

Name: Key
Biology

Date: _____
Mr. Donato

Cell Transport Review Sheet

1. Identify the following statements as true or false.

- T a. The cell membrane selectively regulates the passage of substances into and out of the cell.
- T b. The cell membrane is composed of protein channels, lipids, and protein receptors.
- F c. The cell membrane has the same permeability to all substances found inside or outside the cell.
- F d. The cell membrane is a double protein layer with floating lipid molecules.
- T e. The cell membrane forms a boundary that separates the cellular contents from the outside environment.
- T f. The cell membrane is capable of receiving and recognizing chemical signals.
- F g. The cell membrane forms a barrier that keeps all substances that might harm the cell from entering the cell.
- T h. The cell membrane controls the movement of molecules into and out of the cell.
- T i. The cell membrane serves as a layer of protection much like human skin.

2. The type of transport that requires ATP (energy) is known as Active Transport.

3. a. Identify molecules which are able to easily pass through the cell membrane: _____
Oxygen, Carbon dioxide, glucose, water,

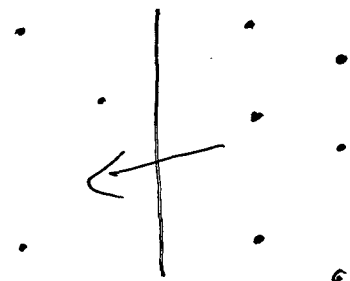
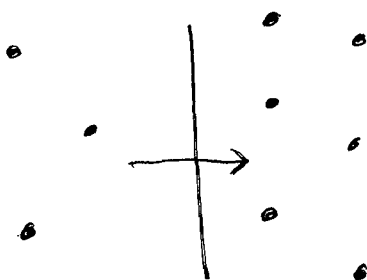
4. Identify molecules which are unable to easily pass through the cell membrane: _____
Starch, Protein

5. As a class, we will draw diagrams to help you remember the difference between

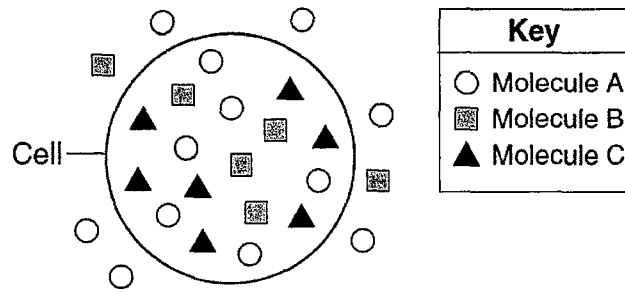
Active Transport

and

Passive Transport (Diffusion)



6. The diagram below represents a cell and several molecules. The number of molecules shown represents the relative concentration of the molecules inside and outside of the cell.

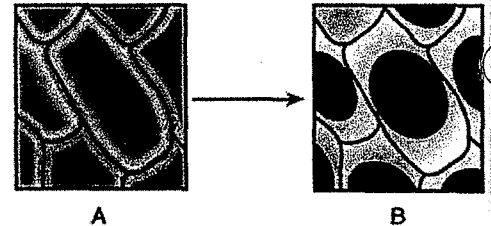


Determine the type of transport (active or passive) for each scenario described below:

- a. Molecule B moves INTO the cell: Active
- b. Molecule C moves OUT of the cell: Passive

7. Receptors aid in cell to cell communication. Certain chemicals are able to bind to them due to their specific shape.
(complimentary)

8. In order to get cell B to appear in the condition below, what type of solution had to be added to the slide? Hypertonic
Explain why the cell looks like this. The cell lost water causing the membrane to shrink



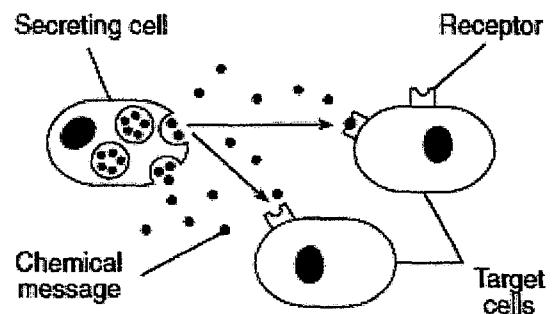
9. Circle the word that best completes the statement.

- a. Human cells will (shrink, swell) in salt water BECAUSE WATER is moving OUT of the cell.
- b. Human cell will (shrink, swell) in distilled water BECAUSE WATER is moving INTO the cell

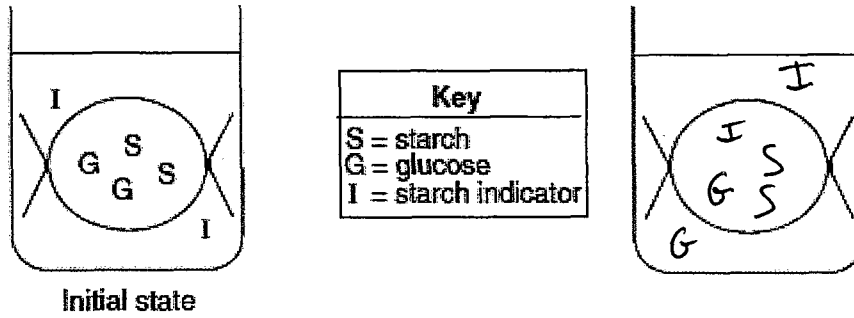
***The two observations above demonstrate that osmosis can occur in EITHER direction! ***

10. When materials move Against the gradient, it is considered active transport.

11. Using the diagram below, describe ~~the~~ the importance of chemical messages and receptors.
Receptors and messages will be complimentary shapes to send information from cell to cell.

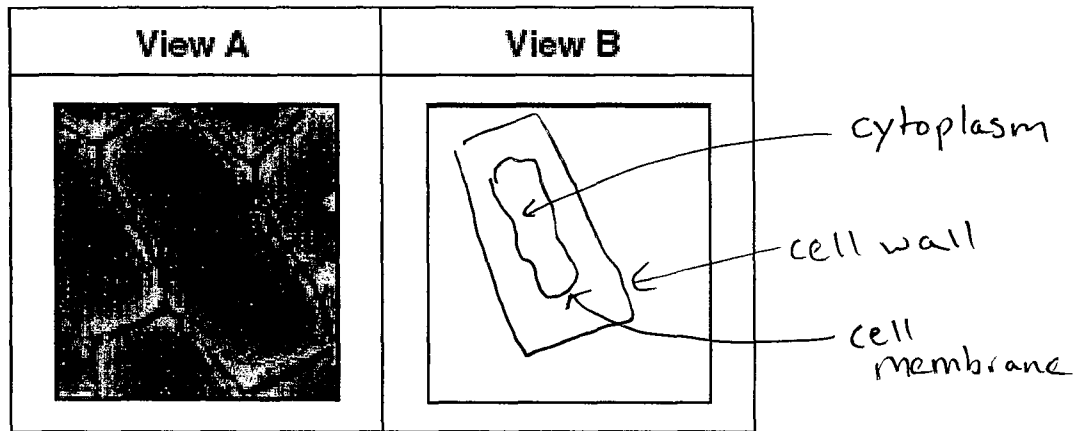


12. A model cell setup is represented in the "Initial State" diagram below. **Draw** where the substances would be located after diffusion had taken place.



- a. At the end of the lab activity, what color was the solution **INSIDE** the cell? dark blue
- b. At the end of the lab activity, what color did the solution **OUTSIDE** the cell turn when Benedict's solution was added and heated? Orange

13. The diagram below is a picture of a plant cell under a microscope. In view B, draw what it would look like if a salt solution was added. **Label** the **cell wall**, **cell membrane**, and **cytoplasm** in each diagram.



14. Describe the technique used to add salt water to the slide above.

A small piece of paper towel was placed on one side of the cover slip and salt water was added in drops to the other side. As distilled water is absorbed salt water will be pulled through.

15. Why will an animal cell burst, but a plant cell will not? Lacking cell wall

Review

Life Functions and the Cell

1. Organize the following terms from MOST complex to LEAST complex:

organism, organelle, cell, organ, tissue

Organism → Organ → Tissue → Cell → Organelle

2. A single cell organisms has tiny structures that perform the 8 life functions. These tiny structures are referred to as organelles.

3. Active Transport requires an energy molecule known as ATP. This molecule is produced by the life function cellular respiration, which occurs in the organelle known as the Mitochondria.