

Brief Contents

Part I

Some Basic Properties of Living Systems

Chapter

1	The Nature of the Subject	3
2	Cellular Constituents	30
3	Cellular Organization	60
4	Energetics, Kinetics, and Metabolism	91
5	Origin and Evolution of Life	130

Part II

Fundamental Units of Animal Regulatory Systems

Chapter

6	Biological Membranes and Material Transport	157
7	Resting and Action Potentials of Excitable Cells	213
8	Synaptic and Generator Potentials	264
9	Mass Cellular Contacts; Sponta- neous and Other Potentials	317
10	Contractility of Muscle and Cells	335
11	Neuromuscular and Neuroendocrine Control Systems	407

Part III

Homeostasis: Regulation of the Internal Environment

Chapter

12	Circulatory Systems—Nature and Functions	479
13	Circulatory Systems—Types, Hearts, and Controls	518
14	Water and Solute Regulation	564
15	Nutrition and Body Temperature Regulation	621
16	Animal Respiration	659

Part IV Some Aspects of Sensory Physiology and Information Processing

Chapter

17	Light and the Animal	695
18	Chromatophores and Bioluminescence	727
19	Mechanoreception	741
20	Chronobiology, Biological Clocks, and Animal Communi- cation	761

Author Index

779

Subject Index

793