

Chapter 5 (Practice)

Bennett Department of Chemistry

West Virginia University

February 24th, 2008

Name: _____

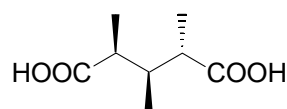
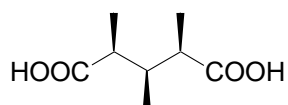
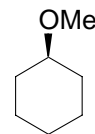
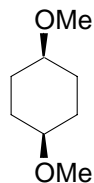
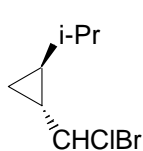
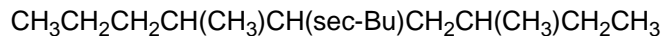
This exam is a closed book, closed notes.

Calculators and a molecular model set are allowed.

You must show your work in order to receive partial credited.

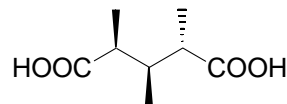
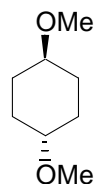
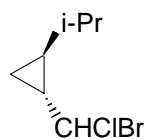
Question 1 (20 points):

1a) How many stereogenic centers in the following molecules (note: it could be 0) (5 points).

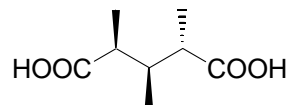
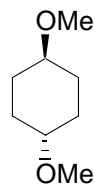
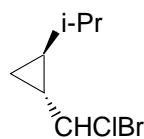


1b) Label R/S for each stereogenic center above (4 points).

1c) Draw enantiomers for the following molecules (3 points).

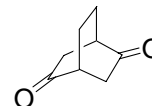
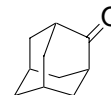
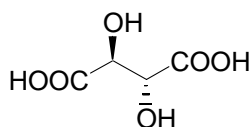
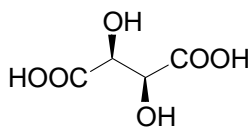
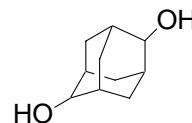
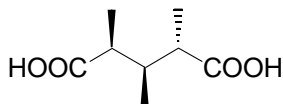
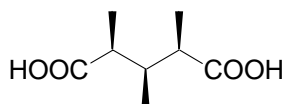
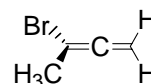
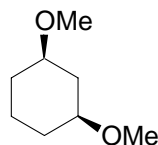
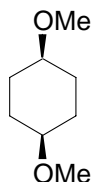
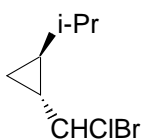
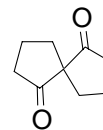
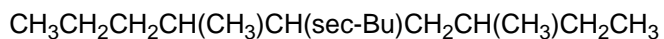


1c) Draw one diastereomer for the following molecules (3 points).



Question 2 (21 points):

Indicate whether the following molecules are chiral. If it is chiral, draw the enantiomer. (5 points).



Question 3 (18 points):

3a) Give two examples of chiral molecules with no stereogenic centers (10 points).

3b) Give two examples of achiral molecules with stereogenic centers (10 points).

3c) Give an example of two diastereomers with no stereogenic center (2 points).

3c) Give two examples of two meso compounds, one cyclic, one acyclic (2 points).