



KREBS CYCLE ✨✨

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1. The Product Essential for Oxidative Phosphorylation in the Krebs Cycle is _____

- (a) NADPH and ATP
- (b) Acetyl CoA
- (c) CO₂ and oxaloacetate
- (d) NADH and FADH₂

Answer: (d)

2. A Single-Molecule of Glucose Generates _____ Molecules of Acetyl CoA, Which Enters the Krebs Cycle.

- (a) 4
- (b) 3
- (c) 2
- (d) 1

Answer: (c)

3. _____ Accepts Hydrogen from Malate

- (a) FAD
- (b) NAD
- (c) NADP
- (d) FMN

Answer: (b)

4. Which of the Intermediate of the Krebs Cycle Is Utilised in the Formation of Amino Acids

- (a) Citric acid
- (b) Malic acid
- (c) Isocitric acid
- (d) α -ketoglutaric acid

Answer: (d)

5. Krebs Cycle Takes Place in Aerobic Respiration Due To

- (a) Electron transport chain requires aerobic conditions to operate
- (b) Oxygen is a reactant
- (c) Oxygen has a catalytic function
- (d) All of the above

Answer: (a)

6. Acetyl CoA is Formed from Pyruvate By _____ Reaction

- (a) Dehydration
- (b) Reduction
- (c) Oxidative decarboxylation
- (d) Dephosphorylation

Answer: (c)

7. Which of the Following is Not Formed During the Krebs Cycle

- (a) Lactate
- (b) Isocitrate
- (c) Succinate
- (d) Both (a) and (b)

Answer: (a)

8. The Arrival of Pyruvate Into the TCA Cycle Is Inhibited by the Presence of a High Cellular Concentration Of

- (a) Pyruvate
- (b) NADH
- (c) Coenzyme A
- (d) AMP

Answer: (b)

9. ATP Synthase is Powered By

- (a) Coenzyme motive force
- (b) CAMP
- (c) Proton gradient
- (d) GTP hydrolysis

Answer: (c)

10. FAD is Reduced in Which of the Reactions of the Krebs Cycle?

- (a) Isocitrate to oxaloacetate
- (b) Succinyl CoA to Succinate
- (c) Fumarate to malate
- (d) Succinate to fumarate

Answer: (d)

Fill In Questions

- 11) _____ is an intermediate between citrate and isocitrate in the citric acid cycle.
- 12) _____ is the metabolic intermediate that condenses with oxaloacetate to form citrate.
- 13) During the oxidation of isocitrate, the intermediate that is decarboxylated to form α -ketoglutarate is _____.
- 14) In eukaryotes, the enzymes of the citric acid cycle are located in the _____.
- 15) One FAD, one GTP and _____ NADH are produced when one acetyl group is oxidized in the citric acid cycle.

Answers



Multiple Choice Questions

- 16) The two main purposes of the citric acid cycle are:
- A) synthesis of citrate and gluconeogenesis.
 - B) degradation of acetyl-CoA to produce energy and to supply precursors for anabolism.
 - C) degradation of pyruvate to produce energy and to supply precursors for anabolism.
 - D) degradation of glucose to produce energy and to supply precursors for anabolism.
 - E) degradation of pyruvate to produce energy and to synthesize oxaloacetate for gluconeogenesis
- 17) The isomerization of citrate to isocitrate:
- A) is the only unnecessary step of the citric acid cycle.
 - B) protects cells from the toxic effects of arsenite ion.
 - C) converts a tertiary alcohol, which cannot easily be oxidized, to a secondary alcohol that can be oxidized.
 - D) is a major regulatory step for the citric acid cycle.
 - E) is an oxidation reaction.
- 18) Which of the following causes pyruvate dehydrogenase kinase to catalyze the phosphorylation and inactivation of E_1 in the pyruvate dehydrogenase complex?
- A) elevated concentrations of NADH and ATP
 - B) elevated concentrations of NAD^+ and ADP
 - C) Ca^{2+}
 - D) insulin
 - E) elevated concentrations of acetyl-CoA

Answers:

Fill in questions :

1. Aconitate
.....
2. Acetyl CoA
3. Oxalosuccinate (not required)
.....
4. Mitochondrial matrix
5. 2

MCQs:

1. B
2. C
3. A

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