**Chemistry 60**

Outlines for Chapters 14-15


**Chapter 14 – Proteins** (continued)

Globular vs. fibrous proteins

Enzymes are proteins that catalyze reactions

Elements of protein structure
  - primary: sequence of amino acids
  - secondary: α-helices and β-pleated sheets
  - tertiary: H-bonding, salt bridges, hydrophilic/phobic interactions & disulfides
  - quaternary: multiple subunits assembled into a protein (often symmetrically)

Denaturation

**Chapter 15 – Carbohydrates**

*Monosaccharides*: glucose, galactose, fructose, ribose, deoxyribose

Be able to recognize the anomeric carbon in a sugar and number the carbons correctly

Alpha vs. beta sugars

*Disaccharides*: two monosaccharides (sucrose, lactose, maltose and their parts)

Be able to name glycosidic bonds

*Polysaccharides*: many monosaccharides strung together
  - *cellulose* has glucose residues connected by β-1,4 glycosidic bonds
  - *amylose* in starch contains many glucose connected by α-1,4 glycosidic bonds
  - *glycogen* has glucose residues connected by α-1,4 and α-1,6 bonds

Be able to hydrolyze disaccharides and polysaccharides with H⁺/H₂O.

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**The Final**

Most of the final exam will be multiple choice. It will be broken up into several sections according to the topics covered and the type of questions.

There will be a section that emphasizes the material not covered on previous tests (or material I felt the class was weak on before), and some of this will not be multiple choice. Short answer, drawing structures, etc. are possible for this part.

All the formulas and important reference information that was given to you for previous exams will be provided for you on the final as well.

**study suggestions next page**
**Study Suggestions**

Study your old tests in order from worst score to best score, and re-learn any material you are weak on.

Study *principles* as well as *facts*. Reasoning is as important as remembering.

Don’t forget to study the calculations (such as mole and solution calculations) and reactions (such as hydrogenation, dehydration, etc.) we have learned. They will be on the test as well.

Use the study guides I have written for you to review the course.

Go through your notes from beginning to end.

Make a reaction sheet that contains all of the organic reactions we learned. Include words (alcohol + carboxylic acid $\rightarrow$ ester + water) and an example, but notice the patterns. Use color to show where atoms went during the reaction if you like.

Hopefully you will be able to firm up your knowledge and make important connections as you study for the final—happy studying!!