Exam 3 Review

Chemistry 202
Summer II 2006
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Chapter 16
1. Nucleophilic aromatic substitution
2. Benzyne

Chapter 18
3. Hydride reduction
   • esters → alcohols; esters → aldehydes
   • acid chlorides → alcohols; acid chlorides → aldehydes
4. Conjugate addition to α,β-unsaturated carbonyl compounds
5. Gilman reagents

Chapter 19 – Reactions at the α-carbon (enolate reactions)
6. Halogenation
   • acid-catalyzed – single replacement
   • base-catalyzed – complete replacement
   • haloform reaction (carboxylic acids from methyl ketones)
7. Deuteration; identification of isomers from NMR
8. Alkylation of enolates
9. Alkylation of enamines
10. Michael addition (conjugate addition of enolates)
11. Stork enamine reaction (conjugate addition of enamines)
12. Aldol addition; aldol condensation; crossed and intramolecular aldol condensations
13. Claisen condensation; crossed Claisen condensation; Dieckmann condensation; mixed Claisen condensation
14. Robinson annulation (Michael addition followed by intramolecular aldol condensation)

15. Functional groups
16. $^{13}$C and $^1$H NMR spectra