

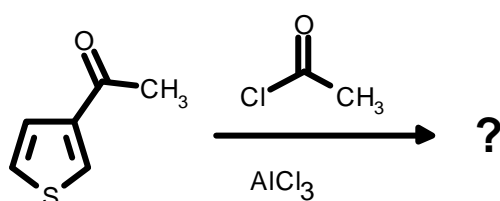
University of Windsor
School of Physical Sciences
Chemistry and Biochemistry

Chemistry 59-235
Second Test

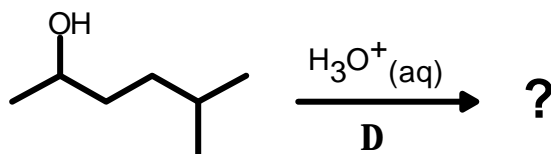
Mar. 16, 1999
Time: 50 minutes

Answer all questions in the test booklet(s). Questions answered in pencil will be marked, but cannot be returned for remarking.

- 1a. Show the result of the following electrophilic acetylation of 3-acetylthiophene. Show by way of the resonance forms of the possible carbocationic intermediates why the predicted regiochemistry is observed (this should include why the other alternatives are not as good). Assume that steric effects of the acetyl group are of minimal importance. (10 marks)

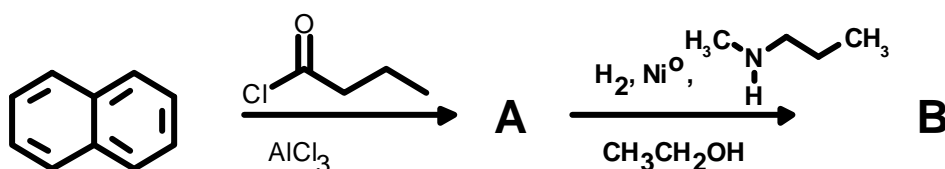


- b) Show all the steps of the complete mechanism for the acid catalyzed reaction of the following alcohol. Any small molecules being given off should be included. What mechanism is this reaction most likely occurring under? (10 marks)



2. Predict the major product of the following transformations. Include stereochemistry where it is relevant. Mechanisms are *not* necessary, but showing your work may be a help. (5 marks for each letter, 30 marks total)

a.



b.

