

Cell Transport Worksheet

Part A: Complete the table by putting a check mark in the correct column for each statement:

Statement	Isotonic solution	Hypotonic solution	Hypertonic solution
1. Causes a cell to swell			
2. Doesn't change the shape of a cell			
3. Causes osmosis			
4. Causes a cell to shrink			

Part B: Match the term with its correct description:

- | | |
|--------------------------|---------------------|
| a. energy | e. active transport |
| b. facilitated diffusion | f. exocytosis |
| c. endocytosis | g. carrier protein |
| d. passive transport | h. diffusion |

5.	6.	7.	8.	9.	10.	11.	12.
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5. Transport protein that provides a tube-like opening in the plasma membrane through which particles can diffuse
6. Is used during active transport but not passive transport
7. Process by which a cell takes in material by forming a vacuole around it
8. Particle movement from an area of higher concentration to an area of lower concentration
9. Process by which a cell expels wastes from a vacuole
10. A form of passive transport that uses transport proteins
11. Particle move from an area of lower concentration to an area of higher concentration using energy
12. Particles move through the membrane from low to high concentration like oxygen or CO₂.

Part C: Match the term with its correct description:

- | | | |
|----------------------|----------------------|----------------|
| a. transport protein | d. passive transport | g. exocytosis |
| b. active transport | e. osmosis | h. equilibrium |
| c. diffusion | f. endocytosis | |

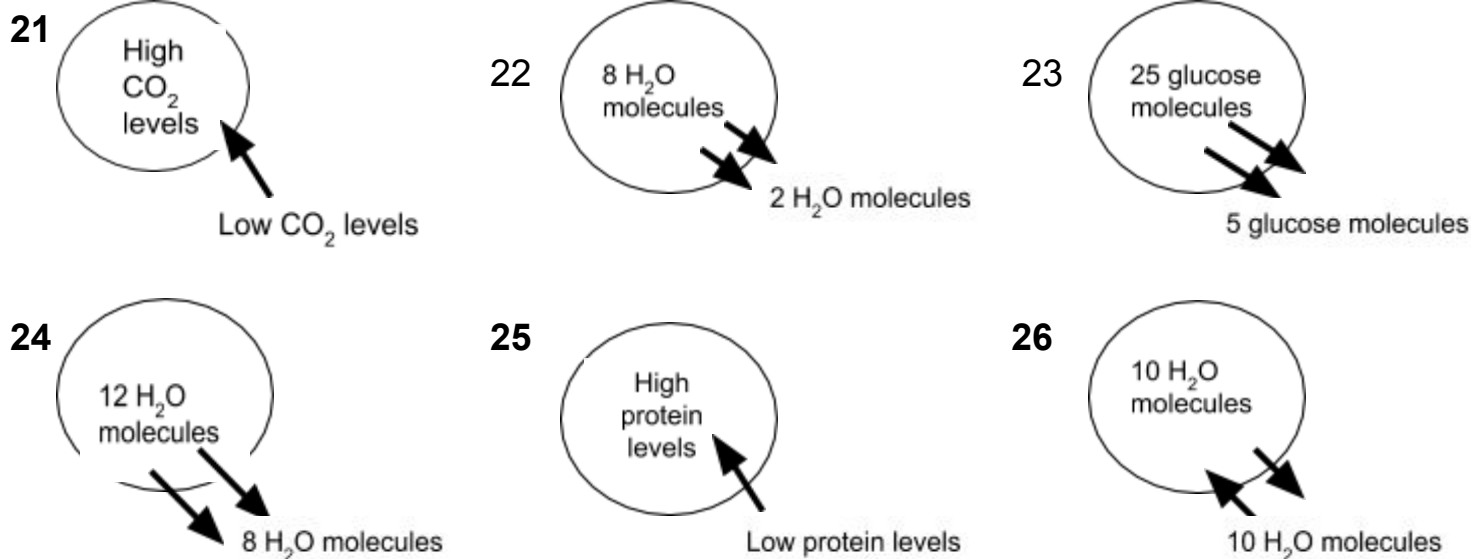
13.	14.	15.	16.	17.	18.	19.	20.
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13. The diffusion of water through a cell membrane
14. The movement of substances through the cell membrane without the use of cellular energy
15. Used to help substances enter or exit the cell membrane
16. When energy is required to move materials through a cell membrane
17. When the molecules of one substance are spread evenly throughout another substance to become balanced
18. A vacuole membrane fuses (becomes a part of) the cell membrane and the contents are released
19. The cell membrane forms around another substance bringing it in the cell, like, how the amoeba gets its food
20. When molecules move from areas of high concentration to areas of low concentration like CO₂

Part D: Label the diagrams of cells using the following terms:

passive transport, active transport, equilibrium.

The arrows show the direction of transport. Terms can be used more than once!



~Part E: Osmosis Practice Activity~

Osmosis is the diffusion of water from an area of high concentration to an area of low concentration. Only water moves in osmosis! The diagrams below show the concentration of water and salt inside the cell and the concentration of water and salt surrounding the cell. Complete the sentences below by comparing the concentration of the water inside the cell and the concentration outside the cell.

- 27.
- | | | |
|--|-------------------------------------|---|
| <div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 150px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: left;">5% NaCl
95% H_2O</div> </div> | 95% NaCl
5% H_2O | a. Water will flow _____
(into the cell, out of the cell, in both directions).

b. The cell will _____ (shrink, burst, stay the same). |
|--|-------------------------------------|---|
- 28.
- | | | |
|--|-------------------------------------|---|
| <div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 150px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: left;">5% NaCl
95% H_2O</div> </div> | 5% NaCl
95% H_2O | a. Water will flow _____
(into the cell, out of the cell, in both directions).

b. The cell will _____ (shrink, burst, stay the same). |
|--|-------------------------------------|---|
- 29.
- | | | |
|--|-------------------------------------|---|
| <div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 150px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="text-align: left;">95% NaCl
5% H_2O</div> </div> | 5% NaCl
95% H_2O | a. Water will flow _____
(into the cell, out of the cell, in both directions).

b. The cell will _____ (shrink, burst, stay the same). |
|--|-------------------------------------|---|

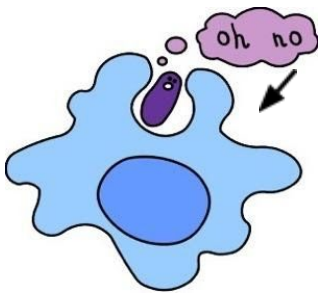
Part F: Answer the following questions to the best of your ability.

30. In Osmosis, a cell will shrink in a _____ solution.
31. In Osmosis, a cell will stay the same in a _____ solution.
32. In Osmosis, a cell will swell in a _____ solution.

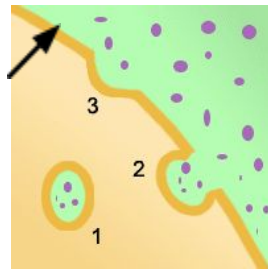
33. Name the process where water moves across a semipermeable membrane:

34. Name the type of transport that moves particles across the membrane using protein channels:

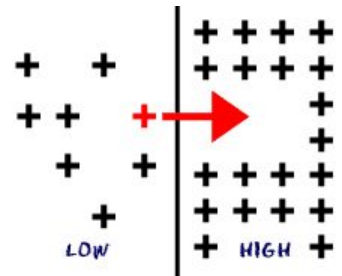
35-37. Label each diagram below: active transport, endocytosis or exocytosis.



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