

### Drug Synthesis II, 2012, Homework 3

Name \_\_\_\_\_

- (1) Show how to synthesize 2,3-dimethyl-2-butene, beginning with 2-propanol as the only carbon source (4p)

- (2) **A** is a drug used to treat depression. It can be synthesized from 2-acetylthiophene **B** or alternatively from thiophene carboxylic acid **C** via enantiomeric chloroalcohol **D**. Propose a reasonable synthetic routes to prepare **A** from **B** and **C**? Notice the chiral center of intermediate **D** and propose method for asymmetric synthesis. (6p)

