Name: **Date:**

AP Biology Prelab for Lab 1: Diffusion and Osmosis

Introduction: Dialysis tubing allows molecules to diffuse through microscopic pres in the tubing. Molecules smaller than the pores can diffuse through the dialysis membrane along their concentration gradients while molecules larger than the pore size are prevented from crossing the dialysis membrane.

Answer all questions in complete sentences. For problems, show equations and work with units and appropriate significant figures.

Part A: Predict whether or not each of these is expected to pass through the dialysis membrane:

Water: Glucose:

I_2KI: Starch:

1. How will you know whether the iodine solution has crossed the dialysis membrane?

Part B: In the following situations, assume that sucrose cannot diffuse through the dialysis membrane.

1. A dialysis bag containing a 0.20 M solution of sucrose is placed in a beaker of distilled water
    a. Will the dialysis bag gain or lose mass?

    b. Explain why.

2. A dialysis bag has an initial mass of 30.2g and a final mass of 26.3g.
    a. Find the % change in mass

Part C: A graph of the % change in mass of potato cores crosses the X axis at a sucrose concentration of 0.40 M at a room temperature of 24.0 °C.

1. Find the osmotic potential of the sucrose solution.

2. Find the water potential of the potato cells.