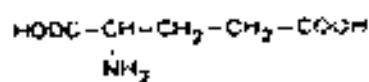


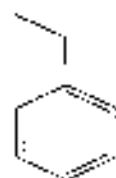
Examen : Méthodes d'analyse spectroscopiques

Exo1

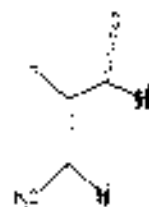
1) Représenter la carte COSY (H-H) des composés A, B et C et celle de HMBC de la molécule D



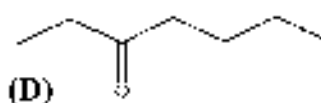
(A)



(B)



(C)

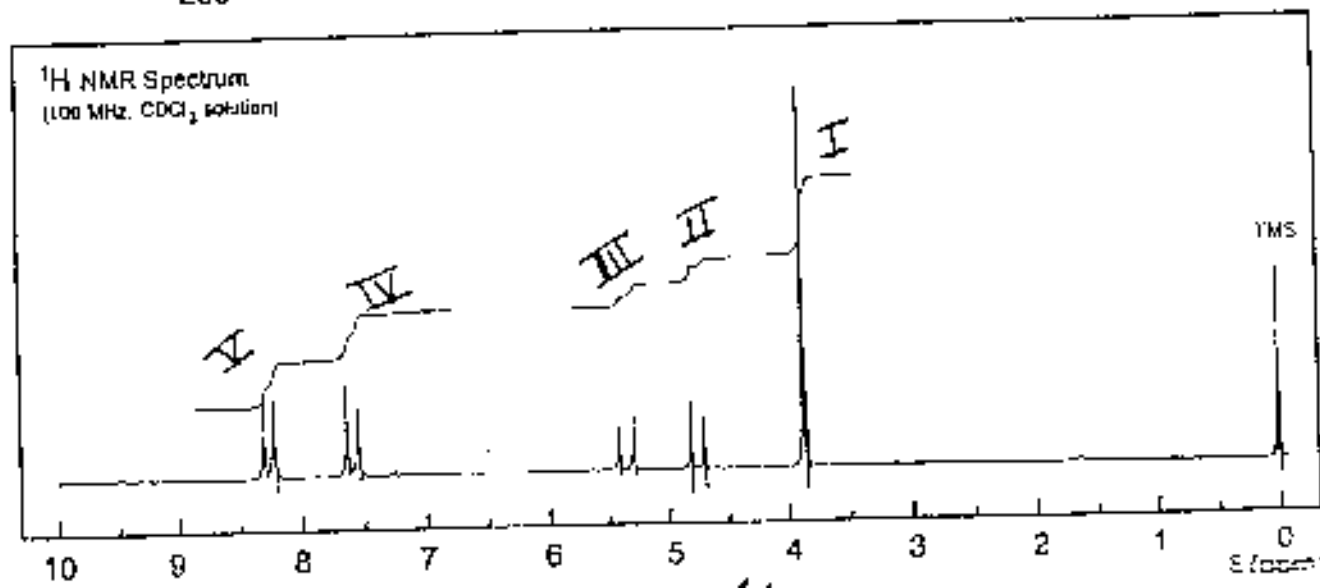
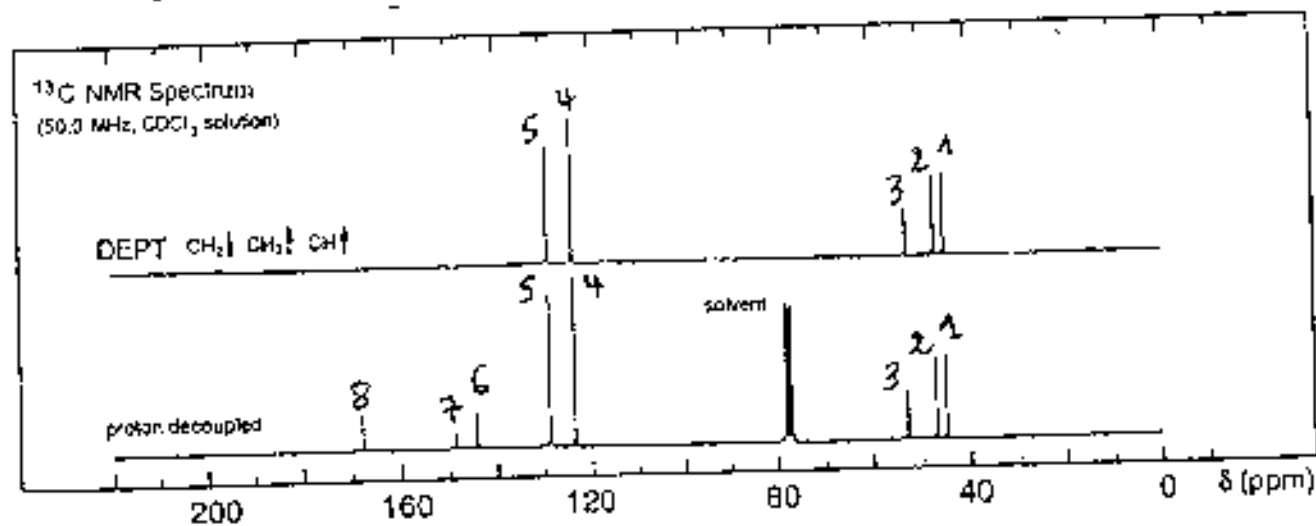


(D)

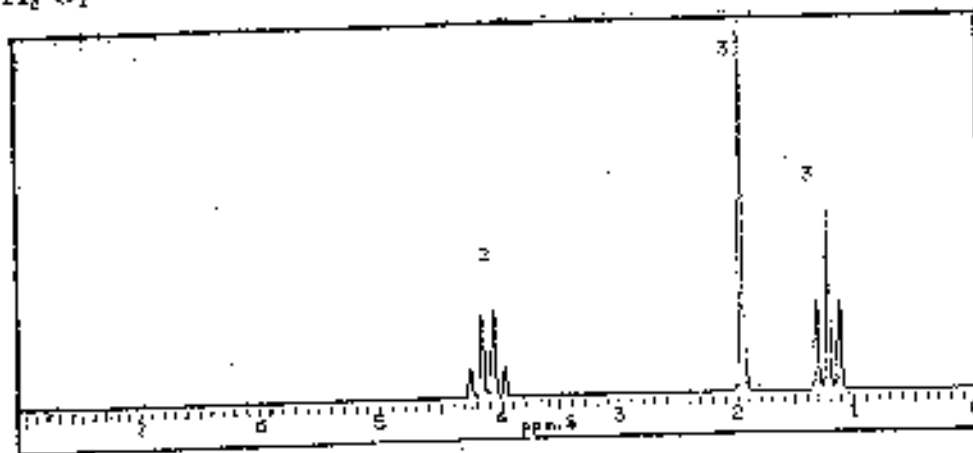
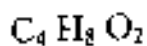
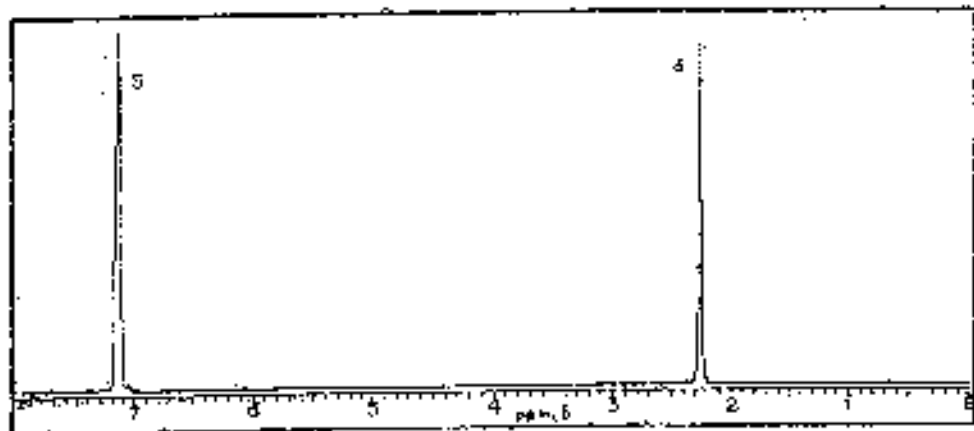
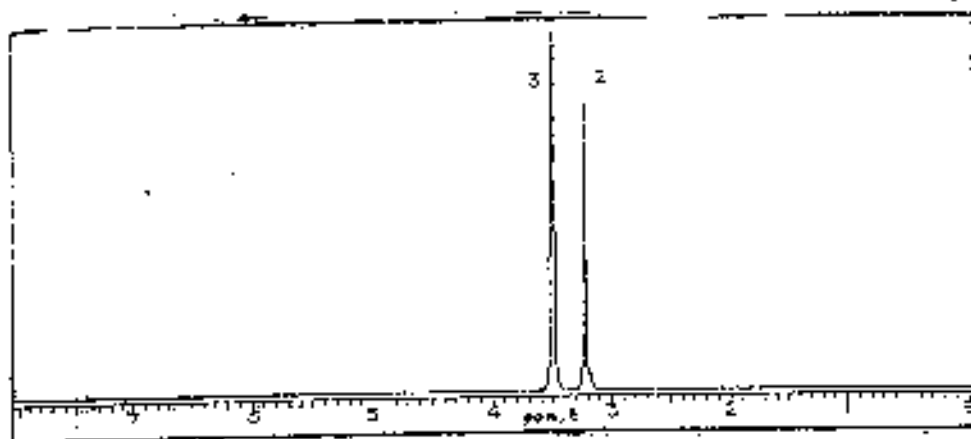
Exo2 :

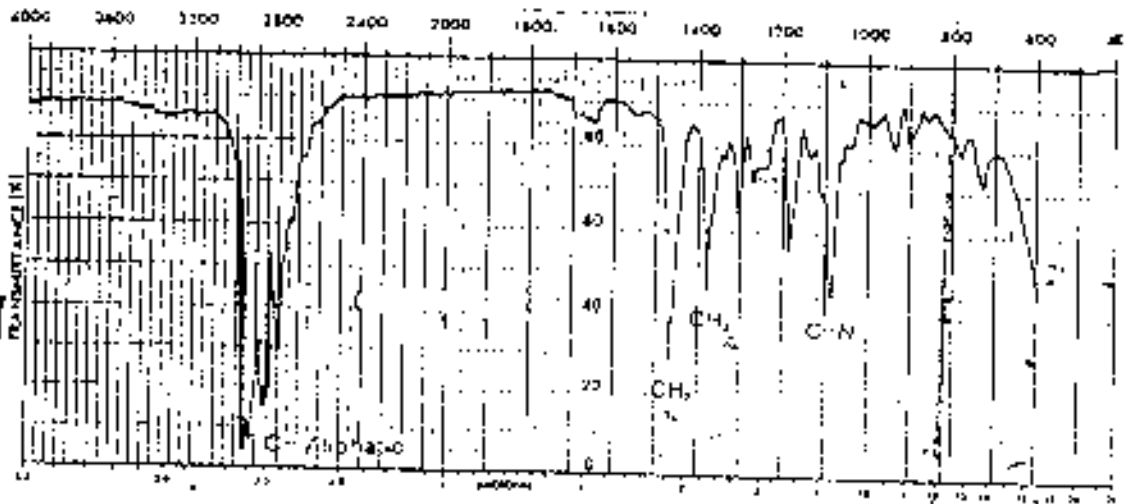
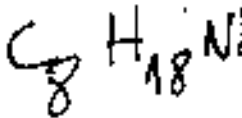
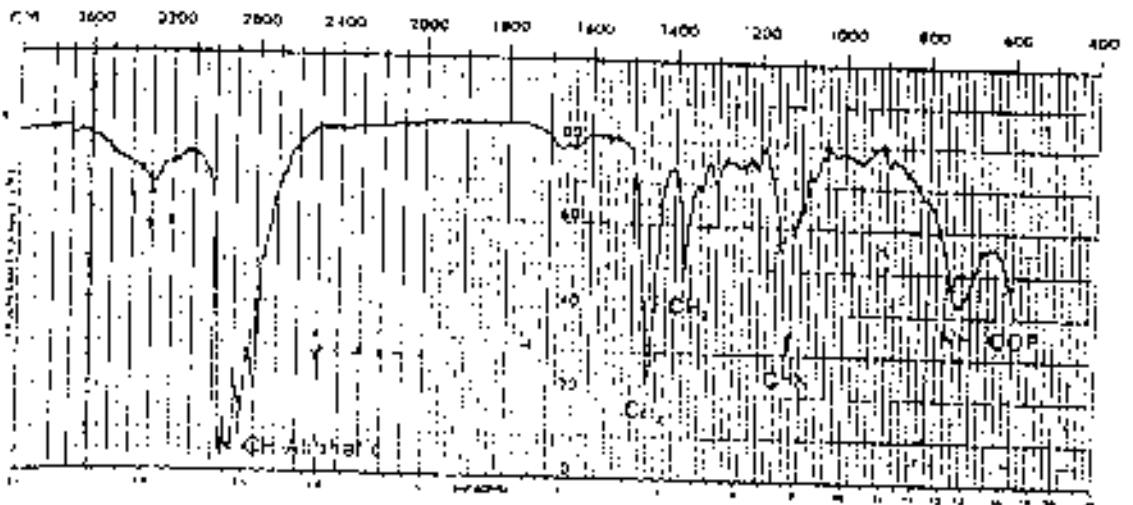
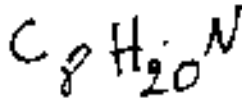
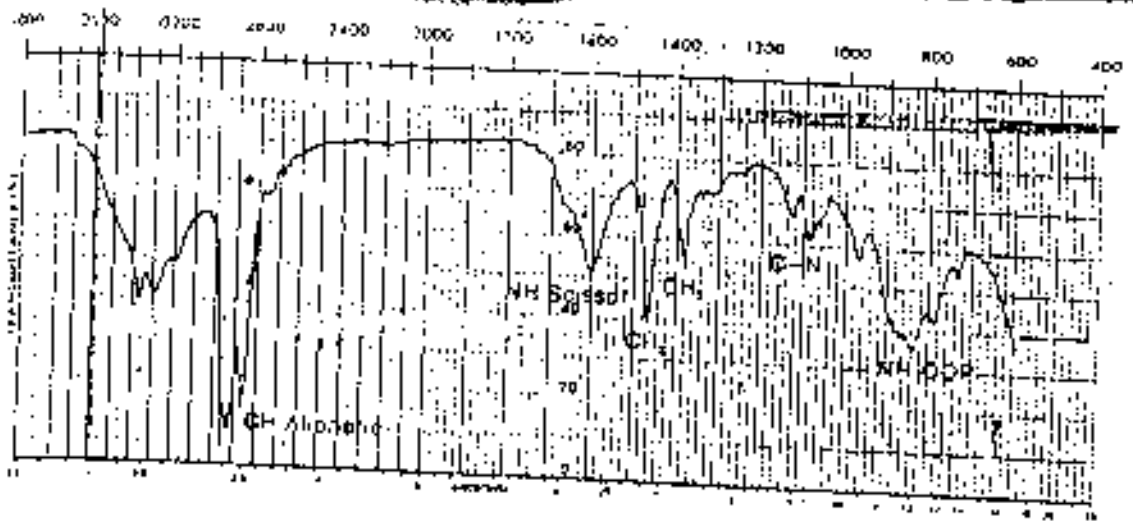
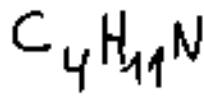
1- Analyser les spectres et donner la formule semi développée du composé suivant : $C_{10}H_{19}NO_3Br_2$

2- sur la formule développée de la molécule, attribuer pour chaque atome H et C son numéro enregistré dans les deux spectres RMN du carbone et du proton.



Quelle est la structure pour les composés ayant une formule brute et dont les spectres RMN H et IR sont rapportés ci-après. Justifier vos réponses ?

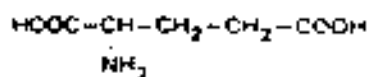




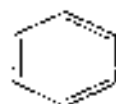
Examen : Méthodes d'analyse spectroscopiques

Exo1 (4 pts)

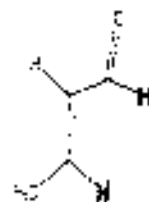
1) Représenter la carte COSY (^1H - ^1H) des composés A, B et C et celle de HMBC de la molécule D



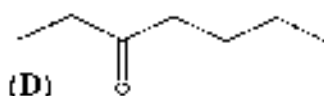
(A)



(B)



(C)

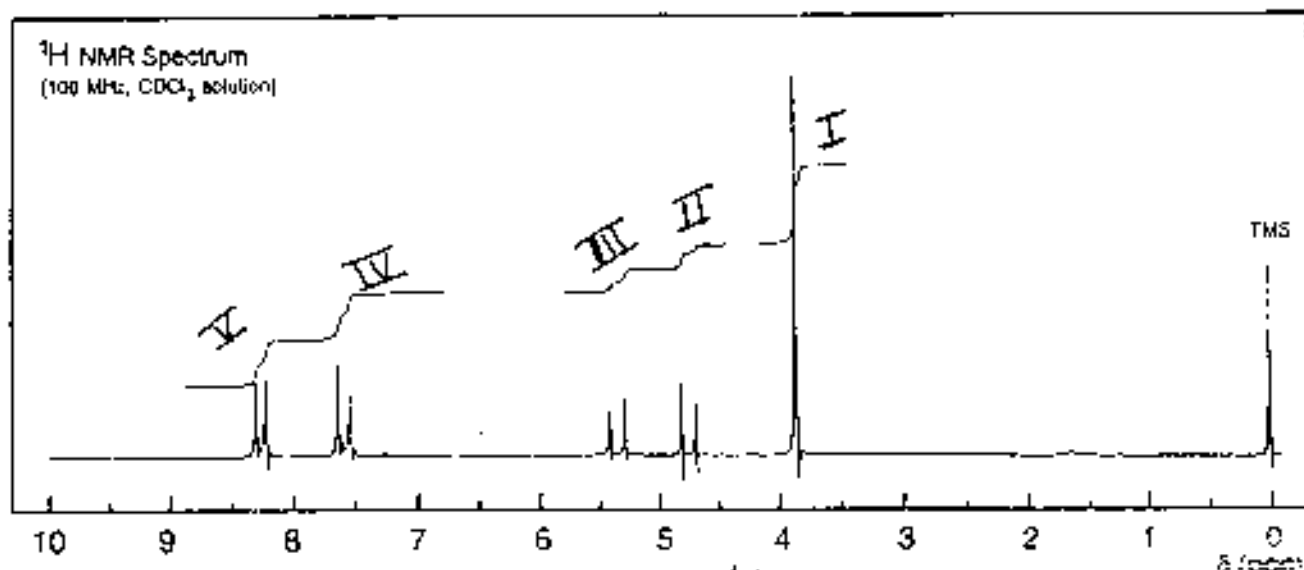
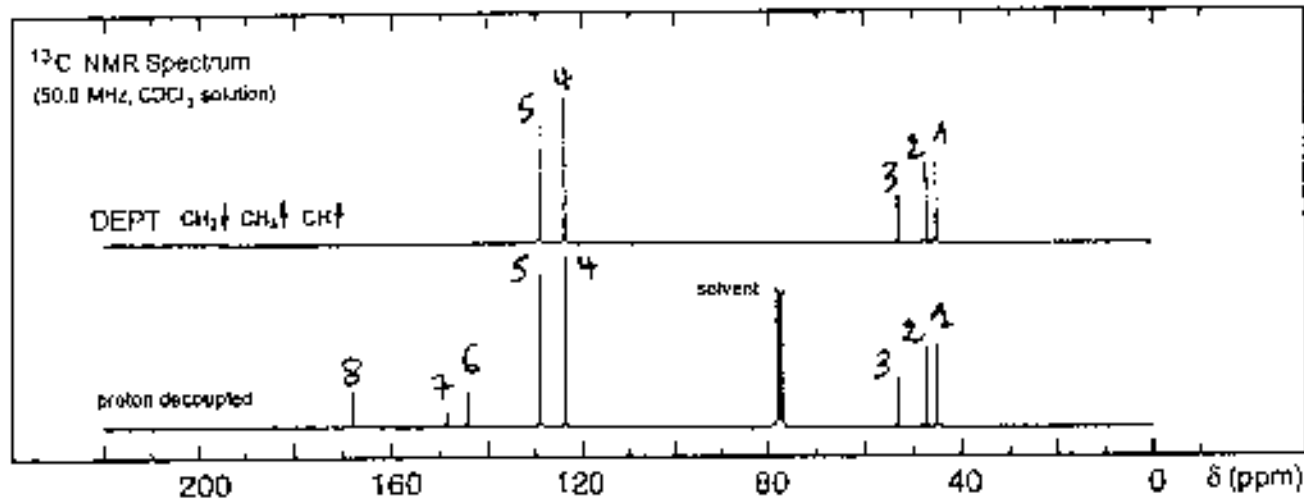


(D)

Exo2: (7 pts)

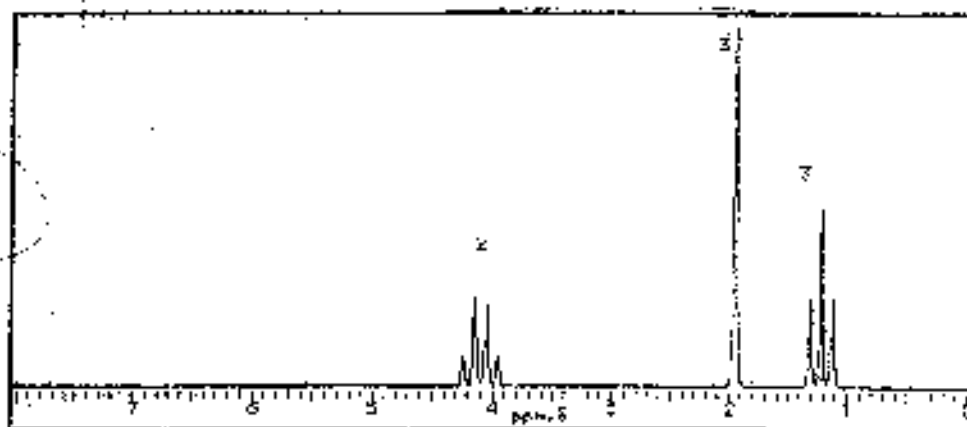
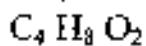
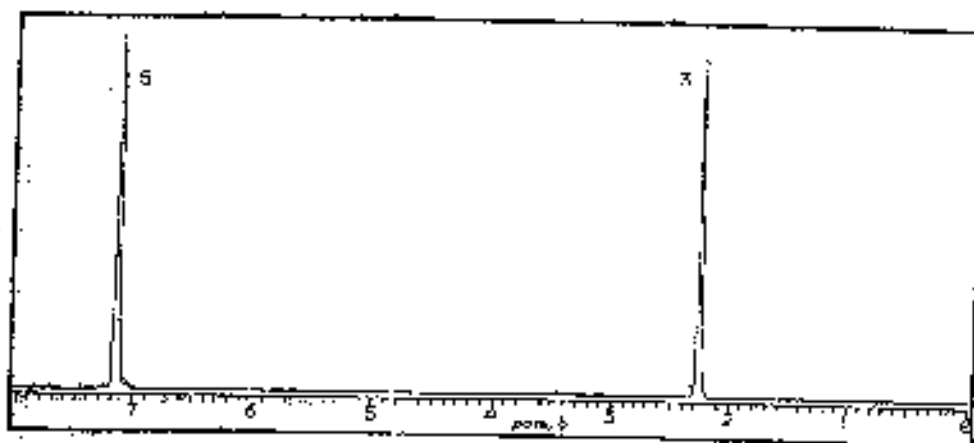
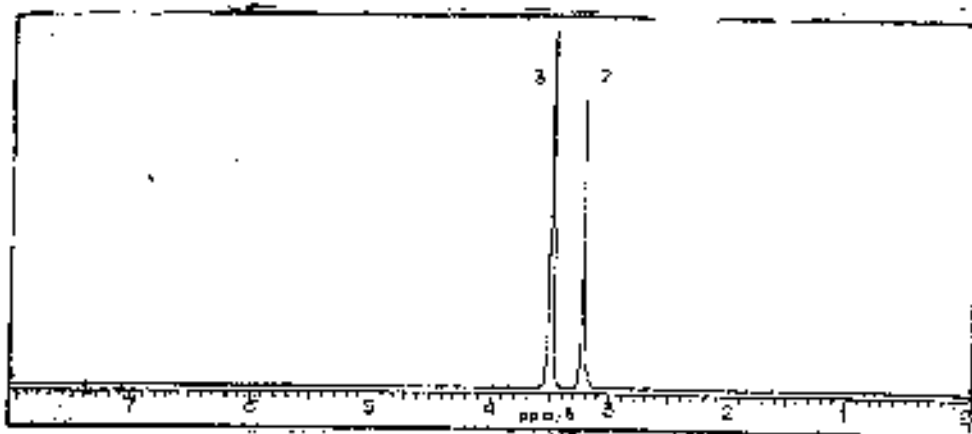
1- Analyser les spectres et donner la formule semi développée du composé suivant : $\text{C}_{10}\text{H}_9\text{NO}_4\text{Br}_2$

2- sur la formule développée de la molécule, attribuer pour chaque atome H et C son numéro enregistré dans les deux spectres RMN du carbone et du proton.



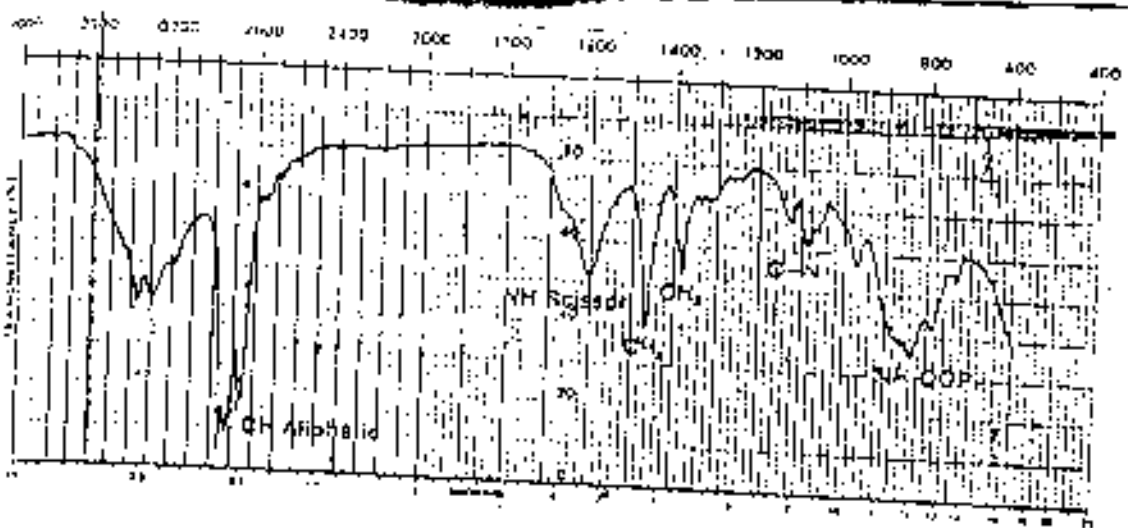
ε (gpts)

Quelle est la structure pour les composés ayant une formule brute et dont les spectres RMN H et IR sont rapportés ci-après. Justifier vos réponses ?



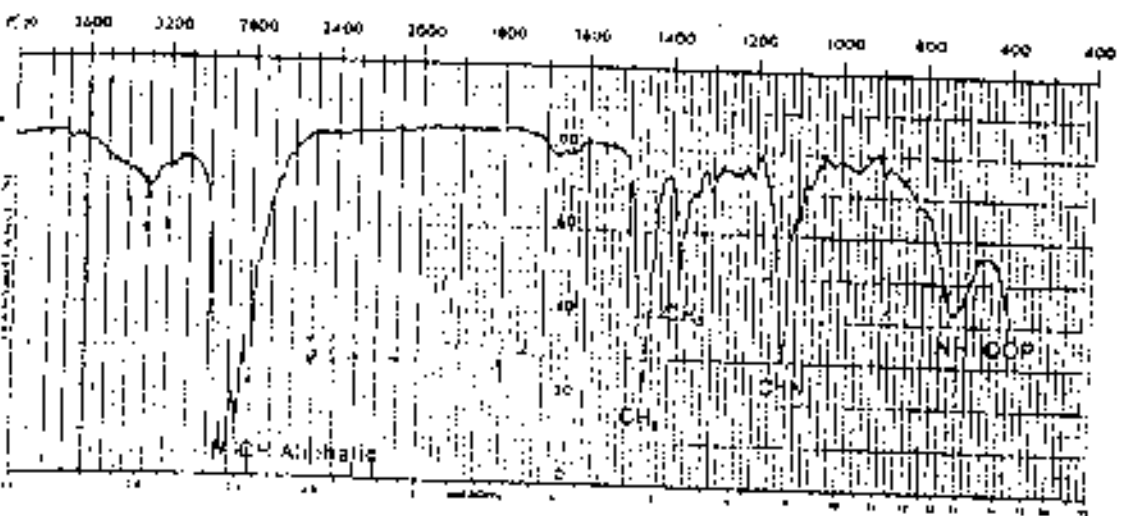
$C_4H_{11}N$

115



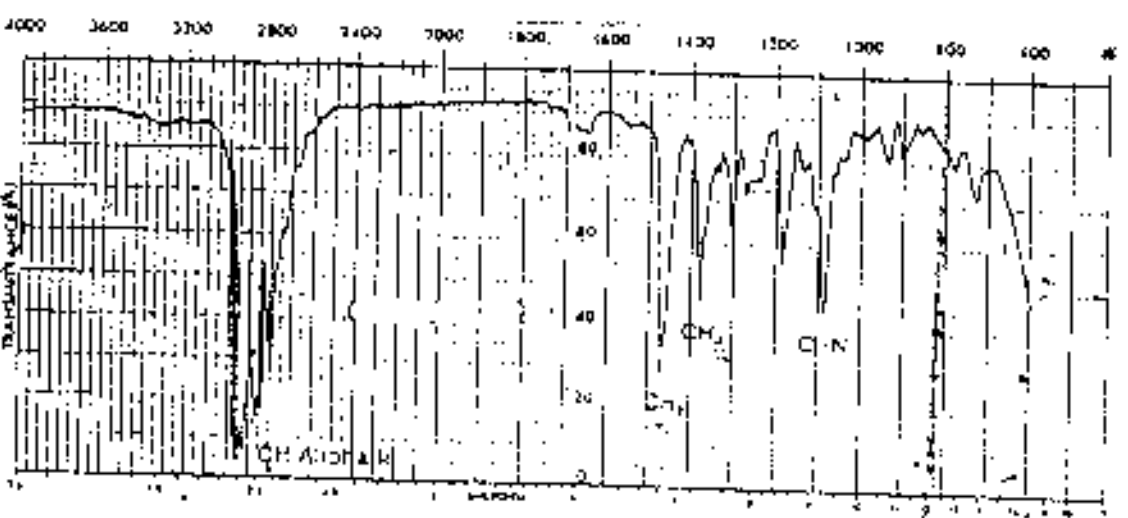
$C_8H_{20}N$

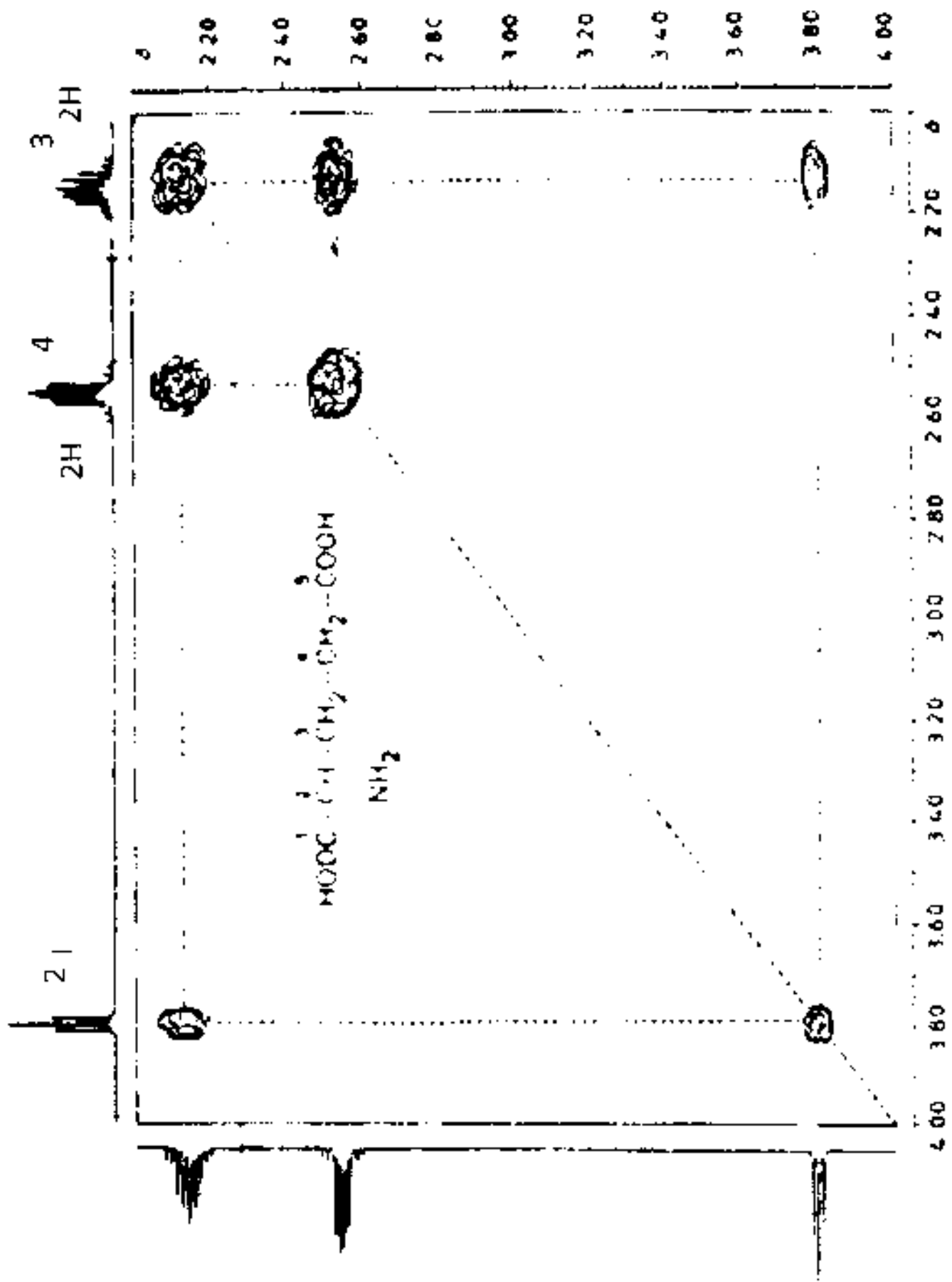
115

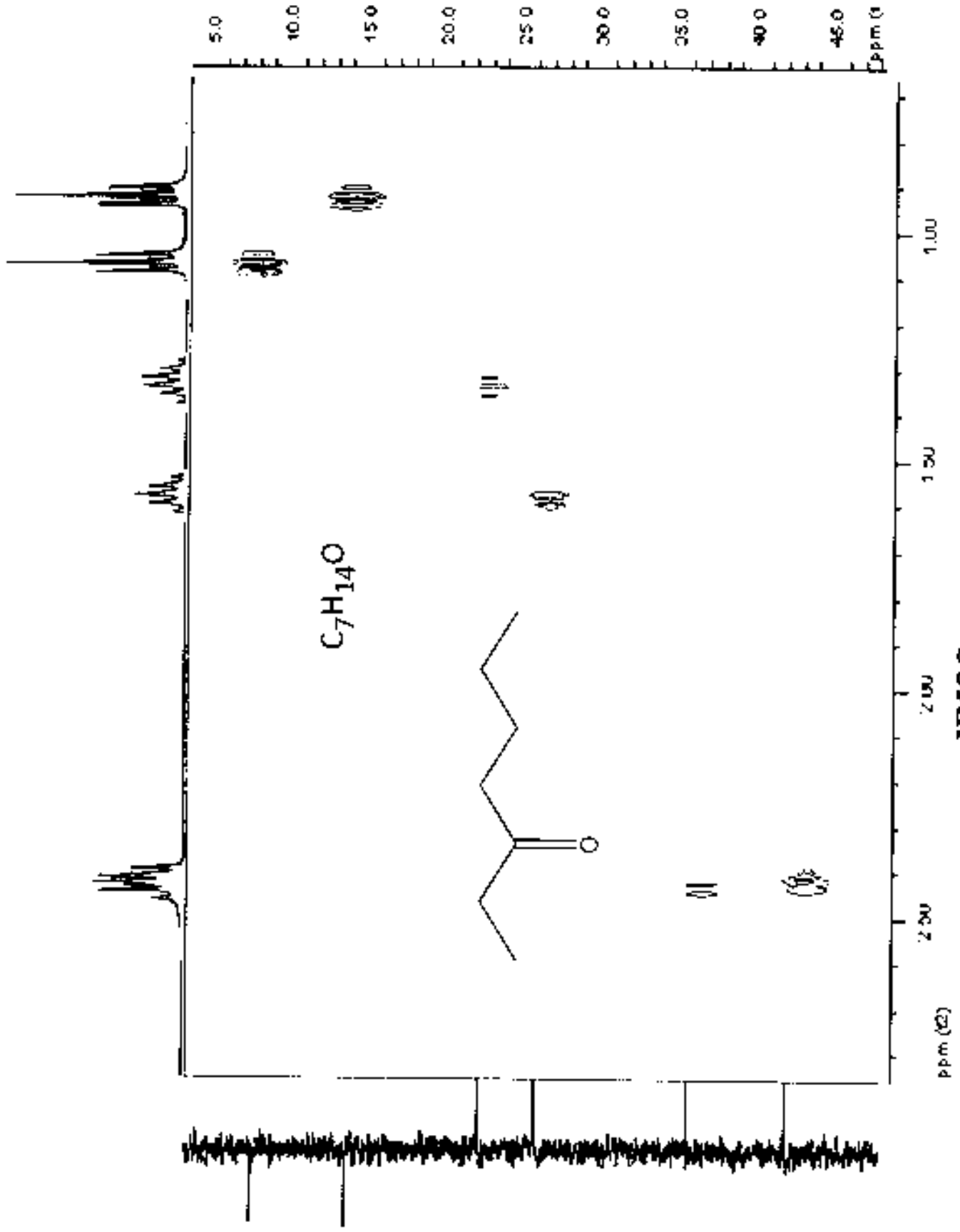


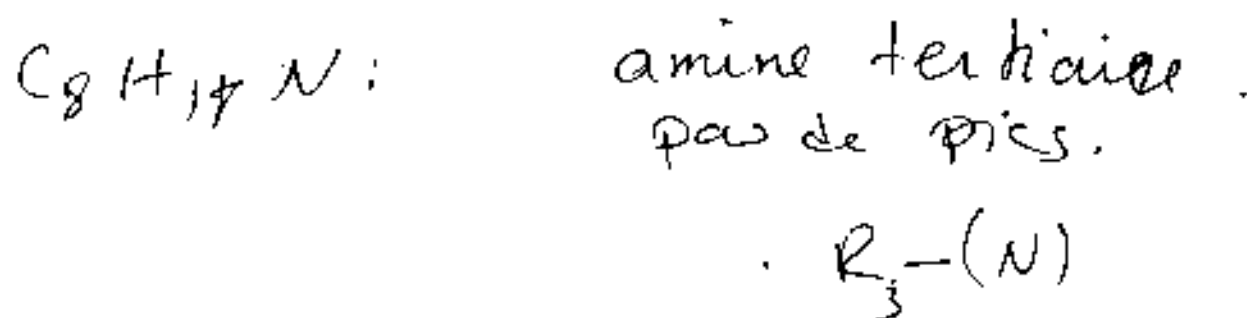
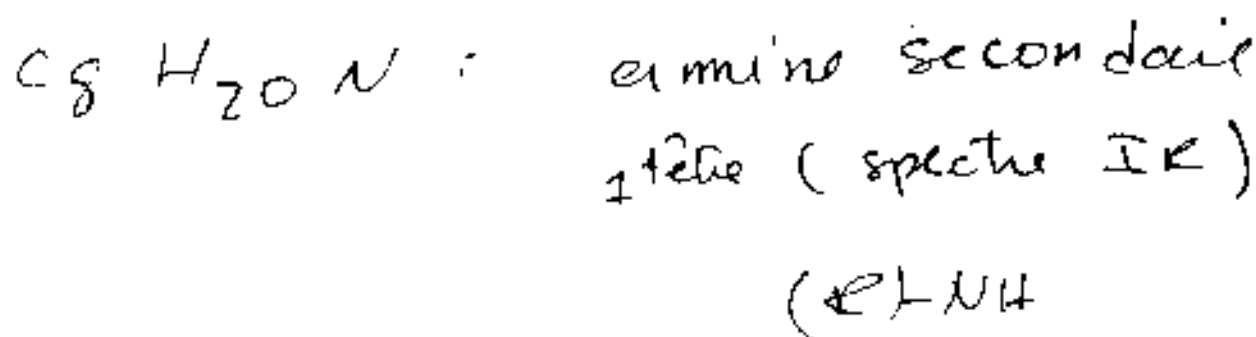
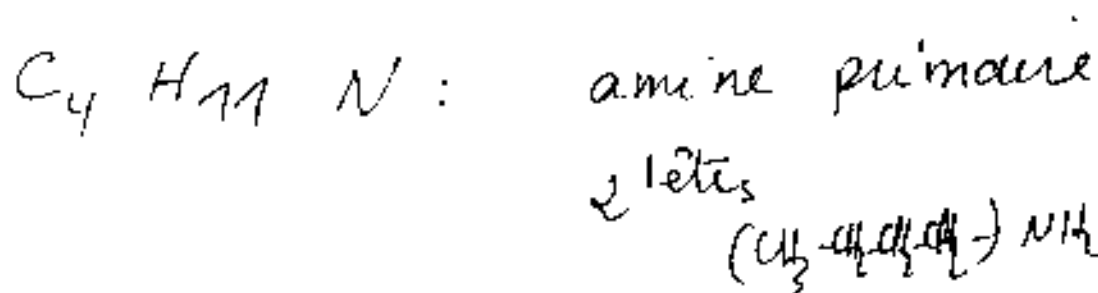
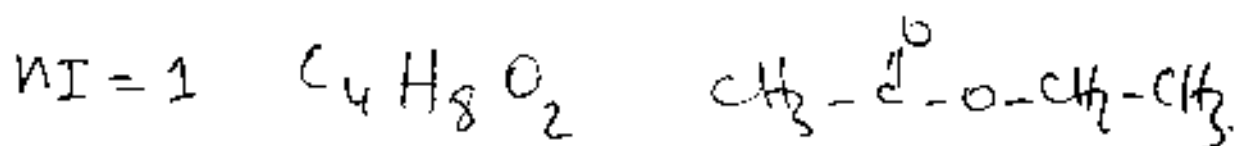
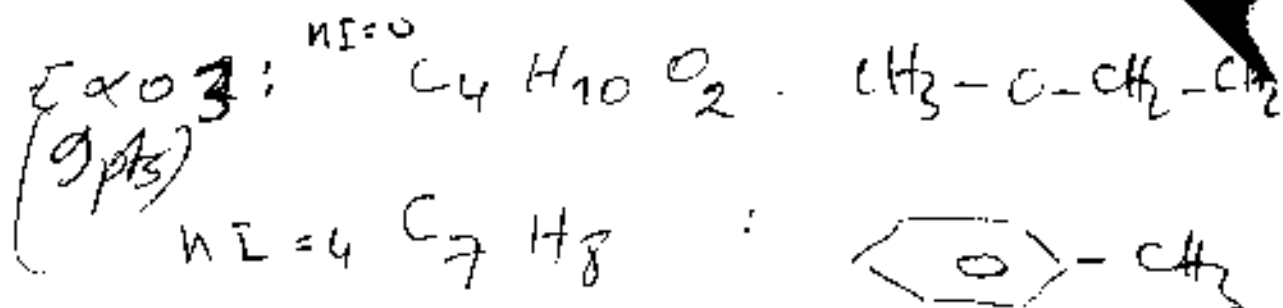
115

$C_8H_{18}N$









Exo 9: (7 pts)
 $C_{10}H_{14}NO_4$ E-1

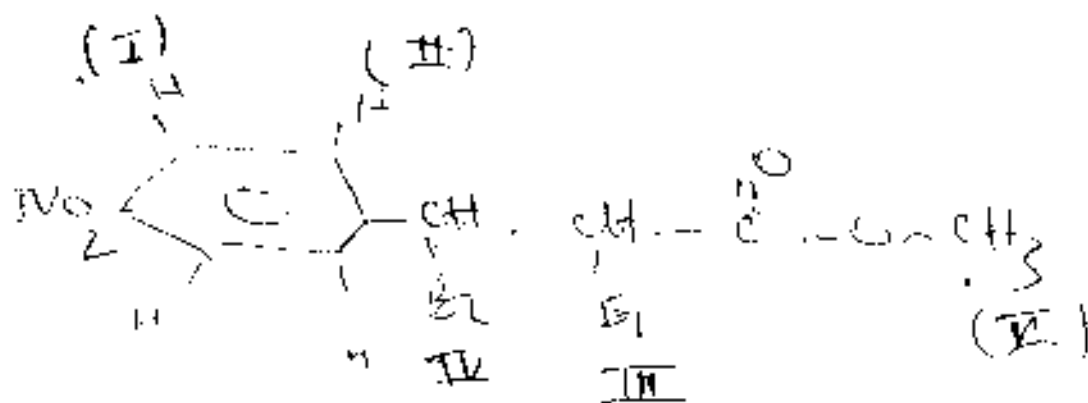
$n_I = 6$

KMn ^{13}C

1	2	3	4	5	6	7	8	Nombre de signaux δ (ppm)
169	148	143	130	122	52	48	45	
d	d	q	d	d	d	d	d	
CH	CH	CH ₃	CH	CH	-C-	-C-	-C ^o -	

KMn 1H

I	II	III	IV	V
3, 9	4, 9	3, 4	7, 8	8, 2
3H	1H	1H	2H	2H
d	d	d	d	d



Spectre COSY de C₈H₁₀

