

Contents

Preface	xi
Bibliographical Note	xv
PART 1	
Introduction	1
Chapter 1 Localized Chemical Bonding	3
Chapter 2 Delocalized Chemical Bonding	29
Aromaticity	41
Hyperconjugation	69
Tautomerism	71
Chapter 3 Bonding Weaker than Covalent	75
Hydrogen bonding	75
Addition compounds	78
Chapter 4 Stereochemistry	86
Optical activity and chirality	86
Cis-trans isomerism	113
Conformational analysis	124
Strain	140
Chapter 5 Carbonium Ions, Carbanions, Free Radicals, Carbenes, and Nitrenes	151
Carbonium ions	151
Carbanions	160
Free radicals	170
Carbenes	178
Nitrenes	184
Chapter 6 Mechanisms and Methods of Determining Them	187
Chapter 7 Photochemistry	208
Chapter 8 Acids and Bases	225
Chapter 9 Effects of Structure on Reactivity	246

PART 2

Introduction	261
Chapter 10 Aliphatic Nucleophilic Substitution	265
Mechanisms	265
Reactivity	315
Reactions	341
Chapter 11 Aromatic Electrophilic Substitution	453
Mechanisms	453
Orientation and reactivity	459
Reactions	473
Chapter 12 Aliphatic Electrophilic Substitution	520
Mechanisms	520
Reactivity	529
Reactions	531
Chapter 13 Aromatic Nucleophilic Substitution	584
Mechanisms	584
Reactivity	591
Reactions	595
Chapter 14 Free-Radical Substitution	619
Mechanisms	619
Reactivity	625
Reactions	631
Chapter 15 Addition to Carbon-Carbon Multiple Bonds	672
Mechanisms	672
Orientation and reactivity	684
Reactions	694
Chapter 16 Addition to Carbon-Hetero Multiple Bonds	801
Mechanism and reactivity	801
Reactions	803
Chapter 17 Eliminations	895
Mechanisms and orientation	895
Reactivity	914
Mechanisms and orientation in pyrolytic eliminations	917
Reactions	922
Chapter 18 Rearrangements	962
Mechanisms	963
Reactions	978

Chapter 19 Oxidations and Reductions	1073
Mechanisms	1073
Reactions	1076
Appendix A The Literature of Organic Chemistry	1143
Primary sources	1143
Secondary sources	1147
Literature searching	1162
Appendix B Classification of Reactions by Type of Compound Synthesized	1166
Indexes	1193
Author Index	1193
Subject Index	1271