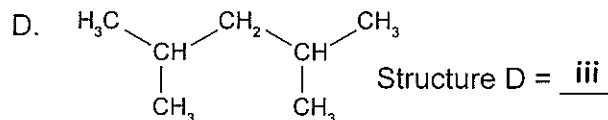
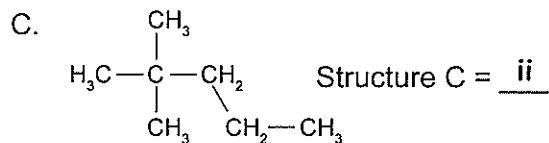
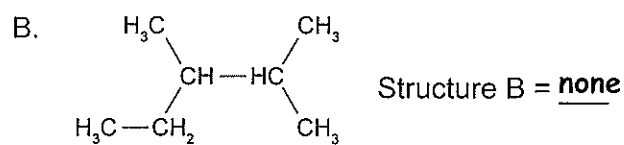
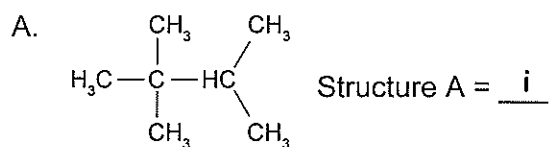
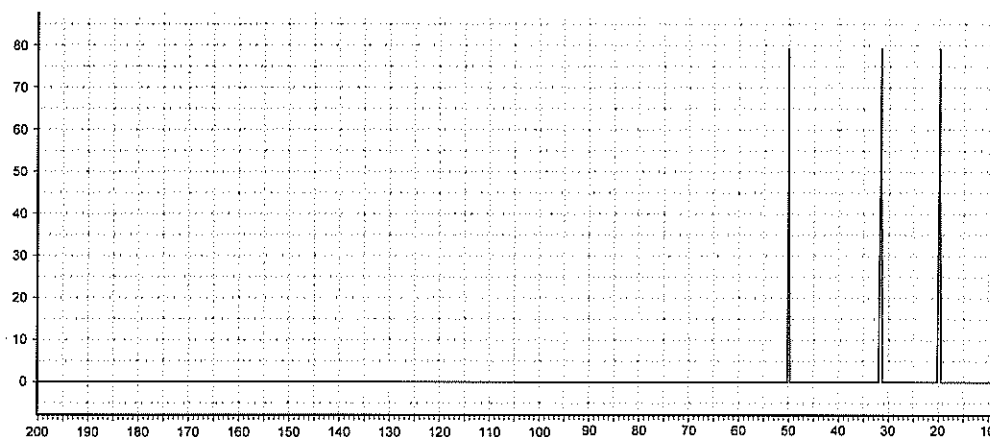


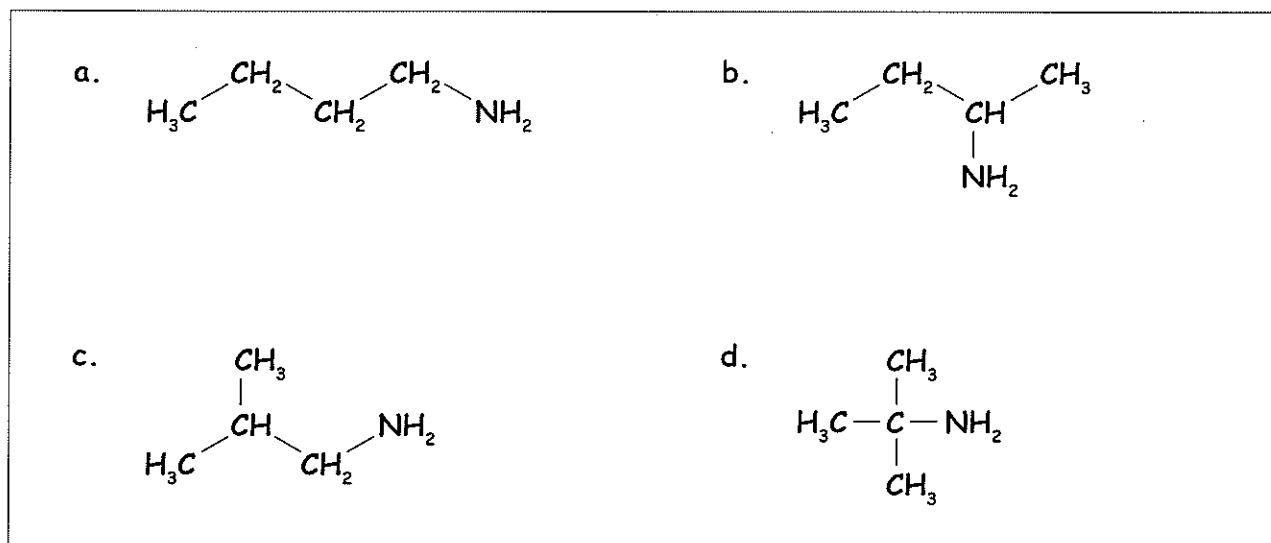
b. Use the number of chemical environments to assign the spectra (i-iii) in question 1.a. to the following structures. (Note: One molecule does not have a spectrum.)



2. Compound X is a primary amine with the molecular formula ($\text{C}_4\text{H}_{11}\text{N}$) and the carbon-13 spectrum below.



Draw out all possible structures for a primary amine with a molecular formula of $\text{C}_4\text{H}_{11}\text{N}$ and decide which compound X is. Justify your answer.



Explanation:

Structures a and b both have 4 chemical environments, structure c has 3 and structure d has 2. As the spectrum has 3 signals, compound X has 3 chemical environments and is therefore c.