

CHM 31 - Bronx Community College - CUNY
Fall 2015
Professor Socha
FINAL EXAM REVIEW SHEET

25 question, multiple choice

Exam duration: 2 hrs

You may bring two sheets of paper (front and back) containing handwritten or typed notes. I will examine at your notes to ensure they are unique (i.e. not copied from another student).

Part 1: Structure, Electronics and Resonance in Organic Compounds.

- Carbon hybridization, bonding, ion valence electronics
- Formal charge on carbon and other atoms in organic compounds
- Resonance forms and their associated likelihood and energetics

Part 2: Acid/Base Chemistry of Organic Compounds

David Evans' pKa table will be given

- pKa considerations for organic reaction equilibria
- pKa considerations for nucleophilic substitution reactions

Part 3: Stereochemistry of Organic Compounds

The structure of an amino acid will be given.

- Understand and distinguish diastereomers and enantiomers, R vs. S, D vs. L
- Stereochemical considerations for nucleophilic substitution reactions

Part 4: Alkene & Alkyne Chemistry

- Electrophilic addition reactions of HX, X₂ and water.
- Markovnikov's rule, carbocation stability and rearrangements
- Reduction and oxidation reactions
- Alkyne preparation

Part 5: Elimination and Nucleophilic Substitution Reactions

- Zaitsev vs. Hoffman reactions and reagents
- Nucleophilic substitution reactions (including stereochemical outcomes, rate, solvent, alkyl halide structure, leaving group, nucleophile considerations)

Part 6: Retrosynthetic Analysis and Green Chemistry

- 2-3 step retrosyntheses
- 12 principals of green chemistry