



QUIZ TIME

Bio- chemistry

Lec 13

Done by:

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Which of the following best describes the primary source of ATP production in the body?

- A) Substrate-level phosphorylation
- B) Oxidative phosphorylation via the respiratory chain
- C) Glycogenolysis
- D) Fermentation

Answer: B

How many high-energy phosphate bonds does ATP contain

- A) One
- B) Two
- C) Three
- D) Four

Answer: B

In substrate-level phosphorylation, ATP is produced by

- A) Directly transferring a phosphate group from a substrate to ADP
- B) Pumping protons across the mitochondrial membrane
- C) Using light energy in chloroplasts
- D) Splitting water molecules

Answer: A

Which of the following best describes anabolism?

- A) Breakdown of large molecules into smaller ones, releasing energy
- B) Synthesis of larger molecules from smaller ones, requiring energy
- C) Transfer of phosphate groups from ATP to ADP
- D) Oxidation of glucose to carbon dioxide and water

Answer: B

Which of the following is true about catabolism

- A) It requires energy input
- B) It usually occurs in the nucleus
- C) It releases energy that can be used for anabolism
- D) It is the process of photosynthesis in plants

Answer: C

Metabolism is defined as

- A) Only the breakdown of food for energy
- B) Only the synthesis of molecules in cells
- C) The sum of all chemical reactions in a living cell
- D) The release of energy from ATP

Answer: C

Which ETC complex does NOT pump protons (H^+) across the inner mitochondrial membrane?

- A) Complex I – NADH dehydrogenase
- B) Complex II – Succinate dehydrogenase
- C) Complex III – Cytochrome reductase
- D) Complex IV – Cytochrome oxidase

Answer: B

How many protons are pumped across the inner mitochondrial membrane by Complex I per 2 electrons transferred

- +A) 2 H
- +B) 4 H
- +C) 6 H
- +D) 8 H

Answer: B

Which of the following correctly pairs the ETC complex with its main function

- A) Complex III – Transfers electrons from cytochrome c to oxygen
- B) Complex IV – Transfers electrons from NADH to C
- C) cytochrome c Transfers electrons from complex III to complex IV
- D) Complex I – Transfers electrons from succinate to cytochrome c

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Answer: c

In the electron transport chain, NADH + H⁺ donates its electrons first to:

- A) Complex I
- B) Complex II
- C) Coenzyme Q
- D) Cytochrome c

Ans :A

?Which of the following statements is true about FADH₂ entry into the ETC

- A) It enters via Complex I and produces 3 ATP
- B) It enters via Complex II and produces 2 ATP
- C) It bypasses Complex II and produces 3 ATP
- D) It enters via Complex IV and produces 1 ATP

Answer: B

In ATP synthase, which subunit acts as the channel for proton (H⁺) re-entry into the mitochondrial matrix

- A) F₁ subunit
- B) β subunit
- C) Fo subunit
- D) γ subunit

Answer: C

:The P:O ratio is defined as

- A) The number of oxygen atoms reduced per molecule of ATP
- B) The number of ATP molecules produced per oxygen atom utilized in the ETC
- C) The number of phosphate bonds broken per oxygen molecule produced
- D) The number of oxygen molecules utilized per NADH

Answer: B