Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Racioppo

**Bio 21 Photosynthesis & Respiration Review**

1. What is ATP? What is it made of? What happens to the ATP after it is produced?
2. What is occurring during the ATP/ADP cycle? What is the difference between ADP and ATP?
3. Importance of ATP’s structure
4. Who is able to do respiration? Photosynthesis?
5. Mitochondria/cytoplasm: function, reactants, processes
6. What are the products of aerobic respiration used for?
7. What are the coenzymes used during aerobic respiration? What are they used for?
8. What is the difference between an autotroph and heterotroph? What processes are each able to do?
9. What does glycolysis produce? Why is it important? Where does it occur?
10. What is the difference between lactic acid and alcoholic fermentation? When and who can do each?
11. Why fermentation occurs in aerobic organisms
12. What processes occur following glycolysis when oxygen is present? Where does this occur?
13. What is the difference between the Kreb cycle and the electron transport chain?
14. What is the purpose of the Kreb cycle and the electron transport chain?
15. What is oxygen used for in aerobic respiration?
16. Which respiratory process (glycolysis, Kreb cycle, fermentation, ETC) produces the most/least amount of ATP?
    1. Relative amounts of energy created/used and why (for aero and anaero)
    2. Why is it able to produce the most ATP?
17. What is the ultimate source of energy for the entire ecosystem?
18. What is the purpose of respiration? Photosynthesis?
19. Chloroplast: function, reactants, processes
20. What is the purpose of chlorophyll? What is it used for? Which colors is it able to use?
21. During photosynthesis, what is the source of oxygen? Carbon? Hydrogen?
22. What is the purpose of the Calvin (carbon Fixation Cycle)?
23. Where does the energy source for the Calvin cycle come from?
24. Light vs. Dark reactions (reactants/products)
25. Write the equations for photosynthesis and aerobic respiration.
26. Describe the carbon cycle of photosynthesis and respiration. Discuss the relationship of respiration & photosynthesis
27. Significance and use of enzymes in all reactions
28. *Reactants/products* of, *where* each occurs, equations, *who* does which, *relative* amounts of energy:

photosynthesis anaerobic lactic acid/alcoholic fermentation

aerobic glycolysis kreb ETC

ADP/ATP cycle

1. Experimental Analysis: IV/DV, hypo, validity.