

University of Windsor
Chemistry and Biochemistry

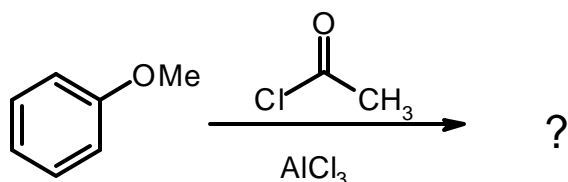
Chemistry 59-235
First Test

Feb. 13, 2001
Time: 50 minutes

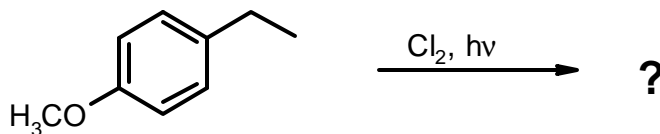
Note: There are questions **on both sides** of this page.

Note: Please write in exam booklets. Tests written in pencil will be marked, but cannot be returned for remarking.

1. Give the complete mechanism for the electrophilic aromatic acetylation of anisole (shown below). The correct answer will include the formation of the reactive electrophilic species, all reasonable resonance forms of the intermediates, and clear indications of the reasons for the regiochemical outcome. (15 marks)

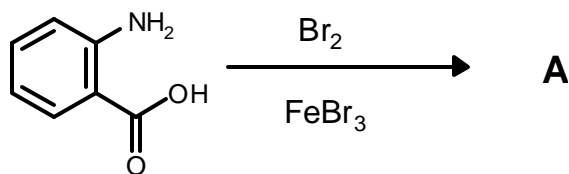


2. Give appropriate initiation, propagation, and termination steps for the following transformation. Also include the correct product. (15 marks)

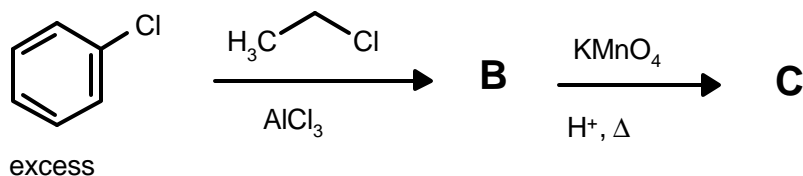


3. Predict the most reasonable structure of the major product(s) from each of the following reactions. Mechanisms are not necessary, but showing your work is likely to be a help. Note: If there is >1 significant product, show them all and take the **major** one on to any further step. (5 marks for each letter, 30 marks total).

a)



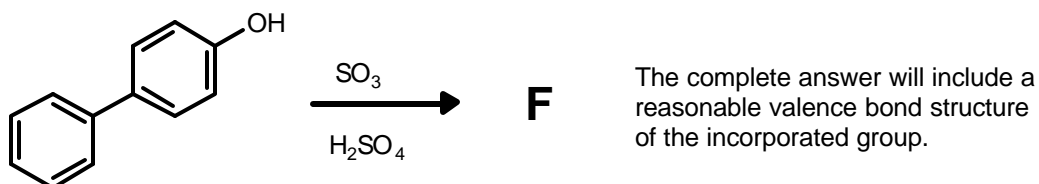
b)



c)

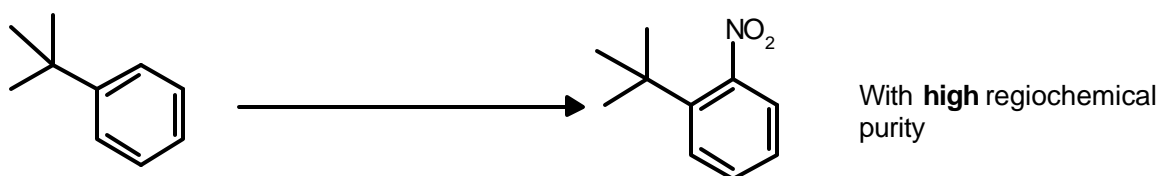


d)



4. Show by equation (in one or several steps) how you could prepare the illustrated products from the given starting material. You may use any other reagents which you deem fit. Show all reagents, conditions, and intermediates which could be isolated. Mechanisms are not necessary, but may be a help (**10 marks each, 20 marks total**).

a.



b.

