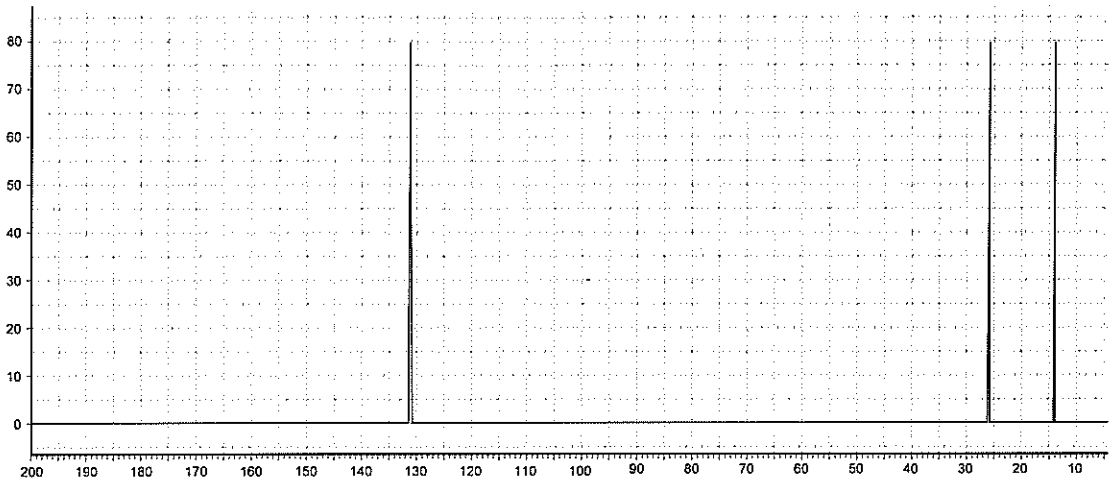
iv.

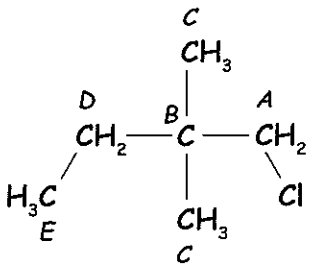


Compound: hex-3-ene

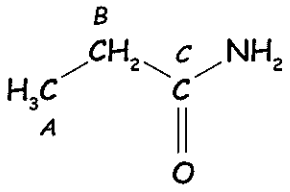
b. Justify your answers for 3.a. Your answer should include structures with labelled environments and may use the data table on page 22.

Propanamide has three carbons giving it three environments. Hex-3-ene and 2,2-dimethyl-1-chloropropane also both have three environments due to symmetry. Hex-1-ene however has six environments and is therefore iii. Propanamide is the only compound with a carbonyl which would give a peak in the 150-250 region. That is ii. Hex-3-ene should have a peak in the 100-150 region due to its double bond, making it iv and lastly 2,2-dimethyl-1-chloropropane will have peaks all 0-60 which makes it i.

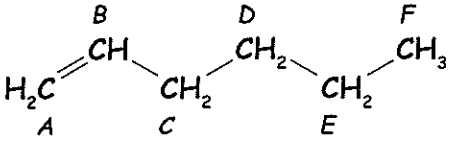
i. 2,2-dimethyl-1-chloropropane



ii. propanamide



iii. hex-1-ene



iv. hex-3-ene