

Standardized Test Prep

Test-Taking Tip

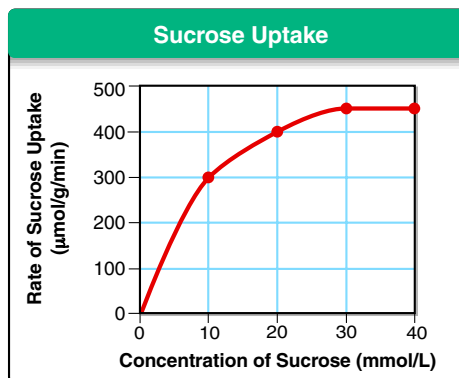
When you answer a question based on experimental data, read the description of the experiment carefully to determine the steps followed. Then, try to see if there are any trends in the data. For example, "if x increases, what happens to y?"

Directions: Choose the letter that best answers the question or completes the statement.

- Animals cells have all of the following EXCEPT
(A) mitochondria. (D) a cell membrane.
(B) chloroplasts. (E) Golgi apparatus.
(C) a nucleus.
- The nucleus includes all of the following structures EXCEPT
(A) cytoplasm. (D) nucleolus.
(B) nuclear envelope. (E) chromatin.
(C) DNA.
- Which statement best describes the expected result when a typical cell is placed into fresh water?
(A) Active transport of water into the cell would begin.
(B) There would be a net movement of water out of the cell.
(C) There would be a net movement of water into the cell.
(D) Protein synthesis would begin.
(E) No change in the cell's water content would occur.
- Which cell structures are sometimes found attached to the endoplasmic reticulum?
(A) chloroplasts (D) nuclei
(B) mitochondria (E) ribosomes
(C) vacuoles
- Which process always involves the movement of materials from inside the cell to outside the cell?
(A) phagocytosis (D) exocytosis
(B) endocytosis (E) osmosis
(C) diffusion
- Which of the following is NOT an example of active transport?
I. Facilitated diffusion
II. Osmosis
III. Diffusion
(A) I only (D) II and III only
(B) III only (E) I, II, and III
(C) I and II only

Questions 7–9

In an experiment, plant cells were placed in sucrose solutions of varying concentrations. The rate at which the plant cells absorbed sucrose from the solution was then measured for the different concentrations. The results are summarized in the graph below.



- In this experiment, there was a positive sucrose uptake. Sucrose probably entered the cells by means of
(A) endocytosis. (D) phagocytosis.
(B) osmosis. (E) active transport.
(C) exocytosis.
- The graph shows that as the concentration of sucrose increases from 10 to 30 mmol/L, the plant cells
(A) take in sucrose more slowly.
(B) take in sucrose more quickly.
(C) fail to take in more sucrose.
(D) secrete sucrose more slowly.
(E) secrete sucrose more quickly.
- Which statement is best supported by information in the graph?
(A) The rate of sucrose uptake increases at a constant rate from 0 to 30 mmol/L.
(B) The rate of sucrose uptake decreases at a varying rate from 0 to 30 mmol/L.
(C) The rate of sucrose uptake is less at 25 mmol/L than at 5 mmol/L.
(D) The rate of sucrose uptake is constant between 30 and 40 mmol/L.
(E) The rate of sucrose uptake declines between 30 and 40 mmol/L.

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|------|------|------|
| 1. B | 4. E | 7. E |
| 2. A | 5. D | 8. B |
| 3. C | 6. E | 9. D |

Writing in Science

Answers may vary. Most students might suggest that companies that market such high-solute beverages should not say that the drinks quench a person's thirst. All responses should provide a logical reason for a position. Students might suggest that a high-solute beverage that dehydrates body cells would actually increase the sensation of thirst rather than quench it.

Performance-Based Assessment

Student answers should be scientifically accurate. Students' answers should demonstrate an understanding of the complex life processes that go on inside a cell.

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