

Review of chapter 18

Please draw five times of the chemical structure of ubiquinone (coenzyme Q or Q).

Please review the following concepts: **Mitochondria and its components. Electron carriers:** In addition to NAD and flavoproteins, three other types of electron-carrying molecules function in the respiration chain: ubiquinone (coenzyme Q or Q) and two types of iron-containing proteins (cytochromes and iron-sulfur proteins). The standard reduction potentials of respiratory chain and the related electron carriers. The sequence of electron carriers. The electron carriers of the respiratory chain are organized into four membrane-embedded supramolecular complexes: complex I, II, III, & IV. Mechanisms of four complexes, such as Q cycle. The energy of electron transfer is efficiently conserved in a proton gradient: the calculation. **ATP synthase:** The chemiosmotic model proposed by Peter Mitchell. ATP synthase. The mechanism. Shuttles systems for transporting NADH. **Regulation of oxidative phosphorylation and mitochondria diseases and the evolution.**

Problems 1, 3, 4, 6, 10, 11, 14, 15, 17, 18, and 20.