Brief Contents

- 1 Introduction to Physiology and Homeostasis 1
- 2 Cell Physiology 20
- 3 The Plasma Membrane and Membrane Potential 46
- 4 Principles of Neural and Hormonal Communication 76
- 5 The Central Nervous System 114
- 6 The Peripheral Nervous System: Afferent Division and Special Senses 150
- 7 The Peripheral Nervous System: Efferent Division 190
- 8 Muscle Physiology 208
- 9 Cardiac Physiology 244
- 10 The Blood Vessels and Blood Pressure 278
- 11 The Blood and Body Defenses 316
- 12 The Respiratory System 366
- 13 The Urinary System 404
- 14 Fluid and Acid-Base Balance 442
- 15 The Digestive System 464

- 16 Energy Balance and Temperature Regulation 508
- 17 The Endocrine System 526
- 18 The Reproductive System 578

Appendix A The Metric System A-1

Appendix B

A Review of Chemical Principles A-3

Appendix C Storage, Replication, and Expression of Genetic Information A-18

Appendix D The Chemistry of Acid-Base Balance A-30

Appendix E Answers to End-of-Chapter Objective Questions, Points to Ponder, and Clinical

Glossary G-1

Considerations A-38

Index I-1