

Table of Contents

- Preface to the First Edition p. ix
- Preface p. xi
- Acknowledgments p. xv
- 1. Structure of the Heart, Myocardial Cells, and Biological Membranes p. 1
- 2. Energetics of Muscle p. 39
- 3. Anaerobic and Aerobic Glycolysis p. 49
- 4. Oxidative Metabolism and Mitochondria p. 71
- 5. Energy Utilization: Work and Heat p. 101
- 6. Contractile Proteins and Cytoskeleton p. 123
- 7. Mechanism and Control of the Cardiac Contractile Process p. 151
- 8. Active State, Length-Tension Relationship, and Cardiac Mechanics p. 167
- 9. Excitation-Contraction Coupling: Calcium and Other Ion Fluxes Across the Plasma Membrane p. 189
- 10. Excitation-Contraction Coupling: Calcium Fluxes Across the Sarcoplasmic Reticulum p. 216
- 11. Determinants of Ejection and Filling: End-Diastolic Fiber Length, Myocardial Contractility (Inotropy) and Relaxation (Lusitropy) p. 240
- 12. Signal Transduction: Receptors, Coupling Proteins, and Second Messengers p. 255
- 13. Neurohumoral Responses and the Hemodynamic Defense Reaction p. 287
- 14. Proliferative Signaling: Regulation of Gene Expression, Protein Synthesis, Cell Growth and Proliferation, Apoptosis p. 312
- 15. Regulation of Myocardial Contractility (Inotropy) and Relaxation (Lusitropy) p. 368
- 16. The Heart as a Muscular Pump p. 398
- 17. The Working Heart p. 418
- 18. Cardiac Ion Channels p. 451
- 19. The Cardiac Action Potential p. 478
- 20. The Electrocardiogram p. 517
- 21. Arrhythmias I: Introduction and Mechanisms p. 553
- 22. Arrhythmias II: Clinical Manifestations and Principles of Therapy p. 580
- 23. The Ischemic Heart p. 630
- 24. Heart Failure p. 658
- Subject Index p. 695