Internet Assignment: Photosystem II

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_

<http://vcell.ndsu.nodak.edu/animations/photosystemII/movie-flash.htm>

1. The oxygen we breathe is a product of what reactions
2. What are Photosystem II key components, including:
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. The reaction center of Photosystem II consists of multiple \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. At the heart of the reaction center is a special pair of chlorophyll molecules, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
4. What does p680 do
   1. .
5. In Photosystem II, the electron is passed 1st to
   1. .
6. The electron is then passed to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and then to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Where are plastiquinone molecules located
   1. .
8. Once Qb has accepted two electrons, it then acts as a what?
   1. .
9. How are electrons lost to the ETC by p680 replaced?
   1. .
10. What surrounds the reaction center, and what do they do?
    1. .

1. When one of the many photons of light flooding a leaf hits a chlorophyll molecule surrounding the reaction center, it creates what? How can you describe this energy?
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What causes (results in ) the loss of an electron from the p680?
   1. .
3. P680 molecules are **oxidized/reduced** by the addition of an electron generated by the splitting of water molecules at the oxygen-evolving complex.
4. How many electrons does Qb need to become mobile?
   1. \_\_\_
5. How many photons of light must strike a chlorophyll to meet the electron requirements to mobilize Qb?
   1. \_\_\_\_\_
6. The fully reduced Qb is then transferred where?
   1. .
7. How many water molecules must be split to provide electrons to reduce p680?
   1. \_\_\_\_\_\_
8. The oxygen we breathe is a product of what?