

## CELL TRANSPORT

### Cell transport – Movement of molecules in and out of the cell

Match the definition on the left with the term on the right.

1. \_\_\_\_\_ Large wastes or cell products are **released** from inside to outside a cell
2. \_\_\_\_\_ Diffusion of *water molecules* through a selectively permeable membrane.
3. \_\_\_\_\_ The transport of particles which **requires the use of energy**
4. \_\_\_\_\_ A state reached when particles continue to move but in *equal amounts* in and out of the cell.
5. \_\_\_\_\_ Large particles are surrounded by the membrane and **taken into the cell**.
6. \_\_\_\_\_ Movement of any particles from an area of *higher* concentration to one of *lower* concentration, with the concentration gradient.
7. \_\_\_\_\_ The transport of particles which **does not require energy**

- a. **Passive transport**
- b. **Diffusion**
- c. **Dynamic equilibrium**
- d. **Exocytosis**
- e. **Osmosis**
- f. **Active transport**
- g. **Endocytosis**

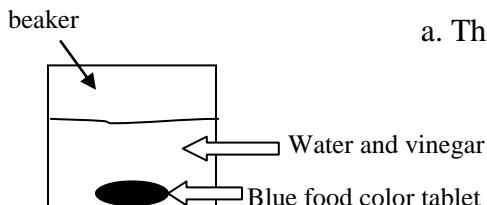
Circle the word or phrase that best completes the statement or answers the question.

8. The structure most responsible for maintaining cell homeostasis is the  
**cytoplasm**                      **cell wall**                      **mitochondria**                      **plasma membrane**
9. The plasma membrane (cell membrane) is made up of a(n)  
**cholesterol layer**                      **enzyme layer**                      **phospholipid bilayer**                      **protein layer**
10. Which of the following is NOT a form of passive transport?  
**facilitated diffusion**                      **diffusion**                      **endocytosis**                      **osmosis**
11. Diffusion continues until  
**equilibrium is reached**                      **turgor pressure is reached**                      **one side has more**
12. If a cell is placed in salt water, *water* leaves the cell by  
**osmosis**                      **diffusion**                      **active transport**                      **phagocytosis**
13. A cell moves particles from a region of *low concentration to a region of high concentration* by  
**facilitated diffusion**                      **osmosis**                      **passive transport**                      **active transport**

For each scenario, answer the questions and draw an **ARROW** to illustrate the movement of molecules.

#### 14. Easter egg coloring:

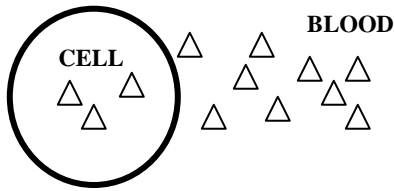
A blue food coloring tablet is placed in a cup of vinegar and water. After several seconds, the blue tablet will begin to dissolve and will eventually spread evenly throughout the liquid.



- a. The blue dye is traveling from a \_\_\_\_\_ to a \_\_\_\_\_ concentration.
- b. Identify the type of transport illustrated in this scenario:
- c. Does this movement of particles require energy?

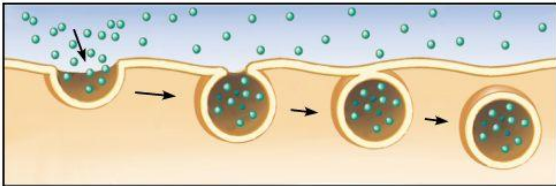
**15. Following the digestion of food:**

△ = glucose molecule



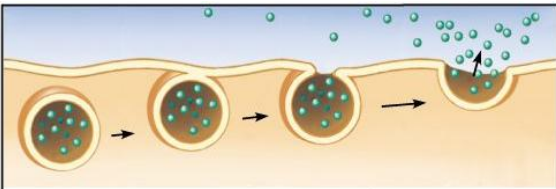
- Where is the higher concentration of glucose – blood or cell? \_\_\_\_\_
- Glucose travels through helper proteins in the cell membrane. Identify this specific type of cell transport: \_\_\_\_\_
- Is this active or passive transport? \_\_\_\_\_
- Use an arrow to illustrate the movement of glucose molecules.

**16. Movement of large particles into the cell:**



- Identify the specific type of transport being illustrated: \_\_\_\_\_
- How are the molecules being moved? \_\_\_\_\_ concentration → \_\_\_\_\_ concentration
- Does this require energy? \_\_\_\_\_

**17. Movement of large particles out of the cell:**



- Identify the specific type of transport being illustrated: \_\_\_\_\_
- Is this active or passive transport? \_\_\_\_\_
- What type of substances would be moved in this way? \_\_\_\_\_

**18. For the boxes seen below, do the calculations (each environment must equal 100%), draw an ARROW to illustrate the direction of water movement. State whether the solution is hypertonic, hypotonic, or isotonic.**

25% H<sub>2</sub>O  
75% glucose

55% H<sub>2</sub>O  
45% glucose

\_\_\_% H<sub>2</sub>O  
60% salt

30% H<sub>2</sub>O  
\_\_\_% salt

\_\_\_% H<sub>2</sub>O  
80% oxygen

80% H<sub>2</sub>O  
\_\_\_% oxygen

\_\_\_% H<sub>2</sub>O  
100% Solute

95% H<sub>2</sub>O  
\_\_\_% Solute

**OSMOSIS**

*Water leaves cell.  
Cell shrinks.  
Hypertonic solution*

55% H<sub>2</sub>O  
\_\_\_% carbon dioxide

50% H<sub>2</sub>O  
\_\_\_% carbon dioxide

100% H<sub>2</sub>O  
\_\_\_% Solute

95% H<sub>2</sub>O  
3% Other  
\_\_\_% Solute

\_\_\_% H<sub>2</sub>O  
88% Solute

\_\_\_% H<sub>2</sub>O  
10% Other  
30% Solute

89% H<sub>2</sub>O  
\_\_\_% Salt

80% H<sub>2</sub>O  
9% Other  
\_\_\_% Salt