

CONTENTS

Part I

Basic Principles Applied to Aliphatic Compounds

1. Introduction	1
2. Ethyl Alcohol, A Representative Organic Compound	4
3. Concerning the Nature of Chemical Bonds	11
4. Alcohols as a Class of Organic Compounds	25
5. Chemical Reactions of Alcohols as Introductory Organic Reactions. Alkyl halides and Ethers	35
6. Alkanes, the Saturated Aliphatic Hydrocarbons. Systematic nomenclature	42
7. Concerning the Nature of Multiple Bonds; Electronic formulas	58
8. The Alkenes. Introduction To Multi-Step Syntheses	72
9. The Alkynes	87
10. Concerning Mechanisms of Organic Reactions	93
11. Carboxylic Acids. Resonance and Hydrogen Bonding	105
12. Acid Chlorides, Anhydrides, Amides, and Nitriles	125
13. The Esters. Fats, Oils, Waxes, and Detergents	134
14. Aldehydes and Ketones	146
15. Substituted Acids as Typical Polfunctional Compounds	172
16. Stereoisomerism	186
17. Monosaccharides, The Basic Structural Unit in Carbohydrates	204
18. Disaccharides and Polysaccharides	219
19. The Organic Bases	226
20. Amino Acids and Proteins	241

Part II

Aromatic Compounds, Carbocyclic and Heterocyclic.

Special Topics

21. The Chemical Nature of Benzene	257
22. Characteristic Substitution Reactions of Aromatic Compounds. Nomenclature	266
23. Reactions and Characteristics of the Primary Aromatic Substitution Groups	292
24. Aromatic Amines	308
25. Phenols and Benzoquinones	323
26. Aromatic Carboxylic Acids	336
27. Certain Phenyl-Substituted Aliphatic Compounds	347
28. Aromatic Aldehydes and Ketones	353
29. Condensations and Displacements by Enolate Ions	362
30. Biphenyl	377
31. Naphthalene and Its Derivatives	385

32. Higher Condensed Ring Compounds	403
33. Pyridine and Its Derivatives	417
34. Quinoline and Its Derivatives	441
35. Isoquinoline	462
36. Survey of Certain Additional Topics	468
37. The Literature of Organic Chemistry	487
Index	507