**CHE2060 Lewis structure & formal charge practice set key**

This practice set allows you to test your skills and prepare for quizzes and exams. The key is posted as well.

*Suggestions: sum valence electrons & think about atomic bonding patterns!*

**Part A: Single bonded structures with no formal charges**

* Draw Lewis dot structures of these molecules and show all free (lone or unbonded) electron pairs.
*(Note: Many formulas are abbreviated structural formulas that group hydrogen atoms around carbon, nitrogen, oxygen or sulfur and suggest structural formulas.)*
* Circle the most polar bond.

NF3 26 ve-

H2O2 14 ve-

SO2 18 ve-

CH3CH2OH 20 ve-

CH3NHOH 20 ve-

CH3SCH3 20 ve-

**Part B: Single bonded structures with formal charges**

* Draw Lewis structures of these molecules, showing all unbounded (free) electron pairs.
* Calculate **formal charges** on all atoms.
* **Locate** the formal charge(s) on one or more atoms.

**CH3OH2 14 ve-

CH3 6 ve-

NH3BF3 32 ve-

CH3NH3Cl 22 ve-

:CH3 8 ve-

:CH2 6 ve-

**Part C: Structures with double bonds**

* Draw Lewis structures of these molecules or ions, showing all unbounded (free) electron pairs.
* Calculate **formal charges** on all atoms.
* **Locate** the formal charge(s) on one or more atoms.
* *If* there is **resonance**, draw all resonance structures and the resonance hybrid.

HNO3 24 ve-

CH2CHO–1 18 ve-

CH3NO2 24 ve-

SO4-2 32 ve-

CH3NCO 22 ve-

CH3SOCH3 26 ve-

