SUGGESTED BLUEPRINT FOR PHASE I
AMERICAN COLLEGE OF VETERINARY CLINICAL PHARMACOLOGY EXAM

GENERAL TOPICS
Physiochemical characteristics of active pharmaceutical ingredients
  - Lipophilicity
  - pKa/pH relationship
  - Molecular weight
  - Solubility
  - Enantiomers
Pharmacodynamics:
  - Dose-concentration-response relationships
  - Drug-receptor theory
  - Drug-receptor interactions
  - Types of receptors
  - Secondary messenger systems
  - Measurements of potency, efficacy
  - Mechanisms of drug action
Drug movement
  - Absorption
  - Distribution
  - Elimination (metabolism, excretion)
  - Proteins involved in drug movement (e.g., drug metabolizing enzymes, transport proteins)
Pharmacokinetics
  - Compartmental Modeling
  - Non-compartmental Analysis
  - Clearance, (apparent) volume of distribution, rate constants, half-lives
  - Bioavailability (relative, absolute)
  - Bioequivalence
Factors impacting drug movement and/or drug response
  - Physiologic (age, gender, species, breed, fed/fasted...)
  - Pharmacologic (drug interactions)
  - Pathologic (impact of disease)
Routes of administration
Dosing forms (and relevant drug delivery devices)
Adverse events
  - Definitions
  - Types (I and II or A & B)
  - Organs at risk
  - Mechanisms of toxicity
  - Cellular/organ responses to toxicity
  - Measures of toxicity
  - Causes for therapeutic failure

DRUGS
For each of the following drug classes/body systems, critical information will be:
  - Structure activity relationship
  - Mechanism of action (as it relates to pathophysiology of target disease) Pharmacologic response

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Clinical pharmacology: ADME
Dosing forms
Drug interactions
Adverse drug events/side effects
Factors impacting drug disposition/response
Therapeutic indications
Regulatory considerations

DRUG CLASSES BY BODY SYSTEMS:

Nervous System
  Autonomic / Somatic nervous system
  Anticonvulsants
  Behavior modifying drugs
  Opioids
  Tranquilizers/sedatives
  Anesthetic agents (gas, injectable, chemical restraints, local anesthetics)
  Renal
  Diuretics
  pH modifiers
  Hormones (e.g. vasopressin)

Cardiovascular
  Vasoactive drugs
  Antiarrhythmics
  Inotropic drugs
  Hematopoiesis Hemostasis

Gastrointestinal
  Appetite
  Emesis
  Prokinetics
  Antiulcer
  Antidiarrheals

Reproduction
  Oxytocics
  Tocolytics
  Hormone agonists/antagonists

Endocrine
  Thyroid
  Pancreas (Diabetes mellitus, etc)
  Parathyroid
  Steroids for systemic use, antiadrenal drugs

General and special senses
  Eye (Ophthalmic)
  Otic

Cutaneous (Dermatologic, including drug vehicles)

DRUG CLASSES BY TARGET INDICATION

Control of inflammation/immunomodulation NSAIDS
  Glucocorticoids
  Immunosuppressive drugs (azathioprine, cyclosporine, etc)
  Autacoids

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Anticancer drugs
   Cell-cycle specific/nonspecific
   Tyrosine kinase inhibitors
   Others
Fluid therapy
   Acid base balance
   Crystalloids/ colloids Electrolytes
Anti-infectives
   Antibacterials
   Antifungals
   Antivirals
   Antiprotozoals
   Antiparasiticides (external and internal)
Botanical/Herbals
   SAMe
   Cannabinoids
   Milk thistle
   Glucosamine/chondroitin
OTHER TOPICS
   Disinfectants/antiseptics