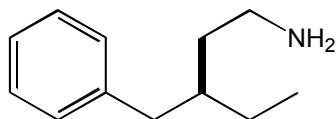
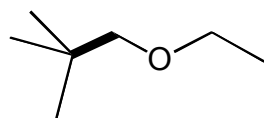
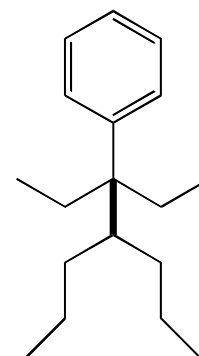
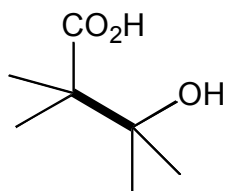
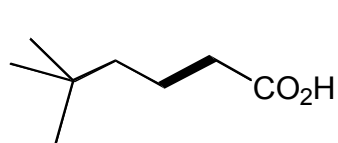


Chem 141 Problem Set 4
Wednesday 26th September 2007

This problem set covers material to the end of Chapter 3 in McMurry.

1. Give the IUPAC names of the following molecules (the highlighted bond is a C-C single bond):



2. Draw Newmann projections of the molecules in Q1 looking along the highlighted bond.

3. Draw the skeleton structures of the following molecules:

(a) 4-hydroxybutanoic acid

(b) 2-aminopropanoic acid

(c) 3-phenyl-2-aminopropane

(d) 2,2,4,4-tetramethylpentane

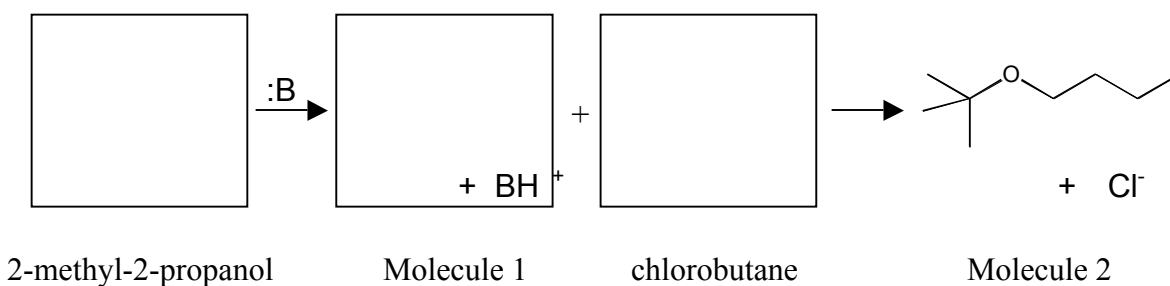
(e) triphenylmethanol

4. Draw Newmann projections of molecules Q2(a) – (d) looking along the C₂-C₃ bond.

5. Draw as many of the **non-cyclic** constitutional isomers of heptane as you can (I got 9).

6. Draw structures and curved arrows to show the reaction of ethanethiol ($pK_a = 10.6$) with triethylamine ($pK_a = 11.0$). Which side of the equilibrium is favored?

7. 2-methyl-2-propanol reacts with a strong base ($B:$) to give Molecule 1 and BH^+ . Molecule 1 reacts with chlorobutane to give Molecule 2 and Cl^- . Draw the structures of 2-methyl-2-propanol, Molecule 1, and chlorobutane. Give the IUPAC name for Molecule 2. Suggest curved arrows to show the mechanism of this reaction (the mechanism is Chapter 11).



Suggested Problems from McMurry Chapter 3. 3.21 – 3.53 but not 3.45, 3.46, 3.50, 3.51