

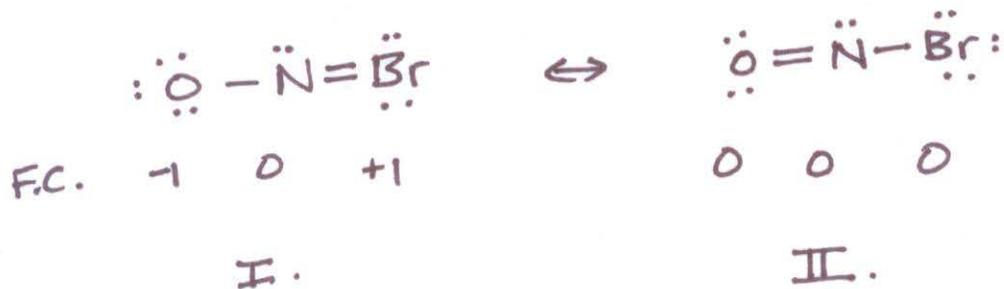
## Quiz 3 – Sept. 25, 2019

1. (6 pts) Please provide the name for each of the following compounds:

- a.  $\text{Co}_2(\text{SO}_4)_3$  **cobalt(III) sulfate**  
 b.  $\text{ICl}_5$  **iodine pentachloride**

2. <sup>15</sup> (13 pts) The following questions relate to the triatomic molecule NOBr, for which **N is the central atom**.

a. Please draw **two resonance structures** for NOBr.  $5+6+7=18 \text{ ve}^-$



b. Calculate **formal charges** for all atoms in your structures. (Please show answers on structures above.)

c. Which resonance structure above **best** describes bonding in NOBr? Briefly **explain** your choice.

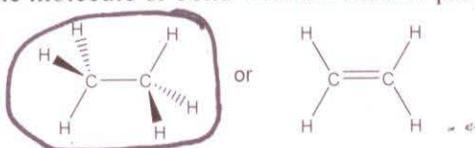
**Structure II ( $\ddot{\text{O}} = \ddot{\text{N}} - \ddot{\text{Br}}\text{:}$ ) is best.**

**It has atomic FCs as close to zero as possible  
 [(0, 0, 0) vs. (+1, 0, -1)]**

d. Based on your answer to part (c), what is the N-O bond order? **2 (N=O)**

3. <sup>4</sup> (6 pts) For each question below, **circle** the molecule or bond with the desired property:

a. Longer carbon-carbon bond:



b. Stronger carbon-carbon bond:

