CHM 2211 – Ch 17 Homework

1. Name the following alcohols systematically and draw their skeletal structures. (2 pts)

   $HOCH_2CH_2CH(CH_3)CH_2CH_2OH$

   $(C_6H_5)CH_2CHOHCH_3$

   $H_2C{=}CHCH_2OH$

   $(C_6H_5)_2CHOH$.

2. Diagram the mechanisms for reactions that will create 5-methyl-2-hexanol by a) reduction of a carbonyl compound and b) addition of a Grignard reagent to a carbonyl compound. Show all lone pairs and use curved arrows. (2 pts)

3. Draw the products in 3D for the reactions of (R) 5-methyl-2-hexanol with a) $Na_{(s)}$, b) PCC, and c) p-toluene-sulfonyl chloride (or tosyl chloride). Also, state and explain the stereochemistry of the tosylated product in part c). (2 pts)

4. Show reactions with mechanisms for 5-methyl-2-hexanol with a) $SOCl_2$ and b) $POCl_3$. Use curved arrows and show all lone pairs. Also, explain the general types of mechanisms and how they work. (2 pts)

5. Show the reactions with mechanisms for 2-methyl-2-propanol with
   a) H_2SO_4 in THF and b) HBr. Use curved arrows and show all lone pairs.
   Also, explain the general types of mechanisms and how they work. (2 pts)