Name: Period:

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| **AP Biology Unit 3. Campbell Ch.8-10.** Your task is to create a quick study card for the Exam. MUST be handwritten. **Accuracy, Neatness – Use ruler to draw charts, tables, etc. and appropriate use of color.** Color needs to be embedded and used appropriately (**DO NOT just color large sections different colors.)**  Title of the Quick Study Card in the Top Center of the page First and Last Name, Date in upper right. | **checklist** |
| **1.** *Science skills:* Create a diagram/**model** of a chloroplast and indicate where the light-dependent and light-independent reactions occur.  **Explain** how the structure of the chloroplast relates to its function. |  |
| **2.**  *Science skills:* Using p. 179, Science skills exercise, create the graph. **Describe** the pattern shown by the data. **Explain** the relationship between this data set and the biological process involved. |  |
| **3.** *Science skills:* Using the data shown in the second graph at<https://pbiol.rsb.org.uk/energy/photosynthesis/investigating-the-light-dependent-reaction-in-photosynthesis> Calculate the rate of the reaction for tube 5. Show your work, including units. |  |
| **4**. Diagram a reaction between and enzyme and its substrate. Label the active site. |  |
| **5**. Define catalyst and explain how enzymes catalyze reactions. |  |
| **6.** Define denaturation. Explain how changes in pH can denature enzymes. What is the equation relating pH to H+? |  |
| **7.** Sketch graphs of the effects of temperature, concentration, and pH on enzyme activity. Indicate the optimal range on each graph. Relate the effect of temperature to enzyme structure. |  |
| **8.** Compare competitive and noncompetitive inhibitors. What is an allosteric interaction? |  |
| **9.** What is the role of energy in living organisms? What happens when energy is lost? |  |
| **10.** Why are exergonic and endergonic reactions coupled in biochemical pathways? Why are these pathways sequential? |  |
| **11.** What is the overall process of photosynthesis? Which organisms evolved this process first? What evidence supports that idea? |  |
| **12.** What is the role of chlorophylls in the light-dependent reactions? What are the inputs and outputs of these processes? What are Photosystems I and II and how are they related? Explain the importance of the ETC and ATP synthase. What are the inputs and products of the Calvin cycle? |  |
| **13.** How are fermentation and cellular respiration similar and different? Which organisms carry out these processes? |  |
| **14.** What is the role of the ETC in cellular respiration? Where does the ETC occur in eukaryotes? Prokaryotes? What are the electron carriers? What is the final electron acceptor**?** |  |
| **15.** Make a chart to compare: oxidative phosphorylation, photorespiration, and substrate-level phosphorylation. |  |
| **16.** How do endothermic organisms make use of the excess heat generated during metabolic processes? |  |
| **17.** Make a chart of the inputs and products of glycolysis, ETC, Krebs cycle. Include cellular location**.** |  |
| **18.** Diagram the ADP/ATP cycle |  |
| **19.** Organisms have several differing types of chlorophylls. Explain how this variation enables these organisms to have a greater fitness. |  |
| **TOTAL** |  |