Cell Transport Review Worksheet

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 large amounts of waste
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

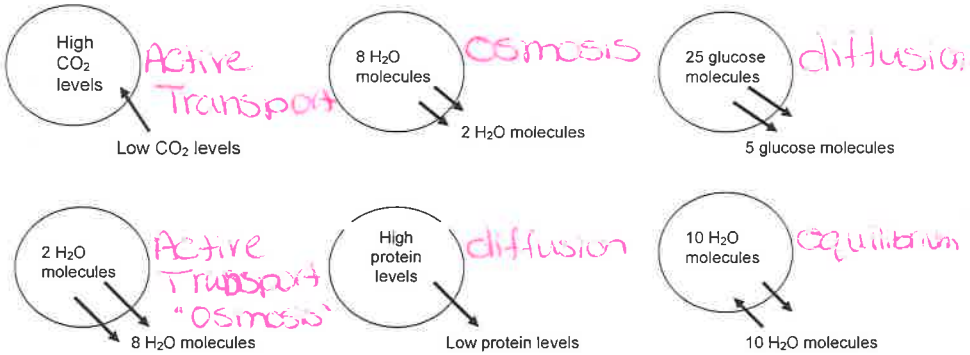
Match the term with its correct description:

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

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 vesicle 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

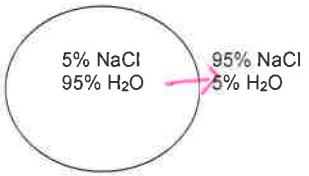
Label the diagrams of cells using the following terms: diffusion, active transport, osmosis, equilibrium. The arrows show the direction of transport. You may use the terms more than once!



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.

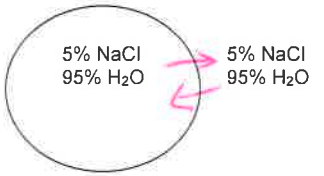
1.



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).

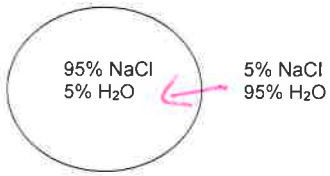
2.



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

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

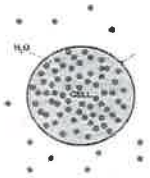
3.



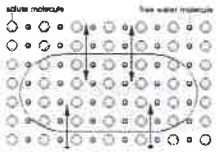
a. Water will **flow** into (into the cell, out of the cell, in both directions).

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

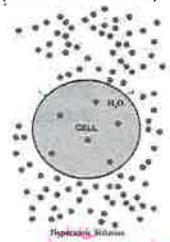
4. At which solution of concentration gradient is each cell diagram? (Hypotonic, Hypertonic, Isotonic)



a. hypertonic

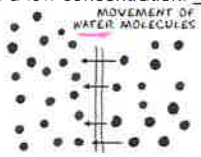


b. isotonic

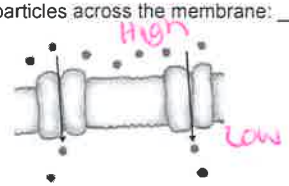


c. hypotonic

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

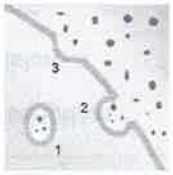


6. Using a transport protein to move particles across the membrane: facilitated diffusion

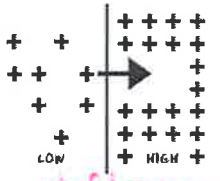


7. Describe the processes occurring in the following pictures:

endocytosis "phagocytosis"



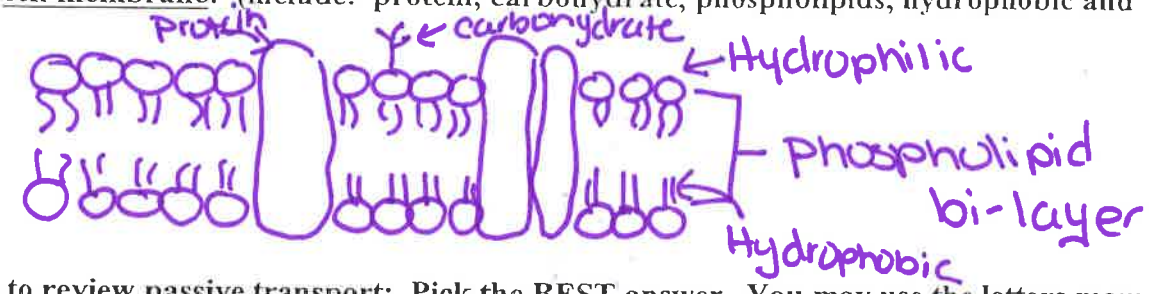
exocytosis



active transport

Cellular Transport Review – PART ONE

Draw and label the cell membrane: (include: protein, carbohydrate, phospholipids, hydrophobic and hydrophilic)



Match the following to review passive transport: Pick the BEST answer. You may use the letters more than once!

A. Diffusion

B. Osmosis

C. Facilitated Diffusion

D. Passive Transport

1. D Diffusion across a biological membrane
2. A Any spread of molecules from an area of high concentration to an area of low concentration.
3. C Diffusion with the help of a transport protein.
4. B Diffusion of water across a selectively permeable membrane.
5. A, B, C The three types of passive transport.
6. D Does not require any energy and moves substances from an area of high concentration to an area of low concentration.

State whether water will: enter the cell (IN), leave the cell (OUT), or move in both directions equally (EQUAL) to review osmosis:

7. Out Cell is exposed to hypertonic solution.
8. Out Cell is placed in salt water.
9. Equal Cell is in isotonic solution.
10. IN Unicellular organism is placed in pure water for examination under the microscope.
11. IN Solute concentration of the cell is greater than solute concentration of surrounding fluid.
12. IN Cell is exposed to hypotonic solution.
13. Out Cytoplasm is more dilute than surrounding solution.

Complete the table to review osmosis:

	How does an animal cell respond?	How does a plant cell respond?
Hypertonic	14. Shrink	15. Shrink (Plasmolysis)
tonic	16. Swell / Burst	17. Swell
Isotonic	18. Same	19. Same

Cellular Transport Review – PART TWO

Match the following to review active transport: Pick the BEST answer. You may use the letters more than once!

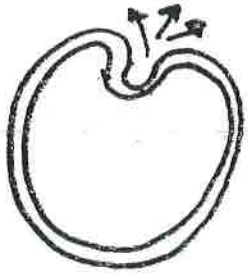
A. Endocytosis
B. Exocytosis
C. Pinocytosis
D. Phagocytosis

20. C Cell drinking
21. D/A How a cell would capture a bacterium
22. C, D The two types of endocytosis
23. D Cell eating
24. A Allows cells to swallow large quantities of a particular substance (could be liquid or solid)
25. B Allows cells to dump large quantities of a particular substance

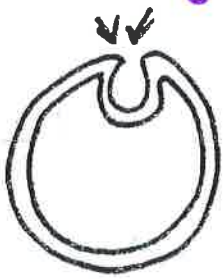
Label the following to review cellular transport:

WORD BANK
endocytosis
exocytosis
osmosis
pump (active transport)
protein channel (facilitated diffusion)

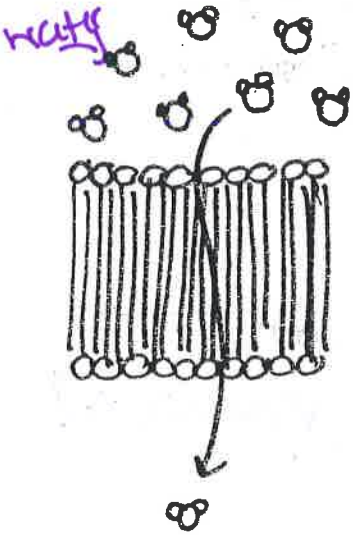
26. exocytosis



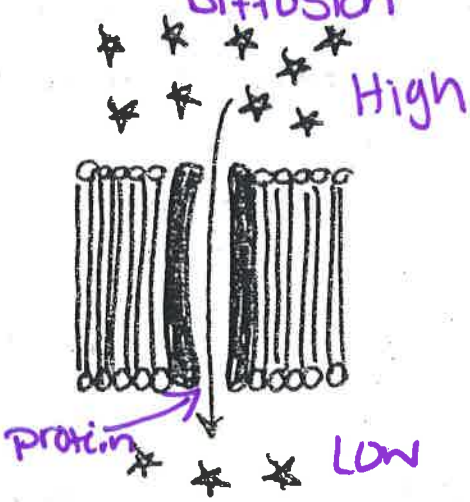
27. endocytosis



28. Osmosis



29. facilitated Diffusion



30. Pump (Active transport)