

Tonicity and Osmosis Worksheet

Biology 101  
Mary Severinghaus  
10 Extra Credit Points

Name: \_\_\_\_\_

Section: \_\_\_\_\_

Date Due: \_\_\_\_\_

Using the key below and the information given, answer the questions.

**key:**  
solute particle •  
cell membrane - - - - -  
cell wall = = = = =  
in all solutions, the solvent is H<sub>2</sub>O

**Part I. Fill in the blanks:**

A \_\_\_\_\_ is a fluid in which a substance is dissolved.

A \_\_\_\_\_ is a substance dissolved in a solvent.

A \_\_\_\_\_ is a combination of solute and solvent.

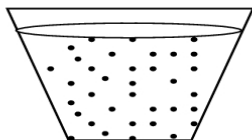
The process by which H<sub>2</sub>O diffuses across a membrane is called \_\_\_\_\_.

**Part II. Look at the solutions illustrated below and fill in the blanks.**

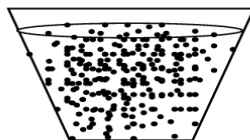
1. **Solution B** is \_\_\_\_\_ to **solution A**. This is because **solution B** has a greater concentration of \_\_\_\_\_ in it than does **solution A**. **Solution C** has no solutes dissolved in it, therefore it is \_\_\_\_\_ to both **Solutions A** and **B**.

2. As the relative concentration of **solutes** in two solutions increases, of necessity the relative concentration of **water** in the same two solutions \_\_\_\_\_. **Solution A** has a lower concentration of \_\_\_\_\_ than does **Solution C**; **Solution A** is also **hypertonic** to **Solution C**.

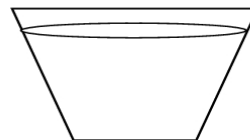
3. If you wanted to make **Solution A** isotonic to **Solution B**, you could add **water** to Solution \_\_\_\_ or you could add **solute** to Solution \_\_\_\_\_. If you took all three solutions, put them into a large container and mixed them thoroughly, then redistributed the solution among the three containers, **Solution A** would be \_\_\_\_\_ to **Solution B**. **Solution A** would also be \_\_\_\_\_ to **Solution C**, and **Solution C** would be \_\_\_\_\_ to **Solution B**.



A



B



C