Name _____ Class _____ Date _____

Skills Worksheet

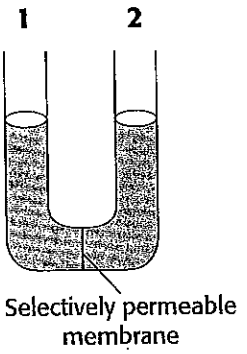
Science Skills

Predicting

Use the information below and the figure at right to answer questions 1–3.

EXPERIMENT A

A selectively permeable membrane separates the solutions in the arms of the U-tube shown at right. The membrane is permeable to water and to substance A but not to substance B. Forty grams of substance A and 20 g of substance B have been added to the water on side 1 of the U-tube. Twenty grams of substance A and 40 g of substance B have been added to the water on side 2 of the U-tube. Assume that after a period of time, the solutions on either side of the membrane have reached equilibrium.



Read each question, and write your answer in the space provided.

1. How many grams of substance A will be in solution on side 1 of the U-tube? How many grams of substance A will be in solution on side 2? Explain.

2. How many grams of substance B will be in solution on side 1 of the U-tube? How many grams of substance B will be in solution on side 2? Explain.

3. What has happened to the water level in the U-tube? Explain.

Use the information below to answer questions 4–6.

EXPERIMENT B

The cell membrane of red blood cells is permeable to water but not to sodium chloride, NaCl. Suppose that you have three flasks:

- Flask X contains a solution that is 0.5 percent NaCl.
- Flask Y contains a solution that is 0.9 percent NaCl.
- Flask Z contains a solution that is 1.5 percent NaCl.

To each flask, you add red blood cells, which contain a solution that is 0.9 percent NaCl.

Read each question, and write your answer in the space provided.

4. Predict what will happen to the red blood cells in flask X.

5. Predict what will happen to the red blood cells in flask Y.

6. Predict what will happen to the red blood cells in flask Z.