Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_\_\_

**AP Exam Review Part 8: Metabolism**

1. Energy Basics
2. Explain why living things don’t violate the 2nd Law of Thermodynamics.
3. Describe the role of ATP in production of cellular work.
4. Compare and contrast exergonic and endergonic reactions. Give a cellular example of each.
5. Compare and contrast anabolic and catabolic reactions. Give a cellular example of each.
6. Compare and contrast chemoheterotrophic nutrition and photoautotrophic nutrition. Give examples organisms.
7. Explain the necessity of electron shuttles.
8. Fill in the table below

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Process** | **Inputs** | **Outputs** | **Major Processes** | **Location** |
| Glycolysis |  |  |  |  |
| Fermentation |  |  |  |  |
| Aerobic Cell Respiration |  |  |  |  |
| Photosynthesis |  |  |  |  |

1. Describe the process of chemiosmosis and compare its function in photosynthetic and respiratory processes.
2. Describe an experimental design to measure the rate of photosynthesis.
3. Describe an experimental design to measure the rate of respiration.
4. Enzymes
5. Describe the relationship between structure and function of enzymes.
6. Describe the environmental conditions that affect enzyme function.
7. How do enzymes accomplish biological catalysis? Give an example.
8. Describe how competitive inhibition and noncompetitive inhibition works.
9. Describe an experimental design to measure the rate of enzyme function.