



Contents

CHAPTER 1	
INTRODUCTION	1
Terminology—Its Importance	1
General Body Plan	1
Structural Units	4
Anatomical Variations	10
The Life Substance and Its Properties	10
Homeostasis	11
Basic Physiological Processes	12
<i>Outline Summary</i>	15
<i>Review Questions</i>	16
CHAPTER 2	
THE SKELETAL SYSTEM	18
Composition and Function	18
Formation and Development	18
Types of Bones	18
Bone Markings	19
Divisions of the Skeleton	21
Articulations (Joints)	38
Types of Joint Movement	40
<i>Outline Summary</i>	41
<i>Review Questions</i>	42

CHAPTER 3	
THE MUSCULAR SYSTEM	43
Muscle Tissue	43
Skeletal Muscles in General	45
Representative Skeletal Muscles	46
Muscle Physiology	54
Special Features of Skeletal Muscle	58
<i>Outline Summary</i>	59
<i>Review Questions</i>	60
CHAPTER 4	
THE NERVOUS SYSTEM	61
General Function of the Nervous System	61
Neurons	62
Neuroglia	64
Terminology	65
The Central Nervous System	65
The Autonomic Nervous System	83
The Eye	87
The Ear	91
<i>Outline Summary</i>	95
<i>Review Questions</i>	96
CHAPTER 5	
THE CIRCULATORY SYSTEM	98
Introduction	98
Blood	98
The Heart	104
The Fetal Heart	107
Blood Vessels	107
Fetal Circulation	112
Physiology of Circulation	113
The Lymphatic System	116
<i>Outline Summary</i>	118
<i>Review Questions</i>	121
CHAPTER 6	
THE RESPIRATORY SYSTEM	122
General Considerations	122
Anatomy of the Respiratory System	122
Physiology of the Respiratory System	131
<i>Outline Summary</i>	138
<i>Review Questions</i>	140

CHAPTER 7

THE DIGESTIVE SYSTEM	141
Introduction	141
General Plan	141
Anatomy of the Digestive System	145
Passage of Food Through the Digestive Tract	154
Digestion	156
Absorption	162
Metabolism	164
<i>Outline Summary</i>	167
<i>Review Questions</i>	170

CHAPTER 8

THE URINARY SYSTEM AND WATER BALANCE	171
Introduction	171
The Kidneys	171
Formation of Urine	175
The Ureters	178
The Urinary Bladder	179
The Urethra	180
Micturition	180
Water Balance	182
<i>Outline Summary</i>	183
<i>Review Questions</i>	185

CHAPTER 9

THE ENDOCRINE GLANDS	186
Introduction	186
Properties of Hormones	186
Types of Endocrine Glands	188
Glands of the Endocrine System	188
<i>Outline Summary</i>	202
<i>Review Questions</i>	205

CHAPTER 10

THE REPRODUCTIVE SYSTEMS	206
Introduction	206
Male Reproductive System	206
Female Reproductive System	213
Pregnancy and the Placenta	220
<i>Outline Summary</i>	222
<i>Review Questions</i>	224

ANATOMY AND PHYSIOLOGY REFERENCES	225
DICTIONARIES AND ATLASES	226
GLOSSARY	227
METRIC LINEAR MEASUREMENTS	231
INDEX	233