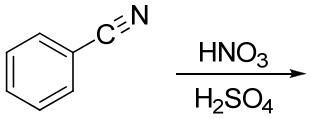
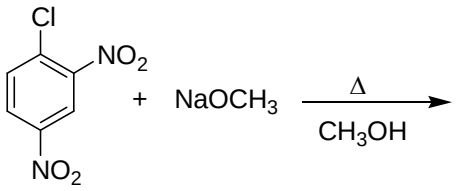
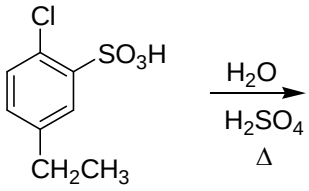
Old Exam Problems *Mostly* Based on Ch. 16 Material

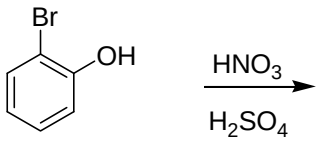
1. Sp09 Final Exam (20 points) Show the ortho, meta, and para substitution products for the following electrophilic aromatic substitution reaction. Circle the major product(s). Provide a complete electron pushing mechanism for <u>each</u> of the three products, including formation of the active electrophile, and briefly explain how your mechanism supports your conclusion as to which product(s) will predominate. Resonance structures for the intermediates are recommended as part of your explanation. You may continue your answer on the next page.

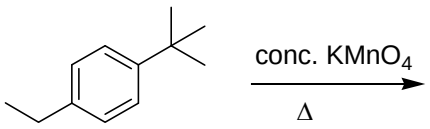


2. Sp07 Final Exam (3 each) Provide the major organic products for the following reactions. Be sure to indicate stereochemistry when necessary.



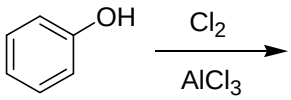




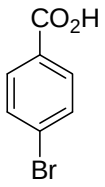


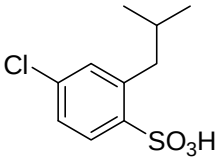
3. Sp07 Final Exam (20 points) Show the ortho, meta, and para substitution products for the following electrophilic aromatic substitution reaction. Circle the major product(s). Provide a complete electron pushing mechanism for <u>each</u> of the three products and briefly explain how

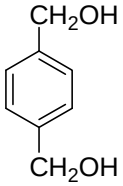
your mechanism supports your conclusion as to which product(s) will predominate. (Resonance structures for the intermediates are required as part of your explanation.)



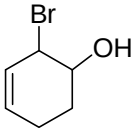
4. Sp07 Final Exam (10 each) Provide a synthesis for two out of three of the following compounds from benzene and any other reagents you need. More than one step will be necessary. Clearly indicate which problem you are omitting.

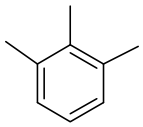




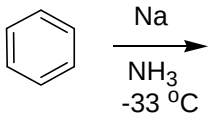


5. Sp 04 Final Exam (4 points each) Provide IUPAC accepted names for the following compounds.

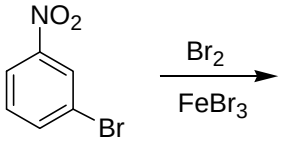


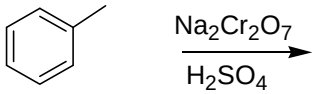


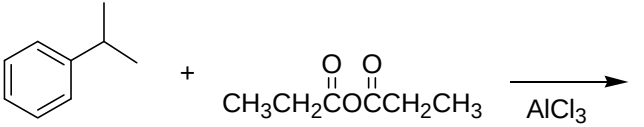
6. Sp 04 Final Exam (3 points each) Provide either the missing organic products or the missing starting materials for the following (one step) reactions. Be sure to indicate stereochemistry when necessary.



(not sure you have seen this … it's a Birch reduction)







7. Sp 04 Final Exam (8 points each) Provide a synthesis for each of the following compounds from benzene. You may use any additional reagents you wish. More than one step may be necessary.

