

Physical Properties of Solutions

HW-chapter 12

No	Questions
1	<p>What is the molar mass of toluene if 0.85 g of toluene depresses the freezing point of 100. g of benzene by 0.47°C? K_f of benzene is $5.12^{\circ}\text{C}/\text{m}$.</p> <p>A) 92.6 g/mol B) 78.0 g/mol C) 10.7 g/mol D) 81.8 g/mol</p>
2	<p>Calculate the molality of 6.0 M H_2SO_4 solution. The density of the solution is 1.34 g/mL.</p> <p>A. 4.48 m B. 7.98 m C. 8.10 m D. 8.43 m</p>
3	<p>Which of the following aqueous solutions has the highest boiling point? Given $K_b = 0.52^{\circ}\text{C}/\text{m}$.</p> <p>a) 0.2 m KCl b) 0.2 m $\text{Ca}(\text{NO}_3)_2$ c) 0.2 M $\text{Ca}_3(\text{PO}_4)_2$ d) pure water</p>
4	<p>Predict whether each of the following substances is more likely to dissolve in the nonpolar solvent carbon tetrachloride CCl_4</p> <p>a) C_7H_{16} b) Na_2SO_4 c) HCl, d) KI</p>
5	<p>The vapor pressure of pure water at 110°C is 1070 torr. A solution of ethylene glycol and water has a vapor pressure of 1.00 atm at 110°C. Assuming that Raoult's law is obeyed, what is the mole fraction of ethylene glycol in the solution?</p> <p>a) 0.29 b) 3.45 c) 1.5 d) 2.5</p>