

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 ----> _____ microliters

Mass of one sugar crystal 0.000625 g ----> _____ ng

Height of Irvine's 200 Spectrum Center 0.0984 km ----> _____ cm

B. How many significant figures are there in each of the following quantities?

i. 0.00104 g

ii. 12010 m

iii. 0.09206

C. Write each of the quantities in part **B** in standard scientific notation.

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

i. $205.36 \text{ mL} + 72.5 \text{ mL} = \underline{\hspace{2cm}}$

ii. $3.55 \text{ cm} \times 12.7 \text{ cm} \times 0.15 \text{ cm} = \underline{\hspace{2cm}}$

iii. $24.01 \text{ cm} - 6.1 \text{ cm} = \underline{\hspace{2cm}}$