

Cell Transport Quiz Answer Key PDF

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Which of the following is a type of passive transport?

- A. Endocytosis
- C. Diffusion ✓**
- D. Exocytosis
- C. Active transport

Explain how the sodium-potassium pump functions in active transport.

The sodium-potassium pump uses ATP to move sodium ions out of the cell and potassium ions into the cell against their concentration gradients, maintaining cellular homeostasis.

Describe the process of osmosis and its importance to cell survival.

Osmosis is the diffusion of water across a selectively permeable membrane. It is crucial for maintaining cell turgor and nutrient balance.

How does temperature affect the rate of diffusion in cells?

Higher temperatures increase kinetic energy, thus speeding up the rate of diffusion, while lower temperatures slow it down.

What is the role of ATP in active transport, and why is it necessary?

ATP provides the energy required to move molecules against their concentration gradient in active transport, enabling vital cellular functions.

What roles do membrane proteins play in cell transport? (Select all that apply)

- A. Structural support
- C. Active transport ✓**
- D. DNA replication
- C. Facilitating diffusion ✓**

Which factors affect the rate of diffusion? (Select all that apply)

- A. Temperature ✓**
- C. Surface area ✓**
- D. ATP availability
- C. Concentration gradient ✓**

Which processes are involved in endocytosis? (Select all that apply)

- A. Phagocytosis ✓**
- C. Exocytosis
- D. Receptor-mediated endocytosis ✓**
- C. Pinocytosis ✓**

Which component of the cell membrane is primarily responsible for its selective permeability?

- A. Carbohydrates
- C. Cholesterol
- D. Nucleic acids
- C. Phospholipid bilayer ✓**

Which of the following are types of passive transport? (Select all that apply)

- A. Diffusion ✓**
- C. Active transport
- D. Facilitated diffusion ✓**
- C. Osmosis ✓**

What is the term for the engulfment of large particles by a cell?

- A. Pinocytosis
- C. Exocytosis

D. Receptor-mediated endocytosis

C. Phagocytosis ✓

Discuss the differences between facilitated diffusion and active transport.

Facilitated diffusion does not require energy and moves substances down their concentration gradient via transport proteins, while active transport requires energy to move substances against their gradient.

Explain how receptor-mediated endocytosis differs from other forms of endocytosis.

Receptor-mediated endocytosis involves specific receptors binding to target molecules, allowing for selective uptake, unlike other forms that may not be as selective.

Which of the following increases the rate of diffusion?

A. Decreased temperature

C. Increased concentration gradient ✓

D. Decreased surface area

C. Increased molecular size

What is the primary energy source used in active transport?

A. Glucose

C. NADH

D. Oxygen

C. ATP ✓

Which process involves the movement of water across a selectively permeable membrane?

A. Facilitated diffusion

C. Phagocytosis

D. Exocytosis

C. Osmosis ✓

Which of the following are characteristics of the phospholipid bilayer? (Select all that apply)

- A. Hydrophilic heads ✓**
- C. Rigid structure
- D. Selectively permeable ✓**
- C. Hydrophobic tails ✓**

What type of protein assists in facilitated diffusion?

- A. Enzymatic proteins
- C. Transport proteins ✓**
- D. Receptor proteins
- C. Structural proteins

Which of the following processes requires energy input from the cell?

- A. Simple diffusion
- C. Active transport ✓**
- D. Facilitated diffusion
- C. Osmosis

Which of the following processes involve vesicles? (Select all that apply)

- A. Exocytosis ✓**
- C. Facilitated diffusion
- D. Simple diffusion
- C. Endocytosis ✓**