

Contents

Unit One. HEAD AND NECK

1. Anterior View of the Skull, Mandible, and Hyoid 2
2. Lateral View of the Skull 4
3. Skull from Above and Behind 6
4. Basal View of the Skull 8
5. Skull Interior: The Cranial Fossae and Foramina 10
6. Cutaneous Nerves and Dermatomes of the Head 12
7. The Scalp 14
8. Superficial and Deep Veins 16
9. Superficial Lymphatics of Head and Neck 18
10. Muscles of Facial Expression 20
11. Muscles of Mastication 22
12. The Facial (VII) Nerve 24
13. The Parotid Gland 26
14. Superficial and Deep Arteries of the Face 28
15. The Trigeminal (V) Nerve 30
16. The Temporomandibular Joint and Related Structures 32
17. The Cervical Triangles and Fascia 34
18. Veins of the Neck 36
19. The Anterolateral Muscles of the Neck 38
20. The Posterior Triangle and Subclavian Artery 40
21. The Anterior Triangle and Root of Neck 42
22. Muscles of Neck, Pharynx, and Tongue 44
23. Thyroid and Parathyroid Glands 46
24. Larynx: Muscles, Vessels, and Nerves 48
25. Larynx: Framework and Structure 50
26. Cervical Nerves, Plexus, and Cervical Sympathetic Trunk 52
27. The Floor of the Mouth, the Suprahyoid, Infrahyoid, and Anterior Vertebral Muscles 54
28. Submandibular and Sublingual Glands 56
29. The Tongue 58
30. Muscles of the Tongue and Swallowing 60
31. Lymphatics of the Nose and Tongue 62
32. Teeth and Palate 64
33. Muscles of the Palate 66
34. Palatine Tonsil 68
35. Auditory Tube, Nasopharynx, and Oral Pharynx 70
36. Meninges of the Brain and the Dural Reflections 72
37. Venous Sinuses and Drainage of Head and Face 74
38. Venous Drainage of Brain and Subarachnoid Space 76
39. Lateral View of the Brain 78

40. Medial View of the Brain 80
41. Basal View of the Brain 82
42. Pituitary Gland 84
43. Brain Stem (Basal Ganglia to Medulla) 86
44. Arteries of the Brain 88
45. Occlusion of Major Arteries to Brain 90
46. Ventricular System and Cerebrospinal Fluid 92
47. Surface Anatomy of Head and Neck 96
48. Eyelid and Lacrimal Gland 98
49. The Lacrimal Apparatus 100
50. The Orbit and Fascia Bulbi 102
51. The Extrinsic Muscles of the Eye 104
52. Structure of the Eye 106
53. Blood Vessels of the Orbit and Eye 108
54. Nerves of the Orbit 110
55. Autonomic Nerves of the Orbit 112
56. The External Ear 114
57. The Middle Ear 116
58. The Inner Ear 118
59. The Nose—Part I 120
60. The Nose—Part II 122
61. Mucous Membrane of the Nose and Sinuses 124
62. Arteries of the Nose 128
63. Nerves of the Nasal Cavity 130
64. Summary of the Cranial Nerves 132

Unit Two DORSUM (BACK)

65. Spinal Nerves and Cutaneous Nerves of the Back 136
66. The Vertebral Column 138
67. Typical and Cervical Vertebrae 140
68. The Thoracic and Lumbar Vertebrae—Sacrum and Coccyx 144
69. Superficial Dorsal Muscles 146
70. Muscles of the Back, the Rhomboid Layer, and the Lumbodorsal Fascia 148
71. Deep Muscles of the Back—Part I 150
72. Muscles of the Back—Part II 152
73. Arterial Blood Supply of the Spinal Cord 154
74. Veins of Cord and Vertebral Column 156
75. The Atlanto-occipital, Atlantoepistropheic, and Intervertebral Articulations 158
76. Intervertebral and Costovertebral Articulations—Part I 160
77. Intervertebral and Costovertebral Articulations—Part II 162
78. Spinal Meninges 164
79. Spinal Cord 166
80. Caudal End of Spinal Cord and Its Meninges 168
81. Muscles Producing Movements on the Vertebral Column 170

Unit Three. UPPER EXTREMITY

- 82. Cutaneous Nerves and Dermatomes of the Upper Extremity 174
- 83. Superficial Veins of the Upper Extremity 176
- 84. Lymphatics of the Upper Extremity 178
- 85. Bones of the Shoulder Girdle 180
- 86. Articulations of the Shoulder Girdle 182
- 87. Humerus 184
- 88. Muscles of the Chest Wall 186
- 89. The Axillary Region 188
- 90. Parts of the Axillary Artery and the Brachial Plexus 190
- 91. Vessels and Nerves of Axilla 192
- 92. Muscles of the Shoulder 194
- 93. Collateral Circulation Around the Shoulder 196
- 94. Shoulder Joint 198
- 95. Muscles of the Arm 200
- 96. Vessels and Nerves of the Arm 202
- 97. Bones of the Forearm 204
- 98. Antecubital Region 206
- 99. Muscles of the Volar Forearm 208
- 100. Deep Vessels and Nerves of the Volar Forearm 210
- 101. Muscles of the Dorsal Forearm 212
- 102. Compartments of Forearm, Deep Vessels and Nerves of Dorsal Aspect 214
- 103. Collateral Circulation Involving the Anastomosis Around the Elbow 216
- 104. The Elbow Joint 220
- 105. Bones of the Wrist and Hand 224
- 106. Anterior and Lateral Aspects of the Wrist 228
- 107. Superficial Palmar Hand 230
- 108. Muscles and Aponeurosis of the Hand—Part I 232
- 109. Muscles of the Hand—Part II 234
- 110. The Synovial Bursae, Compartments and Spaces in the Hand 236
- 111. Relations at Dorsum of Wrist with Vessels and Nerves to Dorsum of Hand 238
- 112. Fascia, Tendon Sheaths, Nerves, and Vessels of the Fingers 240
- 113. Joints of Forearm, Wrist, and Hand 242
- 114. Surface Anatomy of Upper Extremity 244
- 115. Muscle-Nerve Relationship: Functional 246
- 116. Summary of Muscle-Nerve Relationships in Upper Extremity 248

Unit Four. THORAX

- 117. The Mammary Gland 252
- 118. Sternum and Thoracic Cage as a Whole 254
- 119. Sternoclavicular, Sternocostal, and Intrasternal Articulations 256
- 120. The Ribs 258
- 121. Muscles, Deep Vessels, and Nerves of the Thoracic Wall 260

- 122. Surface Projections of Lungs and Pleura 262
- 123. Lungs 264
- 124. Bronchopulmonary Segments 266
- 125. Circulation and Innervation of the Lungs 270
- 126. The Heart, Surface Projections, Great Vessels, and Coronaries 272
- 127. The Pericardium 274
- 128. Interior of the Heart 276
- 129. The Valves of the Heart 278
- 130. Innervation and Conduction System of Heart 282
- 131. The Mediastinum 284
- 132. Trachea and Bronchi 286
- 133. The Esophagus 288
- 134. The Posterior Mediastinum and Thoracic Sympathetics 290
- 135. The Venous System of the Thoracic Wall 292
- 136. Summary of Respiratory Movements 294

Unit Five. ABDOMEN AND PELVIS

- 137. Topography of the Abdomen 298
- 138. Superficial Veins of Thorax and Abdomen 300
- 139. The Muscles of the Abdomen 302
- 140. Abdominal Aponeurosis, Rectus Sheath, and Deep Epigastric Vessels 304
- 141. Spermatic Cord, Inguinal Canal, and Hernia 306
- 142. Peritoneum 308
- 143. Peritoneum of Abdominal Wall and Pelvis 310
- 144. Stomach Structure: Parts and Relations 312
- 145. Blood Supply, Lymph Drainage, and Innervation of the Stomach 314
- 146. Duodenum 316
- 147. Pancreas 318
- 148. Duodenum—Jejunum—Ileum, Duodenal Fossae, and Superior Mesenteric Artery 320
- 149. The Large Intestine 324
- 150. Blood Supply of the Colon and Appendix 326
- 151. Gallbladder and Ducts 328
- 152. Liver 332
- 153. Liver Lobule and Portal Circulation 334
- 154. Spleen 336
- 155. The Kidney and Its Blood Vessels 338
- 156. Relations and Fixation of the Kidney 340
- 157. Ureters 342
- 158. Suprarenal Gland 344
- 159. Lymphatics of the Abdomen 346
- 160. The Diaphragm 350
- 161. Bladder and Male Urethra 352
- 162. Lymphatics, Nerves, and Fascia of Bladder and Prostate 354
- 163. Vas Deferens, Seminal Vesicles, and Prostate 356

- 164. Rectum and Anal Canal 358
- 165. Blood Supply and Lymph Drainage of Rectum 360
- 166. The Pelvic Diaphragm 362
- 167. Relations of the Uterus, Tubes, and Ovary—Part I 364
- 168. Relations of the Uterus, Tubes, and Ovary—Part II 366
- 169. Blood Supply, Innervation, and Lymph Drainage of Female Genital System 368
- 170. Abdominal and Pelvic Autonomics 372
- 171. Pelvic Vessels; Perineal Vessels and Nerves 376
- 172. Scrotum and Testis 378
- 173. The Penis 380
- 174. The Male Perineum 382
- 175. The Female Perineum 384

Unit Six. LOWER EXTREMITY

- 176. Cutaneous Nerves and Dermatomes of the Lower Extremity 388
- 177. Superficial Veins of the Lower Extremity 390
- 178. Lymphatic Drainage of the Lower Extremity 392
- 179. Bone of the Hip 394
- 180. The Pelvic Girdle 396
- 181. Bone of the Thigh 398
- 182. Muscles of the Anterior Thigh 400
- 183. Fascia, Femoral Triangle, and Femoral Sheath 402
- 184. Muscles of the Medial Thigh 404
- 185. Femoral and Obturator Vessels and Nerves 406
- 186. Muscles of the Gluteal Region 408
- 187. Vessels and Nerves of the Gluteal Region 410
- 188. Muscles of the Posterior Thigh 412
- 189. Sacral Plexus and Derivatives 414
- 190. The Hip Joint 416
- 191. Bones of the Leg 418
- 192. Popliteal Region and Anastomosis Around the Knee 420
- 193. Knee Joint—Part I 422
- 194. Knee Joint—Part II 424
- 195. Knee Joint—Part III, Tibiofibular Articulation 426
- 196. Muscles of the Anterolateral Leg 430
- 197. Compartments, Deep Vessels, and Nerves of the Leg 432
- 198. Muscles of the Posterior Leg 434
- 199. Bones of Ankle and Foot 436
- 200. Flexor Retinaculum, Tendon Sheaths, and Vessels of Medial Side of Ankle 440
- 201. Muscles of Dorsum of Foot 442
- 202. Extensor and Peroneal Retinacula, Sheaths, and Arteries on Dorsum of Foot 444
- 203. Muscles of the Plantar Surface of the Foot 448

- 204. Plantar Aponeurosis, the Vessels and Nerves of the Sole of the Foot 450
- 205. Surface Anatomy of Lower Extremity 452
- 206. Joints of the Ankle and Foot 454
- 207. Arches of the Foot 456
- 208. Muscle-Nerve Relationship: Functional 458
- 209. Summary of Muscle-Nerve Relationships in Lower Extremity 460

Appendixes

- I. Definitions of Anatomic Terms 463
- II. Essential Terms of Direction and Movement 465
- III. Classification of Joints 466
- IV. References 467
- Index 469

**Plates Depicting Roentgen Anatomy, Surface Anatomy,
and Anatomic Relationships**

- I. Pneumoencephalogram (X-RAYS) 94
- II. Carotid Arteriogram (X-RAYS) 95
- III. Normal Skull (X-RAYS) 126
- IV. Paranasal Sinuses (X-RAYS) 127
- V. Relations of Cervical Region 142
- VI. Cervical Spine (X-RAYS) 143
- VII. Surface Anatomy of Upper Extremity 218
- VIII. Nerve Blocks of Upper Extremity 219
- IX. Shoulder and Elbow Joints (X-RAYS) 222
- X. Arteriogram of Upper Extremity (X-RAYS) 223
- XI. Right Hand, Adult (X-RAYS) 226
- XII. Left Hand, Child, About 11 Years (X-RAY) 227
- XIII. Bronchograms, AP Views (X-RAYS) 268
- XIV. Bronchogram, Lateral View (X-RAY) 269
- XV. Ascending Aorta, Coronary Arteries, and Esophagus (X-RAYS) 280
- XVI. Normal Chest and Thoracic Aortogram (X-RAYS) 281
- XVII. Esophagus and Stomach (X-RAY) 322
- XXVIII. Stomach and Small Intestine After Barium Meal (X-RAY) 323
- XIX. Colon and Gallbladder (X-RAYS) 330
- XX. Aortogram and Renal Arteriogram (X-RAYS) 331
- XXI. Intravenous Pyelogram and Lymphangiogram (X-RAYS) 348
- XXII. Retrograde Pyelogram and Normal Pelvis, Adult (X-RAYS) 349
- XXIII. Lumbosacral Plexus 370
- XXIV. Cystogram and Female Genital Tract (X-RAYS) 371
- XXV. Abdominal Pelvic Nerves 374
- XXVI. Nerves of Uterus and Perineum 375
- XXVII. Immature Pelvis and Arteriograms Around Hip (X-RAYS) 428
- XXVIII. Knee Joint and Arteriogram at Knee (X-RAYS) 429
- XXIX. Ankle Joint (X-RAYS) 438
- XXX. Feet, Child and Adult (X-RAYS) 439
- XXXI. Surface Anatomy of Lower Extremity 446
- XXXII. Nerve Blocks of Lower Extremity 447