I. OBJECTIVES AND PREPARING FOR LAB

1. Preparing for Lab:
   a. Carefully read the text associated with the three lab exercises listed above. Be sure to read the introductory pages at the beginning of the chapter as well as the specific experimental procedures.
   b. Familiarize yourself with the terms printed in bold print in the introductory pages and in each specific exercise.

2. Objectives: At the end of this lab, you should be able to do the following:
   a. Describe the distinguishing characteristics of the class Actinopterygii and the class Amphibia.
   b. Locate and identify the major external features of a bony fish and an amphibian and compare them to homologous features in other vertebrates.
   c. Discuss the significance of jaws and paired fins in the evolution of early vertebrates.
   d. Discuss the significance of bony fins, gill opercula, and the swim bladder in the evolution of early vertebrates.
   e. Discuss the significance of lungs and paired bony limbs in the evolution of vertebrates.
   f. Discuss the significance of the amniotic egg and scales in the evolution of terrestrial vertebrates.
   g. Locate and identify the major skeletal features of a bony fish and an amphibian and compare them to homologous bones in other vertebrates.
   h. Locate and identify the major muscles of a frog and compare their morphology and functions to homologous muscles in other vertebrates.
   i. Locate, identify, and give the function of the major internal organs of a bony fish and an amphibian and compare them to homologous structures in other vertebrates.
   j. Describe the evolutionary position of the bony fishes and amphibians on the phylogeny of chordates.

WHILE DOING THE LAB EXERCISES, ANSWER ALL QUESTIONS AS YOU ENCOUNTER THEM IN THE LAB MANUAL, RECORDING YOUR ANSWERS IN THE SPACE PROVIDED.

II. EXPERIMENTAL PROCEDURES

Working in pairs, complete Ex. 16.1 and Ex. 17.1, examining the internal and external anatomy of the perch and frog, respectively. With careful dissection, you should easily be able to locate and identify the specified structures with the assistance of the figures in the lab manual. However, you can also refer to the models and specimens on display to help you locate internal structures. Make certain to examine the internal anatomy of fish and frogs of both sexes.

III. ASSESSMENT (10 points)

1. Pre-Lab Quiz (5 Points): There will be a quiz on this lab at the beginning of the lab period. To prepare for the quiz, you should carefully read the material specified above in section I.

2. Bony Fish Oral Quiz OR Amphibian Oral Quiz (5 Points): When you have completed your dissections, bring both dissections to the front of the room. Your instructor will quiz you and your lab partner on the parts of either the perch or the frog, asking you to locate, identify and give the function of those parts of the perch shown in Figures 16.3 - 16.9 and listed in Tables 16.1 and 16.2 OR those parts of the frog shown in Figures 17.3 and 17.8 – 17.16 and listed in Tables 17.4 and 17.5. You should also be able to locate, identify and give the function of those muscles and bones specified by your lab instructor.

IV. KEY TERMS:

In addition to the bold terms scattered throughout the chapters you should be able to describe the taxonomic organization of the phylum Chordata (i.e., distinguishing characteristics of the phylum) and locate, identify and give the function for structures listed in Tables 16.1, 16.2, 17.4 and 17.5 and Figures 16.3 - 16.9, Figure 17.3 and Figures 17.8 – 17.16.