**Review for Exam One, BSC 181**

Please note that this review does not cover ALL of the material discussed in the lecture notes. *It is meant as a guide only*. Exam questions will come from the lecture material, not this review. Please be familiar with all of the topics we discussed in lecture.

1. What are the functions necessary for life?
2. Be able to identify the components of a control mechanism
   1. What is the function of the receptor
   2. What is the function of the control center
   3. What is the function of the effector
      1. Which structures can be an effector?
3. Compare negative versus positive feedback
4. Be familiar with anatomical position
5. Be able to use the directional terms correctly
6. Compare the ventral and dorsal body cavities
7. Be familiar with atomic structures and topics
   1. Nucleus
   2. Proton
   3. Neutron
   4. Electron
   5. Valence Shells
   6. Atomic weight
   7. Atomic mass
   8. Atomic number
8. Know the difference between an atom and an ion
9. Know the difference between an ion and an isotope
10. Compare the different types of mixtures
11. Compare the three types of chemical bonds
12. Be familiar with the octet rule
13. What does it mean to be a polar or a nonpolar compound?
    1. Why is water polar?
14. Review the patterns of chemical reactions
15. What influences chemical reactions and how?
16. Contrast Inorganic compounds to Organic ones
17. Be familiar with how pH is determined
18. What are the four categories of organic compounds
    1. What are the “building blocks” for each group
    2. What are the functions for each group
19. What are the four structures of proteins?
20. What are the two classes/categories of protein
21. What are enzymes? What is a substrate?
22. What are some differences between DNA and RNA
23. What is ATP and where is it used?
24. Identify the organelles within the cell. Be familiar with their functions.
25. Identify the types of proteins located on the plasma membrane, and know their functions.
26. What are the types of membrane junctions
27. Which processes are passive? (What’s it mean to have a passive process?)
28. Which processes are active?
29. What are the stages of the cell cycle?
30. What are the stages and events of mitosis
31. When and where does DNA replicate? What is the result?
32. Where does transcription take place? What is involved? What is produced?
33. Where does translation take place? What is involved? What is produced?
34. What is a codon?
35. What are the three types of RNA and their functions?
36. What are the four types of tissues?
37. Be able to identify and define the epithelia
38. Compare endocrine to exocrine
39. What are the functions of connective tissue
40. What are the connective tissues, the fibers they include, and the locations in which they can be found?
41. What are the “special” connective tissues?
42. What are the three types of muscle tissue?