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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