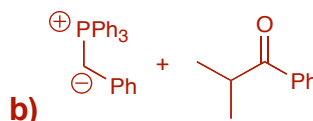
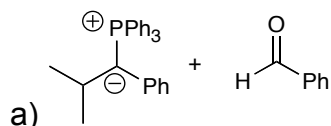
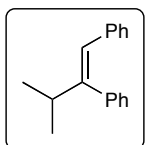


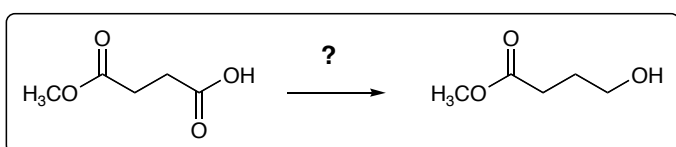
14 April 2004

3 Points Each. Please mark your answers on the scantron sheet. You may keep this copy.

1. Which Wittig reagent and carbonyl would be BEST to prepare the following alkene?



2. Which reducing agent would you use to carry out the following reduction?



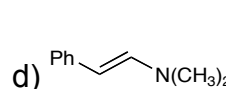
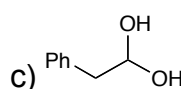
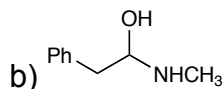
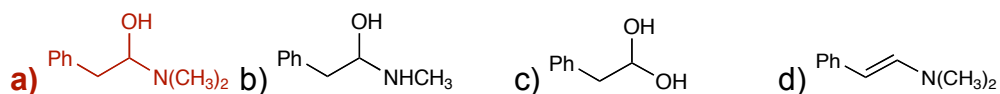
a) LiAlH_4

b) BH_3

c) NaBH_4

d) DIBALH

3. Which of the following is an INTERMEDIATE in the mechanism for formation of an enamine?



4. Rank the following acids in order of DECREASING acidity (strongest first).

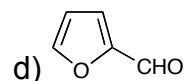
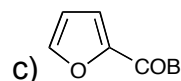
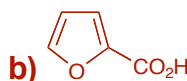
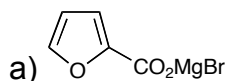
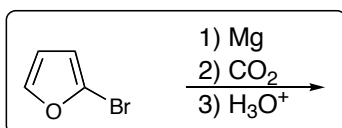
a) $\text{A} > \text{C} > \text{B}$

b) $\text{C} > \text{B} > \text{A}$

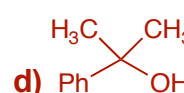
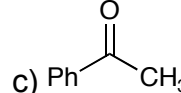
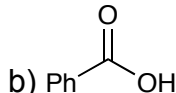
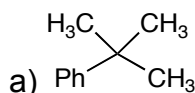
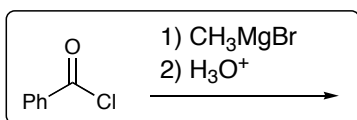
c) $\text{B} > \text{A} > \text{C}$

d) $\text{C} > \text{A} > \text{B}$

5. What is the product of the following sequence of reactions.



6. What is the product of the following reaction?



7. Which of the following CANNOT be easily made directly from the carboxylic acid?

