

CHEM 252 EXAM #1 STUDY GUIDE

Exam will be on May 13 at 2:00 pm in AS 1614B.

The exam will cover The Dye lab, Competing nucleophiles methyl cyclohexene and the ferrocene reaction . It will be 80 pts and you will have an hour to take the exam.

Dye lab

Know the reaction equation and mechanism for making an azo dye . If you mix two compounds together (a primary amine and an activated aromatic) what would be the dye you produce. Would it be ortho, meta or para substituted? If you have a dye structure could you determine how to synthesize it? What makes a compounds colored? What is the effect of pH on the color?

Competeing nucleophiles

Review Sn1 and Sn2 reactions. Be able to draw the mechanisms.

How do you determine if a reaction went by Sn1/Sn2 given GC data.

Be able to predict if a given reaction would go Sn1 or Sn2.

Interpret GC data—which compound come our first and what do the integration values tell you.

Which mechanism (Sn1 or Sn2) reacted more quickly

Methyl cyclohexene (#25):

Know the reaction and the mechanism of the dehydration of an alcohol. How was the equilibrium shifted to the products? Be able to interpret the differences in the NMR and IR of the starting alcohol and alkene product.

Ferrocene

Know the overall reaction and **mechanism** for this experiment.

Why was water avoided in this reaction—how would it interfere with the reaction

Know column chromatography behavior—which compounds eluted first.

What is the structure of the mono and di acelated ferrocenes.

What were all of the purification procedures in this experiment—how did they work (hint: don't forget that you initially did an extraction using methylene chloride and water)