Assignment 1

Due on 2020-02-12, 22:59 IST

Unit 3 - Week 1

The assigment can be submitted for a maximum of 3 times but the assignment has passed. As per our policies you have not submitted this assignment.

1. A closed vessel with a supplementary material inside of the form of a liquid at a constant temperature in a closed container. In order to do an overall study, 100g of water is placed in the container. The water is heated to a temperature of 80°C. The temperature of the water is recorded every minute for 10 minutes and the temperature is 80°C, 80°C, 80°C, 80°C, 80°C, 80°C, 80°C, 80°C, 80°C, 80°C. Which of the following statements is true?

- The temperature of the water is not changing because the heat is being transferred to the water at the same rate at which the water is losing heat to the container.
- The temperature of the water is not changing because the heat is not being transferred to the water.
- The temperature of the water is not changing because the heat is being transferred to the container at a faster rate than the water is losing heat.

2. A thermodynamic state of a system is related to the properties of the system. Which of the following are the correct properties of a system?

- Volume, mass, pressure, temperature, density, molar volume, molar mass, molar entropy, molar energy, molar enthalpy, molar Gibbs free energy.
- Volume, mass, pressure, temperature, density, molar volume, volume, mass, pressure, temperature, density, molar volume, molar mass, molar entropy, molar energy, molar enthalpy, molar Gibbs free energy.
- Volume, mass, pressure, temperature, density, molar volume, volume, mass, pressure, temperature, density, molar volume, molar mass, molar entropy, molar energy, molar enthalpy, molar Gibbs free energy.

3. The thermodynamic state of a system is related by the properties of the system. Which of the following equations is correct?

- V = m \rho\Delta T
- V = m \rho / T
- V = m \rho T

4. The pressure-volume-temperature diagram for a system is shown below. Which of the following statements is true?

- The system is in a state of equilibrium.
- The system is undergoing a phase change.
- The system is undergoing a chemical reaction.

5. Manganese is a valuable metal and it is used in various applications. Which of the following statements is true?

- Manganese is a valuable metal and it is used in the production of steel.
- Manganese is a valuable metal and it is used in the production of aluminum.
- Manganese is a valuable metal and it is used in the production of copper.

6. Which of the following statements is true?

- A closed vessel is a system where the heat is not being transferred to or from the system.
- A closed vessel is a system where the heat is being transferred to or from the system.
- A closed vessel is a system where the heat is being transferred to or from the system at a constant rate.

7. The pressure-volume-temperature diagram for a system is shown below. Which of the following statements is true?

- The system is in a state of equilibrium.
- The system is undergoing a phase change.
- The system is undergoing a chemical reaction.

8. Manganese is a valuable metal and it is used in various applications. Which of the following statements is true?

- Manganese is a valuable metal and it is used in the production of steel.
- Manganese is a valuable metal and it is used in the production of aluminum.
- Manganese is a valuable metal and it is used in the production of copper.

9. Which of the following statements is true?

- A closed vessel is a system where the heat is not being transferred to or from the system.
- A closed vessel is a system where the heat is being transferred to or from the system.
- A closed vessel is a system where the heat is being transferred to or from the system at a constant rate.

10. The pressure-volume-temperature diagram for a system is shown below. Which of the following statements is true?

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