

Preface

Microorganisms or microbes are the organisms that are usually microscopic (too small to be seen with the naked eyes). They live almost everywhere on earth including hot springs, on the ocean floor, and deep inside rocks within earth's crust. They are vital to humans and the environment. The study of microorganisms is called microbiology.

Microbiology is a subject which is growing at a very fast pace. It occupies a central position in biotechnology and genetic engineering and many of the recent major advances have been achieved using microorganisms as model systems. Though a number of books are present on the subject but there is still a need for a book which is simple yet concise, covering all essential concepts. The basic aim of the present book is to provide up-to-date knowledge to the students, researchers and other readers who have a keen interest in the subject.

The book has been organized into six parts. The first part deals with the study of tools and techniques used in microbiology. The second part describes microbial world-classification, structure and organization of microbes. The third part discusses microbial growth and genetics. The fourth part focuses on environmental and applied microbiology. The fifth part describes microbiology in relation to health. The sixth part focuses on control of microorganisms.

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I am very much indebted to my family members—to my mother Smt. Urmila Sharma, my wife Smt. Geeta Sharma and my children Pranjala and Mridul for their constant support, motivation and encouragement.

Though every effort has been made to make the book up-to-date and free from errors but there may still remain some lacunae and deficiencies in the book. I would appreciate constructive criticism and suggestions from the readers. I hope the book will be able to refresh, deepen and systematize the knowledge of the students and to create an interest and zeal among the readers for the subject.

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4. Classification of Microorganisms

4.1 History of Classification

4.2 Levels of Classification (Taxonomic Hierarchy)