

This print-out should have 86 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

EEM 02

001 10.0 points

Water held back by a dam represents what kind of energy?

1. Kinetic
2. Hydroelectric
3. At times, all of these
4. Potential
5. Irrigation

EEM 03

002 10.0 points

Which of the following represents potential energy?

1. All of these
2. Chemical bonds
3. Electric charge imbalance
4. Concentration gradient
5. Both Chemical bonds and Concentration gradient

EEM 06

003 10.0 points

The first law of thermodynamics states that the total energy in the universe is

1. constant.
2. being converted to matter.
3. decreasing.
4. increasing.

5. being converted to free energy.

EEM 07

004 10.0 points

In any system, the total energy includes usable and unusable energy. The unusable energy is a measure of the disorder of the system and is referred to as

1. thermodynamics.
2. entropy.
3. equilibrium.
4. enthalpy.
5. free energy.

EEM 10

005 10.0 points

The standard free energy change for the hydrolysis of ATP to ADP + P_i is -7.3 kcal/mol. From this information one can conclude that

1. the reaction requires energy.
2. the reaction is exergonic.
3. the reaction will never reach equilibrium.
4. the free energy of ADP and phosphate is higher than the free energy of ATP.
5. the reaction is endergonic.

EEM 14

006 10.0 points

How does the second law of thermodynamics apply to organisms?

1. Reactions occur only with an input of energy.
2. As energy transformations occur, free energy increases and unusable energy decreases.

3. It does not apply to organisms; the complexity of organisms contradicts the second law.

4. To maintain order, life requires a constant input of energy.

5. The potential energy of ATP is converted to kinetic energy such as muscle contractions.

EEM 19

007 10.0 points

In glycolysis, the exergonic reaction 1,3-diphosphoglycerate \rightarrow 3-phosphoglycerate is coupled to the reaction $\text{ADP} + \text{P}_i \rightarrow \text{ATP}$. Which of the following is most likely to be true about the reaction $\text{ADP} + \text{P}_i \rightarrow \text{ATP}$?

1. There is a large decrease in free energy.
2. Temperature will not affect the rate constant of the reaction.
3. The reaction is spontaneous.
4. The reaction never reaches equilibrium.
5. The reaction is endergonic.

EEM 21

008 10.0 points

Which of the following statements about ATP is true?

1. An active cell requires about 100 molecules of ATP per second.
 2. The hydrolysis of ATP is exergonic.
 3. ATP releases a relatively small amount of energy when hydrolyzed.
 4. ATP consists of adenine bonded to deoxyribose.
 5. On average, ATP is consumed within one second of its formation.
-

EEM 25

009 10.0 points

Which of the following is an example of an exergonic reaction?

1. Phagocytosis
2. The beating cilia of a protozoan
3. Cellular respiration
4. The Na^+ - K^+ pump
5. Receptor-mediated endocytosis

EEM 31

010 10.0 points

The hydrolysis of sucrose to glucose and fructose is exergonic. However, if sucrose is dissolved in water and the solution is kept overnight at room temperature, there is no detectable conversion to glucose and fructose. Why?

1. This is a condensation reaction.
2. The free energy of the products is higher than the free energy of the reactants.
3. The change in free energy of the reaction is negative.
4. The change in free energy of the reaction is positive.
5. The activation energy of the reaction is high.

Metabolism 07

011 10.0 points

Which of the following is the correct description of ATP (adenosine triphosphate)?

1. a protein made of three amino acids attached to phosphates
2. a phospholipid made of phosphate and diglyceride

3. a simple sugar with an amino acid and phosphates attached

4. a steroid similar to cholesterol attached to phosphates

5. a simple sugar with a nitrogenous base and phosphates attached

Metabolism 12

012 10.0 points

Which of the following form of energy is the most randomized?

1. kinetic
2. light
3. chemical bond
4. electricity
5. thermal (heat)

Metabolism 13

013 10.0 points

Which of the following reactions would result in a decrease of the entropy within a system?

1. photosynthesis
2. respiration
3. hydrolysis
4. digestion
5. catabolism

Metabolism 15

014 10.0 points

Why are biological organisms complex and organized in spite of the energy transfer and transformation which normally increases randomness?

1. The organisms are open systems.
2. They are exceptions to the first and sec-

ond law of thermodynamics.

3. They use more efficient enzymes.

4. The organisms are closed systems.

5. They have emergent properties different from other non-living things.

Metabolism 29

015 10.0 points

Why is ATP an important energy molecule?

1. ATP is an essential part of DNA.
2. Hydrolysis of its phosphate groups releases energy the cell can use.
3. ATP is readily available in the abiotic environment.
4. It energizes other molecules by accepting phosphate groups.
5. Synthesis of APT releases energy the cell can use.

Raven8 25

016 10.0 points

The term oxidation is derived from the name of the element oxygen.

This is reasonable, because oxygen

1. can be oxidize by accepting electrons.
2. is present everywhere.
3. can react chemically readily in its gas state.
4. attracts electrons very strongly.
5. contains more electrons than are needed.

Raven8 26

017 10.0 points

When an atom or molecule gains one or more electrons, it is said to be

1. reduced.
2. activated.
3. oxidized.
4. polarized.
5. energized.

Raven8 29

018 10.0 points

As energy is being reconverted through the many forms, it is continuously lost as

1. electricity.
2. sound.
3. chemical energy.
4. light.
5. heat.

Raven8 43

019 10.0 points

ATP gives up energy when it is converted to

1. NADP.
2. ADP and phosphate.
3. RNA.
4. DNA.
5. NADH.

GA SB1 02

020 10.0 points

Scientists are trying to determine the function of an organelle in a plant cell. They observe that water and carbon dioxide enter the organelle, and oxygen and glucose exit the organelle. This organelle is most likely

1. a ribosome.

2. a chloroplast.
3. a nucleus.
4. an endoplasmic reticulum.
5. a mitochondria.

GA SB1 37

021 10.0 points

Which statement best explains why a tree may continue to carry out photosynthesis in the dark?

1. The tree is using different wavelengths of light for photosynthesis in the dark.
2. Darkness is required for the light-independent reactions to occur.
3. Photosynthesis does not require sunlight to occur.
4. Products of the light-dependent reactions are still available for use.

GA SB1 48

022 10.0 points

Leaves contain openings known as stomata, which allow gas exchange with the outside environment. Which phrase best represents the net flow of gases involved in photosynthesis that would go through a leaf's stomata on a sunny day?

1. Carbon dioxide and oxygen move in while ozone moves out.
2. Carbon dioxide moves in while oxygen moves out.
3. Water and ozone move in while carbon dioxide moves out.
4. Oxygen moves in while nitrogen moves out.

GA SB1 54

023 10.0 points

Which word equation represents the process of photosynthesis?

1. carbon dioxide + water \rightarrow glucose + oxygen
2. glucose + oxygen \rightarrow carbon dioxide + water
3. glucose \rightarrow alcohol + carbon dioxide
4. maltose + water \rightarrow glucose + glucose

Photosynthesis-KS1**024 10.0 points**

Why do plants use visible (light) part of the electromagnetic spectrum to do photosynthesis and not the areas of spectrum with shorter (UV and below) or longer wavelength (IR and above)?

1. Visible light has the optimum level of energy and safety to perform photosynthesis.
2. Visible spectrum is weaker than IR and safer than UV spectrum.
3. Visible spectrum is preferred by the proteins in Calvin cycle.
4. UV light and IR spectrum are more damaging than visible light.

Photosynthesis 03**025 10.0 points**

What are the products that result from the light reactions of photosynthesis?

1. CO₂ and glucose
 2. ATP and NADPH
 3. H₂O and O₂
 4. ADP, P_i, and NADP⁺
 5. electrons and H⁺
-

Photosynthesis 09**026 10.0 points**

Name the color of light that is least effective in photosynthesis.

1. red
 2. blue
 3. green
 4. orange
 5. yellow
-

Photosynthesis 55**027 10.0 points**

The light reactions happen in/on _____ and the Calvin cycle happens in/on _____.

1. chloroplast, cytoplasm
 2. inner membrane, matrix
 3. thylakoid, stomata
 4. stoma, thylakoid
 5. thylakoid, stroma
-

Raven10 17**028 10.0 points**

Flattened sacs of internal membranes which have proteins embedded in them and are associated with photosynthesis are called

1. chloroplasts.
 2. photosystems.
 3. the stroma.
 4. thylakoids.
 5. cristae.
-

Raven10 18**029 10.0 points**

In green plant photosynthesis, the electron donor for the light-dependent reaction is

1. RuBP.
2. water.
3. oxygen.
4. chlorophyll II.
5. carbon dioxide.

Raven10 47

030 10.0 points

Most atmospheric oxygen occurs as a result of photosynthesis.

From which molecule is the oxygen derived?

1. glucose
2. carbon dioxide
3. ATP
4. water
5. chlorophyll

StarrC 06 16

031 10.0 points

What is a photosystem?

1. a fluid-filled space
2. a cluster of light-trapping pigments
3. a collection of membrane-bound carbohydrates
4. a collection of digestive enzymes
5. a collection of enzymes in a root cell.

Sunlight 06

032 10.0 points

When a suspension of algae is incubated in a flask in the presence of light and CO₂ and then transferred to the dark, the reduction

of 3-phosphoglycerate to glyceraldehyde 3-phosphate is blocked. This reaction stops when the algae are placed in the dark because

1. the reaction requires CO₂.
2. the reaction requires ATP and NADPH + H⁺.
3. the reaction requires O₂.
4. chlorophyll is not synthesized in the dark.
5. the reaction is exergonic.

Holt Bio 05 07

033 10.0 points

Electrons in pigment molecules become excited

1. during the Calvin cycle.
2. independent of any outside stimulus.
3. during light-independent reactions.
4. when water molecules are broken down.
5. when light strikes a thylakoid.

Photosynthesis 10

034 10.0 points

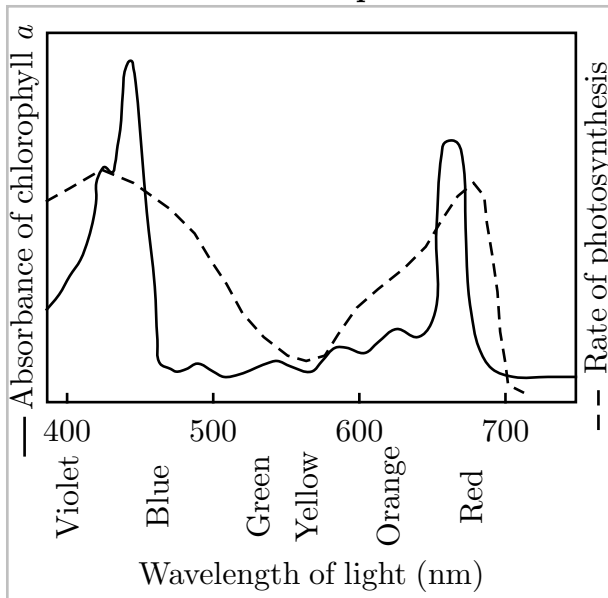
Describe the main role of the antenna pigment molecules located in the thylakoid membranes.

1. to pass electrons to ferredoxin and then NADPH
2. to concentrate photons inside the stroma
3. to split water and release oxygen to the reaction-center chlorophyll
4. to synthesize ATP from ADP and Pi
5. to harvest photons and transfer light energy to the reaction-center chlorophyll

Photosynthesis 12**035 10.0 points**

Describe the primary function of the light reactions of photosynthesis.

1. production of energy-rich glucose from carbon dioxide and water
2. use of ATP to make glucose
3. production of NADPH used in respiration
4. conversion of light energy to the chemical energy of PGAL
5. production of ATP and NADPH

Photosynthesis 42**036 10.0 points**

The solid line in the given figure shows the absorption spectrum for chlorophyll *a* and the dashed line shows the action spectrum for photosynthesis.

Why the two curves are different?

1. Other pigments absorb light in addition to chlorophyll *a*.
2. Bright sunlight destroys photosynthetic pigments.

3. The two lines are probably the result of inaccurate measurements.

4. Anaerobic bacteria probably interfered with light absorption.

5. Green and yellow wavelengths inhibit the absorption of red and blue wavelengths.

Phototsynthesis 47**037 10.0 points**

Why is cyclic electron flow (at Photosystem I) important for photosynthesis?

1. Because light reactions cannot happen without Calvin cycle.

2. Because non-cyclic electron flow produces more NADPH than ATP, while the Calvin cycle consumes less ATP than NADPH.

3. Because non-cyclic electron flow produces ATP and NADPH in equal quantities, while the Calvin cycle consumes more ATP than NADPH.

4. Because non-cyclic electron flow produces no ATP while the Calvin cycle needs ATP.

5. Because non-cyclic electron flow produces ATP and NADPH in equal quantities, while the Calvin cycle consumes less ATP than NADPH.

Phototsynthesis 51**038 10.0 points**

Suppose a thylakoid is somehow punctured so that the interior of the thylakoid is no longer separated from the stroma. This damage will have the most direct effect on which of the following processes?

1. the synthesis of ATP due to chemiosmosis

2. the reduction of NADP^+

3. the splitting of water

4. the flow of electrons from photosystem II to photosystem I

5. the absorption of light energy by chlorophyll

Raven10 29

039 10.0 points

What is common to both cellular respiration and the light reactions of photosynthesis?

1. Mitochondria are essential organelles.
2. Oxygen is one of the byproducts.
3. Light is required.
4. chemiosmotic formation of ATP
5. Electrons are transferred to glucose.

Raven10 51

040 10.0 points

Carotenoids are important to many plants because these pigments can

1. store electrons for use during the “dark” reaction of photosynthesis.
2. remove carbon dioxide from the air.
3. absorb wavelengths of light that neither chlorophyll *a* nor *b* can absorb.
4. capture UV radiation that is harmful to the DNA in the nucleus of plant cells.
5. absorb water so that hydrolysis can be carried out in the chloroplasts.

Starr 07 06

041 10.0 points

What is the role of NADPH in photosynthesis?

1. It fixes atmospheric carbon.
2. It carries hydrogen and electrons from one reaction site to another.

3. It produces ATP.

4. It converts light energy to chemical energy.

5. It forms ATP by phosphate group transfers.

Starr 07 11

042 10.0 points

Oxygen is formed during

1. the cyclic pathway of ATP formation.
2. the noncyclic pathway of ATP formation.
3. the dark reactions.
4. the Calvin-Benson cycle.
5. photorespiration.

StarrC 06 11

043 10.0 points

According to the theory of chemiosmosis, ATP is synthesized with energy released by

1. the cohesivity of water.
2. the diffusion of hydrogen ions down a concentration gradient.
3. pumping hydrogen ions against a concentration gradient.
4. the hydration of hydrogen ions.
5. the electric potential across an inner mitochondrial membrane.

Sunlight 08

044 10.0 points

When white light strikes a blue pigment, blue light is

1. used to synthesize ATP.

2. absorbed.
3. reduced.
4. converted to chemical energy.
5. scattered or transmitted.

Sunlight 10
045 10.0 points

Plants are green because

1. plants possess green pigment.
2. chlorophylls absorb blue and orange-red wavelengths of light and reflect green light.
3. energized chlorophyll a emits green light.
4. chloroplasts transmit green light.
5. chlorophylls absorb green light.

Sunlight 12
046 10.0 points

When a photon is absorbed by a molecule, the photon

1. None of these
2. loses its ability to generate any energy.
3. causes a change in the velocity of the wavelengths.
4. raises the molecule from a ground state of low energy to an excited state.
5. affects the molecule in ways that are not clearly understood.

Sunlight 16
047 10.0 points

How do red and blue light differ from one another?

1. They have a different number of photons in each quantum.

2. They differ in intensity.

3. Red is radiant, whereas blue is electromagnetic.

4. Their wavelengths are different.

5. They differ in duration.

Photosynthesis 20
048 10.0 points

How do you account for the fact that the number of ATP molecules consumed by the Calvin cycle is 30,000 compared to 20,000 of NADPH?

1. chlorophyll
2. photosystem II
3. noncyclic electron flow
4. cyclic electron flow
5. photosystem I

Photosynthesis 26
049 10.0 points

How are the light reactions related to the Calvin cycle?

1. The light reactions provide the Calvin cycle with oxygen for electron flow, and the Calvin cycle provides the light reactions with water to split.

2. The light reactions provide ATP and NADPH to the Calvin cycle, and the cycle returns ADP, P_i , and $NADP^+$ to the light reactions.

3. There is no relationship between the light reactions and the Calvin cycle.

4. The light reactions supply the Calvin cycle with CO_2 to produce sugars, and the Calvin cycle supplies the light reactions with sugars to produce ATP.

5. The light reactions provide ATP and NADPH to the carbon fixation step of the Calvin cycle, and the cycle provides water and electrons to the light reactions.

Photosynthesis 34
050 10.0 points

Which of the following statements describes the primary function of the Calvin cycle in green plants?

1. use ATP to release carbon dioxide
2. split water and release oxygen
3. use NADPH to release carbon dioxide
4. transport RuBP out of the chloroplast
5. synthesize simple sugars from carbon dioxide

Photosynthesis 41
051 10.0 points

In which of the following structures does the Calvin cycle of photosynthesis take place?

1. thylakoid membrane
2. stroma of the chloroplast
3. cytoplasm surrounding the chloroplast
4. outer membrane of the chloroplast
5. chlorophyll molecule

StarrC 06 08
052 10.0 points

Which of the following takes place during the light-independent reactions of photosynthesis?

1. photolysis
2. ATP formation
3. oxygen production

4. carbon dioxide fixation

5. NADPH formation

Sunlight 52
053 10.0 points

After the removal of carbon, the oxygen in CO₂ ends up

1. attached to carbon and hydrogen to form sugar (G3P).
2. as rubisco.
3. attached to hydrogen to form water.
4. in the soil.
5. as atmospheric oxygen.

GA SB1 36
054 10.0 points

In animal cells, the energy to convert ADP to ATP comes directly from

1. hormones (like testosterone).
2. sunlight.
3. inorganic molecules (like table salt).
4. organic molecules (like sugar).

GA SB1 43
055 10.0 points

Where do the final steps of aerobic cellular respiration occur?

1. inside the mitochondria
2. throughout the cytoplasm
3. on the surface of the ribosomes
4. along the endoplasmic reticulum

GA SB1 46
056 10.0 points

Muscle cells in athletes often have more mitochondria than do muscle cells in nonathletes. Based on this observation, it can be inferred that the muscle cells in athletes

1. have nuclei that contain more DNA than do the muscle cells of non-athletes.
2. reproduce less frequently than do the muscle cells of non-athletes.
3. have a greater demand for energy than do the muscle cells of non-athletes.
4. have a smaller demand for cell proteins than do the muscle cells of non-athletes.

GA SB1 59

057 10.0 points

Cellular respiration occurs in which type of organism?

1. autotrophs only
2. decomposers only
3. heterotrophs only
4. all organisms

Harvest 01

058 10.0 points

ATP is

1. the molecule all living cells rely on to do work.
2. a short-term energy-storage compound.
3. the cell's principal compound for energy transfers.
4. synthesized within mitochondria.
5. All of these

Raven9 15

059 10.0 points

What electron carrier is used to harvest en-

ergy from glucose molecules in a series of gradual steps in the cytoplasm?

1. ATP
2. NAD⁺
3. cyclic AMP
4. NADH
5. pyruvate

Raven9 53

060 10.0 points

Which statement accurately reflects the process of glycolysis?

1. Glycolysis is most likely one of the earliest of all biochemical reaction to evolve. It does not use molecular oxygen, and all its reactions occur free in the cytoplasm.
2. Glycolysis is most likely one of the earliest of all biochemical reaction to evolve. It uses molecular oxygen; however, it occurs in aerobic environments.
3. Glycolysis is most likely one of the earliest of all biochemical reactions to evolve. It uses molecular oxygen; however, it occurs in anaerobic environments.
4. Glycolysis is most likely one of the earliest of all biochemical reaction to evolve. It uses molecular oxygen and occurs in the mitochondria.
5. Glycolysis is most likely one of the earliest of all biochemical reaction to evolve. It uses molecular oxygen and occurs in the cytoplasm.

Respiration 02

061 10.0 points

Which of the following describes the fate of oxygen utilized directly during cellular respiration?

1. the phosphorylation of ADP
2. the citric acid cycle
3. accepting electrons at the end of the electron transport chain
4. glycolysis
5. the oxidation of pyruvate to acetyl CoA

Respiration 41

062 10.0 points

What is the fate of an extra 15 lbs of fat, recently lost by a person after switching over on to a rigorous diet?

1. Chemical energy was converted to heat and then released.
2. It was broken down to amino acids and eliminated from the body.
3. It was released as CO₂ and H₂O.
4. It was converted to ATP, which weighs much less than fat.
5. It was converted to urine and eliminated from the body.

Respiration 55

063 10.0 points

Mice were fed glucose (C₆H₁₂O₆) containing radioactive carbon, and then closely monitored. Where would you eventually find radioactive carbon atoms after the mice completely oxidize the glucose in aerobic respiration?

1. water
2. ATP
3. NADH
4. oxygen gas
5. carbon dioxide

Harvest 07

064 10.0 points

Which of the following processes occurs when oxygen is unavailable?

1. An electron transport chain
2. All of these
3. Pyruvate oxidation
4. Fermentation
5. The citric acid cycle

Harvest 08

065 10.0 points

In all cells, glucose metabolism begins with

1. glycolysis.
2. pyruvate oxidation.
3. the citric acid cycle.
4. chemiosmosis.
5. fermentation.

Raven9 16

066 10.0 points

In eukaryotes, where do the glycolytic reactions take place?

1. mitochondria of the cell
2. Golgi bodies of the cell
3. cytoplasm of the cell
4. ribosomes of the cell
5. endoplasmic reticulum of each cell

Raven9 28

067 10.0 points

What is *not* an end product of glycolysis?

1. NAD⁺
2. energy
3. NADH
4. pyruvate
5. ATP

Respiration 07
068 10.0 points

Which of the following statements does *not* describe the role of glycolysis in respiration?

1. The enzymes of glycolysis are located in the cytosol of the cell.
2. The end products of glycolysis are CO₂ and H₂O.
3. Glycolysis makes ATP exclusively through substrate-level phosphorylation.
4. Glycolysis can operate in the complete absence of O₂.
5. Glycolysis has steps involving oxidation-reduction reactions.

Respiration 50
069 10.0 points

Which stage
I: glycolysis
II: oxidation of pyruvate to acetyl CoA
III: Krebs cycle
IV: oxidative phosphorylation (chemi osmosis)
of glucose oxidation normally occurs whether or not oxygen is present?

1. stage I
2. stage II
3. stage III
4. stage IV

Respiration 69
070 10.0 points

How does the reduction of pyruvate to lactic acid during fermentation allow glycolysis to continue in the absence of oxygen?

1. This reaction is coupled to the reduction of FAD to FADH₂.
2. This reaction is a Kinase reaction.
3. This reaction is coupled to the formation of ATP.
4. This reaction is coupled to the oxidation of NADH to NAD⁺.
5. Water is formed during this reaction.

Starr 07 20
071 10.0 points

ATP synthase

1. splits water.
2. attaches carbon to RuBP.
3. consumes ATP
4. pumps hydrogen ions into the thylakoid compartment.
5. catalyzes the attachment of phosphate to ADP.

Starr 08 18
072 10.0 points

Most of the carbon dioxide you exhale is released during

1. glycolysis.
2. electron transfer phosphorylation.
3. the Krebs cycle.
4. alcoholic fermentation.

5. lactate fermentation.

StarrC 07 18

073 10.0 points

In the final stage of aerobic respiration, which of the following deliver hydrogen ions and electrons to the electron transport system?

1. NADH and ATP
2. NADPH and FADH₂
3. NADPH and ATP
4. NADH and FADH₂
5. NADH and NADPH

StarrC 07 20

074 10.0 points

In the final stage of aerobic respiration, energy associated with the flow of which of the following through an ATP synthase drives the formation of ATP?

1. water
2. hydrogen ions
3. pyruvate
4. NADH
5. electrons

Harvest 51

075 10.0 points

Which of the following statements about the electron transport chain is true?

1. Electrons are passed from donor to recipient carrier molecules in a series of oxidation-reduction reactions.
2. Electrons are received from NADH and FADH₂.
3. Usually the terminal electron acceptor is oxygen.

4. Most of the enzymes are part of the inner mitochondrial membrane.

5. All of these

Holt Bio 05 11

076 10.0 points

If oxygen is NOT available to accept electrons during aerobic respiration,

1. All of these
2. fermentation proceeds.
3. only small amounts of ATP can be produced.
4. aerobic processes stops.

Raven9 22

077 10.0 points

Chemiosmotic generation of ATP is driven by

1. osmosis of macromolecules.
2. sodium, potassium pumps.
3. a difference in H⁺ concentration on the two sides of the mitochondrial membrane.
4. large quantities of ADP.
5. phosphate transfer through the plasma membrane.

Respiration 17

078 10.0 points

By which process does cellular respiration derive most of its chemical energy?

1. transferring electrons from organic molecules to oxygen
2. substrate-level phosphorylation
3. converting oxygen to ATP
4. generating carbon dioxide and oxygen in

the electron transport chain

- forming lactate from pyruvate

Respiration 18
079 10.0 points

Choose the sequence in which electrons move downhill during aerobic respiration.

- glucose \rightarrow ATP \rightarrow electron transport chain \rightarrow NADH
- food \rightarrow Krebs cycle \rightarrow ATP \rightarrow NAD⁺
- food \rightarrow glycolysis \rightarrow Krebs cycle \rightarrow NADH \rightarrow ATP
- glucose \rightarrow ATP \rightarrow oxygen
- food \rightarrow NADH \rightarrow electron transport chain \rightarrow oxygen

GA SB1 50
080 10.0 points

You have been jogging for two hours and you get painful cramps in your legs. The cramps are caused by a buildup of lactic acid from the process called

- aerobics.
- glycolysis.
- phosphorylation.
- fermentation.

GA SB1 53
081 10.0 points

A cell that is in the process of aerobic respiration

- uses less carbon dioxide than in anaerobic respiration.
- produces more ATP than during anaerobic respiration.
- uses less oxygen than in anaerobic respiration.

ration.

- produces more alcohol than in anaerobic respiration.

Harvest 45
082 10.0 points

Many species derive their energy from fermentation. The function of fermentation is to

- None of these
- produce acetyl CoA.
- oxidize CO₂.
- reduce NAD⁺.
- oxidize NADH + H⁺, ensuring a continued supply of ATP.

Harvest 69
083 10.0 points

When acetyl CoA builds up in the cell, it increases the activity of the enzyme that synthesizes oxaloacetate from pyruvate and carbon dioxide. Acetyl CoA is acting as a(n)

- allosteric activator.
- proton pump.
- acetate donor.
- substrate.
- electron carrier.

Harvest 72
084 10.0 points

In yeast, if the citric acid cycle is shut down because of a lack of oxygen, glycolysis will probably

- increase.
- produce acetyl CoA for fatty acid synthesis.

3. shut down.
4. produce more ATP per mole of glucose.
5. produce more NADH per mole of glucose.

Raven9 43**085 10.0 points**

Regardless of the electron or hydrogen acceptor used, one of the products of fermentation is always

1. ATP.
2. ADP.
3. alcohol.
4. NAD^+ .
5. pyruvate.

Respiration 74**086 10.0 points**

Conversion of corn sugar to ethanol is an inefficient process of energy conversion. Louis Pasteur proved that yeast grown under anaerobic conditions to make ethanol consumed 100 times more sugar than those under aerobic conditions did, because _____

1. lactate fermentation is more efficient than ethanol fermentation.
2. corn sugar is not a good source for making ethanol or ATP.
3. glycolysis does not happen under anaerobic condition.
4. Krebs cycle happens in fermentation but no ATP is produced.
5. no Krebs cycle nor oxidative phosphorylation would occur in such fermentation.