

^{13}C NMR Spectrum
(100.0 MHz, CDCl_3 solution)

C_9H_{12}

DEPT $\text{CH}_2 \downarrow \text{CH}_3 \uparrow \text{CH} \uparrow$

proton decoupled

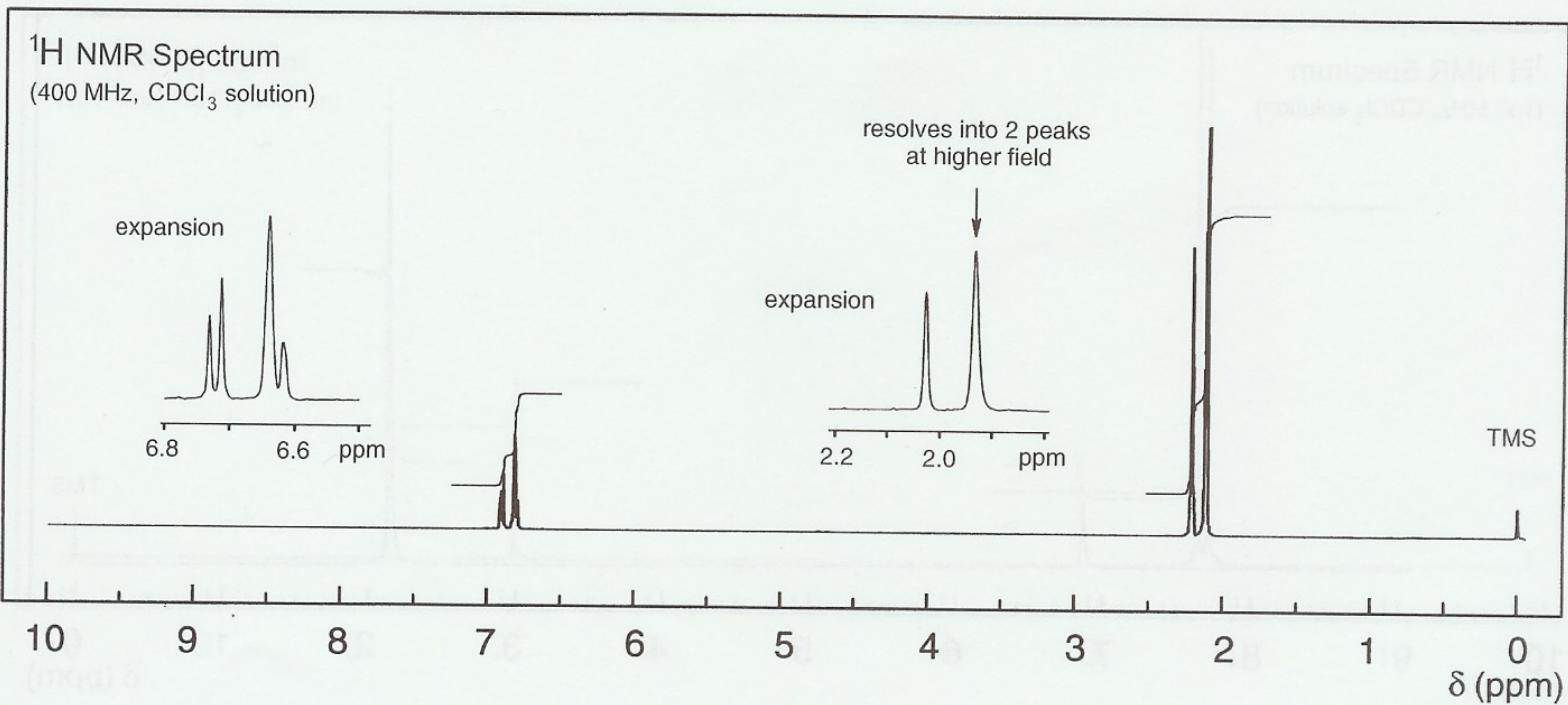
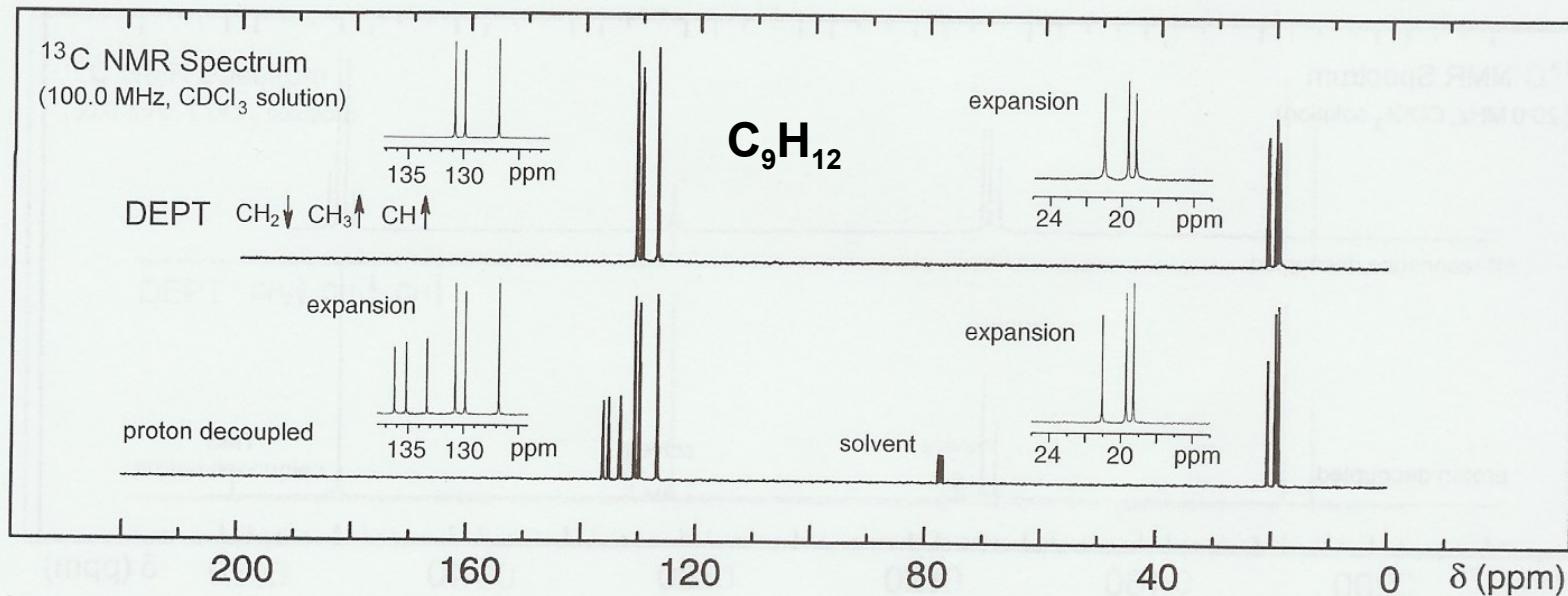
solvent

200 160 120 80 40 0 δ (ppm)

^1H NMR Spectrum
(400 MHz, CDCl_3 solution)

TMS

10 9 8 7 6 5 4 3 2 1 0 δ (ppm)



^{13}C NMR Spectrum
(20.0 MHz, CDCl_3 solution)

$\text{C}_{10}\text{H}_{14}$

off-resonance decoupled

proton decoupled

solvent

TMS

200 160 120 80 40 0 δ (ppm)

^1H NMR Spectrum
(100 MHz, CDCl_3 solution)

TMS

10 9 8 7 6 5 4 3 2 1 0 δ (ppm)

^{13}C NMR Spectrum
(50.0 MHz, CDCl_3 solution)

$\text{C}_{10}\text{H}_{14}$

DEPT $\text{CH}_2 \downarrow \text{CH}_3 \uparrow \text{CH} \uparrow$

proton decoupled

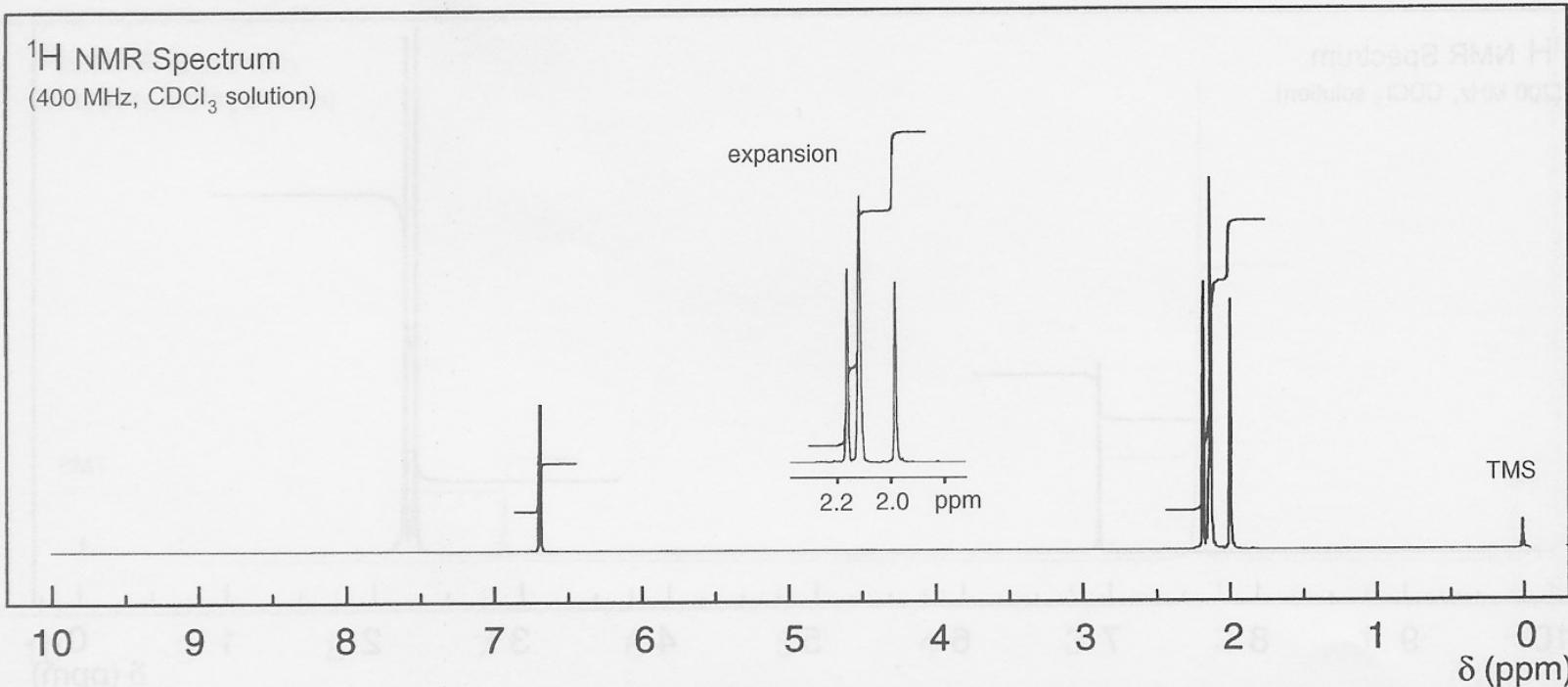
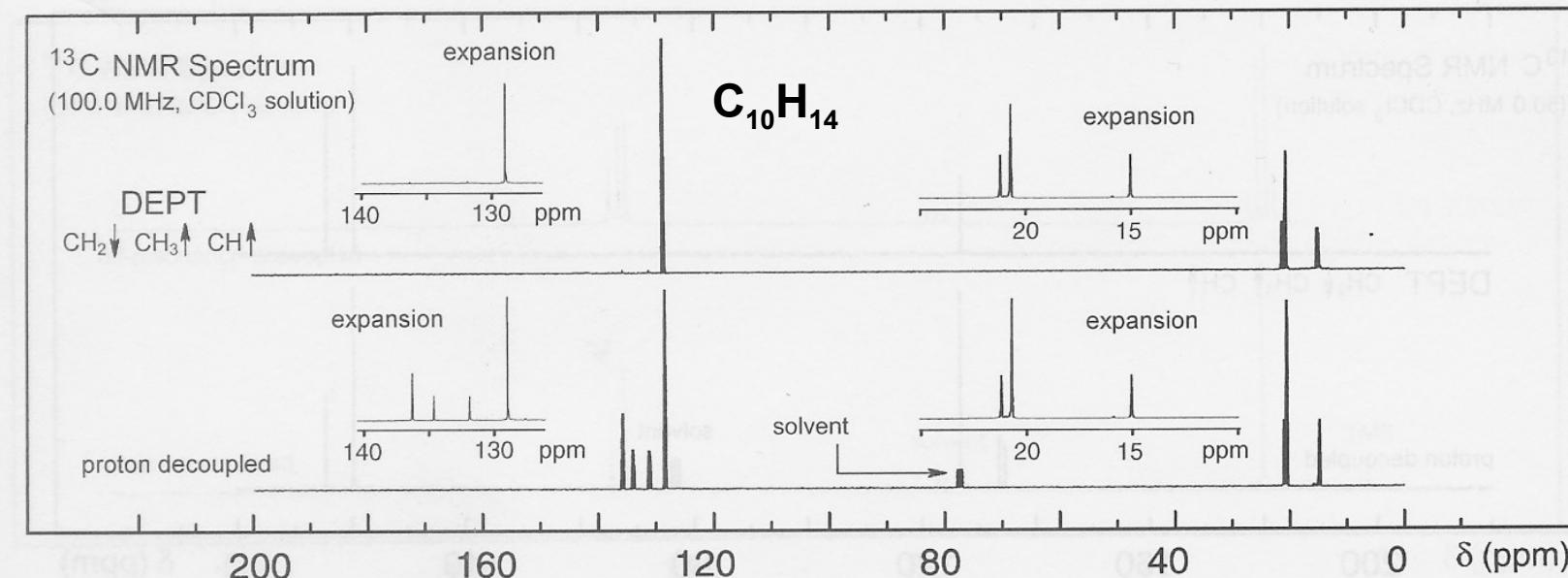
solvent

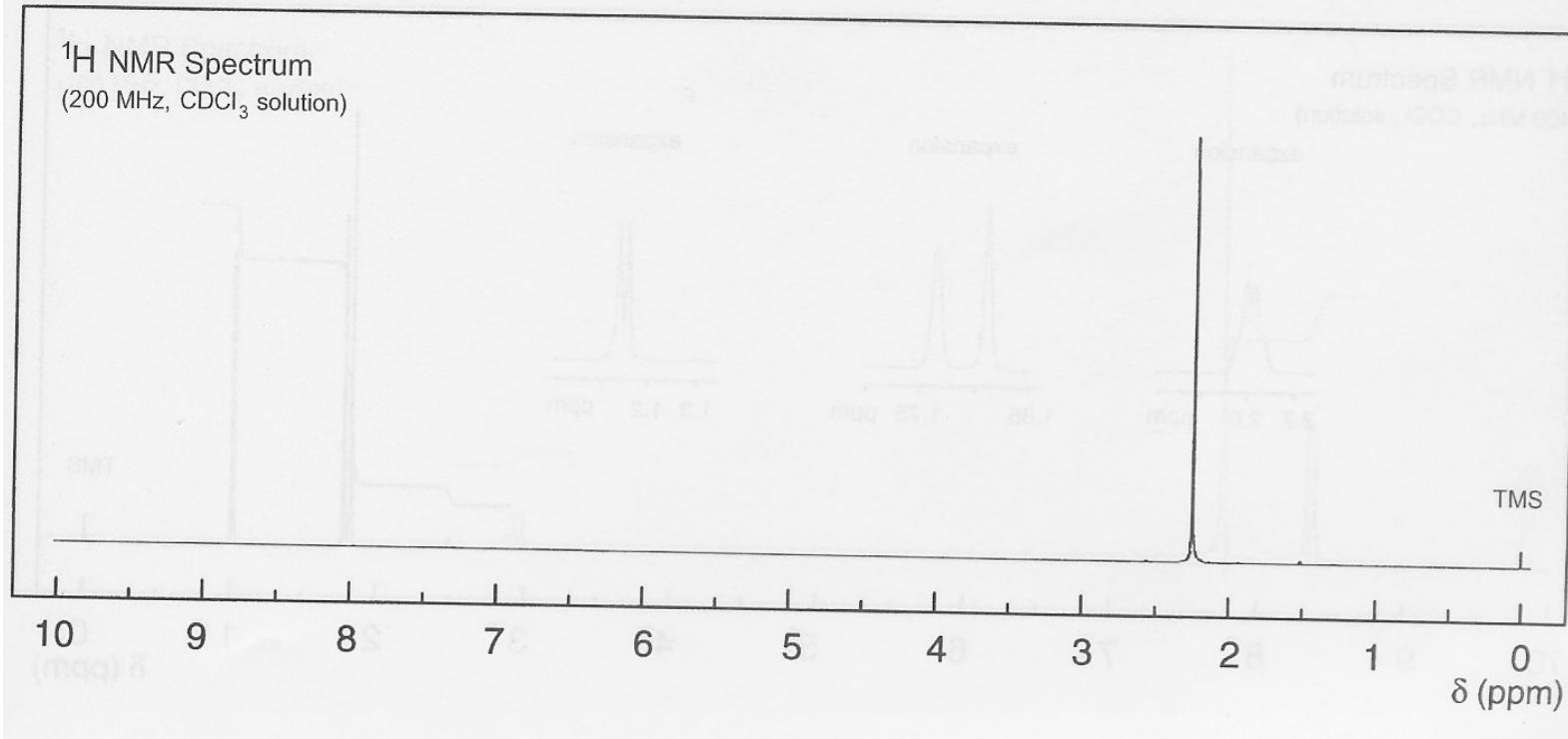
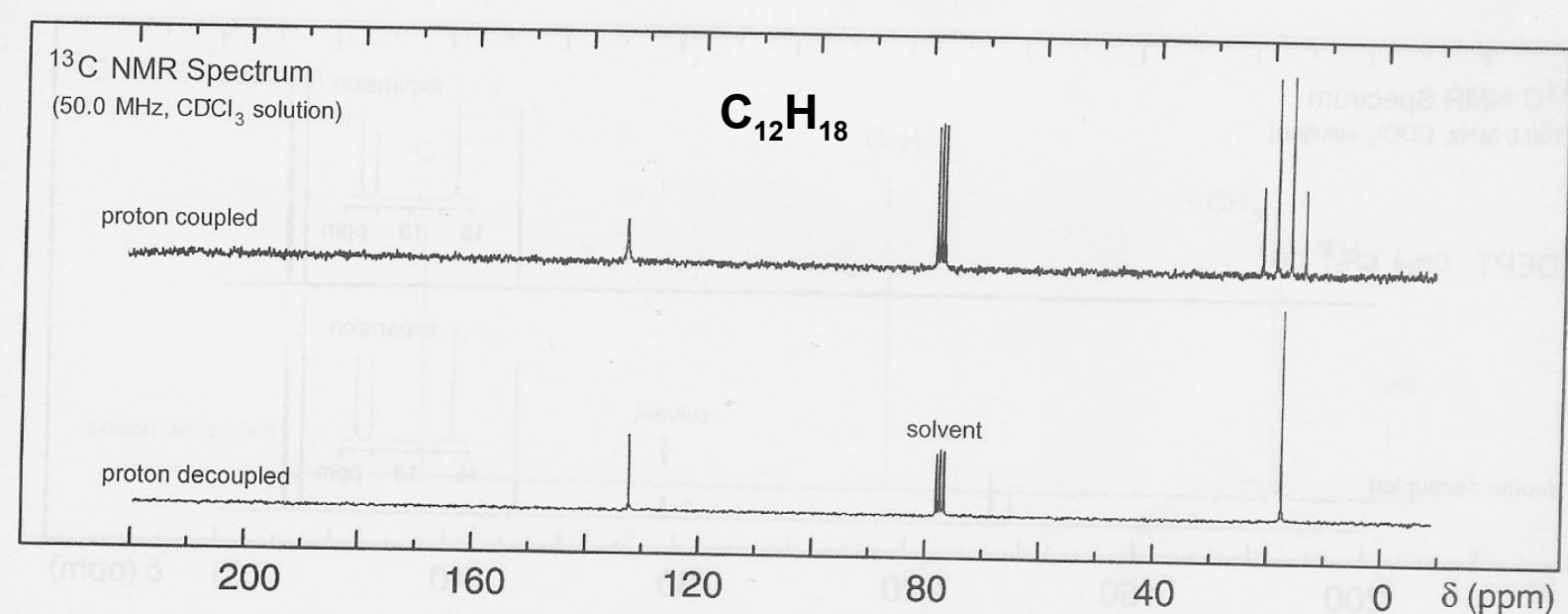
200 160 120 80 40 0 δ (ppm)

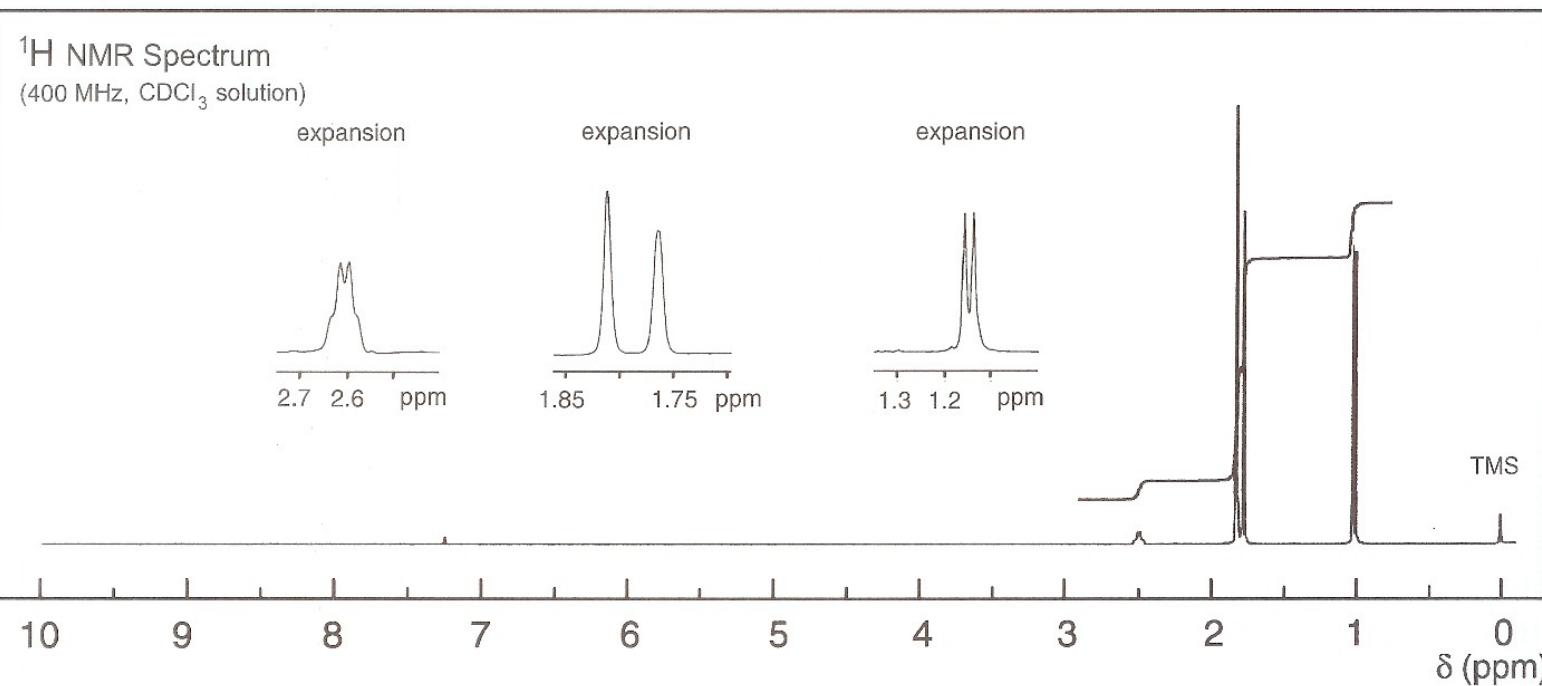
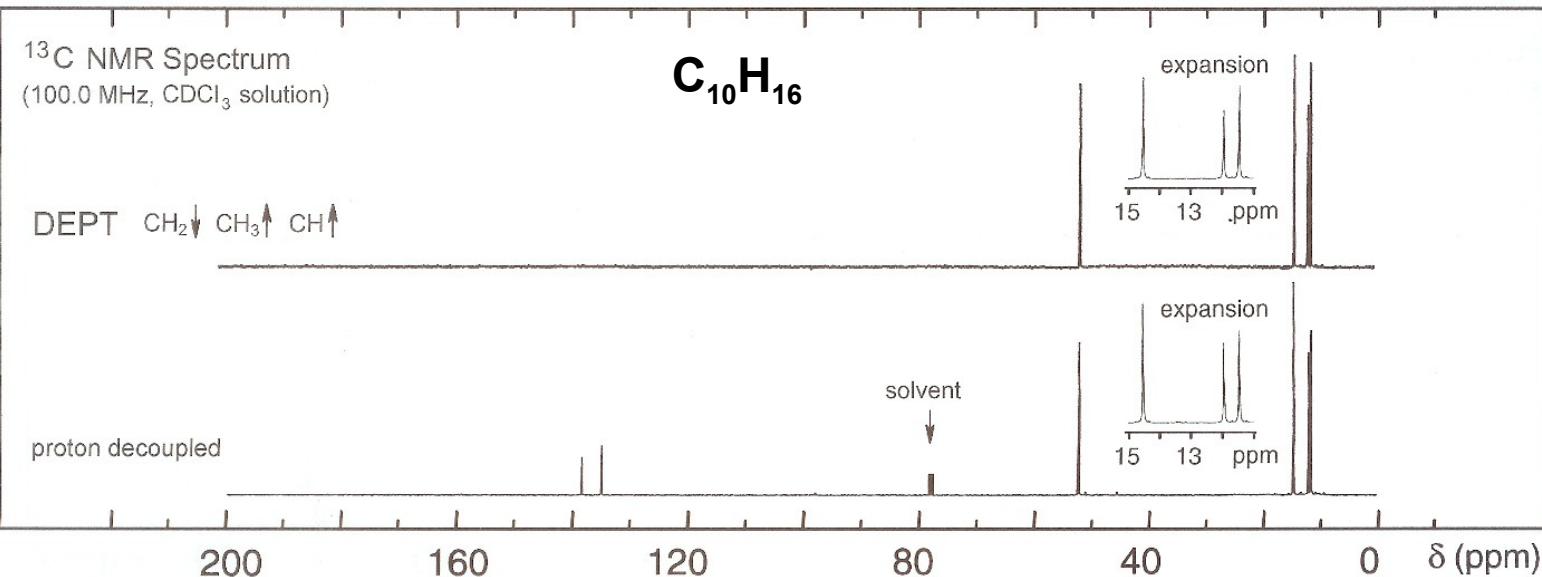
^1H NMR Spectrum
(200 MHz, CDCl_3 solution)

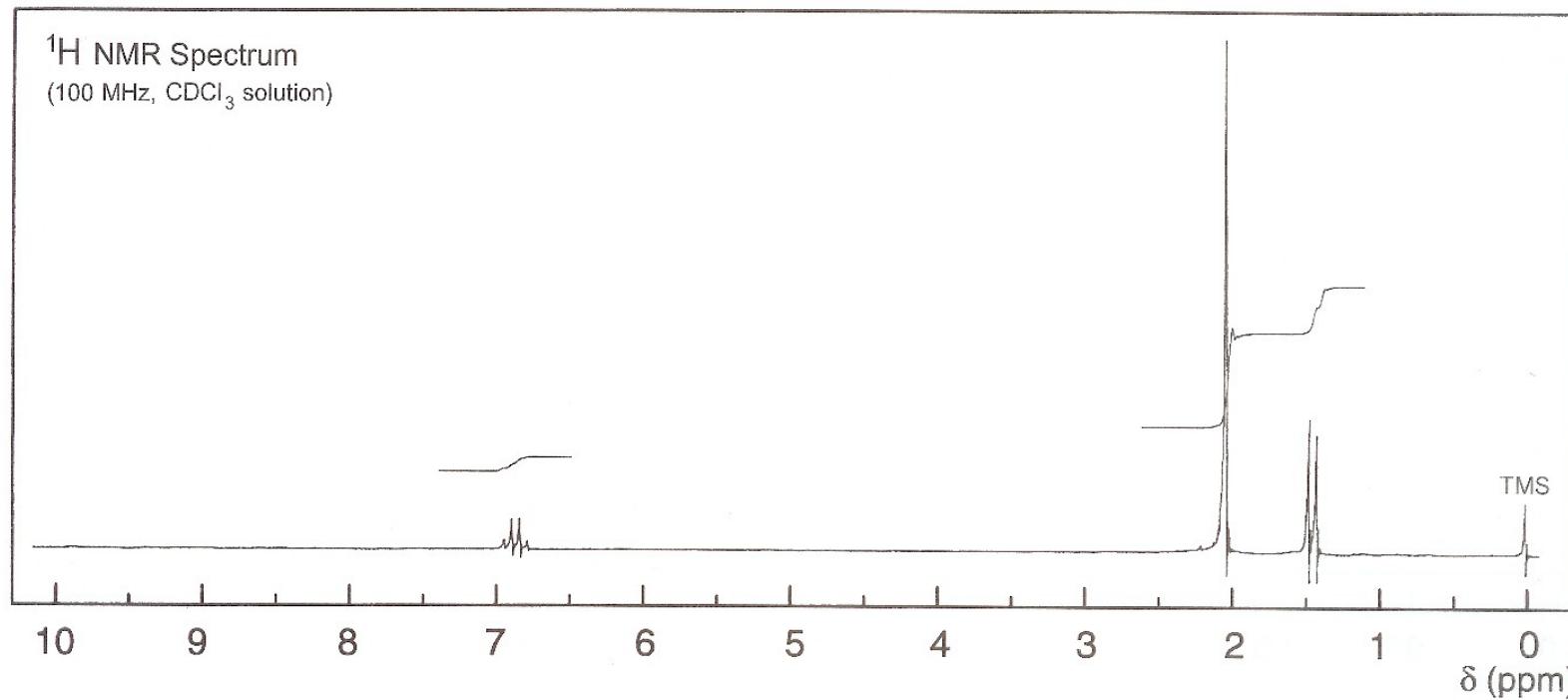
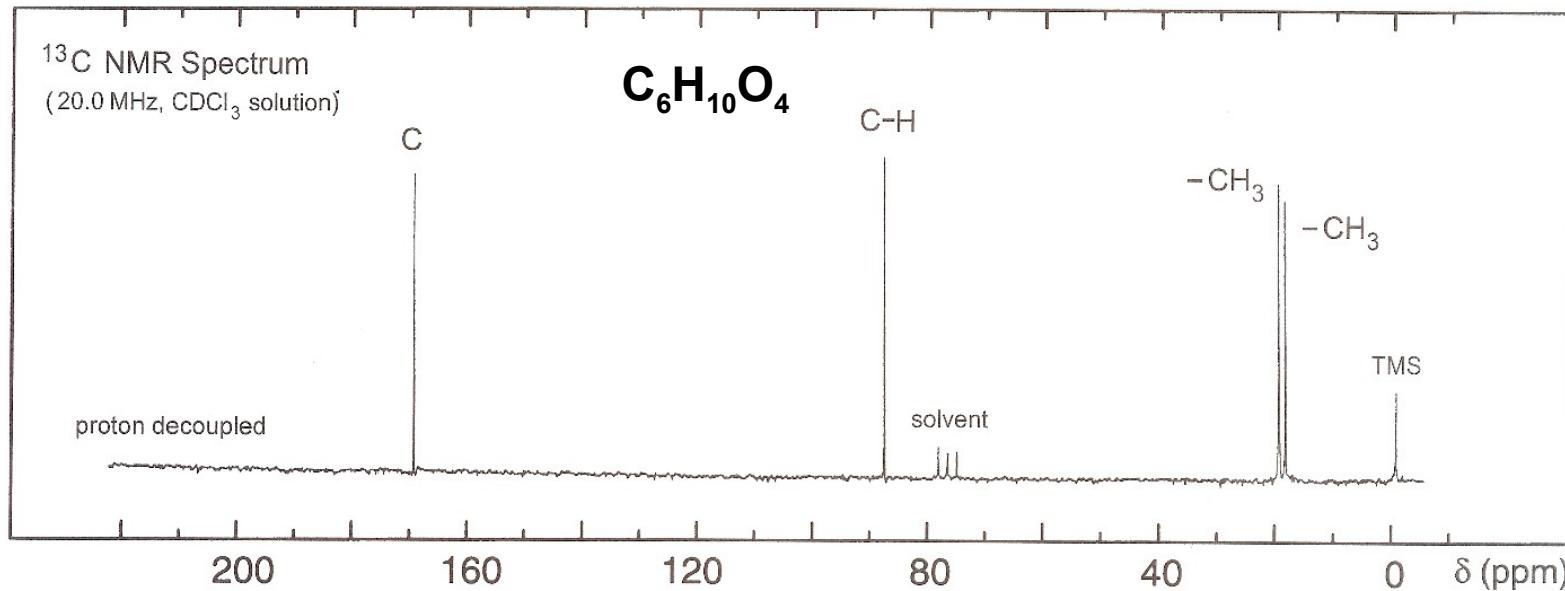
TMS

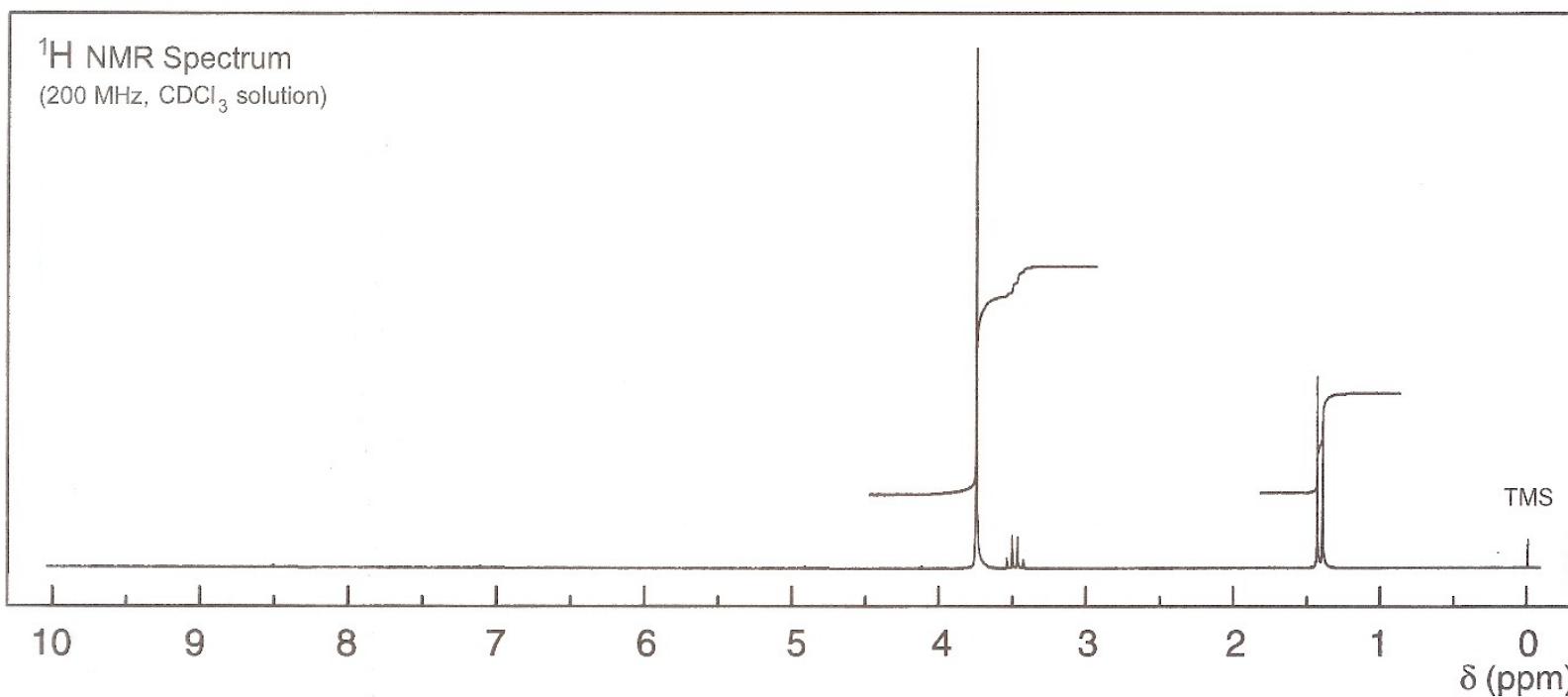
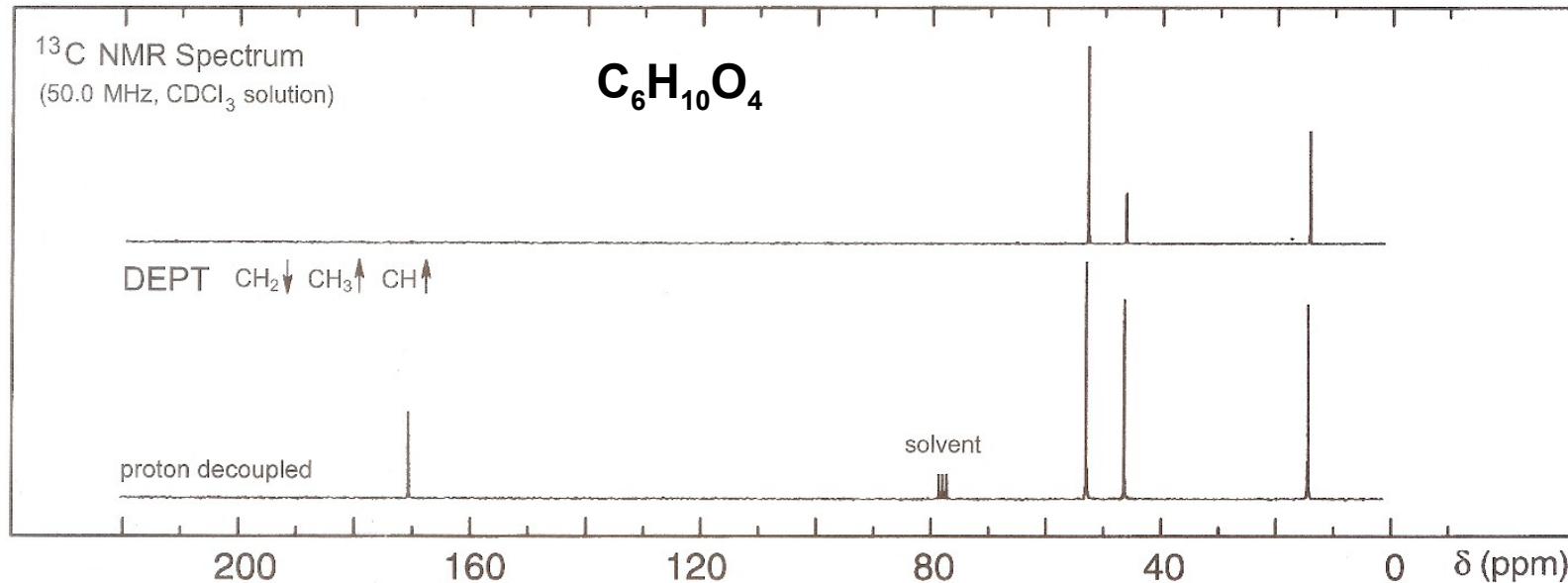
10 9 8 7 6 5 4 3 2 1 0 δ (ppm)

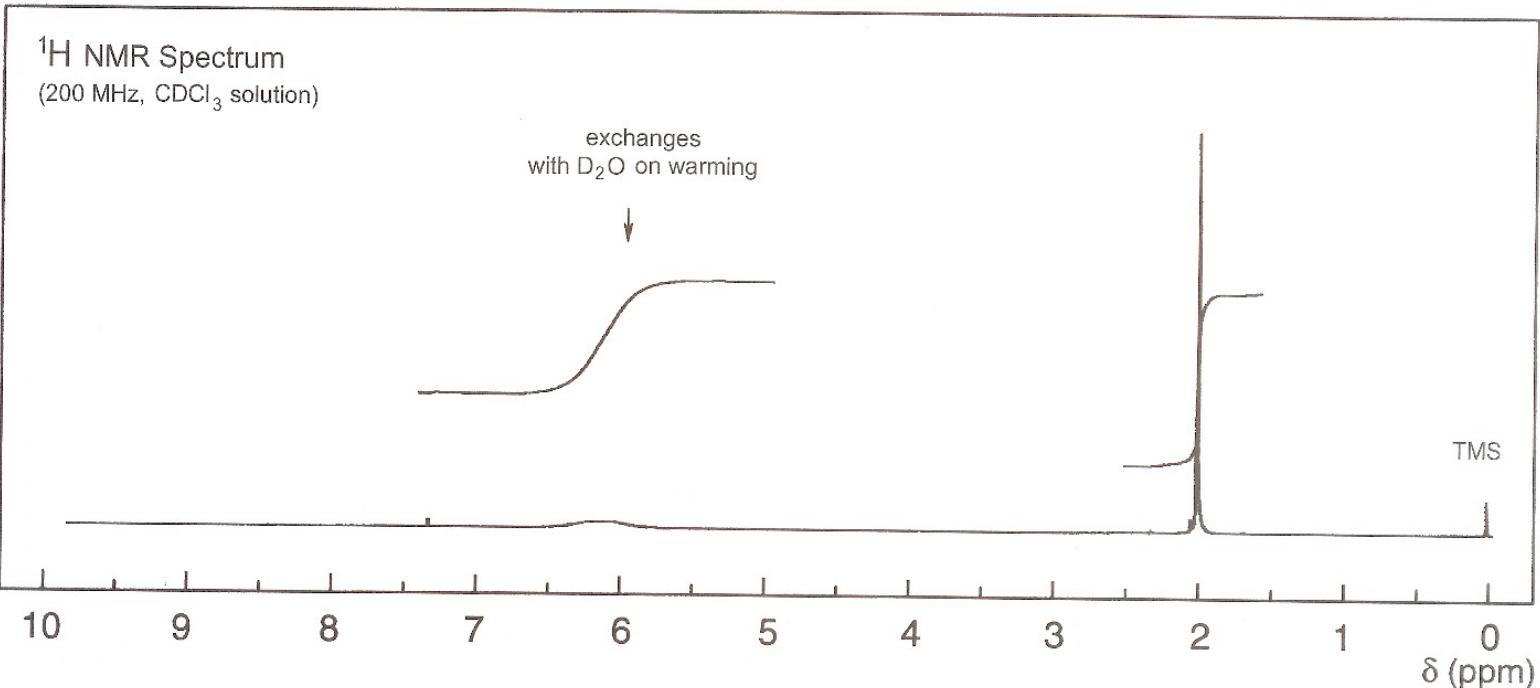
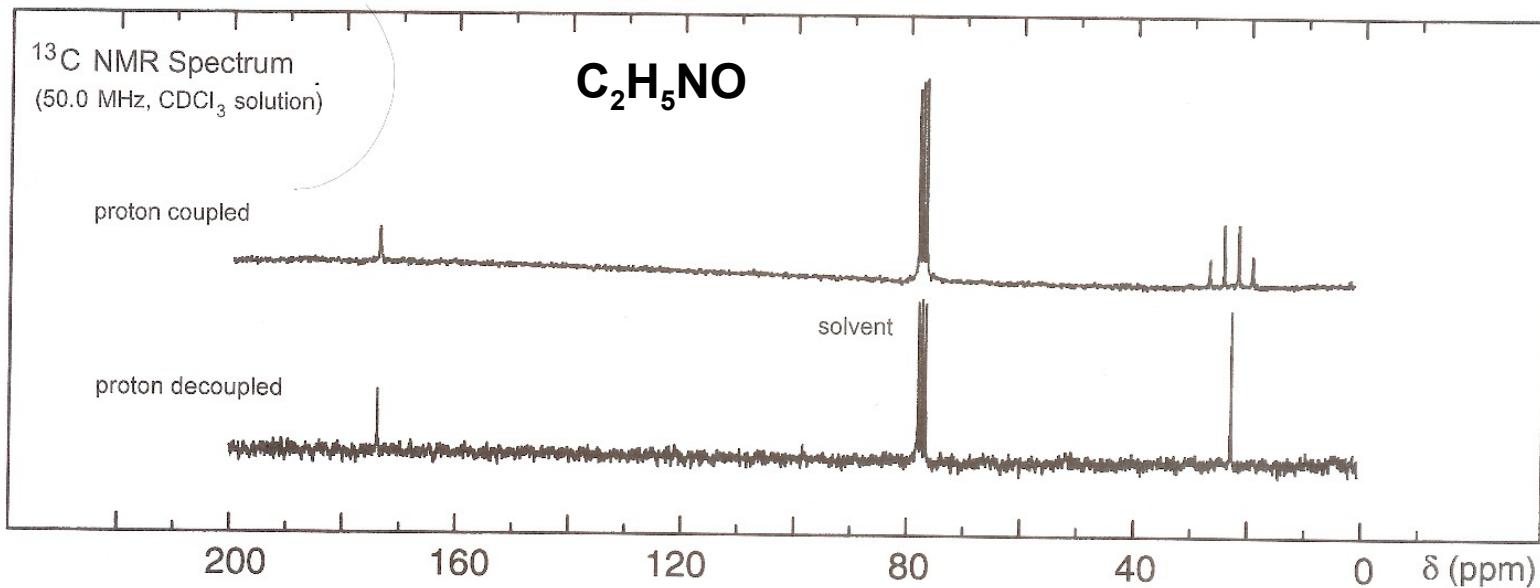












^{13}C NMR Spectrum
(50.0 MHz, CDCl_3 solution)



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proton decoupled

solvent

200 160 120 80 40 0 δ (ppm)

^1H NMR Spectrum
(200 MHz, CDCl_3 solution)

expansions

4.4 4.0 3.6 ppm

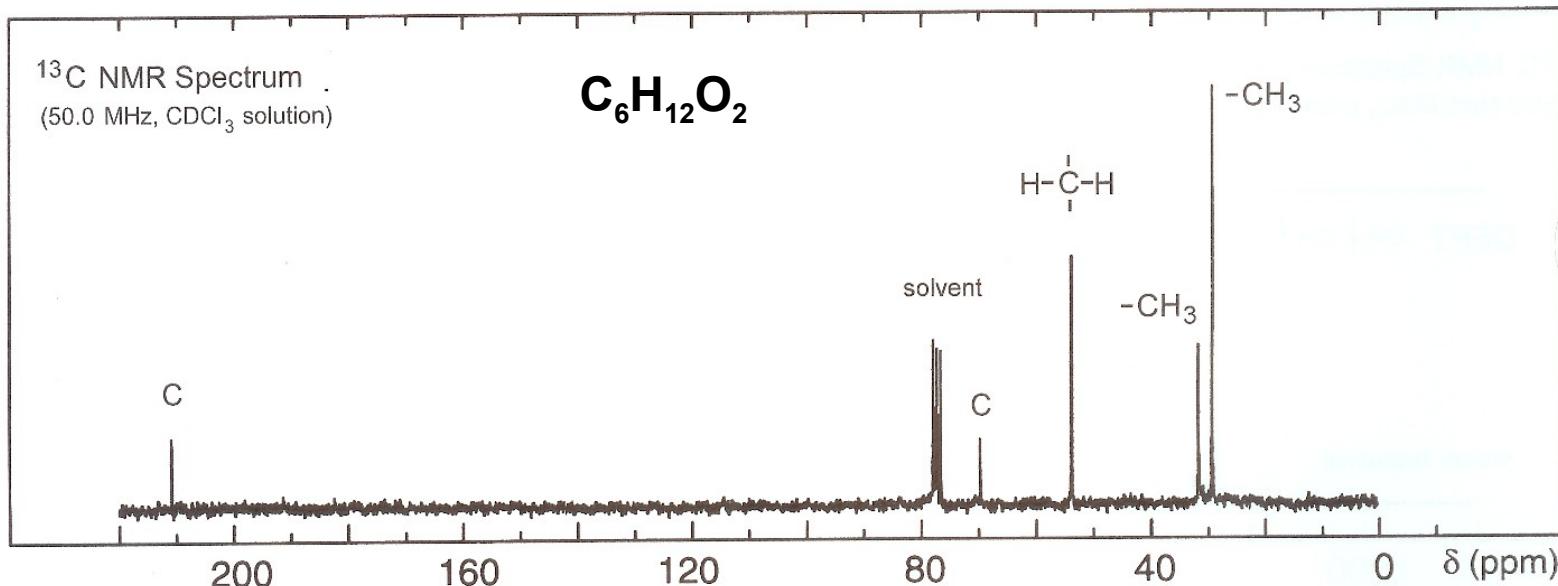
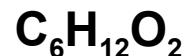
1.4 1.2 ppm

exchanges
with D_2O

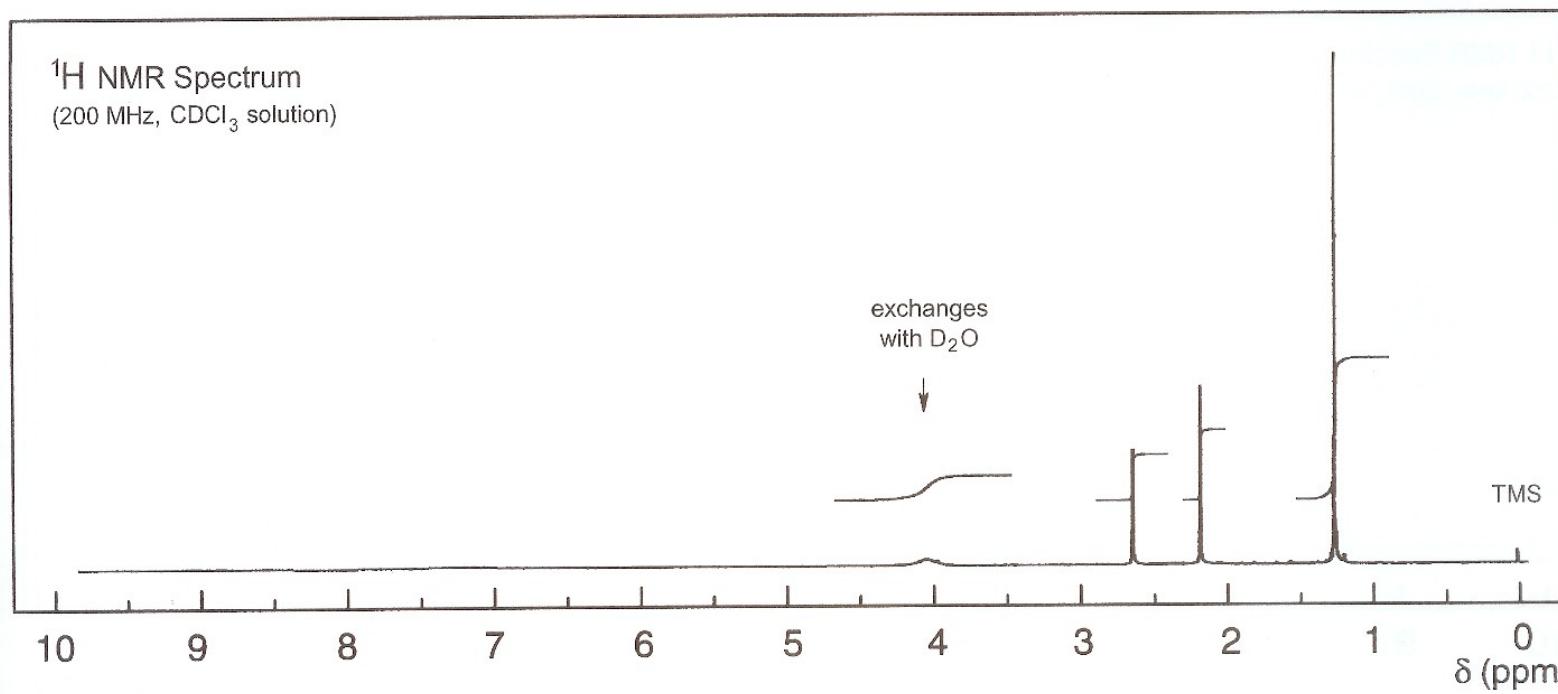
TMS

10 9 8 7 6 5 4 3 2 1 0 δ (ppm)

^{13}C NMR Spectrum
(50.0 MHz, CDCl_3 solution)



^1H NMR Spectrum
(200 MHz, CDCl_3 solution)



^{13}C NMR Spectrum
(50.0 MHz, CDCl_3 solution)



DEPT $\text{CH}_2 \downarrow \text{CH}_3 \uparrow \text{CH} \uparrow$

proton decoupled

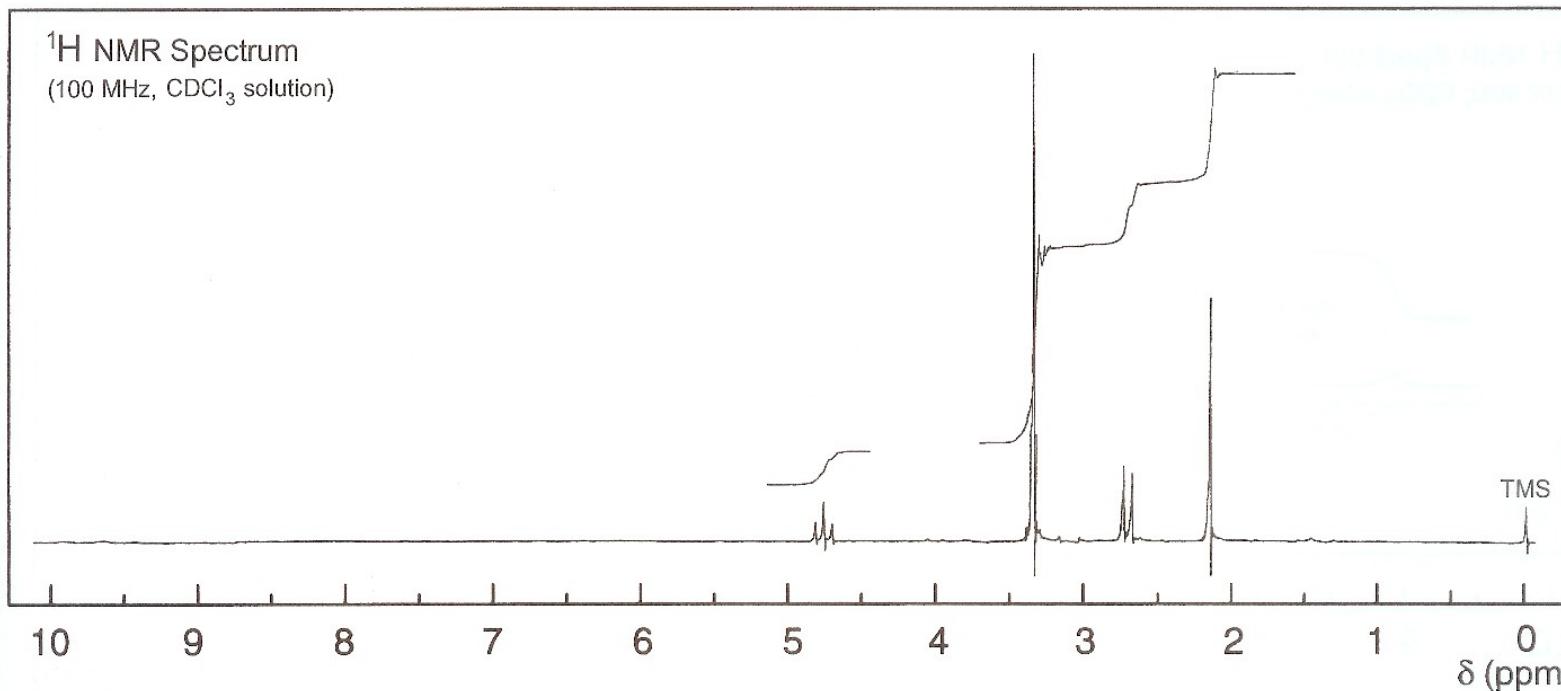
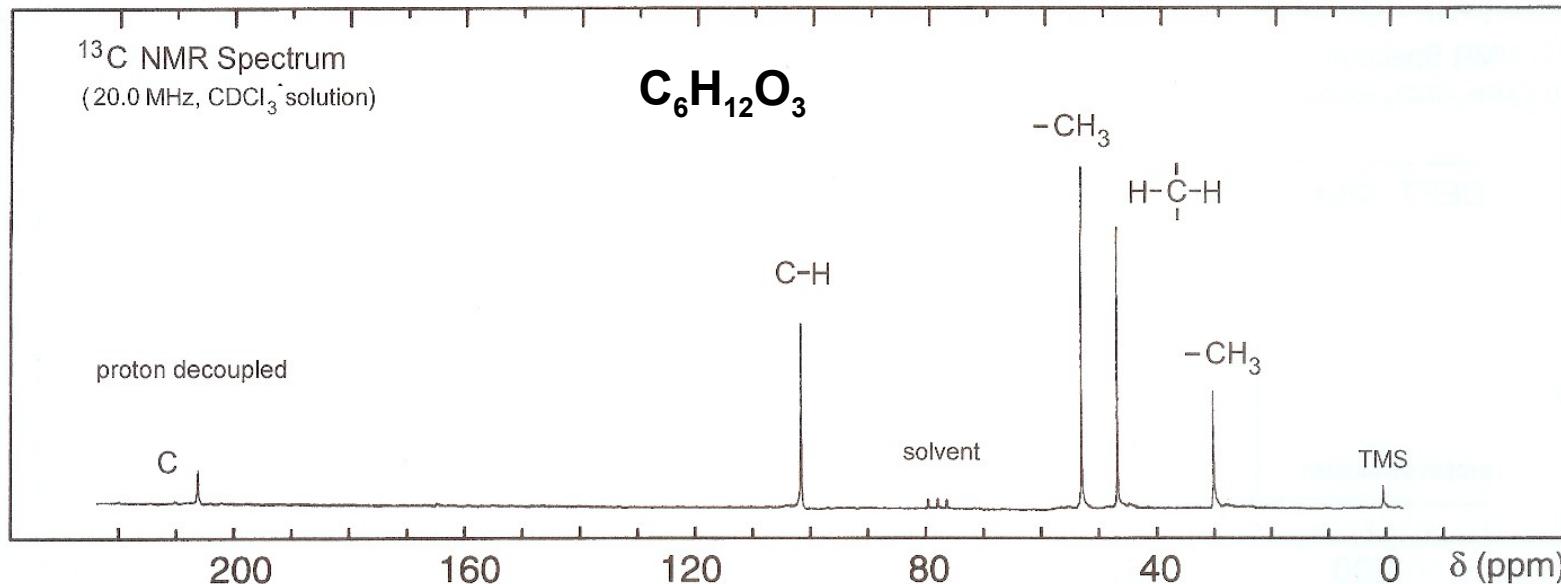
200 160 120 80 40 0 δ (ppm)

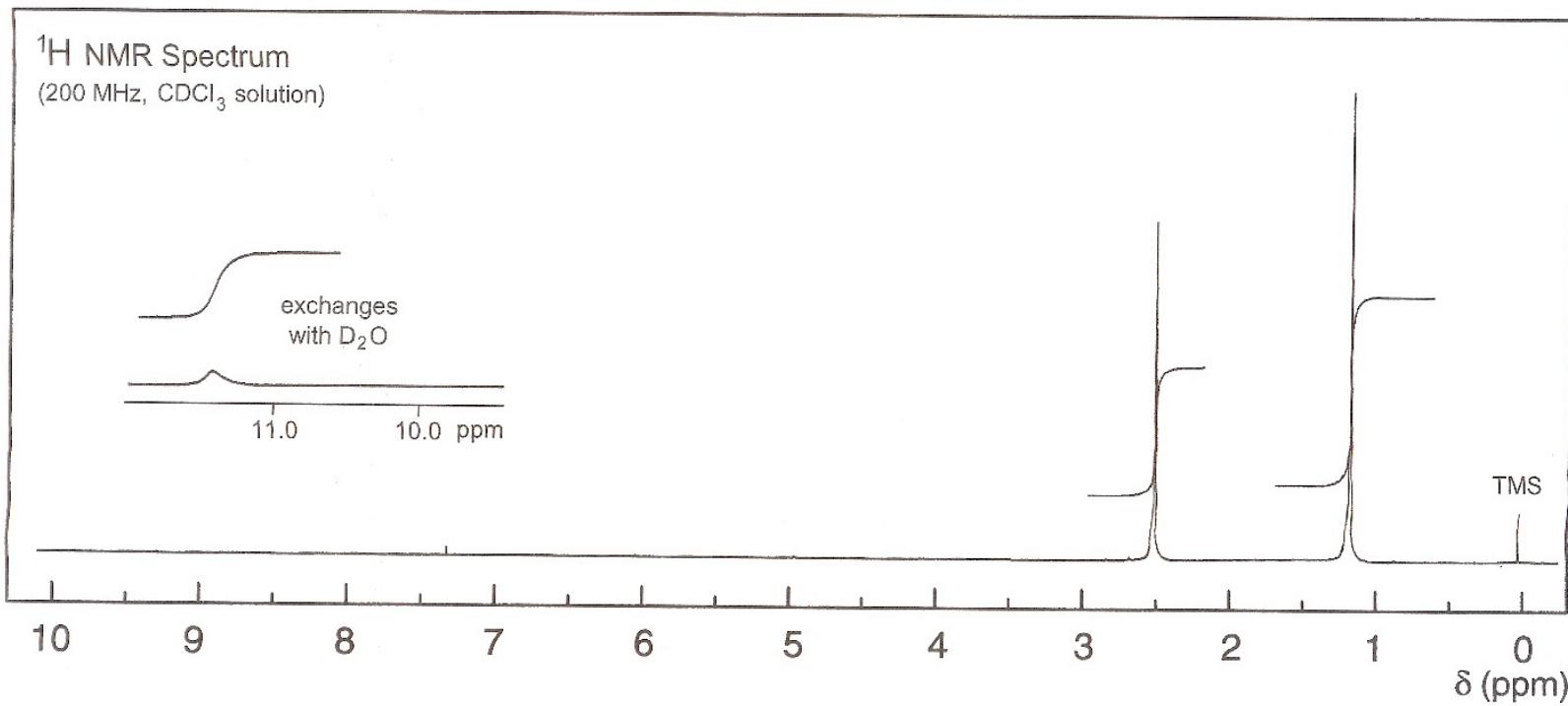
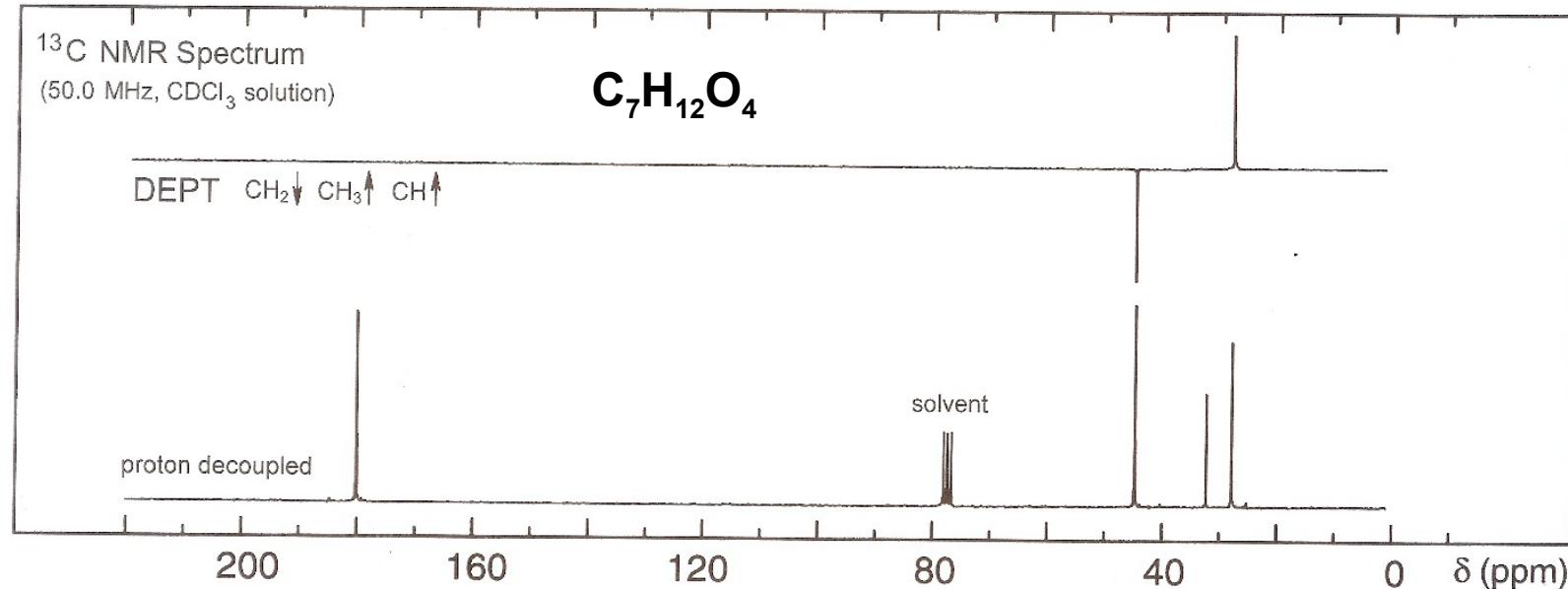
^1H NMR Spectrum
(200 MHz, CDCl_3 solution)

expansions

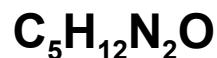
10 9 8 7 6 5 4 3 2 1 0 δ (ppm)

TMS





^{13}C NMR Spectrum
(20.0 MHz, CDCl_3 solution)



off-resonance decoupled

proton decoupled

solvent

TMS

200

160

120

80

40

0

δ (ppm)

^1H NMR Spectrum
(100 MHz, CDCl_3 solution)

TMS

10

9

8

7

6

5

4

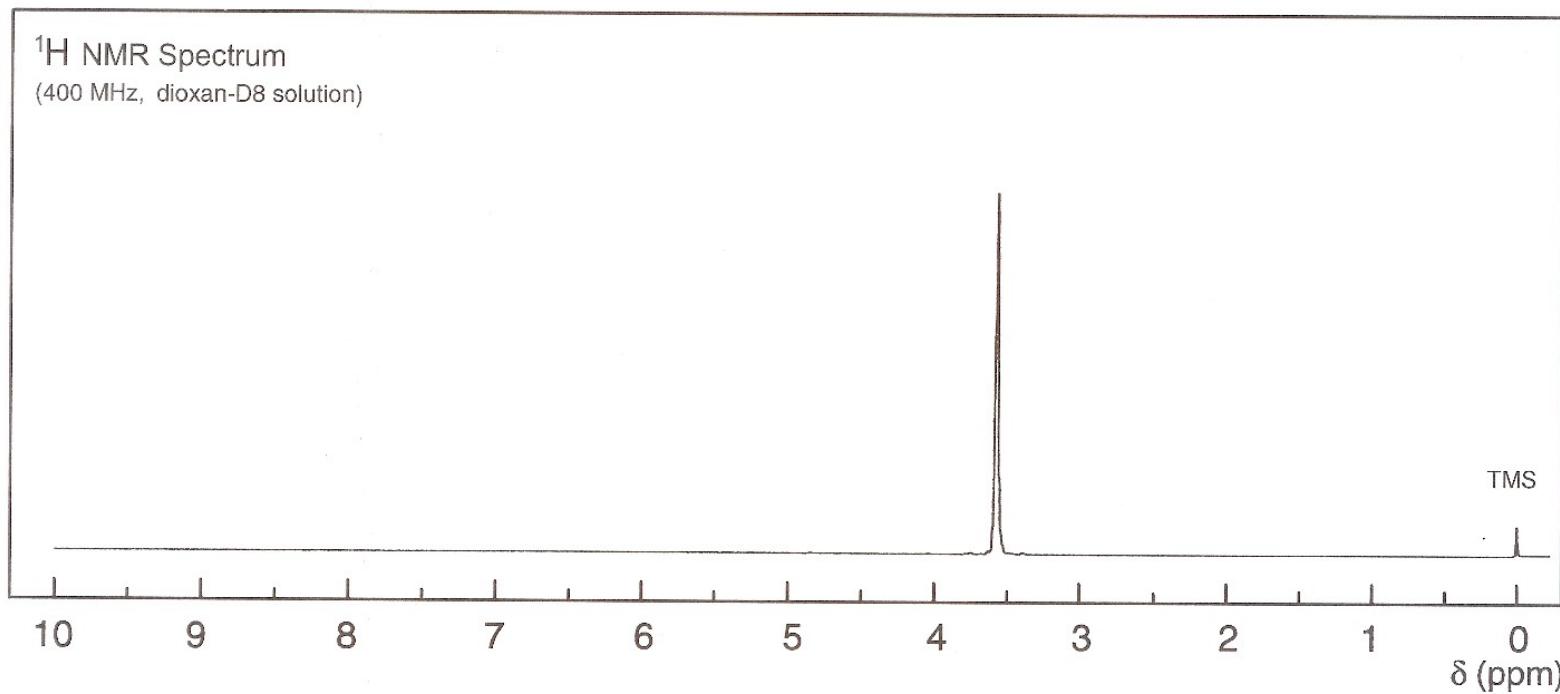
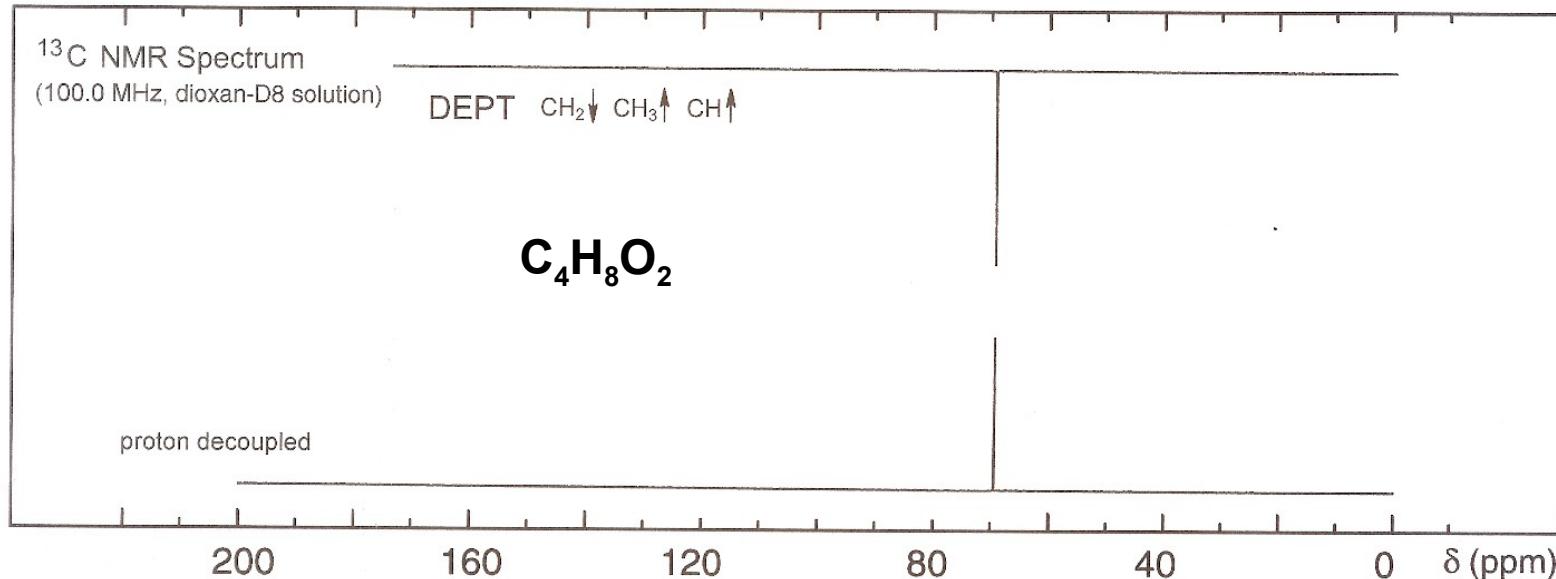
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2

1

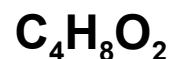
0

δ (ppm)



^{13}C NMR Spectrum
(100.0 MHz, CDCl_3 solution)

DEPT $\text{CH}_2 \downarrow \text{CH}_3 \uparrow \text{CH} \uparrow$



proton decoupled

200 160 120 80 40 0 δ (ppm)

^1H NMR Spectrum
(400 MHz, CDCl_3 solution)

expansion

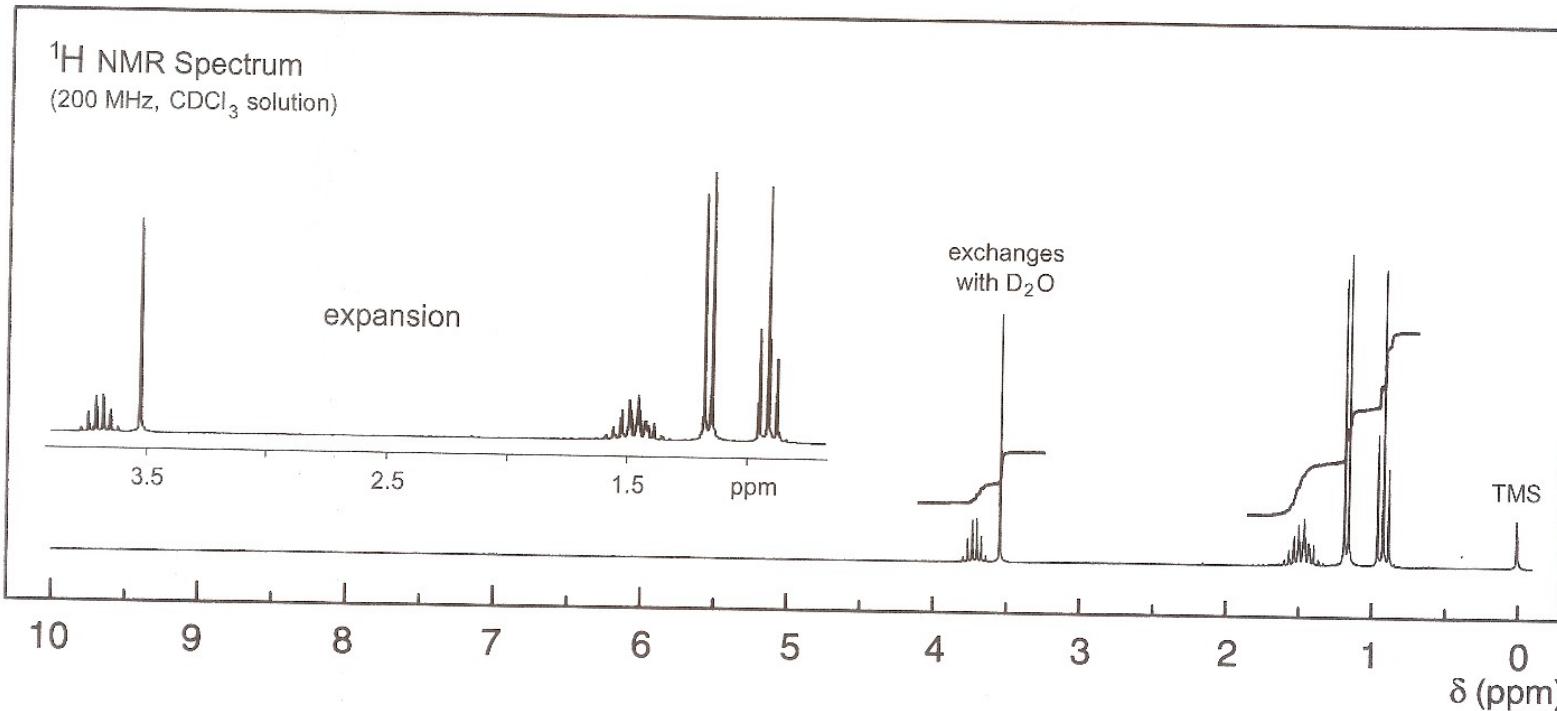
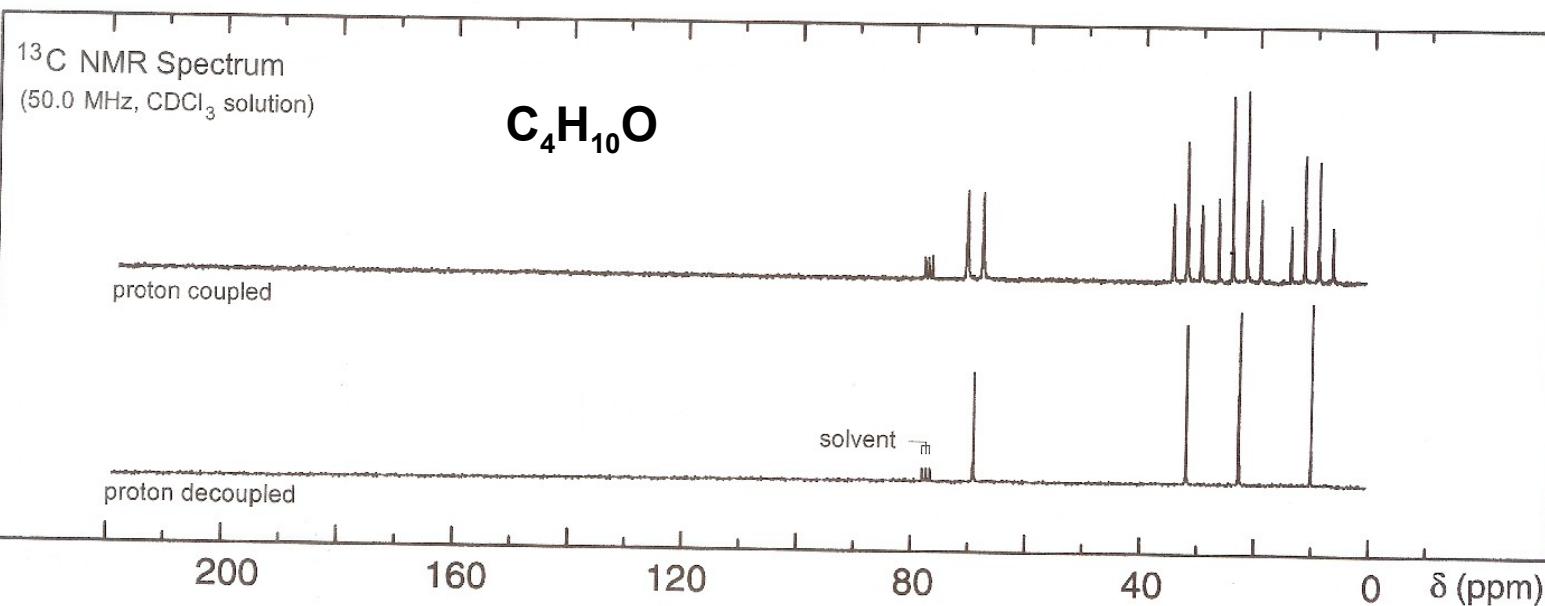
expansion

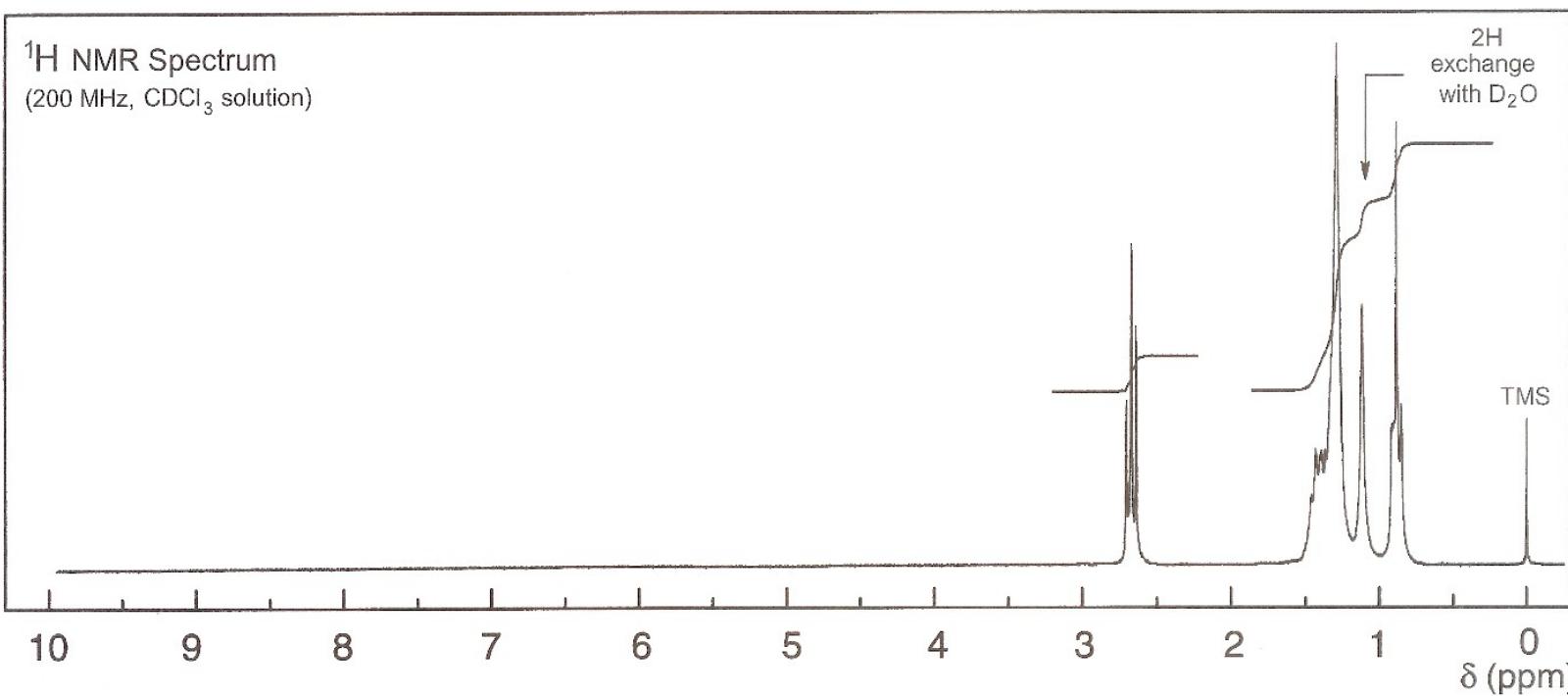
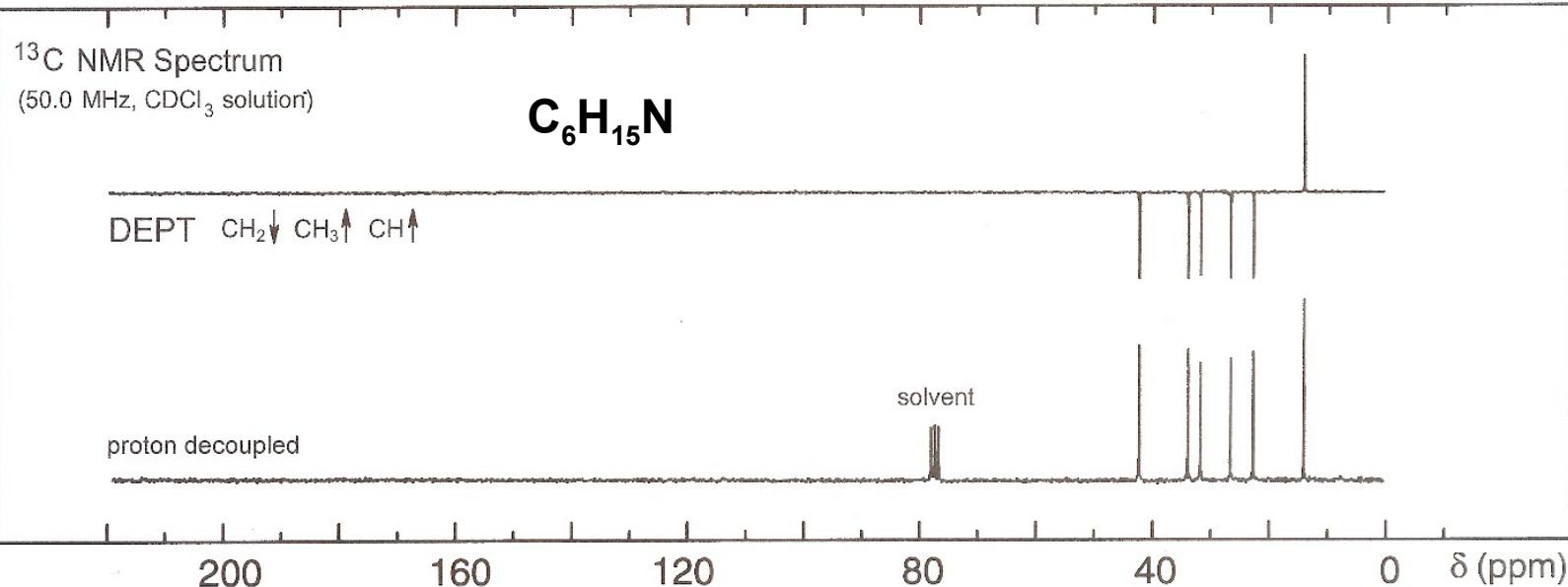
3.8 3.6 ppm

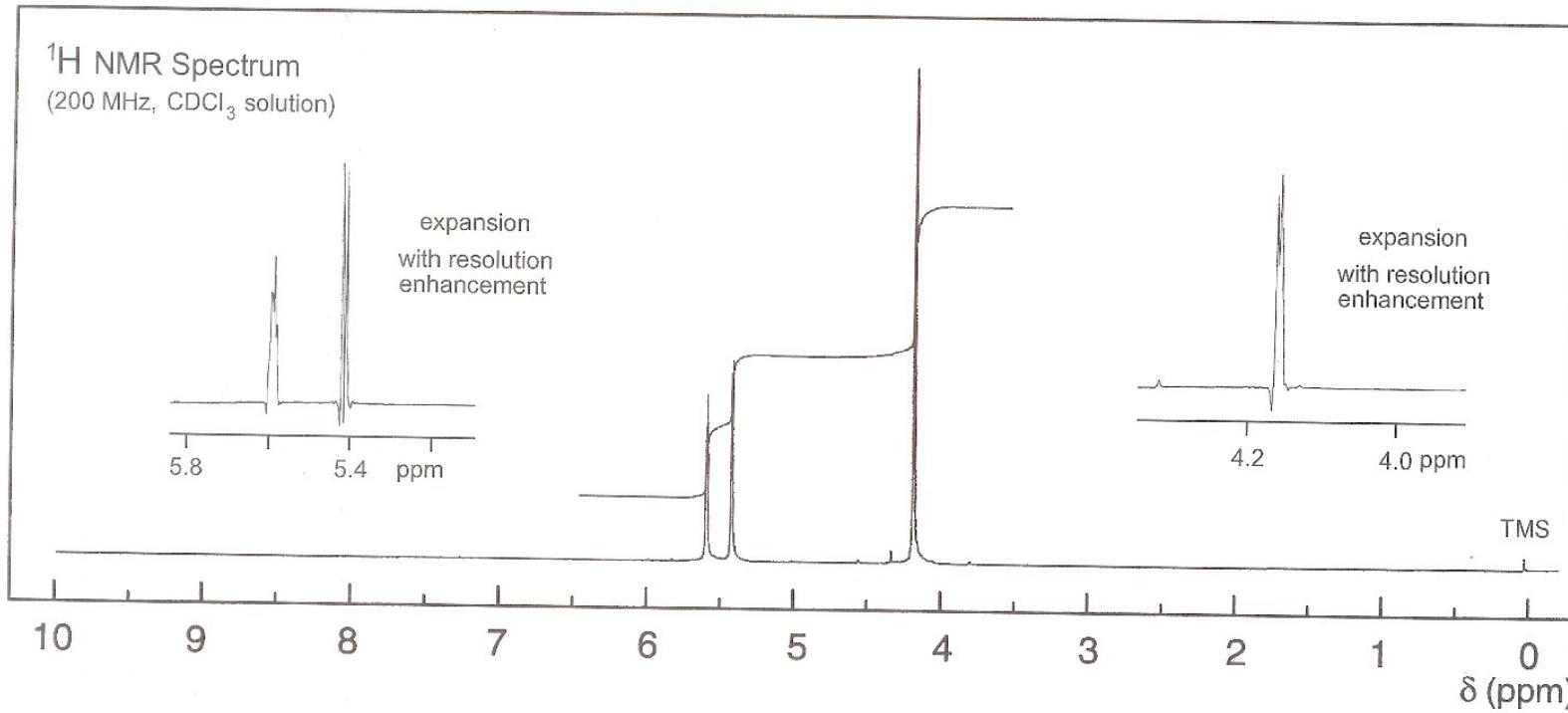
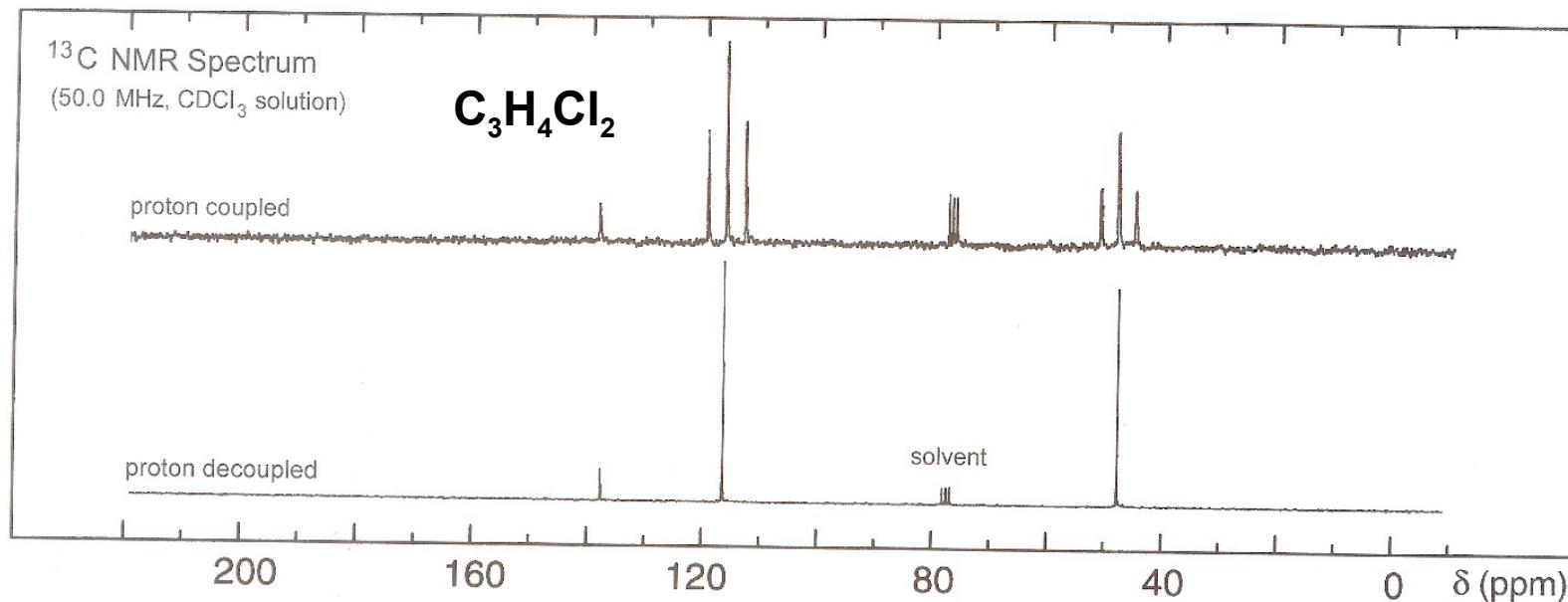
1.8 1.6 ppm

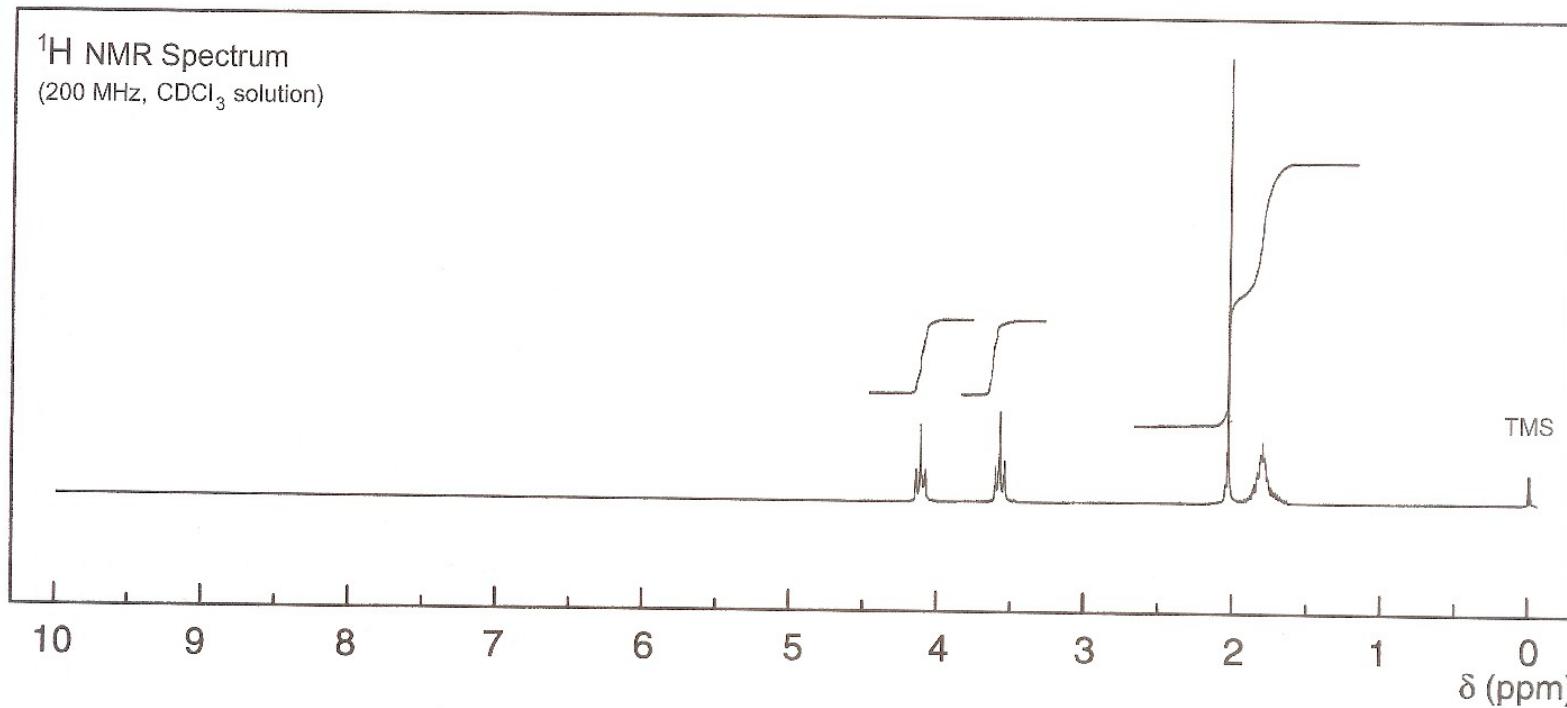
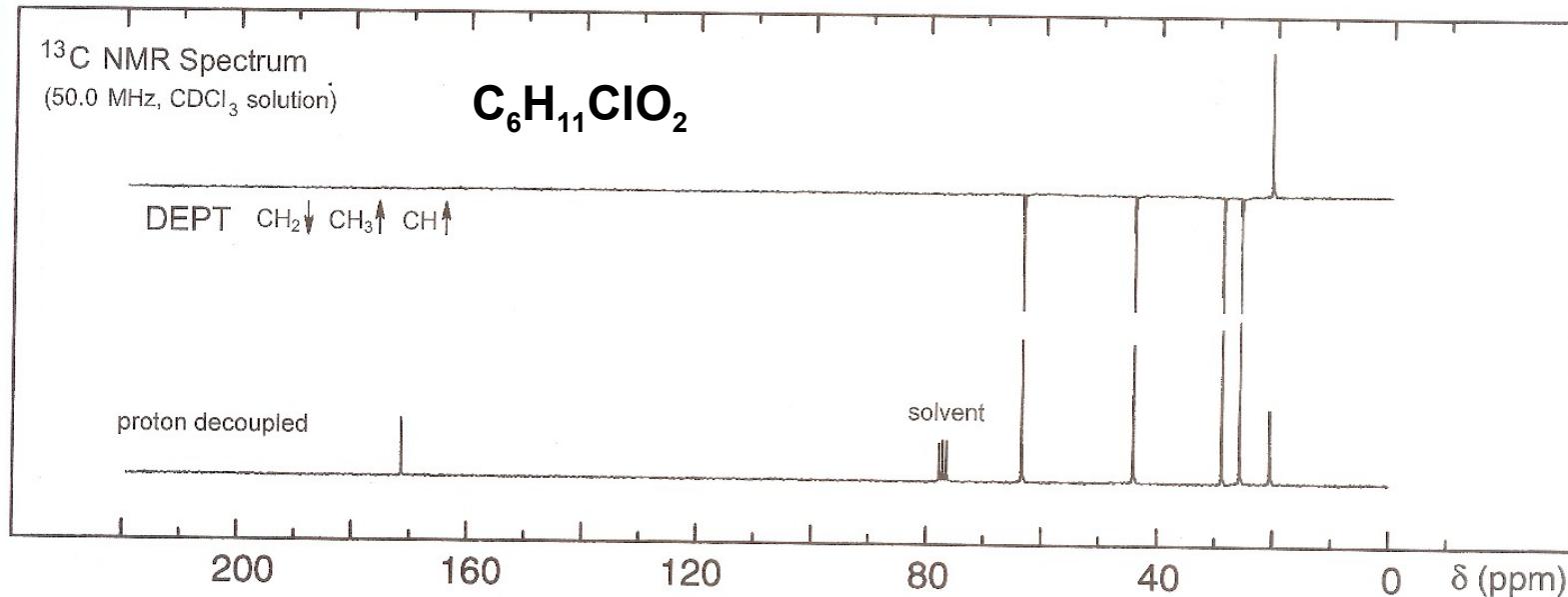
TMS

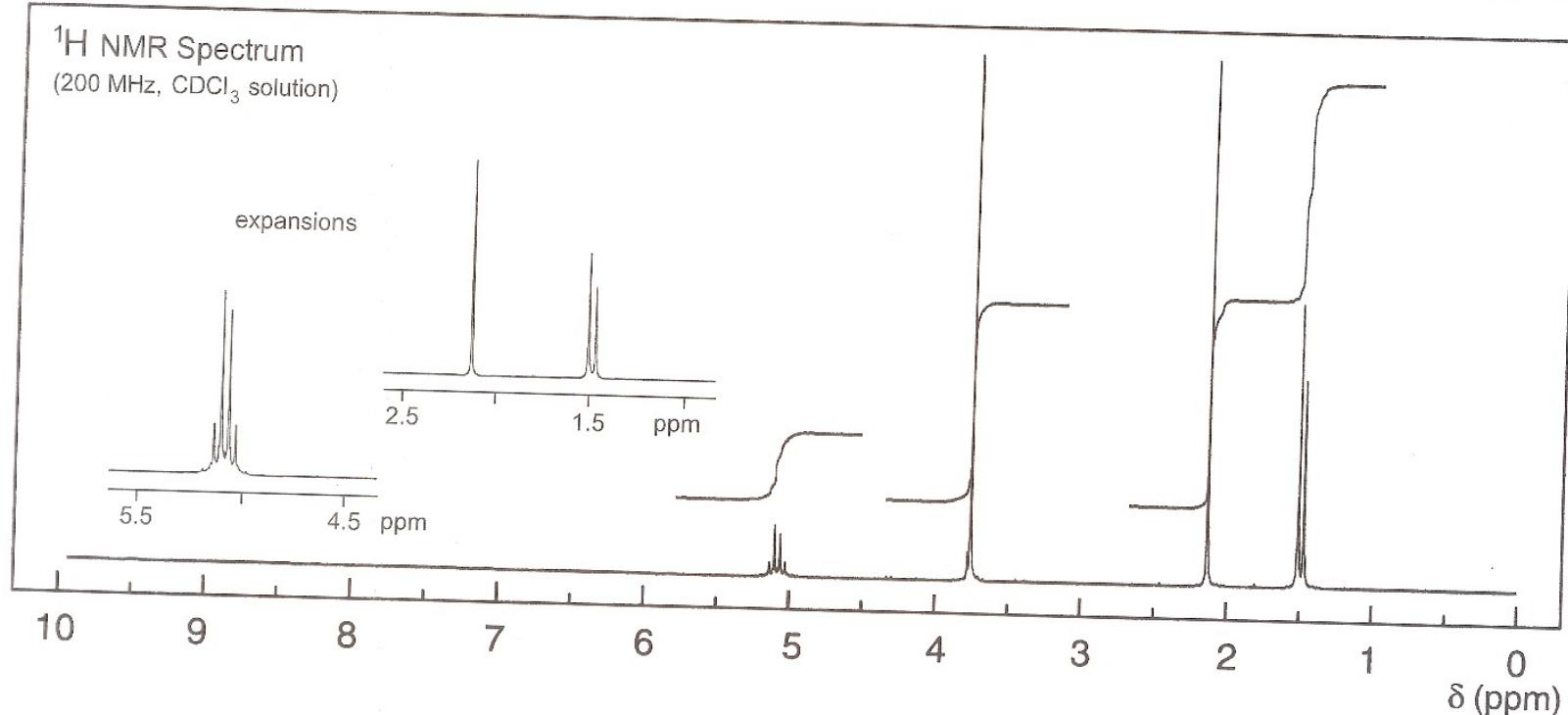
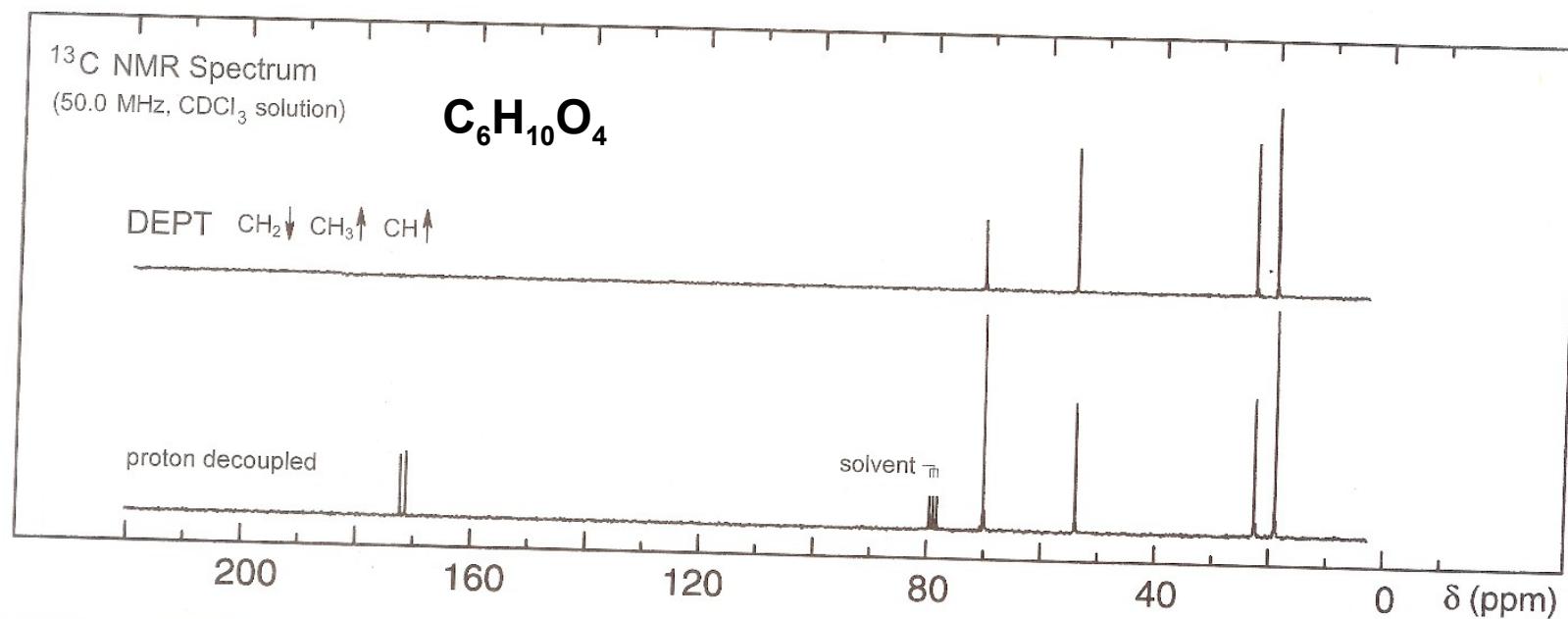
10 9 8 7 6 5 4 3 2 1 0 δ (ppm)











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proton decoupled

solvent

200 160 120 80 40 0 δ (ppm)

^1H NMR Spectrum
(200 MHz, CDCl_3 solution)

expansions

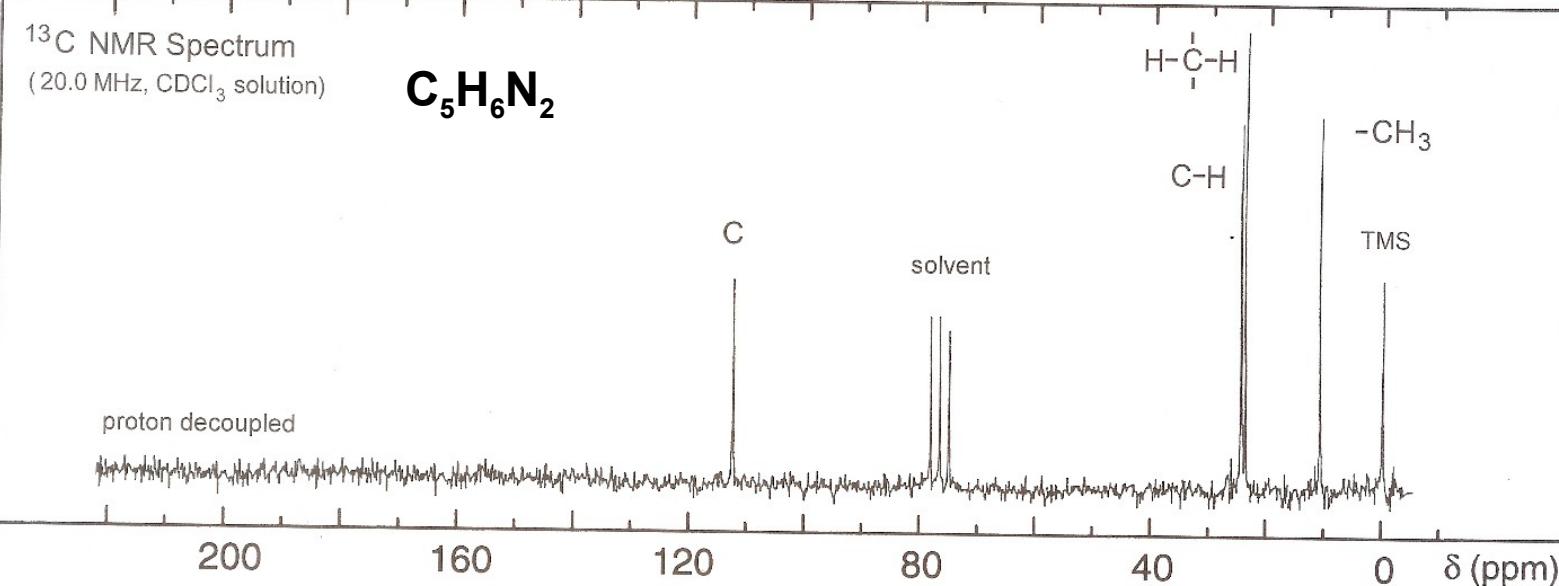
4.5 4.0 2.0 1.0 ppm

TMS

← exchanges
with D_2O

10 9 8 7 6 5 4 3 2 1 0 δ (ppm)

^{13}C NMR Spectrum
(20.0 MHz, CDCl_3 solution)



^1H NMR Spectrum
(100 MHz, CDCl_3 solution)

