

Name \_\_\_\_\_

COLLIGATIVE PROPERTY PROBLEMS

1. A solution contains 0.250 mole ethylene glycol (nonelectrolyte) and 0.750 mole H<sub>2</sub>O. Calculate the vapor pressure of the solution in atmospheres at 100.0°C.

SET-UP

Answer \_\_\_\_\_

2. Calculate the osmotic pressure of a 0.0200 M glycerol (nonelectrolyte) solution at 27.0°C.

SET-UP

Answer \_\_\_\_\_

3. 10.00 g of a nonelectrolyte are dissolved in 250.0 g nitrobenzene. The FP of the resulting solution is 2.60°C. Calculate the MM of the nonelectrolyte. For nitrobenzene: FP = 5.60°C; K<sub>f</sub> = 7.00°C/m.

SET-UP

Answer \_\_\_\_\_

4. 36.0 g glucose (MM 180) was dissolved in 500.0 mL H<sub>2</sub>O. Calculate the molality, freezing point and boiling point of the solution.

a. molality SET-UP

Answer \_\_\_\_\_

b. FP SET-UP

Answer \_\_\_\_\_

c. BP SET-UP

Answer \_\_\_\_\_