

SECTION 5-2 REVIEW

ACTIVE TRANSPORT

VOCABULARY REVIEW Define the following terms.

1. active transport _____

2. endocytosis _____

3. vesicle _____

4. phagocytosis _____

MULTIPLE CHOICE Write the correct letter in the blank.

1. Facilitated-diffusion carrier proteins and cell-membrane pumps both
 - a. require an input of energy.
 - b. are specific for the kinds of substances they transport.
 - c. transport substances up their concentration gradients.
 - d. carry out active transport.
2. The sodium-potassium pump transports
 - a. Na⁺ out of the cell and K⁺ into the cell.
 - b. Na⁺ and K⁺ in both directions across the cell membrane.
 - c. K⁺ out of the cell and Na⁺ into the cell.
 - d. Na⁺ during some cycles and K⁺ during other cycles.
3. The energy needed to power the sodium-potassium pump is provided by the
 - a. binding of ATP to the pump.
 - b. transport of ATP by the pump.
 - c. removal of a phosphate group from ATP.
 - d. formation of ATP.
4. Pinocytosis involves the transport of
 - a. large particles out of a cell.
 - b. fluids into a cell.
 - c. whole cells into another cell.
 - d. lysosomes out of a cell.
5. Exocytosis is a
 - a. type of passive transport.
 - b. mechanism by which cells ingest other cells.
 - c. transport process in which vesicles are formed from pouches in the cell membrane.
 - d. way for cells to release large molecules, such as proteins.

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SHORT ANSWER Answer the questions in the space provided.

1. Why is the sodium-potassium transport mechanism called a "pump"?

2. Explain how a phagocyte destroys bacteria.

3. Describe how a cell produces and releases proteins.

4. **Critical Thinking** Why is it important that ions being transported across a cell membrane be shielded from the interior of the lipid bilayer?

STRUCTURES AND FUNCTIONS Use the figure to answer the following questions.

1. The diagrams below represent the six steps in one cycle of the sodium-potassium pump. The order of the steps has been scrambled. Beginning with diagram *d* (numbered 1), sequence the remaining diagrams by writing the appropriate numeral in each blank.

2. On which side of the membrane are Na^+ ions released from the pump?

3. On which side of the membrane are K^+ ions released from the pump?

