

MAKING CHOICES

Place your answer(s) in the space provided. Some questions may have more than one correct answer.

- _____ 1. Complete aerobic metabolism yields
 - a. 36 to 38 ATPs.
 - b. 2 ATPs from glycolysis.
 - c. 32 to 34 ATPs from electron transport and chemiosmosis.
 - d. 4 ATPs from the citric acid cycle.
 - e. 2 pyruvates.
- _____ 2. Anaerobic respiration
 - a. does not involve an electron transport chain.
 - b. is performed by certain prokaryotes.
 - c. uses an inorganic substance as the final hydrogen acceptor.
 - d. involves chemiosmosis.
 - e. may use nitrate as the final hydrogen acceptor.
- _____ 3. A facultative anaerobe
 - a. is capable of carrying out aerobic respiration.
 - b. is capable of carrying out alcohol fermentation.
 - c. is capable of producing ethanol.
 - d. is capable of producing CO₂.
 - e. requires oxygen.
- _____ 4. During oxidative phosphorylation
 - a. ATP converts to ADP.
 - b. ATP forms ADP.
 - c. most of the ATP from aerobic metabolism is produced.
 - d. the electron transport chain is directly involved.
 - e. chemiosmosis is directly involved.
- _____ 5. Production of acetyl CoA from pyruvate
 - a. is anabolic.
 - b. takes place in mitochondria.
 - c. takes place in cytoplasm.
 - d. takes place in endoplasmic reticulum.
 - e. yields CO₂ and NADH.
- _____ 6. The citric acid cycle yields
 - a. 2 H₂O and 4 CO₂.
 - b. 6 NADH.
 - c. 4 ATP.
 - d. one FADH₂.
 - e. 2 acetyl CoA.
- _____ 7. Glycolysis
 - a. generates a net profit of two ATPs.
 - b. is more efficient than aerobic respiration.
 - c. takes place in the cristae of mitochondria.
 - d. produces two pyruvates.
 - e. reduces glucose to H₂O and CO₂.
- _____ 8. ATP synthase
 - a. is a cytochrome.
 - b. converts ATP to ADP.
 - c. forms channels across the inner mitochondrial membrane.
 - d. is a transmembrane protein.
 - e. couples protons to electrons to form water.
- _____ 9. Chemiosmosis involves
 - a. flow of protons down an electrical gradient.
 - b. flow of protons down a concentration gradient.
 - c. pumping of protons into the mitochondrial matrix.
 - d. proton channels composed of electrons.
 - e. the production of ATP.
- _____ 10. In the electron transport chain
 - a. water is the final electron acceptor.
 - b. cytochromes carry electrons.
 - c. the final electron acceptor has a negative redox potential.
 - d. glucose is a common carrier molecule.
 - e. electrons gain energy with each transfer.