

Chapter #4 Suggested Reading and Selected Questions

Section 4.1: be able to draw Lewis dot diagrams using techniques learned in class. Some tips:

- halogens always bond with simple single covalent bonds
- if extra electrons are present (i.e. a negative ion), the extra electrons will always be present on the most electronegative element (usually oxygen, which will now have seven electrons and behave like a halogen)
- use a balance of single coordinate covalent* bonds and double bonds to satisfy the octet rule if possible
- use expanded valence shells if necessary (this occurs frequently with halogens)
- use valence shells with less than an octet when necessary

* a single coordinate covalent bond is one in which one atom donates both electrons

Section 4.2: be familiar with:

- sp^3 , sp^2 and sp hybridization
- σ and π bonding and relation to single, double and triple covalent bonds
- figures 9 through 16

Section 4.3: VSEPR Theory will be covered thoroughly in class.

Read this section to make sure that you can understand the language being used.

Section 4.4: Read carefully and make notes as necessary, including the blue shaded areas.

Section 4.5: Read carefully and make notes as necessary, including the blue shaded areas. This section contains information about the three types of intermolecular forces. Please note that the London force is often referred to as a van der Waals force.

Section 4.6: Make careful notes, including explanations of physical properties. Note that ionic crystals, metallic crystals and covalent network crystals are macromolecules and have only intramolecular forces at work. Molecular crystals are crystals made from discrete covalent molecules and have both intramolecular and intermolecular forces at work.

Review Questions page 282 - 283: 7, 9, 10, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 a) only, 24, 25.