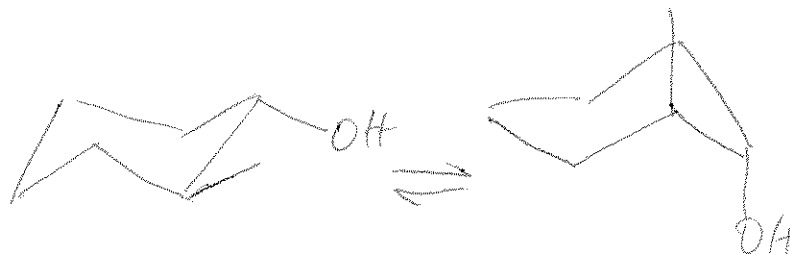


Chem 141  
Problem-Set  
Wednesday 20th September 2006.

1. Draw a molecule of 2-methylcyclohexanol with both substituents in equatorial positions. Ring flip the six-membered ring to position the substituents axial.

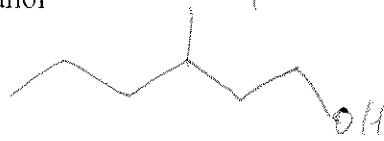


2. Draw the following as bond-line illustrations.

a) 3-methyl-pentene



b) 3-methylhexanol



c) propyne



d) 3-chlorobutanoic acid.



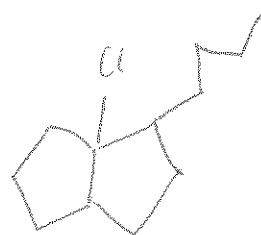
e) dipropyl ether



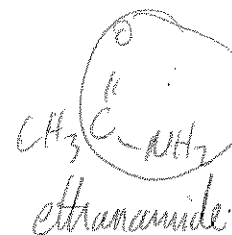
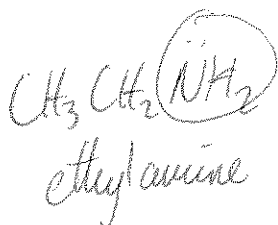
f) N,N-dicyclopropylamine



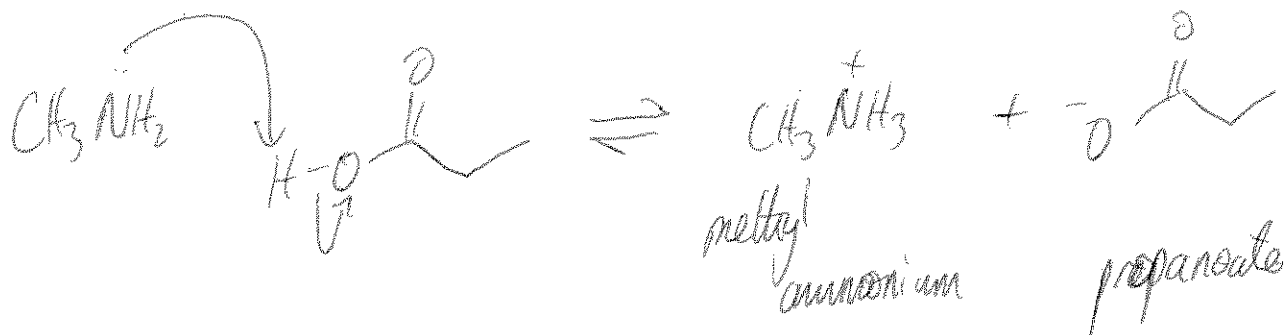
g) 1-chloro-2-butylbicyclo[3.3.0]octane



3) List 3 functional groups capable of hydrogen-bonding. Draw examples of those functional groups and circle the atoms which hydrogen-bond.



4) Draw an equation showing the reaction of an amine with a carboxylic acid. Name the resultant ions (specific names are not required just name the functional groups formed). Use specific examples not the generic R-group.



5) Show resonance contributing structures for the following compounds.

