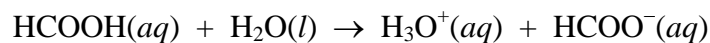


**CHM 151**  
**Recitation #5, 1 October 2008**

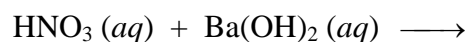
1. The common constituent in all acid solutions is:

- a)  $\text{H}_2$             b)  $\text{H}_3\text{O}^+$             c)  $\text{COOH}$             d)  $\text{H}_2\text{SO}_4$             e)  $\text{Cl}^-$

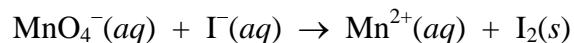
2. In the following reaction, identify the reactant that is a Bronsted acid and the reactant that is a Bronsted base.



3. Write the balanced molecular, ionic, and net ionic equation for the following reaction.



4. Identify the species oxidized, the species reduced, the oxidizing agent, and the reducing agent in the following reaction. Assign oxidation numbers (charges) where appropriate.



5. How many **grams** of  $\text{MgCl}_2$  are present in 60.0 mL of 0.100 *M*  $\text{MgCl}_2$  solution?
6. What **volume** of concentrated nitric acid (15.0 *M*) is required to make 100.0 mL of 3.00 *M* nitric acid,  $\text{HNO}_3$ , solution?
7. What **volume** of a 0.50 *M*  $\text{HCl}$  solution is needed to neutralize completely 10.0 mL of a 0.20 *M*  $\text{Ba(OH)}_2$  solution?

