

CHEM 1310 Reading Day

Chapters 9, 10, and 11: *Periodicity and Ionic Bonding, Covalent Bonding, and Molecular Shape and Bonding Theories*

1. Consider a neutral neon atom (Ne), a sodium cation (Na^+), and a fluorine anion (F^-). Which atom has the largest effective nuclear charge?
2. For CH_2F_2
 - a. Draw the Lewis dot structure
 - b. Determine the electron geometry of the molecule.
 - c. If there is a dipole, draw an arrow representing the dipole moment.
3. Draw all the resonance structures for HPO_3^{2-} .
4. For each of the following molecules, indicate the electron geometry, the molecular geometry, the bond angles, and state whether or not the molecule is polar.
 - a. ClO^-
 - b. KrF_2
 - c. XeF_3^+
 - d. NH_3Cl^+
5. Based on the Lewis structure of this compound, what is the hybridization type of each carbon, oxygen, and the nitrogen? How many sigma bonds and pi bonds are there?

