STUDY GUIDE for EXAM 2:

For each of the groups of animals you should be able to:

- List defining characteristics (if you had one in front of you how would you know for sure which group it belongs to, include structure, organ systems (or lack thereof), etc.)
- Basic classification (Phylum, Class)
- Where do you find them (terrestrial?, aquatic (marine or freshwater)?)
- Reproductive habits

Radiate Animals (Chapter 13)

Cnidaria and Ctenophora
Symmetry and level of development (i.e., tissue grade)
Polymorphism - polyp vs medusa
Cnidocytes and nematocysts (how do these work?)
Reproduction - what is a planula larva? What other larval forms? Sexual/asexual life cycles
Mesoglea
Nervous system
Epitheliomuscular cells
Sense organs (Statocysts - where located, how it works)
Acontia
Bioluminescence
ctenes

Bilateral Acoelomates: Platyhelminthes (Chapter 14)

Parenchyma
Acoelomate body plan
Cephalization
Bilateral Nervous system
Protonephridia; Flame cells (How do these work?)
Water balance (osmoconformers vs osmoregulators; stenohaline, euryhaline)
Tegument
Syncytial (what does this mean?)
Hydrostatic skeleton (how does this work?)
Stimulus (types)
Nerve transmission (basic)
Law of specific nerve energies
Chemoreception, chemotaxis, tangoreceptors, ocelli
Adaptations for parasitism
Proglottids
Segmentation in Cestodes
Purpose of microthrix
How do tapeworms avoid selfing?
Cysticercus/Bladderworm infections in humans
Tapeworm lifecycle

Pseudocoelomates: Rotifers/Nematodes (Chapter 15/18)
How does a pseudocoel differ from a true coelom? How do acoelomates differ? Advantages
Amphids
Common nematodes that cause disease in humans
Corona/mastax
Cyclomorphosis
Why is hypodermic injection of gametes necessary for some pseudocoelomates? Eutely

Molluscs (Chapter 16)
Basic Anatomy (mantle, visceral mass, head, foot, radula, valve anatomy, etc)
open vs closed circulatory system
Metanephridia
Trochophore larvae
Osphradia
Torsion
Coiling
Fouling
How are Torsion, Coiling, and Fouling related?
Pneumostome
Veliger larvae
How is cephalopod locomotion different from that of other Molluscs?
Convergence in vertebrate and cephalopod eyes
Communication in Cephalopods
Chromatophores

Annelids
Tagmata
Metamerism
Segmentation
Benefits of evolution on metamerism and tagmata (evolutionary significance)
Hydrostatic skeleton (including movement)
Epitoky
Typhlosole and chloragogen tissue
Water and Salt balance in terrestrial animals
Costs and benefits to each of the nitrogenous wastes (uric acid vs urea vs ammonia)
Protonephridium vs Metanephridium
Associations between leeches and their prey of choice

Arthropods (not Hexapods)
Arthropodization
Exoskeleton
Division of labor
Cuticle/procuticle
Ecdysis/Molting: mechanism, how controlled
Tracheae
Ommatidia
Metamorphosis
Biramous/uniramous
Carapace
Chelicerae
Book lungs (how different from book gills and tracheae)
Malphigian tubules (how different from proto and metanephridia?)
Review toxicity of nitrogenous wastes
Sensory structures
Web spinning (properties of silk)
Common diseases/human impacts

Don’t forget Chilopoda and Diplopoda

Basic differences in crustaceans and insects
Tagmata
Caradoid facies
Hemocoel (how different from a coelom)
Hemolymph
Green (antennal) gland
Nauplius larvae
Disadvantages to molting
Endocrine control of molting