**Chapter 9 Reading Guide**

**-Cellular Respiration and Fermentation-**

***Section 1***

1. In which particular organelle does photosynthesis occur? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. In which particular organelle does cellular respiration occur? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Write the reactions for photosynthesis and cellular respiration.
4. Would you define photosynthesis as anabolic or catabolic? Respiration?

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1. Cellular respiration can be further broken down into aerobic and anaerobic respiration. What is anaerobic respiration sometimes called?

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1. Describe what it means for a substance to be oxidized or reduced.

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1. What is the job of NAD? How/when does its name change to NADH?

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1. Cellular respiration is divided into the main stages below. For each, state what molecule enters each cycle and what leaves? (Reactant and Product) Also, state where each step occurs.
   1. Glycolysis- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Pyruvate Oxidation- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Citric Acid Cycle- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Electron Transport Chain - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Chemiosmosis- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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***Section 4***

1. What is the job of ATP synthase?

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1. Define chemiosmosis.

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1. How many molecules of ATP are made in each step of cellular respiration? How many total ATP molecules are produced?

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***Section 5***

1. What are the two types of fermentation?

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1. What is the difference between the two types of fermentation? (Hint: what determines which one occurs?)

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1. Explain the terms obligate anaerobes and facultative anaerobes.

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