

Study Guide for Exam 1

Chapters 15, 16, 17 and 18

Nomenclature Substituted Benzenes

EAS Reactions

EAS Mechanisms

 Nitration

 Halogenation

Nomenclature Arenes

Alkylbenzenes

 Reduction

 Oxidation

 EAS

 Nitration

 Sulfonation

 Halogenation

 Friedel-Crafts

 Side Chain Halogenation

Alkenylbenzenes (Review "Alkenes, Reactions")

 Reduction

 Oxidation

 Side Chain

 Addition: H_2 , X_2 , HX , H_2SO_4 , H_2O , $X_2(H_2O)$

 Oxymercuration

 Hydroboration

HBr /Peroxides

 Addition of Carbenes

 Epoxidation

 Hydroxylation

 Allylic Halogenation

 Ozonolysis

 Vigorous Oxidation

Alkynylbenzenes

 Reduction

 Oxidation

 Side Chain

 Reduction

 Addition: X_2 , HX , H_2O/H^+

 As Acids

 With Ag^+

 Oxidation

Infrared Spectroscopy (IR)

Nuclear Magnetic Spectroscopy (NMR)

Nomenclature: Aldehydes and Ketones

Aldehydes Synthesis

Oxidation 1⁰ Alcohols
Oxidation Methylaromatics
Reduction Acid Chlorides
Ketones Synthesis
Oxidation 2⁰ Alcohols
Friedel-Crafts
Coupling R₂CuLi with Acid Chlorides
Aldehydes and Ketones Reactions
Oxidation
Reduction
Addition: CN, Ammonia Derivatives, Alcohols, Grignard Reagents
Cannizzaro