

## Section 7–3 Cell Boundaries (pages 182–189)



**TEKS FOCUS:** 4B Cellular processes including permeability and transportation of molecules

*This section describes the main functions of the cell membrane. It also explains what happens during diffusion and explains what osmosis is.*

### Cell Membrane (page 182)

1. What are the functions of the cell membrane? \_\_\_\_\_  
\_\_\_\_\_
2. The core of nearly all cell membranes is a double-layered sheet called a(an) \_\_\_\_\_.
3. What is the difference in the function of the proteins and the carbohydrates attached to a cell membrane? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

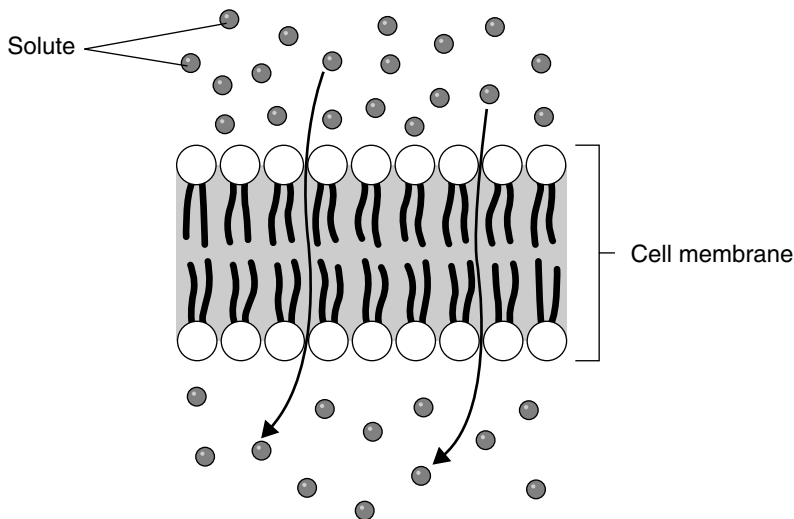
### Cell Walls (page 183)

4. In what organisms are cell walls found? \_\_\_\_\_  
\_\_\_\_\_
5. Is the following sentence true or false? The cell wall lies inside the cell membrane.  
\_\_\_\_\_
6. What is the main function of the cell wall? \_\_\_\_\_  
\_\_\_\_\_
7. What are plant cell walls mostly made of? \_\_\_\_\_  
\_\_\_\_\_

### Diffusion Through Cell Boundaries (pages 183–184)

8. The cytoplasm of a cell is a solution of many different substances in \_\_\_\_\_.
9. What is the concentration of a solution? \_\_\_\_\_  
\_\_\_\_\_
10. What is diffusion? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. The molecules of solute in the illustration are moving through the cell membrane from top to bottom. Indicate with labels which side of the membrane has a high concentration of solute and which has a low concentration.



**Osmosis** (pages 185–186)

12. What does it mean that biological membranes are selectively permeable?

\_\_\_\_\_

\_\_\_\_\_

13. What is osmosis? \_\_\_\_\_

\_\_\_\_\_

14. Is the following sentence true or false? Water tends to diffuse from a region where it is less concentrated to a region where it is highly concentrated. \_\_\_\_\_

15. When will water stop moving across a membrane? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Match the situation to the description.

<b>Situation</b>	<b>Description</b>
_____ 16. Two solutions are isotonic.	<b>a.</b> The solution is above strength in solute.
_____ 17. A solution is hypertonic.	<b>b.</b> The solutions are the same strength.
_____ 18. A solution is hypotonic.	<b>c.</b> The solution is below strength in solute.

19. On which side of a selectively permeable membrane does osmosis exert a pressure?

\_\_\_\_\_

\_\_\_\_\_

**Facilitated Diffusion** (page 187)

20. What happens during the process of facilitated diffusion? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
21. What is the role of protein channels in the cell membrane? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
22. Is the following sentence true or false? Facilitated diffusion does not require the cell to use energy. \_\_\_\_\_

**Active Transport** (pages 188–189)

23. The energy-requiring process that moves material across a cell membrane against a concentration difference is called \_\_\_\_\_.
24. Is the following sentence true or false? Active transport always requires transport proteins during the process. \_\_\_\_\_
25. Complete the table about types of active transport.

**TYPES OF ACTIVE TRANSPORT**

Type	Description
Endocytosis	
Phagocytosis	
Exocytosis	

26. During endocytosis, what happens to the pocket in the cell membrane when it breaks loose from the membrane? \_\_\_\_\_  
 \_\_\_\_\_