

AP Chemistry – Still More Bonding – 14

Name _____ Per ____

1. Give chemical formula for each of the following substances. Determine the electronegativity difference and predict whether the bonding is better described by the ionic or covalent model.

(a) Manganese(III) Fluoride

(b) Chromium (VI) oxide

(c) Arsenic(V) bromide

2. Give the name for each of the following substances. Determine the electronegativity difference and predict whether the bonding is better described by the ionic or covalent model.

(a) SF_4

(b) MoCl_4

(c) ScCl_3

3. Write Lewis structures for the following:

(a) H_2CO

(b) H_2O_2

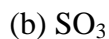
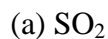
(c) C_2F_6

(d) AsO_3^{3-}

(e) H_2SO_3

(f) C_2H_2

4. For each of the following molecules or ions of sulfur and oxygen, write a single Lewis structure that obeys the octet rule, and calculate the formal charges on all the atoms:



5. Consider the Nitryl cation, NO_2^+ . (a) Write two Lewis structures for this cation. (b) Are resonance structures needed to describe this cation? (c) With what familiar compound is it isoelectronic?

6. For elements in the fourth row of the periodic table and beyond, the octet rule is often not obeyed. What factors are usually cited to explain this fact?

7. Use bond enthalpies to estimate the enthalpy change for the following reaction:

