Grossmont College Name: \_\_\_\_key\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemistry 102, Spring 2017

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

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

|  |  |
| --- | --- |
| 1. Round 93.592299 g to 3 significant figures.
 | 93.6 g |
| 1. How many significant figures are in 0.00042010 L?
 | 5 |
| 1. Write 29508132502 cm in scientific notation with 4 significant figures.
 | 2.951 x 1010 cm |

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

|  |  |  |  |
| --- | --- | --- | --- |
| 61.384 mL + 531.49 mL = | 592.87 mL | $$\frac{1.428492 g }{0.0522 mL}=$$ | 27.4 g/mL |

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 35.9oC. You want to know what this “translates” to in the Fahrenheit system.

$$T\_{F}=\left(\frac{9℉}{5℃}\right)T\_{C}+32℉=64.6℉+ 32℉=96.62℉ ≈96.6℉ $$

1. An average man is requires about 2.75 mg of riboflavin (vitamin B2) per day. Cheese contains 6.3μg 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?

$$\frac{2.75 mg riboflavin}{ 1 day}×\frac{1000 μ g}{1 mg}×\frac{1 g cheese}{6.3 μg riboflavin} ×\frac{1 lb}{454 g}=0.96 lb cheese$$

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

|  |  |  |  |
| --- | --- | --- | --- |
| 1. A bottle of pure iodine;
 | Element | 1. Muddy river water;
 | Heterogeneous mixture |
| 1. A glass of well stirred lemonade;
 | Homogenous mixture | 1. A glass of pure alcohol;
 | Compound |
| 1. Fresh air;
 | Homogenous mixture | 1. A pail of Garbage;
 | Heterogeneous mixture |