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About the Book
Appropriate for one-semester junior-graduate level courses in Endocrinology, Endocrine Physiology, as well as courses in medicine, dentistry, pharmacology, nutrition, nursing and other related medical or animal sciences where endocrinology is the focus. Hadley provides comprehensive coverage of endocrinology, centralizing on the critical roles of glands, hormones, receptors, and molecular signaling pathways in the control of physiological processes. This up-to-date Sixth Edition reviews the basic concepts, research methodologies, and the “state-of-the-art” scientific understanding of each of the major endocrine systems, in examples designed specifically for premedical and related professional courses.

Features
- Emphasizes that all aspects of hormone function—synthesis, secretion, delivery, action and disposal—are of great physiological significance.
- Special reference to the roles of chemical messengers in the control of homeostatic systems—in the overall discussion of homeostasis.
- Coverage of the most recent molecular, genetic, and physiological—as well as the more classical-methodologies.
- Traces the evolution of hormone structure—in relation to the comparative endocrinology of neurohypophysial hormones.

Contents
1. Introduction to Endocrinology.
2. The Vertebrate Endocrine System.
4. Endocrine Methodologies.
5. Pituitary Hormones.
6. The Endocrine Hypothalamus.
7. Neurohypophysial Hormones.
8. Melanotropic Hormones.
9. Hormonal Control of Calcium Homeostasis.
13. Thyroid Hormones.
15. Adrenal Steroid Hormones.
16. Endocrinology of Sex Differentiation and Development.
17. Hormones and Male Reproductive Physiology.
18. Hormones and Female Reproductive Physiology.
20. Endocrine Role of the Pineal Gland.

ISBN: 9788131726105
Endocrinology, 6/e
Mac E. Hadley
Jonathan Levine
608
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Web Supplements
ABOUT THE BOOK
Appropriate for one-semester junior-graduate level courses in Endocrinology, En-
docrine Physiology, as well as courses in medicine, dentistry, pharmacology, nutrition, nursing and other related medical or animal sciences where endocrinology is the focus. Hadley provides comprehensive coverage of endocrinology, centralizing on the critical roles of glands, hormones, receptors, and molecular signaling pathways in the control of physiological processes. This up-to-date Sixth Edition reviews the basic concepts, research methodologies, and the "state-of-the-art" scientific understanding of each of the major endocrine systems, in examples designed specifically for premedical and related professional courses.

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- Traces the evolution of hormone structure—In relation to the comparative endocrinology of neurohypophysial hormones.

CONTENTS
1. Introduction to Endocrinology.
2. The Vertebrate Endocrine System.
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5. Pituitary Hormones.
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15. Adrenal Steroid Hormones.
16. Endocrinology of Sex Differentiation and Development.
17. Hormones and Male Reproductive Physiology.
18. Hormones and Female Reproductive Physiology.
20. Endocrine Role of the Pineal Gland.
Vogel's Qualitative Inorganic Analysis, 7/e

G. Svehla | B. Sivasankar

ISBN: 9788131773710

ABOUT THE BOOK
Vogel's Qualitative Inorganic Analysis (in its seventh edition) follows the current trends and techniques in the field of analytical chemistry. Written for undergraduate and postgraduate students of chemistry, this revised and updated edition treats each concept and principle systematically to make the subject comprehensible to beginners as well as advanced learners.

FEATURES
■ Updated nomenclature
■ Addition of tests for metals based on flame atomic emission and atomic absorption spectrometry
■ New classification of mixtures of common and less common ions
■ Marginalia highlighting important facts
■ Elaborate discussions on preliminary tests, dissolution and fusion of samples
■ Health and hazard warnings throughout the text
■ Details on the preparation of reagents provided in the appendix

CONTENTS
1. Introduction
2. Experimental Techniques
3. Reactions of the Cations
4. Reactions of the Anions
5. Selected Tests and Separations
6. Reactions of Some Less Common Ions

ABOUT THE AUTHOR(S)
G. Svehla is a formerly professor from the department of chemistry, University College, York, Ireland.
B. Sivasankar is a visiting professor from the department of chemistry, Anna University, Chennai, TamilNadu.
ABOUT THE BOOK
Dr. Vogel's classic introduction to analytical methods has provided generations of chemists worldwide with a basis for teaching, learning and applying analytical chemistry. This 60th anniversary edition - the first for a decade - reflects major changes in the subject. Analysts need to understand the concepts behind methods and Vogel's Quantitative Chemical Analysis provides clear introductions to all the key analytical methods including those involving advanced computerised equipment available in many analytical laboratories. The editors have built further on the work of Dr Vogel, modernising the approach while retaining the analytical concepts and ideas which were built into the original work. This new edition has been extensively revised to take into account developments in instrumental procedures and coupled techniques whilst maintaining the book's focus on quantitative chemical and problem-specific analyses. With excellent cross-referencing this book provides a wealth of examples and tables of data.

FEATURES
- Comprehensive coverage of methods with detailed easy-to-follow practical experiments.
- Basic analytical theory which is essential for understanding the subject.
- Greatly expanded sections on instrumental analysis including aspects of miniaturisation.
- Increased emphasis on minor/trace component analysis and revised statistical handling of data.
- New chapters on sampling, mass spectrometry and nuclear magnetic resonance.

CONTENTS
3. Safety; Units.
4. Reagent Purity.
5. Introduction.
10. The Basis of Separative Methods.
11. Thin Layer Chromatography.
12. Liquid Chromatography.
14. Titrimetric Analysis.
15. Gravimetric Analysis.
17. Direct Electroanalytical Methods.
22. Vibrational Spectroscopy.
23. Mass Spectrometry

ABOUT THE AUTHOR(S)
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M.J.K. Thomas, University of Greenwich
About the Book
The book elucidates the principles of analytical methods such as volumetric analysis, gravimetric analysis, statistical methods of analysis, electro-analytical, and thermoanalytical techniques. It also presents the basic principles and instrumentation of UV, IR, NMR, Mass and ESR spectral methods, accompanied by a discussion on the spectra of a number of molecules, intended to develop the skill of the reader and to interpret the spectra of common organic molecules. This text will benefit those preparing for competitive examinations such as NET, SLET, GATE, and the UPSC Civil Services exam.

Features
- Includes up-to-date developments in the field
- Detailed illustration of AES, AAS, and Flame Photometry
- Numerous review questions, solved problems and end of chapter exercises:

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14. Nuclear Magnetic Resonance (NMR) Spectroscopy  
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ABOUT THE BOOK
This text is intended for the undergraduate students of B.Pharmacy for the practical course on Pharmaceutics-I as per the latest PCI syllabus. The book includes solid dosage forms, semisolid dosage forms and liquid dosage forms, including fundamental unit operations required for manufacturing of pharmaceutical products. Written in a simple and lucid fashion, the experiments are sequenced in a logical order. It also features basic theoretical notes correlating to the different formulations dealt, which gives a clear understanding of the subject to the reader.

FEATURES
- Unambiguous classification of the various dosage forms
- Contains relevant prescriptions, formulae, procedures and labels for the individual preparations
- Stepwise approach to calculations for easy comprehension

CONTENTS
1. Dosage Forms – Classification
2. Definitions of Pharmaceutical Dosage Forms
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9. Dilute Solutions
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13. Alcohol Dilution
14. Alligation Method Liquid Dosage Forms for External Use
15. Ear Drops
16. Enemas
17. Gargles
18. Liniments
19. Lotions
20. Mouthwash
21. Nasal Drops
22. Paints
23. Solutions Liquid Dosage Forms for Internal Use
24. Mixtures
25. Elixir
26. Linctus
27. Syrups
28. Emulsions Semisolid Dosage Forms
29. Ointments
30. Paste
31. Creams
32. Jellies Solid Dosage Forms
33. Powders
34. Granules
35. Suppositories

ABOUT THE AUTHOR
K. Elango is presently the Professor and Head, Department of Pharmaceutics, College of Pharmacy, Madras Medical College, Chennai. With a teaching experience spanning over 33 years, and an industrial experience of 3 years, he is an accomplished teacher at both undergraduate and postgraduate levels.
ABOUT THE BOOK
This book provides practical applications of writing in vocational/technical fields, Presenting clear, simplified explanations of key concepts and skills in written communication, Rutherfoord’s guide covers the writing process in a systems approach that integrates reading, planning, writing, and revising.

FEATURES
■ Fourteen technical reading passages that introduce or demonstrate each writing topic.
■ Integration of reading, writing, spelling, word usage, and vocabulary exercises and assignments within each chapter.
■ Complete and independent grammar and mechanics units for flexible planning and individualized study.
■ Exercises and models using common technical vocabulary and concepts.
■ Explanations of concepts in language that is easy to understand and apply.
■ This book is designed to help readers gain a working knowledge of all the major skills for career-related communication, including e-mail, graphics, reports, business correspondence, presentations, job interviews, and resumes.

CONTENTS
PART 1 Foundation
• Audience
• Language and Style
• Organization

PART 2 Writing Elements
• Technical Definitions
• Technical Descriptions
• Summaries
• Graphics
• Instructions
• Comparison and Contrast

PART 3 Forms of Technical Communication
• Technical Reports
• Forms, Memos, and E-mail
• Business Letters
• Presentations
• The Job Search: Resumes and Letters
Our world is witnessing a major change in communication patterns, with expanding social spheres, openness in communication and professionals working in multicultural environments. It is crucial, therefore, that India’s workforce remains world-class, through re-training and continuous improvement, to remain competent, competitive and successful. To create and nurture successful professionals, the acquisition, cultivation and fine-tuning of soft skills are highly essential in the given business paradigm. The ACE of Soft Skills is a part of this educational process that produces top-notch professionals. Divided into three parts “Attitude, Communication and Etiquette” this unique book provides a broad-based coverage of what constitute soft skills. The foundations of soft skills lie in a strong attitude; this attitude gets manifested as communication, which gets further refined as etiquette. This book covers a wide range of topics “a gamut of nearly 40 essential soft skills” including personal accountability, listening skills, business proposals, and the role of small talk and humour at work. The numerous case studies, cartoons, figures, tables and quotations not only offer an insightful, practical and well-rounded perspective into soft skills, but also make reading a joyful experience.

Contents

Part I: Attitude
1. Let Us Get Started!
2. Big Picture, Pride, Passion and Process
3. Vision
4. Personal Accountability
5. Teamwork and You
6. Diversity Awareness
7. Lifelong Learning
8. Performance Expectations Management
9. The Art of Time Management
10. Stepping Up to the Plate
11. When Things Go Way Wrong at the Workplace
12. Tying It All Together: Work Your Way to Success

Part II: Communication
13. Understanding the Communication Cycle
14. Distortion in Communication
15. The ‘Why’ and ‘To Whom’ Parts of Communication
16. Knowing the Objective of Communication and Audience Analysis
17. Preparing for the Communication
18. Listening Skills
20. Vocal Variety: Using the Voice Channel
21. Visual Aids
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23. Resume Writing
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29. Performance Appraisals
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33. E-mail Etiquette
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35. Visits of Foreign Counterparts
36. The Big Deal About Small Talk
37. Respecting Privacy
38. Learning to Say ‘No’
39. The Role of Humour in the Workplace
40. English-language Skills
41. Reach for the Moon

About the Author(S)
Professor Gopalaswamy Ramesh has 30 years of international experience and is an independent consultant and Adjunct Professor at the International Institute of Information Technology Bangalore (IIIT-B), SSN School of Management and Computer Applications, Chennai, and Amrita School of Business, Coimbatore. He has also taught at the Indian Institute of Management Bangalore; Anna University, Chennai; Great Lakes Institute of Management, Chennai, and XLRI Jamshedpur. His vast industry experience covers both India and abroad. He played a key role in the establishment of
Oracle India Development Center and was its former Senior Director. He is the author of the National Award “winning book Managing Global Software Projects, and has also authored Software Testing Principles and Practices and Software Maintenance. Two of these books have also been translated into Chinese. His most recent book is The ACE of Soft Skills: Attitude, Communication and Etiquette for Success. He currently offers consultancy services in the areas of project management and soft skills to several companies in India and abroad. He holds an MS in engineering management from Stanford University, California; MS in computer science from IIT Madras and BE from IISc Bangalore. Mahadevan Ramesh graduated from IIT Kanpur (five-year integrated MSc degree in Physics) and earned a PhD (Physics) from the Ohio State University, USA. Following a research stint in the electrical and computer engineering department in Carnegie Mellon University, Pittsburgh, he worked for Storage Technology Corporation (now a part of Sun Microsystems/Oracle), and for Maxtor Corporation (now a part of Seagate Technologies) at Colorado, USA. He held leadership positions in global product teams and spent considerable time on the factory floor in Singapore, working with stakeholders from many different cultures, and learnt first hand the importance of soft skills. He is currently an adjunct professor in the SSN School of Management and Computer Applications, and he also consults on management and engineering, specializing in production and operations management.

About the Book

Organizational Behavior, Updated, 18/e

Stephen P. Robbins | Timothy A. Judge | Neharika Vohra

ISBN: 9789356064270

About the Book

The bestseller title Organizational Behavior 18e is now revised and updated. This updated 18th edition reflects the most recent research and business events within the field of organizational behavior, while maintaining its hallmark features – a clear writing style, cutting-edge content, and intuitive pedagogy. The text is lucid and makes current, relevant research come alive for readers. The book holds significance as a textbook for students of management and practicing professionals in organizations with engaging, cutting-edge material that aids to understand and connect with organizational behavior.

Features

- Employability Skills Matrix to support the development of skills employers are looking for in today’s business graduates.
- Updated - Opening-Chapter Vignettes bring current business trends and events to the forefront.
- Career Objectives in every chapter provide advice, in a question-and-answer format to help students think through issues they may face in the workforce today.
- Updated - End-of-Chapter Experiential Activities, Ethical Dilemmas, and Cases.
- Real-world examples of organizational behavior
- Includes latest Indian case studies and research

Contents

1. Introduction
2. What Is Organizational Behavior?
3. The Individual
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7. Perception, Learning, and Individual Decision Making
8. Emotions and Moods
9. Motivation Concepts
10. Motivation: From Concepts to Applications
11. The Group
12. Foundations of Group Behavior
13. Understanding Work Teams
14. Power and Politics
15. Communication

Communication Skills
ABOUT THE AUTHOR(S)
Stephen P. Robbins, San Diego State University.
Timothy A. Judge; The Ohio State University.
Neharika Vohra; Indian Institute of Management Ahmedabad.

ABOUT THE BOOK
This book provides a clear understanding of the attributes of good communication vis-à-vis soft skills and hard skills. It guides you through each set of skills and provides practice and assessment modules to sharpen learning, while covering all the four tenets of language learning, listening, speaking, reading and writing. Covering all the topics essential for teachers and students of BCom, BBA and MBA and mass communications, as well as professionals in all industries, *Soft Skills and Communication Skills* is a complete manual to grooming yourself for inter-personal communication in the professional world.

FEATURES
- Situational case studies, illustrations and flow charts for clear grasp of concepts
- Model questions for practice and guidelines for answering difficult problems
- Highlights the linkages between soft skills and hard skills, illustrating the manner in which they can be utilized together in professional situations

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12. Communication: Written English
13. Emotional Skills
14. Interpersonal Effectiveness
15. Assertiveness Skills
16. Conflict Management and Negotiation Skills
17. Team-building Skills
18. Time-management Skills
19. Model Question Papers

ISBN: 9788131760345
ABOUT THE BOOK
Communication Skills and Soft Skills is an invaluable guide to students of professional courses, job seekers and people of various professions seeking to improve their soft skills. The unique feature of the book is that it integrates training in essential soft skills with all the four language skills “listening, speaking, reading and writing” and all the four language components, pronunciation, vocabulary, grammar and spelling. With its perfect blend of theory and practice, this book effectively meets the requirements of the present-day job market and other interactive spheres of their lives.

FEATURES
- Training in essential soft skills
- Uniquely designed practical approach to improving communication skills
- Guidance for all four language skills, listening, speaking, reading and writing
- Practice modules for all four language components, pronunciation, grammar, vocabulary and spelling

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Preface
1. Interpersonal Communication
2. Goal-setting
3. Personality Development
4. Critical Thinking
5. Stress Management
6. Team Work
7. Time Management
8. Essential Written Communication

ABOUT THE AUTHOR(S)
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J. Savithri teaches English at the Department of English, Osmania University, Hyderabad.
**About the Book**

*Thomas’ Calculus*, Fourteenth Edition, introduces students to the intrinsic beauty of calculus and the power of its applications. For more than half a century, this text has been revered for its clear and precise explanations, thoughtfully chosen examples, superior figures, and time-tested exercise sets.

**Features**

- Strong exercise sets feature a great breadth of problems—progressing from skills problems to applied and theoretical problems—to encourage students to think about and practice the concepts until they achieve mastery.
- Complete and precise multivariable coverage enhances the connections of multivariable ideas with their single-variable analogues studied earlier in the book.

**New to this Edition**

- Updated graphics emphasize clear visualization and mathematical correctness.
- New examples and figures have been added throughout all chapters, based on user feedback.
- New types of homework exercises, including many geometric in nature, have been added to provide different perspectives and approaches to each topic.
- Short URLs have been added to the historical margin notes, allowing students to navigate directly to online information.
- New annotations within examples guide the student through the problem solution and emphasize that each step in a mathematical argument is rigorously justified.

**Contents**

1. Functions
2. Limits and Continuity
3. Derivatives
4. Applications of Derivatives
5. Integrals
6. Applications of Definite Integrals
7. Transcendental Functions
8. Techniques of Integration
9. First-Order Differential Equations
10. Infinite Sequences and Series
11. Parametric Equations and Polar Coordinates
12. Vectors and the Geometry of Space
13. Vector-Valued Functions and Motion in Space
14. Partial Derivatives
15. Multiple Integrals
16. Integrals and Vector Fields
17. Second-Order Differential Equations (Online)

**About the Author(s)**

George B. Thomas, Jr. (late) of the Massachusetts Institute of Technology, was a professor of mathematics for thirty-eight years; he served as the executive officer of the department for ten years and as graduate registration officer for five years. Thomas held a spot on the board of governors of the Mathematical Association of America and on the executive committee of the mathematics division of the American Society for Engineering Education.

Joel Hass received his PhD from the University of California Berkeley. He is currently a professor of mathematics at the University of California Davis. He has coauthored widely used calculus texts as well as calculus study guides. He is currently on the editorial board of several publications, including the Notices of the American Mathematical Society.

Christopher Heil received his PhD from the University of Maryland. He is currently a professor of mathematics at the Georgia Institute of Technology.

Maurice D. Weir (late) of the Naval Postgraduate School in Monterey, California was Professor Emeritus as a member of the Department of Applied Mathematics. He held a DA and MS from Carnegie-Mellon University and received his BS at Whitman College.
ABOUT THE BOOK
As in the earlier editions, the book conveys the important fundamentals and principles of the subject in a simple and easily understandable manner.

CONTENTS
1. Structures of Organic Compounds
2. Structural Theory
3. Symmetry of Organic Molecules (Molecular Dissymmetry)
4. Types of Reactions of Organic Compounds
5. Alkanes, Cycloalkanes and Aromatic Hydrocarbons

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23. Oxidation and Reduction Electroorganic Synthesis
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27. Symphoria (Anchimeric Assistance) Neighboring Group Effects. Catalysis by Transition Metal Complexes
28. Introduction to Supramolecular Chemistry Host–Guest Chemistry

Part 4: Biomolecules and Bioorganic Chemistry
29. Lipids Fats, Steroids, Terpenes, and Prostaglandins
30. Carbohydrates I: Monosaccharides. Carbohydrates II: Disaccharides and Polysaccharides
31. Alkaloids
32. Amino Acids and Proteins Molecular Biology
33. Enzymes, Co-Enzymes and Vitamins
34. Nucleic Acids Nucleotides, Polynucleotides and Nucleosides
35. Drugs Chemotherapeutic and Pharmacodynamic Agents

Part 5: Contemporary and Future Organic Chemistry
36. Nanoparticles (Size-Dependent Chemistry)
37. Future Devices and Challenges of Chemistry of this Century Molecular Machines or Nanomachines

ABOUT THE AUTHOR(S)
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Robert Neilson Boyd, New York University
Saibal Kanti Bhattacharjee, Gauhati University
ABOUT THE BOOK
Paula Bruice's presentation in organic chemistry, eighth edition provides mixed-science majors with the conceptual foundations, chemical logic, and problem-solving skills they need to reason their way to solutions for diverse problems in synthetic organic chemistry, biochemistry, and medicine. The eighth edition builds a strong framework for thinking about organic chemistry by unifying principles of reactivity that students will apply throughout the course, discouraging memorization. With more applications than any other textbook, Dr. Bruice consistently relates structure and reactivity to what occurs in our own cells and reinforces the fundamental reason for all chemical reactions—electrophiles react with nucleophiles. New streamlined coverage of substitution and elimination, updated problem-solving strategies, synthesis skill-building applications and tutorials guide students throughout fundamental and complex content in both the first and second semesters of the course.

FEATURES
The textbook bridges the gap between organic chemistry and biochemistry. Because bioorganic chemistry is the bridge between organic chemistry and biochemistry, the text emphasizes that the organic reactions that chemists carry out in the laboratory are similar to those performed by nature inside a cell. These connections are especially important to biological science majors. -Revised, accuracy-checked text provides increased exam relevancy. -Improved visuals and organization engage students with difficult subject matter, organizes the chapter content and improves ease of use. -Strengthened emphasis on the strategies needed to solve problems and master the content. -New and restructured features give students additional conceptual and skill building support. -Organizing What We Know about the reactions of organic compounds Table. -Content Updates and Revisions to the Table of Contents streamline and improve clarity in the presentation.

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1. Remembering General Chemistry: Electronic Structure and Bonding
2. Acids and Bases: Central to Understanding Organic Chemistry
3. An Introduction to Organic Compounds: Nomenclature, Physical Properties, and Structure
PART TWO: Electrophilic Addition Reactions, Stereochemistry, and Electron Delocalization
4. Isomers: The Arrangement of Atoms in Space
5. Alkenes: Structure, Nomenclature, and an Introduction to Reactivity • Thermodynamics and Kinetics
6. The Reactions of Alkenes • The Stereochemistry of Addition Reactions
7. The Reactions of Alkenes • An Introduction to Multistep Synthesis
8. Delocalized Electrons: Their Effect on Stability, pKa, and the Products of a Reaction • Aromaticity and Electronic Effects: An Introduction the Reactions of Benzene
PART THREE: Substitution and Elimination Reactions
9. Substitution and Elimination Reactions of Alkyl Halides
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21. Amino Acids, Peptides, and Proteins
22. Catalysis in Organic Reactions and in Enzymatic Reactions
23. The Organic Chemistry of the Coenzymes, Compounds Derived from Vitamins
24. The Organic Chemistry of the Metabolic Pathways

PART EIGHT: Special Topics in Organic Chemistry
25. The Organic Chemistry of Lipids
26. The Chemistry of the Nucleic Acids
27. Synthetic Polymers
28. Pericyclic Reactions

ABOUT THE AUTHOR(S)
Paula Yurkanis Bruice is from the University Of California, Santa Barbara. Bruice earned her Ph.D. in chemistry from the University of Virginia. She then received an NIH postdoctoral fellowship for study in the Department of Biochemistry at the University of Virginia Medical School and held a postdoctoral appointment in the Department of Pharmacology at the Yale School of Medicine. Paula has been a member of the faculty at the University of California, Santa Barbara since 1972, where she has received the Associated Students Teacher of the Year Award, the Academic Senate Distinguished Teaching Award, two Mortar Board Professor of the Year Awards, and the UCSB Alumni Association Teaching Award. Her research interests center on the mechanism and catalysis of organic reactions, particularly those of biological significance.

ABOUT THE BOOK
In the sixth edition of Dr. Finar's best-selling student text, a great deal of material has been rewritten and many new topics have been added. The arrangement of the subject matter is based on homologous series and SI units have been used throughout the text.

CONTENTS
1. Determination of Structure
2. Properties of Molecules
3. Alkanes
4. Alkenes and Alkyne
5. Halogen derivatives of the alkanes
6. Monohydric alcohols
7. Ethers
8. Aldehydes and ketones
9. Saturated monocarboxylic acids and their derivatives
10. Polycarbonyl compounds
11. Polyhydric alcohols
12. Unsaturated alcohols, ethers, carbonyl compounds and acids
13. Nitrogen compounds
14. Aliphatic compounds of sulphur, phosphorus, silicon and boron
15. Organometallic compounds
16. Saturated dicarboxylic acids
17. Hydroxyacids, stereochemistry, unsaturated dicarboxylic acids
18. Carbohydrates
19. Alicyclic compounds
20. Monocyclic aromatic hydrocarbons
21. Aromatic halogen compounds
22. Aromatic nitro-compounds
23. Aromatic amino-compounds
24. Diazonium salts and their related compounds
25. Aromatic sulphonic acids
26. Phemols and quinones
27. Aromatic alcohols, aldehydes and ketones
28. Aromatic acids
29. Polynuclear hydrocarbons and their derivatives
30. Heterocyclic compounds
31. Dyes and photochemistry

ABOUT THE AUTHOR
The late Dr. Finar was Principal Lecturer in Organic Chemistry at the Polytechnic of North London.

Organic Chemistry, Volume 1, 6/e

I. L. Finar

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ISBN: 9788177585421
Organic Chemistry, Volume 2: Stereochemistry and the Chemistry Natural Products, 5/e

I. L. Finar

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ABOUT THE BOOK
Organic Chemistry is a well-established two-volume textbook for students studying chemistry at degree level. Volume 2 carries the material of Volume 1: Fundamental Principles to a more advanced level. The author provides a comprehensive introduction to the relationship between physical properties and chemical structures, and then proceeds to a detailed account of stereochemistry. The later chapters are devoted to the most typical compounds of natural products and the problems involved. A selected number of reading references are given at the end of each chapter.

CONTENTS
1. Physical properties and chemical constitution
2. Optical isomerism
3. Nucleophilic substitution at a saturated carbon atom, asymmetric synthesis
4. Geometrical isomerism, stereochemistry of alicyclic compounds
5. Stereochemistry of biphenyl compounds
6. Stereochemistry of some elements other than carbon
7. Carbohydrates
8. Terpenoids
9. Carotenoids
10. Polycyclic aromatic hydrocarbons
11. Steroids
12. Heterocyclic compounds containing two or more hetero-atoms
13. Amino-acids and proteins
14. Alkaloids
15. Anthocyanins
16. Purines and nucleic acids
17. Vitamins
18. Chemotherapy
19. Haemoglobin, chlorophyll and phthalocyanines

ABOUT THE AUTHOR
The late Dr. Finar was Principal Lecturer in Organic Chemistry at the Polytechnic of North London.

Problems and Their Solution in Organic Chemistry

I. L. Finar

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ABOUT THE BOOK
The first part of this book collects together the questions set out at end of each chapter in the authors Textbook of Organic Chemistry, Volume 1 (sixth edition). The second part of this book gives the possible solutions, which are linked with an explanation of the sort of reasoning used in order to arrive at one of the answers. In many cases, several answers are given for one question; and in each set of questions, there is at least one which involves the completion of equations. The result is a book which can be used independently of the main volume. This book helps in acquiring a better understanding of the basic principles of organic chemistry and in revising a large amount of the subject matter quickly.
CONTENTS

1. Determination of Structure
2. Properties of Molecules
3. Alkanes
4. Alkenes and Alkynes
5. Halogen derivatives of the alkanes
6. Monohydric alcohols
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11. Polyhydric alcohols
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23. Aromatic amino-compounds
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26. Phenols and quinones
27. Aromatic alcohols, aldehydes and ketones
28. Aromatic acids
29. Polynuclear hydrocarbons and their derivatives
30. Heterocyclic compounds
31. Dyes and photochemistry

ABOUT THE AUTHOR(S)

The late Dr. Finar was Principal Lecturer in Organic Chemistry at the Polytechnic of North London.

Vogel's Textbook of Practical Organic Chemistry, 5/e

Brian S. Furniss | Antony J. Hannaford | Peter W.G. Smith | Austin R. Tatchell

ABOUT THE BOOK

Still recognized as the definitive text on practical topics related to organic chemistry, this text is relied upon by undergraduates, postgraduate students, and professional organic chemists. Topics covered include the structural and theoretical principles required when designing a synthesis; the disconnection or synthon approach; the principles of retrosynthetic analysis applied to relevant aliphatic, aromatic, alicyclic and heterocyclic compounds; and developments in reaction techniques.

FEATURES

- An introductory chapter on the structural and theoretical principles required when designing a synthesis.
- The disconnection on synthon approach now integrated into the text, and the principles of retrosynthetic analysis applied to relevant aliphatic, aromatic, alicyclic and heterocyclic compounds.
- Synthesis methodology is expanded to cover a range of new reagents, including oxidants and reductants; reagents for asymmetric synthesis; and those derived from lithium, boron, silicon, phosphorous and sulphur.
- Recent developments in reaction techniques which include: handling of air-sensitive and moisture-sensitive compounds; new chromatographic procedures; phase transfer catalysis; and solid support reagents.
- Over 100 new experiments selected from the literature to illustrate new reagents and techniques, and the operation of protection, selectivity and control in synthesis.
- A more detailed treatment of carbon-13 n.m.r. spectroscopy, and the interpretation of spectroscopic data for many of synthesized compounds.
CONTENTS
1. Organic Synthesis.
2. Experimental Techniques.
3. Spectroscopic Methods and the Interpretation of Spectra.
4. Solvents and Reagents.
5. Aliphatic Compounds.
6. Aromatic Compounds.
7. Selected Alicyclic Compounds.
8. Selected Heterocyclic Compounds.

ABOUT THE BOOK
This book has proved useful for research as well as for teaching purpose. The fourth edition of this book was distinguished from its predecessors by a greater emphasis on semi-micro methods and modern techniques and reactions. While updating the book in several important aspects, namely, chromatography, reaction mechanism, and safety and first-aid measures.

CONTENTS
Part I: Methods and Manipulation
Part II: Preparations
Part III: Reactions and Identification of Organic Compounds
Part IV: Quantitative Analysis
Part V: Simple Enzyme Reactions

FEATURERS
- Techniques for diagnosis of mechanism not previously compiled from research literature.
- An important bridge between fundamental studies and mechanisms in solution.
- Key references from classic papers to the latest research literature.
CONTENTS
1. The Transition State  
2. Kinetics and Mechanism  
3. The Effect of Changes in Reactant Structure  
4. Kinetic and Equilibrium Isotope Effects  
5. Transition States from External Effects  
6. Transition State Structures - Anomalies  
7. Bioorganic Group Transfer Reactions  
8. Catalysis  
9. Complexation Catalysis  
10. Some Enzyme Systems

ABOUT THE AUTHOR(S)
Michael I. Page, Huddersfield University  
Andrew Williams, University of Kent at Canterbury

ABOUT THE BOOK
This classic textbook on mechanistic organic chemistry, characterized by its clarity, careful choice of examples, and its general approach designed to lead to a greater understanding of the subject matter. The book is aimed clearly at the needs of the student, with a thorough understanding of, and provision for, the potential conceptual difficulties he or she is likely to encounter. The book's success in achieving these goals is reflected in the opinion of one reviewer who says, "Sykes remains the bible of mechanistic organic chemistry for thousands of undergraduates, and there is certainly no English language publication of which I am aware which comes even close to challenging it in terms of clarity and coverage."

FEATURES
- New – topics introduced in this edition: ipso aromatic substitution; the mechanistic borderline in nucleophilic substitution; more use of activation parameters; Dimorth's ET parameter; Hammett's $\lambda$ and spectroscopic data; and 13C n.m.r. in biogenesis.
- New – thoroughly revised text with improved explanations, more examples and increased clarity.

CONTENTS
1. Structure, Reactivity, and Mechanism.  
3. The Strengths of Acids and Bases.  
7. Electrophilic and Nucleophilic Addition to C=C.  
8. Nucleophilic Addition to C=O.  
10. Carbanions and Their Reactions.  
11. Radicals and Their Reactions.  
12. Symmetry Controlled Reactions.  

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ISBN: 9788177584332
Elementary Practical Organic Chemistry: Small Scale Preparations Part 1, 2/e

Arthur I. Vogel

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FEATURES
■ Experimental Techniques
■ Mechanism of all reactions described
■ Introduction of a number of reactions and experimental procedures of general interest

CONTENTS
1. Theory of General Technique
2. Experimental Technique
3. Aliphatic Compounds
4. Aromatic Compounds
5. Miscellaneous Compounds and Miscellaneous Reactions

Elementary Practical Organic Chemistry: Qualitative Organic Analysis Part 2, 2/e

Arthur I. Vogel

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ABOUT THE BOOK
A dedicated chapter on “The use of spectroscopic methods in qualitative organic analysis” which includes the essentials from a practical viewpoint of ultraviolet and visible spectroscopy and infrared spectroscopy and mass spectroscopy. These spectroscopy techniques are now-days of such great importance that no book on qualitative organic analysis can be regarded complete without their inclusion.

CONTENTS
1. Determination of physical constants
2. Qualitative analysis for the elements
3. The solubility classes
4. Reactions and characterization of selected classes of organic compounds
5. Class reactions
6. The preparation of derivatives
7. Qualitative analysis of mixtures of organic compounds
8. The use of spectroscopic methods in qualitative organic analysis
9. Physical constants of organic compounds
ABOUT THE BOOK
Organic Chemistry, Ninth Edition gives students a contemporary overview of organic principles and the tools for organizing and understanding reaction mechanisms and synthetic organic chemistry with unparalleled and highly refined pedagogy. This text presents key principles of organic chemistry in the context of fundamental reasoning and problem solving. Authored to complement how students use a textbook today, new Problem Solving Strategies, Partially Solved Problems, Visual Reaction Guides and Reaction Starbursts encourage students to use the text before class as a primary introduction to organic chemistry as well as a comprehensive study tool for working problems and/or preparing for exams.

FEATURES
■ New chapters on Phenols and Quinones and Asymmetric Synthesis.
■ Green Chemistry is emphasized with presentation of less-toxic, and environmentally friendly reagents.
Over 100 new problems include more synthesis problems and problems based on recent literature.

Over 80 Mechanism boxes help students understand how specific reactions occur by zooming in on each individual step in detail.

Updated art throughout to provide consistency and clarity in the text, giving detailed representations of molecular and orbital art.

CONTENTS
Preface
1. Introduction to Organic Chemistry
3. The Study of Chemical Reactions
4. Structure and Stereochemistry of Alkanes and Cycloalkanes
5. Structure and Synthesis of Alkenes
6. Reactions of Alkenes and Dienes
7. Alkynes
8. Alkyl Halides; Nucleophilic Substitution and Elimination
9. Alcohols and Thiols: Structure and Synthesis
10. Reactions of Alcohols
11. Ethers and Thioethers
12. Stereochemistry
13. Aromatic Compounds
14. Reactions of Aromatic Compounds
15. Ketones and Aldehydes
16. Carboxylic Acids
17. Carboxylic Acid Derivatives
18. Condensations and Alpha Substitutions of Carbonyl Compounds
19. Phenols and Quinones
20. Amines
21. Carbohydrates
22. Amino Acids, Peptides, Proteins and Nucleic Acids
23. Polymeric Materials
24. Asymmetric Synthesis
25. Conjugated Systems, Orbital Symmetry, and Ultraviolet Spectroscopy
26. Infrared Spectroscopy and Mass Spectrometry
27. Nuclear Magnetic Resonance Spectroscopy
28. Lipids
Appendices
Brief Answers to Selected Problems
Photo Credits
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Color Illustrations

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Jan W. Simek, Cal Poly State University
Maya Shankar Singh Department of Chemistry, Institute of Science, Banaras Hindu University

Heterocyclic Chemistry, 3/e

Thomas L. Gilchrist

EXCLUSIVE

ABOUT THE BOOK
This popular text has been completely revised to reflect recent advances in the subject. Deals with the properties of ring systems and general methods of synthesis, providing a unique overview of the subject area. Includes a guide to the naming of the ring systems, invaluable to those unfamiliar with the area.

FEATURES
Includes recent examples of organometallic reagents which are increasingly used in the synthesis and reactions of heterocyclic compounds.
New reaction schemes illustrating the use of heterocycles as synthetic intermediates.
CONTENTS
1. Introduction
2. Aromatic Heterocycles
3. Nonaromatic Heterocycles
4. Methods of Ring Synthesis
5. Six-membered Rings
6. Five-membered Rings with One Heteroatom
7. Six-membered Rings with Two or More Heteroatoms
8. Five-membered Rings with Two or More Heteroatoms
9. Three and Four Membered Rings
10. Seven and Larger Membered Ring Compounds
11. Nomenclature

ABOUT THE AUTHOR(S)
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Donald A. Tarr, St. Olaf College

BIOCHEMISTRY

Introduction to Biochemistry and Metabolism

D. Anandhi

ABOUT THE BOOK
Designed as per the UGC curriculum, Introduction to Biochemistry and Metabolism meets the syllabus requirements of all universities offering a course on biochemistry and metabolism.

The subject, a core paper for the students of botany, zoology, biotechnology and bioinformatics, is dealt with in detail across 13 chapters with emphasis on the metabolism of amino acids, carbohydrates, lipids and high energy compounds. Replete with illustrations and schematic representations, the book reinforces theoretical concepts with its concise, easy-to-follow approach making it an ideal textbook on the subject.

FEATURES
- Comprehensive coverage of free radicals, antioxidation and proteins.
- Focus on enzymes, fatty acids and their metabolic activities.
- Elucidation of the detoxification mechanism.
- Disseminates information on diseases caused due to enzyme deficiencies.
- 150 illustrations and schematics to help readers understand how biochemical reactions and metabolic pathways work.
- Includes laboratory techniques for qualitative and quantitative lipid analysis and estimation of proteins in food samples.

CONTENTS
Preface
1. Chapter 1 Cell
2. Chapter 2 Carbohydrates
3. Chapter 3 Amino acids
4. Chapter 4 Lipids
5. Chapter 5 Nucleic acid
6. Chapter 6 Enzymes
7. Chapter 7 High energy compounds
8. Chapter 8 Introduction to metabolism
9. Chapter 9 Amino acid metabolism
10. Chapter 10 Lipid metabolism
11. Chapter 11 Nucleotide metabolism
12. Chapter 12 Detoxication mechanism
13. Chapter 13 Antibiotics
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ABOUT THE AUTHOR
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Introduction to Bioinformatics

Teresa Attwood  |  David J. Parry-Smith  |  Dr Samiron Phukan

ISBN: 9788177586411

ABOUT THE BOOK
Bioinformatics, the application of computers in the biological sciences, especially analysis of biological sequence data, is becoming an essential tool in molecular biology as genome projects generate vast quantities of data. With new sequences being added to DNA databases on an average of once a minute, there is a pressing need to convert this information into biochemical and biophysical knowledge by deciphering the structural, functional and evolutionary clues encoded in the language of biological sequences.

FEATURES
- Unique guide to bioinformatics linked to an interactive practical on the World Wide Web
- Introduces key databases, tools and resources, and outlines pitfalls of methods
- The Web link integrates conventional and Web-based publishing, allowing interactive exploration of concepts discussed in the book
- Includes numerous Further Reading suggestions, Web references and a useful Glossary

CONTENTS
1. Overview
2. Introduction
3. Information networks
4. Protein information resources
5. Genome information resources
6. DNA sequence analysis
7. Pairwise alignment techniques
8. Multiple sequence alignment
9. Secondary database searching
10. Building a sequence search protocol
11. Analysis packages
12. Probability and statistics

ABOUT THE AUTHOR(S)
Dr Teresa K. Attwood is a Royal Society University Research fellow and Senior Lecturer in the School of Biological Sciences, University of Manchester, UK, Visiting Fellow at the European Bioinformatics Institute, and author and curator of the PRINTS protein fingerprint database.

Dr David J. Parry-Smith is Informatics Director at Cambridge Drug Discovery Limited, Cambridge, UK, and works mainly with algorithm development.

Dr Samiron Phukan is Senior Scientist, SDMD Drug Discovery at Jubilant Biosys Limited, Bangalore, India.
**ABOUT THE BOOK**

This book covers the course requirements for *Environmental Studies* for undergraduate students of all disciplines. It aims to educate the readers about nature, ecosystems, natural resources, biodiversity, pollution, and the current challenges faced by environmentalists. It integrates the social impact associated with environmental issues through national and international case studies.

**FEATURES**

- This book completely follows the UGC model curriculum.
- Discusses current topics in the global environment scenario such as ecological footprint, carbon trading, and emission trading.
- Equipped with a complete list of ISO standards for environment management systems.
- Entire unit devoted to field work with more than 10 experiments for quantitative evaluation of ecosystems.
- Has more than 30 case studies to illustrate environmental issues.
- An updated list of international conventions and protocols.
- Comprehensive glossary for quick recapitulation of technical terms.
- Updated statistical information on air quality standards, permissible exhaust limit, and so on.

**CONTENTS**

1. Definition, scope and importance, need for public awareness, environment and its components
2. Natural resources: Renewable and non-renewable resources Natural Resources and associated problems
3. Ecosystems
4. Biodiversity and its conservation
5. Environmental pollution
6. Social issues and the environment
7. Human population and the environment
8. Field work

**ABOUT THE AUTHOR(S)**

Dr. Anindita Basak is presently Reader in Chemistry at Sushilavati Government Women's College, Rourkela. She was also deputed as a visiting scientist at National Institute of Technology, Rourkela from 2004 to 2006. She has published 16 papers in journals of national and international repute. She has extensive research experience in different fields of chemistry, polymer science, and environmental science.
Environmental Studies

D. L. Manjunath

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ABOUT THE BOOK
Environmental Studies, focuses in clear and simple language, on the basic scientific content necessary to understand environmental issues. It details the latest developments in the field and reflects several major shifts in environmental science education this century. Designed as a foundational text for environmental science courses and spread over eleven chapters, the book includes various aspects of ecology such as ecosystems, environmental impacts, and current environmental issues.

FEATURES
- Pedagogical treatment of the subject to help students grasp fundamentals
- A strong focus on statistical data that illustrates the deterioration of our surroundings, with emphasis on environmental abuse
- Images that portray the current degeneration of our environment

CONTENTS
1. The Earth, Fact File
2. Environment and Ecology
3. Environmental Impacts of Human Activities
4. Water Resources and Water Quality
5. Mineral Resources and Mining
6. Forests
7. Bio-Geo-Chemical Cycles
8. Matter and Energy Fundamentals
9. Environmental Pollution
10. Current Environmental Issues of Importance
11. Environmental Protection

ABOUT THE AUTHOR(S)
D. L. Manjunath, Head, Department of Civil Engineering, Malnad College of Engineering, Hassan
ABOUT THE BOOK
As in the earlier editions, the book conveys the important fundamentals and principles of the subject in a simple and easily understandable manner.

CONTENTS
1. Structures of Organic Compounds
2. Structural Theory
3. Symmetry of Organic Molecules (Molecular Dissymmetry)
4. Types of Reactions of Organic Compounds
5. Alkanes, Cycloalkanes and Aromatic Hydrocarbons

Part 2: Chemistry of Functional Groups Alkenes
11. Alkynes
12. Alkyl Halides Nucleophilic Substitutions, SN Reactions
13. Aryl Halides Nucleophilic Aromatic Substitution (SNAr Reactions)
14. Alcohols and Ethers
15. Phenols
16. Aldehydes and Ketones Nucleophilic Addition
17. Carboxylic Acids

18. Functional Derivatives of Carboxylic Acids Nucleophilic Acyl Substitution
19. Amines

Part 3: Special Topics
20. Heterocyclic Compounds
22. Organic Synthesis
23. Oxidation and Reduction Electroorganic Synthesis
24. Molecular Orbitals; Orbital Symmetry (Pericyclic Reactions)
25. Organic Photochemistry
27. Symphoria (Anchimeric Assistance) Neighboring Group Effects. Catalysis by Transition Metal Complexes

28. Introduction to Supramolecular Chemistry Host–Guest Chemistry

Part 4: (Biomolecules and Bioorganic Chemistry)
29. Lipids Fats, Steroids, Terpenes, and Prostaglandins
30. Carbohydrates I: Monosaccharides. Carbohydrates II: Disaccharides and Polysaccharides
31. Alkaloids
32. Amino Acids and Proteins Molecular Biology
33. Enzymes, Co-Enzymes and Vitamins
34. Nucleic Acids Nucleotides, Polynucleotides and Nucleosides
35. Drugs Chemotherapeutic and Pharmacodynamic Agents

Part 5: Contemporary and Future Organic Chemistry
36. Nanoparticles (Size-Dependent Chemistry)
37. Future Devices and Challenges of Chemistry of this Century Molecular Machines or Nanomachines

ABOUT THE AUTHOR(S)
Robert Thornton Morrison, New York University
Robert Neilson Boyd, New York University
Saibal Kanti Bhattacharjee, Gauhati University
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13. Nitrogen compounds
14. Aliphatic compounds of sulphur, phosphorus, silicon and boron
15. Organometallic compounds
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17. Hydroxyacids, stereochemistry, unsaturated dicarboxylic acids
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19. Alicyclic compounds
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■ Recent developments in reaction techniques which include: handling of air-sensitive and moisture-sensitive compounds; new chromatographic procedures; phase transfer catalysis; and solid support reagents.
■ Over 100 new experiments selected from the literature to illustrate new reagents and techniques, and the operation of protection, selectivity and control in synthesis.
■ A more detailed treatment of carbon-13 n.m.r. spectroscopy, and the interpretation of spectroscopic data for many of synthesized compounds.

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2. Experimental Techniques.
3. Spectroscopic Methods and the Interpretation of Spectra.
4. Solvents and Reagents.
5. Aliphatic Compounds.
6. Aromatic Compounds.
7. Selected Alicyclic Compounds.
8. Selected Heterocyclic Compounds.
ABOUT THE BOOK
Physical Chemistry is a compulsory paper offered to all the students of Pharmacy. There is a dearth of good books that exclusively cover the syllabi of physical chemistry offered to pharmacy courses. Pharmaceutical Physical Chemistry has been designed considering their requirements laid down by AICTE and other premier institutes/universities. Apart from the theory 20 most common laboratory experiments have been included to make this book a unique offering to the students of pharmacy.

FEATURES
- 20 Most common laboratory experiments
- 350 Review questions
- 125 Solved problems
- 280 MCQs
- 152 Line Diagrams
- 35 Tables

CONTENTS
Preface
Part A
1. Behaviour of Gases
2. The Liquid state
3. Solution
4. Thermodynamic
5. Adsorption and Catalysis
6. Photochemistry
7. Chemical Kinetics
8. Quantum Mechanics
9. Ionic Equilibria
10. Distribution Law
11. Electrochemistry
12. Electromotive Force and Oxidation–Reduction System
13. Solid State (Crystalline State)
14. Chemical Bonding
15. Phase Equilibria
16. Experiments

ABOUT THE AUTHOR
Dr S K Bhasin is the Director and Professor of Chemistry at Himalayan Group of Professional institute, Kala Amb, Ambala, Haryana. He has been teaching undergraduate and postgraduate students for more than 40 years.
ABOUT THE BOOK
Designed for pre-nursing and allied health students (and also mixed-majors courses), *Microbiology with Diseases by Body System, Third Edition* retains the hallmark art program and clear writing style that have made Robert Bauman’s book a success. This Third Edition features compelling clinical content related to students’ future healthcare careers and abundant opportunities for applied student practice. Chapter-opening Clinical Cases, Emerging Diseases boxes, and Clinical Applications boxes introduce students to real-world clinical situations. Student comprehension is ensured with end-of-chapter practice that encompasses applied, visual, and conceptual understanding.

CONTENTS

1. A Brief History of Microbiology
2. Cell Structure and Function
3. Microscopy, Staining, and Classification
4. Microbial Metabolism
5. Microbial Nutrition and Growth
6. Microbial Genetics
7. Recombinant DNA Technology
8. Controlling Microbial Growth in the Environment
9. Controlling Microbial Growth in the Body: Antimicrobial Drugs
10. Characterizing and Classifying Prokaryotes
11. Characterizing and Classifying Eukaryotes
12. Characterizing and Classifying Viruses, Viroids, and Prions
13. Infection, Infectious Diseases, and Epidemiology
14. Innate Immunity
15. Adaptive Immunity
16. Immunization and Immune Testing
17. AIDS and Other Immune Disorders
18. Microbial Diseases of the Skin and Wounds
19. Microbial Diseases of the Nervous System and Eyes
20. Microbial Cardiovascular and Systemic Diseases
21. Microbial Diseases of the Respiratory System
22. Microbial Diseases of the Digestive System
23. Microbial Diseases of the Urinary and Reproductive Systems
24. Applied and Environmental Microbiology

ABOUT THE AUTHOR
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ABOUT THE BOOK
Versatile, comprehensive, and clearly written, this competitively priced laboratory manual can be used with any undergraduate microbiology text and now features brief clinical applications for each experiment, MasteringMicrobiology quizzes that correspond to each experiment, and a new experiment on hand washing. Microbiology: A Laboratory Manual is known for its thorough coverage, descriptive and straightforward procedures, and minimal equipment requirements. A broad range of experiments helps to convey basic principles and techniques. Each experiment includes an overview, an in-depth discussion of the principle involved, easy-to-follow procedures, and lab reports with review and critical thinking questions. Ample introductory material and laboratory safety instructions are provided.

FEATURES
- Comprehensive coverage of the core microbiology topics includes experiments in the areas of genetics, immunology, and biotechnology.
- A wide range of experiments progressing from simple to complex enable instructors to tailor their laboratory classes to the topics they wish to cover.
- Experiments use the most common and affordable laboratory materials, designed to accommodate any lab.
- Over 90 photographs in full color and numerous illustrations appear directly alongside the experiments, helping students visualize techniques and expected results.
- Spiral binding makes student-use easier and minimizes space on a lab bench.
- Art demonstrating lab procedures appears consistently in a special box design that distinguishes it from other art, and catches the student's eye.
- A bold and modern four-color design adds distinction to each individual element, and allows for easier navigation within each experiment.
- "Caution" icons alert users to experiments that pose a potential risk.
- Six appendices cover the topics of Scientific Notification, Methods for Preparation of Dilutions, Microbiological Media, Biochemical Test Reagents, Staining Reagents, and Experimental Microorganisms.
- A Guide to Serial Dilutions is printed on the inside back cover for students’ quick reference in completing exercises.
- A detailed introductory section on basic lab techniques and safety thoroughly prepares students for lab work during the semester.

CONTENTS
1. Part 1: Basic Laboratory Techniques for Isolation, Cultivation, and Cultural Characterization of Microorganism
2. Part 2: Microscopy
3. Part 3: Bacterial Staining
4. Part 4: Cultivation of Microorganisms: Nutritional and Physical Requirements, and Enumeration of Microbial Populations
5. Part 5: Biochemical Activities of Microorganisms
6. Part 6: The Protozoa
7. Part 7: The Fungi
8. Part 8: The Viruses
9. Part 9: Physical and Chemical Agents for the Control of Microbial Growth
10. Part 10: Microbiology of Food
11. Part 11: Microbiology of Water
12. Part 12: Microbiology of Soil
13. Part 13: Bacterial Genetics
14. Part 14: Biotechnology
15. Part 15: Medical Microbiology

ABOUT THE AUTHOR(S)
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Pharmaceutical Engineering

Bioprocess Engineering: Basic Concepts, 2/e

Michael L. Shuler

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ABOUT THE BOOK
This is the definitive, up-to-the-minute guide to systems management for every IT professional responsible for maintaining stable, responsive IT production environments. Top IT system management expert Rich Schiesser illuminates both the theoretical and practical aspects of systems management, using methods and examples drawn from decades of professional experience in roles ranging from data center leadership to infrastructure design. Schiesser covers every systems management discipline, every type of IT environment, and all elements of success: technology, processes, and people. This edition adds detailed new coverage of the popular IT Infrastructure Library, showing how ITIL's 10 processes align with the 12 processes Schiesser presents. Another new chapter addresses key issues related to ethics, legislation, and outsourcing. Additional new coverage ranges from managing wireless networks, VoIP, and ultra-speed Internet to strategic security and new approaches to facilities management.

FEATURES
- Concepts of validation and Good Manufacturing Practice (GMP) are introduced.
- Helps students to better understand regulatory constraints on bioprocess development.
- Updated coverage of concepts.
- Shows students the connection between traditional ideas and emerging areas, such as tissue engineering and gene therapy.
- Material on functional genomics and cellular engineering.
- Provides students with new developments in biology as they impact bioprocess engineering.
- Expanded discussion of modeling approach.
- Presents students with a clarified section on models in continuous cultures and adds cybernetic modeling.
- Expanded coverage of chromatography.
- Introduces students to discussions of IMAC (immobilized metal affinity chromatography), use of fusion proteins, and porous supports.
- Expanded sections on metabolic engineering, animal cell culture, and protein processing.
- Offers students information on analysis of metabolic pathways, bioreactor considerations for animal cells, and includes some recent examples.
- Additional examples and homework problems, e.g., on topics such as enzyme reaction; reactor operation and scale-up; purification; waste treatment; and genetically engineered cells.
- Enables students to more thoroughly test their understanding of applied concepts.
- Reorganized coverage.
- Gives students a more logical presentation of genetic instability, strategies for genetic engineering, and then an approach to selection of host expression system for production of a heterologous protein.
- Emphasis on novel bioprocessing technologies.
- Provides students with discussions on metabolic pathways and regulation, bioreactors, and separation processes.
- Coverage on production of proteins from recombinant DNA technology.
- Allows students to critically compare and evaluate the various techniques involved.
- Applications—To special systems and the particular characteristics of mixed cultures; genetically engineered cells; and plant and animal cells.
- Reinforces the previously covered engineering and biological concepts while providing more detailed information about important new biological systems.
- Chapter-end suggested readings.
- Encourages students to obtain a more in-depth understanding of key biological...
CONTENTS

I. INTRODUCTION.
   1. What is a Bioprocess Engineer?
      Introductory Remarks. Biotechnology and Bioprocess Engineering. Biologists and Engineers Differ in Their

II. THE BASICS OF BIOLOGY: AN ENGINEER'S PERSPECTIVE.
   2. An Overview of Biological Basics.
   3. Enzymes.
      Introduction. How Enzymes Work. Enzyme Kinetics. Immobilized Enzyme Systems. Large-scale Production of
      Introduction. The Central Dogma. DNA Replication: Preserving and Propagating the Cellular Message.
      Suggestions for Further Reading. Problems.
   5. Major Metabolic Pathways.
      in Aerobic Glucose Metabolism. Metabolism of Nitrogenous Compounds. Nitrogen Fixation. Metabolism
      of Hydrocarbons. Overview of Biosynthesis. Overview of Anaerobic Metabolism. Overview of Autotrophic
      Suggestions for Further Reading. Problems.
   7. Stoichiometry of Microbial Growth and Product Formation.
   8. How Cellular Information is Altered.
      Introduction. Evolving Desirable Biochemical Activities through Mutation and Selection. Natural Mechanisms for
      Reading. Problems.

III. ENGINEERING PRINCIPLES FOR BIOPROCESSES.
   9. Operating Considerations for Bioreactors for Suspension and Immobilized Cultures.
      Introduction. Choosing the Cultivation Method. Modifying Batch and Continuous Reactors. Immobilized Cell
   10. Selection, Scale-Up, Operation, and Control of Bioreactors.
      of Soluble Products. Finishing Steps for Purification. Integration of Reaction and Separation. Summary.
      Suggestions for Further Reading. Problems.

IV. APPLICATIONS TO NONCONVENTIONAL BIOLOGICAL SYSTEMS.
      Reading. Problems.
      Why Plant Cell Cultures? Plant Cells in Culture Compared to Microbes. Bioreactor Considerations. Economics of
      Predicting Host-Vector Interactions and Genetic Instability. Regulatory Constraints on Genetic Processes.
15. Medical Applications of Bioprocess Engineering.
17. Epilogue.

Appendix: Traditional Industrial Bioprocesses.
Anaerobic Bioprocesses. Aerobic Processes.
Suggestions for Further Reading.

ABOUT THE AUTHOR(S)
DR. MICHAEL L. SHULER is Professor in the School of Chemical Engineering, Cornell University. His areas of research include structured models, heterologous protein expression systems, cell culture analogs for pharmacokinetic models, in-vitro toxicology, plant-cell tissue culture, microbial functional genomics, and bioremediation.
DR. FIKRET KARGI is Professor of Environmental Engineering at Dokuz Eylul University in Ismir, Turkey. His current research includes bioprocessing of wastes for production of commercial products, development of novel technologies for biological treatment of problematic wastewaters, nutrient removal, and novel biofilm reactor development.

ABOUT THE BOOK
Appropriate for one-year transport phenomena (also called transport processes) and separation processes course. First semester covers fluid mechanics, heat and mass transfer second semester covers separation process principles (includes unit operations).

The title of this Fourth Edition has been changed from Transport Processes and Unit Operations to Transport Processes and Separation Process Principles (Includes Unit Operations). This was done because the term Unit Operations has been largely superseded by the term Separation Processes which better reflects the present modern nomenclature being used. The main objectives and the format of the Fourth Edition remain the same. The sections on momentum transfer have been greatly expanded, especially in the sections on fluidized beds, flow meters, mixing, and non-Newtonian fluids. Material has been added to the chapter on mass transfer. The chapters on absorption, distillation, and liquid-liquid extraction have also been enlarged. More new material has been added to the sections on ion exchange and crystallization. The chapter on membrane separation processes has been greatly expanded especially for gas-membrane theory.

FEATURES
- The comprehensive, unified, up-to-date guide to transport and separation processes.
- A more thorough coverage of momentum, heat, and mass transport processes and new coverage of separation process applications.
- Greatly expanded coverage of momentum transfer, including fluidized beds and non-Newtonian fluids.
- More detailed discussions of mass transfer, absorption, distillation, liquid-liquid extraction, and crystallization.
CONTENTS
Preface.
I. TRANSPORT PROCESSES: MOMENTUM, HEAT, AND MASS.
  1. Introduction to Engineering Principles and Units.
  2. Principles of Momentum Transfer and Overall Balances.
II. SEPARATION PROCESS PRINCIPLES (INCLUDES UNIT OPERATIONS).
  8. Evaporation.
  14. Mechanical-Physical Separation Processes.
Appendices.
  Appendix A.1. Fundamental Constants and Conversion Factors.

ABOUT THE AUTHOR(S)
CHRISTIE JOHN GANKOPLIS is a Professor of Chemical Engineering and Materials Science at the University of Minnesota. His current research interests involve transport processes, biochemical reactor engineering, mass transfer in liquid solutions, and diffusion and/or reaction in porous solids. He holds a Ph.D. in Chemical Engineering from the University of Pennsylvania.
ABOUT THE BOOK
In the sixth edition of Dr. Finar’s best-selling student text, a great deal of material has been rewritten and many new topics have been added. The arrangement of the subject matter is based on homologous series and SI units have been used throughout the text.

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2. Properties of Molecules
3. Alkanes
4. Alkenes and Alkynes
5. Halogen derivatives of the alkanes
6. Monohydrmic alcohols
7. Ethers
8. Aldehydes and ketones
9. Saturated monocarboxylic acids and their derivatives
10. Polycarbonyl compounds
11. Polyhydric alcohols
12. Unsaturated alcohols, ethers, carbonyl compounds and acids
13. Nitrogen compounds
14. Aliphatic compounds of sulphur, phosphorus, silicon and boron
15. Organometallic compounds
16. Saturated dicarboxylic acids
17. Hydroxyacids, stereochemistry, unsaturated dicarboxylic acids
18. Carbohydrates
19. Alicyclic compounds
20. Monocyclic aromatic hydrocarbons
21. Aromatic halogen compounds
22. Aromatic nitro-compounds
23. Aromatic amino-compounds
24. Diazonium salts and their related compounds
25. Aromatic sulphonlic acids
26. Phenols and quinones
27. Aromatic alcohols, aldehydes and ketones
28. Aromatic acids
29. Polynuclear hydrocarbons and their derivatives
30. Heterocyclic compounds
31. Dyes and photochemistry

ABOUT THE AUTHOR
The late Dr. Finar was Principal Lecturer in Organic Chemistry at the Polytechnic of North London.
ABOUT THE BOOK

Organic Chemistry is a well-established two-volume textbook for students studying chemistry at degree level. Volume 2 carries the material of Volume 1: Fundamental Principles to a more advanced level. The author provides a comprehensive introduction to the relationship between physical properties and chemical structures, and then proceeds to a detailed account of stereochemistry. The later chapters are devoted to the most typical compounds of natural products and the problems involved. A selected number of reading references are given at the end of each chapter.

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13. Amino-acids and proteins
14. Alkaloids
15. Anthocyanins
16. Purines and nucleic acids
17. Vitamins
18. Chemotherapy
19. Haemoglobin, chlorophyll and phthalocyanines

ABOUT THE AUTHOR

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Part 2: Chemistry of Functional Groups

11. Alkenes
12. Alkyl Halides Nucleophilic Substitutions, SN Reactions
13. Aryl Halides Nucleophilic Aromatic Substitution (SNAr Reactions)
14. Alcohols and Ethers
15. Phenols
16. Aldehydes and Ketones Nucleophilic Addition
17. Carboxylic Acids
18. Functional Derivatives of Carboxylic Acids Nucleophilic Acyl Substitution
19. Amines

Part 3: Special Topics

20. Heterocyclic Compounds
22. Organic Synthesis
23. Oxidation and Reduction Electroorganic Synthesis
24. Molecular Orbitals; Orbital Symmetry (Pericyclic Reactions)
25. Organic Photochemistry

ABOUT THE AUTHOR(S)
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Robert Neilson Boyd, New York University
Saibal Kanti Bhattacharjee, Gauhati University

ABOUT THE BOOK
This popular text has been completely revised to reflect recent advances in the subject. Deals with the properties of ring systems and general methods of synthesis, providing a unique overview of the subject area. Includes a guide to the naming of the ring systems, invaluable to those unfamiliar with the area.

FEATURES
- Includes recent examples of organometallic reagents which are increasingly used in the synthesis and reactions of heterocyclic compounds.
- New reaction schemes illustrating the use of heterocycles as synthetic intermediates.
CONTENTS
1. Introduction
2. Aromatic Heterocycles
3. Nonaromatic Heterocycles
4. Methods of Ring Synthesis
5. Six-membered Rings
6. Five-membered Rings with One Heteroatom
7. Six-membered Rings with Two or More Heteroatoms
8. Five-membered Rings with Two or More Heteroatoms
9. Three and Four Membered Rings
10. Seven and Larger Membered Ring Compounds
11. Nomenclature

ABOUT THE AUTHOR(S)
Gary L. Miessler, St. Olaf College
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ABOUT THE BOOK
The second edition of Medicinal Chemistry is based on the core module of Pharmacy syllabi of various technical universities, and targets undergraduate B.Pharma students across India.

The current edition has been designed by authors based on the opinion of the experts to include the latest developments in the field of medicinal chemistry, detailed synthesis mechanism of the drugs and their mode of action inside the body.

FEATURES
- Complex reactions broken down into intermediary steps
- A variety of exercises to test the cognitive level of students
- New pedagogical features:
  - Learning objectives
  - Further Reading guidelines
  - Coloured illustrations
  - Data tables
- New chapters on drug design and development, principles of drug action, CADD and a chapter on miscellaneous drugs

CONTENTS
1. Drug Discovery and Development
2. Principles of Drug Action
3. Drug Metabolism and Prodrugs
4. Computer-aided Drug Design
5. General Anaesthetics
6. Local Anaesthetics
7. Sedatives, Hypnotics, and Anxiolytic Agents
8. Anti-Epileptic Drugs
9. Antipsychotic Agents
10. Antidepressants
11. Narcotic Analgesics
12. Antipyretics and Non-Steroidal Anti-Inflammatory Drugs
13. Miscellaneous CNS Agents
14. Antihistamines and Anti-Ulcer Agents
15. Diuretics
16. Antihypertensive Agents
17. Antiarrhythmic Drugs
18. Antihyperlipidemic Agents
19. Antiungal Drugs
20. Insulin and Oral Hypoglycaemic Agents
21. Oral Anticoagulants
22. Adrenergic Drugs
23. Cholinergic Drugs
24. Sulphonamides, Sulphones, and Dihydrofolate
25. Inhibitors
26. Quinolone Antibacterials
27. Antibiotics
28. Antitubercular Agents
29. Antifungal Agents
30. Antiviral Agents
31. Antiprotozoal Agents
32. Anticancer Agents
33. Prostaglandins
34. Steroids
35. Miscellaneous Agents
36. Nomenclature of Medicinal Compounds

ABOUT THE AUTHOR(S)
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ABOUT THE AUTHOR

The late Dr. Finar was Principal Lecturer in Organic Chemistry at the Polytechnic of North London.
Physical Chemistry is a compulsory paper offered to all the students of Pharmacy. There is a dearth of good books that exclusively cover the syllabi of physical chemistry offered to pharmacy courses. Pharmaceutical Physical Chemistry has been designed considering their requirements laid down by AICTE and other premier institutes/universities. Apart from the theory 20 most common laboratory experiments have been included to make this book a unique offering to the students of pharmacy.

FEATURES
- 20 Most common laboratory experiments
- 350 Review questions
- 125 Solved problems
- 280 MCQs
- 152 Line Diagrams
- 35 Tables

CONTENTS

Part A
1. Behaviour of Gases
2. The Liquid state
3. Solution
4. Thermodynamic
5. Adsorption and Catalysis
6. Photochemistry
7. Chemical Kinetics
8. Quantum Mechanics
9. Ionic Equilibria
10. Distribution Law
11. Electrochemistry
12. Electromotive Force and Oxidation-Reduction System
13. Solid State (Crystalline State)
14. Chemical Bonding
15. Phase Equilibria
Part B
16. Experiments

ABOUT THE AUTHOR
Dr S K Bhasin is the Director and Professor of Chemistry at Himalayan Group of Professional institute, Kala Amb, Ambala, Haryana. He has been teaching undergraduate and postgraduate students for more than 40 years.
INTRODUCING PHARMACOLOGY

ABOUT THE BOOK
This new edition of Introducing Pharmacology remains an accessible and relevant introduction for nursing and healthcare students who are new to pharmacology, as well anyone looking to refresh their knowledge of the subject.
Focused and engaging, the text balances accessibility with depth. Coverage of anatomy and physiology as well as pathophysiology helps to relate the subject to practical realities and makes this text stand out.

FEATURES
■ Extend coverage of the pharmacopoeia with a completely new chapter on anti-cancer drugs.
■ New sections, including general anaesthetics, hay-fever and prescribing for special groups such as children, pregnant women and the elderly.
■ Fully updated with the Recommended International Non-proprietary Names (rINN) for drugs as used in the British National Formulary.
■ Inclusion of a new glossary of key terms and definitions.

CONTENTS
Part 1 Principles of pharmacology
1. Let's start at basics: cells and how they work
2. Protein targets for drugs
3. Side-effects, interactions and pharmacokinetics
Part 2 The major drug groups
4. The cardiovascular system I: drugs used in the management of coronary artery disease
5. The cardiovascular system II: hypertension and antihypertensive drugs
6. Inflammation and the management of pain
7. Disorders and drugs of the digestive system
8. Infection and anti-microbial drugs
9. Disorders and drugs of the respiratory system
10. Disorders and drugs of the endocrine system
11. Drugs used in the treatment of mental health and neurological disorders
12. Drugs used in the treatment of Cancers and Chemotherapy

ABOUT THE AUTHOR
Roger McFadden is Senior Lecturer in Applied Physiology at Birmingham City University
ABOUT THE BOOK

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FEATURES

- An introductory chapter on the structural and theoretical principles required when designing a synthesis.
- The disconnection on synthon approach now integrated into the text, and the principles of retrosynthetic analysis applied to relevant aliphatic, aromatic, alicyclic and heterocyclic compounds.
- Synthesis methodology is expanded to cover a range of new reagents, including oxidants and reductants; reagents for asymmetric synthesis; and those derived from lithium, boron, silicon, phosphorous and sulphur.
- Recent developments in reaction techniques which include: handling of air-sensitive and moisture-sensitive compounds; new chromatographic procedures; phase transfer catalysis; and solid support reagents.
- Over 100 new experiments selected from the literature to illustrate new reagents and techniques, and the operation of protection, selectivity and control in synthesis.
- A more detailed treatment of carbon-13 n.m.r. spectroscopy, and the interpretation of spectroscopic data for many of synthesized compounds.

CONTENTS

1. Organic Synthesis.
2. Experimental Techniques.
3. Spectroscopic Methods and the Interpretation of Spectra.
4. Solvents and Reagents.
5. Aliphatic Compounds.
6. Aromatic Compounds.
7. Selected Alicyclic Compounds.
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Still recognized as the definitive text on practical topics related to organic chemistry, this text is relied upon by undergraduates, postgraduate students, and professional organic chemists. Topics covered include the structural and theoretical principles required when designing a synthesis; the disconnection or synthon approach; the principles of retrosynthetic analysis applied to relevant aliphatic, aromatic, alicyclic and heterocyclic compounds; and developments in reaction techniques.

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The Elements of Immunology

Fahim Halim Khan

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ABOUT THE BOOK

_Please refer to the original text._

FEATURES

- Simple and lucid language explaining core concepts
- Rich pedagogy that facilitates learning
- Colourful and consistent art programme comprising over 300 four-colour illustrations that helps to visualize and comprehend concepts better
- 400 end-of-chapter questions help revise the key concepts
- Discussion of the latest developments in the area of immunology such as MHC haplotype matching for cell transplantation, latest antiretroviral drugs developed against HIV, etc.
- Description of key contributors, researchers and their landmark experiments
- Packed with supplements and media resources
  - Over 30 animations that depict key concepts in three dimensions
  - A question bank containing over 400 questions and clinical case studies along with lecture slides including artwork from the book, as supplements to the text, specifically for the instructors

CONTENTS

1. Introduction to the Immune System
2. Cells and Organs of the Immune System
3. Antigens
4. Antibodies
5. Generation of Antibody Diversity
6. Major Histocompatibility Complex
7. T-cell Receptor
8. T-cell Development and Activation
9. B-cell Development and Activation
10. Complement System
11. Antigen Processing and Presentation
12. Cell-mediated Immunity
13. Hypersensitivity
14. Cell Migration and Inflammatory Response
15. Immune Response to Infectious Agents
16. Vaccines
17. Transplantation Immunology
18. Cancer and the Immune System
19. Primary and Secondary Immunodeficiencies
20. Autoimmunity and Autoimmune Diseases

ABOUT THE AUTHOR

_Fahim Halim Khan_ is an assistant professor of biochemistry at the Aligarh Muslim University.
ABOUT THE BOOK
Dr. Vogel's classic introduction to analytical methods has provided generations of chemists worldwide with a basis for teaching, learning and applying analytical chemistry. This 60th anniversary edition - the first for a decade - reflects major changes in the subject. Analysts need to understand the concepts behind methods and Vogel's Quantitative Chemical Analysis provides clear introductions to all the key analytical methods including those involving advanced computerised equipment available in many analytical laboratories. The editors have built further on the work of Dr Vogel, modernising the approach while retaining the analytical concepts and ideas which were built into the original work. This new edition has been extensively revised to take into account developments in instrumental procedures and coupled techniques whilst maintaining the book's focus on quantitative chemical and problem-specific analyses. With excellent cross-referencing this book provides a wealth of examples and tables of data.

FEATURES
- Comprehensive coverage of methods with detailed easy-to-follow practical experiments.
- Basic analytical theory which is essential for understanding the subject.
- Greatly expanded sections on instrumental analysis including aspects of miniaturisation.
- Increased emphasis on minor/trace component analysis and revised statistical handling of data.
- New chapters on sampling, mass spectrometry and nuclear magnetic resonance.

CONTENTS
3. Safety; Units.
4. Reagent Purity.
5. Introduction.
10. The Basis of Separative Methods.
11. Thin Layer Chromatography.
12. Liquid Chromatography.
14. Titrimetric Analysis.
15. Gravimetric Analysis.
17. Direct Electroanalytical Methods.
22. Vibrational Spectroscopy.
23. Mass Spectrometry

ABOUT THE AUTHOR(S)
J. Mendham, Consultant Analytical Chemist
R.C. Denney, Consultant Forensic Scientist
J. D. Barnes, University of Greenwich
M.J.K. Thomas, University of Greenwich
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ABSTRACT THE BOOK

Zar’s *Biostatistical Analysis, Fifth Edition*, is the ideal textbook for graduate and undergraduate students seeking practical coverage of statistical analysis methods used by researchers to collect, summarize, analyze and draw conclusions from biological research. The latest edition of this best-selling textbook is both comprehensive and easy to read. It is suitable as an introduction for beginning students and as a comprehensive reference book for biological researchers and for advanced students.

This book is appropriate for a one- or two-semester, junior or graduate-level course in biostatistics, biometry, quantitative biology, or statistics, and assumes a prerequisite of algebra.

FEATURES

- A broad collection of data-analysis procedures and techniques are presented, covering a wide variety of biological research, such as physiology, genetics, ecology, behavior, morphology.
- The most comprehensive treatment available includes coverage of the basics of statistical analysis, and also the following topics rarely or never found in statistics books for biologists:
  - Diversity
  - Polynomial regression
  - Multidimensional contingency tables
  - Stepwise regression
  - Nonparametric multiple comparisons
  - Higher order factorial analyses of variance
  - Circular distributions
  - Power and sample size determinations.
- An orderly organization and presentation of topics, with cross-referencing as appropriate.
- The readable and accessible approach allows students with no previous statistical background or mathematical expertise beyond simple algebra to understand the material presented.
- The thoughtful presentation encourages students to think about the value of each statistical technique, as opposed to merely plugging numbers into formulae.
- The exposition considers complex procedures such as factorial analysis of variance and multiple regression in terms of the interpretation of typical computer output.
- A wealth of graphs and other figures are integrated to visually support concepts under discussion.
- A uniquely comprehensive set of statistical tables—more than 40 in all—facilitates statistical analyses without having to consult a separate book. This includes tables that are unique to this book.
- Worked examples for all major procedures guide readers step-by-step through the techniques, demonstrating each of the important concepts.
- An extensive bibliography directs readers to further relevant literature.
## CONTENTS

1. Data: Types and Presentations
2. Populations and Samples
3. Measures of Central Tendency
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5. Probabilities
6. The Normal Distribution
7. One-Sample Hypotheses
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22. Testing for Goodness of Fit
23. Contingency Tables
24. Dichotomous Variables
25. Testing for Randomness
27. Circular Distributions: Hypothesis Testing
28. Answers to Exercises
29. Literature Cited

## ABOUT THE AUTHOR(S)

**Jerrold H. Zar**  
received his undergraduate degree in Biological Sciences from Northern Illinois University in 1962. He later earned his M.S. and Ph.D. degrees in biology and zoology from the University of Illinois at Urbana-Champaign. Zar then returned to Northern Illinois University for 34 years to serve in a variety of capacities. He joined the faculty at NIU as an Assistant Professor in 1968 and quickly rose through the ranks of associate and full professor to become Chair of the Department of Biological Sciences in 1978. He served two terms as Chair of the Department and then, became the Vice Provost for Graduate Studies and Research and Dean of the Graduate School. He was a founder of the Illinois Minority Graduate Incentive Program and the Illinois Consortium for Educational Opportunities Program, where he helped create and protect fellowship opportunities for minority graduate students at universities across the state. Zar is a member of 17 professional scientific societies, including being an elected fellow of the American Association for the Advancement of Science. His many research publications cover a range of topics, from statistical analysis to physiological adaptations of animals to their environment.
ABOUT THE BOOK

*The Cell: Organisation, Functions and Regulatory Mechanisms* provides a precise blend of basic and applied knowledge of cell science that reinforces the conceptual understanding of the subject with leading edge examples and experiments. Catering to the prescribed curricula for a wide range of programmes in different universities and colleges, this book is ideal for undergraduate and postgraduate students who pursue a detailed study of the subject. The book will also serve as a standard resource material for teachers and scholars who may like to enrich their knowledge about the cell in areas pertaining to their specific fields of interest.
About the book
Dr. Vogel's classic introduction to analytical methods has provided generations of chemists worldwide with a basis for teaching, learning and applying analytical chemistry. This 60th anniversary edition - the first for a decade - reflects major changes in the subject. Analysts need to understand the concepts behind methods and "Vogel's Quantitative Chemical Analysis" provides clear introductions to all the key analytical methods including those involving advanced computerised equipment available in many analytical laboratories. The editors have built further on the work of Dr Vogel, modernising the approach while retaining the analytical concepts and ideas which were built into the original work. This new edition has been extensively revised to take into account developments in instrumental procedures and coupled techniques whilst maintaining the book's focus on quantitative chemical and problem-specific analyses. With excellent cross-referencing this book provides a wealth of examples and tables of data.

Features
- Comprehensive coverage of methods with detailed easy-to-follow practical experiments.
- Basic analytical theory which is essential for understanding the subject.
- Greatly expanded sections on instrumental analysis including aspects of miniaturisation.
- Increased emphasis on minor/trace component analysis and revised statistical handling of data.
- New chapters on sampling, mass spectrometry and nuclear magnetic resonance.

Contents
3. Safety; Units.
4. Reagent Purity.
5. Introduction.
10. The Basis of Separative Methods.
11. Thin Layer Chromatography.
12. Liquid Chromatography.
14. Titrimetric Analysis.
15. Gravimetric Analysis.
17. Direct Electroanalytical Methods.
22. Vibrational Spectroscopy.

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ABOUT THE BOOK
In the sixth edition of Dr. Finar's best-selling student text, a great deal of material has been rewritten and many new topics have been added. The arrangement of the subject matter is based on homologous series and SI units have been used throughout the text.

CONTENTS
1. Determination of Structure
2. Properties of Molecules
3. Alkanes
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16. Saturated dicarboxylic acids
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25. Aromatic sulphonic acids
26. Phenols and quinones
27. Aromatic alcohols, aldehydes and ketones
28. Aromatic acids
29. Polynuclear hydrocarbons and their derivatives
30. Heterocyclic compounds
31. Dyes and photochemistry

ABOUT THE AUTHOR
The late Dr. Finar was Principal Lecturer in Organic Chemistry at the Polytechnic of North London.
ABOUT THE BOOK

*Organic Chemistry* is a well-established two-volume textbook for students studying chemistry at degree level. Volume 2 carries the material of Volume 1: Fundamental Principles to a more advanced level. The author provides a comprehensive introduction to the relationship between physical properties and chemical structures, and then proceeds to a detailed account of stereochemistry. The later chapters are devoted to the most typical compounds of natural products and the problems involved. A selected number of reading references are given at the end of each chapter.

CONTENTS

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2. Optical isomerism
3. Nucleophilic substitution at a saturated carbon atom, asymmetric synthesis
4. Geometrical isomerism, stereochemistry of alicyclic compounds
5. Stereochemistry of biphenyl compounds
6. Stereochemistry of some elements other than carbon
7. Carbohydrates
8. Terpenoids
9. Carotenoids
10. Polycyclic aromatic hydrocarbons
11. Steroids
12. Heterocyclic compounds containing two or more hetero-atoms
13. Amino-acids and proteins
14. Alkaloids
15. Anthocyanins
16. Purines and nucleic acids
17. Vitamins
18. Chemotherapy
19. Haemoglobin, chlorophyll and phthalocyanines

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