

More Spectral Problems

The following slides contain a combination of IR, H-1 and C-13 NMR, and mass spectra. The first click will show the spectra and the second click will show the structure and name. Some of the spectra also will display a pop-up with comments on spectral features. Some of the problems show the molecular formula. Others give molecular weight and %composition from which you should be able to easily calculate the molecular formula. (See page 21-22 in your textbook if you need to review how to do this).

PROBLEM 1

MW 68

%C 88.2

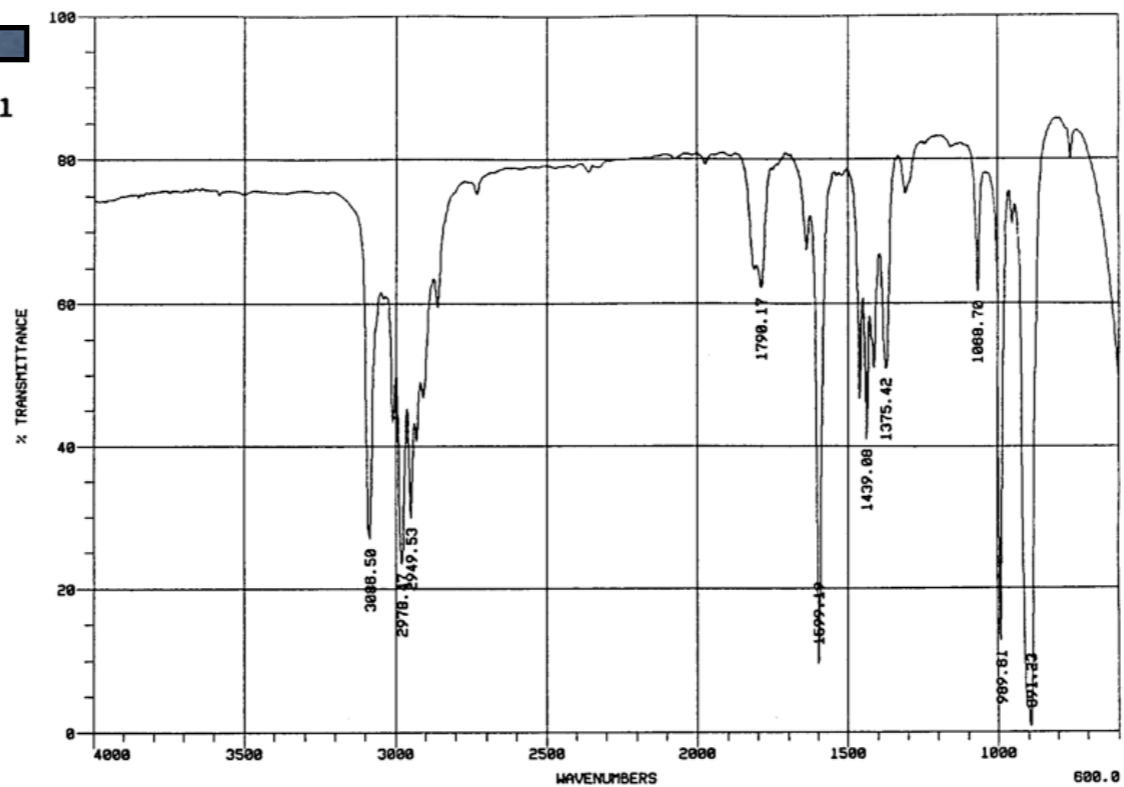
%H 11.8

[78-79-5]

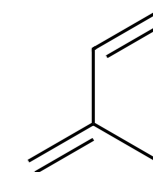
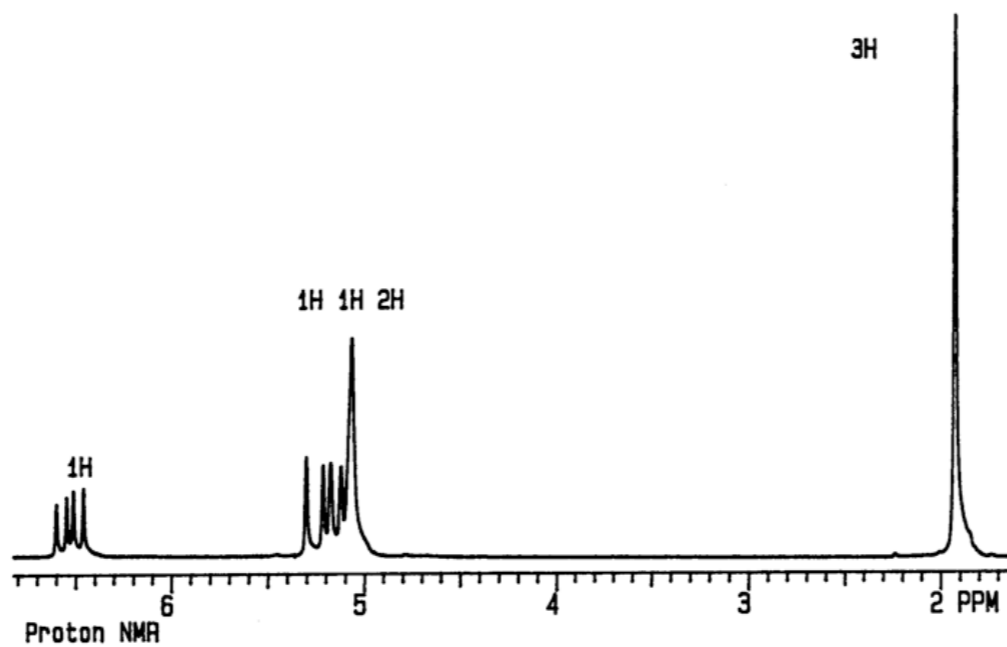
Mass Spec. Data

m/z	relative abund.
27	22
38	12
39	51
40	26
42	13
50	11
51	13
53	63
65	12
67	100
68	64

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Hint: It's not 1,3-pentadiene



Isoprene

PROBLEM 2

MW 122

%C 78.7

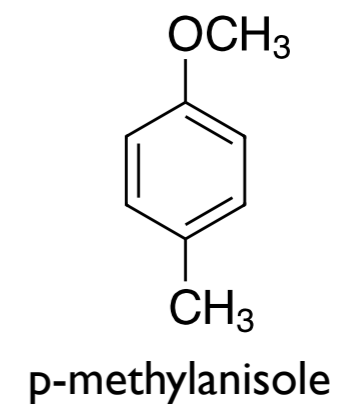
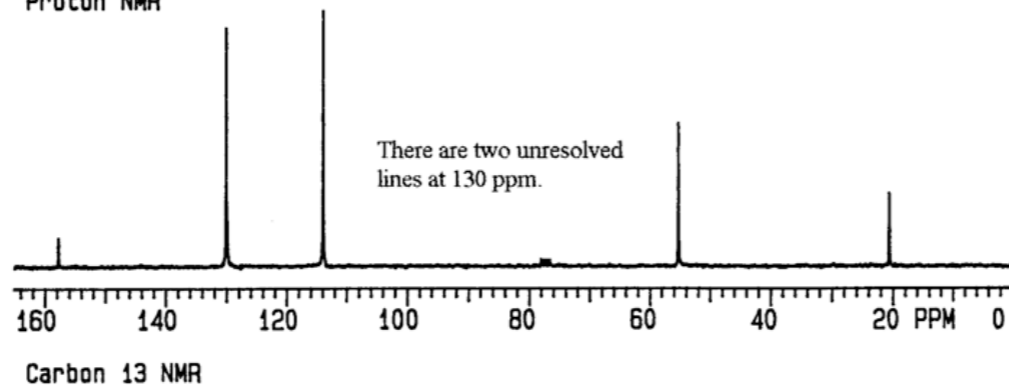
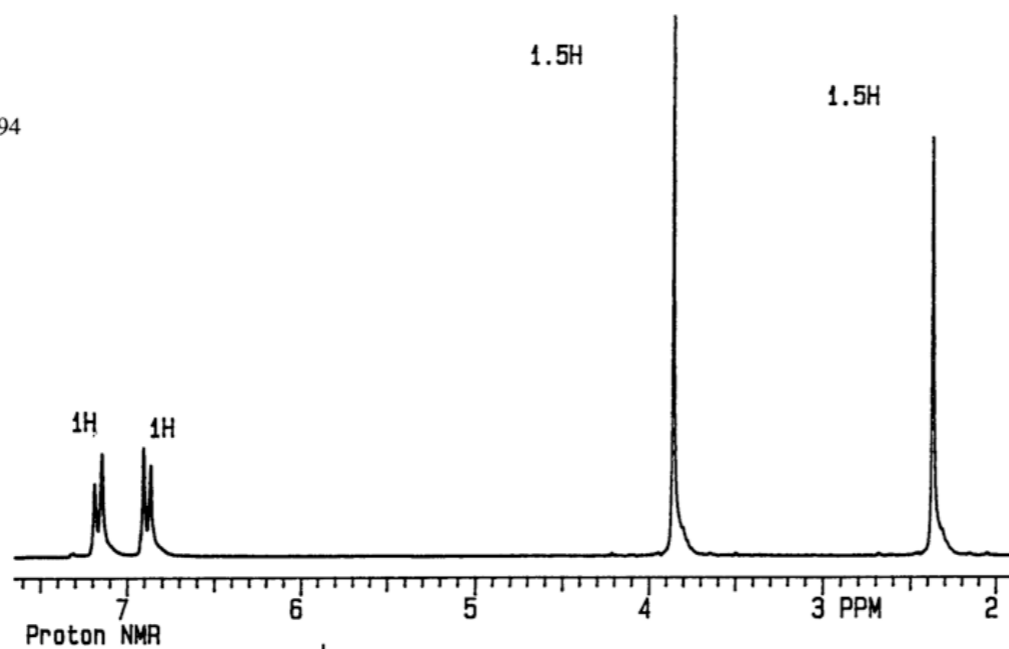
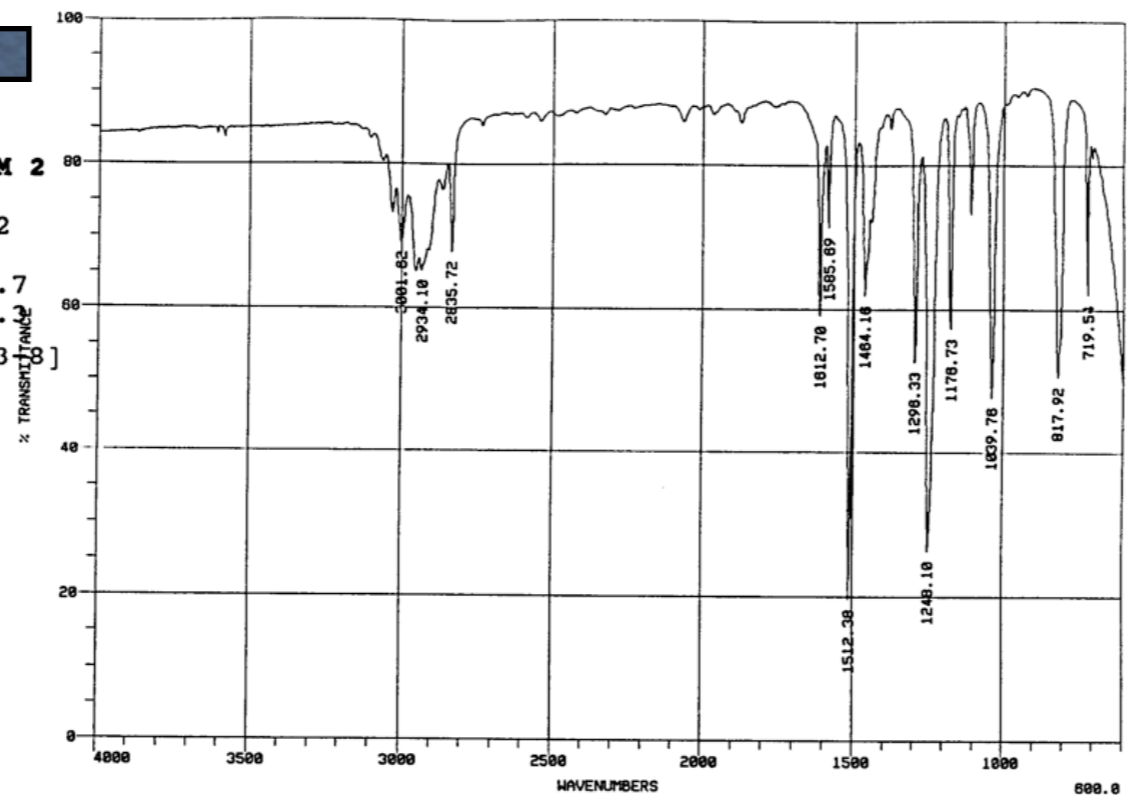
%H 8.2

[104-9318]

Mass Spec. Data

m/z	relative abund.
51	20
53	10
63	10
65	10
77	60
78	16
79	37
92	14
107	42
121	58
122	100
123	9
124	5

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PROBLEM 3

MW 122

%C 78.6

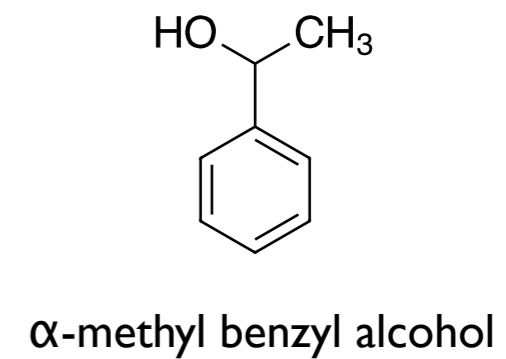
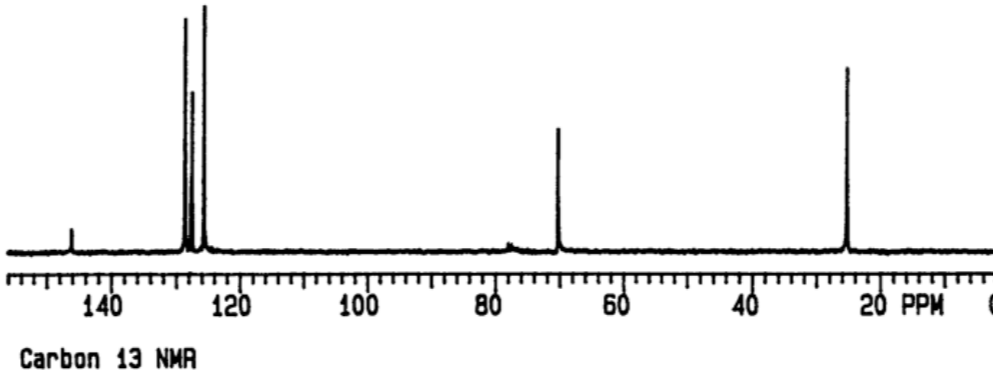
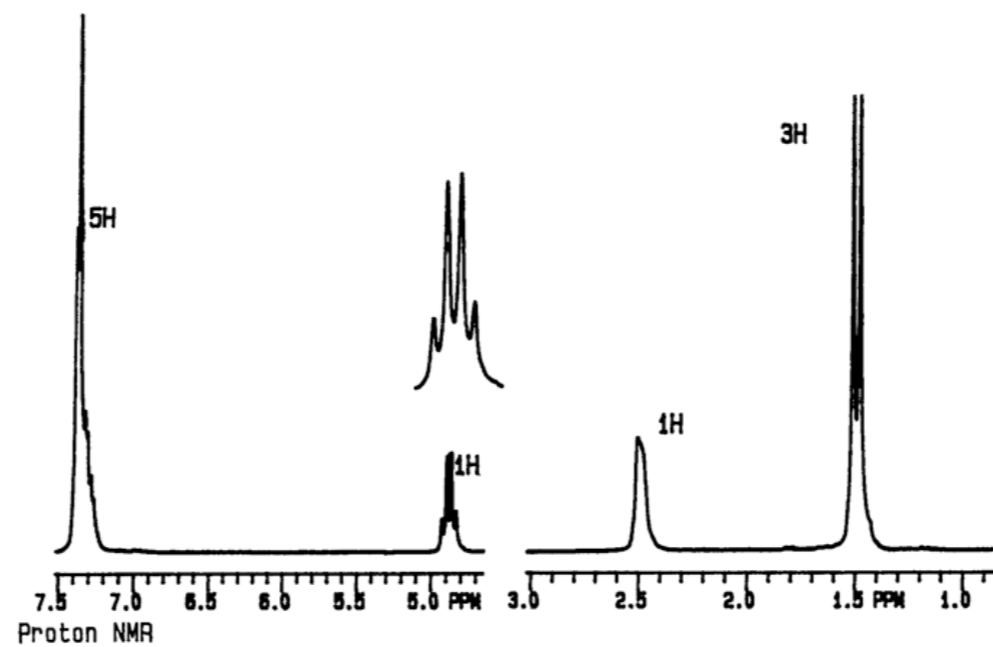
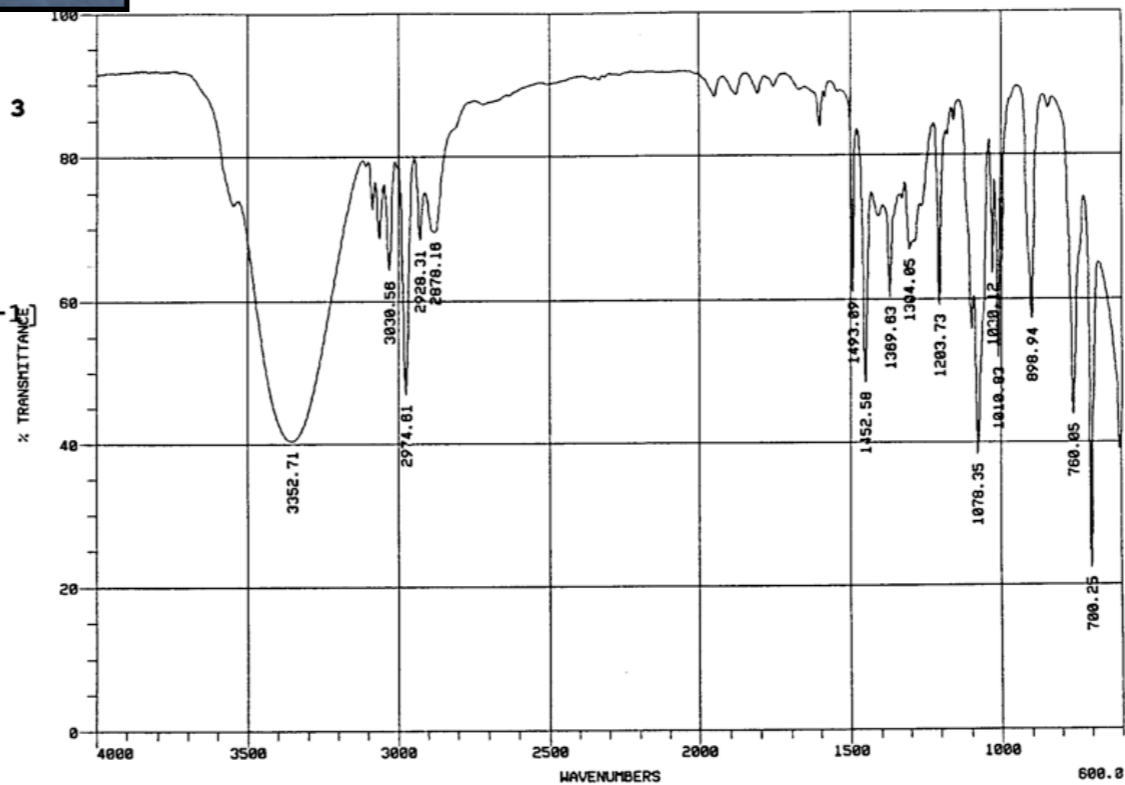
%H 8.2

[98-85-1]

Mass Spec. Data

m/z	relative abund.
51	18
77	42
78	20
79	78
105	10
107	100
108	9
122	20

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PROBLEM 4

MW 150

%C 72.0

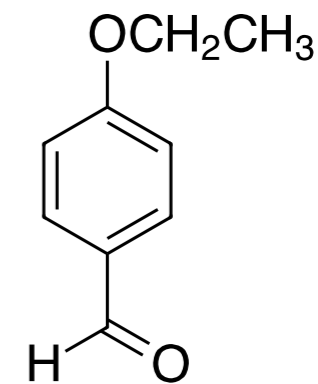
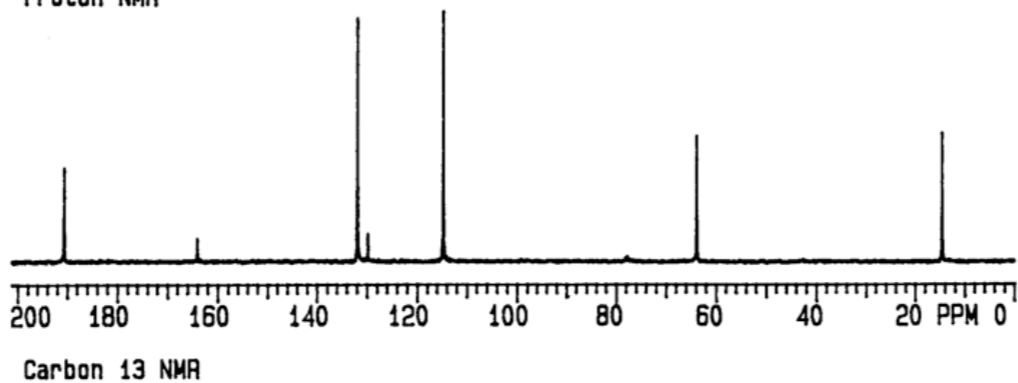
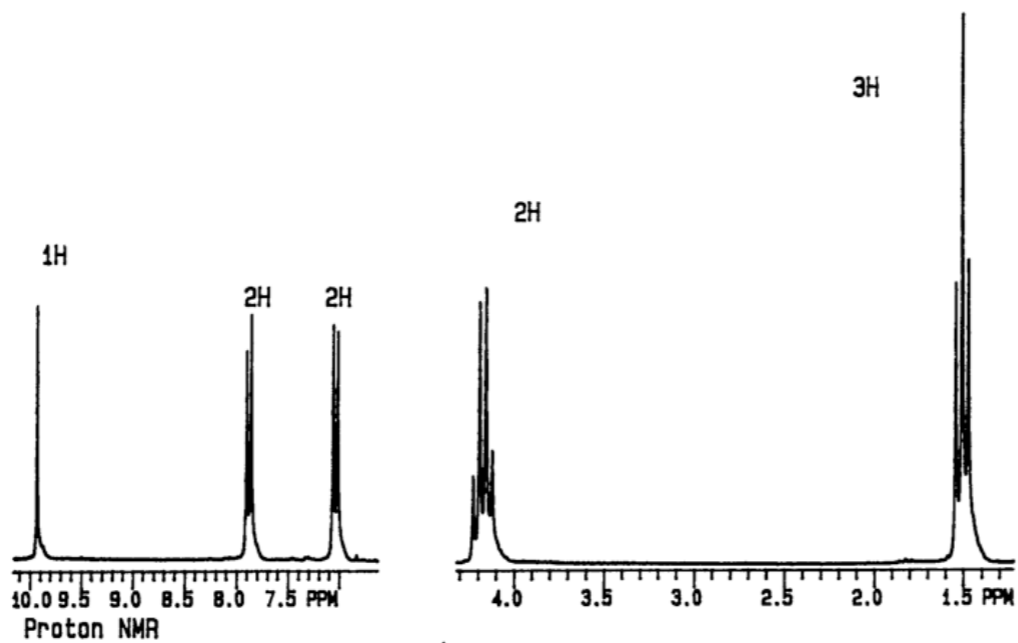
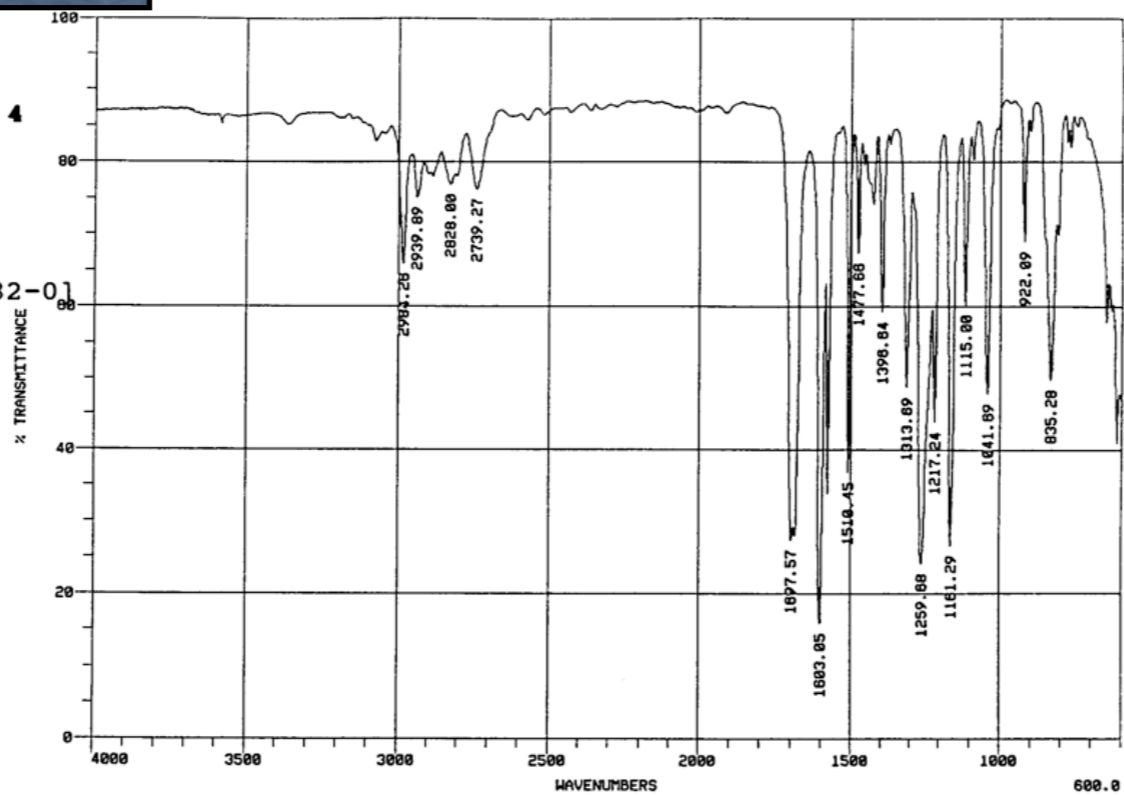
%H 6.7

[10031-82-0]

Mass Spec. Data

m/z	relative abund.
27	15
51	10
65	25
93	14
121	100
122	27
150	38

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4-ethoxybenzaldehyde

PROBLEM 5

MW 84

%C 71.4

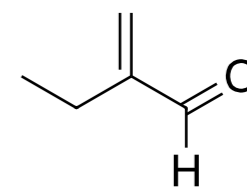
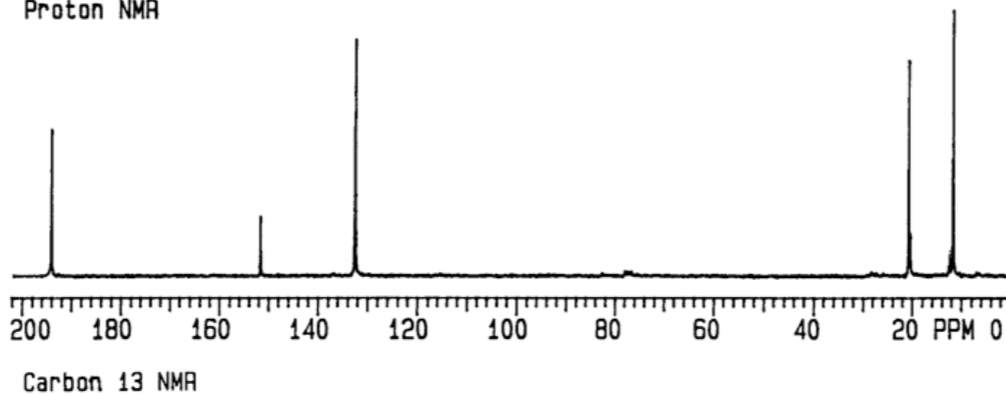
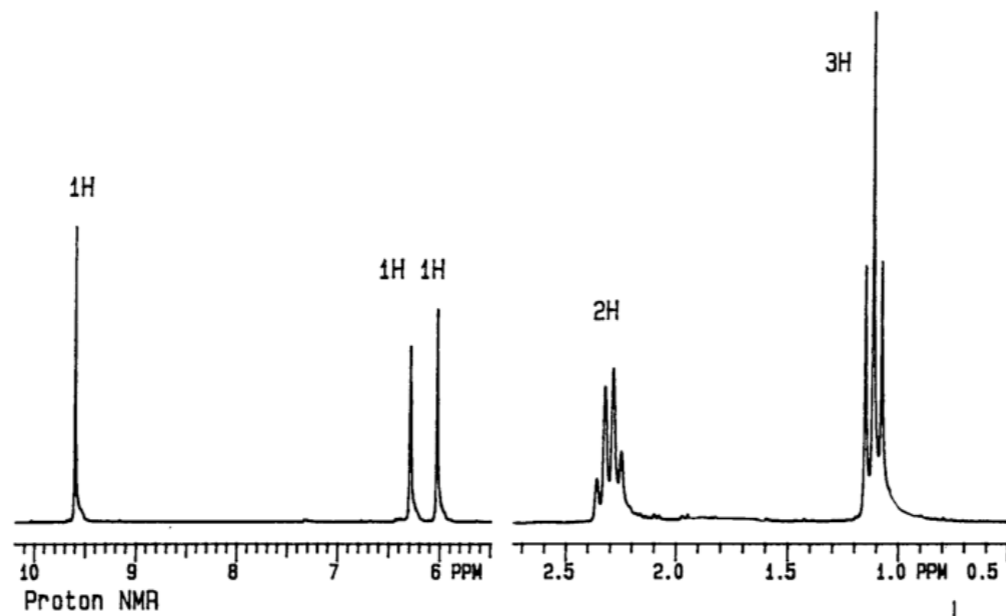
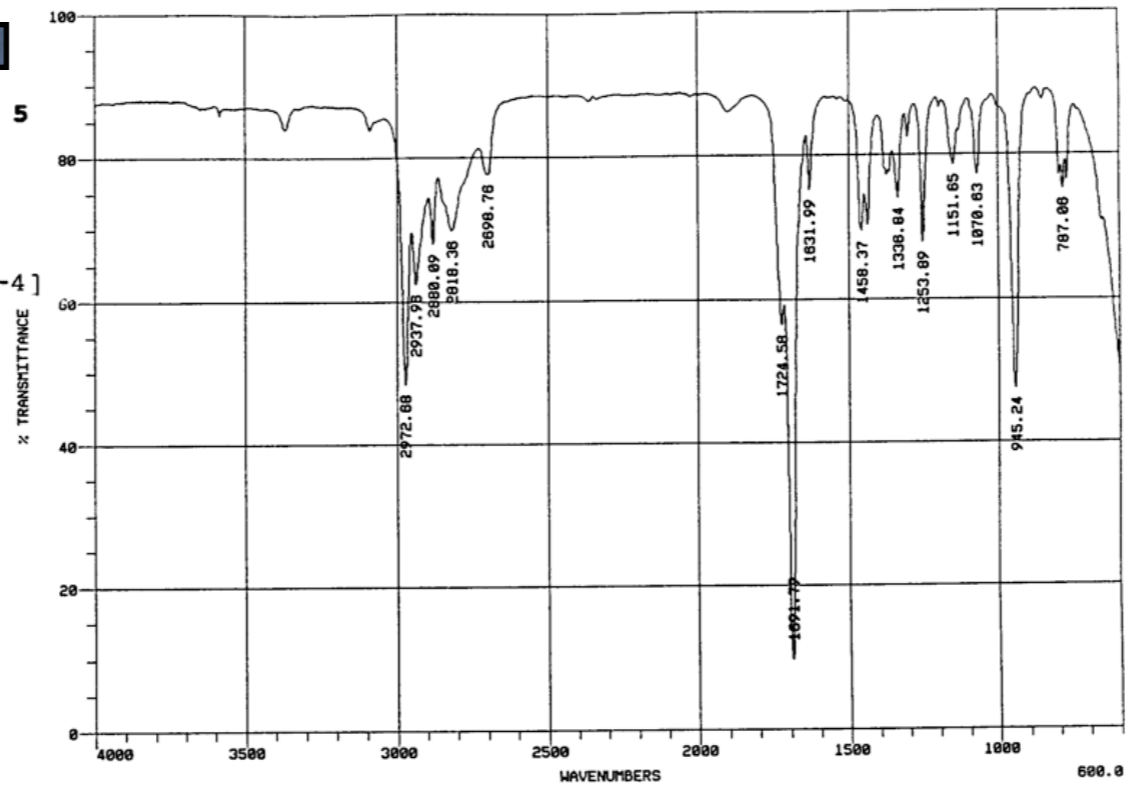
%H 9.6

[922-63-4]

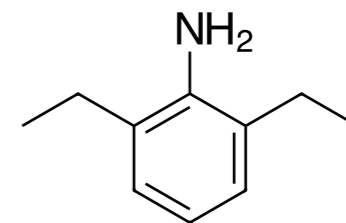
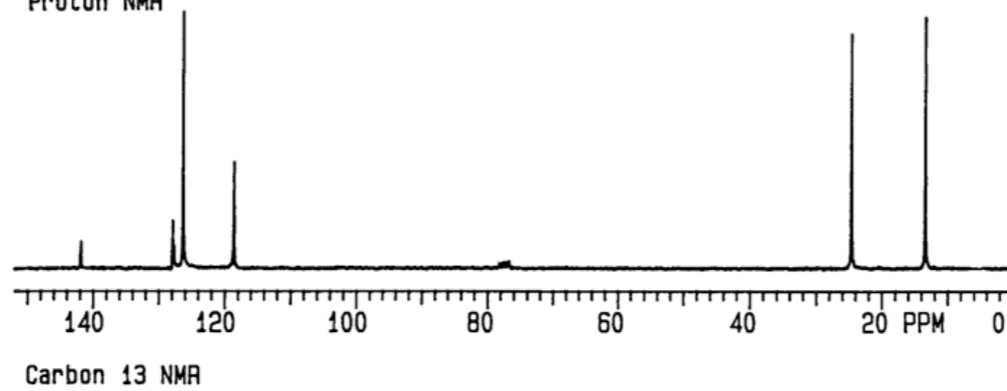
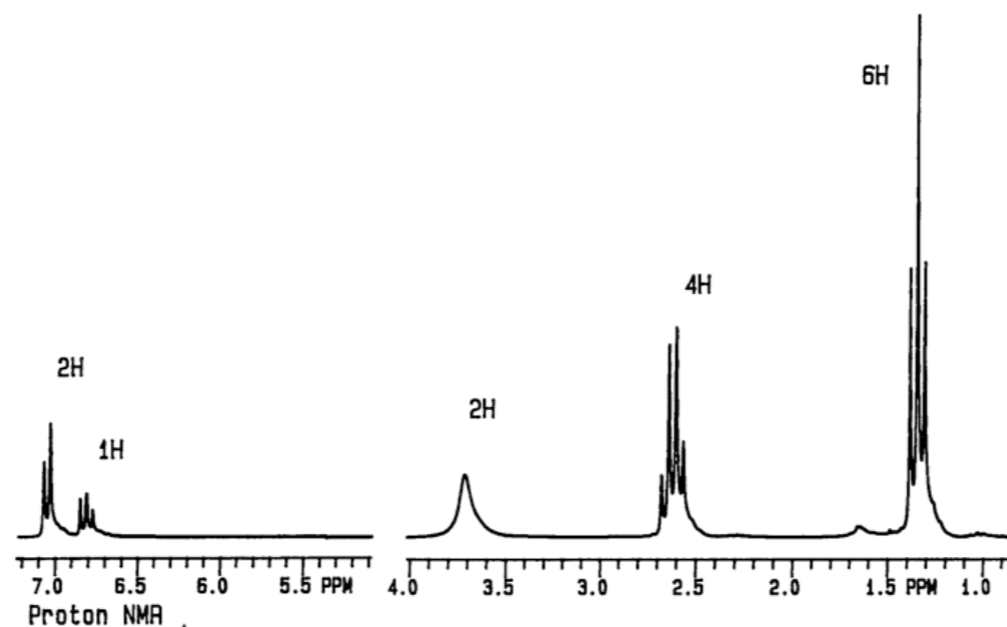
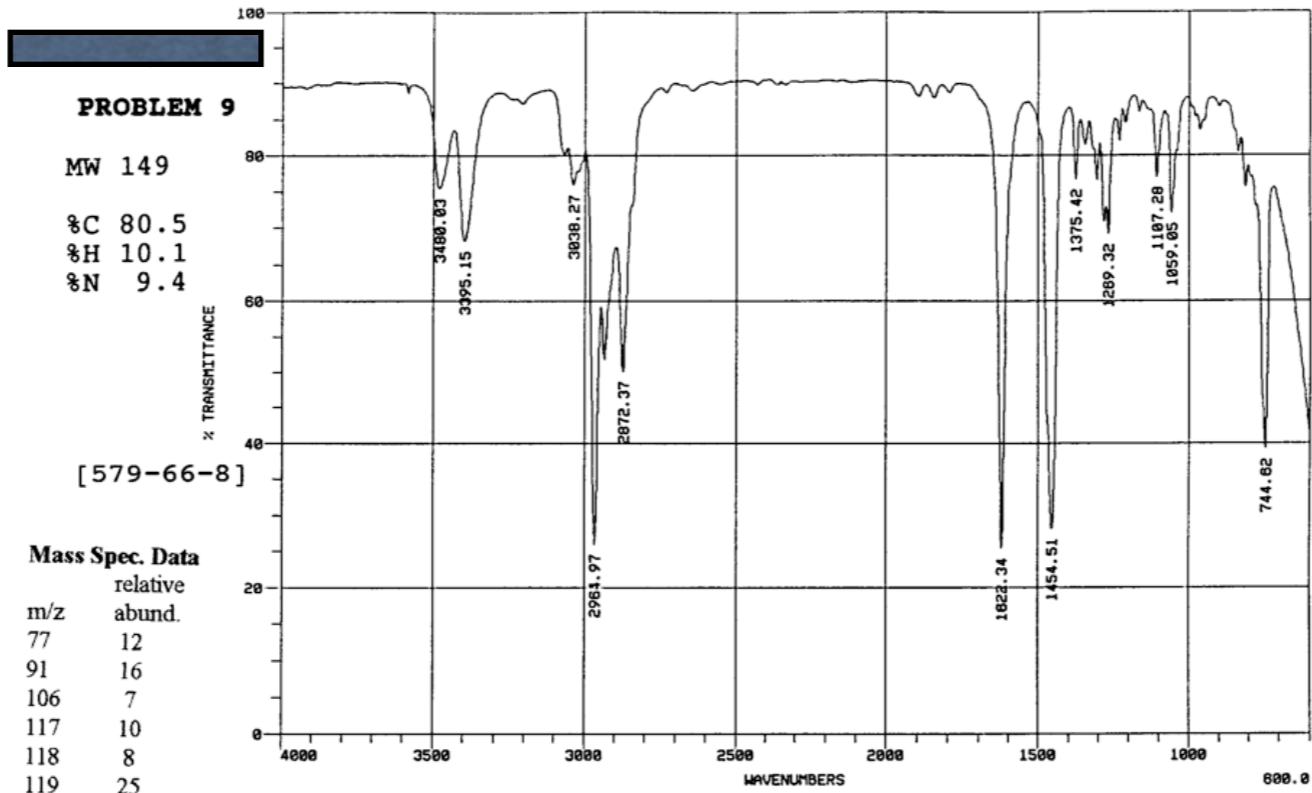
Mass Spec. Data

m/z	relative abund.
27	26
39	46
41	43
50	10
51	10
53	24
55	100
56	28
83	22
84	71

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2-ethylacrolein



2,6-diethylaniline