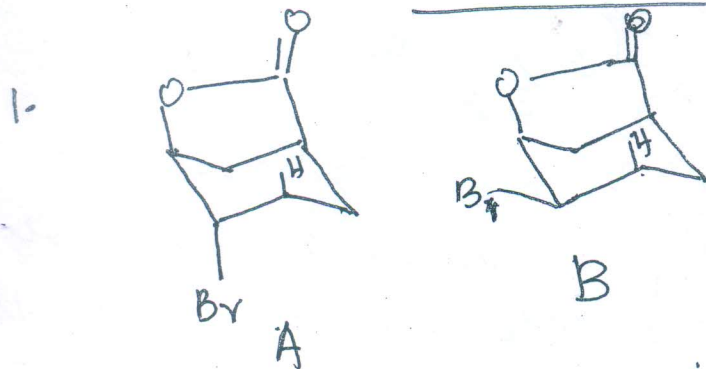
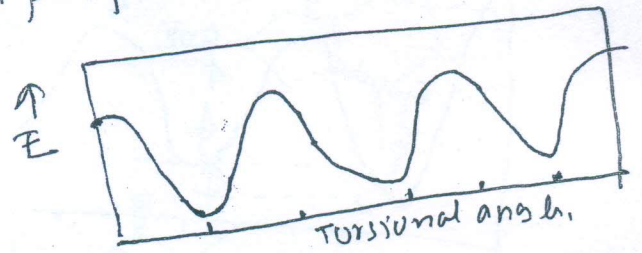
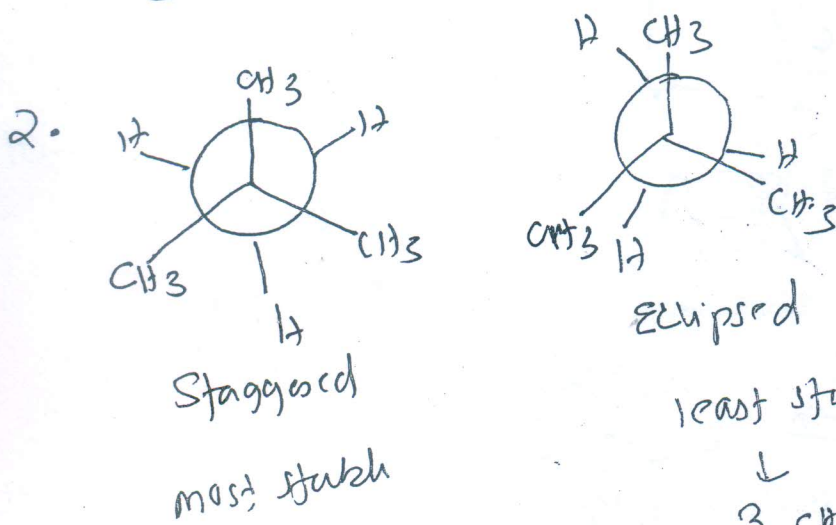


-1-
CH105 Tutorial 4
Conformational Analysis and Carbonyl Compounds

MODEL ANSWERS



In A H and Br are in antiperiplanar configuration

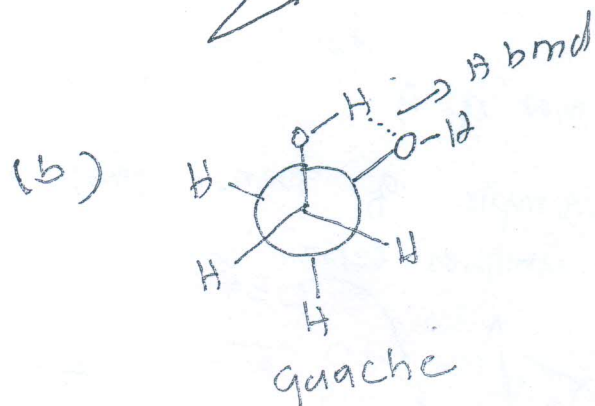
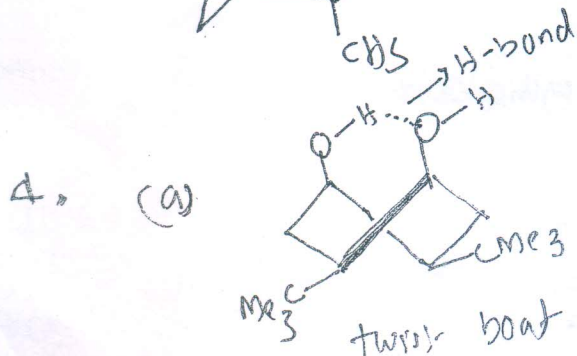
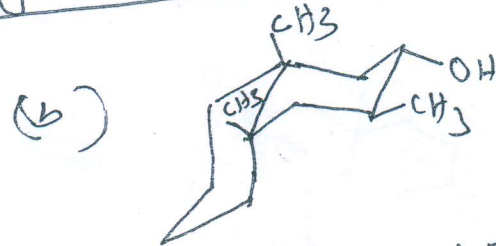
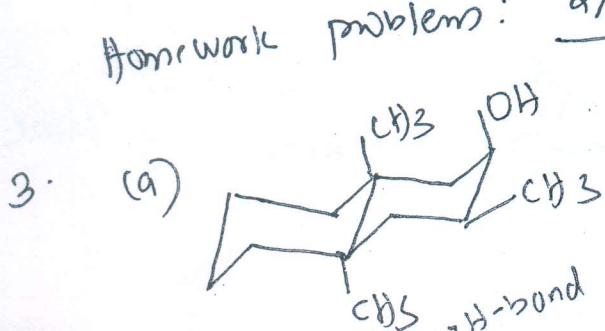


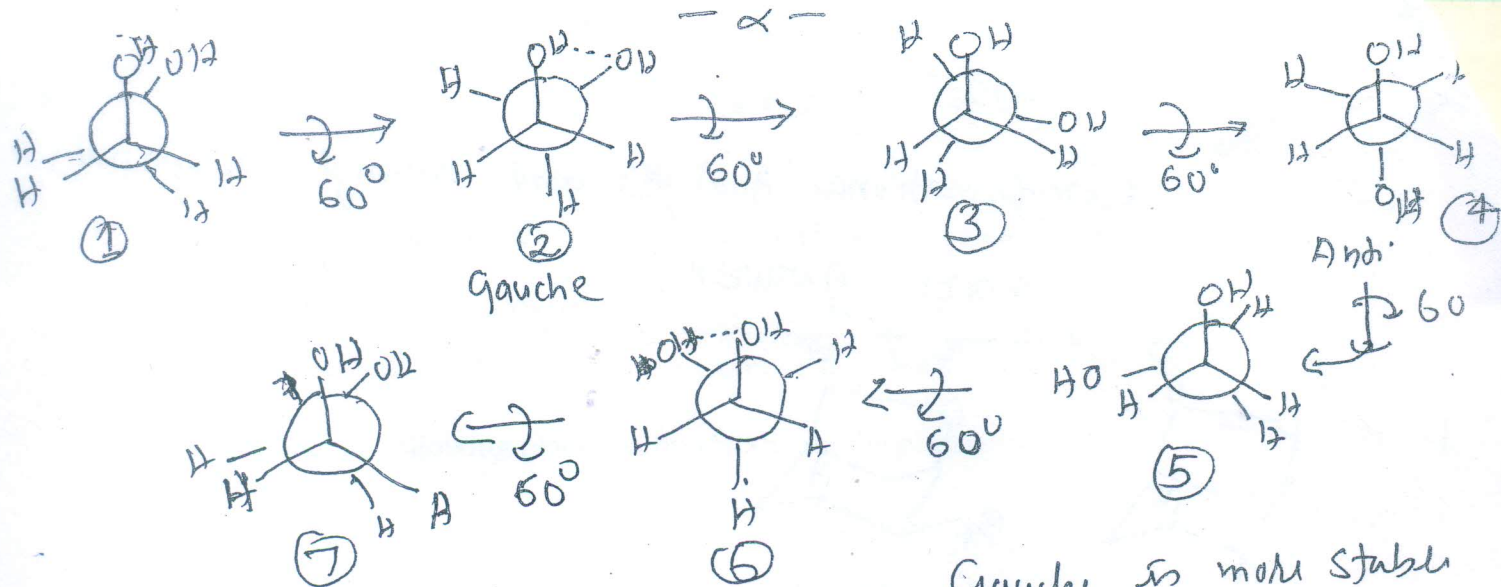
Therefore the barrier height will be 3.9 kcal/mol

↓
No eclipsing interaction

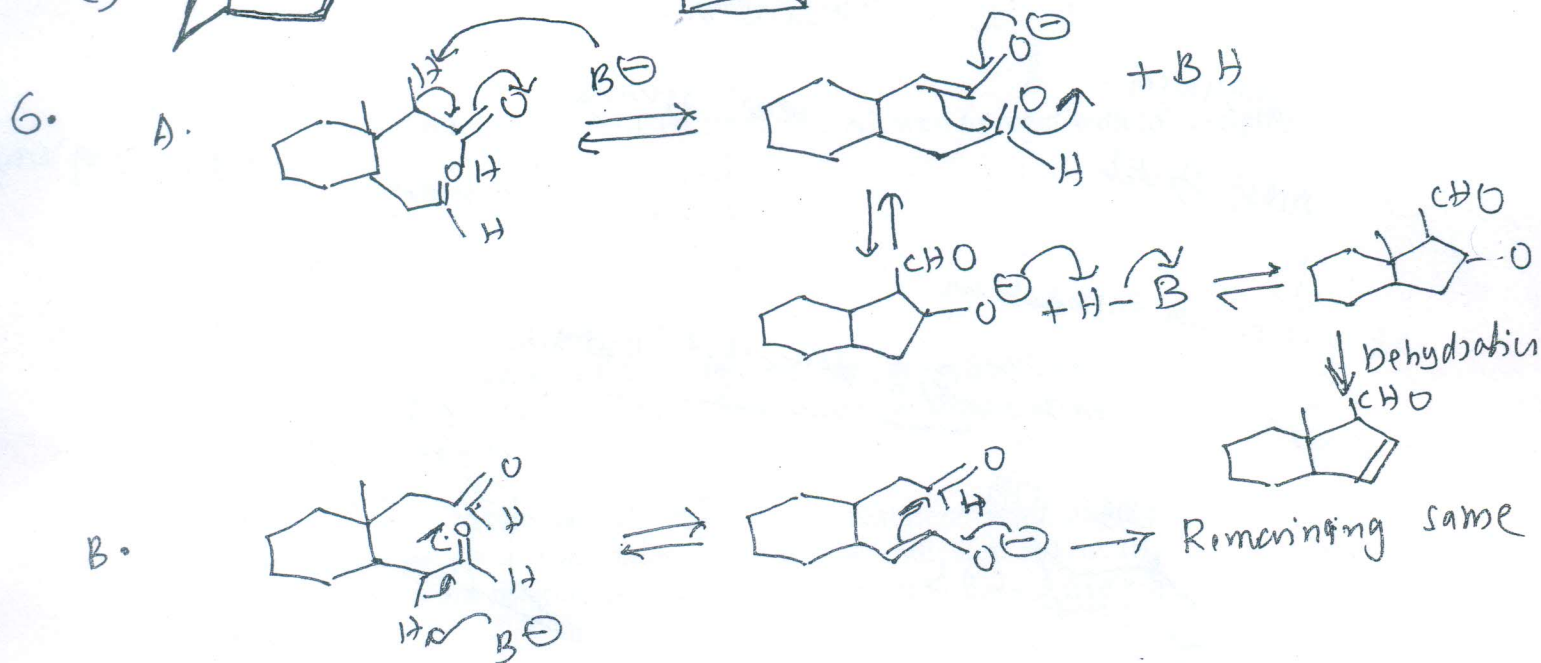
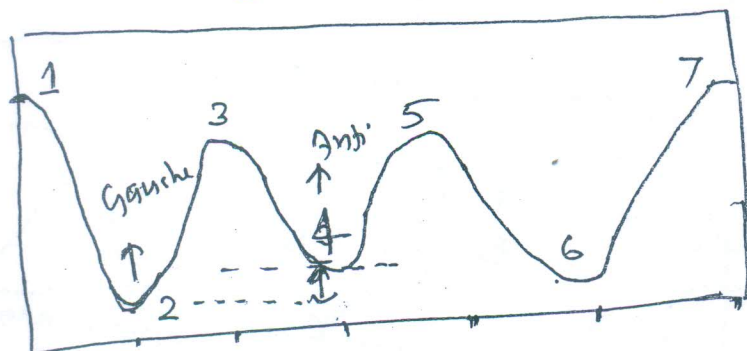
↑
3 CH₃/H eclipsing = 3 x 1.3 = 3.9 kcal/mol

Homework problem: 2,2-dimethyl butane



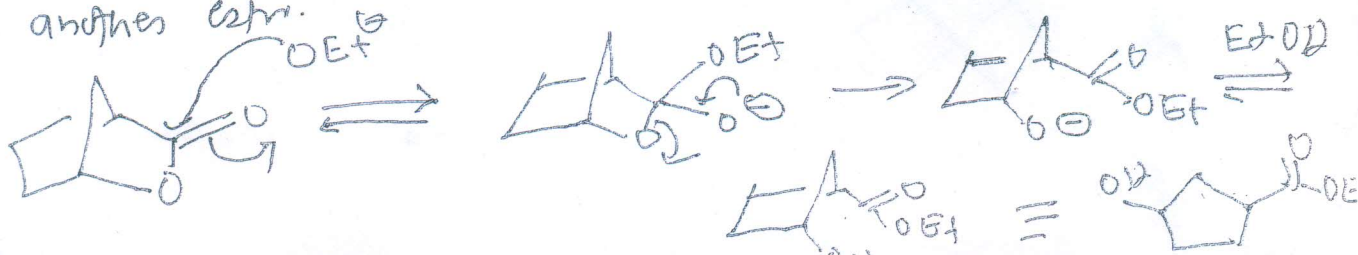


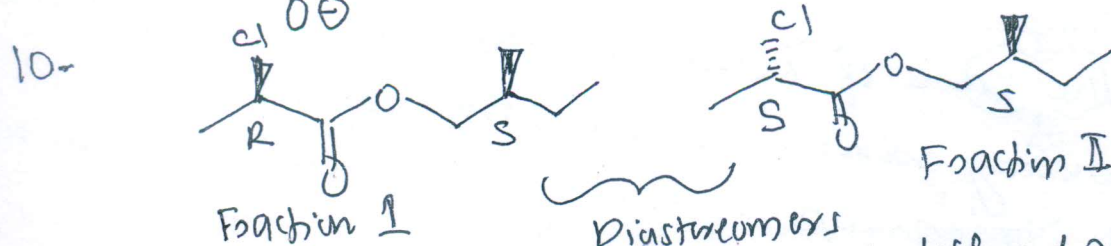
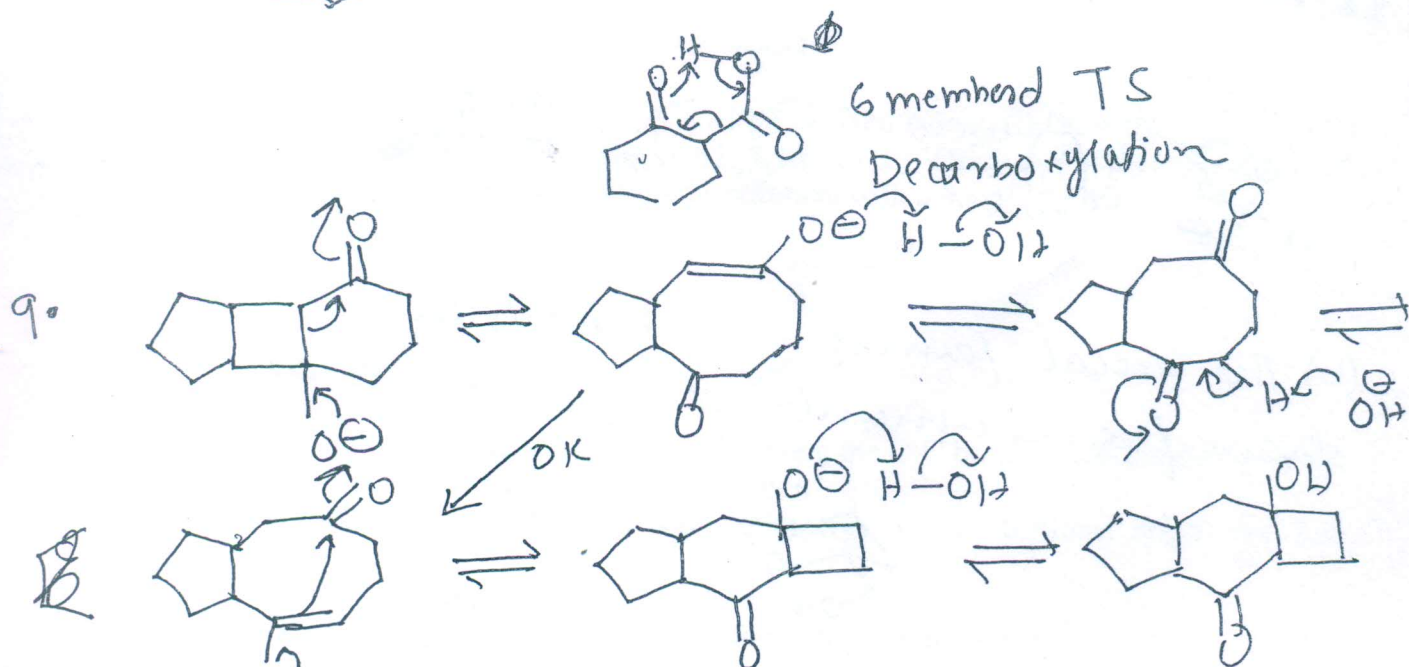
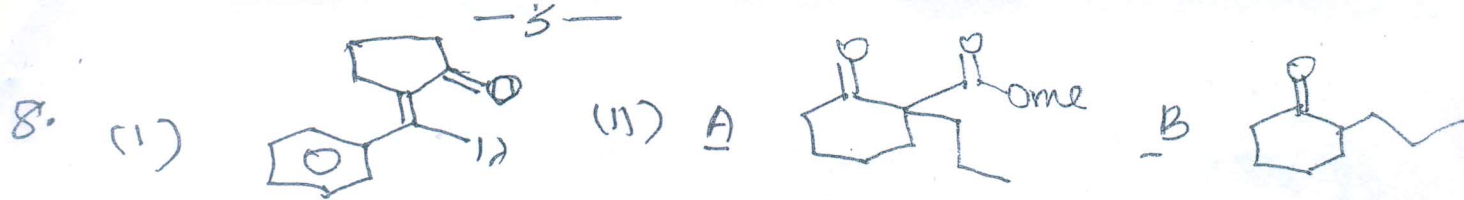
Gauche is more stable than anti due to H-bonding



as that of A

7. Example of trans-esterification: A cyclic ester (lactone) is converted into another ester.



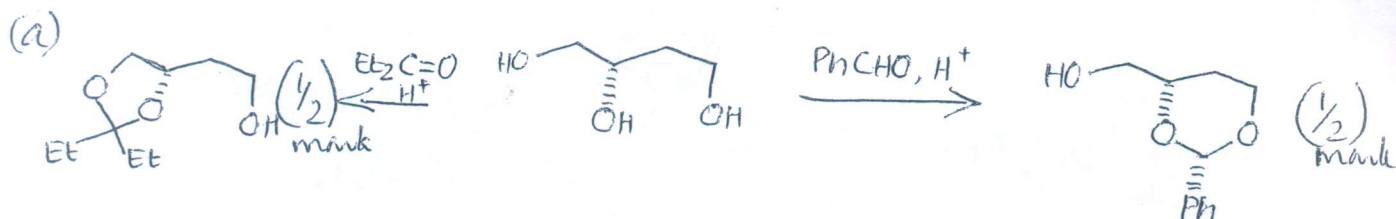


Enantiomers react ~~different~~ at different rates with chiral compounds

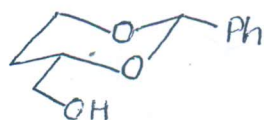
Fraction II should be a mixture of acid when one enantiomer is in excess

11. → Next page.

① 12.



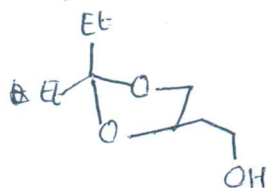
(b) The acetal formed with benzaldehyde is a strain-free six-membered ring as shown



both Ph and CH_2OH are equatorial

• ~~How~~ In the case of ketal, formed with diethyl ketone, the corresponding six-membered ring would have an axial Et group, resulting in high 1,3-diaxial interaction.

This situation results in the formation of a ~~six~~ five-membered ketal.



any one of conformational drawing
— (1)

justification of acetal with benzaldehyde by invoking 1,3-diaxial interaction (or gauche-butane) — (1)