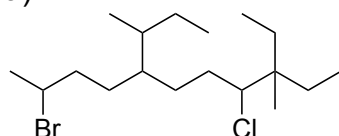


Chemistry 236 Organic Chemistry I – Fall 2023
Midterm #1

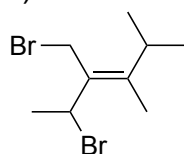
1. What is the IUPAC name for the following compounds? (12 pts total - 4 pts each)

a)



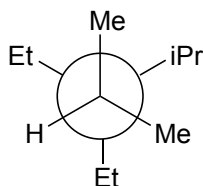
2-bromo-5-(sec-butyl)-8-chloro-9-ethyl-9-methylundecane

b)



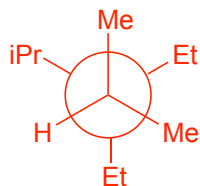
(E)-2-bromo-3-(bromomethyl)-4,5-dimethylhex-3-ene or
(E)-2-bromo-3-(bromomethyl)-4,5-dimethyl-3-hexene

c)

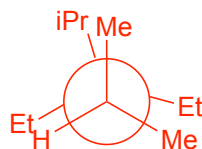


3,3-diethyl-2,4-dimethylpentane

2. For the Newman projection shown in question 1c, draw the most **and** least stable conformers (8 pts total - 4 pts for each correct)

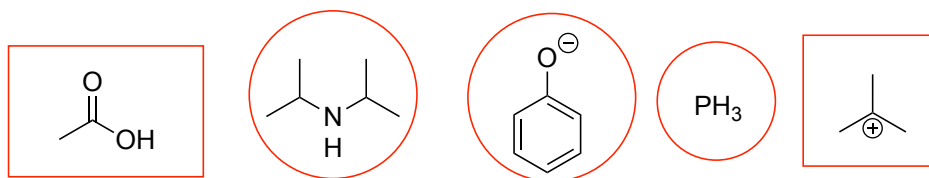


Most stable

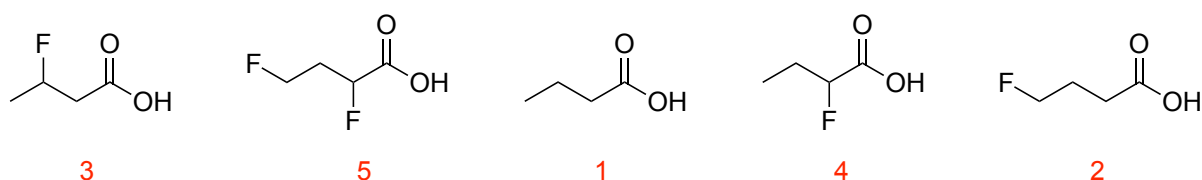


Least stable

3. For each of the following chemicals, identify all Lewis Acids with a box and all Lewis Bases with a circle. (10 pts total - 2 pts each)

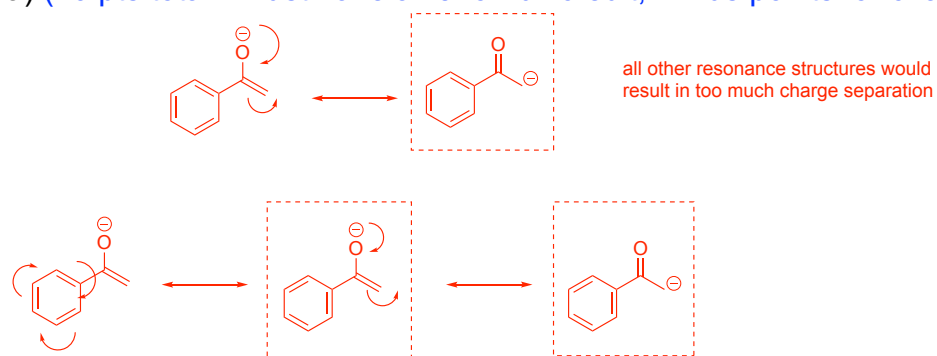


4. Rank the following compounds in order of increasing acidity. 5 = most acidic, 1 = least acidic. (10 pts total - 2 pts each)

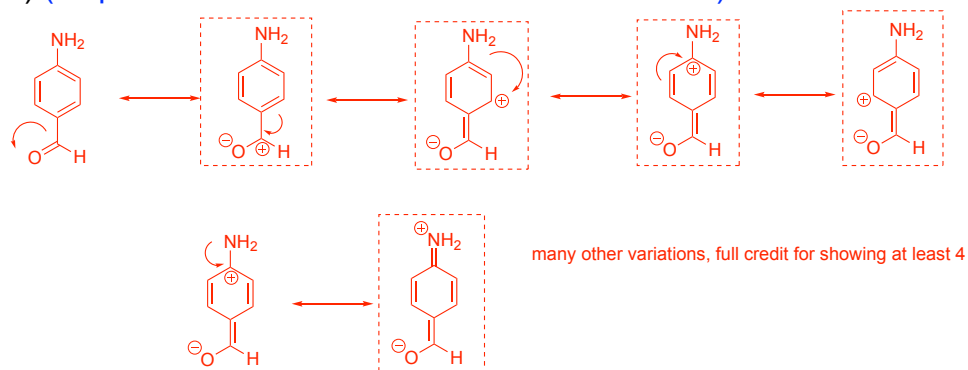


5. Draw all reasonable resonance structures for the following compounds.

a) (10 pts total - must have all 3 for full credit, minus points for charge separated)

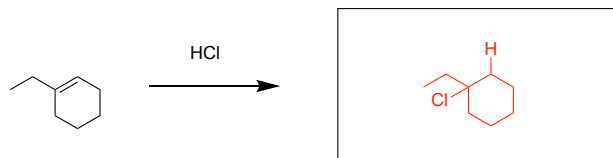


b) (10 pts total – must have at least 4 for full credit)

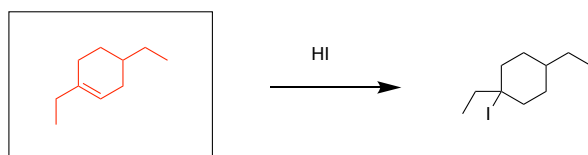


6) Indicate the reactants or the major product for the following reactions.
(20 pts total - 4 pts for each correct answer)

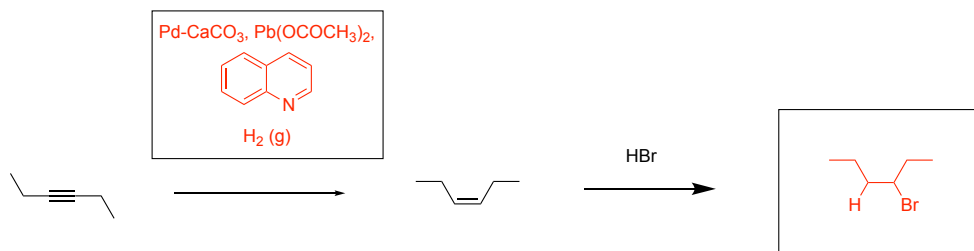
a)



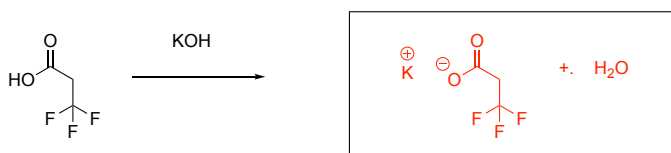
b)



c)



d)



7) Calculate the degree of unsaturation and draw two possible structures for each molecular formula.

a) (10 pts total - 4 pts for DoU calc, 3 pts for each correct structure)

C_6H_{10}

DoU = 2



other regioisomers of the diene also possible

b) (10 pts total - 4 pts for DoU calc, 3 pts for each correct structure)

C_6H_8

DoU = 3



other regioisomers of the diene also possible