at the surface.
5. Evaporation is the same as boiling.
6. When a liquid boils, bubbles form throughout the liquid.
7. At its boiling point, water changes into ice.
8. Water will stop boiling once it reaches 100°C.

(Total for question = 8 marks)

II- Identify the letter of your choice that best completes or answers the statement.

1. Boyle's Law relates to the relationship between:
   A. Pressure and Volume
   B. Volume and Temperature
   C. Pressure and Temperature
   D. Mass and Volume

2. According to Boyle's Law, if the volume of a gas decreases, what happens to its pressure?
   A. Increases
   B. Decreases
   C. Stays the same
   D. Depends on the gas

3. Charles's Law is concerned with the relationship between:
   A. Pressure and Volume
   B. Volume and Temperature
   C. Pressure and Temperature
   D. Mass and Volume

4. According to Charles's Law, if the temperature of a gas increases, what happens to its volume?
   A. Increases
   B. Decreases
   C. Stays the same
   D. Depends on the gas

5. If the volume of a gas is doubled at a constant temperature, according to Boyle's Law, what happens to its pressure?
   A. Doubles
   B. Halves
   C. Quadruples
   D. Stays the same

6. Which term refers to a measurement of a liquid's resistance to flow?
   A. Viscosity
   B. Vapor
   C. Temperature
   D. Surface tension

(Total for question = 6 marks)

III- Choose the term that does not belong in each group. (Hint: In each number, three of the four terms are connected in some way).

1. condensation, ice, gas, liquid
2. solid, water vapor, liquid, freezing
3. gain energy, lose energy, gas particles, condensation
4. freezing, melting, reacting, condensing
5. gain heat, melt, evaporate, state of matter
6. solid, water, sublimation, gas

(Total for question = 6 marks)

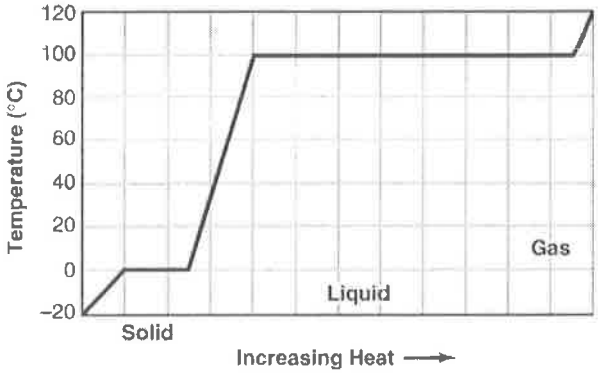
IV- Fill in the blanks with the right term that best completes the sentence.

Matter changes __1.__, but the total amount of the matter __2.__

Thermal energy is sometimes __3.__ by surrounding matter, but the total energy is __4.__

(Total for question = 4 marks)

V- The graph on the right is called a state-change diagram. It shows what happens to water as it changes from ice to liquid water and then to steam. Study the graph. Then, answer the questions that follow.



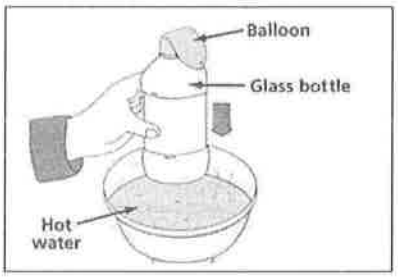
1. What is being measured along the vertical axis of the graph? (1)
2. What is being measured along the horizontal axis? (1)
3. What happens to the temperature of the ice when heat is first added? (1)
4. What happens to the temperature of the ice right after the ice reaches 0°C? What is happening to the ice at this time? (2)
5. The temperature of the liquid water steadily increases between what two temperatures on the graph? (1)
6. What happens to the temperature of the water as it changes to steam? What is happening to the heat during this time? (2)
7. During the times when the temperature is not changing, what do you think is happening to the heat that is being added to the water? (1)

(Total for question = 9 marks)

VI- Study the diagram on the right.

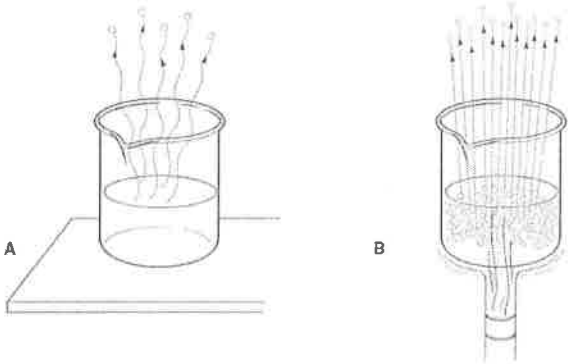
What will happen to the balloon when the bottle is placed into the bowl of hot water? (1)

Explain your answer. (1)



(Total for question = 2 marks)

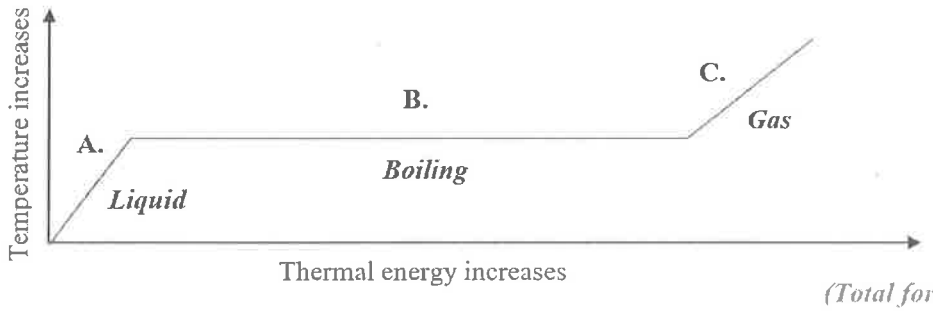
VII- The diagram below illustrates evaporation of water and boiling water. Use the diagram to answer the questions.



1. In which container is the liquid water changing to a gas? (1)
2. What process is taking place in container B? (1)
3. Compare what is happening to the water in each container. (1)

(Total for question = 3 marks)

VIII- The process of boiling is represented in the graph below. On your answer sheet, Label the line parts (A, B, and C) to indicate the changes in temperature (T) and potential energy (PE).



(Total for question = 6 marks)

IX- Short answers

1. Kim placed a cup of water in a warm place. One week later, there was no water left in the cup.

   What happened to the water in the cup? Explain (2)

2. Hypothesize what would happen if the attractive forces between all of the particles of matter on Earth were equal. (2)

3. Compare sublimation with deposition. (2)

4. How are the molecules at the surface of water different from the molecules below the surface?

   (2)

5. Characterize water:

   a. Its melting point

   b. Its boiling point

   c. Why is it unique?

   (3)

(Total for question = 11 marks)

SE02/2023-2024/Chemistry/8ABCE Class 1

I- True or false

1- True (1)
2- True (1)
3- Stays the same (1)
4- True (1)
5- different from (1)
6- True (1)
7- Water vapor / steam (1)
8- start (1)

II- Multiple choice

1- A (1)
2- A (1)
3- B (1)
4- A (1)
5- B (1)
6- A (1)

III- Choose the term that does not belong in each group.

1- ice (1)
2- Water Vapor (1)
3- gain energy (1)
4- reacting (1)
5- state of matter (1)
6- Water (1)

IV- fill in the blanks

1- states (1)
2- remains the same (1)
3- absorbed (1)
4- Conserved. (1)

V- Water graph

1- Temperature (1)
2- heat (1)

3- The temperature increases. (1)
4- The temperature stops increasing and stays (1) at 0°C. The ice is changing to water. (1)
5- between 0°C and 100°C. (1)
6- The temperature stops increasing (1) and stays at 100°C. Heat is still being added. (1)
7- It is providing the energy (1) needed for the state change, either from solid to liquid or from liquid to gas.

VI - Diagram 1

The balloon inflates (1). Charle's law states that volume of a gas increases (1) with increasing temperature. (The hot air molecules inside the bottle will move faster and occupy more space. The balloon starts inflating to provide more space for hot air molecules).

VII - Diagram 2

1- In both containers (1)
2- Boiling (1)
3- In container A, liquid at the surface (0.5) is slowly changing to a gas. In container B, a liquid is rapidly changing to a gas throughout the liquid. (0.5)

VIII - Process of Boiling graph

A- Temperature increasing (1), potential energy (1) little change
B- Temperature (1) constant, potential energy increasing (1)
C- Temperature (1) increasing, potential energy little (1) change.

IX - Short answers

1- The water evaporated. The water molecules at the surface will gain enough Kinetic energy to break free and leave the cup and eventually the whole cup will become empty.

2- There would only be one state of matter at any given time. If all particles of matter had strong attractive forces, everything would be solid; if all particles had weaker attractive forces, everything might be liquid or gas.

3- Both are changes between solid and gaseous states without passing through the liquid state.

4- The molecules near the surface are being pulled only by the molecules below. They exhibit strong attractive forces to their neighboring molecules. This stronger force is the surface Tension.
While the molecules below the surface are being pulled from all sides.

5- Characterize water:
Its melting point: 0°C
Its boiling point: 100°C
Why is it unique: It exists, as a solid, liquid, and gas within Earth's temperature range.