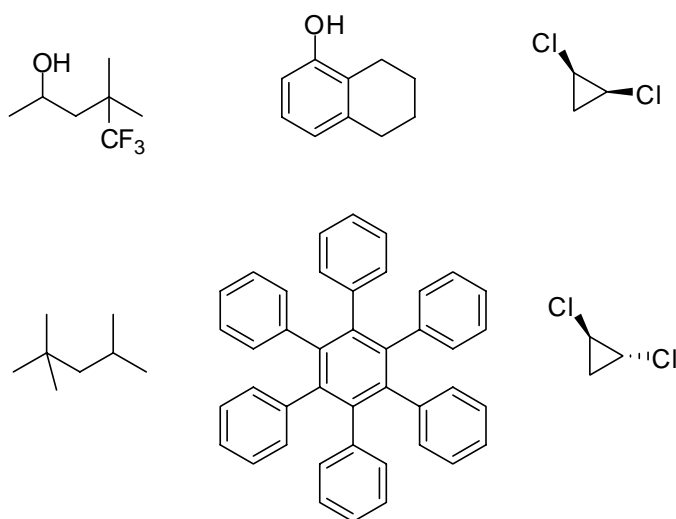


## CH 351 QUALITATIVE ORGANIC ANALYSIS

1. ChemDraw Ultra 10.0 is a great and simple to use tool to estimate the NMR spectra ( $^1\text{H}$  and  $^{13}\text{C}$  NMR) of compounds we work with. The prediction of the spectra could be very useful for us to interpret the actual spectra we record, and help us to identify our products.

Draw the structure of the compounds below in ChemDraw and determine/estimate their  $^1\text{H}$  and  $^{13}\text{C}$ -NMR spectra. Interpret the spectra in terms of chemical shifts (shielding, etc.) and explain the observed splitting patterns.

The software is available possibly on every computer in the library, but definitely on most of them. Should you be interested in having the software on your own computer please, let me know. As we have a site license for this software (subject to renewal in every March), everyone with *umb.edu* email address can download it.



The assignment is due December 20 (Thursday).