**Biology I Energy Test Review**

*Refer to the following questions and vocabulary to help you to review for the test.*

* Required vocabulary: reactant, product, phosphorylation, producer, autotrophs, phototrophs, Cyanobacteria, heterotrophs, guard cells, stoma/stomata, cuticle, mesophyll, epidermis, aerobic, anaerobic, glycolysis, pyruvic acid/ pyruvate, monosaccharide, polysaccharide, and starch

1. What is adenosine triphosphate (ATP)?
   1. Draw and label the ATP molecule
   2. What are the 3 parts that make-up ATP?
   3. How is energy released from the molecule?
   4. What is the function of ATP?
   5. What is the relationship between ADP and ATP?
2. What is an autotroph?
   1. Give an example
   2. How does an autotroph obtain its energy?
3. What is a heterotroph?
   1. Give an example
   2. How does a heterotroph obtain its energy?
4. What is the function of photosynthesis?
   1. Where does photosynthesis occur in the cell (organelle)?
   2. What type of organism engages in photosynthesis?
   3. What are some characteristics of photosynthetic organisms?
   4. What is the chemical equation for photosynthesis?
      1. What are the reactants?
      2. What are the products?
   5. Draw the chloroplast.
5. What are pigments?
   1. What is the function of a pigment?
   2. Why do plants appear green?
      1. What part of the light spectrum is absorbed?
      2. What part of the light spectrum is reflected?
6. What are the stages of photosynthesis?
   1. Where does each stage occur in the chloroplast?
   2. What is produced at each stage?
7. What are the factors that affect photosynthesis?
   1. How do they affect photosynthesis?
8. What is the function of cellular respiration?
   1. Where does cellular respiration occur in the cell (organelle)?
   2. What must be present for cellular respiration to occur?
      1. What is meant by the term, aerobic?
      2. What is meant by the term, anaerobic?
   3. What type of organism engages in cellular respiration?
   4. Is this organelle present in animal and plant cells?
      1. What does this imply about the organisms that rely on this organelle?
   5. What is the chemical equation for cellular respiration?
      1. What are the reactants?
      2. What are the products?
   6. Draw the mitochondrion.
   7. What is the total number of ATP molecules produced during cellular respiration?
9. What are the stages of cellular respiration?
   1. What is produced at each stage?
10. What is fermentation?
    1. What is the function?
    2. Why does the body engage in fermentation instead of cellular respiration?
    3. Is fermentation aerobic or anaerobic?
    4. What is the total number of ATP molecules produced during fermentation?
    5. What are the types of fermentation?
       1. Give an example of a product of each
       2. What are the products of each?
       3. What type of organisms that engage in each?
11. Does the body rely on cellular respiration or fermentation for short bursts of energy?
12. Does the body rely on cellular respiration or fermentation for long-term energy?
13. How does cellular respiration and photosynthesis differ?
14. How is cellular respiration and photosynthesis similar?