Spectral Problems Template

For **each spectral problem**, you should answer the following questions

What is the molecular weight of your compound?	
How many chemically and/or magnetically non-equivalent hydrogens are there in your molecule?	
How many chemically and/or magnetically non-equivalent carbons are there in your molecule?	
Is your unknown molecule conjugated?	
What are the major diagnostic absorptions in the IR spectrum?	
What major fragments are suggested by the mass spectral data?	
What types of hydrogens are present in (by evaluating chemical shift information) the proton NMR?	
What are the integral values for each peak region in the proton NMR?	
What type of splitting patterns are present in each peak region in the proton NMR? What substructures do they suggest?	
What is the degree of unsaturation for your molecule? According to your data, how many rings and/or pi bonds are likely present in your molecule?	

What does the ^{13}C DEPT spectrum indicate for CH, CH_2, and CH_3 groups?	
What does the off-resonance decoupled ^{13}C spectrum indicate?	
What are the major pieces (subunits) of information suggested by the data?	
What is the structure of the molecule that is consistent with all of your data?	
Which piece(s) of information was most influential or telling in helping your figure out the identity of the structure?	
Describe how you used the data to **assemble** the structure of the molecule	