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Questions for Review Index

WHAT THIS BOOK IS FOR Students have generally found biology a difficult subject to understand and learn. Despite the publication of hundreds of textbooks in this field, each one intended to provide an improvement over previous textbooks, students of biology continue to remain perplexed as a result of numerous subject areas that must be remembered and correlated when solving problems. Various interpretations of biology terms also contribute to the difficulties of mastering the subject. In a study of biology, REA found the following basic reasons underlying the inherent difficulties of biology: No systematic rules of analysis were ever developed to follow in a step-by-step manner to solve typically encountered problems. This results from numerous different conditions and principles involved in a problem that leads to many possible different solution methods. To prescribe a set of rules for each of the possible variations would involve an enormous number of additional steps, making this task more burdensome than solving the problem directly due to the expectation of much trial and error. Current textbooks normally explain a given principle in a few pages written by a biologist who has insight into the subject matter not shared by others. These explanations are often written in an abstract manner that causes confusion as to the principle's use and application. Explanations then are often not sufficiently detailed or extensive enough to make the reader aware of the wide range of applications and different aspects of the principle being studied. The numerous possible variations of principles and their applications are usually not discussed, and it is left to the reader to discover this while doing exercises. Accordingly, the average student is expected to rediscover that which has long been established and practiced, but not always published or adequately explained. The examples typically following the explanation of a topic are too few in number and too simple to enable the student to obtain a thorough grasp of the involved principles. The explanations do not provide sufficient basis to solve problems that may be assigned for homework or given on examinations. Poorly solved examples such as these can be presented in abbreviated form which leaves out much explanatory material between steps, and as a result requires the reader to figure out the missing information. This leaves the reader with an impression that the problems and even the subject are hard to learn - completely the opposite of what an example is supposed to do. Poor examples are often worded in a confusing or obscure way. They might not state the nature of the problem or they present a solution, which appears to have no direct relation to the problem. These problems usually offer an overly general discussion - never revealing how or what is to be solved. Many examples do not include accompanying diagrams or graphs, denying the reader the exposure necessary for drawing good diagrams and graphs. Such practice only strengthens understanding by simplifying and organizing biology processes. Students can learn the subject only by doing the exercises themselves and reviewing them in class, obtaining experience in applying the principles with their different ramifications. In doing the exercises by themselves, students find that they are required to devote considerable more time to biology than to other subjects, because they are uncertain with regard to the selection and application of the theorems and principles involved. It is also often necessary for students to discover those "tricks" not revealed in their texts (or review books) that make it possible to solve problems easily. Students must usually resort to methods of trial and error to discover these "tricks," therefore finding out that they may sometimes spend several hours to solve a single problem. When reviewing the exercises in classrooms, instructors usually request students to take turns in writing solutions on the boards and explaining them to the class. Students often find it difficult to explain in a manner that holds the interest of the class, and enables the remaining students to follow the material written on the boards. The remaining students in the class are thus too occupied with copying the material off the boards to follow the professor's explanations. This book is intended to aid students in biology overcome the difficulties described by supplying detailed illustrations of the solution methods that are usually not apparent to students. Solution methods are illustrated by problems that have been selected from those most often assigned for class work and given on examinations. The problems are arranged

in order of complexity to enable students to learn and understand a particular topic by reviewing the problems in sequence. The problems are illustrated with detailed, step-by-step explanations, to save the students large amounts of time that is often needed to fill in the gaps that are usually found between steps of illustrations in textbooks or review/outline books. The staff of REA considers biology a subject that is best learned by allowing students to view the methods of analysis and solution techniques. This learning approach is similar to that practiced in various scientific laboratories, particularly in the medical fields. In using this book, students may review and study the illustrated problems at their own pace; students are not limited to the time such problems receive in the classroom. When students want to look up a particular type of problem and solution, they can readily locate it in the book by referring to the index that has been extensively prepared. It is also possible to locate a particular type of problem by glancing at just the material within the boxed portions. Each problem is numbered and surrounded by a heavy black border for speedy identification. Voet, Voet and Pratt's *Fundamentals of Biochemistry*, 5th Edition addresses the enormous advances in biochemistry, particularly in the areas of structural biology and Bioinformatics, by providing a solid biochemical foundation that is rooted in chemistry to prepare students for the scientific challenges of the future. While continuing in its tradition of presenting complete and balanced coverage that is clearly written and relevant to human health and disease, *Fundamentals of Biochemistry*, 5e includes new pedagogy and enhanced visuals that provide a pathway for student learning. Unique in its focus on eukaryotic molecular biology, this textbook provides a distillation of the essential concepts of molecular biology, supported by current examples, experimental evidence, and boxes that address related diseases, methods, and techniques. End-of-chapter analytical questions are well designed and will enable students to apply the information they learned in the chapter. A supplementary website include self-tests for students, resources for instructors, as well as figures and animations for classroom use. The enormous complexity of biological systems at the molecular level must be answered with powerful computational methods. Computational biology is a young field, but has seen rapid growth and advancement over the past few decades. Surveying the progress made in this multidisciplinary field, the *Handbook of Computational Molecular Biology* of Small-angle scattering of X-rays (SAXS) and neutrons (SANS) is an established method for the structural characterization of biological objects in a broad size range from individual macromolecules (proteins, nucleic acids, lipids) to large macromolecular complexes. SAXS/SANS is complementary to the high resolution methods of X-ray crystallography and nuclear magnetic resonance, allowing for hybrid modeling and also accounting for available biophysical and biochemical data. Quantitative characterization of flexible macromolecular systems and mixtures has recently become possible. SAXS/SANS measurements can be easily performed in different conditions by adding ligands or binding partners, and by changing physical and/or chemical characteristics of the solvent to provide information on the structural responses. The technique provides kinetic information about processes like folding and assembly and also allows one to analyze macromolecular interactions. The major factors promoting the increasingly active use of SAXS/SANS are modern high brilliance X-ray and neutron sources, novel data analysis methods, and automation of the experiment, data processing and interpretation. In this book, following the presentation of the basics of scattering from isotropic macromolecular solutions, modern instrumentation, experimental practice and advanced analysis techniques are explained. Advantages of X-rays (rapid data collection, small sample volumes) and of neutrons (contrast variation by hydrogen/deuterium exchange) are specifically highlighted. Examples of applications of the technique to different macromolecular systems are considered with specific emphasis on the synergistic use of SAXS/SANS with other structural, biophysical and computational techniques. Never before has it been so critical for lab workers to possess the proper tools and methodologies necessary to determine the structure, function, and expression of the corresponding proteins encoded in the genome. Mulhardt's *Molecular Biology and Genomics* helps aid in this daunting task by providing the reader with tips and tricks for more successful lab experiments. This strategic lab guide explores the current methodological variety of molecular biology and genomics in a simple manner, addressing the assets and drawbacks as well as critical points. It also provides short and precise summaries of routine procedures as well as listings of the advantages and disadvantages of alternative methods. Shows how to avoid experimental dead ends and develops an instinct for the right experiment at the right time Includes a handy Career Guide for researchers in the field Contains more than 100 extensive figures and tables Reflecting the versatility of the author's science and the depth of his experience, *Application of Solution Protein Chemistry to Biotechnology* explores key contributions that protein scientists can make in the development of products that are both important and commercially viable, and provides them with tools and information required for successful participation. One of the of the world's most respected protein researchers, Roger Lundblad does not succumb to the notion that new is always better. The application of protein science to the practice of commercial biotechnology is traced to the underlying basic solution protein chemistry. It is only by achieving this understanding that the full potential of protein science may be obtained in the development and characterization of the diverse products of modern biotechnology. Dr. Lundblad also goes far beyond the biopharmaceutical applications that are often equated with protein science today to demonstrate the field's unique versatility. From the making of bread and the invention of adhesives to the production of pharmaceuticals and the development of recombinant DNA products— in each of these products, the role of the protein chemist remains prominent. The important point is that classical protein chemistry is a critical part of the practice of biotechnology in the marketplace. Providing the direction and the foundational work needed by students as well as the details and hundreds of references needed by designers and developers, this remarkable work— Delves into the application of protein science for producing products as diverse as adhesives, drug delivery systems, and quality food products Explores chemistry of attachment of proteins and peptides to solid surfaces with regard to applications both for the improvement of steel and titanium and in DNA and protein microarrays Describes the development of bioconjugates used in antibodies Offers essential advice on guidelines required for producing licensed biopharmaceutical products While he does include a great deal of material not found in other sources, Dr. Lundblad makes a point to separate what is truly new from that which has merely been renamed. A reference unlike most, scientists and students eager to learn will find a text that is as practical as it is purposeful. Methodologies and databases for biochemistry and molecular biology are included in this easy-to-use laboratory reference. Its logical presentation enables the reader to quickly and conveniently locate the information relevant to his or her needs. Featured are tables containing data on amino acids, proteins, nucleosides, nucleotides, and nucleic acids. Also featured are lipids and physical chemical data. Edited by a leading professional in the field, this compact, yet comprehensive bench manual serves as the definitive reference source for your laboratory. *Solution chemistry* deals with liquid solutions in such fields as physical chemistry, chemical physics, molecular biology, statistical mechanics, biochemistry, and biophysics. This book includes experimental investigations of the dielectric, spectroscopic, thermodynamic, transport, or relaxation properties of both electrolytes and non-electrolytes in liquid solutions. The latest research in the world has been selected, gathered and presented here. The text is divided into 36 chapters followed by detailed glossary. Most of the required protocols have been included and the book caters to the need of subjects like food microbiology, textile microbiology, medical microbiology, and agriculture microbiology etc. This text is just a guide line to set the hand. In actual working you will be doing much more beyond this text and that will be going to make us wiser. We hope that this text will prove as a good partner for those who set their hands on microbial biotechnology. Edited by renowned protein scientist and bestselling author Roger L. Lundblad, with the assistance of Fiona M. Macdonald of CRC Press, this fifth edition of the *Handbook of Biochemistry and Molecular Biology* gathers a wealth of information not easily obtained, including information not found on the web. Presented in an organized, concise, and simple-to-use format, this popular reference allows quick access to the most frequently used data. Covering a wide range of topics, from classical biochemistry to proteomics and genomics, it also details the properties of commonly used biochemicals, laboratory solvents, and reagents. An entirely new section on Chemical Biology and Drug Design gathers data on amino acid antagonists, click chemistry, plus glossaries for computational drug design and medicinal chemistry. Each table is exhaustively referenced, giving the user a quick entry point into the primary literature. New tables for this edition: Chromatographic methods and solvents Protein spectroscopy Partial volumes of amino acids Matrix Metalloproteinases Gene Editing Click Chemistry Methods in Plant Molecular Biology and Biotechnology emphasizes a variety of well-tested methods in plant molecular biology and biotechnology. For each detailed and tested protocol presented, a brief overview of the methodology is provided. This overview considers why the protocol is used, what other comparable methods are available, and what limitations can be expected with the protocol. Other chapters in the book present overviews regarding how to approach particular problems and introduce unique methods - such as how to use computer methodology to study isolated genes. The book will be a practical reference for plant physiologists, plant

molecular biologists, phytopathologists, and microbiologists. Molecular Biology Multiple Choice Questions and Answers (MCQs): Quiz & Practice Tests with Answer Key PDF (Molecular Biology Question Bank & Quick Study Guide) includes revision guide for problem solving with hundreds of solved MCQs. "Molecular Biology MCQ" book with answers PDF covers basic concepts, analytical and practical assessment tests. "Molecular Biology MCQ" PDF book helps to practice test questions from exam prep notes. Molecular biology quick study guide includes revision guide with verbal, quantitative, and analytical past papers, solved MCQs. 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Practice "Transcription and Translation MCQ" PDF book with answers, test 19 to solve MCQ questions: Genome, transcriptome and proteome, mitochondrial DNA, transcription and translation, transcription and post transcriptional modifications, translation and post translational modifications. This volume presents various laboratory protocols, reviews, specific techniques and applications related to *Schizosaccharomyces pombe*. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, *Schizosaccharomyces pombe: Methods and Protocols* hopes to serve as an excellent resource for faculty researchers, undergraduate student researchers, graduate researchers, government, and the medical community. This manual contains all the solutions to the end of chapter problems found in Molecular Cell Biology, 7th edition, International Edition (9781464109812) This book starts out by presenting the evidence for the importance of hydrophilic interactions in biochemical processes and then goes on to describe the applications of the hydrophilic interactions in these processes, specifically protein folding, protein association, self assembly and molecular recognition. In this volume it is shown that the new paradigm, based on the hydrophilic effect, brings us as close as one can hope to the solutions of the protein folding problem, as well as the problem of self assembly and molecular recognition. In addition, the new paradigm also provides an explanation of the high solubility of globular proteins. The change in the paradigm is shown symbolically in the cover design of this book. This book is also available as a set with Molecular Theory of Water and Aqueous Solutions Part 1: Understanding Water. The development of an area of scientific research is a dynamic process with its own kinetic equations and its own physical mechanism. The study of fast chemical interactions and transformations is such an area, and while it is tempting to draw analogies or to speculate about the simplest model system, the lack of adequately averaged observables is an annoying obstacle to such an undertaking. Sciences suffering from such conditions usually avoid quantitative models, be they primitive or complex. Instead, they prove their point by "case histories". Chemical relaxation kinetics started as an offspring of research in acoustics. In some aqueous ionic solutions anomalous acoustic absorption had been observed. A systematic study traced the cause of this absorption, showing that the covered frequency range and the intensity of the absorption were related in a predictable manner to the rate at which ions can interact and form structures differing in volume from the non interacting species. The step from this experimental observation and its correct, non trivial explanation to the discovery that all fast chemical processes must reveal themselves quantitatively in the relaxation rate of a perturbed equilibrium state, and that perturbation parameters other than sound waves can be used for its exploitation, was made by MANFRED EIGEN in 1954. The foresightedness of K.F. Molecular Biology Study Guide with Answer Key: Trivia Questions Bank, Worksheets to Review Textbook Notes PDF (Molecular Biology Quick Study Guide with Answers for Self-Teaching/Learning) includes worksheets to solve problems with hundreds of trivia questions. 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AIDS Worksheet Chapter 2: Bioinformatics Worksheet Chapter 3: Biological Membranes and Transport Worksheet Chapter 4: Biotechnology and Recombinant DNA Worksheet Chapter 5: Cancer Worksheet Chapter 6: DNA Replication, Recombination and Repair Worksheet Chapter 7: Environmental Biochemistry Worksheet Chapter 8: Free Radicals and Antioxidants Worksheet Chapter 9: Gene Therapy Worksheet Chapter 10: Genetics Worksheet Chapter 11: Human Genome Project Worksheet Chapter 12: Immunology Worksheet Chapter 13: Insulin, Glucose Homeostasis and Diabetes Mellitus Worksheet Chapter 14: Metabolism of Xenobiotics Worksheet Chapter 15: Overview of bioorganic and Biophysical Chemistry Worksheet Chapter 16: Prostaglandins and Related Compounds Worksheet Chapter 17: Regulation of Gene Expression Worksheet Chapter 18: Tools of Biochemistry Worksheet Chapter 19: Transcription and Translation Worksheet Solve "AIDS Study Guide" PDF, question bank 1 to review worksheet: Virology of HIV, abnormalities, and treatments. 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The Problems Book helps students appreciate the ways in which experiments and simple calculations can lead to an understanding of how cells work by introducing the experimental foundation of cell and molecular biology. Each chapter reviews key terms, tests for understanding basic concepts, and poses research-based problems. The Problems Book has been Advanced Methods in Molecular Biology and Biotechnology: A Practical Lab Manual is a concise reference on common protocols and techniques for advanced molecular biology and biotechnology experimentation. Each chapter focuses on a different method, providing an overview before delving deeper into the procedure in a step-by-step approach. Techniques covered include genomic DNA extraction using cetyl trimethylammonium bromide (CTAB) and chloroform extraction, chromatographic techniques, ELISA, hybridization, gel electrophoresis, dot blot analysis and methods for studying polymerase chain reactions. Laboratory protocols and standard operating procedures for key equipment are also discussed, providing an instructive overview for lab work. This practical guide focuses on the latest advances and innovations in methods for molecular biology and biotechnology investigation, helping researchers and practitioners enhance and advance their own methodologies and take their work to the next level. Explores a wide range of advanced methods that can be applied by researchers in molecular biology and biotechnology Features clear, step-by-step instruction for applying the techniques covered Offers an introduction to laboratory protocols and recommendations for best practice when conducting experimental work, including standard operating procedures for key equipment The aim of this book is to explain the unusual properties of both pure liquid water and simple aqueous solutions, in terms of the properties of single molecules and interactions among small numbers of water molecules. It is mostly the result of the author's own research spanning over 40 years in the field of aqueous solutions. An understanding of the properties of liquid water is a prelude to the understanding of the role of water in biological systems and for the evolution of life. The book is targeted at anyone who is interested in the outstanding properties of water and its role in biological systems. It is addressed to both students and researchers in chemistry, physics and biology. The assassin's bullet misses, the Archduke's carriage moves forward, and a catastrophic war is avoided. So too with the history of life. Re-run the tape of life, as Stephen J. Gould claimed, and the outcome must be entirely different: an alien world, without humans and maybe not even intelligence. The history of life is littered with accidents: any twist or turn may lead to a completely different world. Now this view is being challenged. Simon Conway Morris explores the evidence demonstrating life's almost eerie ability to navigate to a single solution, repeatedly. Eyes, brains, tools, even culture: all are very much on the cards. So if these are all evolutionary inevitabilities, where are our counterparts across the galaxy? The tape of life can only run on a suitable planet, and it seems that such Earth-like planets may be much rarer than hoped. Inevitable humans, yes, but in a lonely Universe. Fundamentals of biochemistry and molecular biology is an important component of all disciplines of Biology. In the era of multidisciplinary approach, the basic techniques in Biochemistry and Molecular Biology are much needed by the students of Botany, Zoology, Microbiology, Biotechnology, Fisheries, Veterinary, Pharmacology, Physiology, Medicine, Genetics, Agriculture and allied subjects both at undergraduate and postgraduate levels. This book includes 15 chapters covering more than 135 experimental protocols. It discussed all the relevant topics like pH and buffers, spectrophotometry, chromatography, carbohydrates, lipids, proteins, electrophoresis, enzyme immunology, vitamins and pigments, metabolites and molecular biology. It includes a wide range of experiments from preparation of culture media to PCR, Southern and Western blotting. All the experiments have been meticulously designed and special care has been taken to the safety in laboratory and precautions are given wheresoever required. With its acclaimed author team, cutting-edge content, emphasis on medical relevance, and coverage based on landmark experiments, "Molecular Cell Biology" has justly earned an impeccable reputation as an authoritative and exciting text. The new Sixth Edition features two new coauthors, expanded coverage of immunology and development, and new media tools for students and instructors. 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Molecular biology notes PDF covers terms, definitions, and explanations: B-DNA (B-form DNA), Bacteria, Bacterial Transduction, Barr Body, Base Pair, Base Pairing, Base Stacking, Basic Helix-Loop-Helix Motif, Basic Leucine Zipper Motif, Binding Energy (~G8), Binding Site, Biochemical Standard Free-Energy Change (~G-0), Biological Information, Blunt Ends, Bond Angle, Branch Migration, Branch Point, BRCA.1, BRCA.2, Bromodomain, Buffer Solution, and Buffering Capacity. Molecular biology notes PDF covers terms, definitions, and explanations: cAMP Receptor Protein (CRP), Cap-Binding Complex (CBC), Carboxyl Terminus (C-terminus), Carcinogen, Catalysis, Catalyst, Catenane, cDNA Library, Cell Cycle, Cell Theory, Cell, Cellular Function, Centromere, Centrosome, Chain Topology Diagram, Chaperone, Chaperonins, Chemical Bond, Chemical Reaction, and Chemical Shift. Molecular biology notes PDF covers terms, definitions, and explanations: DNA (deoxyribonucleic acid), DNA cloning, DNA genotyping, DNA glycosylase, DNA library, DNA ligase, DNA looping, DNA microarray, DNA nuclease, DNA over winding, DNA photolyase, DNA polymerase a (pol a), DNA polymerase e (pol e), DNA polymerase, DNA polymerase iv, DNA polymerase s (pol o), DNA replication, DNA strand invasion, DNA supercoiling, DNA topology, DNA under winding, DNA-binding transcription activator, b-DNA (b-form DNA), and cDNA library. Molecular biology notes PDF covers terms, definitions, and explanations: Holoenzyme, Homeodomain Motif, Homeotic Gene, Homing Endonucleases, Homologous Chromosomes, Homologous Recombination, Homologs, Homooligomer, Homotropic, Homozygous, Hoogsteen Pairing, Hoogsteen Position, Horizontal Gene Transfer, Hormone Response Element, Housekeeping Gene, Hox Gene, Hybrid Duplex, Hybrid, Hydrogen Bond, Hydrolysis, Hydrophobic, Hyperchromic Effect, Hypersensitive Site, and Hypothesis. And many more terms and abbreviations! "The aim of this book is to explain the unusual properties of both pure liquid water and simple aqueous solutions, in terms of the properties of single molecules and interactions among small numbers of water molecules. It is mostly the result of the author's own research spanning over 40 years in the field of aqueous solutions."--Jacket. Molecular Cell Biology presents the key concepts in cell biology and their experimental underpinnings. The authors, all world-class researchers and teachers, incorporate medically relevant examples where appropriate to help illustrate the connections between cell biology and health and human disease. As always, a hallmark of MCB is the use of experiments to engage students in the history of cell biology and the research that has contributed to the field. This is the companion volume to "Discovering Molecular Genetics: A Case Study Course with Problems and Scenarios" (ISBN 0-87969-475-0), which offers teachers a one-semester course in molecular genetics for use by life science majors (microbiology, biochemistry, molecular biology or biology) or pre-med students. This manual offers solutions and strategies for the 140 problems in its companion text, covering scenarios from history, mythology, films and television, which test students' abilities to apply molecular genetic concepts. The case study book is adapted from a course in molecular genetics given by the author at the University of California in Los Angeles, USA. This is a comprehensive collection of multiple-choice questions and answers designed to introduce students to the rapidly advancing science of molecular biology. Some of the questions are simple and are designed to reinforce basic texts, while others explore more complex issues in the field. In both cases, answers explain the reasoning and important concepts behind the questions. Laboratory Investigations in Molecular Biology presents well-tested protocols in molecular biology that are commonly used in currently active research labs. It is an ideal laboratory manual for college level courses in molecular biology. Because of the modular organization of the manual, laboratory courses can be assembled that would be ideal for science professionals, graduate students, undergraduate students and even advanced high school students in AP courses. The manual is also intended to be useful as a laboratory "bench reference". The experiments are designed to guide students through realistic research projects and to provide students with instruction in methods and approaches that can be immediately translated into research projects conducted in modern research laboratories. Although these experiments have been conducted and optimized over 20 years of teaching the New England Biolabs Molecular Biology Summer Workshops, they are real research projects, not "canned" experiments. Based on extensive teaching experience using these protocols, the authors have found that conducting these experiments as described in these protocols serves to effectively instruct students and science professions in the basic methods of molecular biology. An additional unique feature is that the protocols described in the manual are accompanied by available reagent kits that provide quality-tested, pre-packaged reagents to ensure the successful application of these protocols in a laboratory course setting. Full four-color book. Some of the editors created the Bioconductor project and Robert Gentleman is one of the two originators of R. All methods are illustrated with publicly available data, and a major section of the book is devoted to fully worked case studies. Code underlying all of the computations that are shown is made available on a companion website, and readers can reproduce every number, figure, and table on their own computers. Edited by renowned protein scientist and bestselling author Roger L. Lundblad, with the assistance of Fiona M. Macdonald of CRC Press, this fourth edition of the Handbook of Biochemistry and Molecular Biology represents a dramatic revision — the first in two decades — of one of biochemistry's most referenced works. This edition gathers a wealth of information not easily obtained, including information not found on the web. Offering a molecular perspective not available 20 years ago, it provides physical and chemical data on proteins, nucleic acids, lipids, and carbohydrates. Presented in an organized, concise, and simple-to-use format, this popular reference allows quick access to the most frequently used data. Covering a wide range of topics, from classical biochemistry to proteomics and genomics, it also details the properties of commonly used biochemicals, laboratory solvents, and reagents. Just a small sampling of the wealth of information found inside the handbook: Buffers and buffer solutions Heat capacities and combustion levels Reagents for the chemical modification of proteins Comprehensive classification system for lipids Biological characteristics of vitamins A huge variety of UV data Recommendations for nomenclature and tables in biochemical thermodynamics Guidelines for NMR measurements for determination of high and low pKa values Viscosity and density tables Chemical and physical properties of various commercial plastics Generic source-based nomenclature for polymers Therapeutic enzymes About the Editors: Roger L. Lundblad, Ph.D. Roger L. Lundblad is a native of San Francisco, California. He received his undergraduate education at Pacific Lutheran University and his PhD degree in biochemistry at the University of Washington. After postdoctoral work in the laboratories of Stanford Moore and William Stein at the Rockefeller University, he joined the faculty of the University of North Carolina at Chapel Hill. He joined the Hyland Division of Baxter Healthcare in 1990. Currently Dr. Lundblad is an independent consultant and writer in biotechnology in Chapel Hill, North Carolina. He is an adjunct Professor of Pathology at the University of North Carolina at Chapel Hill and Editor-in-Chief of the Internet Journal of Genomics and Proteomics. Fiona M. Macdonald, Ph.D., F.R.S.C. Fiona M. Macdonald received her BSc in chemistry from Durham University, UK. She obtained her PhD in inorganic biochemistry at Birkbeck College, University of London, studying under Peter Sadler. Having spent most of her career in scientific publishing, she is now at Taylor and Francis and is involved in developing chemical information products.