

Exam 2 Possible Review Topics
Chem 1020, Summer 2002, Robertson
Test on Monday, July 22

You should be able to: (I do not claim that this is an exhaustive list.)

Chapter 14

- Name and draw structural formulas for acids, esters, amines, and amides. Be able to recognize these functional groups. Be sure and know any common names given in class.
- Explain how polymers are held together.
- List properties, applications, and types of polymers.
- Explain how addition polymers are formed. Explain how condensation polymers are different.
- Be able to match polymer with monomer or with use. Be able to draw the general structural formula for a polymer given the monomer or vice versa.
- Explain the bonding in silicones and draw the silicone oil structure.

Chapter 15

- List and explain the various biochemical compounds.
- Define and use the following terms: isomers, constitutional (structural) isomers, stereoisomers, cis-trans isomerism, optical isomerism, chiral, enantiomers, asymmetric carbon atom.
- Explain the importance of isomerism in organic chemistry, especially with regard to the chirality of drugs.
- Define and list the different types of carbohydrates.
- Be able to draw structures for **glucose**, galactose, **fructose**, ribose, **sucrose**, **maltose**, lactose, **cellulose**, and **amylose**.
- Explain how amylose, amylopectin, and glycogen are similar and different. Contrast with cellulose.
- Define the term lipid and list and explain the different types.
- Be able to draw structures for simple waxes, fats and oils, soaps, and steroids.
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- Explain the relationship between trans and cis fatty acids; saturated, monounsaturated, and polyunsaturated fats; cholesterol; and atherosclerosis.
- List the ingredients in paint and explain the function of each. Explain the difference in polymerization for latex versus oil paints.
- List several types of steroids.
- Define proteins and describe the amino acids that compose them.
- Draw the structural formula for an amino acid and draw structural formulas showing how the amino acids link to form amide (peptide) linkages.
- List the structural levels of proteins and define each.
- List, explain and give examples of the two major categories of protein reactions.
- Classify proteins by function (enzymes, transport, storage, regulatory, contractile, protective) and give examples.
- Define the terms simple and conjugated protein.
- Describe enkephalins and endorphins.