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Nota di contenuto	FOUNDATIONS OF ORGANIC CHEMISTRY; CONTENTS; PREFACE; ACKNOWLEDGMENTS; PART I: BACKGROUND; CHAPTER 1: An Introduction to Structure and Bonding; A: THE SOURCES OF CARBON COMPOUNDS; I. How Do We Know a Material Is Pure?; B. MORE ABOUT HYDROCARBONS; I. Combustion-Heats of Reaction; C. ON THE NATURE OF THE CHEMICAL BOND; I. Ionic and Nonpolar Covalent Bonds; II. Polar Covalent Bonds; III. Orbital Hybridization; IV. Allotropes of Carbon; V. Combination of Ionic and Covalent Bonding; NOTICE TO THE STUDENT; ADDITIONAL PROBLEMS; REFERENCE CHAPTER 2: An Introduction to Spectroscopy and Selected Spectroscopic Methods in Organic ChemistryA. GENERAL INTRODUCTION; B. X-RAY CRYSTALLOGRAPHY; C. PHOTON SPECTROSCOPY; I. General Introduction; II. UV and VIS Spectroscopy; III. IR Spectroscopy; IV. Raman Spectroscopy; V. Microwave Spectroscopy; VI. Magnetic Resonance Spectroscopy; a. NMR; b. ESR; D. MS; I. Creation of Ions in the Mass Spectrometer: The Ionization Chamber; II. The Separation of Ions by Mass: The Mass Analyzer; III. Detecting the Ions; ADDITIONAL PROBLEMS; REFERENCE CHAPTER 3: Structure: The Nomenclature of Hydrocarbons and the

Shape of Things to ComeA. INTRODUCTION; B. NOMENCLATURE AND SPECTROSCOPY; I. Alkanes; a. Acyclic Alkanes; b. Cyclic Alkanes; II. Alkenes, Arenes, and Alkynes; a. Alkenes; b. Arenes; c. Alkynes; C. PHYSICAL AND CHEMICAL PROPERTIES; OXIDATION AND REDUCTION OF HYDROCARBONS; I. The Concept of Homology; II. Oxidation and Reduction; a. Oxidation; b. Reduction; ADDITIONAL PROBLEMS; REFERENCES; CHAPTER 4: An Introduction to Dynamics; A. INTRODUCTION; B. REVIEW OF SOME ENERGY CONSIDERATIONS; C. THE BARRIER BETWEEN REACTANTS AND PRODUCTS
CHAPTER 5: Classes of Organic Compounds-A Survey: An Introduction to Solvents and to Acids and Bases and to Computational ChemistryA. INTRODUCTION; B. GENERAL CHARACTERISTICS OF FUNCTIONAL GROUP PLACEMENT; C. THE FUNCTIONAL GROUPS AND THEIR NAMES; I. Hydrocarbons; a. Alkanes; b. Alkenes; c. Alkynes; d. Arenes; II. Alkyl and Aryl Halides; III. Alcohols and Phenols; IV. Ethers; V. Thiols, Thioethers, Disulfides, and Their Oxides; VI. Amines, Hydrazines, and Other Nitrogenous Materials; VII. Phosphines, Phosphonium Salts, and Other Phosphorus Derivatives
VIII. An Introduction to Organometallic Compounds

Sommario/riassunto

This book differs from other organic chemistry textbooks in that it is not focused purely on the needs of students studying premed, but rather for all students studying organic chemistry. It directs the reader to question present assumptions rather than to accept what is told, so the second chapter is largely devoted to spectroscopy (rather than finding it much later on as with most current organic chemistry textbooks). Additionally, after an introduction to spectroscopy, thermodynamics and kinetics, the presentation of structural information of compounds and organic families advances from hyd
