Name:_____ Date:_____

Look over Chapter 9 and complete the questions below (typed or on a separate sheet):

Questions to answer:

1. What is the relationship between photosynthesis and aerobic cellular respiration?

2. In cellular respiration, what is oxidized and what is reduced?

3. What is the role of electron carrier molecules in energy processing systems? Why are they necessary?

4. Can a cell produce enough ATP to persist by using glycolysis alone? Why or why not?

5. Why do anaerobic cellular systems use fermentation? What would happen if they didn't?

6. Why do you think mammalian muscle cells perform lactic acid fermentation (instead of, say, ethanol fermentation)?

7. Why are pyruvate converted into acetyl-coA prior to entering the Kreb's (Citric acid) cycle? What does this conversion do to the pyruvate molecules?

8. Oxygen is not used in the Kreb's cycle, so why must the Kreb's cycle occur in aerobic cellular respiration?

9. Where in the mitochondria does oxidative phosphorylation occur? Why does it occur there?

10. Explain how the movement of electrons through the electron transport chain is used.

11. Why is oxygen needed for oxidative phosphorylation?

12. Explain redox reactions (reduction/oxidation). What is oxidized and what is reduced in reactions in respiration? Think NAD+/NADH.

13. BIG ONE: Please write out AND draw all reactants and all products for cellular respiration. Show the fate of each reactant. Include the acetyl-coA cycle, the Kreb's cycle and oxidative phosphorylation. You might use simple reactant/product t-tables. You might also sketch out where in the cell all this happens.