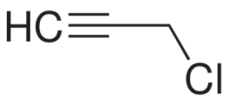
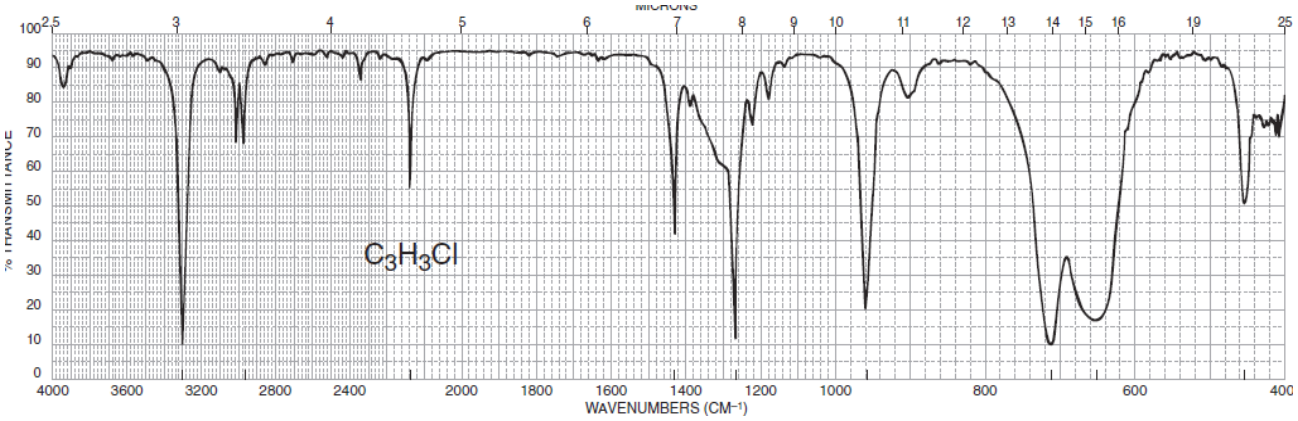
EXERCÍCIOS DE INFRAVERMELHO 2013 – Parte 1

1 – Para cada espectro, indique e explique as principais bandas de absorção, de acordo com a respectiva estrutura.

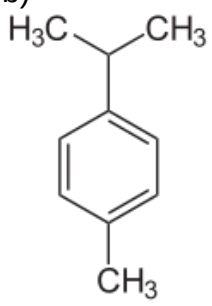
a)



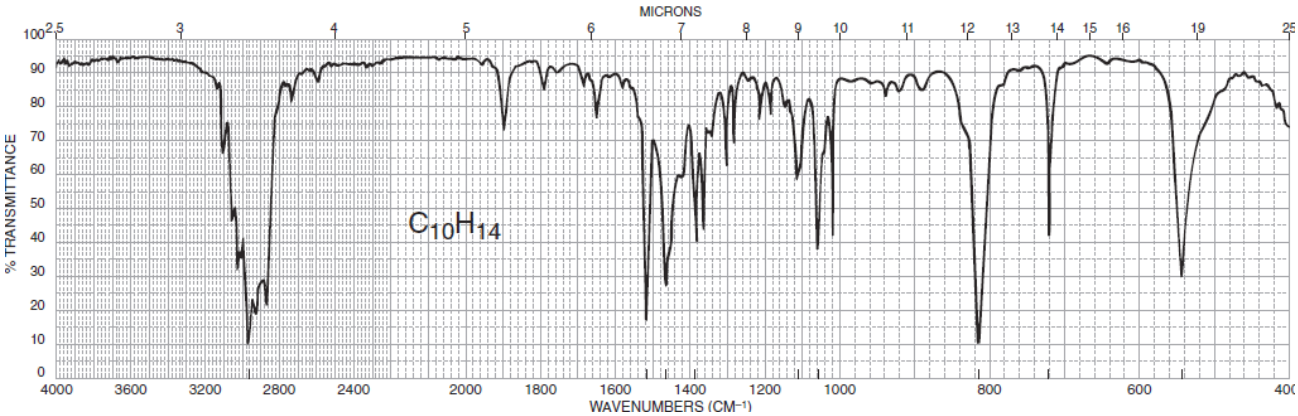
ν ≡C-H, ν CH_2, δ CH_2



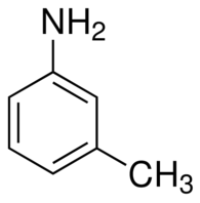
b)



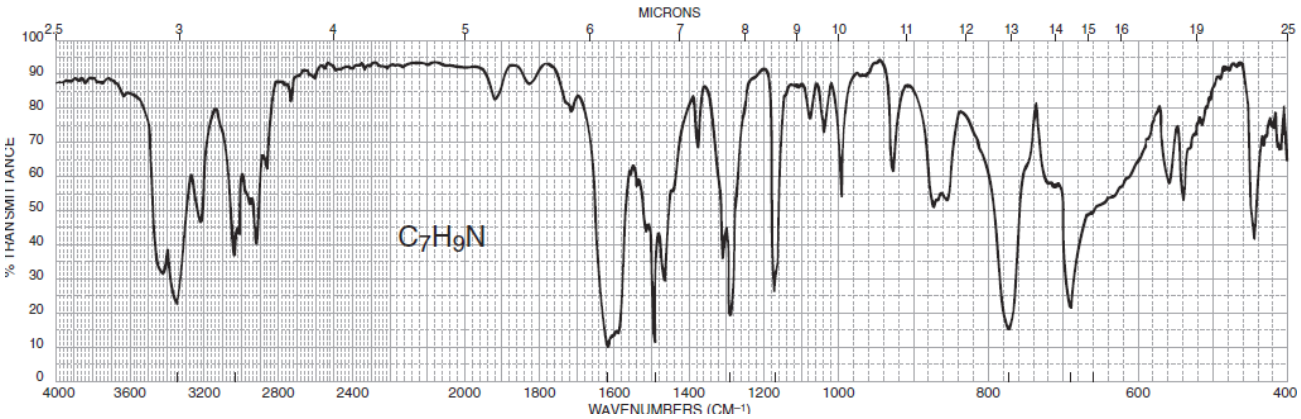
ν CH_3, ν Ar-H, δ CH_3, δ Ar-H



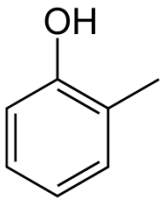
c)



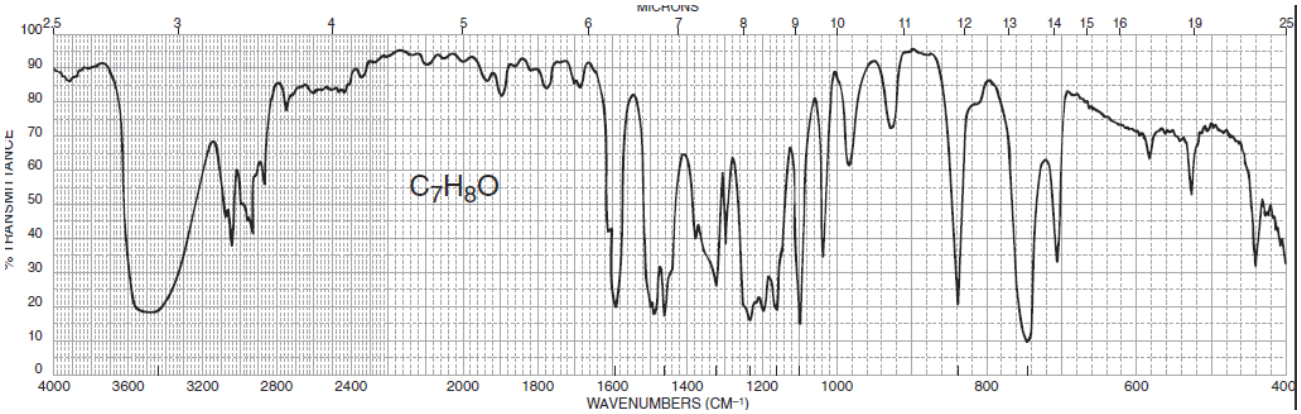
ν Ar-H, ν CH_3, δ CH_3, δ Ar-H



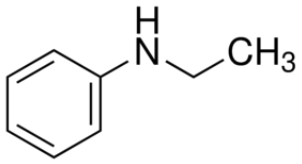
d)C_7H_8O



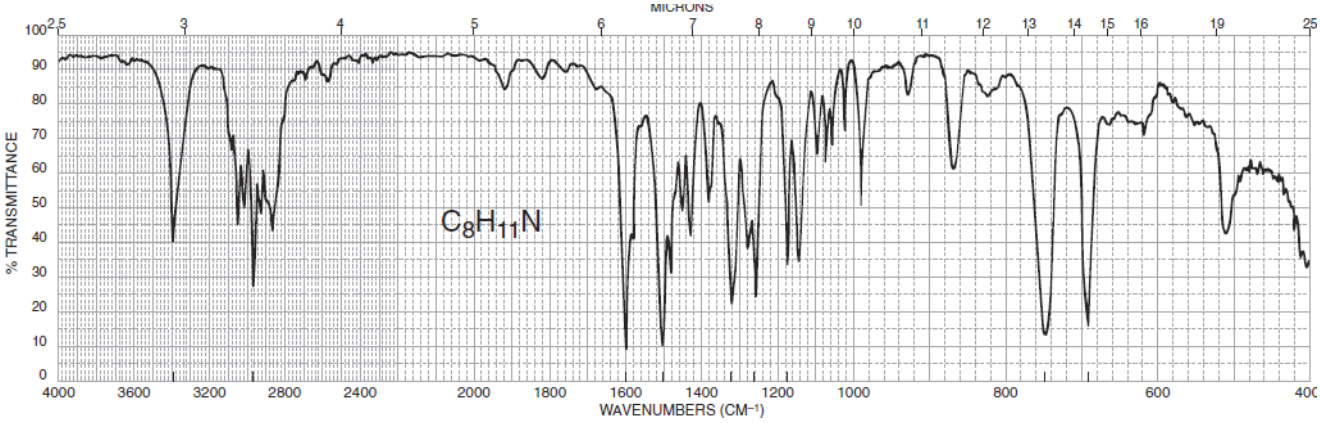
ν Ar-H, ν CH_3, δ CH_3, δ Ar-H



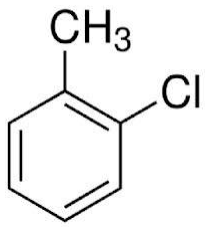
e)



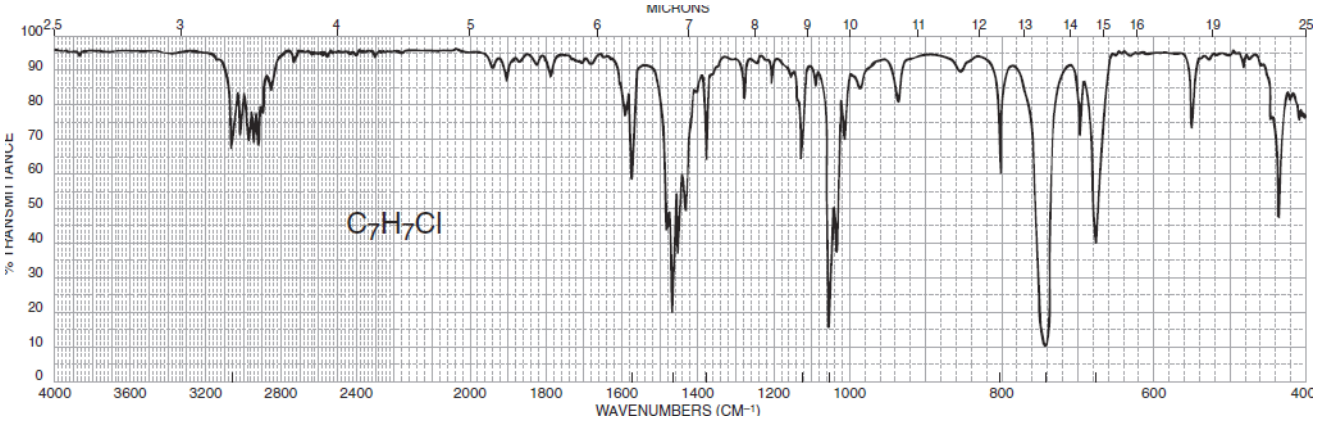
ν Ar-H, **ν** CH_2, **ν** CH_3, **δ** CH_2, **δ** CH_3, **δ** Ar-H



f)



ν Ar-H**,** **ν** CH_3, **δ** CH_3, **δ** Ar-H



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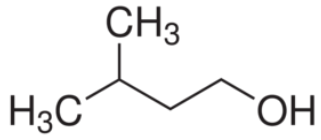
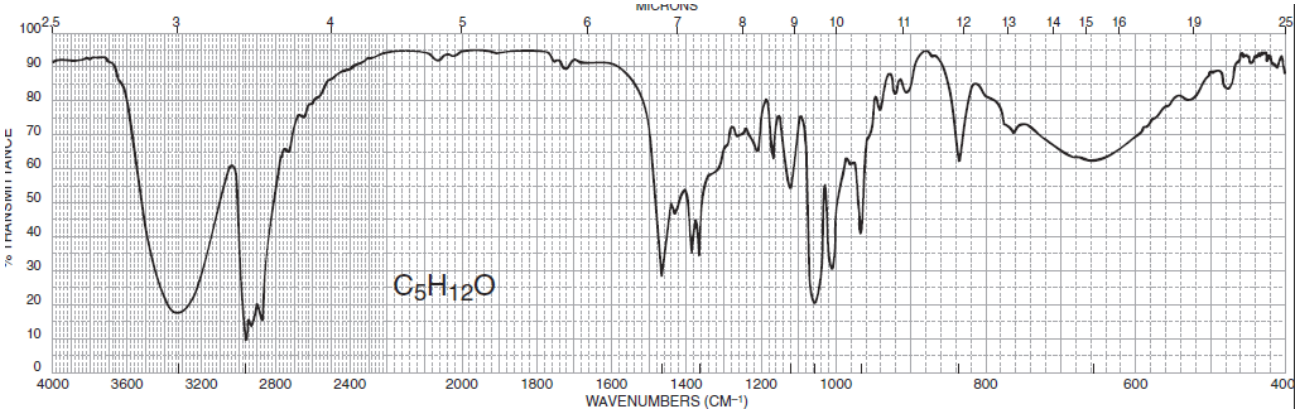


ν CH_3, **ν** CH_2, **ν** CH, **δ** CH_2, **δ** CH_3



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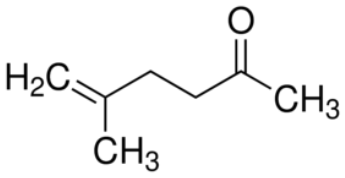
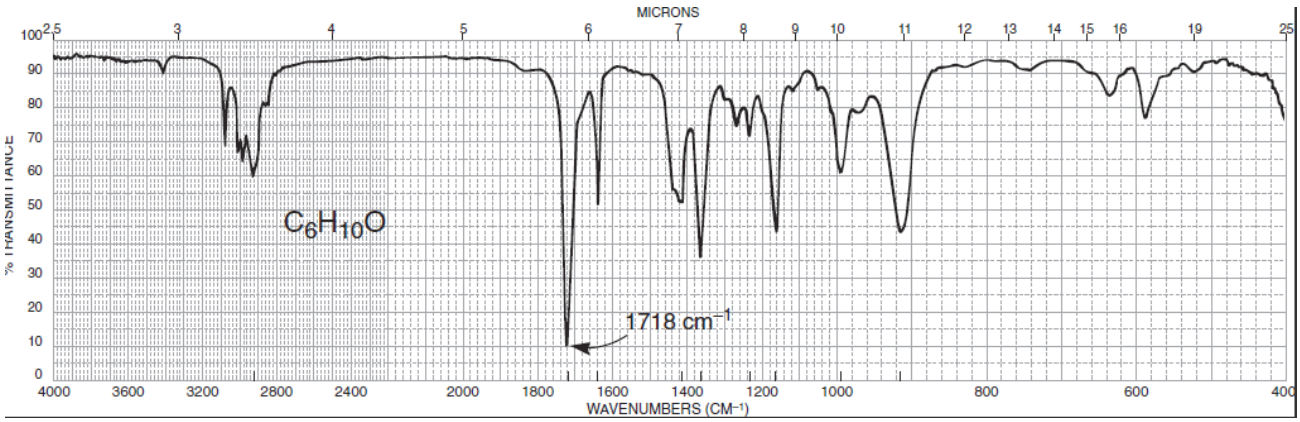
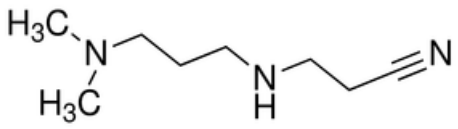


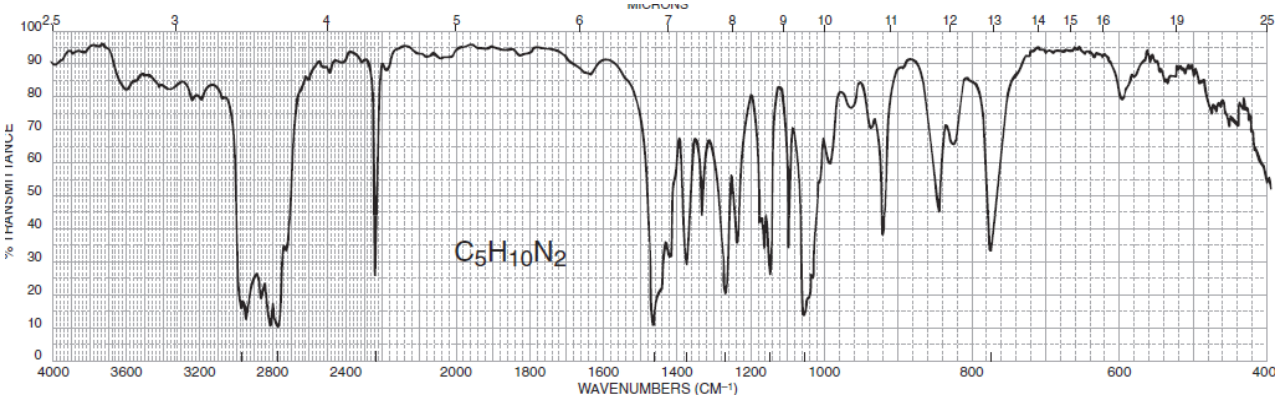
ν $=CH_2$, **ν** CH_2, **ν** CH_3, **δ** CH_2, **δ** CH_3



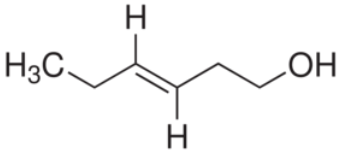
i)

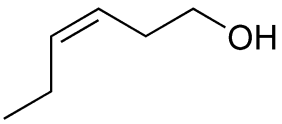


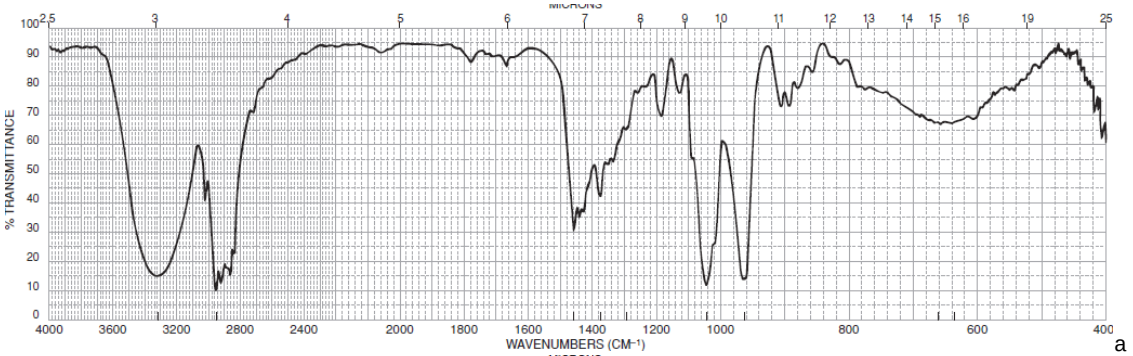
ν CH_3, ν CH_2, δ CH_2, δCH_3



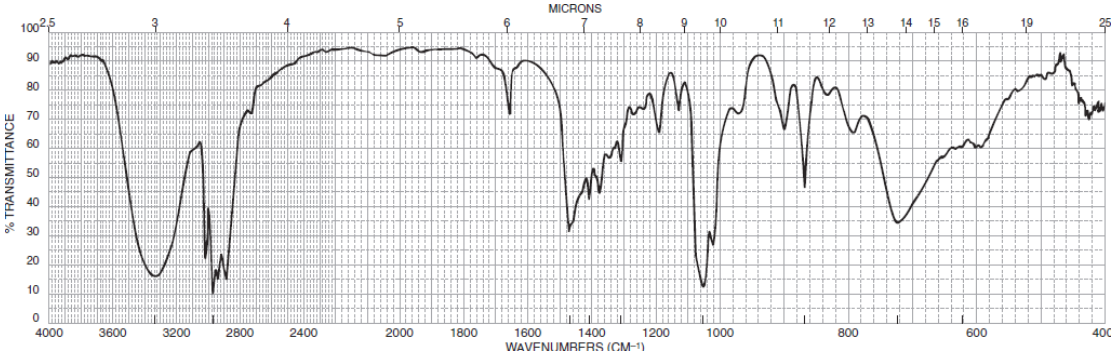
2 - A seguir, apresentam-se os espectros infravermelhos dos ***cis-*** e ***trans*-3-hexen-1ol**. Determine uma estrutura para cada um deles.





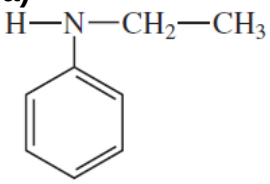


a

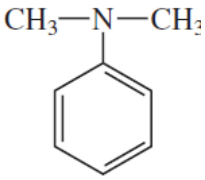


4 – Entre as estruturas abaixo, escolha a que melhor se adapta ao espectro infravermelho apresentado:

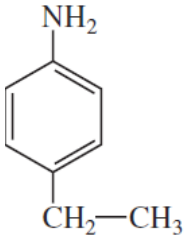
a)



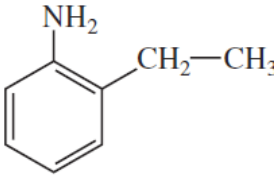
A



B

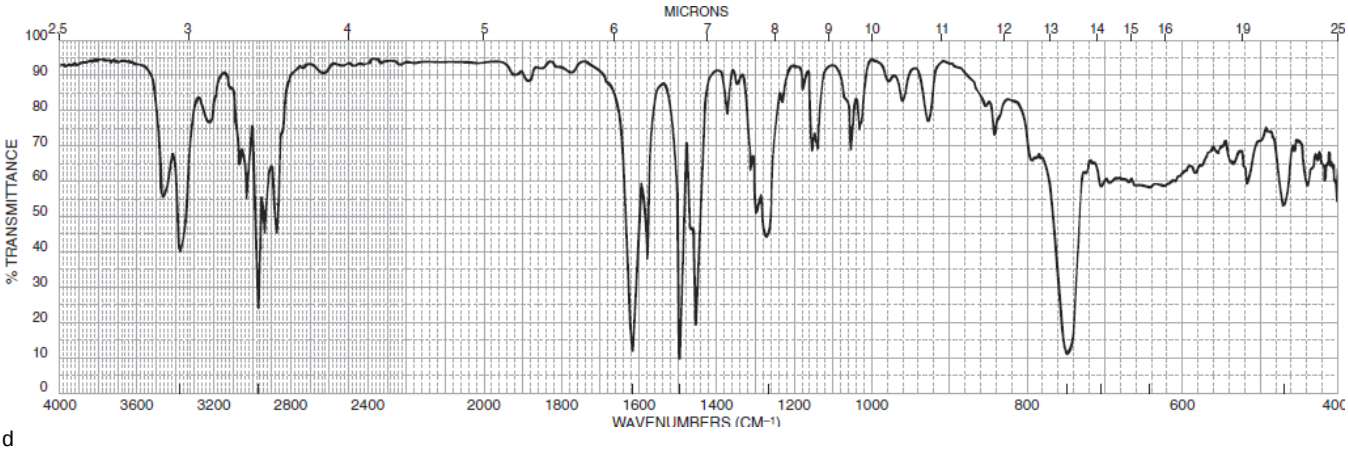


C



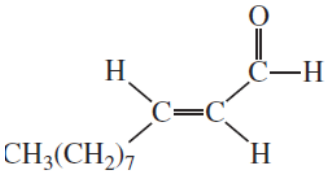
D

Observar νNH e δ Ar-H

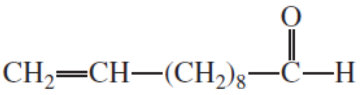


d

b)



A



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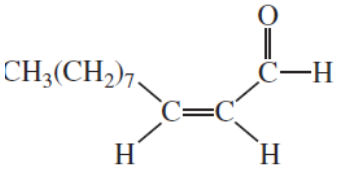
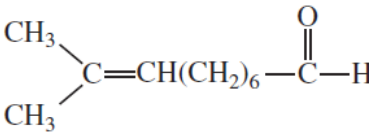
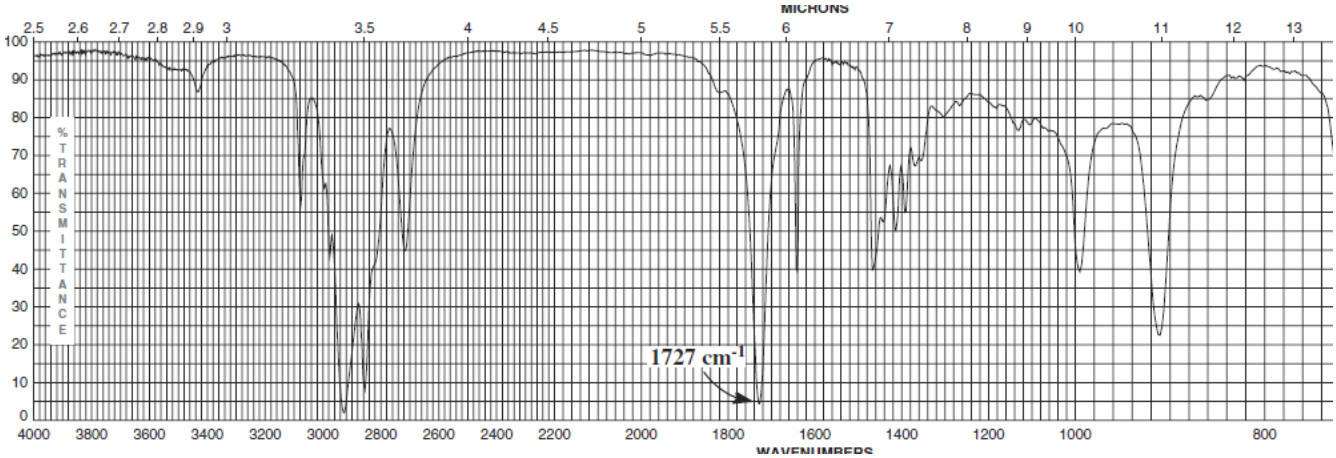


C



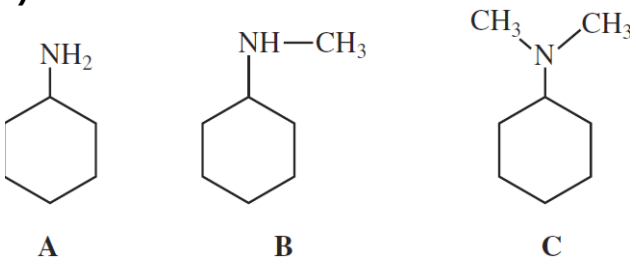
D

Observar ν =CH, ν CHO, δ CH3, *cis*, *trans* ou normal



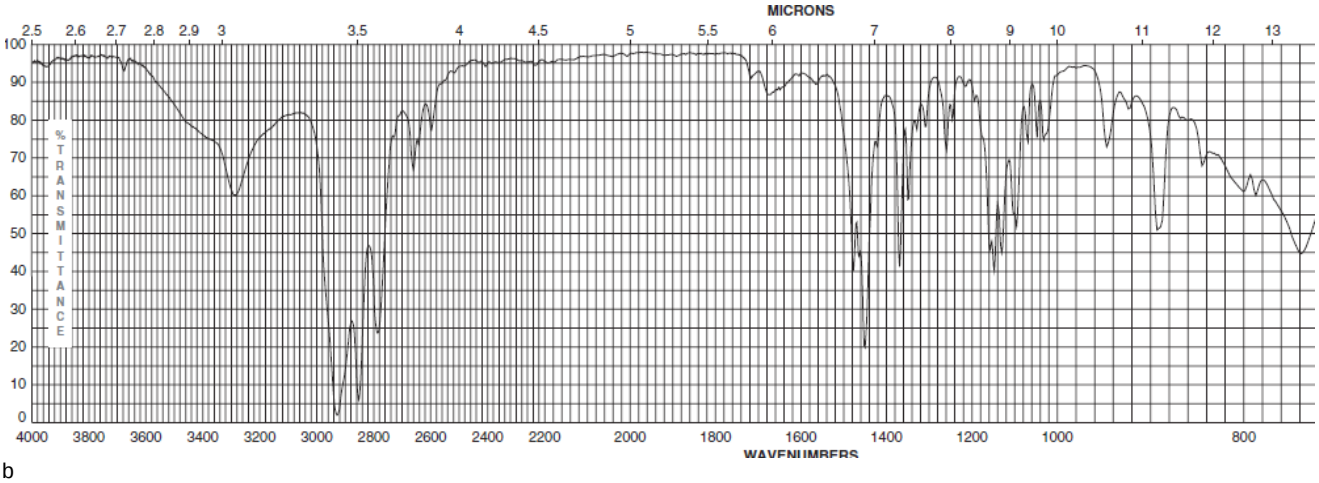
b

c)



A B C

Observar νNH_2, ν NH



b

d)

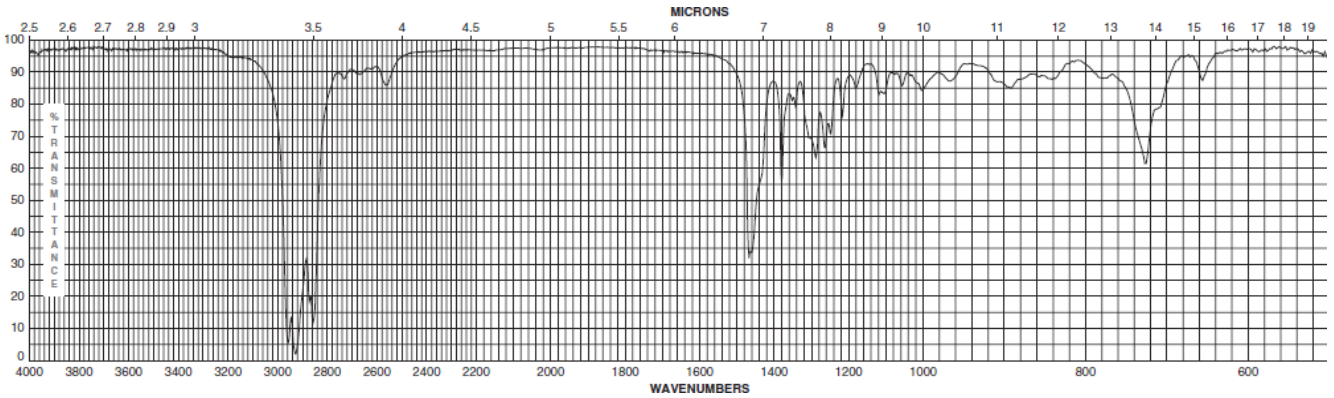
CH_3-CH_2-CH_2-S-CH_2-CH_2-CH_3 **$CH_3(CH_2)_4CH_2$-S-H**

A B

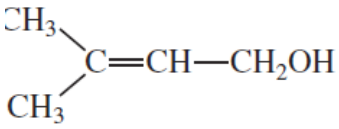
$CH_3(CH_2)_4CH_2$-O-H **CH_3-CH_2-CH_2-O-CH_2-CH_2-CH_3**

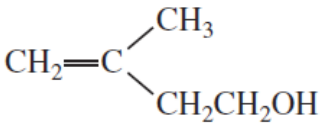
C D

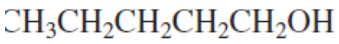
Observar ν OH, ν SH

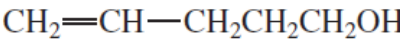


3 – Atribua uma estrutura para cada um dos espectros apresentados. Escolha entre os seguintes alcoóis de cinco carbonos.

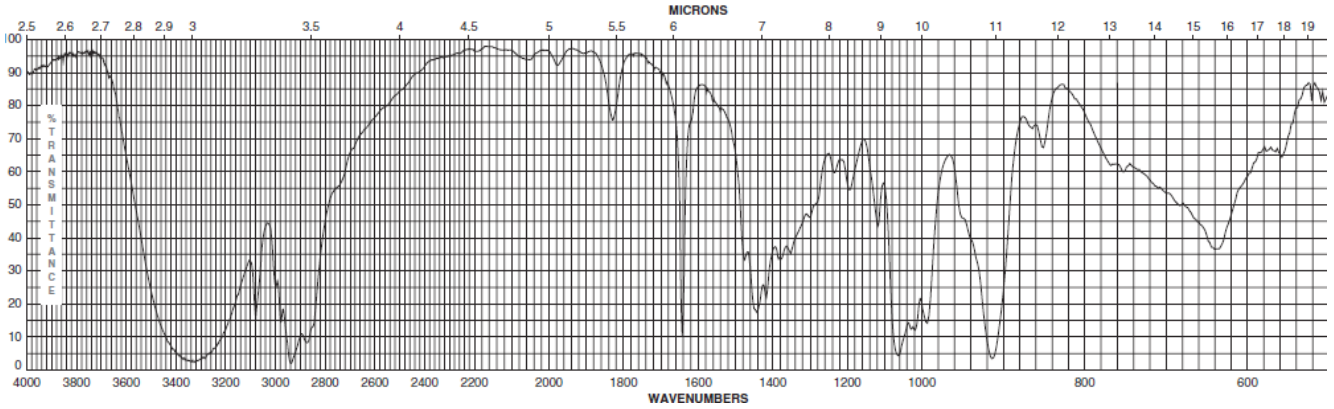








Observar ν =CH_2, ν CH_3, ν CH_2, δ CH_2, δ CH_3



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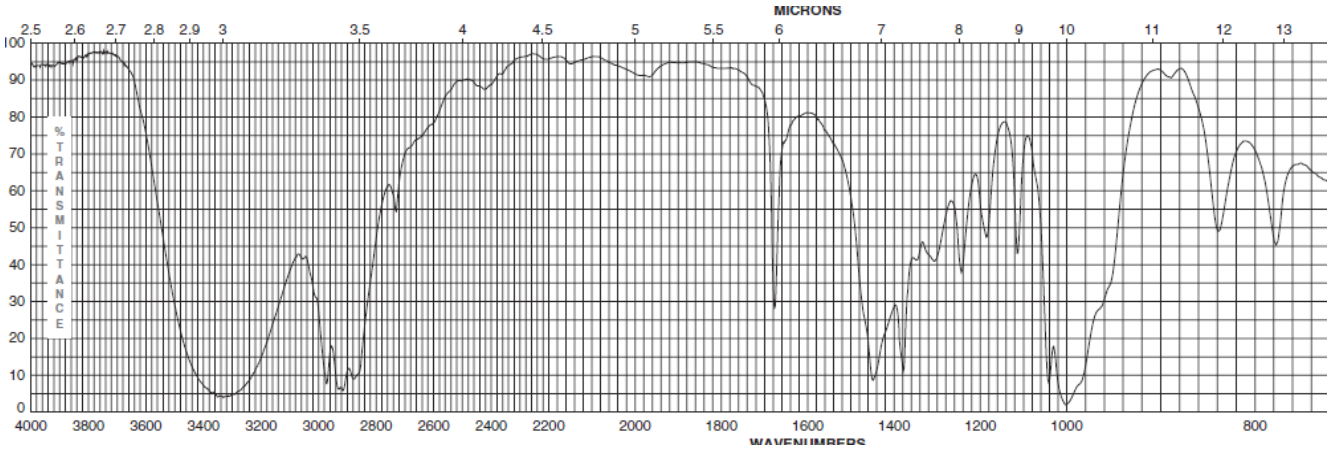
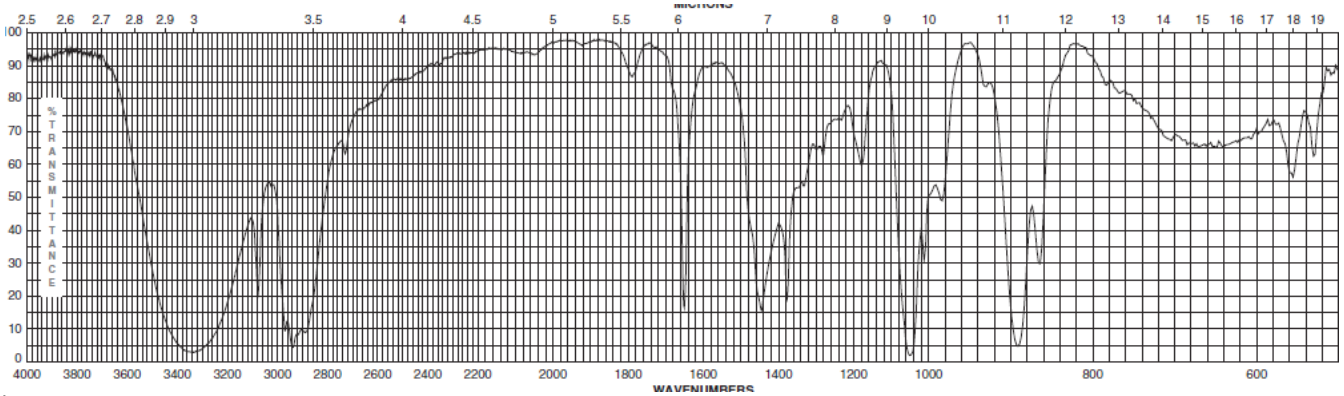


a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% TRANSMITTANCE
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WAVENUMBERS

b