

**Unit 5 – Chapter 16: Electrochemistry**

Name \_\_\_\_\_

**Beer's Law Lab Conclusion Questions**

Period \_\_\_\_\_

- 1) A solution is made by dissolving 25 g NaCl in enough water to make 1.0 liter of solution. Assume that the density of the solution is  $1.0 \text{ g/cm}^3$ . Calculate the a) mass percent, b) molarity, c) molality, and d) mole fraction of NaCl.
  
- 2) A solution is prepared by dissolving 50.0 grams of cesium chloride (CsCl) in 50.0 grams of water. The density of the solution is  $1.58 \text{ g/mL}$ . Calculate the a) mass percent, b) molarity, c) molality, and d) mole fraction of the cesium chloride.
  
- 3) In a solution of acetone and ethanol, the mole fraction of the acetone is 0.40. What is the concentration of acetone as a mass percent?
  
- 4) A  $1.37 \text{ M}$  solution of citric acid ( $\text{H}_3\text{C}_6\text{H}_5\text{O}_7$ ) in water has a density of  $1.10 \text{ g/mL}$ . Calculate the a) mass percent, b) molality, and c) mole fraction of the citric acid.
  
- 5) The most concentrated aqueous solution of NaOH that can be prepared is approximately 50% by mass. Calculate the a) mole fraction and b) molality of NaOH in this solution.