Preview Sheet for Test 3

Chapters 9, 10, 11, 12; lightly through 7
Lectures from 3/11 through 4/11; Problem Sets 6 and 7

The test will be on Thursday, April 14, in Olin-Rice 350, starting at 8:30 a.m. You will have three hours to work on the exam.

Studying Strategies:

- Focus on problem-solving techniques used in the homework, and concepts discussed in lecture. (See the course web page for class overheads and homework keys.)
- Do extra problems at the ends of the chapters.
- Talk with Rob or me if you have any questions. I will have extra office hours from 6:30 p.m.-8:30 p.m. on the night before the exam.
- For Rob's part of the course, focus on topics that either appeared on Problem Set 6 or that I picked up on after Spring Break
- If a topic was not covered in homework or in lecture, you are not responsible for it!

Test Format: 60 points based on mathematical questions, and 40 points based on shorter/longer essay questions. There will be no multiple-choice or true-false questions. Here's a preview of the instructions:

1. Write your name in the space above and on the backs of pages 2-7.
2. Your exam booklet should have **nine** pages total, with questions on pages 2-7, and a periodic table and other reference data on pages 8-9. Check to see you have nine pages now. If you do not, ask for another copy of the exam.
3. You may use programmable calculators, but chemical data should not be stored in them.
4. You should always justify your answers in writing, unless you are explicitly told not to do so. You will be awarded credit only for clear, legible work.
5. You may always assume all activity coefficients are 1 unless you are explicitly told otherwise in a problem statement.
6. You may use Harris' shortcuts for computing equilibrium concentrations unless you are explicitly told otherwise in a problem statement.
7. Work will begin at 8:30 a.m. You have a maximum of **3 hours** to work on this exam.

Also note the formulas and constants you will be given on the exam:

$$K_w = [H^+][OH^-] = K_a K_b = K_1 K_{b2} = K_2 K_{b1} = 1.0 \times 10^{-14} \qquad pK_w = pH + pOH = 14.00$$

$$pH = pK_a + \log\frac{[A^-]}{[HA]} \qquad [H^+] = \sqrt{\frac{K_1 K_2 [HA^-] + K_1 K_w}{K_1 + [HA^-]}}$$