

Honors Biology
Cellular Transport Review

Name _____

Part A: Define the following terms in your own words. Use as few words as possible in your definitions.

cell membrane
simple diffusion
concentration gradient
solute
solvent
isotonic solution
hypertonic solution
hypotonic solution
plasmolysis
turgor pressure
facilitated diffusion
crenation
active transport
endocytosis
phagocytosis
pinocytosis
exocytosis
glycolipid
glycoprotein

Part B - Short Answers

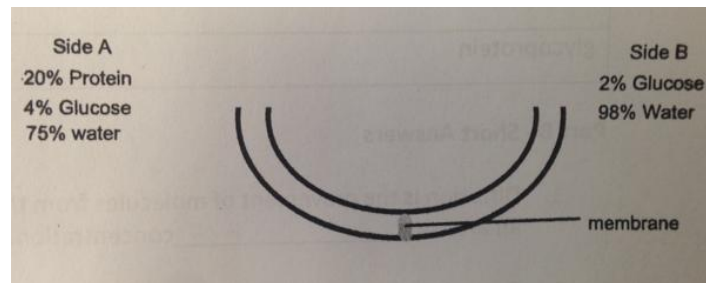
1. Diffusion is the movement of molecules from the area of _____ concentration to an area of _____ concentration.
2. Osmosis is the movement of _____ across a selectively permeable membrane.
3. A cell is isotonic to a solution of 0.01% sugar.
 - a. What concentration would be hypertonic?
 - b. What concentration would be hypotonic?
4. What happens to an animal cell in a hypotonic solution?

5. What happens to an animal cell in a hypertonic solution?
6. Turgor pressure is best exemplified by placing a plant cell in a _____ solution.
7. Give an example:
 - a. of diffusion in the body
 - b. of facilitated transport in the body
 - c. of active transport in the body
8. List 3 ways in which active transport differs from the process of diffusion across a cell membrane.
 - i.
 - ii.
 - iii.
9. List 2 ways in which facilitated transport differs from active transport.
 - i.
 - ii.
10. Within each of the three pairs, choose the more concentrated solution:

Pair A	Pair B	Answer (Pair A or B)
80% water, 20% starch	90% water, 10% starch	
5 g NaCl, 50 g water	5 g NaCl, 25 g water	
85% solvent, 15% solute	75% solvent, 25% solute	

11. Consider the diagram to the right.

- a) Will the concentration of water stay the same on side A or become greater or less with time? _____
- b) Will the concentration of protein on side A stay the same or become greater or less with time? _____
- c) Glucose will cross the membrane in which direction? _____
- d) What will happen to the level of the solution on each side?



12. Red blood cells neither gain nor lose water when put into a 0.9% NaCl solution.
- What term would you use to describe the tonicity of 0.9% NaCl for Red blood cells?

 - Are the solutions below hypertonic or hypotonic to red blood cells?
 - 15% NaCl _____
 - 0.001% NaCl _____
13. A scientist notes that of three monosaccharides -- glucose, fructose, and galactose -- glucose enters cells much faster than the other two. What process is at work?

14. Answer true or false:
- If a plant cell is placed in salt solution, the central vacuole will shrink
 - If a red blood cell is placed in distilled water, it will shrink
 - If a plant cell is placed in distilled water, the cell membrane will move away from the cell wall
 - If a red blood cell is placed in a salt solution, it will shrink
 - Crenation is to plasmolysis as lysis is to turgor pressure
15. Which of these does not require an expenditure of energy? a) diffusion b) osmosis c) facilitated transport d) none of these require energy
16. Cell drinking is synonymous with a) cell eating b) endocytosis c) phagocytosis d) pinocytosis
17. If a cell uses active transport to take in salts, then osmosis will follow and water will enter the cell a) true b) false
18. Which of the following substances would be taken into a cell by phagocytosis? a) dissolved gases b) amino acids c) simple sugars d) bacteria
19. An animal cell will always take in water when placed in a a) hypertonic solution b) hypotonic solution c) isotonic solution d) osmotic solution