

Homework 4

Solve the following structures from their spectra. Correlate the NMR peaks with the structure. Make a summary table for each (both 1-H and C-13) and give a proper name for each compound.

Molecular Formula	Proton chemical shifts (multiplicity, integration) multiplicity: s-singlet, d-doublet t-triplet q-quartet m-multiplet	Carbon chemical shifts (DEPT results, intensity) u-up, n-no peak, d-down three results from bottom to top on DEPT spectra
a) C ₄ H ₉ Br	1.0 (t, 3), 1.7 (d, 3), 1.8 (m, 2), 4.1 (m, 1)	12 (unu, 1), 26 (unu, 1), 34 (und, 1), 53 (uuu, 1)
b) C ₄ H ₈ Br ₂	2.0 (t, 4), 3.4 (t, 4)	31.0 (und, 2), 32.5 (und, 2)
c) C ₃ H ₇ Br	1.3 (d, 6), 3.8 (m, 1)	28.5 (uuu, 1), 45.4 (unu, 2)
d) C ₅ H ₁₁ Cl	0.9 (d, 6), 1.4 (m, 1), 1.9 (q, 2), 3.6 (t, 2)	22 (unu, 2), 26 (uuu, 1), 42 (und, 1), 43 (und, 1)