Chapter 19 – Oxidative Phosphorylation

19.1 Electron-Transfer Reactions in Mitochondria

The following sub-sections are important:

* Electrons Are Funneled to Universal Electron Acceptors
* Electrons Pass Through A Series of Membrane-Bound Carriers
* Electron Carriers Function in Multienzyme Complexes. Make sure you understand what is occurring at each complex
* Mitochondrial Complexes Associate in Respirasomes
* Other Pathways Donate Electrons to the Respiratory Chain via Ubiquinone

19.2 ATP Synthesis

The following sub-sections are important:

* The Introduction
* ATP Synthase Has Two Functional Domains, FO and F1
* The Proton Gradient Drives the Release of ATP from the Enzyme Surface
* Each β-Subunit of the ATP Synthase Can Assume Three Different Conformations
* Rotational Catalysis Is Key to the Binding-Change Mechanism for ATP Synthesis
* How Does Proton Flow Through the FO Complex Produce Rotary Motion?
* The Proton-Motive Force Energizes Active Transport
* Shuttle Systems Indirectly Convey Cytosolic NADH into Mitochondria for Oxidation