

Exam 2 Possible Review Topics
Chem 1020, Summer 2004, Robertson
Test on Monday, July 19

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

Chapter 9

- Name and draw structural formulas for alkyl halides, alcohols, ethers, aldehydes, ketones, acids, esters, amines, and amides. Be able to recognize these functional groups. Be sure and know any common names given in class. Describe the general properties of each type of compound with regard to stable phase under normal room conditions, water solubility, and chemical reactivity.

Chapter 10

- Explain how polymers are held together.
- List properties, applications, and types of polymers.
- Explain how addition polymers are formed. Be able to list and explain (using structural formulas) the steps of initiation, growth and termination using any addition polymer.
- Be able to write equations for butadiene polymers and explain the process of vulcanization and copolymerization.
- Explain how condensation polymers are different. Show the formulas and reactions for the production of polyesters and polyamides.
- Be able to match polymer with use from table 10.2 on page 285 and those given in class. Be able to draw the general structural formula for a polymer given the monomer(s) or vice versa. Be able to write a given number of units of the polymer chain.
- Explain how the property of polymers is temperature dependent. Be able to talk about T_g and its practical applications. Explain the use of a plasticizer.
- Know the abbreviations for the plastics recycling code (table 10.3 on page 295 and in the lab)
- 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.
- Understand 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 recognize structures for **glucose**, galactose, **fructose**, ribose, **sucrose**, **maltose**, lactose, **cellulose**, and **amylose**. Be able to draw structures for glucose, fructose, sucrose, maltose, cellulose, and amylose.
- Explain how amylose, amylopectin, and glycogen are similar and different. Contrast with cellulose.