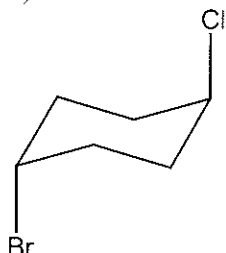


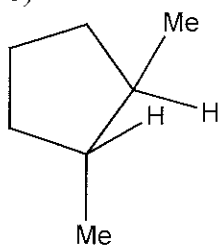
Chem 141
Problem-Set
Wednesday 18th October 2006.

1. Name the following compounds. Including R/S (or *cis/trans*) where appropriate.

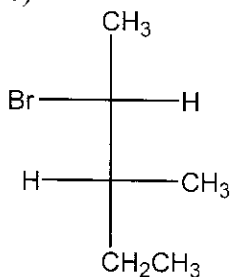
a)



b)



c)



2. Define a *meso* compound in a couple of brief sentences and show an illustration of a *meso* compound.

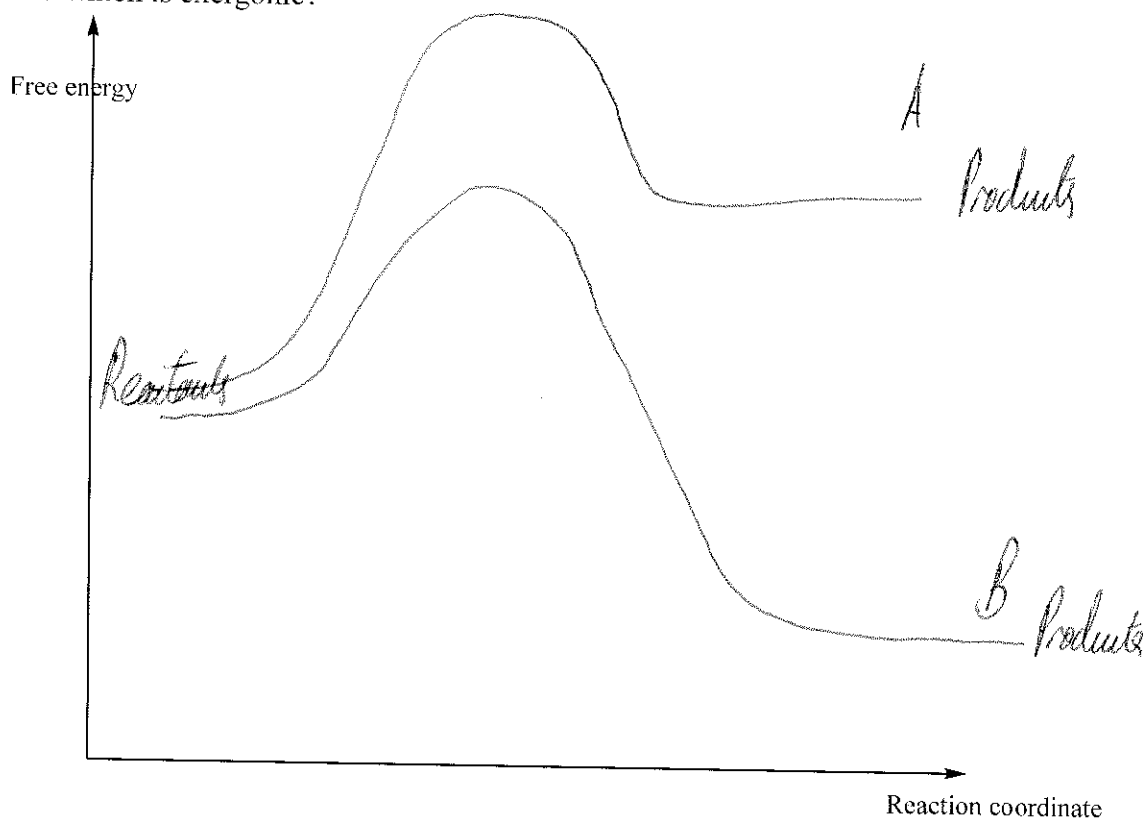
3.a) Define the letters and numbers associated with the abbreviation S_N1 and S_N2.

b) Which mechanism is concerted; S_N1 and S_N2? Circle

c) Which mechanism is stepwise; S_N1 and S_N2? Circle

4) Draw a mechanism for the S_N2 reaction of cyanide ($:\text{C}\equiv\text{N}$) on (2R)-2-bromobutane. Include a transition state.

5) Which of the following reactions progresses with the higher activation energy (label the portion of the graph relating to the activation energy). Which reaction is endergonic and which is exergonic?



6) Suggest molecules that could act in the following roles for nucleophilic substitution reactions.

a) Nucleophile _____

b) Substrate _____

c) Leaving group _____