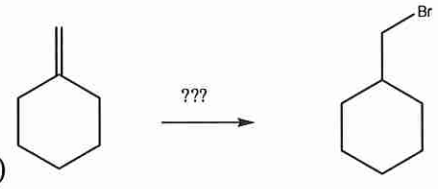
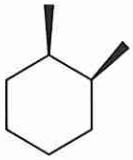
Assignment # 13
Organic 211
Fall 2020

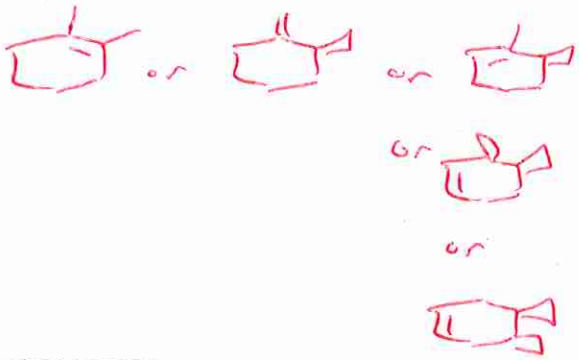
Name:_____

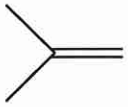
1) Give the missing parts of the following reactions.

a) 

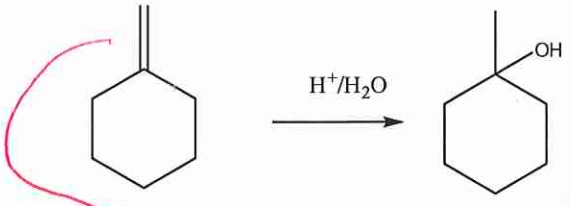
HBr with peroxides like H–O–O–H

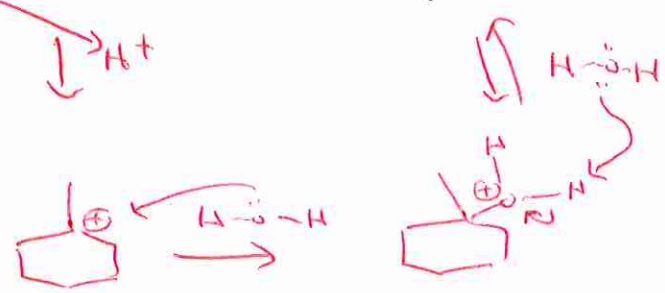
b) ??? H_2/Pd 

lots of possibilities 

c)  HBr, NO peroxides ??? + Br

2) Give the mechanism for the following reaction. SHOW EVERY STEP!





3) What is meant by syn addition?

both atoms are added to same side of alkene

e.g. 

4) What is meant by anti addition?

both atoms are added to opposite sides of alkene

e.g. 

5) What is meant by Markovnikov addition?

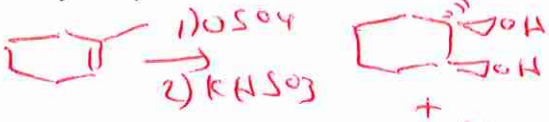
Markovnikov rule - addition of an unsymmetrical reagent to an unsymmetrical alkene results in more electronegative part of reagent adding to carbon of double bond with less hydrogens. e.g. 

6) Give an example of a halohydrin.

7) Give an example of a reagent or reagents that give syn addition of hydroxyls.

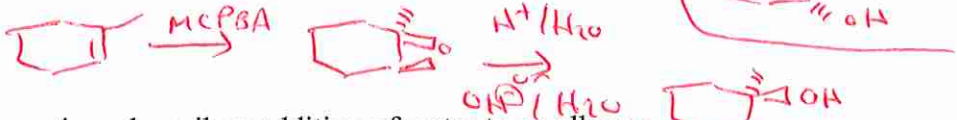
1) OsO_4
2) $KHSO_3$

or "cold" $KMnO_4$

e.g. 

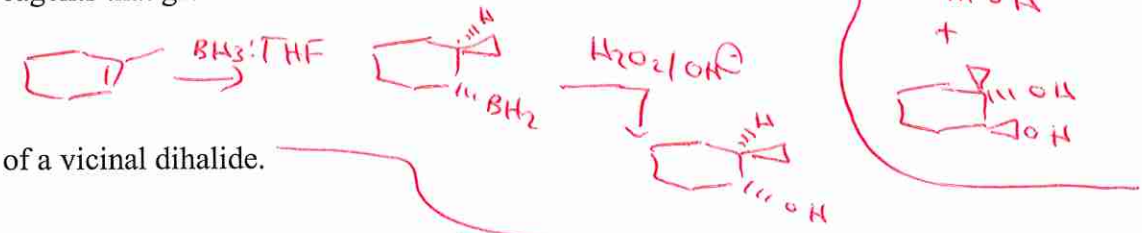
8) Give an example of a reagent or reagents that give anti addition of hydroxyls.

1) MCPBA
2) H^+/H_2O or $OH^\ominus/H_2O$



9) Give a reagent or reagents that give anti-markovnikov addition of water to an alkene.

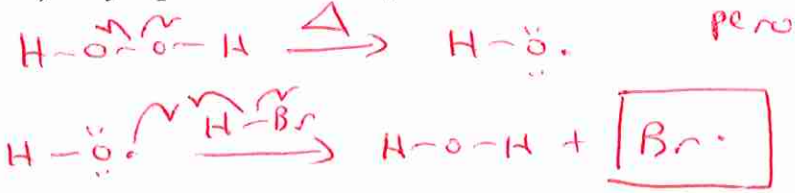
1) BH_3:THF
2) $H_2O_2/OH^\ominus$



10) Give an example of a vicinal dihalide.

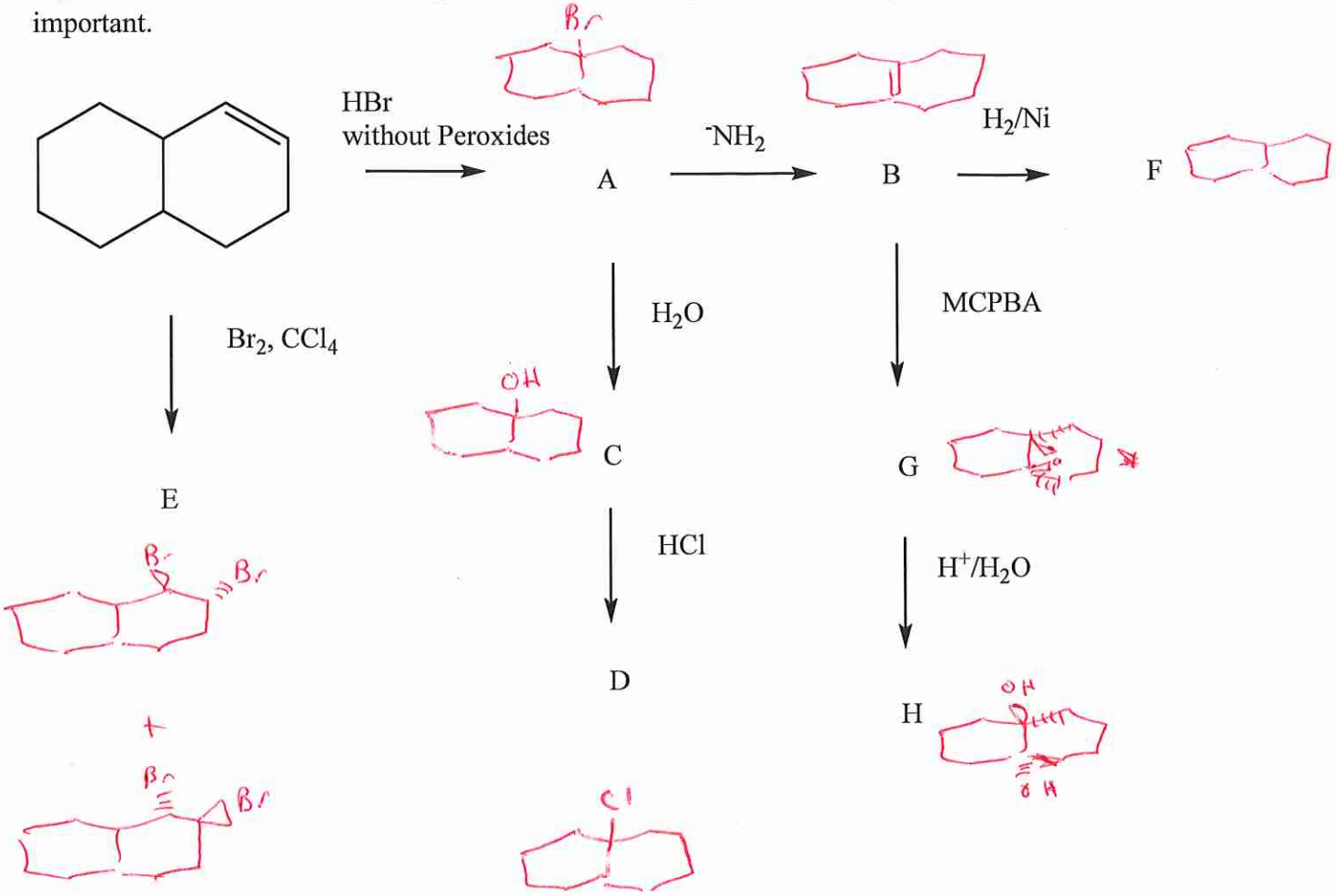
11) Give an example of a bromonium ion.

12) Why is peroxide necessary for anti-Markovnikov addition of HBr to an alkene?



peroxide forms Br· which then adds to alkene.

13) Give a structure for the missing letter for the roadmap below. Showing stereochemistry is important.



14) Suggest a reasonable mechanism for the reaction below.