

## Quiz 7

Fill in the blanks:

1. When a chloroplast is exposed to sunlight, protons accumulate in the \_\_\_\_\_ and are depleted from the \_\_\_\_\_.
2. To convert two water molecules to one diatomic oxygen, \_\_\_\_\_ electrons are transferred to \_\_\_\_\_ molecules of  $\text{NADP}^+$  within a chloroplast.
3. If DCPIP were utilized as the electron acceptor instead of  $\text{NADP}^+$ , you could monitor photosynthesis by observing DCPIP change from \_\_\_\_\_ to \_\_\_\_\_.
4. Lane argues that the Oxygen Evolving Complex (OEC; we called it Photosystem II) evolved from the interaction of two catalase enzymes, which scavenge \_\_\_\_\_ from the cell.
5. With balanced stoichiometry, \_\_\_\_\_  $\text{NADPH}$  are required to utilize the Calvin cycle (Five  $\text{C}_3 \rightarrow$  Three  $\text{C}_5$ ) and have one glyceraldehyde-3-phosphate as a net product. To produce this number of  $\text{NADPH}$  from the "light" reactions, an excess of \_\_\_\_\_ protons will be created across a membrane. If the ATP synthase within a chloroplast function identically to that of the mitochondria, \_\_\_\_\_ protons must transverse the membrane to yield one ATP.