

Within chloroplasts, the semiliquid matrix in which the Calvin cycle occurs is called:

- A) stroma.
 - B) thylakoids.
 - C) grana.
 - D) photosystem.
-

Visible light occupies what part of the electromagnetic spectrum?

- A) the entire spectrum
 - B) the entire upper half (with longer wavelengths)
 - C) a small portion in the middle
 - D) the entire lower half (with shorter wavelengths)
-

The colors of light that are most effective for photosynthesis are

- A) red, blue, and violet.
 - B) green, yellow, and orange
 - C) infrared and ultraviolet
 - D) All colors of light are equally effective.
-

A photosystem consists of

- A) a group of chlorophyll molecules, all of which contribute excited electrons to the synthesis of ATP.
 - B) a pair of chlorophyll *a* molecules.
 - C) a group of chlorophyll molecules held together by proteins.
 - D) a group of chlorophyll molecules that funnels light energy toward a single chlorophyll *b* molecule.
-

The final product of the Calvin cycle is

- A) RuBP.
 - B) G3P.
 - C) glucose.
 - D) PGA.
-

C4 photosynthesis is an adaptation to hot, dry conditions in which

- A) CO₂ is fixed and stored in the leaf.
 - B) water is stored in the stem.
 - C) oxygen is stored in the root.
 - D) light energy is stored in chloroplasts.
-

C4 photosynthesis is an adaptation to hot, dry conditions in which

- A) CO₂ is fixed and stored in the leaf.
 - B) water is stored in the stem.
 - C) oxygen is stored in the root.
 - D) light energy is stored in chloroplasts.
-

In cellular respiration, energy-depleted electrons are donated to an inorganic molecule. In fermentation, what molecule accepts these electrons?

- A) oxygen
- B) an organic molecule
- C) sulfur
- D) an inorganic molecule other than O₂

Which of the following is *not* a stage of aerobic respiration?

- A) glycolysis
- B) pyruvate oxidation
- C) the Krebs cycle
- D) electron transport chain

Oxidizing which of the following substances yields the most energy?

- A) proteins
- B) glucose
- C) fatty acids
- D) water

The final electron acceptor in lactic acid fermentation is:

- A) pyruvate
- B) NAD⁺
- C) lactic acid
- D) O₂

Oxidizing which of the following substances yields the most energy?

- A) proteins
- B) glucose
- C) fatty acids
- D) water

The final electron acceptor in lactic acid fermentation is:

- A) pyruvate
- B) NAD⁺
- C) lactic acid
- D) O₂

Which of the following techniques has recently aided the study of receptor proteins?

- A) protein purification
- B) monoclonal antibodies
- C) isolation of cell signal molecules
- D) all of these

Which of the following describes autocrine signaling?

- A) Signal molecules released by cells diffuse through the extracellular fluid to other cells.
- B) Signal molecules enter the organism's circulatory system and travel throughout the body.
- C) Signal molecules are released from a cell and bind to receptors on its own plasma membrane.
- D) Signal molecules are released into a narrow space between cells called a synapse.

Intracellular receptors usually bind

- A) water-soluble signals.
- B) large molecules that act as signals.
- C) signals on the cell surface.
- D) lipid-soluble signals.

Which of the following is *not* a type of cell surface receptor?

- A) chemically gated ion channels
- B) intracellular receptors
- C) enzymic receptors
- D) G-protein-linked receptors

Cadherin can be found in which of the following?

- A) tight junctions
- B) anchoring junctions
- C) communication junctions
- D) adherens junctions

Plasmodesmata are a type of

- A) gap junction.
- B) anchoring junction.
- C) communicating junction.
- D) tight junction.

Plasmodesmata are a type of

- A) gap junction.
- B) anchoring junction.
- C) communicating junction.
- D) tight junction.

An atom gains energy when

- A) an electron is lost from it.
- B) it undergoes oxidation.
- C) it undergoes reduction.
- D) it undergoes an oxidation-reduction reaction.

Which of the following is concerned with the amount of energy in the universe?

- A) the First Law of Thermodynamics
- B) the Second Law of Thermodynamics.
- C) thermodynamics
- D) entropy

In a chemical reaction, if ΔG is negative, it means that

- A) the products contain more free energy than the reactants.
- B) an input of energy is required to break the bonds.
- C) the reaction will proceed spontaneously.
- D) the reaction is endergonic.

A catalyst

- A) allows an endergonic reaction to proceed more quickly.
- B) increases the activation energy so a reaction can proceed more quickly.
- C) lowers the amount of energy needed for a reaction to proceed.
- D) is require for an exergonic reaction to occur.

Anabolic reactions are reactions that

- A) break chemical bonds.
- B) make chemical bonds.
- C) harvest energy.
- D) occur in a sequence.

How is a biochemical pathway regulated?

- A) The product of one reaction becomes the substrate for the next.
- B) The end product replaces the initial substrate in the pathway.
- C) The end product inhibits the first enzyme in the pathway by binding to an allosteric site.
- D) All of these are correct.

How is a biochemical pathway regulated?

- A) The product of one reaction becomes the substrate for the next.
- B) The end product replaces the initial substrate in the pathway.
- C) The end product inhibits the first enzyme in the pathway by binding to an allosteric site.
- D) All of these are correct.