

Contents

<i>Preface</i>	<i>xi</i>
Chapter 1 Cellular Physiology	1
Hemodialysis.....	1
Hyponatremia.....	4
Membrane Potentials in Hyperkalemia	9
Membrane Potentials in Hypokalemia	14
Action Potentials in Tetrodotoxin Poisoning.....	16
Neuronal Physiology in Multiple Sclerosis	19
Synaptic Transmission in Seizure Disorder	23
Chapter 2 The Immune System	29
The Common Cold	29
Pneumococcal Pneumonia	33
Acute Proliferative Glomerulonephritis	39
Anaphylaxis	42
Kidney Transplant	47
Skin Laceration: Inflammation	51
Skin Laceration: Tissue Repair	56

Chapter 3	<i>The Cardiovascular System</i>	61
	Blood Disorders: Idiopathic Aplastic Anemia	61
	Blood Disorders: Hemophilia A	66
	Blood Disorders: Pulmonary Embolism.	70
	Circulatory System: Vascular System	75
	Circulatory System: Hemorrhagic Shock 1	79
	Circulatory System: Hemorrhagic Shock 2	84
	Circulatory System: Aerobic Exercise	89
	Circulatory System: Essential Hypertension	94
	Circulatory System: Secondary Hypertension, Renal Artery Stenosis.	98
	Cardiac Physiology: Atrial Septal Defect	102
	Cardiac Physiology: Heart Block	106
	Cardiac Physiology: Atrial Fibrillation	112
	Cardiac Physiology: Premature Ventricular Contractions	117
	Cardiac Physiology: Cardiac Failure	123
	Cardiac Physiology: Aerobic Exercise	129
Chapter 4	<i>The Respiratory System</i>	135
	Cystic Fibrosis (Mucoviscidosis)	135
	Pneumothorax.	139
	Acute Mountain Sickness.	146
	Iron-Deficiency Anemia	150
	Infant Respiratory Distress Syndrome	154
	Emphysema	158

Asthma	164
Pulmonary Embolism	168
Oxycontin Overdose	171
Acute Respiratory Distress Syndrome	175
Chapter 5 The Digestive System	179
Esophageal Cancer	179
Postoperative Ileus	182
Secondary Lactose Intolerance	186
<i>Helicobacter Pylori</i> Gastritis	190
Cystic Fibrosis (Mucoviscidosis)	195
Alcohol-Induced Liver Disease	199
Chapter 6 The Renal System	205
Renal Calculus	205
Hyponatremia	209
Acute Proliferative Glomerulonephritis	213
Diabetes Insipidus	215
Secondary Hypertension, Renal Artery Stenosis	220
Primary Hyperaldosteronism	224
Type 1 Diabetes Mellitus	228
Idiopathic Addison's Disease	231
Syndrome of Inappropriate Antidiuretic Hormone	234
Chronic Renal Failure	239
Diuretics	241

Chapter 7	<i>The Endocrine System and the Reproductive System</i>	251
Diabetes Insipidus		251
Acromegaly		255
Graves' Disease		262
Myxedema		266
Primary Hyperparathyroidism		269
Cushing's Syndrome		272
Idiopathic Addison's Disease		276
Type 1 Diabetes Mellitus		279
Type 2 Diabetes Mellitus		283
Kallmann Syndrome		286
Erectile Dysfunction		290
Endometriosis		294
Polycystic Ovary Syndrome		298
Amenorrhea		301
Chapter 8	<i>The Nervous System</i>	305
Central Nervous System: Hemiplegia		305
Central Nervous System: Stroke		309
Central Nervous System: Bacterial Meningitis		312
Spinal Cord: Gunshot Wound		317
Spinal Cord: Amyotrophic Lateral Sclerosis		322
Autonomic Nervous System: Insecticide Poisoning		326
Autonomic Nervous System: Pheochromocytoma		330

Autonomic Nervous System: Infant Botulism.	334
Pain: Appendicitis.	338
Pain: Any Given Sunday.	342
Chapter 9 Muscle Physiology	345
Skeletal Muscle: Myasthenia Gravis	345
Skeletal Muscle: Duchenne Muscular Dystrophy	349
Skeletal Muscle: Neuromuscular Blockade.	352
Skeletal Muscle: Endurance Training	356
Skeletal Muscle: Resistance Training	360
Smooth Muscle: Raynaud's Disease.	365
Smooth Muscle: Parturition	367
Chapter 10 The Skeletal System	373
Osteoporosis	373
Osteomalacia.	377
Osteoarthritis	380
Appendix: Diagnostic Tests	383
A. Blood Tests	383
B. Urinalysis	386
C. Vital Signs.	387
D. Radiography (X-rays).	387
E. Intravenous Pyelogram	388
F. Angiography	389
G. Magnetic Resonance Imaging	390

H. Computed Tomography	390
I. Ultrasound Imaging	391
J. Echocardiogram	392
K. Electromyogram and Nerve Conduction Velocity	393
<i>Answer Key</i>	<i>395</i>