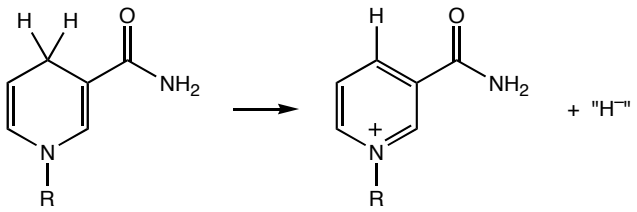
Name _____ Test 4 (5/5)
CHEM 0203 (Organic II) Spring 2008

1. (10 pts.) The molecule drawn below (NADH) is an important biochemical reducing agent. It acts as a reducing agent by acting as an H^- donor. Normally, it is quite difficult to release H^-. Explain why this molecule is an effective H^- donor.

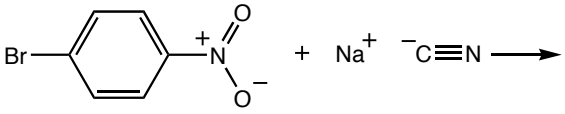


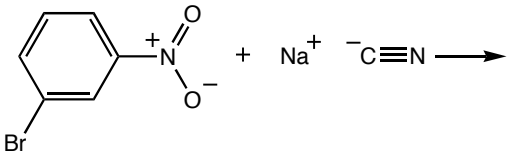
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

2. (10 pts.) Nitro groups deactivate benzene rings toward electrophilic aromatic substitution, yet nitro groups activate benzene rings toward nucleophilic aromatic substitution. Explain these observations.

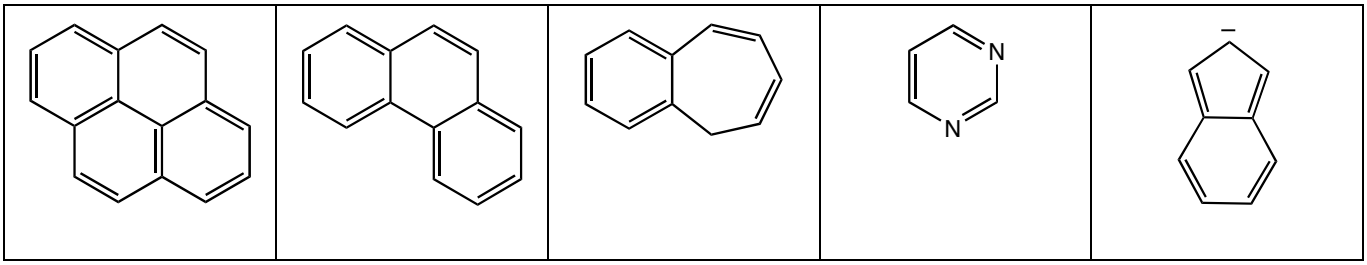
7. _____
8. _____
9. _____

3. (10 pts.) Determine which of the following nitro substituted benzene rings will undergo nucleophilic aromatic substitution and draw the product of the reaction.

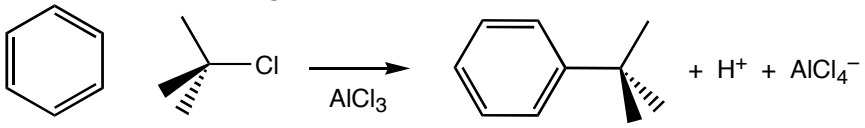




4. (Determine which of the following molecules is(are) aromatic.

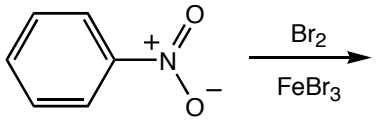


5. Draw a mechanism for the following reaction.

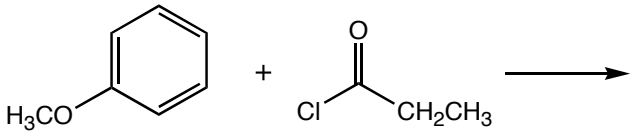


6. (5 pts. each) Determine the products of the following reactions.

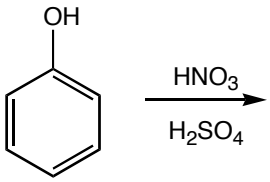
a.



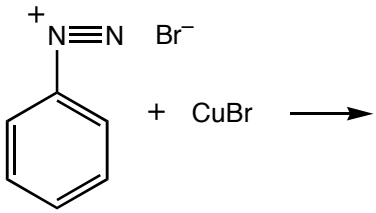
b.



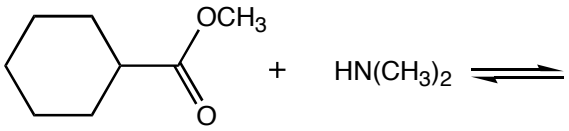
c.



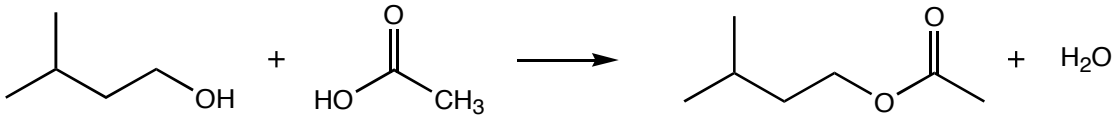
d.



7. (10 pts.) Predict the product of the following reaction, and determine whether the products or the reactants would be favored.



8. (10 pts.) Explain why adding an acid to the reaction drawn below will speed up the reaction.



9. a. (6 pts.) Predict the products of the following reactions, and
b. (8 pts.) Determine which would be the faster reaction (explain your choice).