

Directed Reading

Section: Cell Transport

Read each question, and write your answer in the space provided.

1. What is the purpose of cell transport? What is the difference between active transport and passive transport?

2. What is equilibrium?

3. What is diffusion? Why is diffusion an example of passive transport?

In the space provided, write the letter of the description that best matches each term .

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| _____ 4. simple diffusion | a. a substance binds to a protein, which changes shape; both move together across the cell membrane, where the substance is released |
| _____ 5. facilitated diffusion with channel proteins | b. small, nonpolar molecules passing directly through the cell membrane |
| _____ 6. facilitated diffusion with carrier proteins | c. an ion, sugar, or amino acid moving through a specific pore, based on the size and charge of the moving substance |

Directed Reading *continued*

Read each question, and write your answer in the space provided.

7. What is osmosis, and why is it important in cells?

8. Explain how water moves across a cell membrane.

Match the condition on the right with the numbered action on the left.

_____ 9. water moves into the cell

_____ 10. a state of ongoing equilibrium occurs

_____ 11. water moves out of the cell

- a. The solution a cell is in is hypertonic, meaning that it has a higher solute concentration than the cytoplasm does
- b. The solution a cell is in is isotonic, meaning that it has the same solute concentration as the cytoplasm does
- c. The solution a cell is in is hypotonic, meaning that it has a lower solute concentration than the cytoplasm does.

Complete each statement by writing the correct term or phrase in the space provided.

12. The transport of a substance across the cell membrane against its concentration gradient is called _____
_____.

13. The energy needed for active transport is usually supplied by _____.

Directed Reading *continued*

Read each question, and write your answer in the space provided.

14. What is the sodium-potassium pump? Describe how it works.

15. Explain why proteins and polysaccharides cannot be transported across a cell membrane by carrier proteins. How do these substances cross the cell membrane?

16. What is endocytosis? Describe how it works.

17. What is exocytosis? Describe how it works.

18. What are some circumstances in which cells use exocytosis?
