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

Quiz 1a

Dr. Cary Willard August 27, 2013

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

1. (4 points) What is wrong with the expression “That is just a theory,” if by theory the speaker is referring to a scientific theory?

Scientific theories are backed by extensive data and have a high probability of being correct. Often people will refer to any idea, tested or not, as a theory. This does not meet the scientific definition of a theory. Scientific theories cannot be considered absolute truths however because science allows anything to be questioned and tested.

1. (2 points) Write the name or symbol for the following elements
	1. Chromium Cr
	2. B boron
2. (4 points) Write the following measurements in scientific notation with 4 significant figures.
	1. 581962846 g 5.820 x 108 g
	2. 0.0000352329 mL 3.523 x 10-5 mL
3. (2 points) What is the log of 6.49 x 105? 5.812 (4 sig figs)
4. (4 points) Perform the following calculations and give the answer to the correct number of significant figures.
	1. 61.384 mL + 531.49 mL = 592.874 rounds to 592.87 mL
	2. $\frac{1.428492 g }{0.0522 mL}=$ 27.3657 rounds to 27.4 g/mL
5. (4 points) A tree is 2.57 x 10-2 miles tall. How tall is the tree in inches? Given that there are 5280 feet per mile and 12 in per foot, write both of these relationships as conversion factors and then use dimensional analysis to solve the problem

Conversion factor relating feet and miles $\frac{5280 ft}{1mi}or \frac{1 mi}{5280 ft}$

Conversion factor relating inches and feet $\frac{1 ft}{12 in}or \frac{12 in}{1 ft}$

$$?in tree=2.57×10^{-2}mi×\frac{5280 ft}{1 mi}×\frac{12 in}{1 ft}=1630 in tree$$

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

Quiz 1b

Dr. Cary Willard August 27, 2013

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

1. (4 points) What is wrong with the expression “That is just a theory,” if by theory the speaker is referring to a scientific theory?

Scientific theories are backed by extensive data and have a high probability of being correct. Often people will refer to any idea, tested or not, as a theory. This does not meet the scientific definition of a theory. Scientific theories cannot be considered absolute truths however because science allows anything to be questioned and tested.

1. (2 points) Write the name or symbol for the following elements
	1. Cobalt Co
	2. Li lithium
2. (4 points) Write the following measurements in scientific notation with 4 significant figures.
	1. 6824246825 g 6.824 x 109 g
	2. 0.0006159724 mL 6.160 x 10-4 mL
3. (2 points) What is the log of 3.52 x 105? 5.547 (4 sig figs)
4. (4 points) Perform the following calculations and give the answer to the correct number of significant figures.
	1. 61.384 mL + 684.49 mL = 745.874 rounds to 745.87 mL
	2. $\frac{1.428492 g }{0.0289 mL}=$ 49.428789 rounds to 49.4 g/mL
5. (4 points) A tree is 3.04 x 10-2 miles tall. How tall is the tree in inches? Given that there are 5280 feet per mile and 12 in per foot, write both of these relationships as conversion factors and then use dimensional analysis to solve the problem

Conversion factor relating feet and miles $\frac{5280 ft}{1mi}or \frac{1 mi}{5280 ft}$

Conversion factor relating inches and feet $\frac{1 ft}{12 in}or \frac{12 in}{1 ft}$

$$?in tree=3.04×10^{-2}mi×\frac{5280 ft}{1 mi}×\frac{12 in}{1 ft}=1930 in tree$$

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

Quiz 1c

Dr. Cary Willard August 27, 2013

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

1. (4 points) What is wrong with the expression “That is just a theory,” if by theory the speaker is referring to a scientific theory?

Scientific theories are backed by extensive data and have a high probability of being correct. Often people will refer to any idea, tested or not, as a theory. This does not meet the scientific definition of a theory. Scientific theories cannot be considered absolute truths however because science allows anything to be questioned and tested.

1. (2 points) Write the name or symbol for the following elements
	1. Magnesium Mg
	2. S sulfur
2. (4 points) Write the following measurements in scientific notation with 4 significant figures.
	1. 5269725 cm 5.270 x 106 cm
	2. 0.006848267 kg 6.848 x 10-3 kg
3. (2 points) What is the log of 4.95 x 108? 8.694 (4 sig figs)
4. (4 points) Perform the following calculations and give the answer to the correct number of significant figures.
	1. 12.6842 g + 3.5 g = 16.1842 rounds to 16.2 g
	2. $\frac{94.3512 m }{6.157 s}=$ 15.32422 rounds to 15.32 m/s
5. (4 points) A chicken has a mass of 3.78 x 10-3 tons. What is the mass of the chicken in ounces? Given that there are exactly 2000. lbs per ton and 16 ounces per pound, write both of these relationships as conversion factors and then use dimensional analysis to solve the problem

Conversion factor relating pounds(lb) and tons $\frac{2000.lb}{1ton}or \frac{1 ton}{2000 ft}$

Conversion factor relating pounds(lb) and ounces(oz) $\frac{1 lb}{16 oz}or \frac{16 oz}{1 lb}$

$$?oz chicken=3.87×10^{-3}ton×\frac{2000.lb}{1 ton}×\frac{16 oz}{1 lb}=124oz$$

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

Quiz 1d

Dr. Cary Willard August 27, 2013

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

1. (4 points) What is wrong with the expression “That is just a theory,” if by theory the speaker is referring to a scientific theory?

Scientific theories are backed by extensive data and have a high probability of being correct. Often people will refer to any idea, tested or not, as a theory. This does not meet the scientific definition of a theory. Scientific theories cannot be considered absolute truths however because science allows anything to be questioned and tested.

1. (2 points) Write the name or symbol for the following elements
	1. Bromine Br
	2. P phosphorous
2. (4 points) Write the following measurements in scientific notation with 4 significant figures.
	1. 9573517 cm 9.573 x 106 cm
	2. 0.0057596248 kg 5.760 x 10-3 kg
3. (2 points) What is the log of 6.37 x 108? 8.804 (4 sig figs)
4. (4 points) Perform the following calculations and give the answer to the correct number of significant figures.
	1. 15.6842 g + 3.6 g = 19.2842 rounds to 19.3 g
	2. $\frac{94.3512 m }{4.257 s}=$ 22.16377 rounds to 22.16 m/s
5. (4 points) A chicken has a mass of 2.94 x 10-3 tons. What is the mass of the chicken in ounces? Given that there are exactly 2000. lbs per ton and 16 ounces per pound, write both of these relationships as conversion factors and then use dimensional analysis to solve the problem

Conversion factor relating pounds(lb) and tons $\frac{2000.lb}{1ton}or \frac{1 ton}{2000 ft}$

Conversion factor relating pounds(lb) and ounces(oz) $\frac{1 lb}{16 oz}or \frac{16 oz}{1 lb}$

$$?oz chicken=2.94×10^{-3}ton×\frac{2000.lb}{1 ton}×\frac{16 oz}{1 lb}=94.1 oz$$