1. (3.0 points) Answer the following questions either True or False.

A. The proton-motive force consists of both an electrical and chemical component.  
   True

B. The proton-motive force creates a gradient of protons across the inner mitochondrial membrane such that the inside of the mitochondria carries a positive charge as compared to outside the mitochondria.  
   False

C. All four complexes of the electron transport chain pump protons out of the mitochondria in order to create the proton-motive force.  
   False

D. Rotenone will inhibit electron transport in the presence of succinate.  
   False

E. The ATP synthase couples proton ejection from the mitochondria to the synthesis of ATP.  
   False

F. The terminal electron acceptor in the electron transport chain is oxygen, which gets reduced to water.  
   True

2. (1.0 point) Describe the role of coenzyme Q in the electron transport chain.

   Accepts e\textsuperscript{-} from Fe-S in complexes I + II.  
   Is lipophilic and located within the inner mitochondrial membrane.  
   Donates e\textsuperscript{-} to cytochrome b\textsubscript{562} in complex III.  
   Is recycled.

3. (1.0 point) Which component of the electron transport chain is only loosely associated with the inner mitochondrial membrane?

   Cytochrome c