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

1. Show the carbocation intermediate(s) formed here:



1. Give the major product of the elimination reaction that occurs upon interaction of below reagents. Does it occur via E2 mechanism or E1 mechanism? Justify.



3. Show the mechanism for this reaction:



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



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



6. Explain why phenol is acidic.

7. Give a correct IUPAC name for this molecule:



8. Give a correct IUPAC name for this molecule:



9. Give a correct IUPAC name for this molecule:



10. Draw the structure of this molecule: 3-methylbenzoic acid

11. Draw the structure of this molecule: (R)-5-methoxy-1,3-cyclohexadiene

12. How can you convert a hydroxyl group into a good leaving group?

13. Circle the alkyl halides that can undergo β-elimination:



14. Show the oxidation product of this alcohol:



15. Draw the structure of this compound: (3*R*)-3-methoxyhexan-3-ol

16. Indicate which compounds below are primary, secondary and tertiary alcohols.



17. Give the product(s) of this reaction:



Extra Credit: 18. Show the mechanism for this reaction: 