Chapter 3 Assessment - Solids, Liquids & Gases

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. According to Boyle’s law, when the pressure of a gas increases at constant temperature, its volume
   a. stays constant.
   b. decreases.
   c. increases, then decreases.
   d. increases.

____ 2. In which state of matter do the particles spread apart and fill all the space available to them?
   a. gas
   b. solid
   c. liquid
   d. crystal

____ 3. The freezing point of water is the same as its
   a. melting point.
   b. sublimation point.
   c. boiling point.
   d. evaporation point.

____ 4. An uncovered pot of soup is simmering on a stove, and there are water droplets on the wall above the back of the stove. What sequence can you infer has occurred?
   a. vaporization, then condensation
   b. melting, then boiling
   c. condensation, then vaporization
   d. freezing, then thawing

____ 5. The opposite of vaporization is called
   a. sublimation.
   b. evaporation.
   c. freezing.
   d. condensation.

____ 6. A solid is a state of matter that has a(n)
   a. indefinite volume and a definite shape.
   b. definite volume and an indefinite shape.
   c. indefinite volume and an indefinite shape.
   d. definite volume and a definite shape.

____ 7. A graph that shows that the volume of a gas is directly proportional to its temperature under constant pressure demonstrates
   b. the Pressure law.
   c. Boyle’s law.
   d. the Density law.

____ 8. The resistance of a liquid to flowing is its
   a. volume.
   b. temperature.
   c. viscosity.
   d. pressure.
9. The boiling point of a substance is affected by
   a. the amount of surface tension the substance has.
   b. the substance’s volume.
   c. the mass of the substance.
   d. the pressure of the air above the substance.

10. According to Charles’s law, when the temperature of a gas increases at constant pressure, its
    a. mass increases.
    b. particles move more slowly.
    c. volume decreases.
    d. volume increases.

11. Data plotted on a graph results in a line that slopes upward from left to right. This graph tells you that
    a. both variables are decreasing.
    b. when one variable increases, the other variable decreases.
    c. when one variable increases, the other variable increases.
    d. when one variable increases, the other variable remains the same.

12. A fluid is
    a. a substance that has a definite shape and a definite volume.
    b. a substance that melts at a distinct temperature.
    c. a solid substance made up of crystals.
    d. a substance that flows.

13. The amount of space that a gas takes up is its
    a. mass.
    b. density.
    c. volume.
    d. pressure.

14. The change from liquid to solid, or the reverse of melting, is called
    a. freezing.
    b. boiling.
    c. sublimation.
    d. condensation.

15. During the process of sublimation,
    a. a gas turns directly into a solid.
    b. a solid turns directly into a gas.
    c. a liquid turns into a gas.
    d. a solid turns into a liquid.

16. In cold climates, the amount of snow on the ground may decrease even if the temperature stays below zero degrees Celsius. The process that best explains this event is
    a. evaporation.
    b. melting.
    c. condensation.
    d. sublimation.

17. A graph that shows that the pressure of a gas varies inversely with its volume under constant temperature demonstrates
    a. the Density law.
    b. Boyle’s law.
    c. the Pressure law.
    d. Charles’s law.
18. When the temperature of a gas decreases at constant volume, its
   a. mass increases.
   b. particles move faster.
   c. pressure increases.
   d. pressure decreases.

19. The force of a gas’s outward push divided by the area of the walls of the container is the gas’s
   a. density.
   b. pressure.
   c. volume.
   d. temperature.

20. The state of matter in which particles are arranged in either a crystalline or an amorphous form is
   a. solid.
   b. gas.
   c. liquid.
   d. fluid.

21. When an inflated balloon is exposed to cold air,
   a. the temperature inside the balloon rises.
   b. the volume of the balloon decreases.
   c. the volume of the balloon increases.
   d. the pressure inside the balloon rises.

22. What is vaporization?
   a. a liquid becoming a gas
   b. a gas becoming a solid
   c. a liquid becoming a solid
   d. a gas becoming a liquid

23. When the temperature of a gas at constant volume increases, its
   a. pressure increases.
   b. pressure decreases.
   c. volume decreases.
   d. volume increases.

24. A graph of Boyle’s law shows the relationship between
   a. volume and pressure of a gas.
   b. temperature and pressure of a gas.
   c. temperature and volume of a gas.
   d. volume and density of a gas.

25. Which state of matter undergoes changes in volume most easily?
   a. frozen
   b. gas
   c. liquid
   d. solid

26. The surface of water can act like a sort of skin due to a property of liquids called
   a. evaporation.
   b. viscosity.
   c. surface tension.
   d. condensation.
27. A graph of Charles’s law shows the relationship between
   a. temperature and volume of a gas.
   b. volume and density of a gas.
   c. volume and pressure of a gas.
   d. temperature and pressure of a gas.

28. The greater the speed of gas particles in a container, the
   a. greater the pressure.
   b. lower the temperature.
   c. lower the pressure.
   d. fewer collisions there will be.

29. In which state of matter are particles packed tightly together in fixed positions?
   a. gas
   b. solid
   c. compound
   d. liquid

30. Particles of a liquid
   a. are tightly packed together and stay in a fixed position.
   b. have no viscosity.
   c. decrease in volume with increasing temperature.
   d. are free to move in a container but remain in close contact with one another.