Chemistry 115 Name

Dr. Cary Willard

Quiz 9a (20 points) November 25, 2013

All work must be shown to receive credit.

1. (4 points) A solution is composed of 83.4 grams of ethanol and 54.9 grams of benzene. Identify the solvent and the solute..

Ethanol is the solvent and benzene is the solute

1. (4 points) If a solution is made by combining 38.7 grams of glucose, 96.7 grams of fructose and 455 grams of water, what is the percent concentration of fructose?

$$\% fructose=\left(\frac{mass fructose}{mass solution}\right)×100\%=\left(\frac{96.7 g fructose}{38.7 g glu+96.7 g fru+455 g water}\right)×100\%=\left(\frac{96.7 g fructose}{590 g soln}\right)×100\%=$$

1. (4 points) How many mL of a 1.747 M solution of silver nitrate, AgNO3, can be made from 74.83 g of silver nitrate?

$$?mL soln=74.83 g AgNO\_{3}×\frac{1 mol AgNO\_{3}}{169.9 g AgNO\_{3}}×\frac{1000 mL soln}{1.747 mol AgNO\_{3}}=$$

1. (4 points) If 35.00 mL of a 2.771 M solution of iron(II) sulfate, FeSO4, is diluted to 175.0 mL, calculate the concentration of the resulting solution?

$$M\_{1}V\_{1}=M\_{2}V\_{2} \rightarrow M\_{2}=M\_{1}\left(\frac{V\_{1}}{V\_{2}}\right)=2.771 M\left(\frac{35.00 mL}{175.0 mL}\right)=$$

1. (4 points) A person preparing a fish tank used preboiled (and then cooled) water to fill it. When the fish is put into the tank, it dies. Explain.

Because the solubility of gases decreases as the temperature increases, the boiled water will not contain enough dissolved oxygen to sustain the fish.

Chemistry 115 Name

Dr. Cary Willard

Quiz 9b (20 points) November 25, 2013

All work must be shown to receive credit.

1. (4 points) A solution is composed of 27.6 grams of ethanol and 44.2 grams of benzene. Identify the solvent and the solute..

Benzene is the solvent and ethanol is the solute.

1. (4 points) If a solution is made by combining 38.7 grams of glucose, 96.7 grams of fructose and 455 grams of water, what is the percent concentration of glucose?

$$\% glucose=\left(\frac{mass glucose}{mass solution}\right)×100\%=\left(\frac{38.7 g glucose}{38.7 g glu+96.7 g fru+455 g water}\right)×100\%=\left(\frac{38.7 g glucose}{590 g soln}\right)×100\%=$$

1. (4 points) How many mL of a 1.747 M solution of silver nitrate, AgNO3, can be made from 36.27 g of silver nitrate?

$$?mL soln=36.27 g AgNO\_{3}×\frac{1 mol AgNO\_{3}}{169.9 g AgNO\_{3}}×\frac{1000 mL soln}{1.747 mol AgNO\_{3}}=$$

1. (4 points) If 55.00 mL of a 2.771 M solution of iron(II) sulfate, FeSO4, is diluted to 175.0 mL, calculate the concentration of the resulting solution?

$$M\_{1}V\_{1}=M\_{2}V\_{2} \rightarrow M\_{2}=M\_{1}\left(\frac{V\_{1}}{V\_{2}}\right)=2.771 M\left(\frac{55.00 mL}{175.0 mL}\right)=$$

1. (4 points) A person preparing a fish tank used preboiled (and then cooled) water to fill it. When the fish is put into the tank, it dies. Explain.

Because the solubility of gases decreases as the temperature increases, the boiled water will not contain enough dissolved oxygen to sustain the fish.