Preface

This textbook is intended for students studying pharmacy and medicine. It covers the program included in the general and inorganic chemistry course. Divided into two parts, each part further divided into sections and subsections to facilitate the interrelationship of topics, this textbook will enable researchers, professors, and students to find the wide range of topics, including the most cutting-edge topics in general and inorganic chemistry. The content of the textbook is consistent with the curriculum. In the discipline "general and inorganic chemistry," the fundamental principles and general directions of chemistry are considered, and in the second part on the chemistry of the elements, the general physical and chemical properties of the elements and their compounds with an emphasis on their biological role are presented.

The first part of the textbook presents basic theoretical topics such as the structure of the atom, periodic table and law, chemical bonding, and complex compounds. The following are the topics related to the course of chemical processes (chemical thermodynamics, chemical kinetics, catalysis, chemical equilibrium, redox processes, and physicochemical analysis), as well as topics studying solutions (disperse systems, electrolyte solutions, and colloidal solutions). This part would give students systematic theoretical and practical knowledge in the field of general chemistry with an emphasis on biochemical processes.

The second part of the textbook is dedicated to chemical elements. It is built on the concept of interconnection "place in the periodic table – chemical properties – biological role of chemical elements and their compounds" and is adapted to the needs of pharmaceutical practice. It includes an analysis of the sources and preparations of the elements, their common compounds, their physical and chemical properties, and their applications. Attention is specifically focused on the role and influence of chemical elements and their compounds on biological systems and mainly on the human body. Students are expected to build the necessary thinking and skills to apply this knowledge in their professional realization.

The compulsory course in general and inorganic chemistry is in line with the modern requirements for in-depth fundamental knowledge and practical skills in the training of pharmacy and medical students. At the same time, the students pursuing MSc in chemical engineering and other professional studies will also find the book extremely useful. The objective is to provide the students with comprehensive treatment of the subject on modern lines.

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