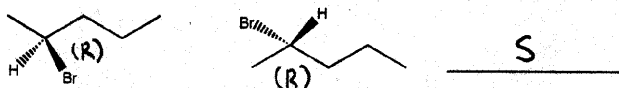
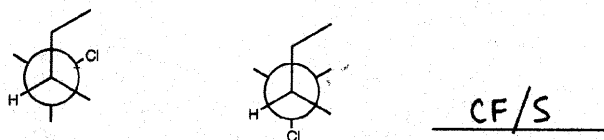
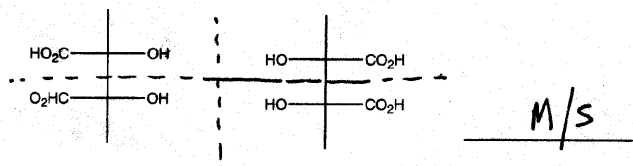
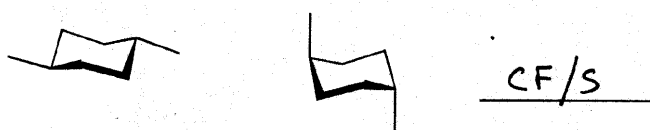
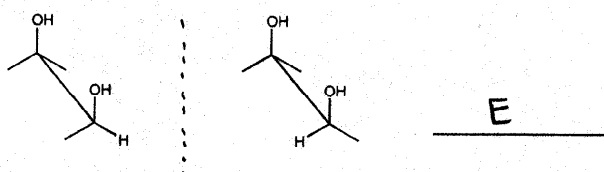
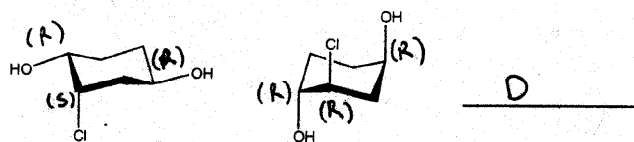


Exam 2
6/17/2008
Chm 122

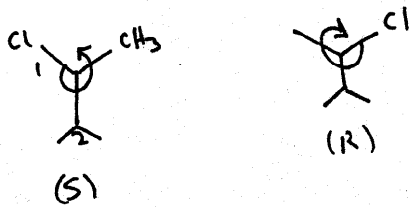
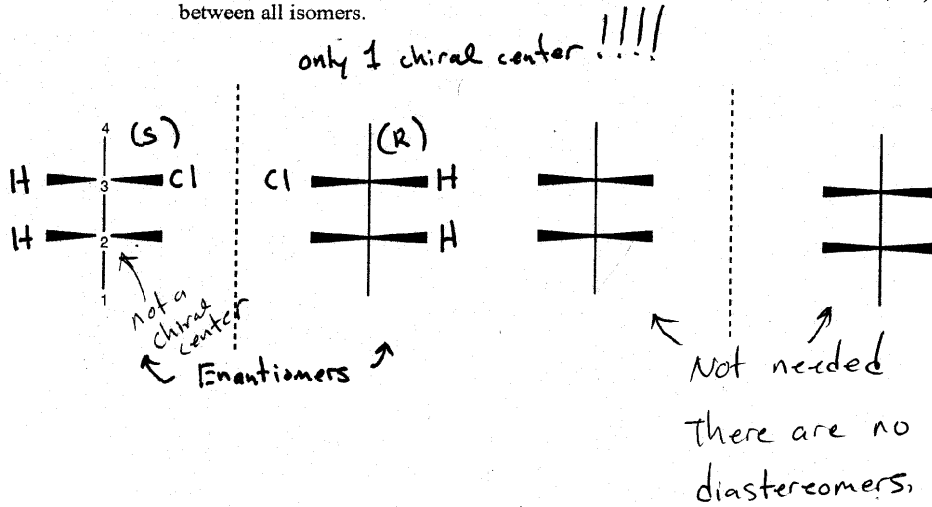
Name: _____
I agree to observe the Wake Forest
Honor Code during this exam.

118pts.

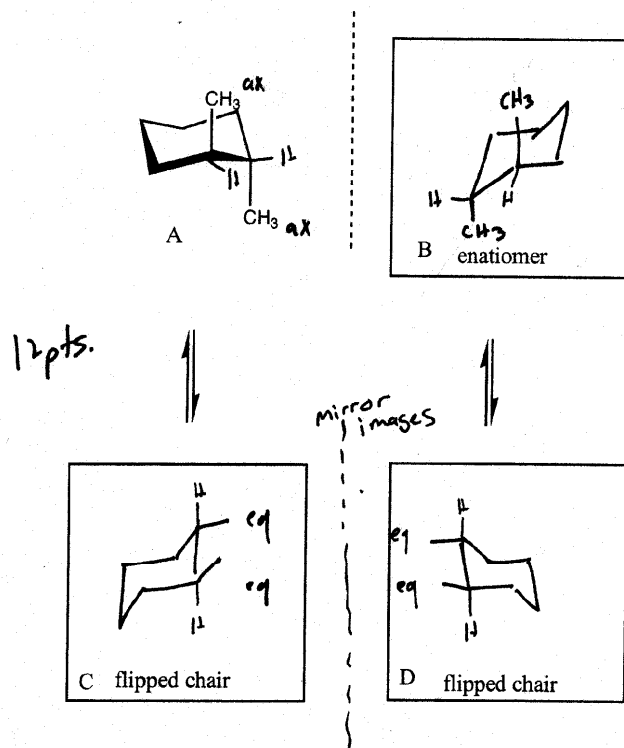
1. Indicate if the pair of molecule shown represents diastereomers (D), enantiomers (E), meso compounds (M), the same compound (S), constitutional isomers (C) or conformational isomers (CF). The pair may be both M and S or CF and S. If this is the case, so indicate. **24 points (4 pts each)**



2. (20 pts) a. Draw all the stereoisomers of 3-chloro-2-methyl-butane using Fisher projections.
 b. Assign R and S absolute configuration to each chiral center.
 c. Indicate the stereochemical relationships (enantiomer, diastereomers, meso, etc) between all isomers.



3. Draw enantiomers and their flipped chairs of *trans*-1,2-dimethylcyclohexane. (20 pts)



What is(are) the stereochemical relationship(s) between the flipped chairs (C-D)?

4 enantiomers - they are mirror images

What is(are) the stereochemical relationship(s) between one chair structure and the flipped chair of its enantiomer (i.e. A-D or B-C)?

4 Still enantiomers - since both chiral centers are inverted } proper or formally

will take diastereomers
 since they are not mirror images and not superimposable.
 (These would also have different physical properties),
 ↑ i.e. NMR

4. HBr adds to *trans*-2-butene to yield a racemic mixture of 2-bromobutane. Draw *re* and *si* addition to the alkene to give the indicated products. Make your drawing very clear. Indicate pro-R and pro-S protons on the CH₂. (20 pts)

