Practice Problems – Sept. 25, 2019

For each molecule or ion below:

i. Draw the best Lewis structure(s)
ii. Name and sketch the molecular geometry
iii. Estimate the bond angles
iv. Indicate whether it is polar or nonpolar

1. XeO_3
   a. Draw the best structure that obeys the octet rule
   b. Draw the best structure that minimizes FCs.
   c. Predict the molecular geometry, angles, and polarity for each "best" structure. What do you notice about your answers?

2. PF_4^- [Avoid unnecessary violations of the octet rule.]

3. NO_3^-

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4. The atom arrangement in adenine ($C_5H_5N_5$), one of the nitrogenous bases of DNA, is shown below.

   a) Add lone pairs as needed to complete the Lewis structure.
   b) Use VSEPR Theory to provide estimates for the specified angles (A-C).