

Contents

- 1** Introduction 1
- 2** Mass Spectrometry 4
 - Introduction 4
 - Apparatus 5
 - The Mass Spectrum 7
 - Determination of an Empirical Formula 9
 - Derivatives 11
 - Mass Spectra of Some Chemical Classes 11
 - References 18
 - Appendix A, Masses and Isotope Abundances 20
 - Appendix B, Common Fragments 47
- 3** Infrared Spectrometry 49
 - Introduction 49
 - Theory 50
 - Instrumentation 52
 - Sample Handling 53
 - Interpretation of Spectra 54
 - Characteristic Group Frequencies of Organic Molecules 55
 - References 70
- 4** Nuclear Magnetic Resonance Spectrometry 71
 - Introduction and Theory 71
 - Apparatus 73
 - Chemical Shifts 74
 - Spin-Spin Coupling 77
 - Appendix A, Charts of Chemical Shifts 82
 - Appendix B, Shielding Constants for Disubstituted Methylenes 87
 - Appendix C, Protons Subject to Hydrogen-Bonding Effects 87
 - Appendix D, Proton Spin-Spin Coupling Constants 87
 - Appendix E, Properties of Nuclei 89
 - References 89
- 5** Ultraviolet Spectrometry 90
 - Introduction 90
 - Theory 91
 - Instrumentation 95
 - Sample Handling 96

Characteristic Absorption of Organic Compounds	97	7 Sets of Spectra with Beilstein References	150
References	102	8 Sets of Spectra, Unidentified	161
6 Sets of Spectra Translated into Compounds	104	Index	173