QUIZ Time

physiology 3

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1. What distinguishes active transport from passive transport across the cell membrane?
A. Active transport requires energy and moves substances against their concentration gradient, while passive transport does not require energy and moves substances along their concentration gradient.
B. Active transport does not require energy and moves substances along their concentration gradient, while passive transport requires energy and moves substances against their concentration gradient.
C. Both active and passive transport require energy but differ in the direction of substance movement relative to the concentration gradient.
D. Active transport requires energy and moves substances along their concentration gradient, while passive transport does not require energy and moves substances against their concentration gradient.
Answer: A. Active transport requires energy and moves substances against their concentration gradient, while passive transport does not require energy and moves substances along their concentration gradient.
2. Which of the following is an example of primary active transport?
A. Sodium-glucose co-transport
B. Sodium-hydrogen counter-transport
C. Sodium-potassium pump
D. Facilitated diffusion of glucose
Answer: C. Sodium-potassium pump
3. In secondary active transport, how is energy utilized?
A. Directly by the carrier protein through ATP hydrolysis
B. Indirectly, using the energy from the electrochemical gradient of another molecule
C. By passive diffusion along the concentration gradient
D. Through vesicular transport mechanisms
Answer: B. Indirectly, using the energy from the electrochemical gradient of another molecule
4. What is the main function of the sodium-potassium pump in cells?
A. To facilitate passive diffusion of sodium and potassium ions
B. To maintain the resting membrane potential by actively transporting sodium out of the cell and potassium into the cell
C. To equalize sodium and potassium concentrations on both sides of the membrane
D. To transport glucose molecules into the cell
Answer: B. To maintain the resting membrane potential by actively transporting sodium out of the cell and potassium into the cell
5. Which process describes the cellular uptake of large particles or microorganisms?
A. Pinocytosis
B. Phagocytosis
C. Exocytosis
D. Receptor-mediated endocytosis
Answer: B. Phagocytosis