

Chapter One Study Guide
Major Themes in Anatomy and Physiology (0723)

- 1 What are the definitions for anatomy and physiology? Why do we study these topics together?
- 2 What is the purpose for the scientific method? What is the purpose of science?
- 3 When you use the hypothetico-deductive scientific method, what is the first step in the process? What is the next step? What terms describes the second step in the process? The nickname for this event? Other steps? Is it bad if the first assumption is wrong? Explain?
- 4 In science, we have facts, laws of nature, and theories? Which term includes all the known information on the subject?
- 5 What are the steps in the hierarchy of complexity? Significance? How many systems make a human organism? Which system is not essential for the survival of the organism?
- 6 What is homeostasis? You need to memorize (word for word) my definition of homeostasis. You will have an unannounced quiz after the second week. If you can write this definition then you will earn an extra two points on your first lecture unit exam.
- 7 Draw and label the relationship between our organs and cells. Your answer needs to include the digestive system, cardiovascular system, respiratory system, urinary system, interstitial space, and cells.
- 8 What are the three components of a feedback loop? What is the significance of a stimulus?
- 9 What two systems resist changes in the internal environment? What is the “boss” of these two systems? Is the boss of homeostasis part of your conscious or subconscious brain function? How may the boss be influenced? Explain in terms of the triune brain metaphor. Significance?
- 10 Explain how negative and positive feedback loops are used to regulate homeostasis? What loop is self-amplifying? What loop returns a change to the set point? Give examples of each. Which loop is potentially more dangerous? Explain
- 11 What is evolution? What is natural selection? How do these two forces create new species?
- 12 What is the difference between classical genetics, modern genetics, and epigenetics?