

Study Guide for Exam 3

Chapters 21, 22, 23, 24 and 25

Carbanions II

- Claisen Condensations

- Nucleophiles in S_N2 Reactions with Alkyl halides

 - Malonic Synthesis of Carboxylic Acids

 - Acetoacetate Synthesis of Ketones

 - Michael Addition (Ch. 27, Sect. 27.7)

Amines

- Nomenclature

 - IUPAC and Common

- Salts of Amines

- Synthesis

 - Reduction of Nitro Compounds

 - Ammonolysis (1^o or CH₃) Halides

 - Reductive Amination

 - Reduction of Nitriles

 - Hoffman Degradation

- Reactions

 - As Bases with Acids

 - Alkylation

 - Reductive Amination

 - Conversion into Amides

 - EAS

 - Hofmann Elimination from Quaternary Ammonium Salts

 - Reactions with Nitrous Acid

Diazonium Salts

- Synthesis: (1)HNO₃/H₂SO₄; (2)H₂, Ni; (3) HONO

- Reactions

 - Coupling to Form Azo Dyes

 - Replacements

 - Br, Cl, CN

 - I

 - F

 - OH

 - H, etc

Phenols

- Nomenclature

- Synthesis

 - From Diazonium Salts

 - Alkali Fusion of Sulfonates

- Reactions

 - As Acids with Active metals

 - Ester Formation

Ether Formation
EAS