Biology 0871 UNIT 2 STUDY GUIDE

Winter 2015 Chordates

**Chapter 30: Nonvertebrate Chordates, Fishes and Amphibians**

Vocabulary: chordate, notochord, pharyngeal pouch, vertebra, cartilage, atrium, ventricle, cerebellum, medulla oblongata, lateral line system, swim bladder, oviparous, ovoviviparous, viviparous, operculum, gills, cloaca, nictitating membrane, tympanic membrane, tadpole.

1. What characteristics do all chordates share?
2. What are the two groups of nonvertebrate chordates?
3. How do lancelets and tunicates differ?
4. What are the basic characteristics of fishes?
5. How are fishes adapted for life in water?
6. What are the three main groups of fish? Give 2 unique characteristics of each group.
7. How is an African lung fish adapted to drought?
8. What adaptive advantages do jaws and fins provide for fishes?
9. List 4 specific ways in which fishes are adapted for aquatic life.
10. What is an amphibian?
11. How are amphibians adapted for life on land?
12. What are the main groups of living amphibians. Give 2 unique characteristics of each group.
13. What characteristics usually restrict amphibian reproduction to moist environments?
14. For the nonvertebrates, fishes and amphibians explain how each group of animals carries out feeding, digestion, respiration, circulation, excretion, and reproduction, movement and response.
15. With respect to fishes, anadromous, refers to which type of fish behavior?
16. With respect to fishes, catadromous, refers to which type of fish behavior?
17. Why is the amphibian population a good indicator of the health of an ecosystem?

**Fish Dissection/Frog Dissection**

Be able to identify and know the function of the following organs of the fish and/or frog:

-operculum, pectoral fin, caudal fin, anal fin, pelvic fin, dorsal fin, later line, eyes, nicitating membrane, tympanic membrane, kidney, stomach, pyloric cecum, swim bladder, esophagus, spinal cord, vertebrae, gills, brain, heart, liver, gallbladder, pancreas, large intestine, small intestine, fat bodies, reproductive organs – testes, oviduct; cloaca.

**Chapter 31: Reptiles and Birds**

Vocabulary: ectotherm, amniotic egg, carapace, plastron, feather, endotherm, crop, gizzard, air sac

1. What are the characteristics of reptiles?
2. How are reptiles adapted to life on land?
3. What are four living orders of reptiles?
4. What are the advantages of dry, scaly skin?
5. Name and give the function of each of the membranes of an amniotic egg.
6. How does a lizard control its body temperature?
7. What characteristics do all birds have in common?
8. How are birds adapted for flight?
9. Name and give the function of the two types of feathers a bird may have.
10. How does a chick get out of its eggshell?
11. How can birds be used as indicators of environmental health?
12. Explain how birds and reptiles carry out each of the following: feeding, digestion, respiration, circulation, excretion, and reproduction, movement and response.
13. Know the pathway of oxygen through a bird from the moment it is inhaled to the cells in the body of the bird.
14. Compare the hearts of a fish, amphibian, reptile and a bird. How are they the same?different?

**Chapter 32 Introduction to Mammals**

Vocabulary: mammary gland, placenta, subcutaneous fat, rumen, diaphragm, cerebral cortex, monotreme, marsupial.

1. What are the characteristics of mammals?
2. How do mammals maintain homeostasis?
3. How do mammals control their body temperature?
4. How do the three groups of living organisms differ from one another?
5. Omit 32-3 onwards Primates and Human Origins.

**Rat Dissection**

Be able to identify and know the function of the following organs of the rat. Also know which organ system the organs belong to.

kidney, stomach, esophagus, spinal cord, vertebrae, brain, heart, lungs, diaphragm, liver, gallbladder, pancreas, large intestine, small intestine, reproductive organs – vas deferen, testes, oviduct/uterine horn, ureter, urinary bladder

**Chapter 33 COMPARING INVERTEBRATES**

This is a very important chapter.

1. Omit Chordate evolution 33-1
2. How is the control of body temperature an important aspect of vertebrate life?
3. What is the difference between ectotherms and endotherms.
4. How do the mouth structures of filter feeding vertebrates differ from those of a carnivore like?
5. Compare the digestive tracts of herbivores and carnivores.
6. Compare the respiratory tract of aquatic animals with terrestrial animals.
7. Compare the respiratory tract between the different terrestrial animals studied – Amphibian, Reptile, Bird, Mammal.
8. Compare the circulatory system of the different animals we have studied.
9. Compare a single loop circulatory system with a double loop one.
10. Know the structure of a heart for each of the animals studied.
11. What three structures support a vertebrate’s body and allow it to move?
12. List the organ systems that chordates use to perform life functions. How does each system vary between nonvertebrate chordates and vertebrates?
13. Explain the difference between oviparous, ovoviviparous and viviparous modes of development. Give an example of each.
14. What advantage does a three or four chambered heart provide that a two-chambered heart does not?