

# Table of Contents

|            |                                                           |     |
|------------|-----------------------------------------------------------|-----|
| Chapter 1  | Tissues, Organs, and Skeletal Organization .....          | 1   |
|            | P. D. STURKIE                                             |     |
| Chapter 2  | General and Cellular Physiology .....                     | 21  |
|            | P. D. STURKIE                                             |     |
| Chapter 3  | Organization of the Nervous System .....                  | 35  |
|            | C. H. PAGE                                                |     |
| Chapter 4  | Neuronal Activity .....                                   | 52  |
|            | C. H. PAGE                                                |     |
| Chapter 5  | Sensory Reception and Somatesthesia .....                 | 71  |
|            | C. H. PAGE                                                |     |
| Chapter 6  | Special Sensory Systems.....                              | 84  |
|            | C. H. PAGE                                                |     |
| Chapter 7  | Spinal Reflexes .....                                     | 111 |
|            | C. H. PAGE                                                |     |
| Chapter 8  | Central Motor Control, Cerebellum and Basal Ganglia ..... | 121 |
|            | C. H. PAGE                                                |     |
| Chapter 9  | Higher Functions of Cerebral Cortex.....                  | 134 |
|            | C. H. PAGE                                                |     |
| Chapter 10 | Neural Control of Visceral Activity.....                  | 148 |
|            | C. H. PAGE                                                |     |
| Chapter 11 | Muscle .....                                              | 161 |
|            | P. D. STURKIE                                             |     |
| Chapter 12 | Body Fluids, Capillaries, and Lymphatics                  | 169 |
|            | P. D. STURKIE                                             |     |
| Chapter 13 | Blood.....                                                | 178 |
|            | P. D. STURKIE                                             |     |
| Chapter 14 | Circulation.....                                          | 190 |
|            | P. D. STURKIE                                             |     |
| Chapter 15 | The Heart as a Pump .....                                 | 211 |
|            | P. D. STURKIE                                             |     |
| Chapter 16 | Electrocardiography .....                                 | 223 |
|            | P. D. STURKIE                                             |     |
| Chapter 17 | Respiration .....                                         | 233 |
|            | H. M. FRANKEL                                             |     |

|             |                                                                  |     |
|-------------|------------------------------------------------------------------|-----|
| Chapter 18  | Energy Metabolism .....                                          | 258 |
|             | T. M. CASEY                                                      |     |
| Chapter 19  | Temperature Regulation .....                                     | 271 |
|             | T. M. CASEY                                                      |     |
| Chapter 20  | Movements of Gastrointestinal Tract .....                        | 293 |
|             | P. D. STURKIE                                                    |     |
| Chapter 21  | Secretion, Digestion, Absorption .....                           | 307 |
|             | P. D. STURKIE                                                    |     |
| Chapter 22  | Intermediary Metabolism.....                                     | 319 |
|             | R. L. HAZELWOOD                                                  |     |
| Chapter 23  | Nutrition .....                                                  | 340 |
|             | P. GRIMINGER                                                     |     |
| Chapter 24  | Kidney .....                                                     | 351 |
|             | E. J. ZAMBRASKI                                                  |     |
| Chapter 25  | Endocrinology: Functions of Hypophysis<br>and Hypothalamus ..... | 375 |
|             | P. D. STURKIE                                                    |     |
| Chapter 26  | Reproduction .....                                               | 388 |
|             | P. D. STURKIE                                                    |     |
| Chapter 27  | Thyroid Hormones .....                                           | 407 |
|             | P. D. STURKIE                                                    |     |
| Chapter 28  | Hormonal Regulation of Calcium<br>Metabolism .....               | 414 |
|             | P. D. STURKIE                                                    |     |
| Chapter 29  | Adrenal Hormones .....                                           | 419 |
|             | P. D. STURKIE                                                    |     |
| Chapter 30  | Pancreatic Hormones.....                                         | 427 |
|             | P. D. STURKIE                                                    |     |
| Index ..... |                                                                  | 435 |