

CHEM 241 STUDY GUIDE for EXAM #2

Exam for 10 am and 1 pm class: Tuesday Nov 24

The exam for the evening class will be on Monday, Nov 23rd

The exam will cover material from chapters 3, 4 and 5. It is a close book exam. The sample exam, inclass assignments and listed problems in the syllabus for chapters 3,4 and 5 will be indicative of what will be on exam #2 and it is recommended that you work at least some of them.

Extra Office hours: Monday, Nov 23rd 3-6 pm.

From Chapter 3/4 be expected to know:

- Naming of Alkenes
- The carbocation and bromonium ion and their relative stabilities
- Be able to draw the curved arrow mechanisms for these reactions:
 - Electrophilic addition of a hydrogen halides and halogens to an alkene
 - Electrophilic addition of water/alcohol (with acid catalyst) to an alkene
- Know the regioselectivity of the above reactions.

Reaction coordinate diagram (interpreting equilibrium and rates of the reactions)
Transition states, Intermediates, Gibbs free energy, Exothermic/Exergonic
Endothermic/Endergonic, Free energy of activation. Be able to draw a reaction coordinate diagram for any reaction mechanism we covered.

The hydroboration oxidation reaction, sec 4.10 (not the mechanism but the products produced)

Addition of hydrogen to alkenes sec 4.11 (not the mech, just the product produced)

From Chapter 5 be expected to know:

The relationship between different stereoisomers (enantiomers, diastereomers) **You will not be able to use a model kit** so you will have to be able to work with 3-D on your own.

Be able to assign the R and S configuration to chiral carbons.

From sec 5.19 focus on the stereochemistry of the addition reaction of an alkene (pg 235) and the stereochemistry of the Bromine addition (pg 242) to an alkene

Know these terms

Constitutional isomers stereoisomers, Enantiomers Diastereoisomers Chiral/achiral carbon Meso compound Regioselective Stereoselective Syn addition Anti addition