CONCEPT: CHEMIOSMOSIS

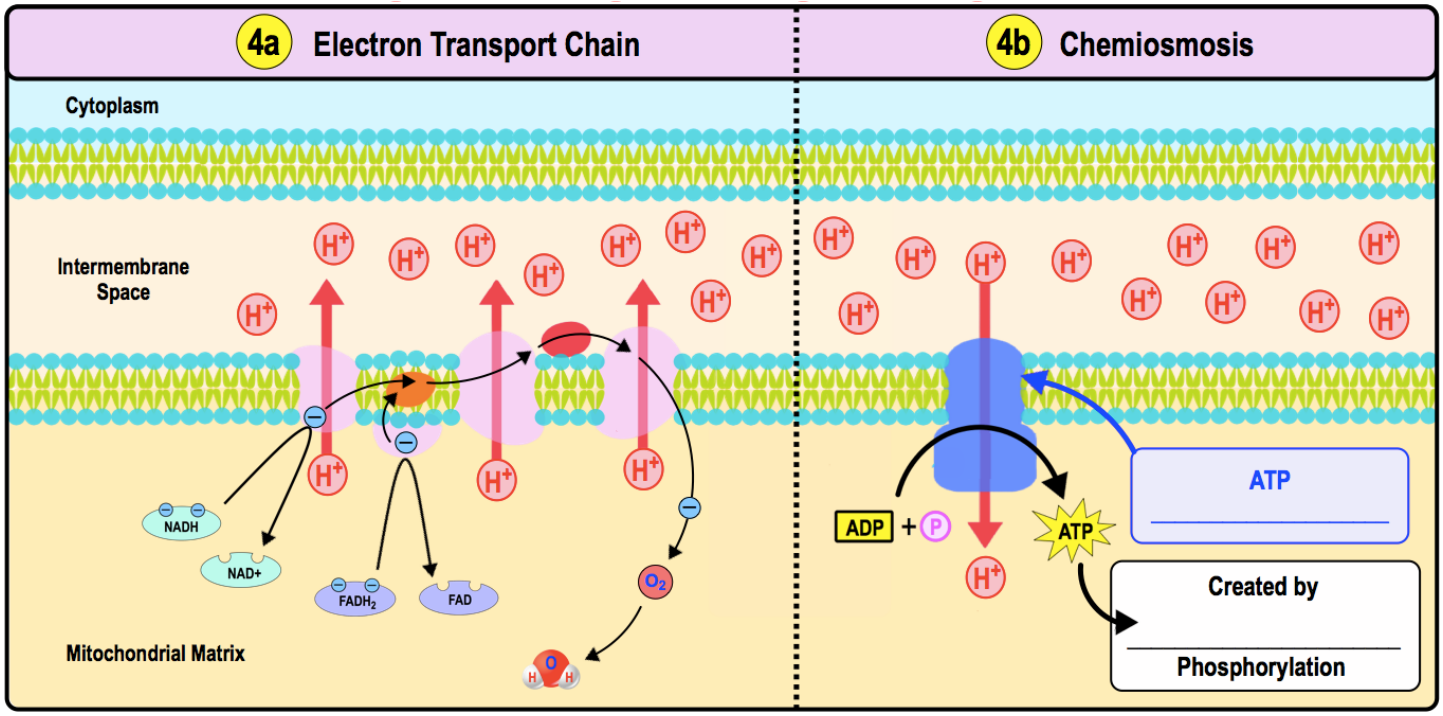
●The H^+ gradient built by the ETC has tremendous potential energy that can be captured via _____.

□ **Chemiosmosis**: the diffusion of ions across a membrane _____ their concentration gradient (high to low).

□ **ATP Synthase**: *enzyme* that facilitates chemiosmosis & synthesizes _____.

●*Recall:* **Oxidative Phosphorylation**: *ETC* redox reactions & *chemiosmosis* "powering" phosphorylation to make _____.

EXAMPLE: Oxidative Phosphorylation = ETC + Chemiosmosis.



PRACTICE: Chemiosmotic creation of ATP is driven by:

a) Phosphate transfer through the plasma membrane.

b) Potential energy of the H+ concentration gradient created by the electron transport chain.

c) Substrate-level phosphorylation in the mitochondrial matrix.

d) Large quantities of ADP in the mitochondrial matrix.

PRACTICE: The electron transport chain pumps H+ ions into which location of the mitochondria?

a) Mitochondrial intermembrane space.

b) Mitochondrial matrix.

c) Mitochondrial inner membrane.

d) The H+ ions are pumped out of the mitochondria.