
Contents

<i>Preface</i>	v
1. General Physiology	1
Cell Physiology	1
Transport Across Cell Membrane	1
Body Fluids	2
2. Blood	5
Plasma and Plasma Proteins	5
Red Blood Cells and Anemia	6
White Blood Cells and Immunity	11
Platelets, Hemostasis and Blood Coagulation	14
Blood Groups and Blood Transfusion	18
3. Nerve and Muscle	22
Nerve	22
Neuromuscular Junction	27
Muscle	28
4. Respiratory System	32
Pulmonary Ventilation	32
Pulmonary Diffusion and Transport of Gases	36
Regulation of Respiration	40
Respiration—Applied Aspects	42
5. Cardiovascular System	44
Cardiac Muscle	44
Conducting System of Heart, Heart Rate, and Electrocardiography	46
Cardiac Cycle, Cardiac Output, and Venous Return	49
Blood Pressure	55
Coronary Circulation and Cutaneous Circulation	57
Cardiovascular Changes in Exercise	58
6. Gastrointestinal System	59
Saliva	59
Esophagus	59
Stomach	60
Liver and Gallbladder	63
Pancreas	67
Small and Large Intestine	68
7. Renal System	72
Functional Anatomy and Glomerular Filtration	72
Tubular Handling of Solutes	76

Concentration and Dilution of Urine	80	
Physiology of Micturition: Innervation of the Urinary Bladder	83	
Skin Function and Body Temperature Regulation	86	
8. Endocrine System		88
General Endocrinology	88	
Hypothalamus and Pituitary Gland	89	
Thyroid Gland	92	
Calcium Metabolism	95	
Adrenal Gland	97	
Pancreatic Hormones	99	
9. Reproductive System		101
Sexual Growth and Development	101	
Male Reproductive System	102	
Female Reproductive System	104	
Physiology of Pregnancy and Lactation	107	
Physiology of Contraception	109	
10. Central Nervous System		110
Functional Anatomy, Synapse and Reflex	110	
Sensory System	117	
Motor System	124	
Basal Ganglia and Cerebellum	127	
Thalamus, Hypothalamus and Limbic System	129	
Sleep and EEG	131	
11. Special Senses		133
Eye	133	
Ear	136	
Smell and Taste	137	
<i>Index</i>		139