

An example from the Summer 1998 Examination #1:

6. (25 points)

The infrared, ^1H NMR and ^{13}C NMR (broadband ^1H decoupled) spectra of compound A ($\text{C}_6\text{H}_{15}\text{N}$) are shown below. Clearly assign all the resonances that you can identify with certainty and draw the structure of compound A. (Correlation tables are included separately.)

The infrared spectrum is unavailable due to copyright considerations.

The ^1H NMR and ^{13}C NMR spectra are unavailable due to copyright considerations.

6. (continued)

Infrared absorption assignments:

wave number (cm⁻¹)

functional group

type of vibration (stretch or bend)

¹H NMR assignments:

chemical shift (ppm)

assignment

explanation of multiplicity

¹³C NMR assignments:

chemical shift (ppm)

assignment

explanation of multiplicity

structure of compound A: