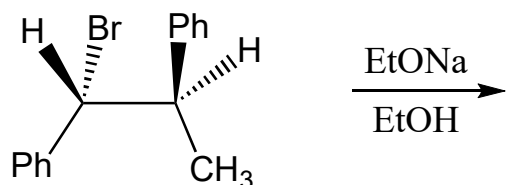
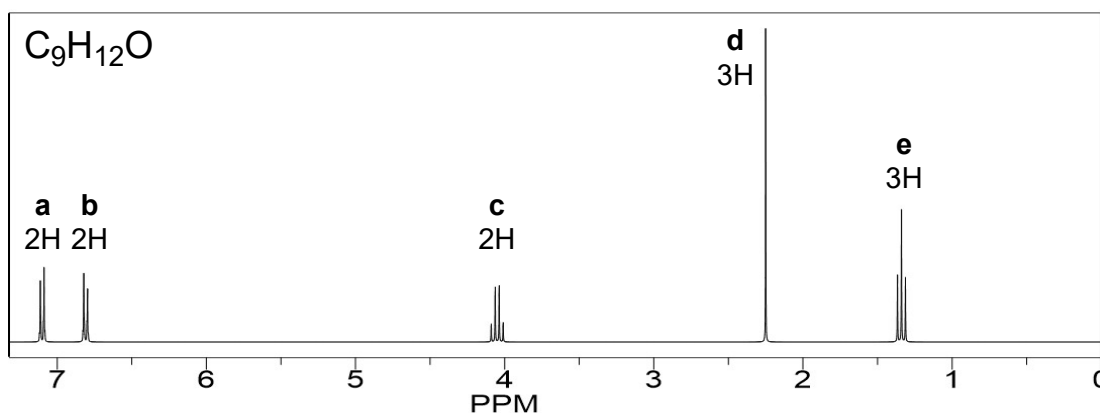


6A) (8 pts) **Predict the major product** for the following E2 elimination reaction and **provide a complete mechanism**. Pay close attention to details, including lone pairs, formal charges and the use of curved arrows. Show how you determined the major product. **No work = no credit.**



6B) (8 pts) Provide a structure that is consistent with the given  $^1\text{H}$  NMR spectrum. **Show your work** and justify your answer by **labeling each set of protons on the structure a/b/c** to match the a/b/c peaks in the spectrum, and **use the table to confirm the  $\delta$  value** for each set of protons. **No work = no credit.**



$^1\text{H}$ NMR	
Protons on Carbon	
Type of C-H	$\delta$ (ppm)
R-CH <sub>3</sub>	0.9
R-CH <sub>2</sub> -R	1.3
R <sub>3</sub> C-H	1.5-2
CH <sub>3</sub>	1.8
O    R-C-CH <sub>3</sub>	2-2.3
Ar-CH <sub>3</sub>	2.3
RC≡C-H	2.5
R <sub>2</sub> N-CH <sub>3</sub>	2-3
R-CH <sub>2</sub> -X	3-3.5
RO-CH <sub>3</sub>	3.8
R-CH <sub>2</sub> -F	4.5
H   R <sub>2</sub> C=CR	5-5.3
Ar-H	7.3
O    R-C-H	9.7
Protons on Oxygen	
Type of H	$\delta$ (ppm)
ROH	0.5-5
ArOH	4-7
O    R-C-OH	10-13