

## **Study Guide Test 2**

### **BIO 220**

#### **Chapter 5**

1. Define metabolism, anabolism, and catabolism.
2. Write the equation for the formation and catabolism of ATP.
3. Define metabolism pathways.
4. Define Collision Theory and what it means to chemical reactions.
5. Define activation energy.
6. Be able to draw or interpret a energy diagram such as figure 5.2, labelling the starting energy, final energy, transition state, and activation energy.
7. Define an endergonic and exergonic reaction, what differences do they have in the energy diagram.
8. Define enzyme, catalyst, and substrate.
9. Describe how enzymes change the energy diagram of a reaction and how they do not.
10. Define apoenzyme, holoenzyme, and cofactor.
11. List the five (5) steps of enzyme action
12. Define active site.
13. Describe the effects of temperature, pH, and substrate concentration on enzyme actions.
14. Describe competitive inhibition, noncompetitive inhibition, and feedback inhibition.
15. Describe the difference between an oxidation and a reduction reaction.
16. List the three steps of complete cellular respiration of glucose.
17. Define Glycolysis.
18. What are the products of glycolysis?
19. Describe the differences between aerobic and anaerobic respiration, which produces more ATP, what are the requirements for each.
20. Define fermentation.
21. Define Photosynthesis.
22. Differentiate between an autotroph and a heterotroph.
23. Differentiate between a phototroph and a chemotroph.

#### **Chapter 6**

1. Define psycrotroph, psycrophile, thermophile, mesophile, and hyperthermophile.
2. Identify the minimum growth temperature, optimum growth temperature, and maximum growth temperature from a graph.
3. Why are psycrotrophs so dangerous?
4. Define acidophile.
5. Define halophile.
6. List the physical factors that effect growth.
7. List the major chemical requirements for microbial growth.
8. Define trace elements and organic growth factors.

9. Define obligate aerobe, facultative aerobe, facultative anaerobe, and obligate anaerobe.
10. Define aerotolerant and microaerophile.
11. Describe the difference between complex media and defined media.
12. Define Selective, Differential, and Enrichment Media.
13. Describe two methods for directly counting bacteria.
14. Label or draw a bacterial growth chart with the four phases of growth.

## **Chapter 7**

1. What is the difference between sterilization and commercial sterilization.
2. Define sanitation, degerming, and sanitization.
3. List the factors that affect microbial death during microbiocide action.
4. List the two ways that microbial control agents act.
5. List two physical methods of microbial control.
6. Define Decimal Reduction Time.
7. What is the purpose of an autoclave.
8. Define pasteurization.
9. Which form of radiation is most effective for sterilization.
10. What chemical are all disinfectants gauged against?
11. List three types of chemical microbial control agents and their methods of action.
12. List the types of microorganisms from those that are hardest to kill to those that easiest to kill. (figure 7.11)