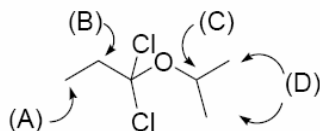


CH 351 QUALITATIVE ORGANIC ANALYSIS

1. Which hydrogen atom in the ether derivative shown below would appear as a triplet in the ^1H NMR spectrum?



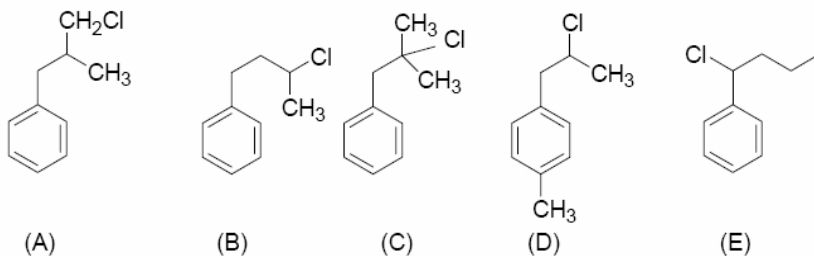
What is the expected multiplicity due to coupling for the hydrogen atoms marked “D” in the diagram in Question 8?

2. Draw the ^1H -NMR spectrum of 1,1-dibromoethane.
3. Which of the following structures is consistent with the NMR data shown below?

Compound: $\text{C}_4\text{H}_{10}\text{O}$

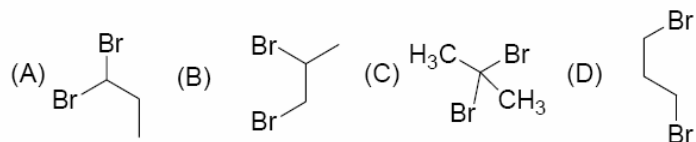
Chemical shift	multiplicity	integration
1.0	doublet	6H
1.5	multiplet	1H
3.8	doublet	2H
4.4	broad singlet	1H

4. A compound with the molecular formula $\text{C}_{10}\text{H}_{13}\text{Cl}$ contains only singlet peaks in the ^1H NMR spectrum {at $\sim \delta 1.6$ (6H), 2.2 (2H), and 7.2 (5H-an apparent singlet)}. Which structure below is consistent with these data?



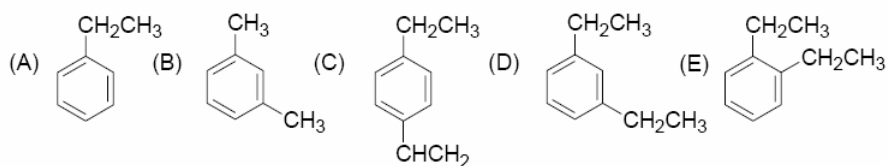
5.

The ^1H NMR spectrum of a compound ($\text{C}_3\text{H}_6\text{Br}_2$) contains 3 peaks (listed in no particular order): a triplet (3H), a quintet (2H), and another triplet (1H). Which of the following structures is consistent with this spectrum?



6.

Which of the following compounds would give a ^{13}C NMR spectrum containing 5 peaks: 3 in the δ 120-140 and 2 in the region δ 10-30?



The assignment is due December 06 (Thursday).