

## • **TABLE OF CONTENTS**

- Cover image
- Title page
- Table of Contents
- Copyright
- Dedication
- Contributors
- Preface
- Evolve Website
- Acknowledgments
  
- **Part 1: Anatomy and Veterinary Diagnostics**
  - **Chapter 1: Animal Anatomy and Physiology**
    - Acknowledgment
    - Definitions
    - Cell Structure and Physiology
    - Movement In and Out of Cells
    - Tissues
    - Membranes
    - Directional Terminology
    - Body Systems
    - Review Questions
  - **Chapter 2: Urinalysis and Hematology**
    - Acknowledgment
    - Quality Control and Quality Assurance
    - Urinalysis
    - Hematology
    - Review Questions
  - **Chapter 3: Parasitology**
    - Common Parasites
    - Feces Examination
    - Baermann Technique
    - Preservation of Parasitic Samples
    - Blood Parasite Examination (Differentiating *Dirofilaria immitis* and Nonpathogenic *Acanthocheilonema* [Formerly *Dipetalonema*] *reconditum* Larvae
    - Enzyme-Linked Immunosorbent Assay
    - External Parasite Identification
    - External and Internal Parasite Identification
    - Review Questions
  - **Chapter 4: Clinical Chemistry**
    - Acknowledgment
    - General Information
    - Chemistry Analyzers

- Kidney Function
- Pancreatic Function
- Liver Function
- Electrolytes
- Thyroid Function
- Miscellaneous Chemistry Assays
- Other in-House Assays
- Review Questions
  
- **Chapter 5: Cytology**
- Acknowledgment
- Indications
- Specimen Collection
- Concentration Techniques
- Characteristics of Fluid Samples
- Slide Preparation
- Fixation and Staining Techniques
- Evaluation and Interpretation
- Cytology of Inflammation
- Neoplastic Lesions
- Noninflammatory, Nonneoplastic Lesions
- Sample Collection and Evaluation of Common Lesions
- Review Questions
  
- **Chapter 6: Diagnostic Microbiology and Mycology**
- Purpose
- Equipment
- Bacteriological and Fungal Media
- Types of Specimens
- Collection and Culture of Specimens
- Transport and Shipping of Specimens
- Basic Diagnostic Tests
- Bacterial Identification
- Fungal Identification
- Lab Safety; Zoonosis and Nosocomial Infections
- Other Methods of Bacterial Identification
- Review Questions
  
- **Chapter 7: Radiography**
- Acknowledgment
- X-Ray Overview
- Radiation Safety
- Production of X-Rays
- Image Receptors
- Darkroom and Processing Techniques
- Digital Radiography
- Legal Records and Identification
- Radiographic Quality
- Technical Errors and Artifacts
- Developing a Technique Chart

- Positioning Techniques
- Contrast Radiography
- Equine and Large Animal Radiography
- Avian and Exotic Companion Mammal Radiography
- Review Questions
  
- **Chapter 8: Alternative Imaging Technology: Ultrasound and Other Imaging Modalities**
- Ultrasound in Veterinary Medicine
- Basic Physics of Ultrasound
- Terminology
- Transducers
- How to Maximize Your Image
- Artifacts
- The Examination
- Sonographic Appearance of Organs
- Lesions
- Other Imaging Modalities
- Endoscopy Review for Veterinary Technicians
- Review Questions
  
- **Part 2: Patient Management**
  
- **Chapter 9: Immunology and Virology**
- Acknowledgment
- Immunology
- Virology
- Review Questions
  
- **Chapter 10: Sanitation, Sterilization, and Disinfection**
- **Acknowledgment**
- Levels of Microbial Resistance
- Degrees of Microbial Control
- How Microbial Control Methods Work: Mode of Action
- Efficacy of Microbial Control
- Sterilization
- Sterilization Methods
- Storage Requirements and Shelf Life
- Disinfectants
- Review Questions
  
- **Chapter 11: Companion Animal Behavior**
- Acknowledgement
- Normal Canine Behavior
- Normal Feline Behavior
- Applied animal Behavior
- Common Canine Behavioral problems
- Common Feline Behavioral Problems
- Psychopharmacology
- Review Questions

- **Chapter 12: Restraint and Handling**
- Dog Restraint
- Cat Restraint
- Horse Restraint
- Cattle Restraint
- Sheep Restraint
- Goat Restraint
- Pig Restraint
- Knots
- Review Questions
- 
- **Chapter 13: Small Animal Nutrition**
- Acknowledgment
- Basic Nutrition
- Energy-Producing Nutrients
- Non–Energy-Producing Nutrients
- Daily Energy Requirements
- Nutritional Requirements for Each Life Stage of the Dog and Cat
- Nutritional Assessment
- Feline Lower Urinary Tract Disease
- Obesity
- Critical Care Nutrition
- Food Allergy or Intolerance
- Oral Health
- Neoplasia
- Renal Disease
- How to Choose a Pet Food
- Pet Food
- Statement of Nutritional Adequacy
- Homemade Pet Foods
- Review Questions
- 
- **Chapter 14: Large Animal Nutrition and Feeding**
- Large Animal Nutrition Concepts
- Ruminant Digestion
- Feeding Dairy and Beef Cattle
- Feeding Sheep and Goats
- Feeding Camelids
- Monogastric Digestion
- Feeding Swine
- Feeding Horses
- Summary
- Acknowledgment
- Review questions
- 
- **Chapter 15: Genetics, Theriogenology, and Neonatal Care**
- Acknowledgment
- Basic Concepts of Genetics and Inheritance
- Feline Theriogenology and Neonatal Care
- Canine Theriogenology and Neonatal Care

- Equine Theriogenology and Neonatal Care
- Bovine Theriogenology and Neonatal Care
- Caprine Theriogenology and Neonatal Care
- Ovine Theriogenology and Neonatal Care
- Porcine Theriogenology and Neonatal Care
- Review Questions
  
- **Chapter 16: Laboratory Animal Medicine**
- Acknowledgment
- Regulations, Guidelines, Policies, and Principles Governing the Use of Animals in Teaching, Testing, and Research
- General Ecological Characteristics, Caging, and Housing
- Anesthesia Considerations
- Zoonosis
- Laboratory Animal Allergy
- Mouse (*Mus Musculus*)
- Rat (*Rattus Norvegicus*)
- Syrian Hamster (*Mesocricetus Auratus*)
- Mongolian Gerbil (*Meriones Unguiculatus*)
- Rabbit (*Oryctolagus Cuniculus*)
- Guinea Pig (*Cavia Porcellus* [Cavy])
- Chinchilla (*Chinchilla Lanigera*)
- African Clawed Frog (*Xenopus Laevis*)
- Fish
- Nonhuman Primate
- Necropsy Techniques Specific to Laboratory Animals
- Review Questions
  
- **Chapter 17: Exotic Animal Medicine**
- Acknowledgment
- Ferret Medicine
- Hedgehog Medicine
- Degu Medicine
- Avian Medicine
- Reptilian Medicine
- Fish Medicine
- Keeping Wildlife as Pets
- Review Questions
  
- **Chapter 18: Zoonoses**
- Review Questions
  
- **Part 3: Veterinary Therapeutics**
  
- **Chapter 19: Pharmacology**
- Acknowledgment
- Definitions and Basic Terminology
- Drug Administration
- Pharmacokinetics
- Pharmacodynamics

- Classes of Drugs
- Antimicrobial Drugs
- Analgesic and Antiinflammatory Drugs
- Anesthetic Drugs
- Other Nervous System Drugs
- Cardiovascular Drugs
- Respiratory Drugs
- Gastrointestinal Drugs
- Antiparasitic Drugs
- Hormones and Endocrine Drugs
- Corticosteroids
- Immunological Drugs
- Topical Drugs
- Chemotherapeutic Drugs
- Antidotes and Reversal Agents
- Nutraceuticals
- Summary
- Review Questions
  
- **Chapter 20: Pharmaceutical Calculations**
- Metric System
- Dosage Calculations
- Dilutions and Solutions
- Parts Per Million
- Drip Rates
- Constant Rate Infusion Calculations
- Prescriptions
- Review Questions
  
- **Chapter 21: Anesthesia**
- Acknowledgment
- Preanesthetic Assessment
- Preanesthetic Drugs
- Classifications of Preanesthetic Drugs
- Injectable Anesthetic Drugs
- Classifications of Anesthetic Drugs
- Inhalation Anesthetic Agents
- Classifications of Inhalant Drugs
- Anesthetic Equipment
- Anesthetic Induction Equipment
- Breathing Systems
- Breathing Circuits
- Health Hazards and Environmental Concerns
- Equipment Maintenance and Concerns
- Monitoring Techniques
- Stages of Anesthesia
- Ventilation
- Acid-Base Balance
- Oxygenation and Anesthetic Equipment Problems
- Review Questions

- **Chapter 22: Pain Management**
- The Role of the Veterinary Technician or Nurse in Pain Management
- Neurophysiology of Pain
- Clinical Applications
- Pharmacology of Pain Medications
- Analgesic Techniques
- Nonpharmacologic Pain Management
- Review Questions
  
- **Chapter 23: Surgical Principles**
- Surgical Instruments
- Instrument Care and Pack Preparation
- Patient Preparation
- Draping
- Common Surgeries
- Surgeon and Sterile Assistant Surgical Scrub
- Operating Room Conduct
- Postoperative Evaluation
- Postoperative Complications
- Review Questions
  
- **Chapter 24: Small Animal Nursing**
- Physical Examination
- Drug Administration
- Fluid Therapy
- Venipuncture
- Blood Collection and Transfusion
- Electrocardiography
- Orogastric Intubation
- Nasogastric Intubation
- Canine Male Urinary Catheterization
- Canine Female Urinary Catheterization
- Cystocentesis
- Manual Compression of the Urinary Bladder
- Auricular Treatment
- Anal sac Expression
- Enemas
- Microchipping for Identification
- Tracheostomy Tube Placement and Cleaning
- Esophageal Feeding Tube Placement and Cleaning
- Ophthalmology (Table 24.3)
- Dermatology
- Bathing Small Animals
- Wound Management
- Bandaging
- Rehabilitation Therapy
- Nursing for Neonatal or Orphaned Animals
- Oncology
- Euthanasia and Pet Bereavement
- Necropsy

- Review Questions
- **Chapter 25: Equine Nursing and Surgery**
  - Acknowledgment
  - Physical Examination and Normal Values
  - Basic Equine Care
  - Routes of Medication Administration
  - Vaccinations (Table 25.1)
  - Gastrointestinal Ailments
  - Neuromuscular Disorders
  - Respiratory Diseases
  - Blood Disorders
  - Foot Ailments
  - Lameness
  - Therapeutic Modalities
  - Standing Sedation
  - Equine Surgery and Anesthesia
  - Bandage Techniques
  - Review Questions
- **Chapter 26: Ruminant, South American Camelid, and Swine Nursing, Surgery, and Anesthesia**
  - Nursing
  - Diseases
  - Anesthesia
  - Surgery
  - Review Questions
- **Chapter 27: Emergency Medicine**
  - Acknowledgments
  - Preparedness
  - Triage
  - The Primary Survey
  - Cardiopulmonary Resuscitation
  - Monitoring Status of Emergency Patients
  - Endocrine and Metabolic Emergencies
  - Gastrointestinal Emergencies
  - Hemostatic Emergencies (Table 27.8)
  - Critical Care Emergencies
  - Reproductive System Emergencies
  - Toxic Substance Emergencies
  - Ocular Emergencies
  - Advanced Veterinary Nursing Procedures
  - Review Questions
- **Chapter 28: Veterinary Dentistry**
  - Anatomy of the Tooth
  - Dentition
  - Tooth Surface Terminology
  - Tooth Roots



- Tooth Function
- Numbering Teeth
- Dental Instruments and Machines
- Comprehensive Oral Health Assessment and Treatment
- Local Analgesia
- Safety and Infection Control
- Dental Radiography
- Home Care
- Occlusion
- Oral Lesions
- Further Dental Problems
- Periodontal Disease
- Tooth Resorptive Lesions
- Feline Chronic Gingivostomatitis
- Lagomorphs and rodents
- Review Questions
  
- **Part 4: Professional Management**
  
- **Chapter 29: Personal, Practice, and Professional Management Skills and Ethics**
- Acknowledgment
- Practice Management Communication
- Special Communication Situations
- Practice Management
- Personal Management
- Career Management
- Marketing
- Professionalism
- Ethics
- Veterinary Technology as a Profession
- Summary
- Review Questions
  
- **Appendix A: Comprehensive Test**
- Comprehensive Test Answer Key
  
- **Appendix B: Chapter Reviews Answer Key**
  
- Chapter 1 Animal Anatomy and Physiology
- Chapter 2 Urinalysis and Hematology
- Chapter 3 Parasitology
- Chapter 4 Clinical Chemistry
- Chapter 5 Cytology
- Chapter 6 Diagnostic Microbiology and Mycology
- Chapter 7 Radiography
- Chapter 8 Alternative Imaging Technology: Ultrasound and Other Imaging Modalities
- Chapter 9 Immunology and Virology

- Chapter 10 Sanitation, Sterilization, and Disinfection
- Chapter 11 Companion Animal Behavior
- Chapter 12 Restraint and Handling
- Chapter 13 Small Animal Nutrition
- Chapter 14 Large Animal Nutrition and Feeding
- Chapter 15 Genetics, Theriogenology, and Neonatal Care
- Chapter 16 Laboratory Animal Medicine
- Chapter 17 Exotic Animal Medicine
- Chapter 18 Zoonoses
- Chapter 19 Pharmacology
- Chapter 20 Pharmaceutical Calculations
- Chapter 21 Anesthesia
- Chapter 22 Pain Management
- Chapter 23 Surgical Principles
- Chapter 24 Small Animal Nursing
- Chapter 25 Equine Nursing and Surgery
- Chapter 26 Ruminant, South American Camelid, and Swine Nursing, Surgery, and Anesthesia
- Chapter 27 Emergency Medicine
- Chapter 28 Veterinary Dentistry
- Chapter 29 Personal, Practice, and Professional Management Skills and Ethics
  
- **INDEX.**