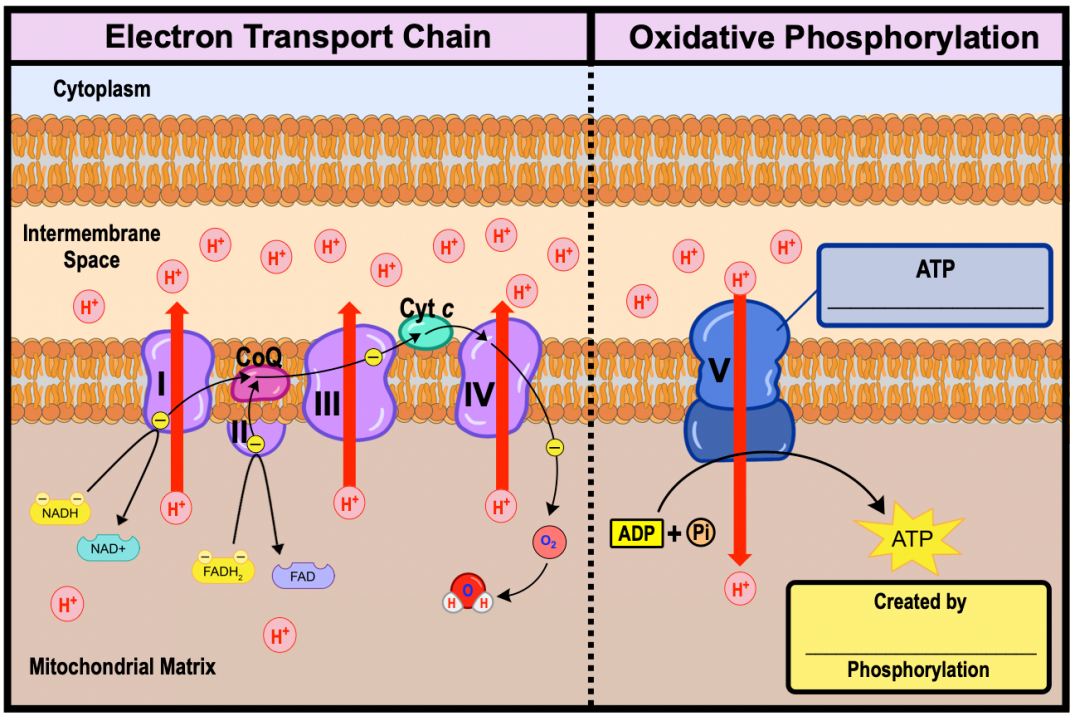
CONCEPT: OXIDATIVE PHOSPHORYLATION

- **Oxidative Phosphorylation:** synthesis of _____ from _____.
  - □ Uses potential _____ stored in the H^+ gradient built by the ETC.
- **Chemiosmosis:** the diffusion of ions across a membrane _____ their concentration gradient (_____ to _____).



- □ **ATP Synthase (V):** enzyme complex that facilitates chemiosmosis & synthesizes _____.
  - H^+ diffusion through ATP Synthase _____ energy that drives ADP phosphorylation.

- Total ATP produced by Oxidative Phosphorylation:

+ 6 NADH x ____ ATP = ____ ATP
+ 2 $FADH_2$ x ____ ATP = ____ ATP

____ ATP molecules*

EXAMPLE: The diffusion of H^+ ions from higher concentration to lower concentration:

a) Occurs at ADP Synthase complex.

b) Requires energy and is supplied by the formation of ATP.

c) Driven by ATP synthesis.

d) Provides energy that facilitates oxidative phosphorylation of ADP.

CONCEPT: OXIDATIVE PHOSPHORYLATION

PRACTICE: All of the following pump H^+ ions across the inner membrane of mitochondria except:

a) Complex I b) Complex II c) Complex III d) Complex IV e) Complex V

PRACTICE: Chemiosmotic creation of ATP is driven by which?

a) ATP Synthase complex.

b) Oxidative phosphorylation of ADP.

c) Large quantities of ADP in the mitochondrial matrix.

d) Potential energy of H^+ ion concentration gradient created by ETC.