

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

### Key Concepts

- What are the main functions of the cell membrane and the cell wall?
- What happens during diffusion?
- What is osmosis?

### 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? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

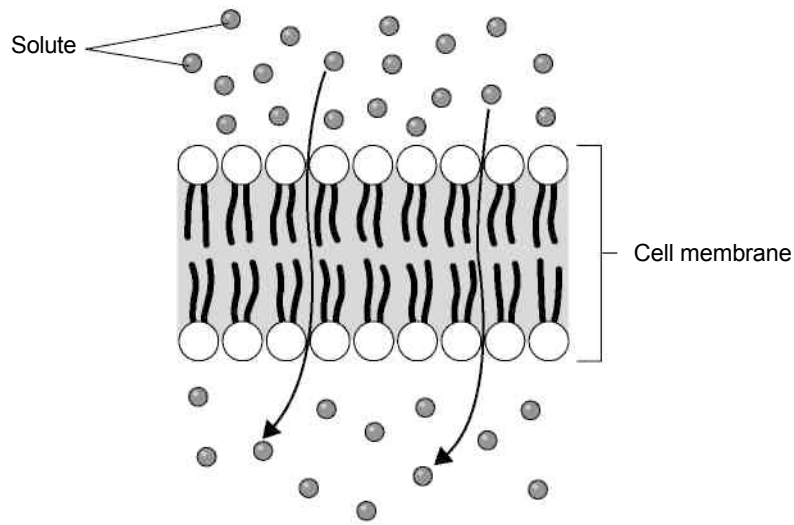
### Cell Walls (page 183)

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. What is the concentration of a solution? \_\_\_\_\_  
\_\_\_\_\_
9. What is diffusion? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
10. What is meant when a system has reached equilibrium? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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 the 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? \_\_\_\_\_  
 \_\_\_\_\_