

Things to Know for Quiz 4

Chem 30A, Fall 2019

Chapter 4

1. Predict the charges of main-group monatomic ions (based on what group they are in).
2. Review the names of the elements (see the handout of element names and symbols).

Chapter 5

3. The properties of compounds are completely different than the properties of the elements in the compounds. (Compounds are **not** just mixtures of elements – the elements are chemically combined to make something new with different properties.)
4. Given a formula, state how many atoms of each element are present.
5. Given a molecular formula, write the empirical formula. (The empirical formula shows the lowest whole number ratio of atoms.)
6. Memorize the 7 diatomic elements.
7. Classify different elements as either atomic or molecular. (Some elements consist of individual atoms, and some consist of molecules.)
8. Classify compounds as either ionic or molecular. (Ionic compounds consist of ions, and their smallest unit is the formula unit. Molecular compounds consist of molecules.) Ionic compounds contain a metal and a nonmetal (or recognizable ions), like NaCl or NH_4NO_3 . Molecular compounds contain just nonmetals, like $\text{C}_{12}\text{H}_{22}\text{O}_{11}$.
9. **Memorize the polyatomic ions: name, formula and charge. Given the name, write the formula and charge. Given the formula and charge, write the name.**
10. **Given the formulas and charges of ions, write the formula of the ionic compound containing those ions.** (Look at the charges of each to figure out how many of each ion are in the formula. Compounds must be uncharged overall, so the total charges of all of the cations and anions in the compound have to add up to zero.) Example: if a compound contains Na^+ and Cl^- , the formula is NaCl. If it contains Mg^{2+} and Cl^- , the formula is MgCl_2 .
11. Given the atoms in an ionic compound, predict their charges and then predict the formula of the compound.
12. **Naming ionic compounds:** name the cation and then the anion. Do not use prefixes. Example: CaCl_2 is calcium chloride, SnF_4 is tin (IV) fluoride.
13. **Given the name of an ionic compound, be able to write the correct formula.**