Mole Quiz

1. What is the percent by mass of hydrogen in water?
   - a. 2%
   - b. 16%
   - c. 11%
   - d. 1g

2. What is the empirical formula for a compound containing 36% aluminum and 64% sulfur?
   - a. Al_2S_3
   - b. Al_3S_6
   - b. AlS
   - d. AlS_2

3. What is an empirical formula?
   - a. A chemical formula that was originally determined by a Japanese emperor in the 19th century.
   - b. A formula that is used to determine if a chemical has explosive properties.
   - c. A formula that contains the density of the compound.
   - d. A formula that tells the lowest whole number ratio of atoms in a compound.

4. If the empirical formula is CH_2O, the a possible molecular formula could be:
   - a. $C_{12}H_2O_{16}$
   - b. $C_6H_{12}O_6$
   - c. $C_2H_6O_2$
   - d. CHO

5. If the molecular formula is P_4O_{10}, then the empirical formula would be:
   - a. P_2O_5
   - b. P_4O_{10}
   - c. PO
   - d. $PO_{2.5}$

6. Which compound has the highest percentage composition of calcium?
   - a. CaO
   - b. $CaCl_2$
   - c. $CaSiO_3$
   - d. $Ca(OH)_2$

7. What is the meaning of the number 3 in the chemical formula $Mg(NO_3)_2$:
   - a. 6 atoms of oxygen
   - b. 3 molecules of nitrate
   - c. 3 atoms of oxygen
   - d. 3 molecules of oxygen

8. What is the atomic mass of fluorine?
   - a. 9g
   - b. 19g
   - c. 9amu
   - d. 19amu

9. What is the molar mass of sodium nitride (Na_3N)?
   - a. 83g
   - b. 37amu
   - b. 40g
   - d. 40amu

10. If the empirical formula is CH_2O and the molecular mass is 120g, then the molecular formula is:
    - a. CH_2O
    - b. $C_4H_8O_4$
    - c. $C_{30}H_{60}O_{30}$
    - d. $C_2H_8O_2$