

1. Which term refers to a substance that has uniform chemical composition and physical properties throughout?

- a) Mixture
- b) Compound
- c) Pure Substance
- d) Solution

Answer: c) Pure Substance

Explanation: A pure substance consists of only one type of molecule or atom, exhibiting uniform properties throughout its structure.

2. At what temperature does water transform into steam at standard atmospheric pressure?

- a) 100°C
- b) 0°C
- c) 273°C
- d) 373°C

Answer: a) 100°C

Explanation: Water undergoes a phase transformation from liquid to steam at 100°C under standard atmospheric pressure (1 atm).

3. Which diagram depicts the relationship between enthalpy and entropy of a substance?

- a) PV Diagram
- b) TS Diagram
- c) PH Diagram
- d) TV Diagram

Answer: b) TS Diagram

Explanation: The TS (Temperature-Entropy) diagram shows the relationship between temperature and entropy, commonly used to analyze phase changes and thermodynamic processes.

4. What property distinguishes steam from liquid water?

- a) Density
- b) Volume
- c) Temperature
- d) Phase

Answer: d) Phase

Explanation: Steam refers to water in the gaseous phase, while liquid water is in the liquid phase. The phase of a substance is determined by its temperature and pressure.

5. Which diagram represents the relationship between pressure and volume of a substance at constant temperature?

- a) PV Diagram
- b) TS Diagram
- c) PH Diagram
- d) TV Diagram

Answer: a) PV Diagram

Explanation: The PV (Pressure-Volume) diagram illustrates the relationship between pressure and volume of a substance at constant temperature.

6. What is the term used to describe the measure of dryness of steam?

- a) Saturation
- b) Superheat
- c) Enthalpy
- d) Dryness Fraction

Answer: d) Dryness Fraction

Explanation: Dryness fraction represents the ratio of mass of dry steam to the total mass of steam-water mixture, indicating the steam quality.

7. Which tool is commonly used to determine properties of steam such as enthalpy and entropy?

- a) Steam Tables
- b) Mollier Chart
- c) Thermometer
- d) Barometer

Answer: a) Steam Tables

Explanation: Steam tables provide tabulated data on the properties of steam at various pressures and temperatures, including enthalpy, entropy, and specific volume.

8. What does the PVT surface represent in thermodynamics?

- a) Pressure-Volume-Temperature
- b) Phase-Volume-Transformation
- c) Pure Vaporization Transition
- d) Property Variation Trend

Answer: a) Pressure-Volume-Temperature

Explanation: The PVT surface depicts the relationship between pressure, volume, and temperature of a substance, indicating its thermodynamic state.

9. In which diagram does the saturation curve separate the liquid and vapor phases of a substance?

- a) PV Diagram
- b) TS Diagram
- c) PH Diagram
- d) TV Diagram

Answer: c) PH Diagram

Explanation: In the PH (Pressure-Enthalpy) diagram, the saturation curve distinguishes between the liquid and vapor phases of a substance at equilibrium.

10. What does the Mollier chart primarily illustrate?

- a) Temperature-Entropy relationship
- b) Pressure-Volume relationship
- c) Enthalpy-Entropy relationship
- d) Temperature-Volume relationship

Answer: c) Enthalpy-Entropy relationship

Explanation: The Mollier chart, also known as the h-s (enthalpy-entropy) diagram, illustrates the relationship between enthalpy and entropy of a substance, aiding in thermodynamic analysis and process calculations.

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