Name _____ Lab Partner _____

TA Name _____ Section _____ Date _____

Experiment 2 - NMR Spectroscopy

1. Draw the structural formulas of the following compounds and indicate the number of NMR signals that would be expected for each compound.

   (a) methyl iodide

   (b) 2,4-dimethylpentane

   (c) cyclopentane

   (d) propylene (propene)

2. Draw the structural formula of the compounds that are indicated by the following data:

   (a) an alkyl halide with a molecular formula of C_3H_7Cl whose NMR spectrum contains two signals: a doublet (6H), and a multiplet (1H).

   (b) a compound with molecular formula $C_7H_{14}Cl_2$ whose NMR spectra contains three signals: a singlet (9H), a triplet (3H), and a quartet (2H).

3. Figures 3-7 are representative spectra of compounds. Based on the NMR spectra shown, please provide a reasonable structure for each compound.

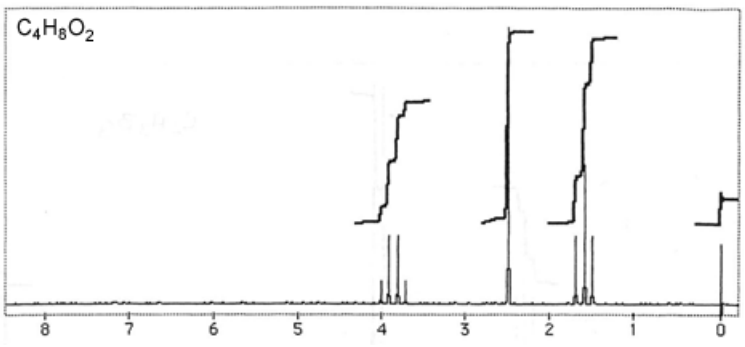

Figure 4

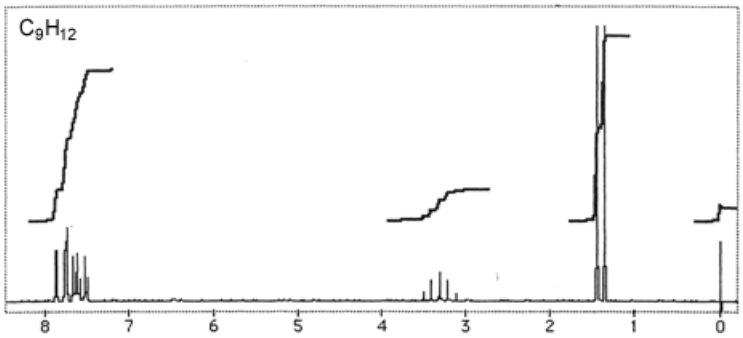

Figure 5

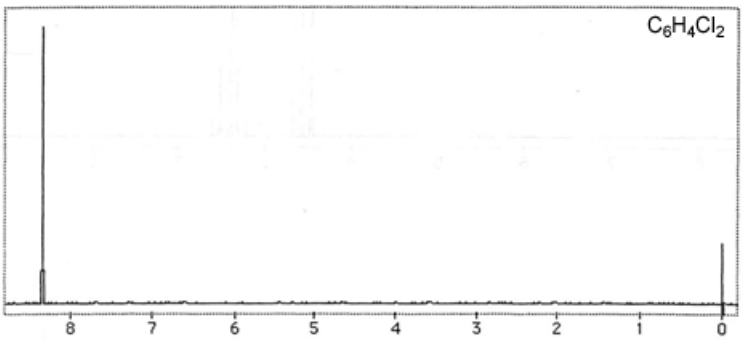

Figure 6

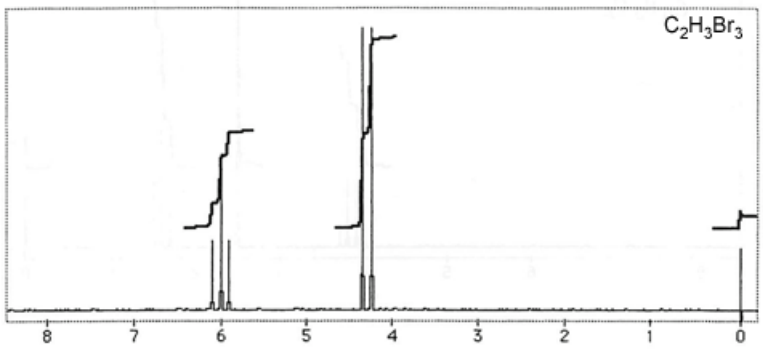

Figure 7

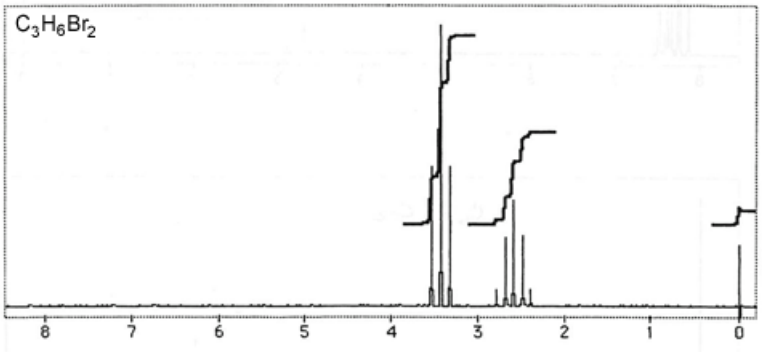

Figure 8

