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# Cell Transport Review Worksheet

The cell membrane is also known as a lipid bilayer

Draw a cross section of the phospholipid bilayer. Label the polar and nonpolar portions.

What is another term for polar? hydrophilic
What is another term for nonpolar? hydrophobic

Besides forming a barrier, what is the key function of the cell membrane? controls the passage of materials

What does the fluid mosaic model describe? cell membrane?
What is the function of proteins (amino acids) in a cell membrane? transport
What is the function of cholesterol/fatty acids in a cell membrane? structure
What is the function of carbohydrates in a cell membrane? identification/recognition

Complete the table by checking the correct column for each statement:

| Statement | Isotonic solution | Hypotonic solution | Hypertonic solution |
|---|---|---|---|
| Causes a cell to swell | | ✓ | |
| Doesn't change the shape of a cell | ✓ | | |
| Causes osmosis | | ✓ | ✓ |
| Causes a cell to shrink | | | ✓ |

Match the term with its correct description:

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

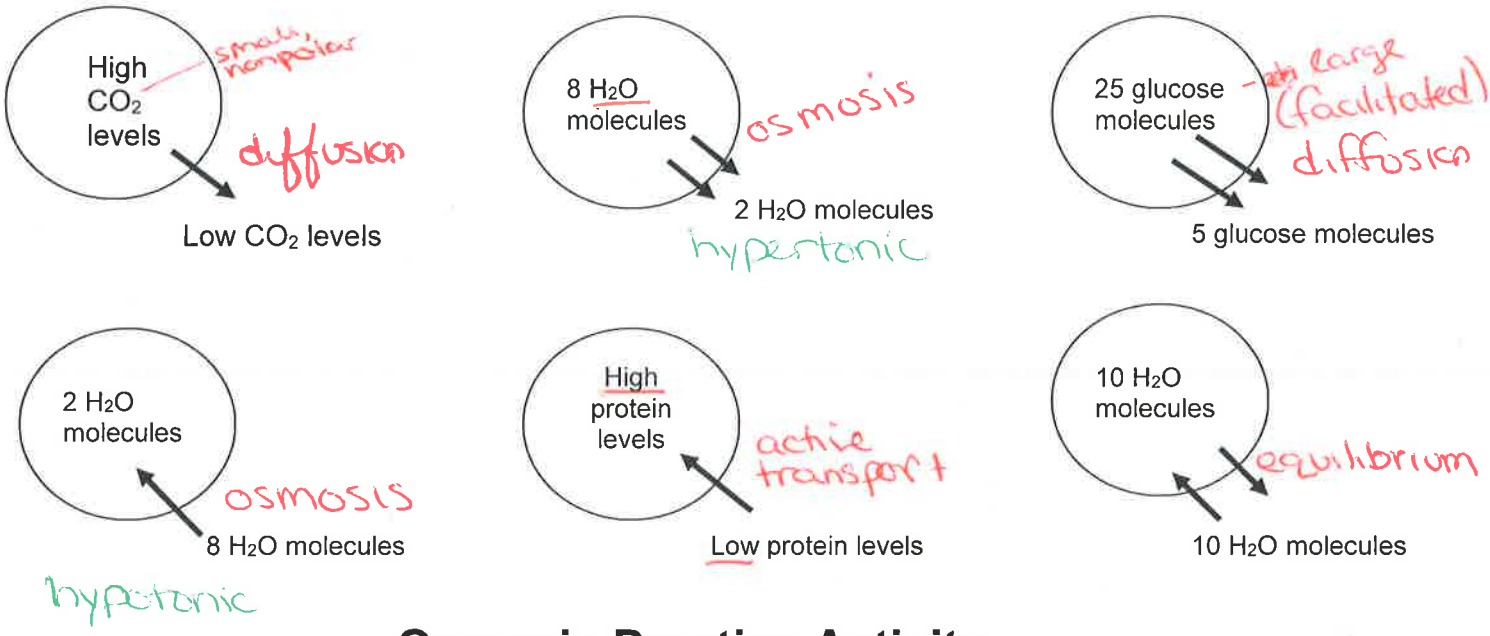
H Transport protein that provides a tube-like opening in the plasma membrane through which particles can diffuse
A Is used during active transport but not passive transport
C Process by which a cell takes in material by forming a vacuole around it
D Particle movement from an area of higher concentration to an area of lower concentration
F Process by which a cell expels wastes from a vacuole
B A form of passive transport that uses transport proteins
E Particle movement from an area of lower concentration to an area of higher concentration
G Transport protein that changes shape when a particle binds with it

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 | |

e The diffusion of water through a cell membrane
d The movement of substances through the cell membrane without the use of cellular energy
a Used to help substances enter or exit the cell membrane
b When energy is required to move materials through a cell membrane
h When the molecules of one substance are spread evenly throughout another substance to become balanced
g A vacuole membrane fuses (becomes a part of) the cell membrane and the contents are released
f The cell membrane forms around another substance, for example, how the amoeba gets its food
c When molecules move from areas of high concentration to areas of low concentration

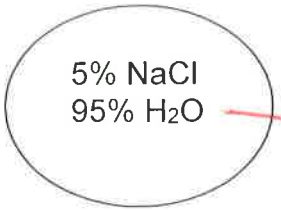
Label the diagrams of cells using the following terms: diffusion, active transport, osmosis, equilibrium. The arrows show the direction of transport. You may use the terms more than once!




# 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.

1.

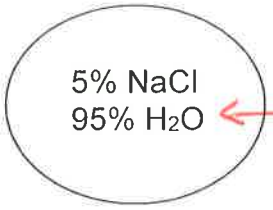



hypertonic
95% NaCl
5% $H_2O$

a. Water will flow out (into the cell, out of the cell, in both directions).

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

2.

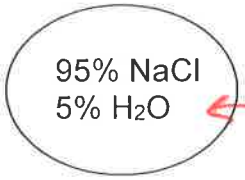



isotonic
5% NaCl
95% $H_2O$
*best for animals

a. Water will flow both directions (into the cell, out of the cell, in both directions).

b. The cell will stay the same (shrink, burst,

3.

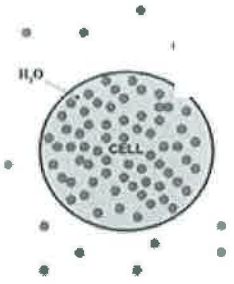



hypotonic
5% NaCl
95% $H_2O$
*best for plants

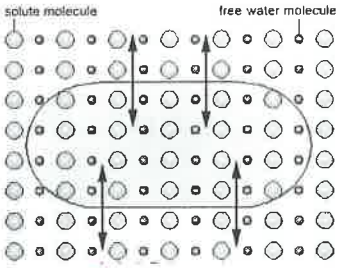
a. Water will flow into cell (into the cell, out of the cell, in both directions).

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

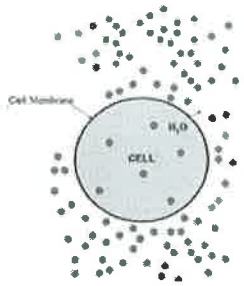
4. At which solution of concentration gradient is each cell diagram? (Hypotonic, Hypertonic, Isotonic)




a. hypotonic



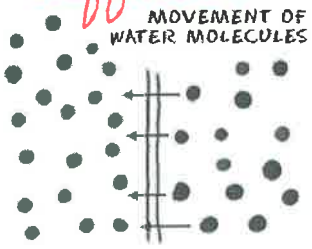

b. isotonic




c. hypertonic

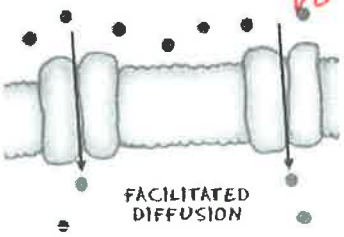
5. This diagram is moving from a high to a low concentration:

diffusion

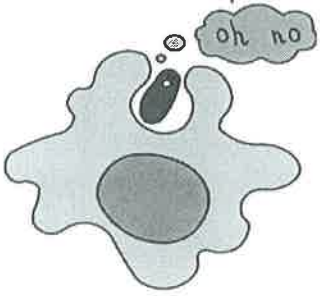



6. Using a transport protein to move particles across the membrane:

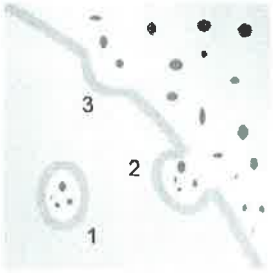
facilitated diffusion



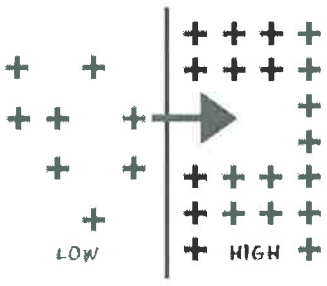

7. Describe the processes occurring in the foll pictures:




endocytosis




exocytosis




active transport