Jonathan Quang 10/20/14

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Part II:

Accessory pigment: Molecules in chloroplasts that absorb additional wavelengths of light energy and transfer their energy to chlorophyll.  
ATP synthase: A channel that spans the thylakoid membrane that generates ATP from ADP and phosphate dissolved in the stroma as the H+ flows through the channel.  
Bundle Sheath cells: Cells that surround the vascular bundles (veins in the leaf)   
C3 Pathway: The Calcin cycle. This is where carbon fixation generates the three-carbon molecule, PGA  
C4 Pathway: A biochemical pathway that terrestrial plants have evolved that consumes more energy to increase the efficiency of carbon fixation in hot and dry environments.  
Calvin Cycle: The reactions of the enzymes in the fluid stroma that surrounds thylakoids that use CO2 from the atmosphere and energy-carrier molecules to drive the synthesis of a three-carbon sugar.  
Carbon Fixation: The process where carbon from CO2 is incorporated into larger organic molecules.  
Cartenoid: Accessory pigments found in all chloroplasts that absorb blue and green light and appear mostly yellow or orange.  
Chemiosmosis: The process where ions move across a selectively permeable membrane down an electrochemical, and the energy generated is used to make ATP.  
Chlorophyll *a*: The key light-capturing pigment that absorbs violet, blue, and red light but reflects the characteristic green color of leaves.  
Chloroplast: The organelle where photosynthesis occurs  
Crassulacean acid metablolism (CAM): Another biochemical pathway that consumes more energy to increase the efficiency of carbon fixation where carbon fixation occurs at night and sugar synthesis occurs during the day while also using the C4 Pathway.  
Cuticle: The outer surface of the epidermis that is transparent, waxy, and waterproof to prevent the evaporation of water from the leaf  
Electromagnetic spectrum: The range of wavelengths over which electromagnetic radiation functions.  
Electron Transport Chain: A series of compounds that transfer electrons from electron donors to electron receivers.  
Epidermis: The upper and lower surfaces of a leaf consisting of a layer of transparent cells that protect the inner parts of the leaf while allowing light through.  
Light Reactions: The first stage of photosynthesis in which the energy of light is captured as ATP and NADPH in thylakoids  
Mesophyl: The cells that compose the inside layers of leaves where most chloroplasts are located  
Photon: A particle representing electromagnetic radiation  
Photorespiration: The wasteful process where O2 is combined with RuBP instead of carbon dixoide, preventing the Calvin cycle from synthesizing sugar.  
Photosynthesis: The process where light energy is captured and stored as chemical energy in the bonds of organic molecules.  
Photosystem: In thylakoid membranes, this is a cluster of chlorophyll, accessory pigments, proteins, and other molecules that collectively capture light energy, transfer some of the energy to electrons, ad transfer the energetic electrons to an adjacent electron transport chain.  
Reaction Center: Two chlorophyll *a* molecules and a primary electron acceptor complexed with proteins and located near the center of each photosystem. Light energy is passed to one of the chlorophylls, which donates an energeized electron to the primary electron acceptor, which then passes the electron to an adjacent electron transport chain.  
Rubisco: The enzyme the combines three carbon dioxide molecules with three RuBP molecules to produce three unstable six-carbon molecules that split in half to for six molecules of PGA.  
Stoma: The pores in the epidermis where a leaf obtains the carbon dioxide it needs from the air.   
Stroma: A semifluid substance enclosed by the double membranes of chloroplasts.  
Thylakoid: Disk like interconnected membranous sacs in the stroma.

Part III:

1. stomata, oxygen, carbon dioxide, evaporation, chloroplasts, mesophyll  
2.red, blue, violet, green, cartenoids, photosystems, thylakoid  
3.reaction center, primary electron acceptor, electron transport chain, hydrogen ions, cheiosmosis  
4.water, carbon dioxide, Calvin cycle, carbon fixation  
5.rubisco, oxygen, photorespiration, C4 pathway, CAM pathway  
6. ATP, NADH, Calvin, RuBP, G3P, glucose