

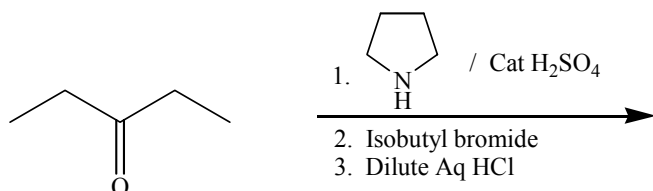
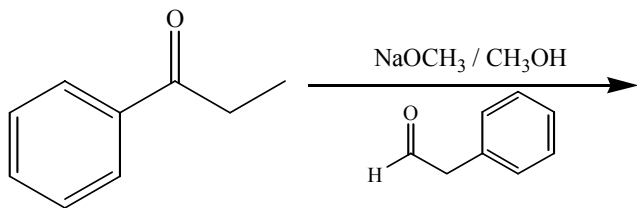
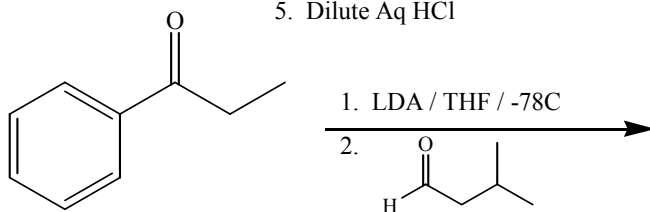
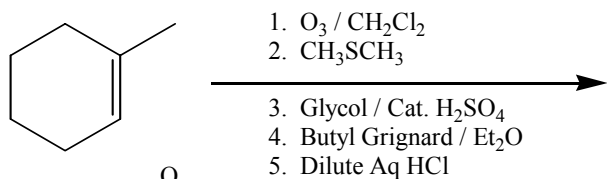
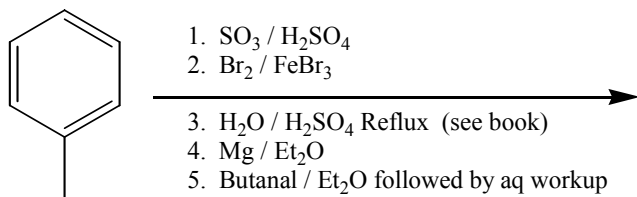
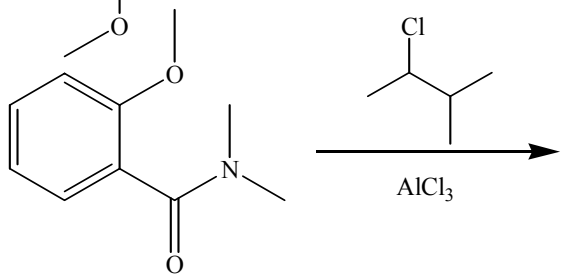
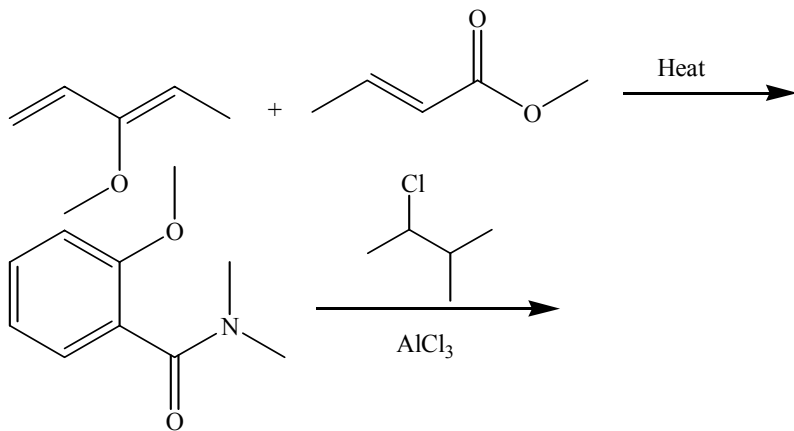
Organic Chemistry: CHEM 231B

Spring 2003 - Whittier College

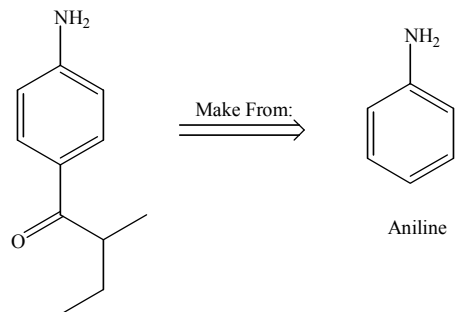
Practice Problem Set

Not Due

1. Predict products for the following reactions. Include proper regio- and stereochemistry, where appropriate.



2. Bob wanted to make the following molecule from Aniline. He thought that he could simply take aniline and conduct a Friedel-Crafts Acylation Reaction using 2-methyl Butanoyl Chloride. However, the product he obtained was not his desired molecule. A GC-MSD revealed a single product with a $m/z = 177$.

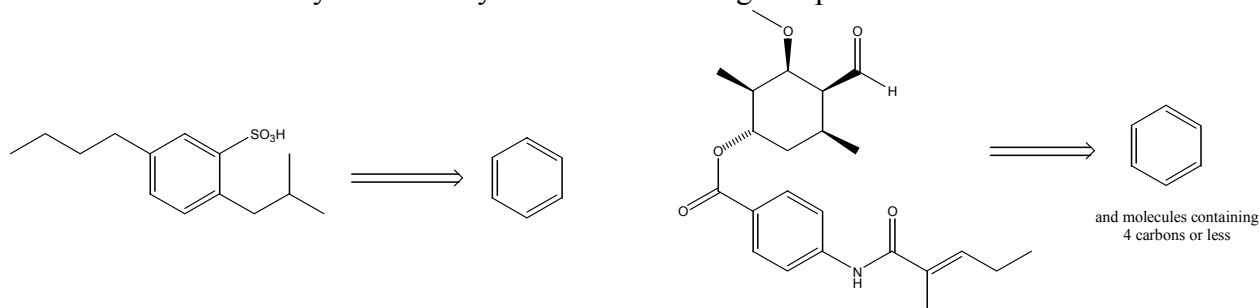


By NMR he observed the following data:

δ (ppm)	Coupling (J)	Integration	δ (ppm)	Coupling (J)	Integration
0.87	Triplet (7)	3	1.08	Doublet (7)	3
1.51	Quintet (7)	2	2.38	Sextet (7)	1
7.05	Triplet (9)	1	7.25	Triplet (9)	2
7.65	Doublet (9)	2	9.90	Broad singlet	1

In the IR, he observed peaks at 3320(m), 3200 – 3100 (s, multiple), 2950 (s), 2850 (s), 1680 (s) and then the fingerprint region.

- 2a. What product did Bob obtain?
 - 2b. Draw a mechanism that accounts for its formation.
 - 2c. Why didn't Bob's reaction form what he wanted?
 - 2c. How should Bob have done his reaction in order to obtain his desired product. (Provide an effective synthesis of this product).
3. Conduct a retrosynthetic analysis for the following compounds:



4. The following reaction scheme is used to synthesize the anti-depressant, sertraline. This drug functions by blocking synaptosomal noradrenaline uptake. Write a mechanism that accounts for the formation of each molecule in this synthetic scheme (6 different mechanisms).

