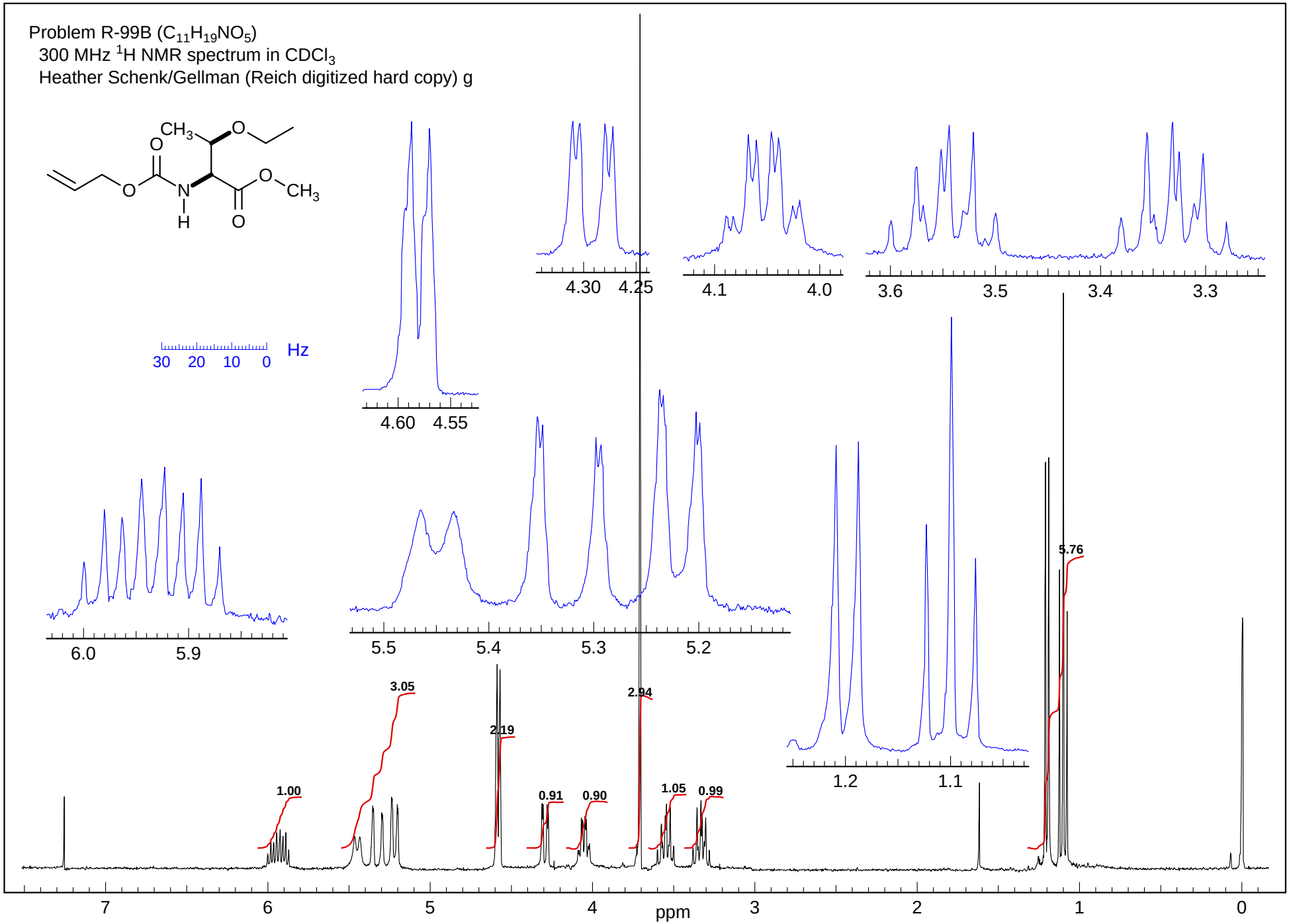


PLT ex-1-1999a-g.plt

Problem R-99B. The ^{1}H and ^{13}C NMR spectra (normal and DEPT-135) of R-99A are provided. Your task is to assign the proton and carbon NMR spectra.

(a) All of the protons have been labelled A-L (there is no I). Enter the chemical shift, multiplet structure and approximate coupling constants in the table below. Use the format shown for X:
X e.g.: 3.3 δ, qt, J = 7 , 3 Hz

A_____

B_____

C_____

D_____

E_____

F_____

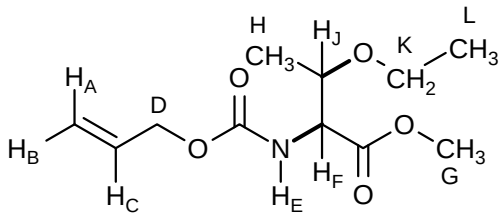
G_____

H_____

J_____

K_____

L_____



(b) All of the carbons have been labelled 1-11 in the structure below. Enter the chemical shift in the table. Indicate any ambiguous assignments.

1_____

2_____

3_____

4_____

5_____

6_____

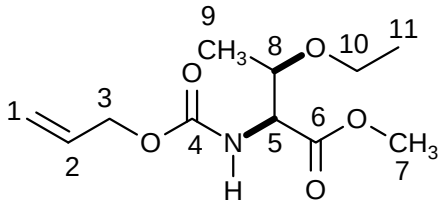
7_____

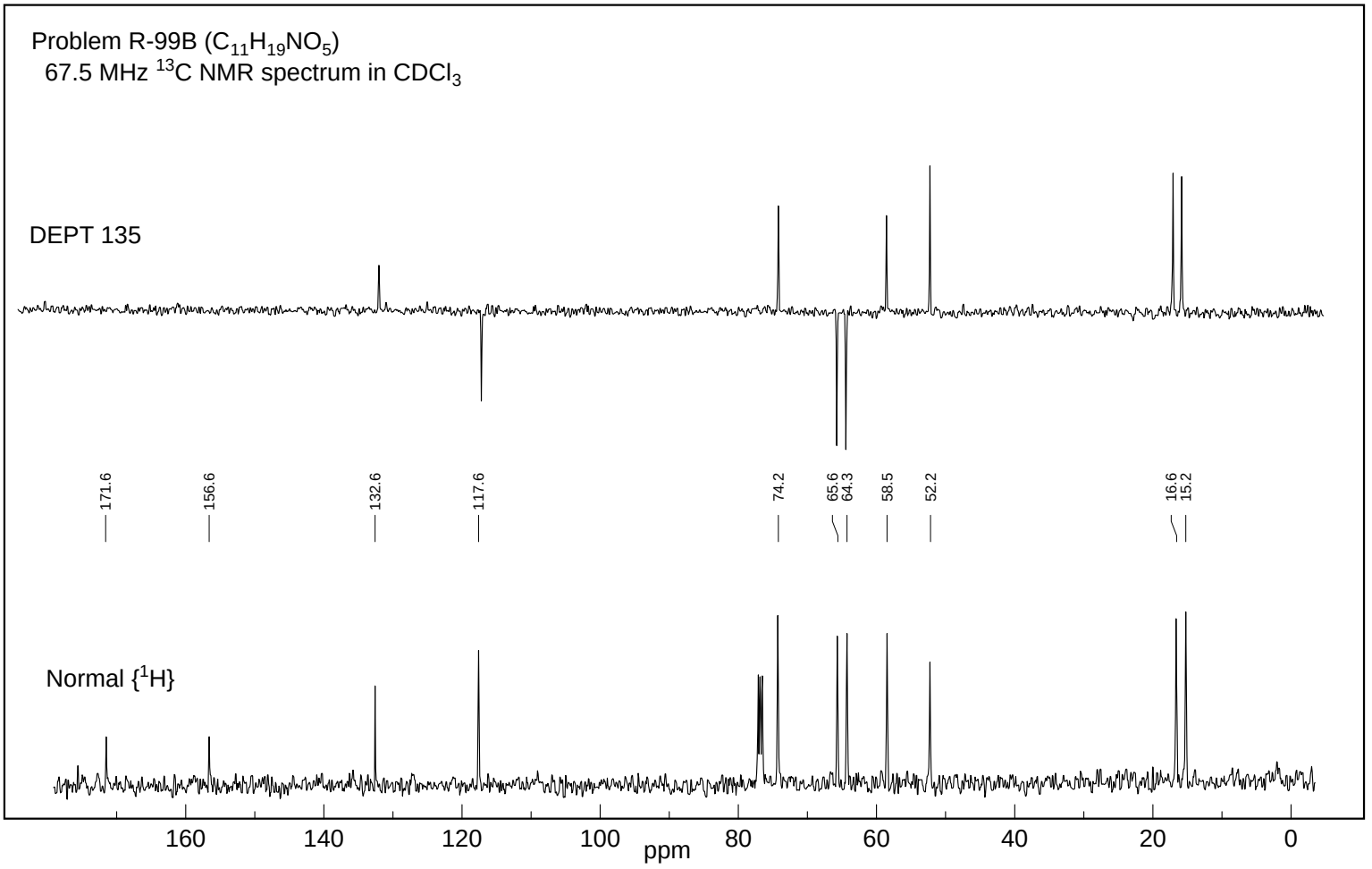
8_____

9_____

10_____

11_____





PLT ex-1-1999a-g.plt

Problem R-99B. The ^{1}H and ^{13}C NMR spectra (normal and DEPT-135) of R-99A are provided. Your task is to assign the proton and carbon NMR spectra.

(a) All of the protons have been labelled A-L (there is no I). Enter the chemical shift, multiplet structure and approximate coupling constants in the table below. Use the format shown for X:

X e.g.: 3.3 δ, qt, J = 7 , 3 Hz

A 5.33, dq (dd?), *J* = 16, 2 Hz

B 5.22, dq (dd?), *J* = 10, 2 Hz

C 5.9, ddt, *J* = 16, 10, 6 Hz

D 4.58, dm (dt?), *J* = 6 Hz

E 5.45, broad d, *J* = 8 Hz (NH, broadened by J_{NH})

F 4.29, dd, *J* = 8, 3 Hz

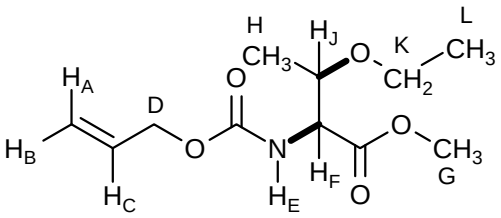
G 3.7, s

H 1.20, d, *J* = 7 Hz

J 4.05, qd *J* = 6, 3 Hz

K 3.33, dq, *J* = 9. 8 Hz; 3.55, dq, *J* = 9. 8 Hz Distereomeric -O-CH_2-CH_3

L 1.10, t, *J* = 7 Hz



(b) All of the carbons have been labelled 1-11 in the structure below. Enter the chemical shift in the table. Indicate any ambiguous assignments.

1 117.605

2 132.596

3 65.594 or 64.269

4 156.614

5 58.471 (4,6 common switch)

6 171.604

7 52.177

8 74.207

9 15.239 or 16.564

10 65.594 or 64.269

11 15.239 or 16.564