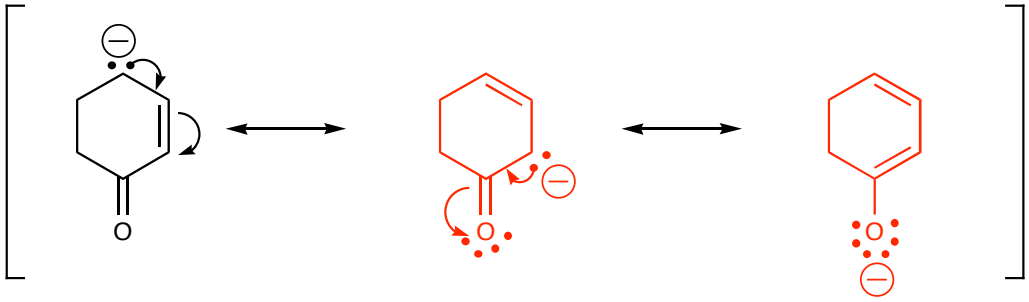
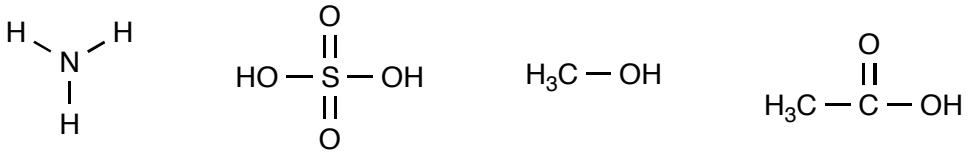
Chem 2061 Fall 2005 Name: _____
Quiz 1

1. Draw two other resonance structures for the given ion, and use curved arrows to show how the electrons move from one resonance structure to the next. Label the major resonance structure and briefly describe why (5 or 6 words will do).



The third resonance structure is major because the more electronegative oxygen bears the negative formal charge.

2. Rank the following in terms of acidity, with 1 being the most acidic and 4 being the least. Briefly explain your reasoning behind choosing the structures which are the *most* acidic and the *least* acidic.



Rank: 4 1 3 2

Sulfuric acid is most acidic because its conjugate base has three equal resonance structures; this delocalizes the negative charge over three oxygens and makes the conjugate base extra stable. Stable conjugate bases make for strong acids.

Next is acetic acid, which has two equal resonance structures in its conjugate base.

Next is methanol which has no resonance delocalization.

Finally, ammonia is the least acidic because nitrogen is less electronegative than oxygen, and therefore its conjugate base is less able to support the full negative charge.