Organic Chemistry II: With Practical: Dr. Bishwajit Saikia (Minor and Major Syllabus) FYUGP- NEP

Contents

CHAPTER-1 CHEMISTRY OF ALIPHATIC HYDROCARBONS

- 1.1 Formation of Alkanes
- 1.1.1 Wurtz Reaction
- 1.1.2 Wurtz-Fittig Reaction
- 1.1.3 Corey-House Reaction
- 1.2 Free Eadical Substitutions: Halogenation
- 1.2.1 Chlorination
- 1.2.2 Comparison of Halogenation Reaction of Alkanes
- 1.2.3 Free Radical Bromination vs Chlorination
- 1.3 Free Radical Initiators
- 1.4 Relative Reactivity of Halogens in Halogenation Reaction of Alkanes
- 1.5 Selectivity of Alkane Halogenation
- 1.6 Elimination Reactions
- 1.6.1 E2 (Bimolecular Elimination) Reaction
- 1.6.2 E1 (Unimolecular Elimination) Reaction
- 1.6.3 ElcB (Elimination Unimolecular Conjugate Base)
- 1.7 Saytzeff Eliminations
- 1.8 Hofmann Elimination
- 1.9 Special Emphasis on Preparation of Alkenes by syn Elimination
- 1.9.1 Pyrolysis of Esters
- 1.9.2 Chugaev Reaction
- 1.9.3 Wittig Reaction
- 1.9.4 Heck Reaction
- 1.10 Reactions of Alkenes
- 1.11 Addition of Halogens to the Double Bond (Trans-addition) (Halogenation)
- 1.12 Stereochemistry of Bromination Reaction
- 1.13 Addition of Hydrogen Halides (HX)
- 1.14 Addition of HX to Symmetrical Alkenes
- 1.15 Addition of HX to Unsymmetrical Alkenes

- 1.15.1 Markovnikov Addition
- 1.15.2 Anti-Markovnikov Addition (Kharash Peroxide Effect)
- 1.16 Oxymercuration-Demercuration
- 1.17 Hydroboration-oxidation
- 1.18 Ozonolysis
- 1.19 Catalytic Hydrogenation
- 1.20 Syn and anti-hydroxylation (Oxidation)
- 1.21 Woodward and Prevost Dihydroxylation
- 1.22 1,2- and 1,4-Addition Reactions in Conjugated Dienes
- 1.23 Diels-Alder Reaction
- 1.24 Endo Rule for Diels-Alder Reaction
- 1.25 Allylic and Benzylic Bromination
- 1.26 Stereoselectivity and Stereospecificity
- 1.27 Acidity of Alkynes
- 1.28 Electrophilic Addition to Alkynes
- 1.29 Addition of Halogens
- 1.30 Addition of Hydrogen Halides (HX)
- 1.31 Nucleophilic Addition to Alkynes
- 1.32 Hydration to Form Carbonyl Compounds
- 1.33 Alkylation of Terminal Alkynes
- 1.34 Catalytic Reduction
- 1.35 Chemical Reduction
- 1.36 Solved Examples

ORGANIC CHEMISTRY PRACTICAL