Chapter 1: Cardiovascular Anatomy and Physiology
   Basic Cardiac Anatomy
   Circulatory System
   Cardiac Cycle
   Coronary Circulation
   Cardiac Action Potential
   Contractile Properties of Cardiac Muscle
   Cardiac Conduction System
   Hemodynamic Principles
   The Cardiopulmonary Circuit and Delivery of Oxygen
   Neurological Control of the Heart and Blood Pressure
   Regulation of Fluid Balance

Chapter 2: Cardiovascular Assessment
   Health History
   Physical Assessment
      Assessment of Skin
      Assessment of Nail Beds
      Cyanosis Assessment
      Vital Signs
      Jugular Vein Evaluation
      Hepatojugular Reflex
      Cardiac Examination
      Heart Sounds
      Examination of Extremities
      Assessment of Bruits

Chapter 3: Oxygenation and Pulmonary Physiology
   Overview
      Control of Breathing
      Muscles of Inspiration and Expiration
      Process of Inspiration
      Anatomy of the Pulmonary System
Conducting Airways
Gas Exchange Airways
Lung Volumes
Physical Assessment
Pulmonary Physiology
Ventilation
Perfusion
Diffusion of Gases Across the Alveolar Capillary Membrane
Transport of Gases in the Blood
Oxygen Delivery to the Tissues / Consumption / Reserve
Cellular Respiration
Acid-Base Balance
Oxygen Therapy and Mechanical Ventilation
Oxygen Therapy
Mechanical Ventilation

Chapter 4: Hemodynamics / Intra-aortic Balloon Pump Therapy
Hemodynamic Concepts
Invasive Hemodynamic Monitoring
Altered Hemodynamic States Due to Cardiac Abnormalities
Oxygen Delivery to Tissues
Left Ventricular Function Curves
Intra-aortic Balloon Pump Counterpulsation

Chapter 5: Cardiac Arrhythmias
Basics of Rhythm Interpretation
Rhythms Originating in the Sinus Node
Rhythms Originating in the Atria
Supraventricular Tachycardias
Rhythms Originating in the AV Junction
Rhythms Originating in the Ventricles
AV Blocks
Asystole
Bundle Branch Blocks
Differential Diagnosis of Wide QRS Beats and Tachycardias
Accessory Pathway Conduction
Bedside Cardiac Monitoring
Practice Strips
Practice Strip Answers

Chapter 6: 12 Lead Electrocardiography
Introduction
Anatomy of a 12 Lead ECG
ECG Leads
Normal Cardiac Depolarization
The 12 Views of the Heart
Normal and Abnormal ECG Waveforms and Intervals
Frontal Plane Axis
Bundle Branch Block
Fascicular Blocks (Hemiblocks)
Chamber Enlargement
Preexcitation Syndromes
Ischemia, Injury and Infarction
Locating the Infarction on the 12 Lead ECG
Myocardial Ischemia and Non-ST Elevation Myocardial Infarction
Brugada Syndrome
Long QT Syndromes
Ischemia and MI Practice

Chapter 7: Risk Factors and Prevention of Coronary Artery Disease
Overview
Nonmodifiable Risk Factors
Modifiable Risk Factors
  Tobacco Use
  Hypertension
  Dyslipidemia
  Diabetes Mellitus
  Obesity
  Metabolic Syndrome
  Physical Inactivity
  Stress, Depression, and Other Psychosocial Risk Factors
  Alcohol
  Obstructive Sleep Apnea
Additional Issues in Risk Assessment

Chapter 8: Coronary Artery Disease
Introduction
Pathophysiology of Coronary Artery Disease
Clinical Signs and Symptoms of Coronary Artery Disease
Diagnosis of Coronary Artery Disease
Management of Stable Ischemic CAD
Acute Coronary Syndrome
ST Segment Elevation MI (STEMI)
Non-ST Segment Elevation MI / Unstable Angina
Special Populations in ACS
Special Circumstances
Long Term Management of ACS

Chapter 9: Heart Failure
Introduction
Clinical Presentation
Etiology
Initial Evaluation
Classifications of Heart Failure
Pathophysiology
Ongoing Assessment in Heart Failure Management
Treatment Goals
Pharmacological Treatment of Heart Failure
Nonpharmacological Treatment Strategies for Heart Failure
Special Issues in Heart Failure
Comprehensive Disease State Management

Chapter 10: Cardiomyopathy
Introduction
Dilated Cardiomyopathy
Restrictive Cardiomyopathy
Hypertrophic Cardiomyopathy (HCM)
Arrhythmogenic Right Ventricular Cardiomyopathy
Tako-Tsubo (Stress) Cardiomyopathy (TCM)

Chapter 11: Valve Disease
Overview
Normal Valve Function
Aortic Valve Disease
   Aortic Stenosis
   Aortic Regurgitation
Mitral Valve Disease
   Mitral Regurgitation
   Mitral Stenosis

Table of Contents – Volume 2

Chapter 12: Inflammatory Cardiovascular Disease: Diseases Involving the Pericardium, Myocardium, and Endocardium
Layers of the Heart
Pericardial Diseases
   Pericarditis
   Pericardial Effusion
   Cardiac Tamponade
   Constrictive Pericarditis
Myocardial Disease
   Myocarditis
Endocardial Disease
   Infective Endocarditis

Chapter 13: Peripheral Arterial Disease and Ischemic Stroke
   Peripheral Arterial Disease Overview
   Lower Extremity PAD
   Renal Artery Disease
   Aortic Aneurysms
   Thoracic Aneurysms and Acute Thoracic Aortic Disease
   Carotid Disease and Ischemic Stroke

Chapter 14: Cardiovascular Drugs
   Physiologic Basis of Cardiovascular Drug Therapy
   Angiotensin Converting Enzyme Inhibitors (ACEI)
   Angiotensin Receptor Blockers (ARBs)
   Aldosterone Blockers
   Renin Inhibitors
   Beta Blockers
   Calcium Channel Blockers
   Diuretics
   Vasoactive Drugs
   Antithrombotic Drugs
Antiarrhythmic Drugs
Anti-Lipid Drugs

Chapter 15: Cardiac Catheterization and Interventional Cardiology
  Diagnostic Cardiac Catheterization
  Percutaneous Coronary Interventional Procedures

Chapter 16: Open Heart Surgery and Coronary Artery Bypass Grafting (CABG)
  Overview
  Preoperative Care
  Traditional CABG
  Alternatives and Adjuncts to Traditional CABG
  Graft Material in CABG
  Postoperative Care
  Postoperative Complications
  Special Patient Populations
  Post-Discharge Planning and Education

Chapter 17: Electrical Management of Arrhythmias
  Defibrillation
  Cardioversion
  Pacemakers
  Dual Chamber Pacemakers
  Cardiac Resynchronization Therapy
  Minimizing Unnecessary Right Ventricular Pacing
  Implantable Cardioverter Defibrillators (ICDs)
  Electrophysiology Studies and Radiofrequency Catheter Ablation for Arrhythmias
  Single Chamber Pacing Terminology
  Dual Chamber Pacemaker Terminology
  Practice Strips: Pacemakers and ICDs
  Answers

Chapter 18: Non-cardiac Issues in the Cardiac Patient
  Pulmonary Pathophysiology
  Electrolyte Abnormalities
  Renal Issues in Cardiac and Critical Care
  Sepsis
  Delirium

CHAPTER 19: Shock States, Sudden Cardiac death and Targeted Temperature Management
  Introduction
  Altered Hemodynamic States: Shock States
  Sudden Cardiac Death
  Targeted Temperature Management Post Cardiac Arrest

CHAPTER 20: Adults with Congenital Heart Disease
  Introduction
  Classification of Congenital Heart Defects
  Congenital Heart Defects Affecting Adult Patients
    Atrial Septal Defects
    Patent Foramen Ovale
    Ventricular Septal Defects
Patent Ductus Arteriosus
Tetralogy of Fallot
Transposition of the Great Arteries (TGA)
Ebstein’s Anomaly
Single Ventricle Defects
General Issues Related to Adults with Congenital Heart Disease