#### **Table of Contents**

### Part I: Introduction to Hematology

- 1. An Overview of Clinical Laboratory Hematology
- 2. Quality Assurance in Hematology and Hemostasis Testing

### Part II: Blood Cell Production, Structure, and Function

- 3. Cellular Structure and Function
- 4. Hematopoiesis
- 5. Erythrocyte Production and Destruction
- 6. Erythrocyte Metabolism and Membrane Structure and Function
- 7. Hemoglobin Metabolism
- 8. Iron Kinetics and Laboratory Assessment
- 9. Leukocyte Development, Kinetics, and Functions
- 10. Platelet Production, Structure, and Function

#### Part III: Laboratory Evaluation of Blood Cells

- 11. Manual, Semiautomated, and Point-of-Care Testing and Hematology
- 12. Automated Blood Cell Analysis
- 13. Examination of the Peripheral Blood Film and Correlation with the Complete Blood Count
- 14. Bone Marrow Examination
- 15. Body Fluid Analysis in the Hematology Laboratory

## **Part IV: Erythrocyte Disorders**

- 16. Anemias: Red Blood Cell Morphology and Approach to Diagnosis
- 17. Disorders of Iron Kinetics and Heme Metabolism
- 18. Anemias Caused by Defects of DNA Metabolism
- 19. Bone Marrow Failure
- 20. Introduction to Increased Destruction of Erythrocytes
- 21. Intrinsic Defects Leading to Increased Erythrocyte Destruction
- 22. Extrinsic Defects Leading to Increased Erythrocyte Destruction-- Nonimmune Causes
- 23. Extrinsic Defects Leading to Increased Erythrocyte Destruction-- Immune Causes
- 24. Hemoglobinopathies (Structural Defects in Hemoglobin)
- 25. Thalassemias

#### Part V: Leukocyte Disorders

- 26. Non-Malignant Leukocyte Disorders
- 27. Intro to Hematologic Malignancies
- 28. Flow Cytometric Analysis in Hematologic Disorders
- 29. Molecular Diagnostics in the Clinical Laboratory
- 30. Cytogenetics
- 31. Acute Leukemias
- 32. Myeloproliferative Neoplasms
- 33. Myelodysplastic Syndromes
- 34. Mature Lymphoid Neoplasms

#### Part VI: Hemostasis and Thrombosis

- 35. Normal Hemostasis and Coagulation
- 36. Hemorrhagic Disorders and Laboratory Assessment
- 37. Qualitative Disorders of Platelets and Vasculature
- 38. Thrombocytopenia and Thrombocytosis
- 39. Thrombotic Disorders and Laboratory Assessment
- 40. Antithrombotic Therapies and Their Laboratory Assessment

- 41. Laboratory Evaluation of Hemostasis42. Hemostasis and Coagulation Instrumentation

# Part VII: Hematology and Hemostasis in Selected Populations

43. Hematology and Hemostasis in the Pediatric, Geriatric, and Pregnant Populations

# **Appendix**

Answers Glossary List of Abbreviations and Formulas Index