

Introduction

This book is intended to complement most of the text books that are currently in use for Organic I and II in the United States. Its aim is to enable students to write reasonable organic reaction mechanisms for unseen problems. A systematic approach for problem solving is provided that requires only basic mechanistic organic chemistry.

The first chapter is concise, and outlines key points that will enable students to draw reasonable arrows. Such points are either not mentioned in text books or they are not in condensed form. All the other chapters are ordered in the manner they appear in most text books.

There are many books on mechanisms that are available for Organic I and II. This book differs from them as it does not include topics that are already described in most text books. Also, all mechanisms are taught with the help of solved problems. These problems are solved with the help of a six point analysis. This style is similar to Moloney's "Reaction Mechanism at a Glance." However, the problem solving approach is different in this book. This approach is more close to Grossman's "The Art of Writing Reasonable Organic Reaction Mechanisms". Grossman's text is, however, for advanced level students. Another point that is different in this book is the use of dotted arrows in the analysis. It is my observation that these arrows help students tremendously.

Each problem is followed by a concise discussion where new points are mentioned. This gradual dose of information is easy to retain. As such, students are likely to remain interested.

The method described in this book is by no means comprehensive. It is mainly concerned with polar mechanisms. However, it is sufficient for solving most problems that students encounter in Organic I and II. Radical reactions and the reactions that require some memorization are not mentioned in this book. Examples of such reactions include Ozonolysis and other oxidation and reduction reactions. The strategy is also not suitable to solve multi-step reaction mechanisms such as Appel reaction, DCC coupling and Swern Oxidation (especially when byproducts are not shown in the problem). Such mechanisms, without some memorization, are probably too hard for organic I and II students.

Almost all of the problems mentioned in this book are taken from the literature and their references have been provided. Occasionally, for clarity, structures of some reagents have been modified. The book uses abbreviations and groups that are common in modern organic synthesis, but not mentioned in most text books. Whenever a new abbreviation is used, it is provided by a non abbreviated name and the structure. The first few pages of the book also contain these abbreviations and their structures.

How to use this book

1. Use it in conjunction with your text book.
2. Read the book in chronological order.
3. Follow the six points.

Some students find this strategy too lengthy (six points) especially in the beginning of the semester when they have covered less material in the class. If you belong to this category, I urge you to try to solve some of the problems that are mentioned at the end of chapter 2. If you are having difficulty or you can not solve these problems at all, please follow the system and do not skit any step. Believe me; it will save you a ton of time.