

# Cellular Transport

Name: \_\_\_\_\_ Per: \_\_\_\_\_

Multiple Choice: Circle the correct answer.

- Which term refers to the condition that exists when *no* net change in concentration results from diffusion?
    - concentration
    - equilibrium
    - osmosis
    - randomness
  - Which process can move molecules from a lower concentration solution on one side of the membrane to a higher concentration solution on the other side?
    - active transport
    - facilitated diffusion
  - Which process does not require energy?
    - active transport
    - facilitated diffusion
  - What does the word *facilitated* mean in *facilitated diffusion*?
    - hindered
    - helped
5. In the table below, draw how each type of cell will look after being placed in a hypertonic solution.

Appearance of Cells in a Hypertonic Solution	
Animal Cells	Plant Cells

For Questions 6–8, Write the letter of the correct answer on the line at the left

**Situation**

**Result**

- |       |  |                             |
|-------|--|-----------------------------|
| _____ | 6. Cells are in an isotonic solution.  | a. The cells lose water.    |
| _____ | 7. Cells are in a hypertonic solution. | b. The cells gain water.    |
| _____ | 8. Cells are in a hypotonic solution.  | c. The cells stay the same. |

**Active Transport**

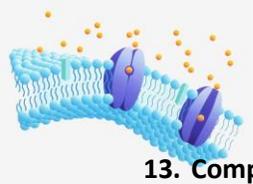
9. What is the function of active transport in moving small molecules and ions across cell membranes?

10. How does ATP enable transport proteins to move ions across a cell membrane?

11. Complete the table to summarize the types of bulk transport.

Types of Bulk Transport	
Type	Description
Endocytosis	
Phagocytosis	
Exocytosis	

12. Most sports drinks are isotonic in relation to human body fluids. Explain why athletes should drink solutions that are isotonic to body fluids when they exercise rather than ones that are hypotonic to body fluids (contain a greater proportion of water in comparison to the fluids in and around human body cells).



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**13. Compare/Contrast Table** Use a compare/contrast table when you want to see the similarities and differences between two or more objects or processes. Select words or phrases from the box to complete the table comparing passive and active transport.

- |             |                     |                       |               |
|-------------|---------------------|-----------------------|---------------|
| diffusion   | energy required     | exocytosis            | osmosis       |
| endocytosis | energy not required | facilitated diffusion | protein pumps |

Passive Transport	Active Transport

### Plasma Membrane

14. The plasma membranes is a double-layered sheet called a(an) \_\_\_\_\_.
15. What is the difference in the function of the proteins and the carbohydrates attached to a cell membrane?

### Cell Walls

16. Cell walls are found in \_\_\_\_\_, algae, \_\_\_\_\_, and many prokaryotes.
17. What is the main function of the cell wall? \_\_\_\_\_
18. What is the concentration of a solution? \_\_\_\_\_
19. Diffusion is the process by which molecules tend to move from an area where they are \_\_\_\_\_ concentrated to an area where they are \_\_\_\_\_ concentrated.
20. What is meant when a system has reached equilibrium?
21. What does it mean that biological membranes are selectively permeable?
22. Osmosis is the diffusion of \_\_\_\_\_ through a selectively permeable membrane.
23. Water will move across the membrane until \_\_\_\_\_ is reached.
24. What is the role of protein channels in the cell membrane? \_\_\_\_\_
25. The energy-requiring process that moves material across a cell membrane against a concentration difference is called \_\_\_\_\_.