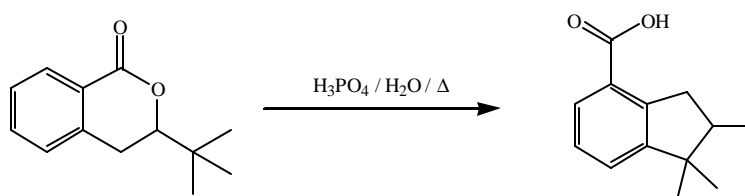
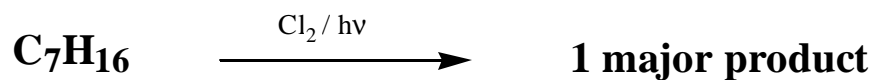


2. Starting with 3-(p-methoxyphenyl)-2,4-pentadiene, make any molecule you want. Ensure that you use at least seven (7) different reactions. (28 points)

3. Given the following reaction, provide a reaction mechanism that accounts for formation of the observed major product: (20 points)



4. Consider the following reaction and experimental data: (25 points)



Starting Material NMR Data				Product NMR Data		
Chemical Shift (δ)	Coupling	Integration (cm)		Chemical Shift (δ)	Coupling	Integration (cm)
1.05	Doublet	20.34		1.08	Doublet	11.52
1.35	Triplet	3.42		1.15	Doublet	5.54
1.43	Nonet	3.36		1.39	Triplet	3.85
				1.48	Nonet	1.94
				1.68	Octet	1.89
				3.52	Doublet	3.80

- 4a. What information is important to understand the structure of the starting material? What is the structure of the starting material?
- 4b. What general reaction is occurring?
- 4c. What is the product for this reaction?
- 4d. Provide a mechanism that accounts for the formation of your product.

5. Provide products for the following reactions or series of reactions. Include stereochemistry as appropriate. If there are multiple steps, provide intermediate products for partial credit. Mechanisms are NOT required. (28 Points)

