CHEMISTRY 116 - Fall 2021 Dr. Audrey Dell Hammerich Discussion Worksheet - Week 5

1. What is the general trend in the periodic table (period, group) for

a) sizes of atoms, cations, anions	b) ionization energies
c) electron affinities (more negative)	d) electronegativity

2. Give the Lewis structures, including all resonance structures for the following. Be sure to include the formal charge on all atoms having any. Predict all of the bond angles and give the electronic and molecular geometries

a) CO_3^{2-} b) hydrogen peroxide c) $SbCl_2^+$

3. Consider the cyanate ion, OCN⁻.

a) Draw its three Lewis resonance structures.

- b) Determine the formal charge on all atoms having any.
- c) Which is the most important resonance structure? Why?

4. Predict all of the bond angles in $O = C = N - CH_3$ and give the electronic and molecular geometry about each atom.