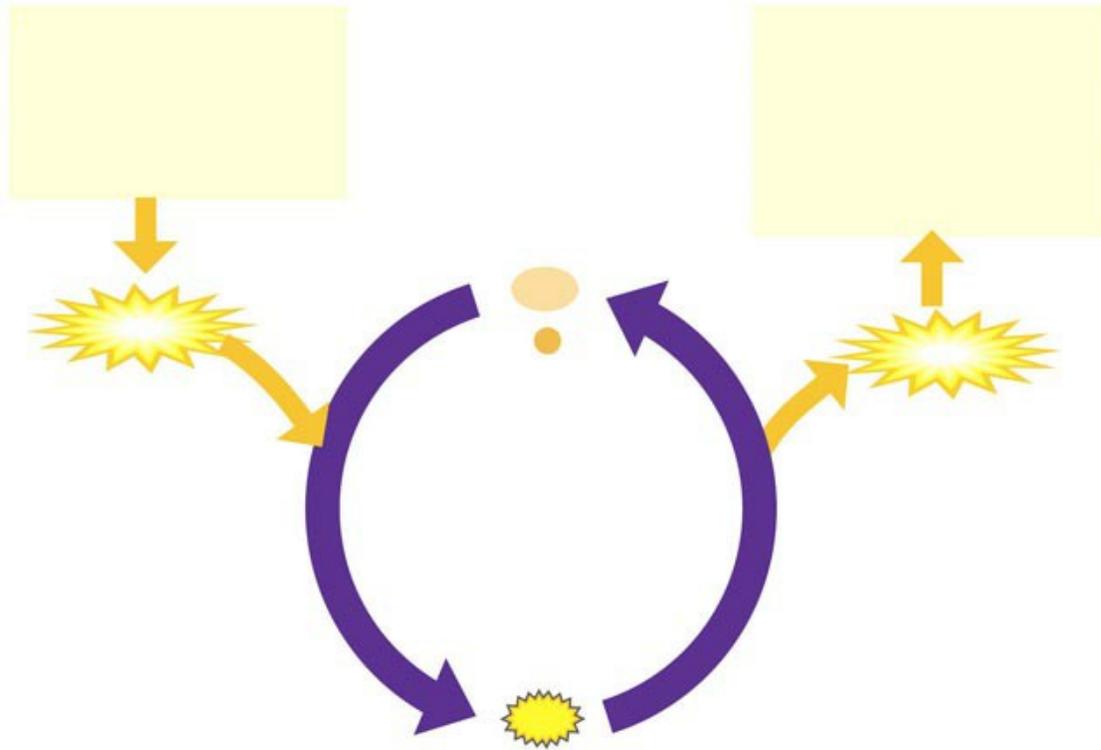


Question 1 (1.5 points)

Below is a picture of the ATP Cycle. Which statement explains why the left side of the cycle is endergonic?

Extra Content:



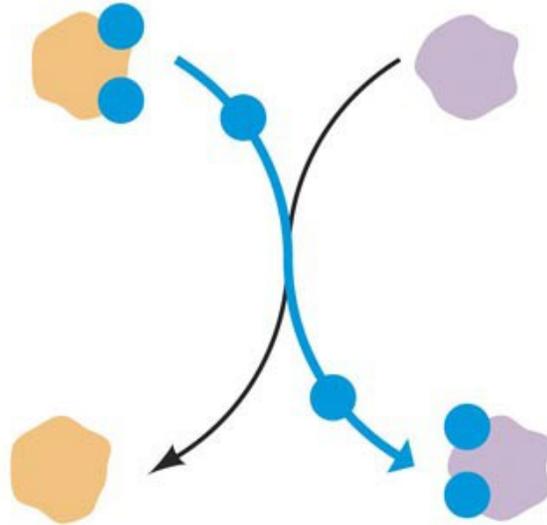
PRINCIPLES OF LIFE, Figure 6.1
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- A. Because there is a positive change in energy, in other words energy is added to the system
- B. Because there is a negative change in energy, in other words, energy is taken out of the system
- C. Because hydrolysis, or digestion of the ATP molecule is represented on the left side
- D. Because I looked at the picture in my book and it gave me the right answer, which was actually the right thing to do if you didn't know, but is a poor answer all the same.

Question 2 (1.5 points)

Which statement best explains the redox reaction pictured in the diagram

Extra Content:



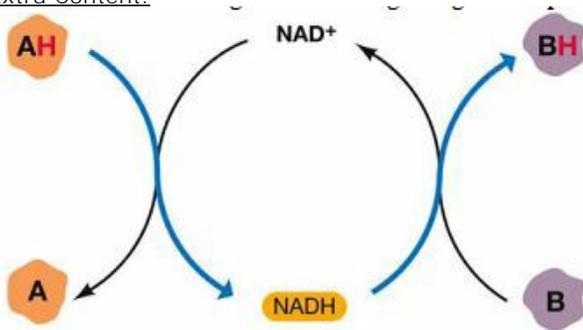
PRINCIPLES OF LIFE, In-Text Art, Ch. 6, p. 102 (2)
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- A. The oxidizing agent is transferring electrons to the reducing agent and thus gets reduced
- B. The molecule on the left is being reduced after it donates electrons to the molecule on the right
- C. The reducing agent transferred electrons to the oxidizing agent (which is reduced)
- D. Electrons are transferred from one molecule to the other and thus one is probably oxidized and the other must be reduced, by deductive reasoning obviously, and such as, I think that is correct, such as, the right answer

Question 3 (1.5 points)

Which statement best describes the coupled reaction below.

Extra Content:



- A. Molecule A is receiving energy from molecule B. It is transferred to A via NADH
- B. Molecule B is Receiving energy from molecule A. The energy is transferred to B via NADH
- C. None of these reactions shown will require an enzyme to perform the task
- D. There is no energy transferred here because electrons are not being transferred, just hydrogens

Question 4 (1.5 points)

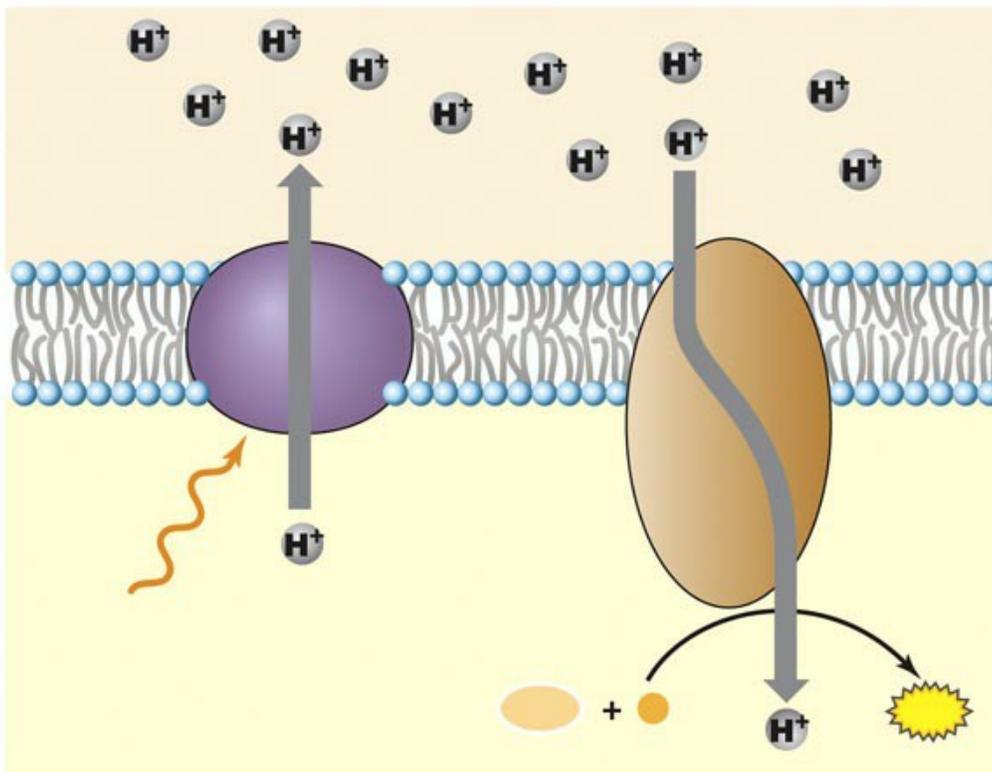
What is the function of NADH, and FADH₂

- A. They provide a carrier molecule that can accept electrons that are released when glucose is oxidized.
- B. They deliver energy in the form of electrons to the Electron Transport Chain
- C. They link reactions that might occur in different physical places in the cell, e.g., glycolysis in the cytoplasm and the oxidative phosphorylation in the mitochondrion
- D. None of these answers are correct and I am appalled that you tried to trick me with all of these answers that were close to right
- E. All of these are functions of the Electron Carriers listed in the question

Question 5 (1.5 points)

BE CAREFULL WITH THIS ONE. Which of the choices properly completes the following sentence? The generation of an H⁺ gradient across the mitochondrial inner membrane _____ energy that is provided by _____. The synthesis of ATP is coupled to the _____ flow of H⁺ down the gradient.

Extra Content:



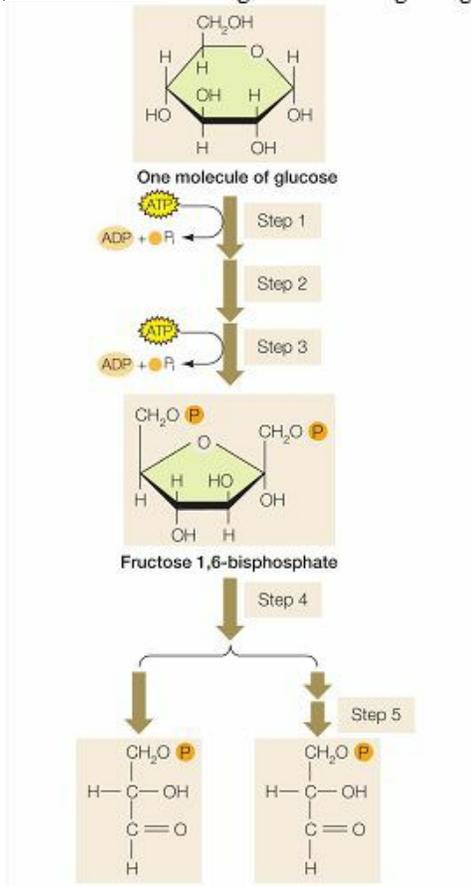
PRINCIPLES OF LIFE, Figure 6.5 (Part 1)
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- A. Requires; Oxidation-Reduction Reactions; Endergonic
- B. Liberates; Oxidation-Reduction Reactions; Exergonic
- C. Requires; ATP Hydrolysis; Exergonic
- D. Requires; Oxidation-Reduction; Exergonic
- E. Liberates; ATP hydrolysis; Energonic

Question 6 (1.5 points)

Which statement best explains why the glucose is able to be split in this picture

Extra Content:



- A. After ATP is produced in process, the fructose is able to be split
- B. The investment of ATP couples the sugar with Phosphate and thus energy. This destabilizes the molecule
- C. Fructose will split on its own, time just needs to pass to wait for this fructose to split
- D. The phosphate groups are both negative so they repel each other and split the molecule

Question 7 (1.5 points)

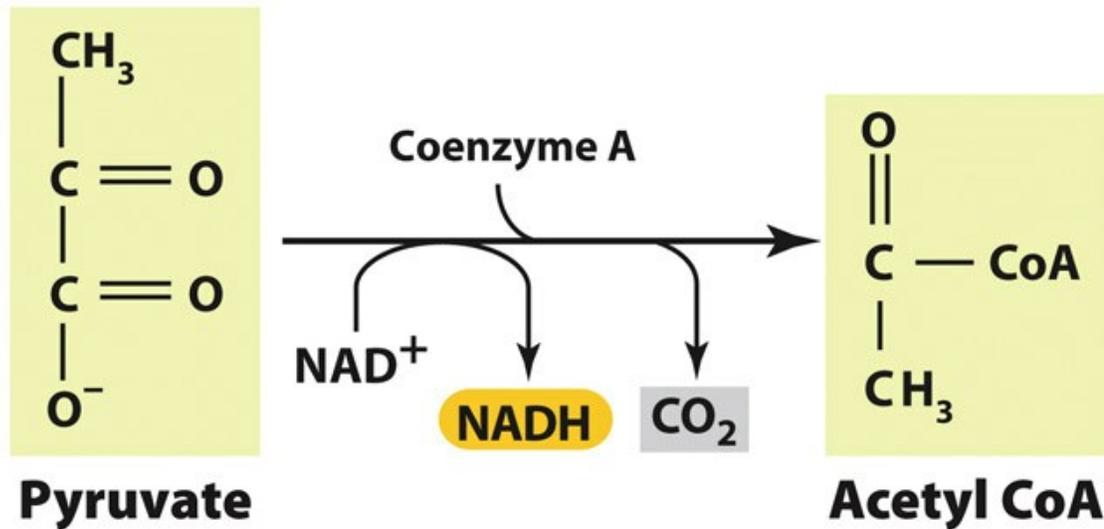
Which answer correctly lists the investments and products of Glycolysis

- A. 2 consumed ATP
4 produced ATP
2 NADH
2 Pyruvate
- B. 4 produced ATP
4 total NADH
2 G3P
- C. 2 Net ATP
2 NADH
2 G3P
- D. 2 Hamburger Combo meal
Chocolate shake substitute for drink
1 apple pie

Question 8 (1.5 points)

Which statement does NOT occur in the picture of pyruvate oxidation below

Extra Content:



PRINCIPLES OF LIFE, In-Text Art, Ch. 6, p.108 (1)
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- A. Pyruvate from the Cytoplasm is Oxidized to Acetyl CoA in the Mitochondrion
- B. Coenzyme A is added to Replace the Carbon from Pyruvate that was lost as CO₂ so that it doesn't lose energy
- C. NAD⁺ is Reduced to NADH using the energy from hydrolysis of CO₂ from the Pyruvate
- D. Pyruvate is Oxidized when CO₂ is broken away from the carbon chain on pyruvate

Question 9 (1.5 points)

Which answer correctly lists the Products of the Krebs Cycle from the addition of ONE Acetyl CoA

- A. 6 NADH
2 ATP
2 FADH₂
4 CO₂
- B. 3 NADH
1 ATP
1 FADH₂
2 CO₂
- C. 9 NADH
6 ATP
1 FADH₂
2 CO₂
- D. I really have no frickin' idea. My notes are a jumbled mess and reading the book is like reading a Japanese dictionary

Question 10 (1.5 points)

Oxaloacetate is regenerated every time the Krebs cycle turns. It's function is to collect the Two Carbons from Acetyl CoA that originally came from Glucose. How many Carbons make up Oxaloacetate, and thus how many carbons continue to spin through the cycle?

- A. 6
- B. 2
- C. 8
- D. 4

