Bio. I - Name: Answers

-Cells and Energy-

1. What is "photosynthesis"?

How autotrophs use sunlight to convert CO_2 + H_2O into food (glucose)

*In what organelle does it occur? Chloroplast

*How does structure relate to function in this organelle?

Plants need chlorophyll to trap sunlight and chlorophyll is found in the thylakoids in a chloroplast. Chloroplasts have tons of thylakoids to capture tons of sunlight!!

2. Think about the equation for photosynthesis and complete the following:

*Name 2 materials needed for Photosynthesis: CO_2 + H_2O

*Name 2 materials produced by Photosynthesis: glucose ($C_6H_{12}O_6$) + O_2

3. What is Cellular Respiration?

How cells convert food/sugar (glucose) into ATP energy (cellular energy)

4. Think about the equation for Cell Respiration and complete the following:

*Name 2 materials needed for cell respiration: (glucose) $C_6H_{12}O_6$ + O_2

*Name 2 materials produced by cell respiration: CO_2 + H_2O

-What is the "energy" product that is created??? ATP

5. In what cell organelle does respiration take place in your body? Mitochondria

*How does structure relate to function in this organelle?

Mitochondria have a lot of inner membrane (all folded up) and this membrane contains the enzymes that build ATP. So more inner membrane = more ATP energy!

6. Photosynthesis and cell respiration are said to be "opposite" processes of each other. * Explain what is meant by this.

The [illegible] produced by each process are what's needed for the other process! Products of photo are the reactants of C.R., and products of C.R. are reactants of photo!

7. Describe the flow of ENERGY through ecosystems.

Energy can only flow from Sunlight → food energy (glucose) → ATP → heat energy in the ecosystem.