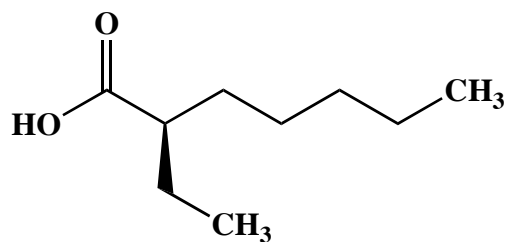


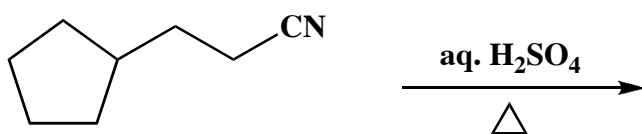
## Problem Set 8

1. Use IUPAC nomenclature to write the systematic name of the following carboxylic acid.

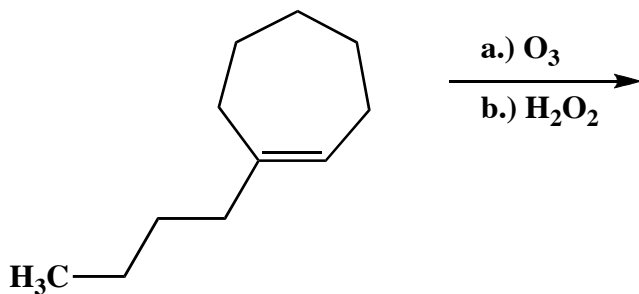


2. Draw the structure of the expected major organic product for each of the following three questions.

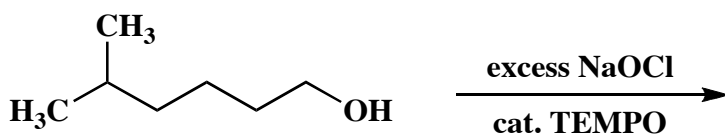
A.



B.

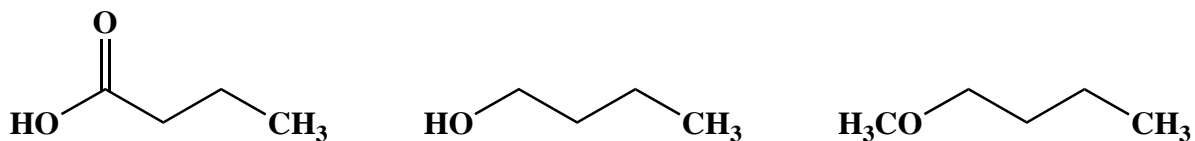


C.

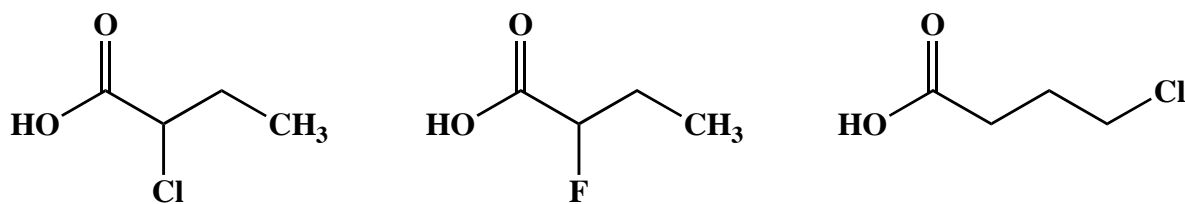


3. Answer the following three questions precisely, succinctly, and with correct grammar.

A. Rank the following three compounds from highest to lowest  $pK_a$ . Explain your reasoning.



B. Rank the following three compounds from highest to lowest  $pK_a$ . Explain your reasoning.



C. What spectroscopic techniques could be used to distinguish between the following two organic compounds? Discuss all of the specific resonances that would be utilized.

