

# CONTENTS

## PART I Basic Immunologic Mechanisms

- 1 Foundations of Innate and Adaptive Immune Systems, 2
- 2 Soluble Mediators of the Immune System, 28
- 3 Antigens and Antibodies, 47
- 4 Cellular Activities and Clinical Disorders of Innate and Adaptive Immunity, 67

## PART II The Theory of Immunologic and Serologic Procedures

- 5 Basic Safety in the Immunology-Serology Laboratory, 98
- 6 Basic Quality Control and Quality Assurance Practices, 107
- 7 Basic Serologic Laboratory: Techniques and Clinical Applications, 117
- 8 Precipitation and Particle Agglutination Methods, 128
- 9 Electrophoresis Techniques and Chromatography, 143
- 10 Labeling Techniques in Immunoassay, 150
- 11 Flow Cytometry, 159
- 12 Molecular Laboratory Techniques, 168

## PART III Immunologic Manifestations of Infectious Diseases

- 13 Infectious Diseases: Overview and TORCH Diseases, 190
- 14 Streptococcal Infections, 221
- 15 Syphilis, 228
- 16 Vector-Borne Diseases, 240
- 17 Infectious Mononucleosis, 267
- 18 Viral Hepatitis, 273

## PART IV Immune Disorders

- 19 Primary and Acquired Immunodeficiency Syndromes, 300
- 20 Hypersensitivity Reactions, 337
- 21 Plasma Cell Neoplasms and Other Diseases With Paraproteins, 353
- 22 Tolerance, Autoimmunity, and Autoimmune Disorders, 369
- 23 Systemic Lupus Erythematosus, 396
- 24 Rheumatoid Arthritis, 414

## PART V Transplantation and Tumor Immunology

- 25 Transplantation: Human Leukocyte Antigens, Solid Organ, Tissues, and Hematopoietic Stem Cells, 428
- 26 Tumor Immunology and Applications of Massive Parallel Sequencing/Next-Generation Sequencing, 454

## PART VI Vaccines

- 27 Vaccines: Development and Applications, 478

Appendix A: Answers to Case Study Multiple-Choice Questions, 500

Appendix B: Answers to Review Questions, 503

Appendix C: Origin and Immunoregulatory Activity of Cytokines, 510

Appendix D: Coronavirus Disease 2019 (COVID-19), 514

Appendix E: Vaccines Licensed for Use in the United States by the Federal Drug Administration, 516

Bibliography, 518

Glossary, 528

Index, 550