Don't forget to check out the supporting videos

EOR#8

Name _____

DIRECTIONS: Read 7.1→7.11 (photosynthesis) and answer the following questions

1. Write the photosynthesis chemical reaction below:

_____ + _____ → _____ + _____

2. Draw a diagram of a **chloroplast** below and label the following 5 structures: outer membrane, inner membrane, thylakoid membrane, grana, stroma. CIRCLE any of the previous chloroplast structures that contain Chlorophyll pigments molecules. (7.2)

3. Does the Oxygen that plants release during photosynthesis come from the original CO_2 or H_2O reactant ….. CIRCLE? Explain how scientists answered this question during the 1950s. (7.3)

4. Identify which 2 molecules help transfer energy and electrons from the light reactions to the Calvin cycle during photosynthesis. (see 7.5)

5. Complete the table below summarizing the wavelengths of visible light: (7.6)

Wavelength (nm)	750			550			380
Color		orange			Blue	Indigo	

6. CIRCLE the colors of visible light in the table above that chlorophyll *a* pigments can absorb.

7. Explain why maple tree leaves are green during the summer but orange and red during fall?

8. Number the following light reaction activities in the correct sequence:

_____ A chlorophyll pigment in photosystem 1 absorbs a photon of light energy
_____ An energized P680 chlorophyll molecule releases its excited electron
_____ The excited photosystem 2 electron travels to the bottom of photosystem 1 via the electron transport chain of the thylakoid membrane and some ATP is generated
_____ A wave of energy jumps from chlorophyll to chlorophyll molecule until it is absorbed by a central P700 chlorophyll
_____ A wave of energy jumps from chlorophyll to chlorophyll molecule until it is absorbed by a central P680 chlorophyll.
_____ A water molecule is split to release oxygen and a replacement electron for P680 chlorophyll
_____ An energized P700 chlorophyll molecule releases its excited electron.
_____ The excited photosystem 1 electron joins a NADPH molecule along with its energy
_____ A chlorophyll pigment in photosystem 2 absorbs a photon of light energy

Part 2 DIRECTIONS: Read chapter 6 (Cell Respiration) and answer the following questions:

1. Write the cellular respiration chemical reaction below: (6.3)

_____ + _____ → _____ + _____ + _____

2. WHAT is Glycolysis, WHERE does it occur in a cell, and how many NET **ATP** are produced? (6.6, 6.7)

3. Study section and figure 6.10 carefully and then explain exactly how mitochondria use the **OXYGEN** (i.e., Do you know why you breath OXYGEN?)

4. Explain how exposure to cyanide or carbon monoxide can kill a cell? (6.11)

5. What causes bread dough to rise when baker's yeast is used in the recipe? (6.13)

Directions: Review the assigned Cell Energy reading by indicating whether each statement below is T/F and the textbook page where the answer can be found.

	Cell Energy Statements (Chapters 6 & 7)	After reading **T/F**	Textbook page
1	During strenuous activities like sprinting, muscle cells can quickly supply the needed ATP using a type of anaerobic respiration called lactic acid fermentation		
2	Pyruvate molecules produced during glycolysis each contain 4 carbon atoms		
3	Most of the ATP made during aerobic respiration is produced during glycolysis		
4	Oxygen is crucial for a cell's survival because it is the only molecule that can break apart an ATP molecule to release the energy for the cell		
5	When electrons fall down an electron transport chain, H+ ions also move across the membrane through various transport proteins using facilitated diffusion		
6	The carbon atoms needed to produce glucose during photosynthesis come from CO_2 molecules that enter the chloroplast during the Calvin cycle		
7	Both photosynthesis and cellular respiration reactions involve the use of ATP molecules for energy storage as energy is processed in the cell		
8	Plant leaves are usually green because that is the color that chlorophyll molecules use the most during photosynthesis		
9	Plants release O_2 that is produced when glucose molecules are broken down		
10	3 CO_2 molecules are produced for every Acetyl CoA molecule that enters the citric acid cycle		