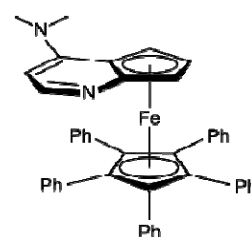
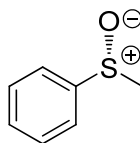
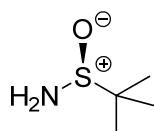
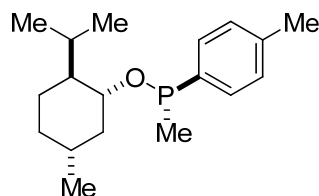
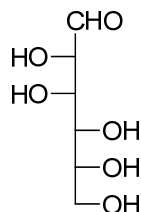
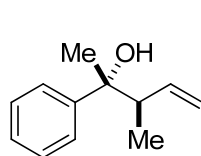


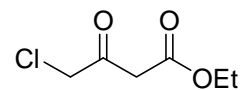
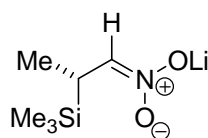
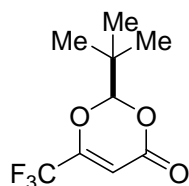
**Problem Set No. 2 (23.4.2013)**

1. a) Specify the absolute configuration of all stereocenters and chiral planes.



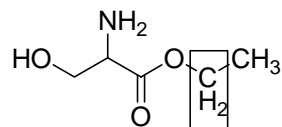
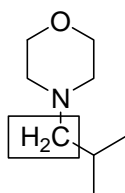
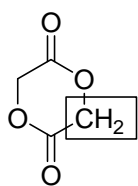
b) Draw (*S*)-BINOL (1,1'-bi-2-naphthol)!

2. a) Specify the topicity of the shown (front) side using Re/Si-nomenclature.



b) Draw (*R*)-2-(ethylthio)cyclopentanone and define the Re and Si faces of this compound!

3. Provide the topicity of the highlighted methylene groups.



4. Draw ethane in its most stable conformation

a) with the C-C bonds in plane!

b) as Newman-projection!

c) Why has the staggered conformation the lowest energy?

d) Explain why 1,2-difluoroethane prefers the gauche conformation!

5. a) Draw a bisected and two eclipsed conformations of 1-butene as Newman-projections!

b) Give an example of a compound where allylic 1,3-strain is operating!

6. Draw a qualitative energy profile of the conformations of (*E*)-1,3-pentadiene?

7. Draw *trans*-1,3-dimethylcyclohexane in a normal chair conformation and in a Newman projection! How many gauche interactions can you identify?