

STUDY SHEET EXAM 2

Define and/or describe: nucleus, isotope, valence shell, valence electron, atomic number, mass number, atomic mass, ion, cation, anion, monatomic ion, polyatomic ion, ionic bond, covalent bond, molecule, formula unit, molecular mass, formula mass, mole, molar mass, empirical formula, molecular formula.

1. Write the charge, mass, symbol, and location in the atom of the proton, neutron, and electron.
2. Write the nuclear symbol for any given isotope.
3. Given the nuclear symbol, tell the number of protons, neutrons and electrons.
4. Write the electronic configuration for a given atom or ion.
5. For a given A group element, draw the Lewis electron dot symbol.
6. Draw Lewis structures for molecules and polyatomic ions.
7. Given the name of a compound, write its formula and vice versa.
8. Given the formula of a compound, calculate its molar mass.
9. Use the molar mass of a substance to make conversions between moles and mass.
10. Know and be able to use Avogadro's number to make conversions between moles and number of particles.
11. Use formula subscripts to make conversions between moles of A and moles of B.
12. Calculate the percent composition of a compound from either:
 - a. the mass of each element present in a sample of the compound.
 - b. the formula of the compound.
13. Determine the molecular formula of a compound given the molar mass of the compound and either:
 - a. the percent composition of the compound.
 - b. the mass of each element present in a sample of the compound.
14. Determine the empirical formula of a compound when the molar mass of the compound is not given but either of the following is given:
 - a. the mass of each element present in a sample of the compound.
 - b. the percent composition of the compound.
 - c. the molecular formula of the compound.
15. Be able to solve any of the worksheet and assigned textbook problems.