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The first chapter has been revised to include an expansion in the different chemical bonding theories to include the Valence Bond Theory and Molecular Orbital Theory. Intermolecular forces are covered as well. The second chapter covers inorganic chemistry. Those most commonly encountered concepts are presented, such as coordination numbers, crystal systems, and ionic crystals. A more detailed explanation of the coordination encountered in bonding of inorganic compounds requires a deeper explanation than this book was intended for.

Chapter 3 consists mostly of organic reactions listed according to their preparation and reactions. The mechanisms of the various reactions are not discussed since there are numerous books which are devoted to the subject. A section is devoted to the concept of isomers since any treatment of organic chemistry must include an understanding of it. The section on polymer has been expanded to include the different types of polymerizations, structures, molecular forces, and a section on terminology also has been added.

Chapter 4 covers basic nomenclature. It is meant to give the reader a basic idea of how compounds are named and how it relates to the structure. Inorganic nomenclature has been totally revised and is more detailed.

Chapter 5 is intended to present an outline of how wet chemical analysis is done and not a guide for the laboratory.

The sixth chapter covers instrumental analysis. No attempt is made to explain the inner workings of the different machinery or the mechanisms by which various spectra are produced. The material listed is for use by those that are familiar with the different type of spectra encountered in the instrumental analysis of chemical compounds. The tables and charts would be useful for the interpretation of various spectra generated in the course of analyzing a chemical substance. Listed are tables that would be useful for the interpretation of ultraviolet-visible (UV-Vis), infrared (IR), nuclear magnetic resonance (NMR), and mass spectrometry (MS) spectra.

Chapter 7 now deals with the fundamentals of nuclear chemistry such as radioactivity, types of radiation, half-life, fusion, and fission.

Chapter 8 now consists of physical constants and unit conversions that are commonly encountered throughout the application of chemistry.

Chapter 9 contains certain mathematical concepts that are useful to have when reviewing or working with certain concepts encountered in chemistry. Use of significant figures and basic mathematical operations has been added.

An additional appendix, Appendix C, has been added and contains common NMR solvent spectra.

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