

Cellular Respiration Quiz Answer Key PDF

Cellular Respiration Quiz Answer Key PDF

Disclaimer: The cellular respiration quiz answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

How does the Krebs Cycle contribute to the production of ATP?

The Krebs Cycle contributes to the production of ATP by generating NADH and FADH₂, which are then used in the electron transport chain to produce ATP.

Which molecule is the final electron acceptor in the electron transport chain?

- A. Carbon dioxide
- B. Glucose
- C. Oxygen ✓**
- D. Water

What is the primary purpose of cellular respiration?

- A. To produce glucose
- B. To generate ATP ✓**
- C. To store oxygen
- D. To create carbon dioxide

What are the end products of aerobic respiration?

- A. ATP ✓**
- B. Water ✓**
- C. Oxygen
- D. Carbon dioxide ✓**

Which of the following is a byproduct of the Krebs Cycle?

- A. Oxygen
- B. Lactic acid

C. Carbon dioxide ✓

D. Ethanol

What are the characteristics of anaerobic respiration?

A. Occurs without oxygen ✓

B. Produces lactic acid in animals ✓

C. Generates more ATP than aerobic respiration

D. Produces ethanol in yeast ✓

Which of the following are true about the electron transport chain?

A. It occurs in the cytoplasm

B. It produces the most ATP in cellular respiration ✓

C. It requires oxygen ✓

D. It is part of anaerobic respiration

What are the roles of ATP in the cell?

A. Energy storage ✓

B. Structural component

C. Energy transfer ✓

D. Electron carrier

Which process occurs in the absence of oxygen?

A. Aerobic respiration

B. Glycolysis

C. Anaerobic respiration ✓

D. Photosynthesis

Explain the relationship between photosynthesis and cellular respiration in the context of energy flow in ecosystems.

Photosynthesis captures sunlight to produce glucose and oxygen, while cellular respiration breaks down glucose to release energy, carbon dioxide, and water, creating a cycle that sustains life in ecosystems.

Explain the overall equation for cellular respiration and its significance.

The overall equation for cellular respiration is $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{energy (ATP)}$.

What is the net gain of ATP molecules from glycolysis?

- A. 1 ATP
- B. 2 ATP ✓**
- C. 4 ATP
- D. 6 ATP

In which part of the mitochondria does the Krebs Cycle occur?

- A. Cytoplasm
- B. Inner membrane
- C. Outer membrane
- D. Mitochondrial matrix ✓**

Where does glycolysis occur in the cell?

- A. mitochondrial matrix
- B. Cytoplasm ✓**
- C. Inner mitochondrial membrane
- D. Nucleus

Describe the role of oxygen in cellular respiration and what happens in its absence.

Oxygen plays a crucial role in cellular respiration by serving as the final electron acceptor in the electron transport chain, facilitating the production of ATP. Without oxygen, cells undergo anaerobic respiration, resulting in lower ATP yield and the production of byproducts like lactic acid or ethanol.

Compare and contrast aerobic and anaerobic respiration in terms of efficiency and byproducts.

Aerobic respiration is more efficient, producing 36-38 ATP and byproducts of CO₂ and water, while anaerobic respiration produces only 2 ATP and byproducts like lactic acid or ethanol.

What is the main function of NADH and FADH₂ in cellular respiration?

- A. To break down glucose
- B. To carry electrons to the electron transport chain ✓**
- C. To produce carbon dioxide
- D. To synthesize glucose

Which molecules are electron carriers in cellular respiration?

- A. NADH ✓**
- B. FADH₂ ✓**
- C. ATP
- D. ADP

Which of the following are stages of cellular respiration?

- A. Glycolysis ✓**
- B. Krebs Cycle ✓**
- C. Calvin Cycle
- D. Electron Transport Chain ✓**

Discuss how cellular respiration is regulated within the cell.

Cellular respiration is regulated through various mechanisms including allosteric regulation of key enzymes, substrate availability, and feedback inhibition, ensuring that ATP production meets the energy demands of the cell.