Chemistry 115 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Quiz 2a

Dr. Cary Willard February 12, 2014

All work must be shown to receive credit. Use correct significant figures.

1. (5 points) The distance between San Diego and Dallas is 1906 km. What is this distance in feet?

$$?ft=1906 km×\frac{1000 m}{1 km}×\frac{100 cm}{1 m}×\frac{1 in}{2.54 cm}×\frac{1 ft}{12 in}= 6.253×10^{6} ft $$

$$(or 6253000 ft)$$

1. (5 points) The density of bronze is 7.64 g/mL. If a bronze statue has a mass of 15.32 lb, what is the volume of the statue in L?

$$?L=15.32 lb ×\frac{454 g}{1 lb}×\frac{1 mL}{7.64 g}×\frac{1 L}{1000 mL}= 0.910 L$$

1. (4 points) State whether each of the following is a physical or chemical change.
	1. A few grams of sucrose (table sugar) are placed in a small beaker of deionized water; the sugar crystals “disappear.” And the liquid in the beaker remains clear and colorless.

Physical change

* 1. A steak is cooked on a grill until well done.

Chemical change

1. (6 points) The temperature outside is 12oC. What is this temperature in oF? In K?

$$℉=\left(12℃×\frac{180℉}{100℃}\right)+32℉=22℉+32℉=54℉$$

$$K=12℃+273=285 K$$

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Quiz 2b

Dr. Cary Willard February 12, 2014

All work must be shown to receive credit. Use correct significant figures.

1. (5 points) The distance between San Diego and Chicago is 3343 km. What is this distance in feet?

$$?ft=3343 km×\frac{1000 m}{1 km}×\frac{100 cm}{1 m}×\frac{1 in}{2.54 cm}×\frac{1 ft}{12 in}= 1.097×10^{7} ft $$

$$(or 10970000 ft)$$

1. (5 points) The density of bronze is 7.64 g/mL. If a bronze statue has a mass of 21.85 lb, what is the volume of the statue in L?

$$?L=21.85 lb ×\frac{454 g}{1 lb}×\frac{1 mL}{7.64 g}×\frac{1 L}{1000 mL}= 1.30 L$$

1. (4 points) State whether each of the following is a physical or chemical change.
	1. A copper statue, over time, turns green.

Chemical change

* 1. In the lab, students firepolish the end of a glass rod. The jagged edge of the glass becomes smooth.

Physical change

1. (6 points) The temperature outside is 27oC. What is this temperature in oF? In K?

$$℉=\left(27℃×\frac{180℉}{100℃}\right)+32℉=49℉+32℉=81℉$$

$$K=27℃+273=300 K$$

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Quiz 2c

Dr. Cary Willard February 12, 2014

All work must be shown to receive credit. Use correct significant figures.

1. (5 points) The distance between San Diego and Omaha is 1305 km. What is this distance in feet?

$$?ft=1305 km×\frac{1000 m}{1 km}×\frac{100 cm}{1 m}×\frac{1 in}{2.54 cm}×\frac{1 ft}{12 in}= 4.281×10^{6} ft $$

$$(or 4281000 ft)$$

1. (5 points) The density of bronze is 7.64 g/mL. If a bronze statue has a mass of 8.645 lb, what is the volume of the statue in L?

$$?L=8.645 lb ×\frac{454 g}{1 lb}×\frac{1 mL}{7.64 g}×\frac{1 L}{1000 mL}= 0.514 L$$

1. (4 points) State whether each of the following is a physical or chemical change.
	1. When a teaspoon of baking soda (sodium bicarbonate is placed into a few ounces of vinegar (acetic acid), volumes of carbon dioxide bubbles (effervescence) are produced.

Chemical change

* 1. Chlorine bleach is used to remove a coffee stain on a white lab coat.

Chemical change

1. (6 points) The temperature outside is 34oC. What is this temperature in oF? In K?

$$℉=\left(34℃×\frac{180℉}{100℃}\right)+32℉=61℉+32℉=93℉$$

$$K=34℃+273=307 K$$

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Quiz 2d

Dr. Cary Willard February 12, 2014

All work must be shown to receive credit. Use correct significant figures.

1. (5 points) The distance between San Diego and New Orleans is 2586 km. What is this distance in feet?

$$?ft=2586 km×\frac{1000 m}{1 km}×\frac{100 cm}{1 m}×\frac{1 in}{2.54 cm}×\frac{1 ft}{12 in}= 8.484×10^{6} ft $$

$$(or 8484000 ft)$$

1. (5 points) The density of bronze is 7.64 g/mL. If a bronze statue has a mass of 46.47 lb, what is the volume of the statue in L?

$$?L=46.47 lb ×\frac{454 g}{1 lb}×\frac{1 mL}{7.64 g}×\frac{1 L}{1000 mL}= 2.76 L$$

1. (4 points) State whether each of the following is a physical or chemical change.
	1. When a few grams of a blue crystalline solid are placed into a beaker of deionized water, the crystals “disappear” and the liquid becomes clear and blue in color.

Physical change

* 1. When two clear and colorless aqueous salt solutions are mixed together, the solution turns cloudy and yellow.

Chemical change

1. (6 points) The temperature outside is 22oC. What is this temperature in oF? In K?

$$℉=\left(22℃×\frac{180℉}{100℃}\right)+32℉=40℉+32℉=72℉$$

$$K=22℃+273=295 K$$