

# ORGANIC CHEMISTRY 30C

(Prof. Yves Rubin)

UCLA, FALL 2001

## MIDTERM EXAM II

On my honor, I have neither given nor received any aid on this exam  
(Please, use ink for this first page!):

\_\_\_\_\_  
Signature

\_\_\_\_\_  
I. D. Number

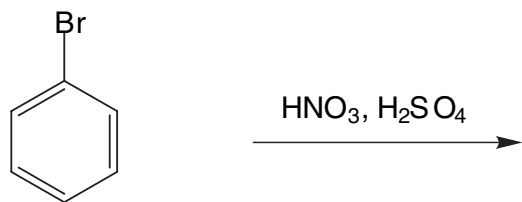
\_\_\_\_\_  
Full Name (**Please Print !**)

Question	Points
1 (20)	
2 (20)	
3 (20)	
4 (20)	
5 (20)	

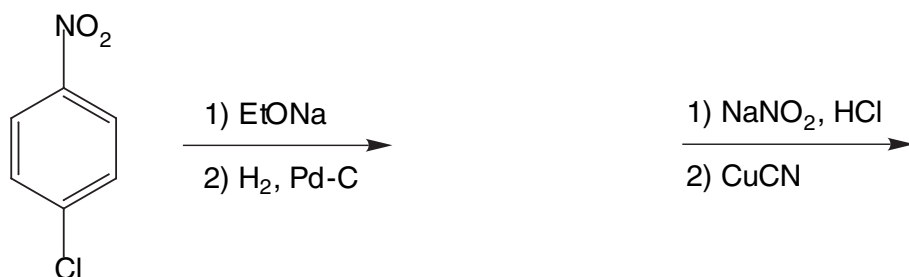
**Total (100)**

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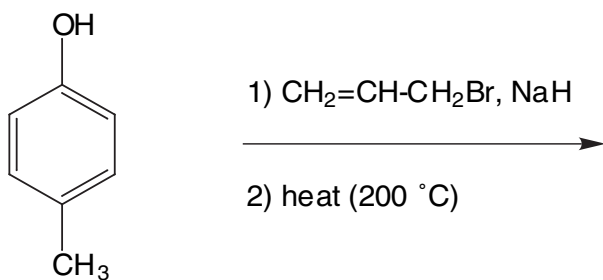
1. a) (20 points) Give the product(s) for the following reactions, assuming *1 equivalent of reagent* is used unless specified otherwise (show each step, where applicable, to ensure max. credit if you are not sure of your final product):



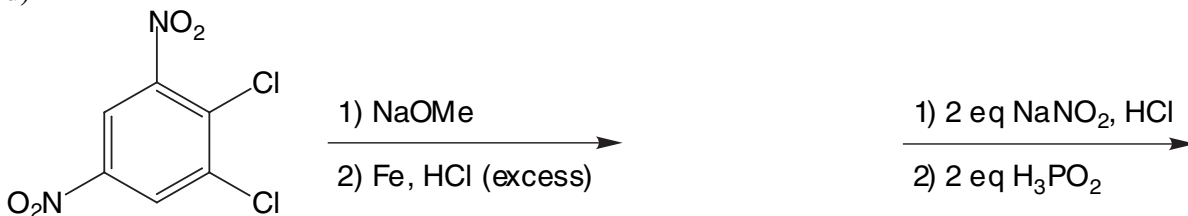
b)



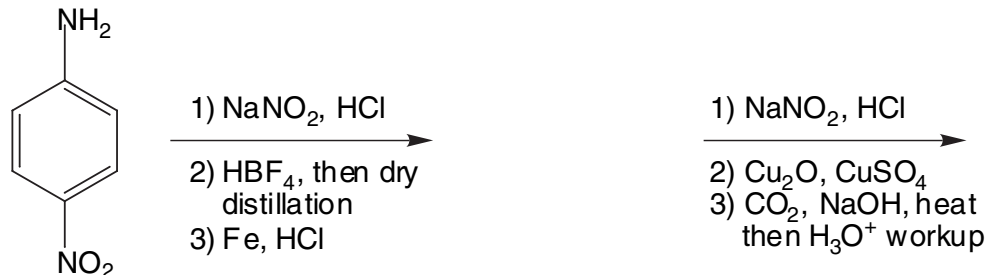
c)



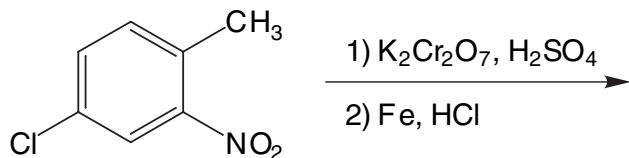
d)



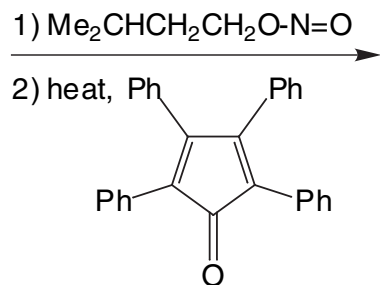
2. a) (20 points) Give the products for the following reactions, assuming 1 equivalent of reagent is used unless specified otherwise (show each step, where applicable, to ensure max. credit if you are not sure of your final product):



b)

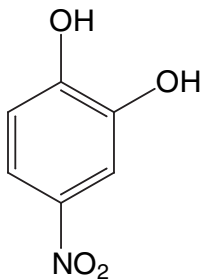


**product A**

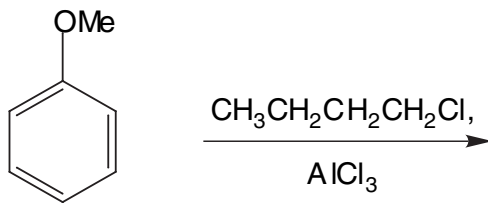


**product B**

3. a) (10 points) Circle the most acidic of two hydroxy groups in the following compound. Explain using a mechanistic argument:

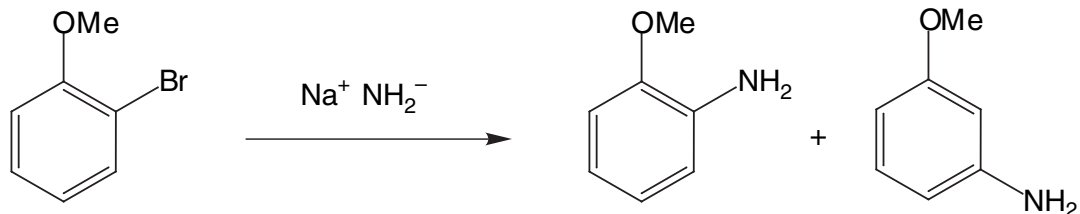


b) (10 points) Explain why the following reaction is not expected to work well (give a *simple* answer, use mechanistic arguments preferentially):



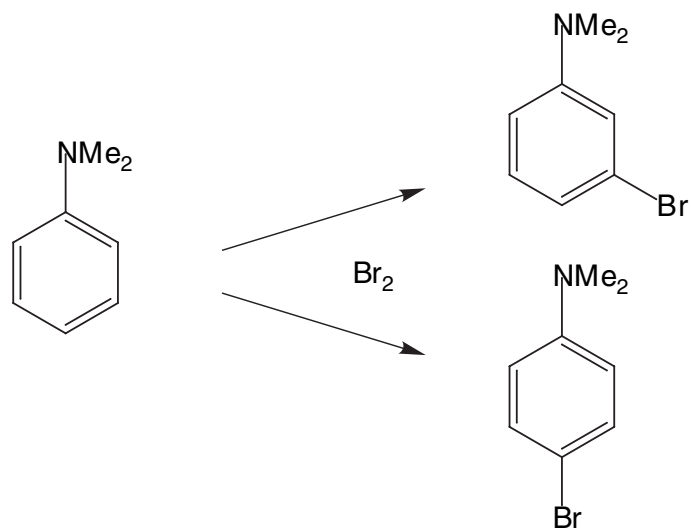
4. (20 points) Provide a **step-by-step** mechanism for the following reaction (*no shortcuts!* make sure to show all intermediates and byproducts in addition to the correct arrow-pushing formalism):

a)



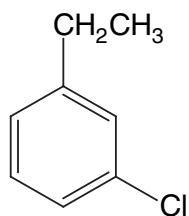
b) Show: 1) *one key* resonance structure for each of the two possible pathways below, and 2) how they explain which pathway is preferred (*please indicated this!*).

Write answers here:



5. (20 points) Devise a reasonable synthesis for the following compound from readily available reagents and the starting material provided:

*Note: do no "invent" new reagents or reactions. There should not be more than 10 steps necessary in these syntheses, although longer ones may also be correct.*



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