

SECTION 3.4

DIFFUSION AND OSMOSIS

Study Guide

KEY CONCEPT

Materials move across membranes because of concentration differences.

VOCABULARY

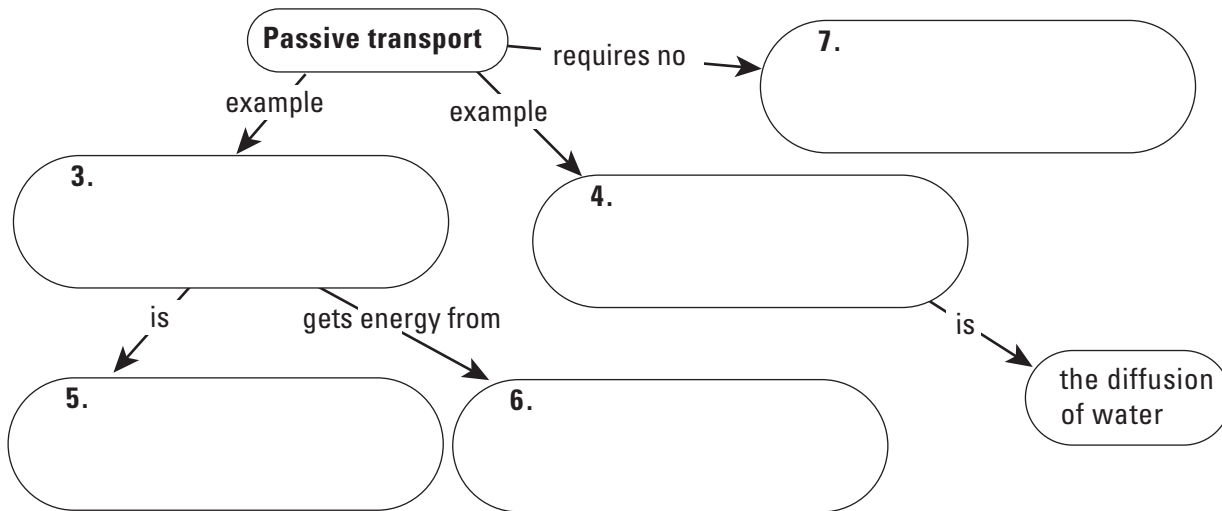
passive transport	osmosis	hypotonic
diffusion	isotonic	facilitated diffusion
concentration gradient	hypertonic	

MAIN IDEA: Diffusion and osmosis are types of passive transport.

1. What is a concentration gradient?

2. What does it mean for a molecule to diffuse down a concentration gradient?

Complete the concept map below about passive transport.



8. The higher the concentration of dissolved particles in a solution, the _____ the concentration of water molecules in that solution.

STUDY GUIDE, CONTINUED

Suppose you have three solutions with different concentrations of particles. Relative to the concentration of particles in a cell, one solution is isotonic, one is hypertonic, and one is hypotonic. Use this information to answer the next two questions.

9. Which solution has the highest concentration of particles?

10. Which solution has the highest concentration of water molecules?

MAIN IDEA: Some molecules diffuse through transport proteins.

11. How does facilitated diffusion differ from simple diffusion?

12. In facilitated diffusion, do molecules move down a concentration gradient or against a concentration gradient?

Vocabulary Check

13. The difference in the concentration of a substance from one location to another is a

14. People with excess energy are described as hyper. How does this relate to the meaning of hypertonic?

15. The word *facilitate* means “to make easier.” How does this meaning apply to facilitated diffusion?
