

## **Bio 112 - Study Guide for Final Exam**

This exam will cover chapters 46, 47 and 49 lectures, your fellow student's presentations, the field trip and the frog and pig external and internal dissections. The lab portions are worth approximately 40% of the points on the exam. The lecture chapters and presentations cover 60% of the exam.

**Frog** - Go over your frog dissection papers, can you label the mouth, the head and the internal anatomy. Both structures and functions are included on this exam. How do you identify the sexes? All the questions about function and structure can be on the exam. Go over the online dissection if you have problems, the online dissection is on my webpage.

**Pig** - We spent a lot of time on the pig, both external, inside the mouth, the abdominal cavity and the thoracic cavity. Expect to see questions about locating structures and functions. Study your labs, all questions are possibly on the exam. Go over the online dissections!

### **Follow reproduction from sex to birth in humans**

#### **Chapter 46 - Animal Reproduction**

What are some of the differences between asexual and sexual reproducing creatures, why do some animals use both strategies?

What are some of the problems faced by species that externally fertilize their eggs (like frogs) what strange behaviors can arise from this?

Describe the male and female reproductive systems in humans and be able to label them.

Describe fertilization in humans; include the challenges that the sperm face entering the vagina, how they get to the egg (and where).

Describe the steps of the uterine (menstrual) cycle.

#### **Chapter 47 - Animal Development**

Describe the acrosomal and cortical reactions - what are they for? Can you describe the steps involved?

Describe how cleavage occurs in zygotes, how are the axes determined, and what are they.

Describe the steps in egg activation and what has to occur before the zygote goes through its first division.

What are the differences between meroblastic and holoblastic cleavage and why do they have to be different.

Where does the neural tube form? What does it become?

What are the three germ layers, and can you name three organs/parts of the body that stem from each?

What is an amniotic egg and who has one? Why?

Why do cells crawl in a developing fetus?

How do we know that cells have determined fates? (Think about those Frankenstein experiments)

Define the following words: fertilization, egg activation, holoblastic, meroblastic, organogenesis, morphogenesis, homunculous, blastula, gastrula, somites, protostomes, deuterostomes.

### **Chapter 49 - Brains and Nerves**

Describe how the different phyla have different nervous systems

What are the Central nervous system and the peripheral nervous system.

What is a reflex? Can you describe one?

Describe the three parts of the autonomic nervous system.

Where are memories and consciousness held?

How do bird and mammal brains differ and how does that affect intelligence?

Define the following words: nerves, afferent, efferent, cranial nerves, spinal nerves,