Preview Sheet for Test 2
Light, Quantum Mechanics, and Atomic Properties
Chapters 7 and 8; Lectures from 9/21 to 10/7; Problem Sets 3 and 4

Studying strategies:

- Focus on your lecture notes and homework. Use your textbook only as a reference.
- Do extra problems at the ends of the chapters. In particular, work the blue-numbered problems paired with the black-numbered problems you were assigned for homework; the answers to the blue problems are in Appendix E of your textbook. If you are stuck on a problem, please come talk with me or one of the student tutors:

Student Tutoring Schedule
(in Olin-Rice 341)
Sunday: noon – 9:00 p.m.
Monday –Thursday: 7:00 – 10:00 p.m.

Extra Office Hours
This Tuesday, 6:30 – 8:30 p.m.

- It is also important to understand concepts not covered explicitly in the homework problems. This conceptual material will be tested either with true-false or short essay questions.
- If a topic was not covered in homework or in lecture, you are not responsible for it!
- Try not to just memorize facts and problem-solving techniques; think about the underlying concepts and how to apply them in new ways.
- Test Format: 30 points for true-false and multiple-choice questions, 35 points for calculations, and 35 points for short answer and explanation questions.

[From the test booklet:]

Instructions before starting the test:

1. Write your name in the space above and on the backs of the other pages.
2. This exam is closed-everything.
3. Your exam booklet should have **six** pages total, with questions on pages 2-5, and a periodic table and other information on p. 6. Check to see you have six pages now. If you do not, ask for another copy of the exam.
4. You may tear off p. 6 if you wish.
5. You may use programmable calculators, but chemical data should not be stored in them.
6. To receive full credit for a mathematical problem, you must show the method by which you obtained the final answer, including dimensional analysis.
7. You have **60 minutes** to work on this exam. Do not start until you are instructed to.

What not to memorize (they will be provided on page 6 of the test booklet):

(1) The periodic table (with groups numbered as in the inside front cover of Silberberg)
(2) The information below. Note that you will not necessarily need all of this information.

$$c = \lambda\upsilon \qquad \frac{1}{\lambda} \equiv \tilde{\nu} \qquad E = h\upsilon$$

$$\Delta E = -\Re Z^2\left(\frac{1}{n_f^2} - \frac{1}{n_i^2}\right) \qquad L = n\frac{\lambda}{2} \qquad \lambda = \frac{h}{mv} \qquad KE = \frac{1}{2}mv^2$$

$N_A = 6.022 \times 10^{23}$ particle mol^{-1} $h = 6.626 \times 10^{-34}$ J s particle^{-1} $c = 2.998 \times 10^{8}$ m s^{-1}

1 m = 10^9 nm = 10^{10} Å $\Re = 2.179 \times 10^{-18}$ J particle^{-1}

Test-Taking Tips

- Pace yourself. Try to make your effort on a given problem proportional to the number of points that it is worth. Be sure not to spend too much time on the multiple-choice and true-false questions at the start of the exam.
- Read the problems carefully.
- If you can't figure out how to begin a problem after thinking about it for a couple of minutes, go on to the next problem.
- Please ask me if a question doesn't make sense.