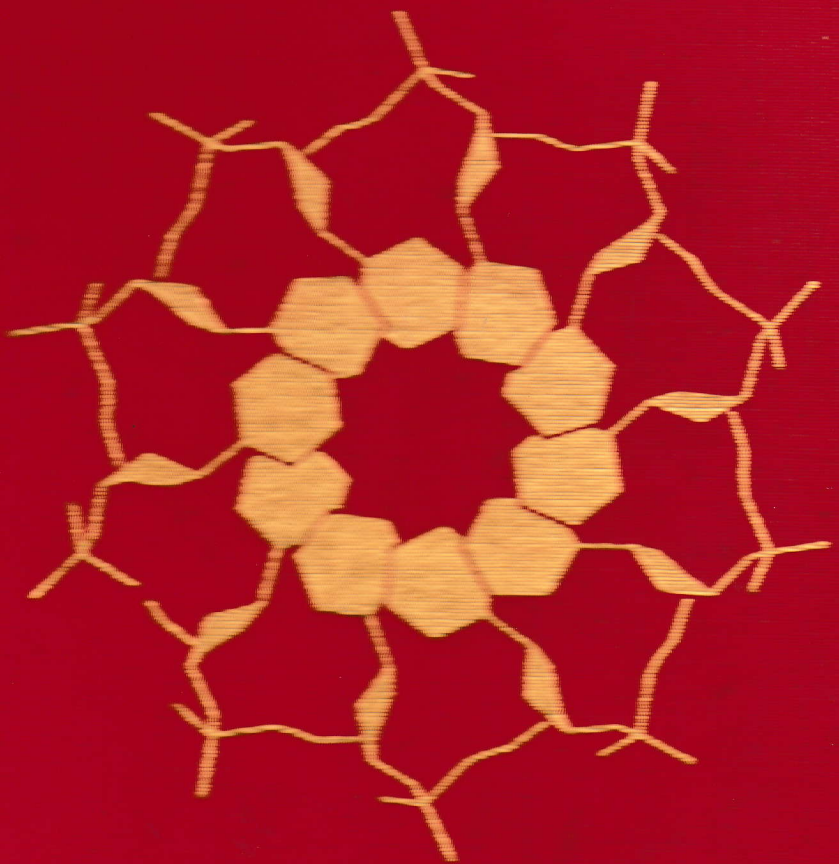


**SPECIAL
STUDENT
PRICE**

Biochemistry

FOURTH EDITION



Albert Stryer

Contents

Topics x

Preface to the Fourth Edition xxvii

Prefaces to Prior Editions xxx

PART I *Molecular Design of Life* 1

- 1 Prelude 3
- 2 Protein Structure and Function 17
- 3 Exploring Proteins 45
- 4 DNA and RNA: Molecules of Heredity 75
- 5 Flow of Genetic Information 95
- 6 Exploring Genes 119

PART II *Proteins: Conformation, Dynamics, and Function* 145

- 7 Portrait of an Allosteric Protein 147
- 8 Enzymes: Basic Concepts and Kinetics 181
- 9 Catalytic Strategies 207
- 10 Regulatory Strategies 237
- 11 Membrane Structure and Dynamics 263
- 12 Membrane Channels and Pumps 291
- 13 Signal Transduction Cascades 325
- 14 Antibodies and T-Cell Receptors 361
- 15 Molecular Motors 391
- 16 Protein Folding and Design 417

PART III *Metabolic Energy: Generation and Storage* 441

- 17 Metabolism: Basic Concepts and Design 443
- 18 Carbohydrates 463
- 19 Glycolysis 483
- 20 Citric Acid Cycle 509
- 21 Oxidative Phosphorylation 529
- 22 Pentose Phosphate Pathway and Gluconeogenesis 559
- 23 Glycogen Metabolism 581
- 24 Fatty Acid Metabolism 603
- 25 Amino Acid Degradation and the Urea Cycle 629
- 26 Photosynthesis 653

PART IV *Biosynthesis of Building Blocks* 683

- 27 Biosynthesis of Membrane Lipids and Steroids 685
- 28 Biosynthesis of Amino Acids and Heme 713
- 29 Biosynthesis of Nucleotides 739
- 30 Integration of Metabolism 763

PART V *Genes: Replication and Expression* 785

- 31 DNA Structure, Replication, and Repair 787
- 32 Gene Rearrangements 819
- 33 RNA Synthesis and Splicing 841
- 34 Protein Synthesis 875
- 35 Protein Targeting 911
- 36 Control of Gene Expression in Prokaryotes 949
- 37 Eukaryotic Chromosomes and Gene Expression 975

Appendixes 1012

Answers to Problems 1016

Index 1035

