**CHM 257 Spring 2012 Exam III Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**50 pts total**

1. Show the carbocation intermediate(s) formed:



1. Does this reaction occur via SN2/E2 mechanisms or SN1/E1 mechanisms?



1. Give the most stable product formed in this reaction:



1. Give the FULL name for this compound:



1. Give the FULL name for this compound:



1. Give the oxidation product for this compound:



1. Draw all reasonable resonance structures for this ion:



1. Show the products and mechanism for this reaction:



(include ALL steps)

1. Draw the structure of this compound: N-*sec*-butyl-2-phenylhexanamine
2. Why is phenol acidic?
3. Which one(s) of the following compounds is/are aromatic?



1. Show the products and the mechanism for this reaction:



1. Show the products for this reaction: 
2. Show the products for this reaction: 



15. Give all the products of reaction of water with this molecule: