$$HS^{-1}_{(aq)} + HNO_{2(aq)} \rightleftharpoons H_2S_{(aq)} + NO_2^{-1}{}_{(aq)}$$

1. Review Example 15.01. Identify each species above as an acid or base, and identify the two conjugate acid-base pairs. Hint: What does pair mean? (2 pt)

2. Review the Lewis concept in the chapter notes. Identify the proton (H^{+1}) donors and acceptors, as well as the electron pair ($2e^{-1}$) acceptors and donors, on both sides of the reaction above #1. How many electrons are in a pair? Why are the electrons paired? (2 pts)

3. Review Figure 14.8 and Example 15.03. Determine which acid is stronger and which base is stronger in the reaction above. Then, determine which side of the reaction is favored. Explain why. (1 pt)

4. Define amphiprotic and amphoteric and say what the difference is between the two terms. Review Examples 4.03, 4.05, and 15.01. Identify the amphiprotic species in the reaction above. Write the balanced complete ionic and net ionic equations where that species reacts as a Bronsted-Lowry acid with KOH. Include all of the correct ionic charges and phase subscripts (s, L, g, and aq) in your reaction. (1.5 pts)

5. Review Examples 15.04, 15.05, and 15.06. Suppose that $[H_3O^{+1}] = 2.25 \times 10^{-6}$ at equilibrium. Write the expression and the value for K_w. Rearrange that equation to find the $[OH^{-1}]$ value. Then, determine pH and pOH. Use those pH and pOH values to recalculate $[H_3O^{+1}]$ and $[OH^{-1}]$. (2 pts)

6. Review pages 1, 2, and 3 in the chapter notes. Briefly describe all three concepts of acids and bases. Write balanced reactions that demonstrate each concept. Explain how the reactions demonstrate the concepts. (1.5 pts)