Energy Review Questions

1. Explain potential energy.
2. In the food we eat, where is the energy found?
3. What is the difference between Exergonic (exothermic) and (endothermic) reactions?
4. Yesterday I consumed 2,500,000 actual “scientific calories”. Is that reasonable? How many “food” Calories did I actually consume? Explain.
5. Write the chemical equations for both photosynthesis and cellular respiration.
6. In what ways are photosynthesis and cellular respiration complementary or opposite processes?

Enzymes Review Sheet

1. Explain the relationship between an enzyme and a catalyst. What is the role of each?
2. Define substrate.
3. Describe activation energy and explain how an enzyme operates.
4. Explain how pH and temperature affect enzyme action.
5. Explain how competitive inhibition affects reaction rates.
7. Explain how precursor activation affects reaction rates.

Energy Storage and Transformation Review

1. What does ATP and ADP represent?
2. What is the primary function of ATP in the cell?
3. Explain how energy is released from ATP.
4. Write the chemical equation for the hydrolysis of ATP.
5. Is energy released or consumed when ATP is converted to ADP?
6. How much energy is released or consumed when ATP is converted to ADP?
7. Explain phosphorylation.
8. Is energy released or consumed when ADP is converted to ATP?
9. How much energy is released or consumed when ADP is converted to ATP?
10. Write the chemical equation for the synthesis of ATP.
11. Most chemical reactions in the cell are powered by ATP. Give 3 examples of such reactions.
12. Give 4 examples of other cell functions that are powered by ATP.