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

Chemistry 102, Spring 2017

Quiz 1a (23 points) Date: \_\_\_\_\_\_\_\_\_\_\_\_

1. (3 points) Perform the following actions on each of the following

|  |  |
| --- | --- |
| 1. Round 7.29764 mL to 3 significant figures.
 | 7.30 mL |
| 1. How many significant figures are in 0.00860 g?
 | 3 |
| 1. Write 70350000 cm in scientific notation.
 |  7.035 x 107 cm |

1. (4 points) Perform the following calculation and give the answer to the correct number of significant figures

|  |  |  |  |
| --- | --- | --- | --- |
| $$72.041+16.3+1901.22=$$ | 1989.6 | $$\frac{\left(0.00966\right)(85.24)}{21.588}=$$ | 0.0381 |

1. (3 points) You are a new nurse at Lakeview Hospital. Your previous facility used Fahrenheit for recording patient temperatures, but at Lakeview they use Centigrade. Your patient’s temperature is 39.5oC. You want to know what this “translates” to in the Fahrenheit system.

$$T\_{F}=\left(\frac{9℉}{5℃}\right)T\_{C}+32℉=71.1℉+ 32℉=103.1℉ ≈103℉ $$

1. An average man is requires about 2.00 mg of riboflavin (vitamin B2) per day. Cheese contains 5.5μg of riboflavin per gram of cheese.
	1. (4 points) Write two reciprocal conversion factors for each pair of units. Be sure each quotient contains a number and a unit in both the numerator and denominator.

|  |  |
| --- | --- |
| mg and μg | g and lbs |
| $$\frac{1000 μ g}{1 mg} \frac{1 mg}{1000 μ g}$$ | $$\frac{454 g}{1 lb} \frac{1 lb}{454 g}$$ |

* 1. (3 points) Use the conversion factor from step (a) to determine how many pounds of cheese would a man have to eat per day if this is his only source of riboflavin?

$$\frac{2.00 mg riboflavin}{ 1 day}×\frac{1000 μ g}{1 mg}×\frac{1 g cheese}{5.5 μ g riboflavin} ×\frac{1 lb}{454 g}=0.80 lb cheese$$

1. (6 points) Classify each of the following as a homogenous mixture, heterogeneous mixture, element or compound:

|  |  |  |  |
| --- | --- | --- | --- |
| 1. A bag of coffee beans;
 | Heterogeneous mixture | 1. A gallon of nonfat milk;
 | Homogenous mixture |
| 1. A teaspoon of table sugar;
 | Compound | 1. A tank of gasoline;
 | Homogenous mixture |
| 1. Muddy river water;
 | Heterogeneous mixture | 1. A bottle of sulfur powder.
 | Element |