

## Problem Set #2 Colligative Properties

1. Calculate the vapor pressure of a solution made by dissolving 50.0 grams of calcium chloride and 50.0 grams of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) in 500.0 grams of water. The vapor pressure of pure water is 47.1 torr at 37.0 °C.
2. Lysozyme is an enzyme that cleaves cell walls. A 0.100-L sample of a solution of lysozyme that contains 0.0750 g of the enzyme exhibits an osmotic pressure of  $1.32 \times 10^{-3}$  atm at 25 °C. Assuming ideal solution behavior, what is the molar mass of lysozyme?