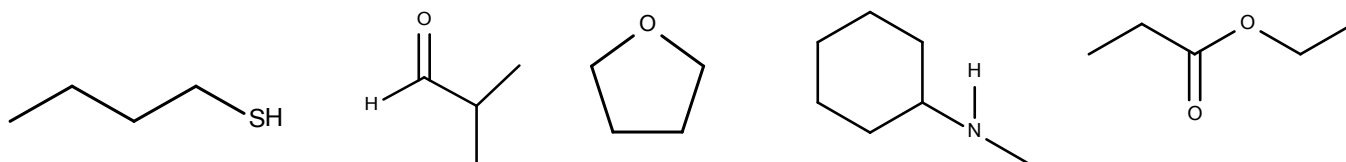


Organic Chemistry Practice Problems

10) For each of the following, provide a structural formula. Be sure to identify stereoisomers properly.

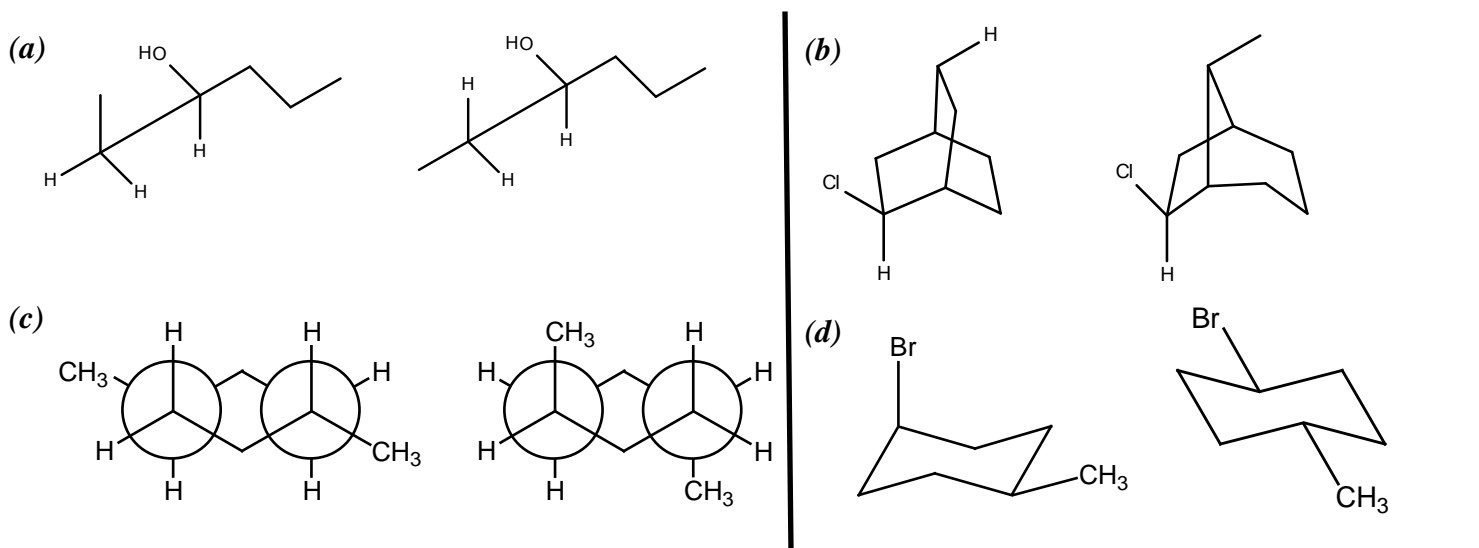
(a) tetrahydrofuran (b) spiro[2.4]heptan-1-ol

11) Give the name of the functional group class for each of the compounds given below. Be as specific as possible. Note that *carbonyl group* is **NOT** an acceptable answer.

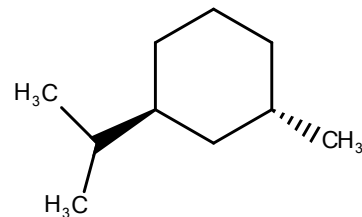


12) For each of the pairs shown below, give the best answer which describes the relationship between each molecule in the pair.

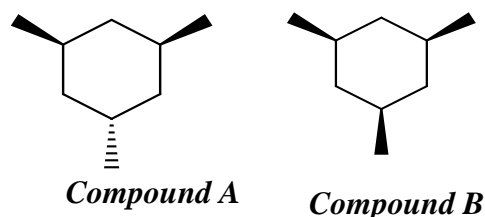
Choose from: (i) *constitutional isomers* (ii) *different conformations of the same compound*
(iii) *stereoisomers that cannot be interconverted by rotation about single bonds*



13) Clearly give the two chair conformations for the molecule shown to the right. **Put a circle around the more stable chair conformation.**

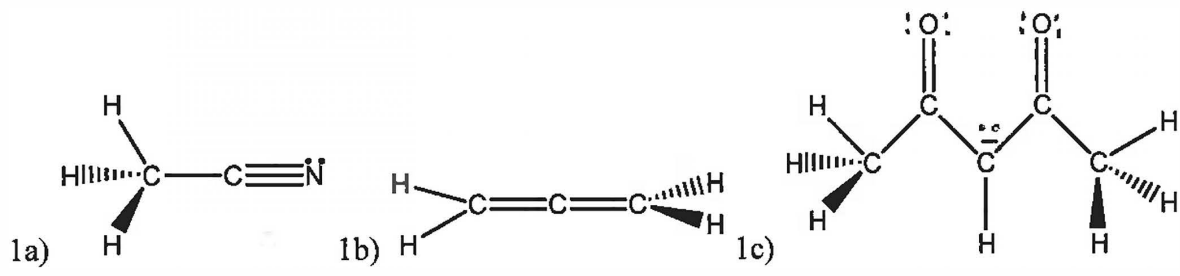


14) Which one of the two stereoisomers shown below is thermodynamically *less* stable: **compound A** or **compound B**? Draw the two chair conformations for each stereoisomer and provide a clear, concise explanation for your choice.



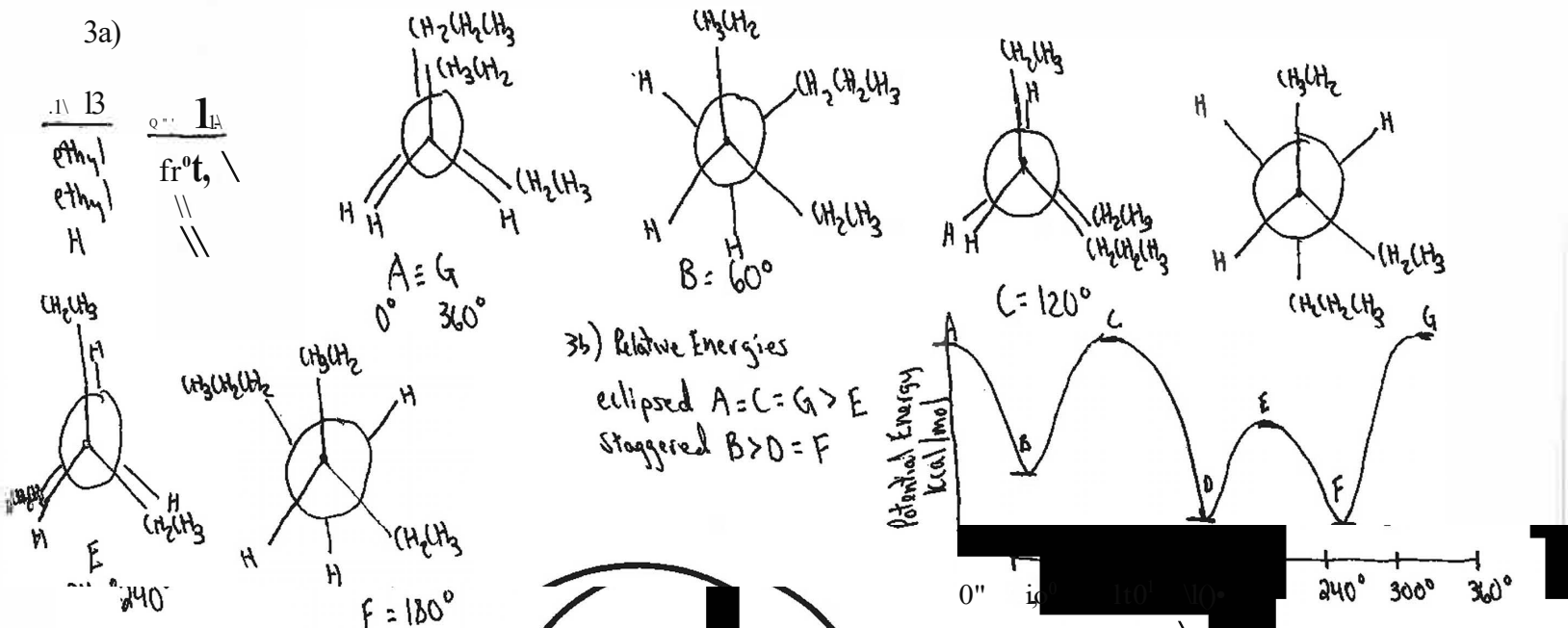
Organic Chemistry Practice Problems

Organic Chemistry I Answers to Practice Set #5 (Chapters 2-4 - Carey)

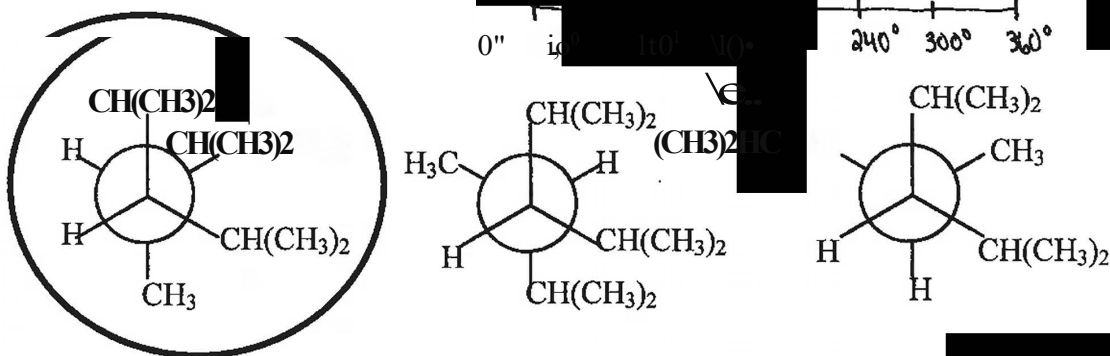


2a) sp^2 2b) sp

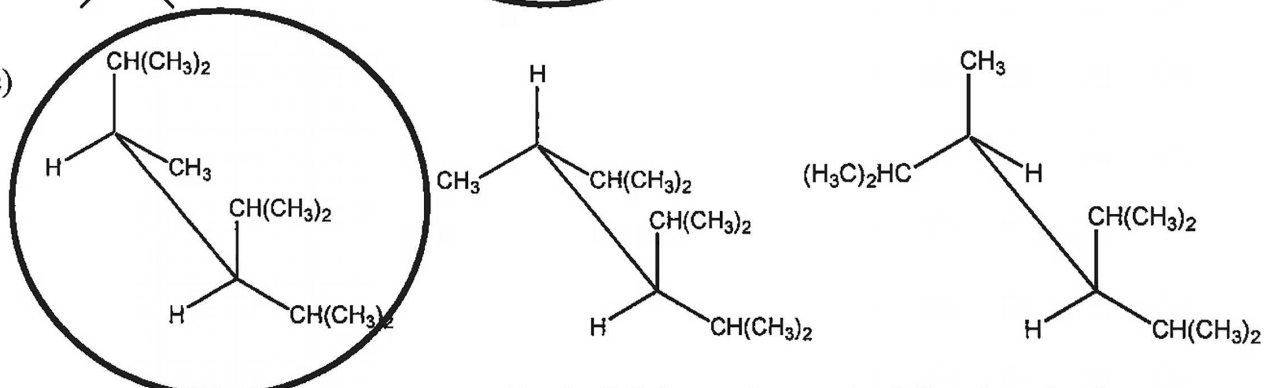
3a)



4b)



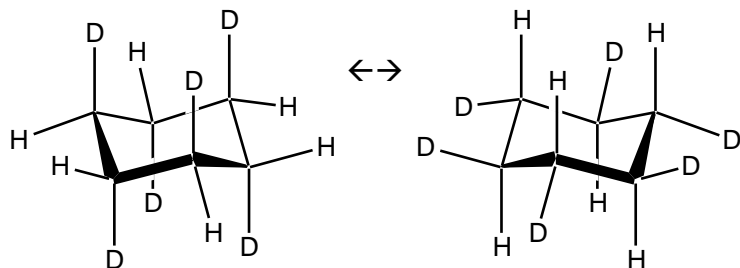
4c)



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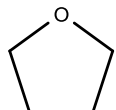
6) 2,3,3-trimethylhexane 7) a

8 a and b)

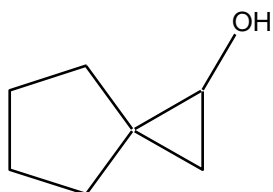


9a) 6-bromo-4-isopropyl-3-methylhexan-3-ol 9b) bicyclo[3.2.1]octane

10a)



10b)

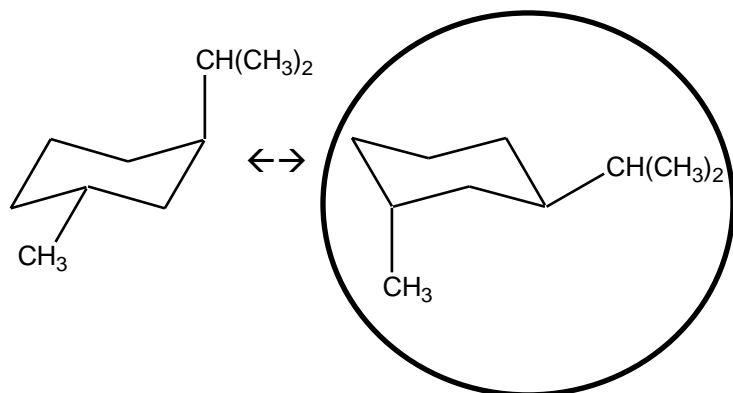


11a) thiol 11b) aldehyde 11c) ether

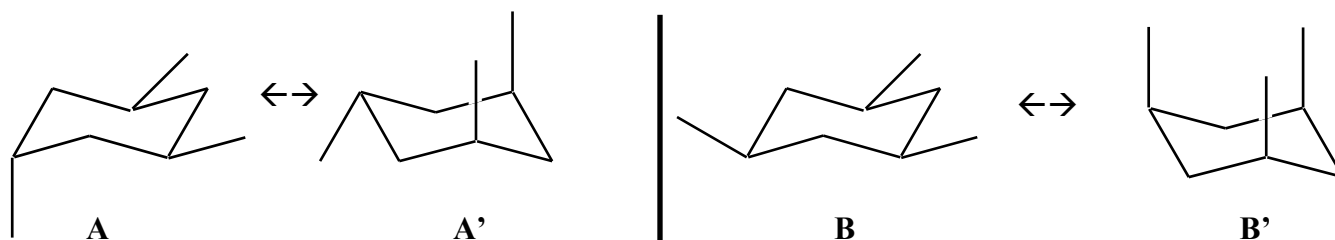
11d) secondary amine 11e) ester

12a) ii 12b) i 12c) ii 12d) iii

13)



14)



A is more stable than A'

B is more stable than B'

B is more stable than A. Therefore, compound A is the less stable stereoisomer.