Chemistry 328N Spring 2019

Homework #1

Due: 1/28/19 by 5PM

Read: All of Chapter 14

Do Problems: 14.1a; 14.6; 14.7; 14.9; 14.11; 14.30.

Supplemental Problems:

1. Write the name of the “mystery compound” on the web page. You need to “surf” the page to find it!
2. Estimate the M+1 peak intensity for cyclooctane.
3. Qingjun has an unknown to solve. He has worked diligently for hours on the problem and based on several complex analytical studies, he has decided that he has either cyclohexane or cyclopentanone ($C_5H_8O$). He quickly runs a high-resolution mass spectrum and finds M = 84.059. What is the structure of his unknown??
4. There are three intense peaks in the molecular ion area of the mass spectrum of 1,2-dibromoethane. What are the relative intensities of the peaks at (M/e = 188,190) to the peak at M/e = 186. Which of these peaks is the “Molecular Ion?”

   Hint: See https://www.chemguide.co.uk/analysis/masspec/mplus2.html