

Practice for quiz 14: The actual quiz will not be multiple choice.

1) Carbon dioxide is a gas that causes global warming because of the greenhouse effect. What is the approximate percentage (by volume) of  $\text{CO}_2$  in the atmosphere?

- A) less than 0.1%    B) about 1%    C) about 10%    D) more than 20%

2) Pressure is defined as

- A) force divided by unit area.                      B) force times unit area.  
C) mass divided by acceleration.                D) mass times acceleration.

3) The SI unit for pressure is the

- A) atmosphere.    B) MM Hg.    C) newton.    D) pascal.

4) Which of the following is not equivalent to 1 atm pressure?

- A) 10 cm Hg    B) 14.7 lb/in<sup>2</sup>    C) 101 kPa    D) 760 mm Hg

5) An "empty" aerosol can at 25°C still contains gas at 1.00 atmosphere pressure. If an "empty" can is thrown into a 475°C fire, what is the final pressure in the heated can?

- A) 5.26 atm    B) 0.398 atm    C) 2.51 atm    D) 19.0 atm

6) A basketball is inflated to a pressure of 1.50 atm in a 20.0°C garage. What is the pressure of the basketball outside where the temperature is -5.00°C?

- A) 1.37 atm    B) 1.42 atm    C) 1.58 atm    D) 1.64 atm

7) A gas bottle contains 0.650 mol of gas at 730 mm Hg pressure. If the final pressure is 1.15 atm, how many moles of gas were added to the bottle?

- A) 0.0680 mol    B) 0.128 mol    C) 0.717 mol    D) 0.778 mol

8) If the number of moles of gas is doubled at constant temperature and volume, the pressure of the gas

- A) is halved.    B) is doubled.    C) is quadrupled.    D) remains the same.

9) Three identical flasks contain three different gases at standard temperature and pressure. Flask A contains  $\text{CH}_4$ , flask B contains  $\text{CO}_2$ , flask C contains  $\text{N}_2$ . Which flask contains the largest number of molecules?

- A) flask A    B) flask B  
C) flask C    D) All flasks contain the same number of molecules.

10) A 0.286-g sample of gas occupies 125 mL at 60.0 cm of Hg and 25°C. What is the molar mass of the gas?

- A) 5.9 g/mol    B) 44 g/mol    C) 59 g/mol    D) 71 g/mol

11) An unknown gas effuses through a membrane at a rate that is 1.61 times faster than Krypton. What is the molar mass of the unknown gas. What could this gas be?

12) What is the molar fraction of oxygen if the partial pressure of oxygen is 152 mmHg and the total pressure is 1 atm at 25°C?

13) What is the average speed of a hydrogen gas molecule in a 1 L flask at 100°C and 2 atm?

14) What is the average speed of a water gas molecule in a 1 L flask at 100°C and 2 atm?

- 1) A
- 2) A
- 3) D
- 4) A
- 5) C
- 6) A
- 7) B
- 8) B
- 9) D
- 10) D
- 11) 32 g/mole
- 12) 0.2
- 13)  $2.15 \times 10^3$  m/sec
- 14)  $7.19 \times 10^2$  m/sec