Study Suggestions for Exam 2 - Bio 112

This exam will cover Chapters 40, 41 and 42 and labs on the phyla Platyhelmethes, Mollusca, Nematoda and Annelida. About 70% of the exam is on the lecture and 30% is from the Lab sessions. This guide will help you focus your studies.

Review all of your lab questions, expect to see some diagrams from lab and some questions directly from our lab book. Check your returned papers to be sure that you got the questions correct! Review the comparison of three phyla that we did in the lab book.

> ***For EACH Phylum and Class that we detailed in class, know the traits that make it unique (ie for Platyhelmethes: bilateral, flat, acoelum and nervous system.) Best way to do this is flash cards. ***

Don't forget our first two phyla, can you compare their similarities/differences to the four groups that we focused on in lab in this section?

What are some characteristics that you see in a parasite?
How can you tell a leach from a fluke?
I will have several drawings for you to label. I will focus on digestive and reproductive systems but anything that you looked at in lab is fair game.

Phylum Platyhelmethes: -

- How do they eat? Which are parasitic and which are free living?
- How does a tapeworm get nutrients? Label its parts
- What are the eyespots for on a Planarian, and why does a tapeworm not have them?
- How do they reproduce?

Phylum Mollusca

- What are the different classes (can you names them) and what makes each class unique?
- What kind of circulatory system, muscles etc. Eyes?
- What is torsion? A radula?
- Can you label the major parts of a bivalve?
- Moving onto land is a major step in evolution, how did the mollusks manage to do it?

Phylum Nematoda

- How would you recognize one? How would you become infected with one?
- What sort of coelum do they have?
- Where can they live? (In lab we saw all parasites, but some do live in soil)
- What is sexual dimorphism?

Phylum Annelida

- What is segmentation, how can you recognize it.
- How are the Annelida different from the Nematoda?
- What type of circulatory system, digestive system?
- What is the clitellum and what is it for?
- How do they mate? What is a hermaphrodite and is that asexual or sexual.
- Can you describe and label the digestive tract? Why is it so complex?

Chapter 40 - Basic Principles of Animal Form and Function

Know all four tissue types, if I give you a type of cell, can you tell me what tissue?
There are three types of muscle tissue, what are they and what are the different types for?
How is homeostasis maintained in the body for temperature? What organ is involved? Can you explain what it is and its function.
How do nerves and hormones send signals in the body, how are they similar and how are they different?
Why do creatures hibernate or estivate? Why don't we?
Can you describe a circadian rhythm and give me an example of something that follows one?
Define anatomy, physiology, ectothermy, endothermy, homeostasis, thermoregulation, metabolic rate, torpor, hibernation, circadian rhythm.

Chapter 41 - Animal Nutrition: The Need to Feed.

Trace the digestive system in a human from food in mouth to feces out the anus. With all of the parts in the correct order! Now can you do it for an annelid? How about a Planaria or a hydra?
Where is food chemically digested, how about mechanically?
What digestive enzymes did we talk about and where are they used?
What is the function of the stomach, small intestines and the large intestines?
How does the pancreas participate in the digestive system?
Why do both humans and Planaria (and other things) have a lot of bumps and folds on the walls of where they digest?
Functions of leptin? What is it? Where is it produced?
Why would any creature become obese. What are the ultimate (the long time ago) causes of obesity? What are some proximate (very recent) causes?
Define the following: digestion, absorption, vitamins, minerals, hydrolysis, peristalsis, carnivore, herbivore, omnivore, bulk feeder.

Chapter 42 - Circulation and Gas Exchange

Why do animals need a circulatory system? What is it for?
What three things make up a circulatory system?
What do mitochondria have to do with gas exchange?
What is an open circulatory system, who has one?
What are similarities/ differences between frog, reptile, bird and mammal circulatory systems.
Follow the blood flow from the human heart through the body and back to the heart.
What is the lymphatic system, what are some of its functions? Why is it different than blood?
What are your lungs for? How are they similar/different to gills in a fish?
How does a bird breathe? How does it compare to a frog or a human?
Define the following: atrium, ventricle, gas exchange, vasoconstriction, vasodilatation, pulse, systolic, diastolic, murmur, single circulation, double circulation.