Coastline College Dupon

Homework Set 1

(Distributed 8/29/16; Due on 9/7/16)

Read Chapters 1 & 2 (sections 2.1 – 2.5) in Zumdahl & DeCoste and complete the listed questions from the text: **Chapter 1: 3; Chapter 2: 7, 11, 25, 33, 40, 44, 47;** as well as the following problems:

A. Convert each of the indicated quantities to the new units:

Volume of a single teardrop 0.00721 mL	> <u>7</u> .	<u>21</u> microliters
Mass of one sugar crystal 0.000625 g	>	_ 6.25 x 10⁵ ng
Height of Irvine's 200 Spectrum Center 0.	0984 km	> 9840 cm

B. How many significant figures are there in each of the following quantities?i. 0.00104 gii. 12010 m3 sig figs4 sig figs4 sig figs4 sig figs

C. Write each of the quantities in part **B** in standard scientific notation. 1.04 x 10^{-3} g 1.201 x 10^{5} m 9.206 x 10^{-2}

D. Complete the following calculations and express each answer with the correct number of significant figures and units:

1. 205.36 mL + 72.5 mL = <u>277.9 mL</u>

ii. 3.55 cm x 12.7 cm x 0.15 cm = <u>6.8 cm³</u>

iii. 24.01 cm – 6.1 cm = <u>17.9 cm</u>

Problems from Zumdahl/DeCoste:

Chapter 1

3. Some possibilities might include the refined petroleum products that fuel your car; burning natural gas or oil heats our homes and the many readily available pharmaceuticals like aspirin or ibuprofen.

Chapter 2:		
7 a. 5.012 x 10^{-1}	b. 5.012 x 10 ⁶	c. 5.012 x 10 ⁻⁶
d. 5.012 x 10^{0}	e. 5.012 x 10 ³	f. 5.012 x 10 ⁻³
11. a. 9.782 x 10 ⁴	b. 4.214 x 10 ⁴	c. 8.214 x 10 ⁻⁵
d. 3.914 x 10 ⁻⁴	e. 9.271 x 10 ²	f. 4.781 x 10 ⁻¹

25. a. kilometers b. meters c. centimeters d. micrometers or millimeters

33. (a) 3 (b) 2 (c) 2 (d) 4

40. a. 8.8×10^{-4} b. 9.375×10^{4} c. 8.97×10^{-1} d. 1.00×10^{3}

44. b, c and d have one significant figure; a has three.

47.a. 52.36 b. 10.90 c. 5.25 d. 6.5