

Esercizio 1

Quale gruppo funzionale dà i seguenti segnali nello spettro infrarosso?

- a) 1700 cm^{-1}
- b) 1550 cm^{-1}
- c) 1700 cm^{-1} e $2510\text{--}3000\text{ cm}^{-1}$

Esercizio 2

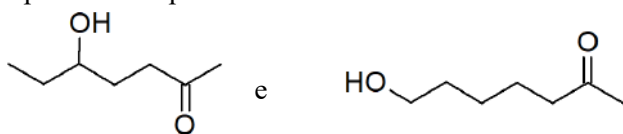
A che numero d'onda corrispondono le vibrazioni dei seguenti legami?

- a) C=O
- b) C-H alifatico
- c) C-H aromatico
- d) S-H
- e) C-O-C
- f) (C=O)-NH
- g) C≡C
- h) C≡N
- i) $\text{--N=N}^+=\text{N}^-$ (azide)

Esercizio 3

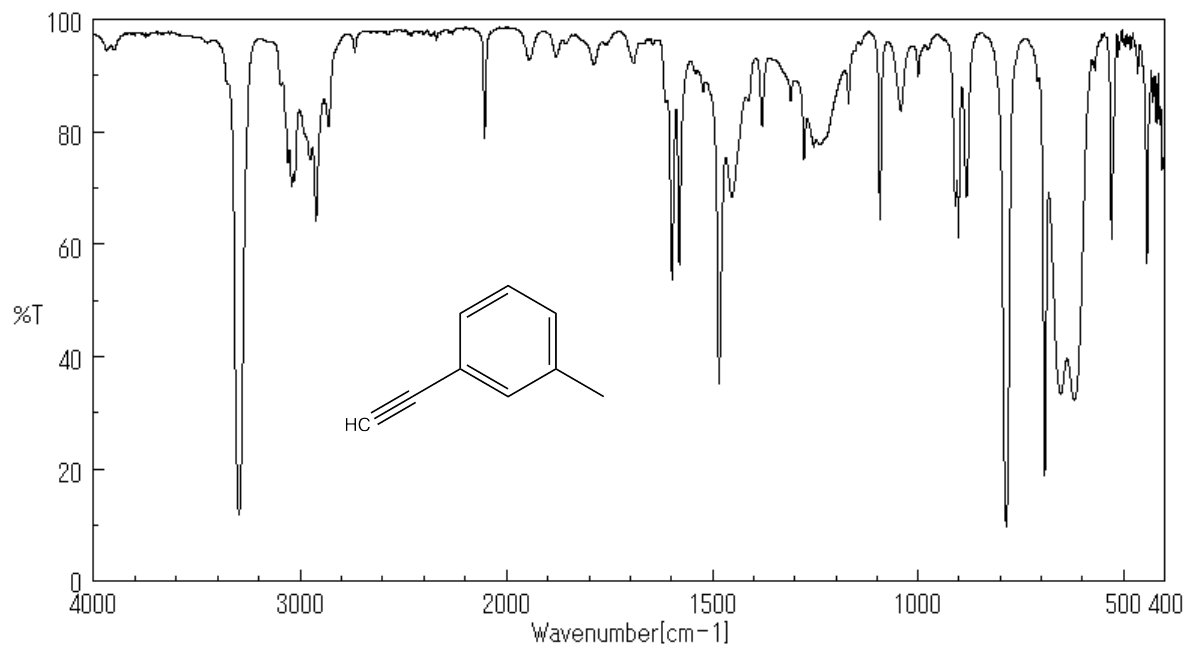
Si possono distinguere le seguenti coppie di composti tramite spettroscopia FTIR? Se sì, come?

- a) CH_3OH (metanolo) e $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$ (etere dietilico)
- b) Ciclopentano e 1-pentene.
- c)



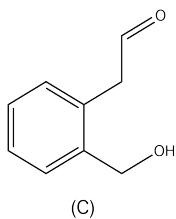
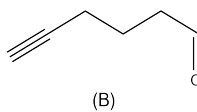
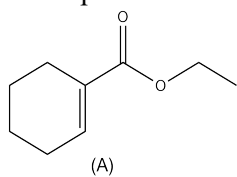
Esercizio 4

Il seguente spettro FTIR è della molecola riportata. Quali picchi caratteristici puoi identificare?



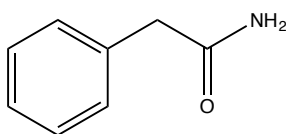
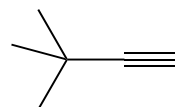
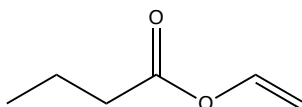
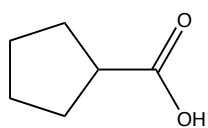
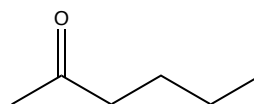
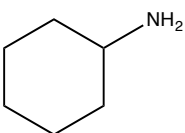
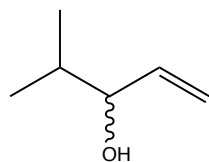
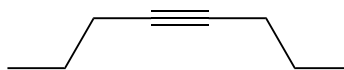
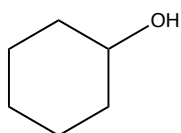
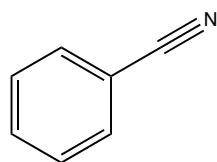
Esercizio 5

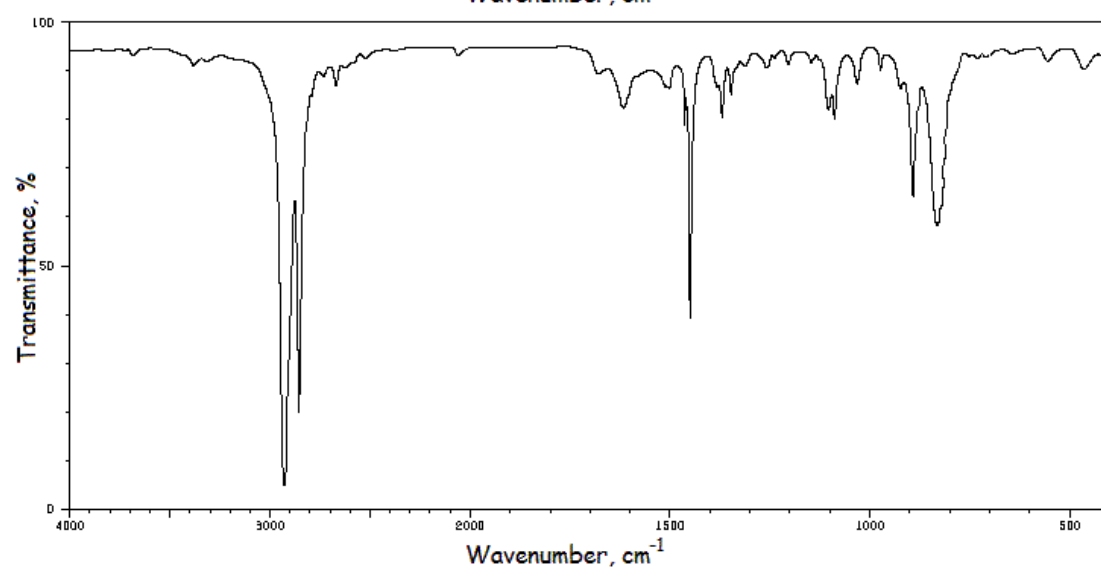
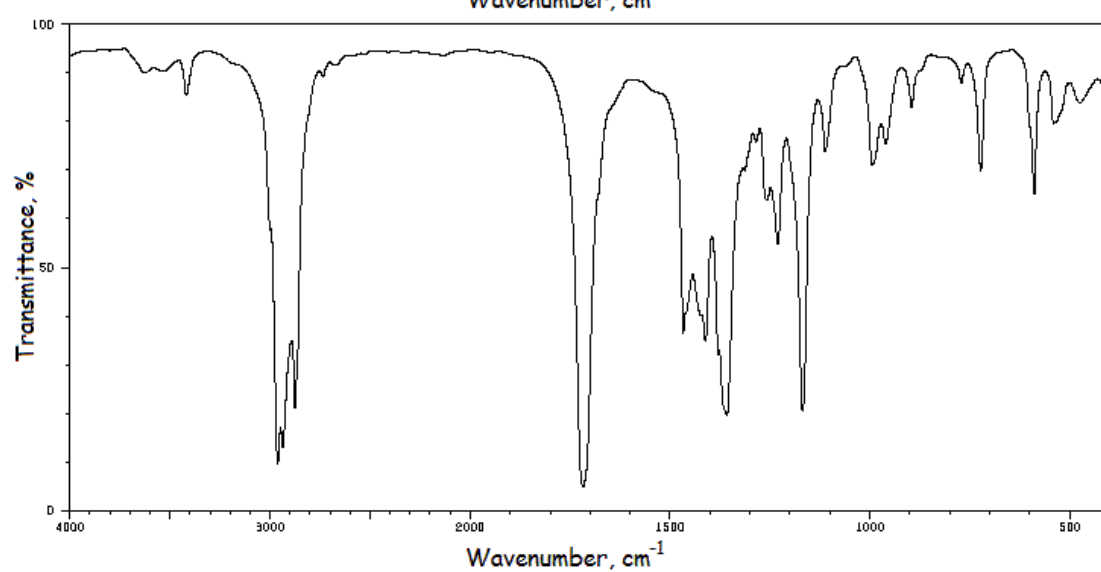
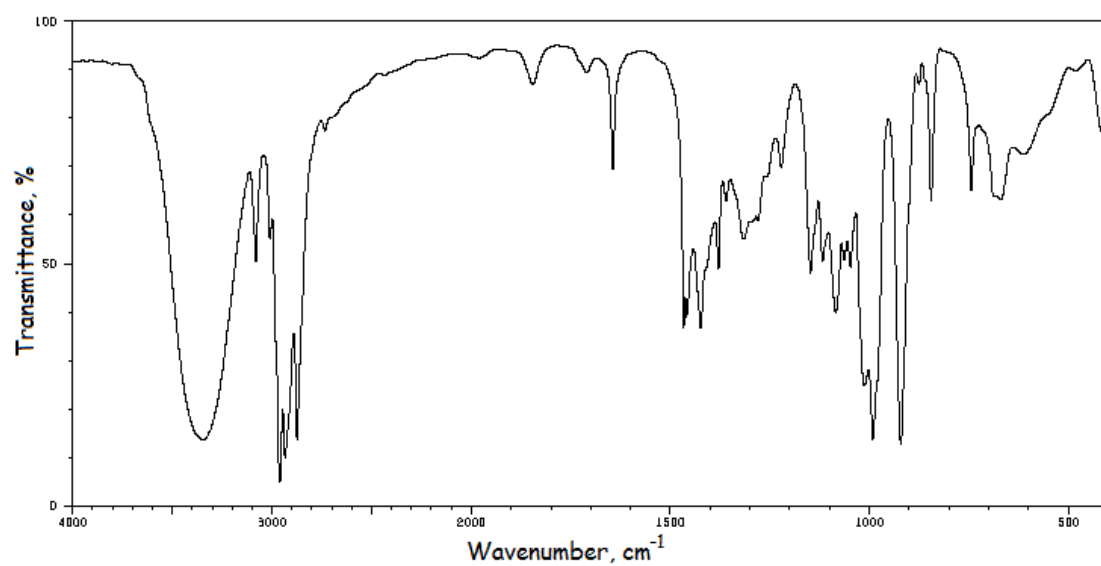
Quali segnali di assorbimento ti aspetti di osservare per i seguenti 3 composti?

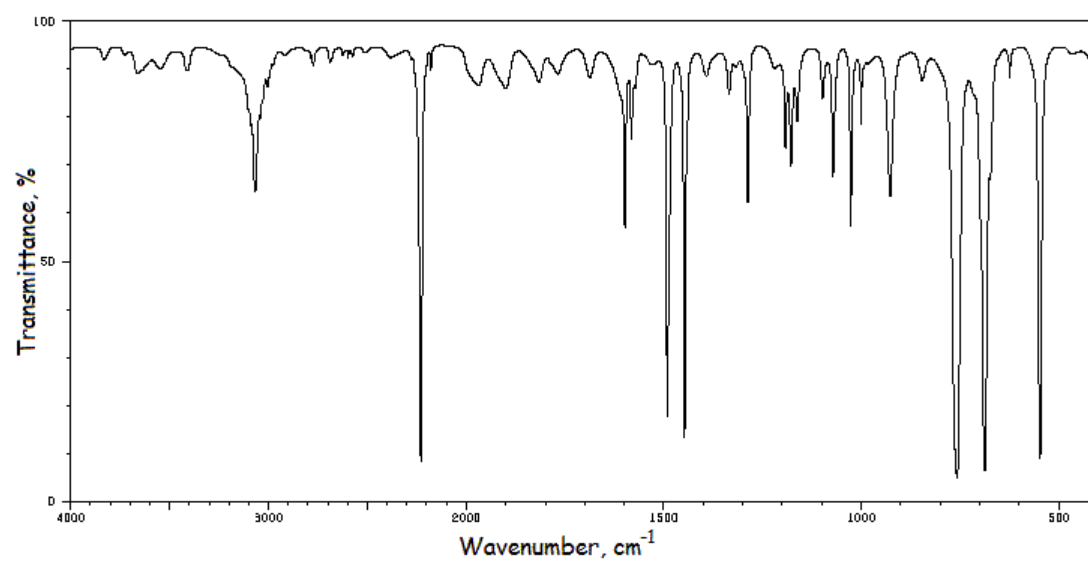


Esercizio 6

Assegna il corretto spettro FTIR a ciascuna delle molecole riportate qua sotto.







N

