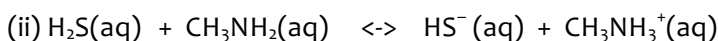
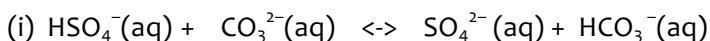


Homework Set 11

(Distributed 11/30/15; Due on 12/7/15)

Read Chapters 16 and 18 in Zumdahl and complete the listed questions from the text:
Chapter 16: 9, 15, 31, 36, 54, 102; Chapter 18: 4, 33, 56, 86; as well as the following problems:

A. Identify the Brønsted-Lowry acid, base, conjugate acid and conjugate base in the following equations:



B. What are $[\text{H}_3\text{O}^+]$ and $[\text{OH}^-]$ for solutions with the following pH values:

(i) pH = 9

(ii) pH = 4

(iii) pH = 5.33

(iv) pH = 8.04

C. What is the pH of each of the following solutions:

(i) Lime juice : $[\text{H}_3\text{O}^+] = 4.64 \times 10^{-4} \text{ M}$

(ii) saliva $[\text{H}_3\text{O}^+] = 7.94 \times 10^{-7} \text{ M}$

(iii) laundry bleach: $[\text{H}_3\text{O}^+] = 2.51 \times 10^{-13} \text{ M}$

D. Identify the materials being oxidized or reduced in the equations shown:

