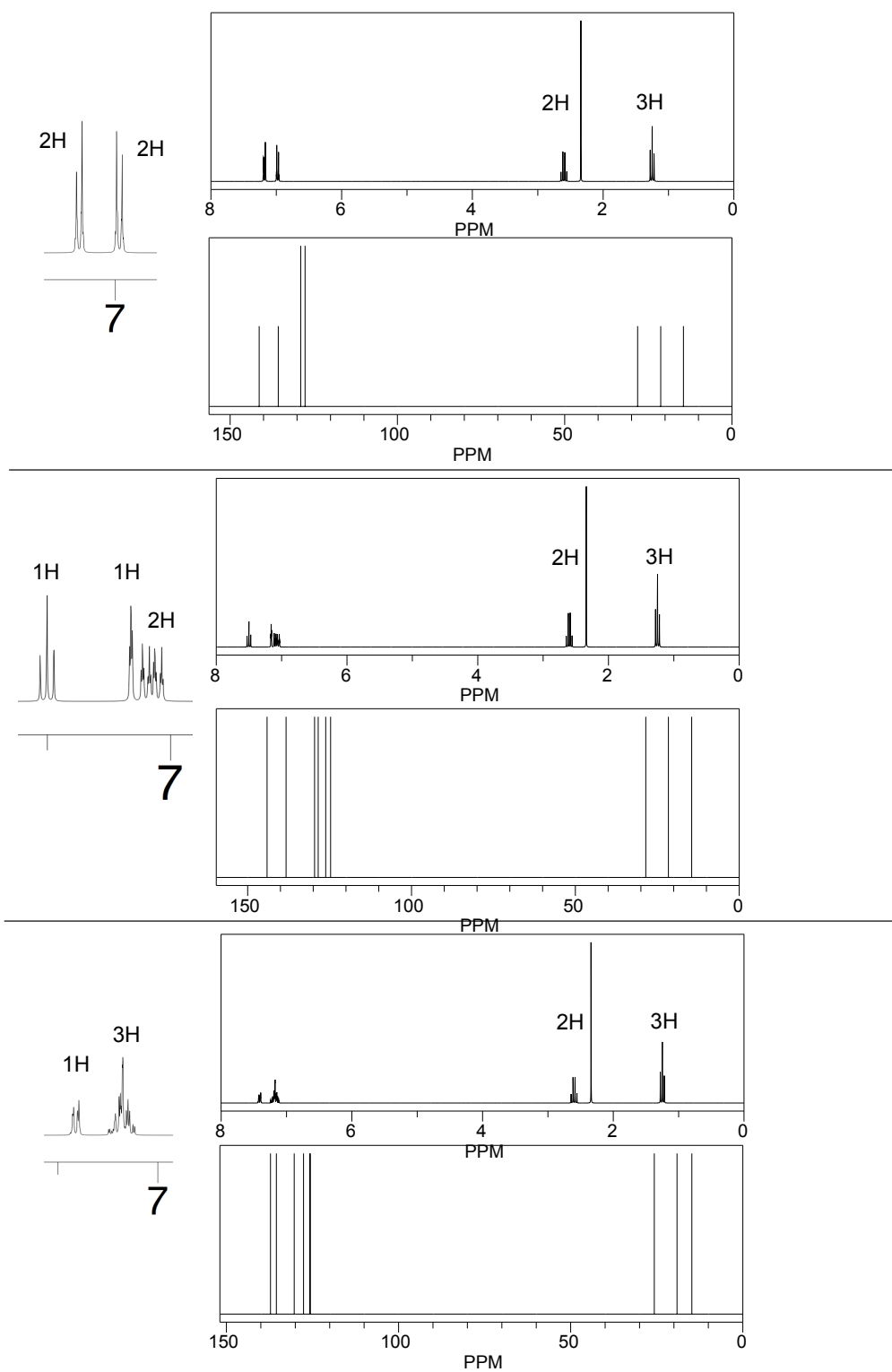
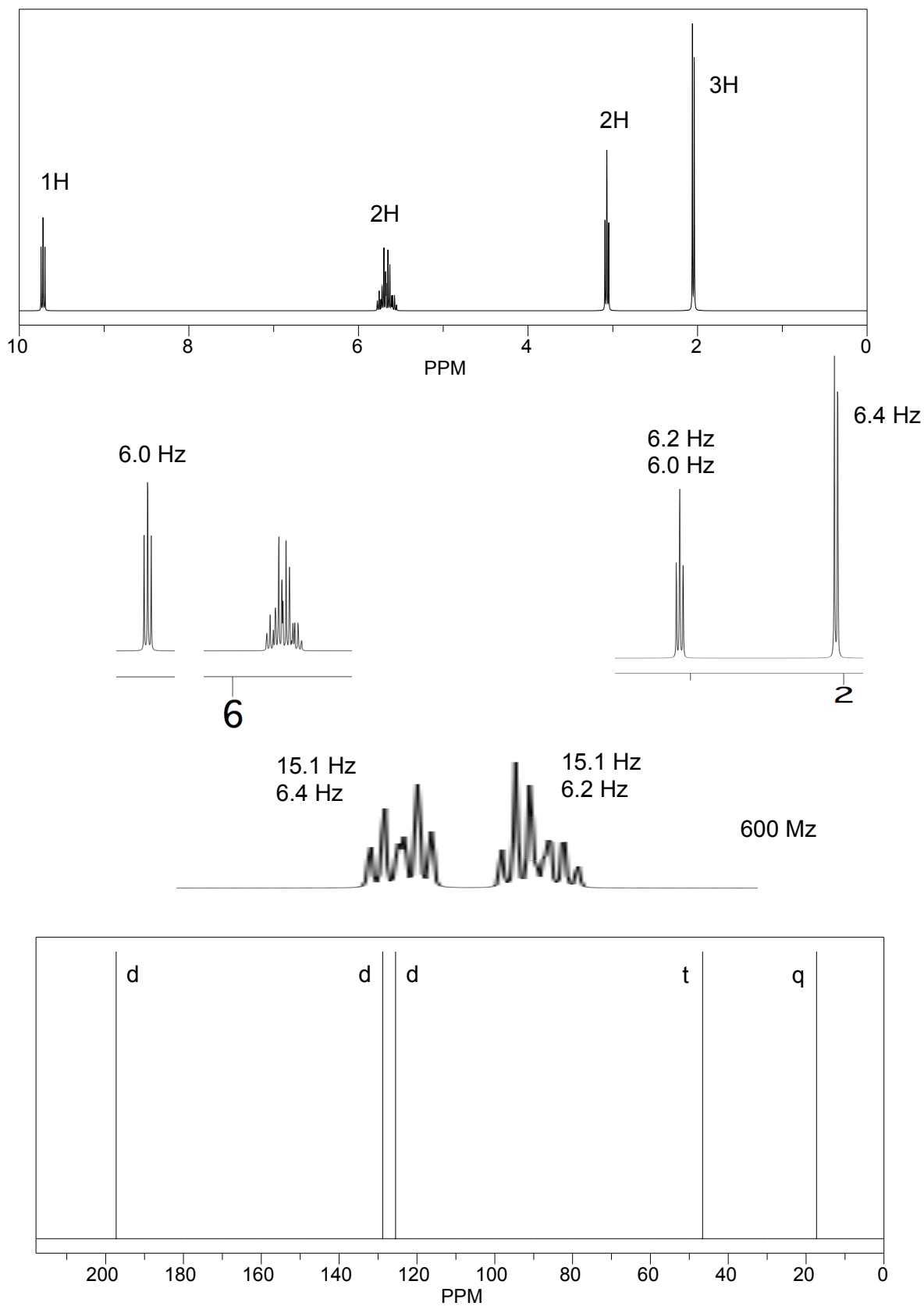


NMR Problems 2

1. The following 3 sets of spectra were obtained from 3 isomers of a compound with formula C_9H_{12} . Identify the compounds.

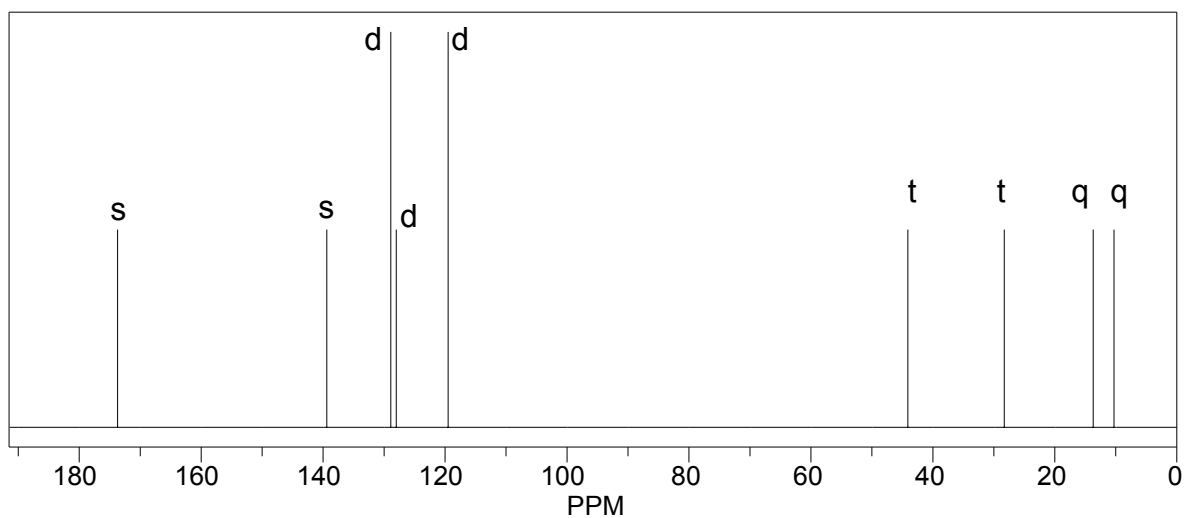
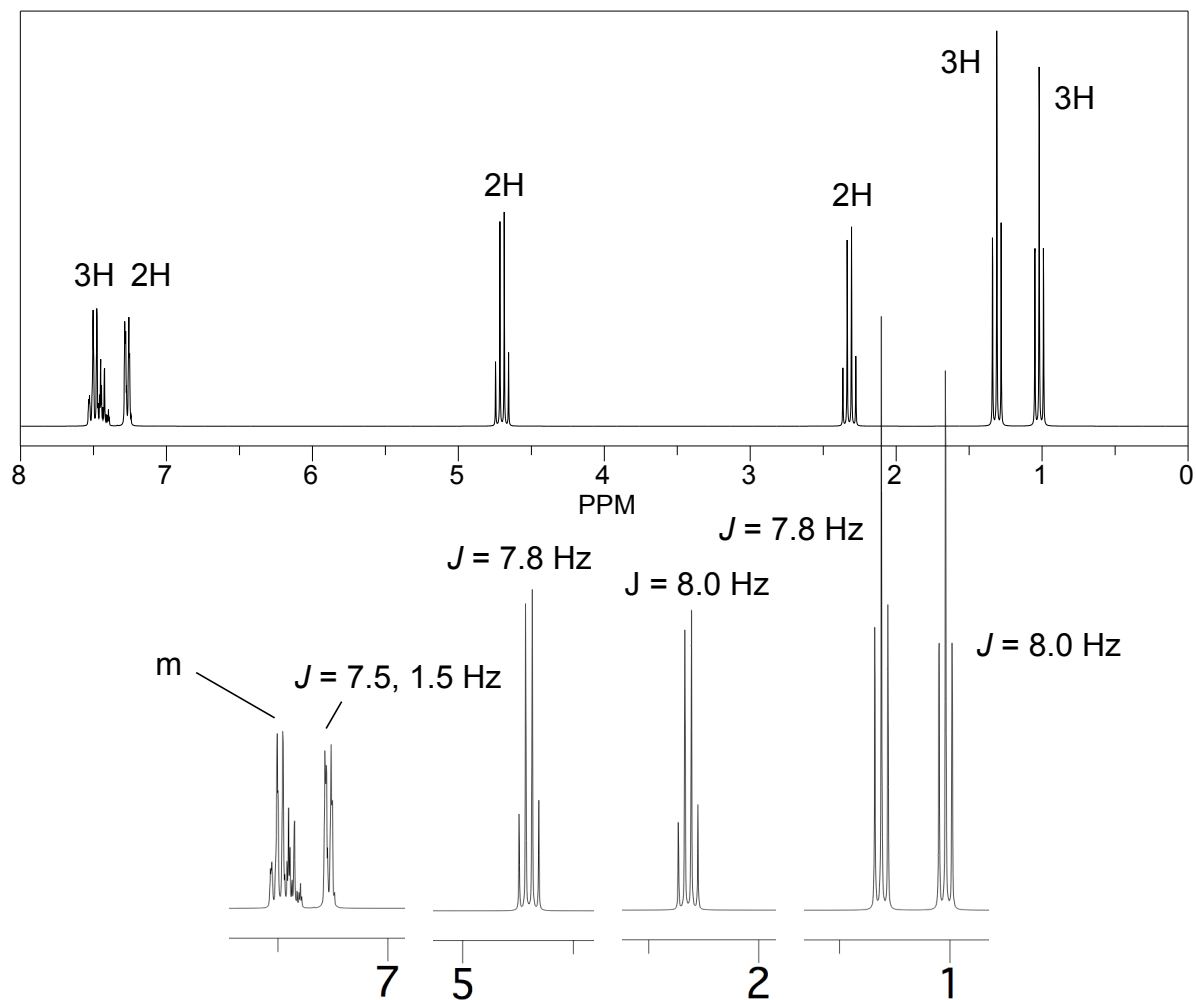


2. The following spectra were obtained from a compound of formula C_5H_8O . Identify the compound.

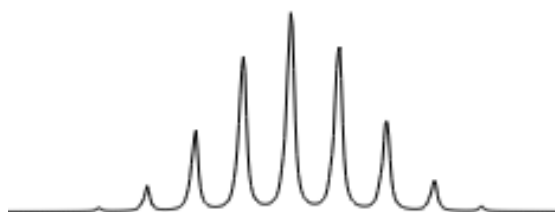
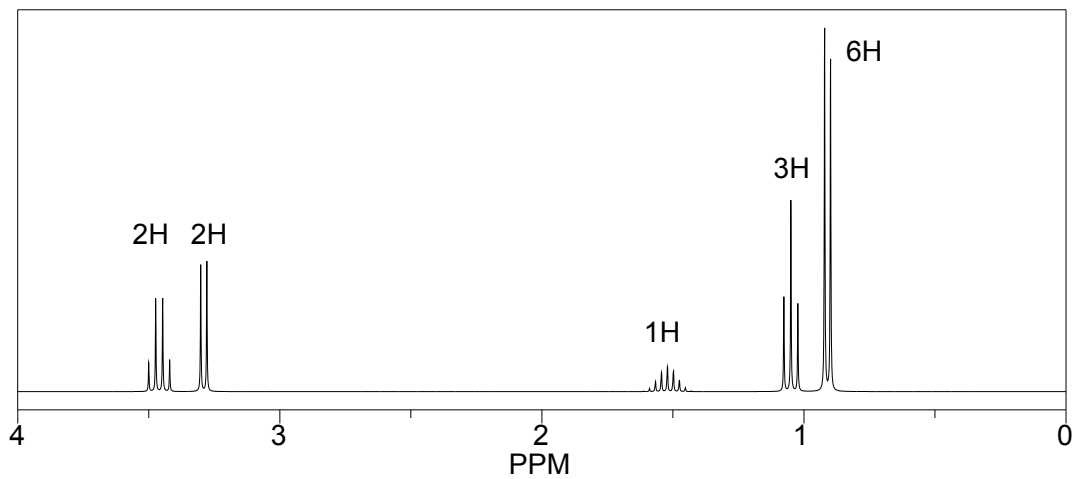


3. Identify the compound with the following analytical data.

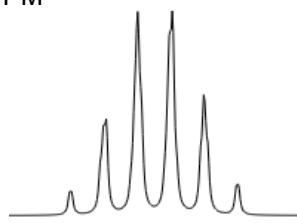
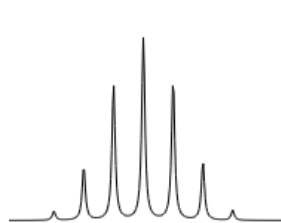
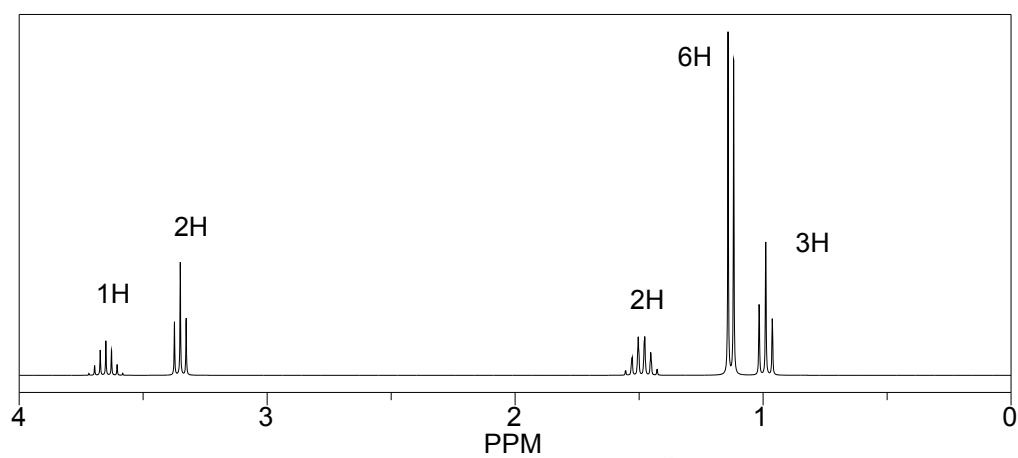
Elemental Analysis: C, 74.54; H, 8.53; N, 7.90; O, 9.03



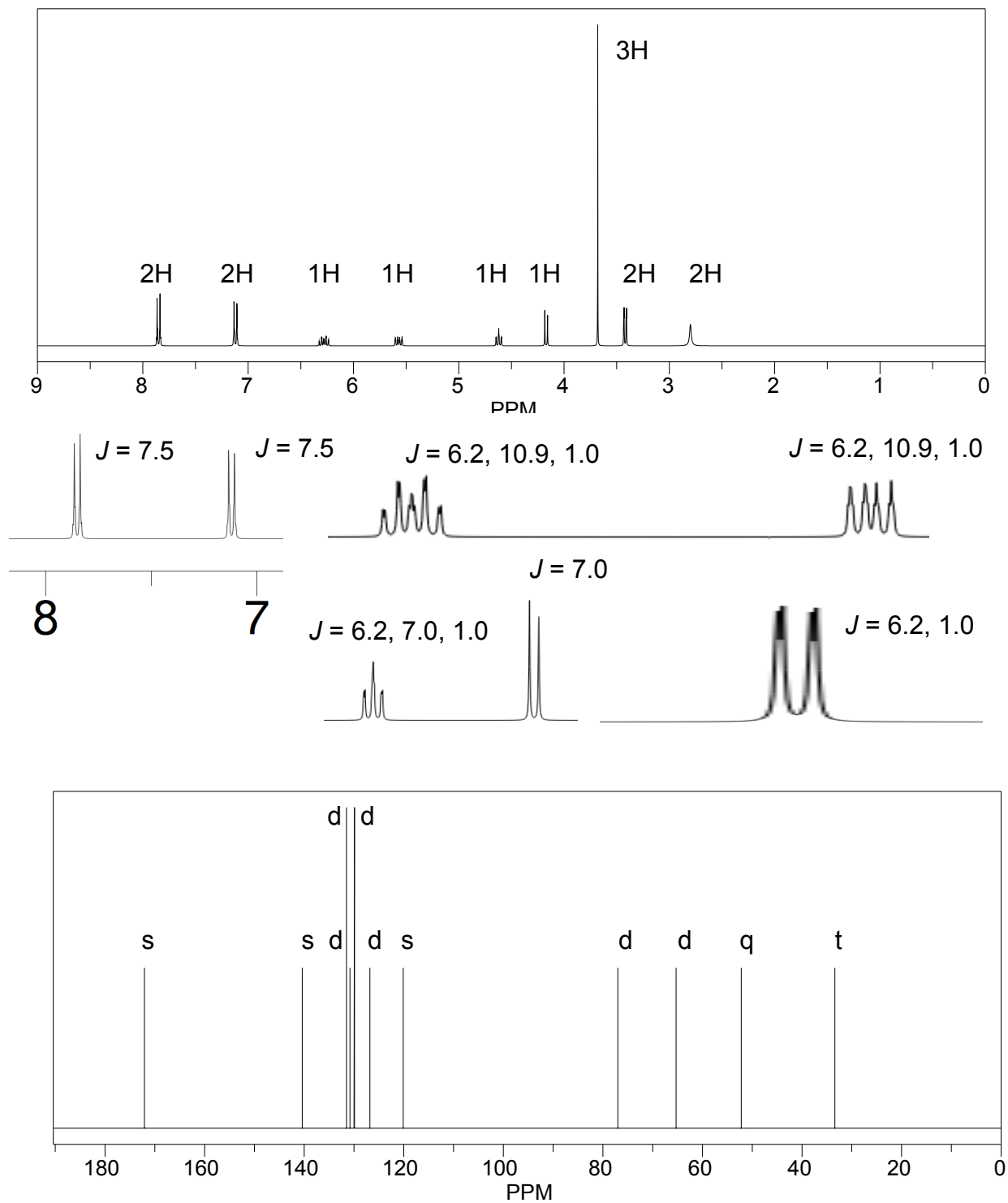
4. The following spectra were obtained from a compound of molecular formula $C_6H_{14}O$. Identify the compound.



5. The following spectra were also obtained from a compound of molecular formula $C_6H_{14}O$. Identify the compound.



6. The following spectra were obtained from a compound with elemental analysis: C, 49.54; H, 4.80; Br, 25.35; O, 20.31 %. Identify the compound.



7. The cyclic compound C_6H_8O gave the following 1H NMR spectrum. Identify it.

