Grossmont College Name: \_\_KEY\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

Chemistry 102, Spring 2017 Quiz 8a (24 points)

1. (6 points) How many grams of Kl are needed to prepare 325 mL of a 1.33 M solution?

$$325 mL KI soln×\frac{1 L}{1000 mL}×\frac{1.33 mol KI }{1 L KI soln}× \frac{166.0 g KI}{ 1 mol KI}=71.8 g KI$$

1. (4 points) How many milliliters of 5.0% (m/v) glucose solution would provide 75 g of glucose?

$$75 g Glucose ×\frac{100 mL glucose soln}{5.0 g Glucose}=1500 mL glucose soln$$

1. (6 points) Why is it bad to drink (in terms of osmosis):

a) Seawater? Water will flow out of your cells by osmosis, causing dehydration.

b) Distilled water? Water will flow into your cells by osmosis, causing them to swell, and possibly burst.

1. (2 points) Which of the following statements concerning electrolytes are correct?

1. All ionic compounds are strong electrolytes. (some are insoluble, so this is false)

2. Weak acids, such as acetic acid, are weak electrolytes.

3. Molecular (covalent) species are weak electrolytes, provided they dissolve in water. (some are nonelectrolytes)

a) 1 only **b) 2 only** c) 3 only d) 1, 2, and 3

1. (2 points) The solubility of Al(NO3)3 is 73.9 g per 100 g of water. If a student adds 35.9 g of Al(NO3)3 with stirring to 50.0 g of water, what type of solution will result?

Saturated =73.9 g Al(NO3)3 /100 g water

Need to get your solution to 100 g water so double top and bottom 71.8 g Al(NO3)3 /100 g water

73.9 g Al(NO3)3 /100 g water > 71.8 g Al(NO3)3 /100 g water (solution is unsaturated)

1. Saturated **b) unsaturated**  c) supersaturated

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| 1. (4 points) Definitions
 | Term |
| Diffusion across a membrane when no energy is required | Passive Transport |
| When a cell expends energy to move molecules or ions across a membrane.  | Active Transport |
| Solute particles pass through a channel in a transport protein but no energy is required. | Facilitated Transport |
| Some substances cross the membrane more easily than others and the passage of some substances are blocked altogether. | Semi-permeable membrane |