Chapter 11/Gases (sec 2)

1. Gay-Lussac's law shows a direct relationship between temperature and
    a. volume   c. density
    b. composition   d. pressure

2. The combined gas law is expressed by

    A. $P_1V_1 = P_2V_2$

    B. $P_1V_1/T_1 = P_1V_2/V_2$

    C. $P_1/T_1 = P_2/T_2$

    D. $V_1/T_1 = V_2/T_2$

3. Assuming all other conditions are constant, what is the new pressure of a gas if the original pressure is 50 kPa and the Kelvin temperature is doubled?
    a. 25 kPa   c. 100 kPa
    b. 50 kPa   d. 200 kPa

4. The average kinetic energy of the particles in any gas depends only on the
    a. volume of the gas.   c. temperature of the gas.
    b. pressure of the gas.   d. number of moles of the gas.

5. Who developed the concept that the total pressure of a mixture of gases is the sum of their partial pressures?
    a. Charles   c. Dalton
    b. Boyle   d. Kelvin

6. A sample of a gas occupies 250. mL at 1.00 atm of pressure. If the pressure increases to 2.00 atm while the temperature stays the same, what is the new volume?
    a. 500. mL   c. 125 mL
    b. 1.00×10^3 d. 62.5 mL

7. The gas in an aerosol container is at a pressure of 3.50 atm at 24.0°C. The caution on the container warns against storing it at temperatures above 95°C. What would the gas pressure in the container be at 95°C?
    a. 4.34 atm   c. 13.9 atm
    b. 8.68 atm   d. 84.0 atm

8. For a fixed amount of gas at a constant temperature, the volume increases as the pressure
    a. remains steady.   c. decreases
    b. increases.   d. fluctuates.

9. The direct relationship between temperature and volume is known as
    a. Kelvin's law.   c. Boyle's law.
    b. Charles's law.   d. Ayogadro's law.

10. A graph of pressure versus temperature in kelvins of a gas at constant volume
    and fixed mass is a(n)
    a. downward curve.   c. straight line passing through the point (0,0).
    b. upward curve.   d. straight line with a negative slope.

11. If the temperature of a gas remains constant, then the pressure of the gas will
    increase if the
    a. mass of the gas molecules decreases.
    b. diffusion of the gas molecules increases.
    c. size of the container is decreased.
    d. number of gas molecules in the container is decreased.

12. A student inflates a balloon with helium then places it in the freezer. The student should
    expect
    a. the balloon's volume to increase.
    b. the balloon's moles to increase.
    c. the balloon's volume to decrease.
    d. the balloon's moles to decrease.

13. If a hairspray can is heated, what can be expected of the pressure of the gas inside the can?
    a. The pressure will increase.
    b. The pressure will remain constant.
    c. The pressure will decrease.
    d. The pressure will equalize.

A. Jacques Charles   **B. Robert Boyle**   **C. inverse**

14. Discovered the quantitative relationship between gas volume and gas pressure.

15. Gas volume and gas pressure have this relationship.

16. Discovered the relationship between gas volume and temperature.

A. Charles's law   B. Gay-Lussac's law   C. Boyle's law   D. Combined gas law

17. The pressure of a fixed mass of gas varies directly with the kelvin temperature at constant
    volume.

18. The volume of a fixed mass of gas varies inversely with the pressure at constant temperature.

19. The relationship between pressure, volume, and temperature is expressed by this law.

20. The volume of a fixed mass of gas varies directly with the kelvin temperature at constant
    pressure.

Complete

A. combined gas law	**B. Charles's law**	**C. Bolyle's law**	**D. inverse**
E. temperature	**F. Direct**	**G. partial pressure**	**H. pressure**

21. The statement defining the relationship between the pressure and volume of a gas at constant temperature is known as_____.

22. The statement defining the relationship between the temperature and volume of a gas at constant pressure is known as__ _____.

23. The single statement that relates the volume, pressure, and temperature of a gas is the_____.

24. The relationship between the pressure and volume of a sample of gas at constant temperature is a(n)_____proportion.

25. If a fixed quantity and volume of a gas undergoes a change in temperature, it will also experience a change in_____.

26. To study the relationship between the pressure and volume of a fixed amount of gas, hold the_____constant.

27. The pressure exerted by each gas in a mixture is called the _ ____ of that gas.

28. The volume of a gas at 7.00°C is 49.0 mL. If the volume increases to 74.0 mL and the pressure is constant, what will the temperature of the gas be in °C?
    A. 130°C   B. 140°C   C. 150°C   D. 160°C

29. A sample of helium gas has a volume of 250.0 mL when its pressure is 0.935 atm. If the temperature remains constant, what will the pressure of the gas be when it has a volume of 175.0 mL?
    A. 1.34 atm.   B. 1.44 atm.   C. 1.54 atm.   D. 1.64 atm.

30. You collect 552 mL of argon gas at 23.0°C. What volume will the gas occupy at 46.0°C if the pressure remains constant?
    A. 565 mL.   B. 575 mL.   C. 585 mL.   D. 595 mL.

31. The pressure of a 70.0 L sample of gas is 600. mm Hg at 20.0°C. If the temperature drops to 15.0°C and the volume expands to 90.0 L, what will the pressure of the gas be?
    A. 449 mm Hg.   B. 459 mm Hg.   C. 469 mm Hg.   D. 479 mm Hg.

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