Chapter 8

1. What is the definition of metabolism?
2. What are examples of potential and kinetic energy?
3. What is the difference between catabolism and anabolism? (include how they change the entropy within a cell)
4. What are the first and second laws of thermodynamics?
5. What is the Gibb’s free energy equation and what do the parts stand for? What does a positive or negative result mean?
6. What is the difference between exergonic and endergonic reactions?
7. What happens to the heat produced by an organism?
8. What is the lock and key model for enzymes?
9. What do cofactors and coenzymes do?
10. What are the types of inhibitors and how do they work? (or not work…nerd joke)
11. 

**Chapter 9**

1. What is the equation for cellular respiration? What is oxidized and what is reduced?
2. When NAD+ is turned into NADH is it reduced or oxidized?
3. What is the role of oxygen at the end of ETC?
4. What are the net products of glycolysis?
5. What releases the most CO2 during aerobic respiration? Where else is CO2 released?
6. What are the electron carriers of the citric acid cycle?
7. 
8. What takes place in the ETC?
9. During aerobic respiration, electrons travel from \_\_\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Where is the ETC located?
11. About how many ATP are produced through Aerobic respiration?
12. Where does glycolysis occur?
13. What process occurs with or without o2
14. What is the purpose of fermentation?
15. Where does CO2 come from?

Chapter 10

1. What wavelengths of light are most effective for photosynthesis?
2. What event accompanies energy absorption by chlorophyll (or other pigment molecules of the antenna complex)?
3. Where does photosystem II get its electrons?
4. What process splits CO2 into carbon compounds?
5. What process produces O2?
6. What does the Calvin Cycle need in order to run? (attained from light reactions)
7. Where does the Calvin Cycle take place?
8. What is the function of the Calvin Cycle?
9. List things that occur in the Calvin Cycle?
10. What is the value of ΔG if ΔH = -32.0 kJ, ΔS = +25.0 kJ/K and T = 293 K? \_\_\_\_\_\_\_\_\_\_\_\_
11. Is the reaction in Problem 36 spontaneous? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. What is the value of ΔG if ΔH = +12.0 kJ, ΔS = -5.00 kJ/K and T = 290. K? \_\_\_\_\_\_\_\_\_\_\_\_
13. Is the reaction in Problem 38 spontaneous? \_\_\_\_\_\_\_\_\_\_\_
14. 