

## Test Objectives- The Mole and Composition Stoichiometry

1. Define mole and know why it is important in chemistry.
2. Know that the amu is a relative mass that is  $6.02 \times 10^{23}$  times smaller than a gram.
3. Know when to use the amu or the gram as the correct unit of measure for a substance.
4. Be able to calculate the mass of one mole (the molar mass) of any element or compound.
5. Use molar mass in calculations- example: given moles, find mass.
6. Use Avogadro's number in calculations- example: given mass, find number of atoms.
7. Use Avogadro's number in calculations- example: given mass, find number of molecules.
8. Calculate the percent composition of a compound. (example: penny lab calculations)
9. Use percent composition to find the empirical formula of a compound.
10. Distinguish between an empirical and molecular formula.
11. Be able to determine the chemical formula of a hydrated compound- Example from copper sulfate lab.
12. Know how to calculate percent error from lab data.

Also, it is expected (as usual) that you can...

- write chemical formulas
- balance equations, and use the language of chemistry
- convert between common SI (metric) units
- use and report correct significant figures in calculations, and
- work with numbers in scientific notation.