CHEM 116

Stereochemistry practice problem key

1. Circle the stereogenic center(s) on each of the following molecules.



2. A. Label each stereocenter in these molecules with an asterisk.

 B. Indicate whether the molecules shown are chiral or achiral.



3. Identify each of the stereogenic centers as R- or S-. **(Optional)**



4. Following are Fisher projections for the 4 stereoisomers of 3-chloro-2-butanol.



 A. Which compound is an enantiomer of (1)? 3

 B. Which compounds are diastereomers of (4)? 1&3

 C. Which compounds are diastereomers of (3)? 2 & 4

5. Draw the Fischer projections for the 4 stereoisomers of 2-bromo-3-chlorobutane.



6. The Fischer projections for the four stereoisomers of 1,2,3-butanetriol are shown below.

 A. Label each stereogenic center as R- or S-. **(Optional)**

 B. Which compounds are enantiomers? 1 &4, 2&3

 C. Which compounds are diastereomers of (1)? 2&3

 D. Which compounds are diastereomers of (2)? 1 &4

 E. Which compounds are meso compounds ? none