**Gen Chem 140** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Lab Activity: Lewis structures*

***The following worksheet will be completed during the lab period. The worksheet MUST be correct before leaving.***

Draw Lewis structures of the following molecules. For a structure to be correct you must include the correct number of valence electrons. Show all electrons (either as “**:**” if they are nonbonding electrons or as bonds if they are involved in a bond). Include formal charge if necessary.

1. Ammonia (NH3) 2. Methane (CH­4)

3. Formaldehyde (CH2O) 4. Chloromethane (CH3Cl)

 *(C is center atom) (C is center atom)*

 5. dihydrogen monoxide 6) Carbon dioxide

7a) Draw the Lewis Dot structure of the sulfate and nitrate ions strictly using the octet rule. Show the formal charge on the atoms.

*Which central atom is capable of having an expanded octet?*

7b) Draw a new structure with an expanded octet and show the formal charge.

8. Draw the structure of sulfur tetrafluoride. (Count electrons carefully! Sulfur—the center atom—can have an expanded octet.) Is there any formal charge on the atoms?

9. Draw the structure of phosphorus pentachloride. (Phosphorus, the center atom, can have an expanded octet) Is there any formal charge on the atoms?

10. Draw the structure of XeF4. (Count electrons carefully! Xenon—the center atom—can have an expanded octet.) Is there any formal charge on the atoms?

11. Draw the structure of sulfur hexafluoride.