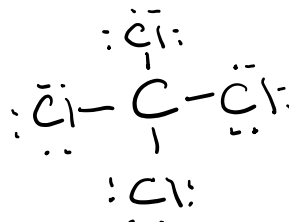
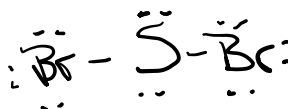
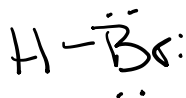
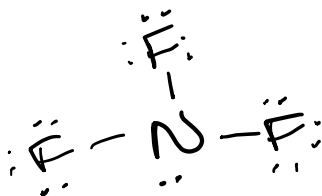
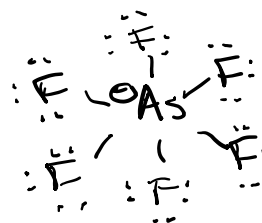
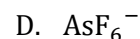
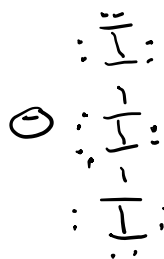
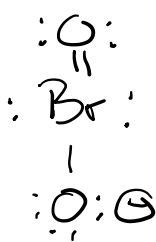
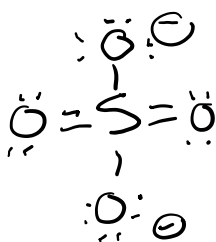


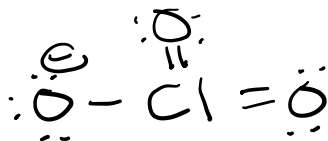
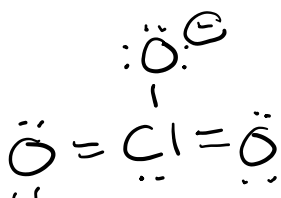
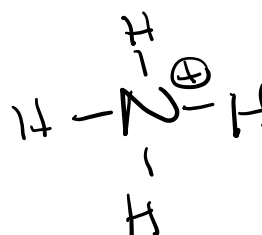
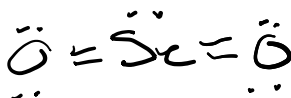
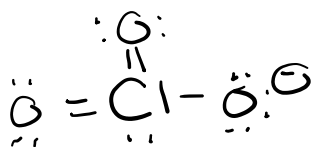
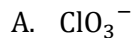
1. Write a Lewis structure for each of the following molecules.



2. Write the best Lewis structure for each of the following species. Label nonzero formal charges.



3. Write the best Lewis structure for each of the following molecules or ions. Assign formal charges to each atom. If the best Lewis structure has equivalent resonance structures, include all of them and assign formal charges to each atom.



4. A) Trigonal Pyramidal, T-shaped, $<90^\circ$ & $<180^\circ$, sp^3d , 3 sigma, 2 pi B) Tetrahedral, Tetrahedral, $<109.5^\circ$, sp^3 , 4 sigma, 3 pi C) Tetrahedral, Trigonal Pyramidal, $<109.5^\circ$, sp^3 , 3 sigma D) Octahedral, Square Pyramidal, 180° & 90° , sp^3d^2 , 4 sigma
5. A) Nonpolar B) Polar C) Polar D) Nonpolar
6. 420 mL
7. 1.15 mL
8. 0.104 g/L
9. 3.99 g/mol
10. 66.9 L
11. $X_{He} = 0.978$, $X_{O_2} = 0.0218$, $P_{total} = 12.1$ atm, $P_{He} = 11.8$ atm, $P_{O_2} = 0.264$ atm
12. 1.32 g O_2
13. 495 m/s