

Week 4 Worksheet

Chem 11100-2: Section 33

Oct. 19, 2021

Problem 1: For each of the following molecules:

1. Draw all reasonable 2D Lewis Dot structures
 2. Assign formal charges to the atoms in each structure
 3. Rank order the structures in terms of how favorable they are
- a) SCN^-
 - b) CO_2
 - c) SO_2

In each of the examples above, is there one correct structure for each molecule? Why or why not?

Problem 2: For each of the following molecules:

1. Draw all reasonable 2D Lewis Dot structures. If multiple resonance structures are possible, draw them all
 2. Draw the 3D VSEPR structure, using bolded and dashed wedges as needed
 3. Determine the molecular geometry that describes the structure of the molecule
 4. Determine whether the molecule is polar or nonpolar
- a) ICl_3
 - b) NO_3^-
 - c) HCN

Problem 3: For each of the following molecules:

1. Draw the 2D Lewis dot structure. If multiple resonance structures are possible, draw them all and indicate whether they are all equally viable or if one is more viable than the others.
2. Draw the 3D VSEPR structure, using bolded and dashed wedges as needed.

3. Indicate the name of the specific geometry that describes the structure of the molecule
- a) BrF_5
 - b) Chlorite ion
 - c) SCP^- ion (C is central atom)