HOMEWORK ASSIGNMENT #8 ORGANIC CHEMISTRY I (25 pts)

**Due 12 November Wednesday 2014**

your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8.1. Practical Reaction Thinking (5 pts)

Which condition will increase the rate of the reaction given: (If both, circle **Both. I**f neither circle **None)**

HBr + t-butanol  **Using polar protic solvent** Using non-protic solvent Both None

HBr + t-butanol Increasing HBr concentration Increasing H2SO4 concentration Both None

could be both (H+)

HBr + 1-butanol Increasing HBr concentration Increasing H2SO4 concentration Both None

HBr + 2-butanol Increasing 2-butanol concentration Using polar, protic solvent Both None

HBr + 1-butanol Running neat Using a non-protic solvent Both None

could be both

8.2 On the Road Again

Starting from alcohols and/or ketones/aldehyde compounds with <4 Carbons :



1. Suggest a route to : 5 pts

A=



A



1. Suggest a route to: B= 3 pts



B



1. Suggest a route to: C= 6 pts



C

**A** from first synthesis

**8.3. Name or draw these alkenes. Use IUPAC rules.(if E, Z forms present, indicate which) 6 pts**









**(E)-7-chloro-2-octene 6-chloro-1-cyclohexenol\* isobutylene**

**(or 6-chlorocyclohexenol Common**

**(also accepted: 3-chloro-1-cyclohexen-2-ol)\* 2-methylpropene**

**\*two different rules collide here: The first is to give precedence to the `most reactive group’ (OH) => it gets 1 position. The second is to minimize substituent count=> OH gets 2-count. From what seems the common practice, the former is the preferred rule though both yield specific and correct specifications of the structure.**



**3-methyl-2,7-cyclooctadienol**

**(Z) 2,2,5-trimethyl-3--hexene**