**CHM 257 Spring 2014 Exam III Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Show the carbocation intermediate(s) formed here, with all reasonable resonance structures:



2. Give the substitution product(s) for this reaction:



3. Circle the compound(s) below that are aromatic:





4. Show all the reasonable resonance structures for this molecule:

5. Show the mechanism of this reaction:

6. Give a correct name for this molecule:

7. Give a correct name for this molecule:



8. Give a correct name for this molecule:



9. Draw the structure of this molecule: 3-isopropylbenzoic acid

10. Draw the structure of this molecule:

11. Why is acid catalysis needed in many reactions of alcohols?



12. Give the organic product(s) of this reaction:

13. Show the oxidation product(s) of this compound:

14. Draw the structure of this compound:

15. Circle the compounds that are resonance stabilized:



16. Give the most likely product of this reaction:

17. Identify each molecule shown below as an electrophile (E), nucleophile (N) or both (EN):



Extra Credit: 18. Show the mechanism and organic product for this reaction:

