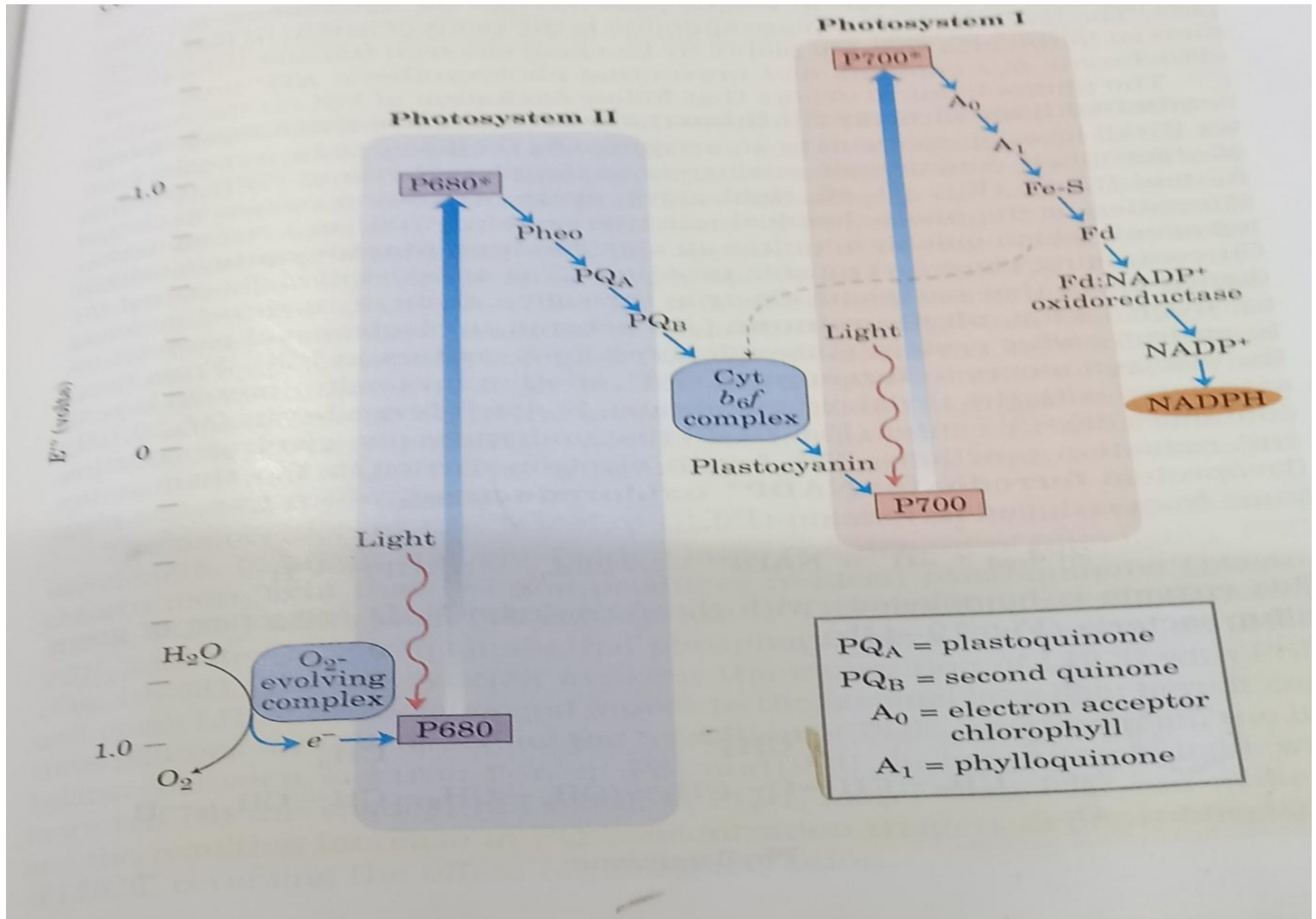
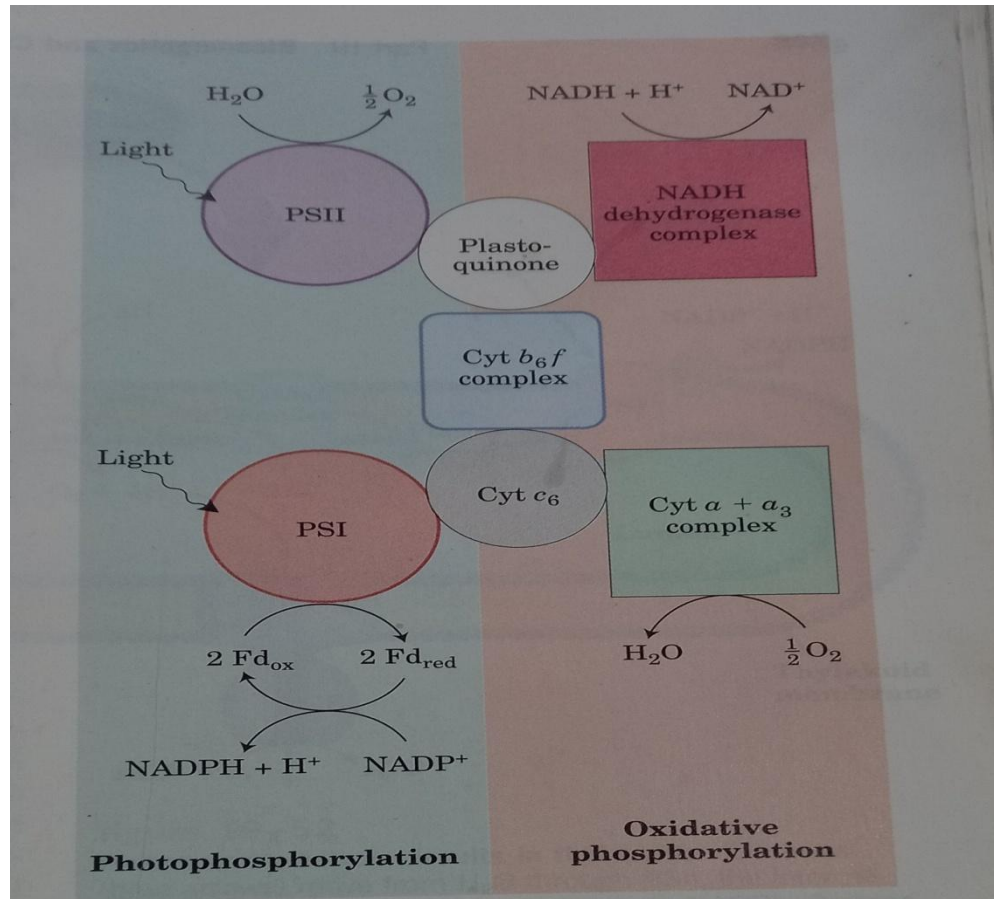


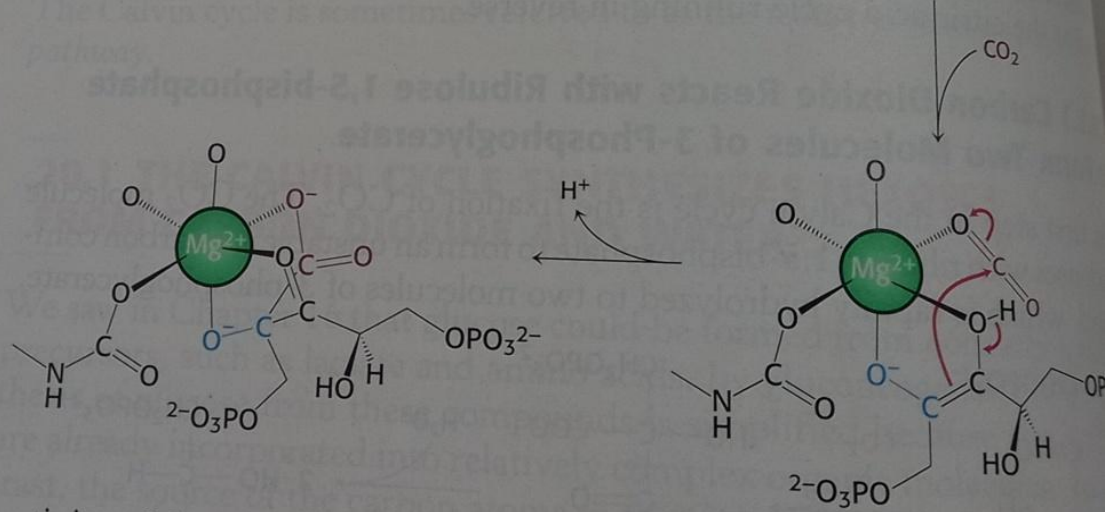
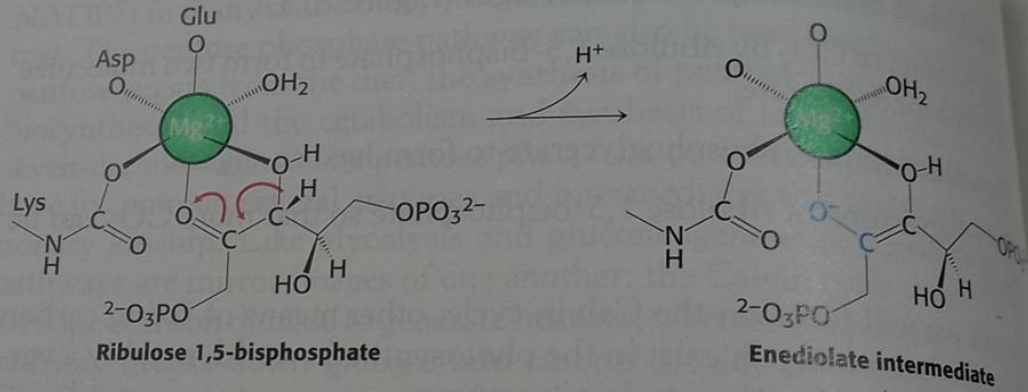
Water-splitting activity of the Mn complex
 Shown here is the process of water-splitting, where the Mn complex acts as an oxidizing agent, believed to involve several Mn ions, in the lumen. The sequential absorption of four photons, causing the loss of an electron from the Mn center, produces an oxidizing agent that can take four electrons from water, producing O₂ and four protons from the lumen. This is an oxidizing agent.





(a)

(b)



20.4 Role of the magnesium in the rubisco mechanism.

Ribulose 1,5-bisphosphate binds to a magnesium ion that is linked to rubisco by a glutamate residue, an aspartate residue, and the lysine carbamate. The magnesium ion and ribulose 1,5-bisphosphate lose a proton to form a reactive enediolate species that reacts with CO₂ to form a new carbon-carbon bond.

FIGURE 20.4 Role of the magnesium ion in the rubisco mechanism.

Ribulose 1,5-bisphosphate binds to a magnesium ion that is linked to rubisco through a glutamate residue, an aspartate residue, and the lysine carbamate. The coordinated ribulose 1,5-bisphosphate gives up a proton to form a reactive enediolate species that reacts with CO_2 to form a new carbon-carbon bond.

