

Chapter One Study Guide / Tortora & Derrickson
Introduction to Anatomy and Physiology

1. Definitions: a) biology, b) physiology, and c) anatomy
2. Why is physiology and anatomy studied together?
3. What is gross anatomy?
4. What is histology?
5. What is cytology?
6. What is the significance of comparative physiology? Role of bacteria?
7. What is the purpose of science?
8. What is the cell theory? Significance
9. What is the “scientific method”?
10. What is the difference between a hypothesis and a theory?
11. What is evolution?
12. What is natural selection?
13. How are evolution and natural selection interdependent?
14. When scientists and laypeople (i.e. non-scientist) debate topics, they often communicate using the same words but the words for them have different meanings. Unfortunately, this breakdown in “language” results in mistrust and misunderstanding. This often then results in bad public policy. How are the terms hypothesis and theory used differently by scientist and lay-people and how has this resulted in a confused public discourse? (Do this in the context of evolution.)
15. Is evolution a fast or slow process? (This is a trick question – think about how it occurs in different species- bacteria vs humans / What about viruses! Do viruses evolve?)
16. Explain the significance of the “hierarchy of complexity”. Define the functions of each division of the hierarchy from atoms to organism.
17. What is metabolism? Where does it occur in humans?
18. What are the two forms of metabolism?
19. What is a metabolic pathway? What type of molecules are necessary for a metabolic pathway? Their characteristics?
20. What is homeostasis?
21. What phase best describes the “state of the internal environment” of the human body?
22. What are the two mechanisms used to “regulate” body functions?
23. Which regulatory mechanism “returns or restores” the body to its normal state following a change?
24. Which regulatory mechanism is described as “self-amplifying” or continues to move physiologic state away from its “normal or starting point”?
25. Explain how these terms (receptor / integrating center / effector) apply to both negative and positive feedback mechanisms.
26. What do we call the event detected by a receptor?
27. Site example of both negative and positive feedback mechanisms:

Hot List Questions

1-4-7-8-9-10-11-12-13-16-17-18-19-20-21-22-23-24-25-26-27