allylic + benzylic halogenation

stability of dienes

s-cis vs s-trans conformations

kinetic vs thermodynamic control

simple vs conjugate addition

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cycloaddition

Diels-Alder

drawing π molecular orbitals

Homo vs. Lumo

symmetry allowed vs. symmetry forbidden

nomenclature of aromatic molecules

annulenes

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aromaticity - planar, cyclic, able to delocalize, Hückel #

Frost's circle (molecular orbital energy levels)

identify as aromatic, non-aromatic, anti-aromatic

benzylic carbocation

oxidation of side chain

Birch reduction

substituent effects on reactivity rates.

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Test #1 rework

Electrophilic aromatic substitution
arenium ion
Halogenation (chlorine + bromine)
Halogenation mechanism
nitration mechanism
sulfonation mechanism
reversibility of sulfonation
Friedel crafts alkylation mechanism
Friedel crafts acylation mechanism
Clemmensen reduction of carbonyl
Wolff-Kishner reduction of carbonyl
Raney Nickel reduction of carbonyl

ortho/para activators
ortho/para deactivators
meta deactivators

no meta Friedel-crafts reactions
oxidation of side chains
reduction of nitro groups
H_2S / NH_3 reduction of one nitro group
activators beat deactivators
ortho disubstituted benzenes
order of reactions in synthesis
partial rate factors
substitution of naphthalene
substitution of heterocycles

reactions

Synthesis

Electrophilic aromatic substitution mechanism

Free question

Spectral sheet (s)

resonance structures

potential energy diagrams