

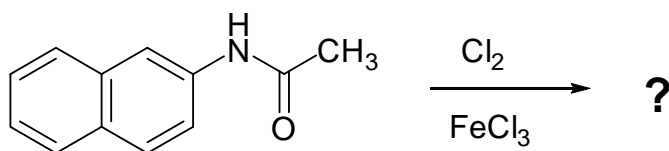
University of Windsor  
Chemistry and Biochemistry

Chemistry 59-235  
Midterm #2

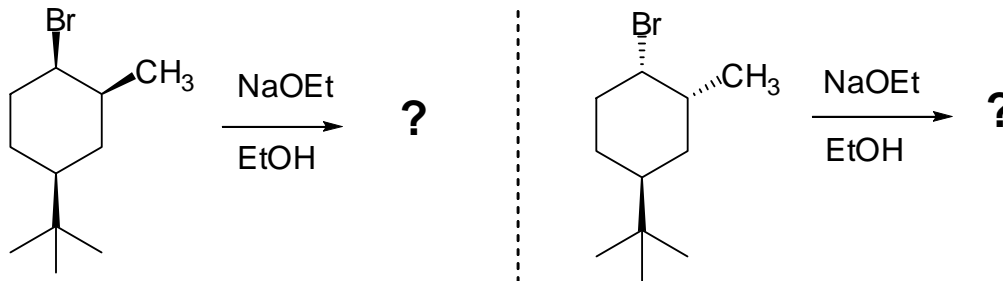
Mar. 17, 2011  
Time: 50 minutes

Answer all questions in the test booklets. Exams written in pencil will be marked, but cannot be returned for remarking.

- 1a.** Predict the predominant product of the following reaction on the indicated substituted naphthalene. Explain the expected regiochemistry in terms of the reasonable possible resonance forms, including the complete set for the actual reaction pathway. Note: Steric effects here will be very *minor* as compared to electronic effects. I do *not* need to see explicitly the generation of the electrophile (**10 marks**).

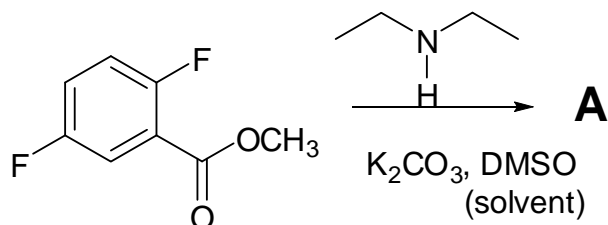


- 1b.** One of these two compounds undergoes elimination faster than the other. Show by any convincing 3 dimensional structure which one it is and why this is the case. Include the products of reaction (I do not need to see any *substitution* byproducts). What mechanism is operating? Note: In terms of size,  $t\text{-Bu} \gg \text{Me} > \text{Br}$  (**10 marks**)

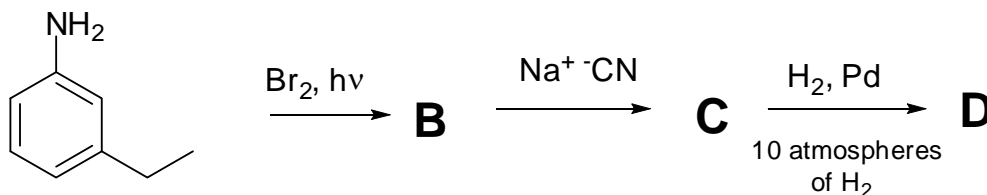


- 2.** Predict the major product(s) of the following reactions. Mechanisms are not necessary, but showing your work is likely to be a help (**5 each, 40 marks total**).

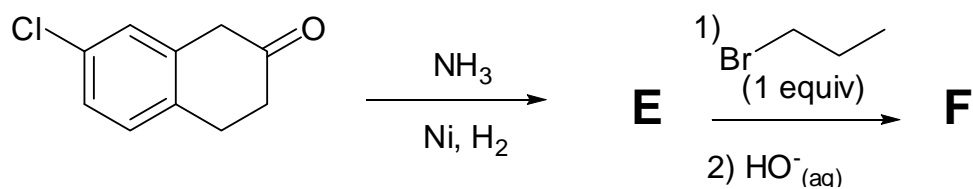
**a.**



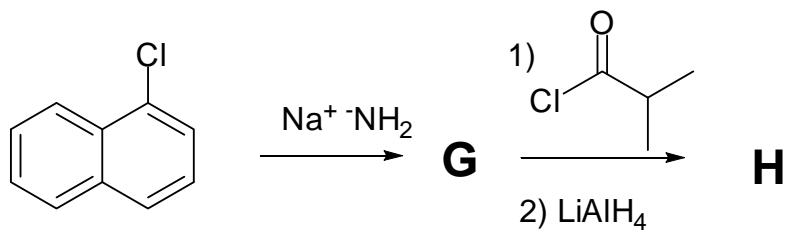
**b.**



c.

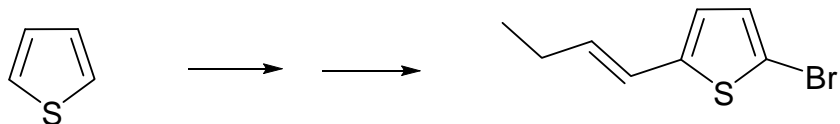


d.



3. Show by equations how you would prepare each of the shown products from the indicated starting materials. You may use any other reagents you deem fit, as long as they are stable and make chemical sense. Show all intermediates that could be isolated. Mechanisms are not necessary (10 each, 20 marks total).

a.



b.

