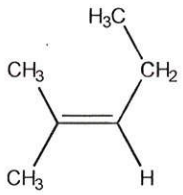
HOMEWORK ASSIGNMENT #10 **ORGANIC CHEMISTRY I (21 pts)**

Due Monday 7 December 2015

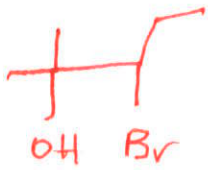
Your name: Answer

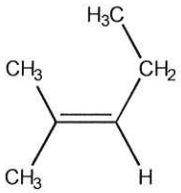
10.1 Natural Selection (7 pts total/1 pt each)

Write down the **most likely product** arising out of the following reactions:

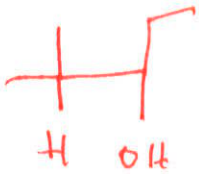


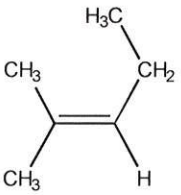
H_2O/Br_2



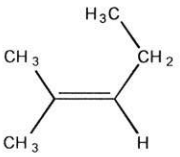


B_2H_6 in diglyme, then basic H_2O_2

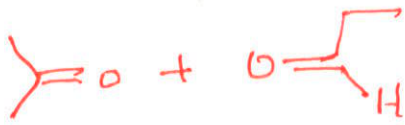


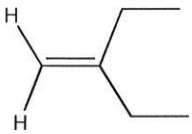


HBr/peroxide

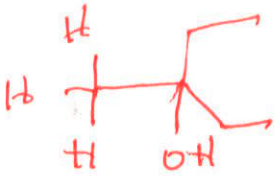


O_3 then Zn/H^+



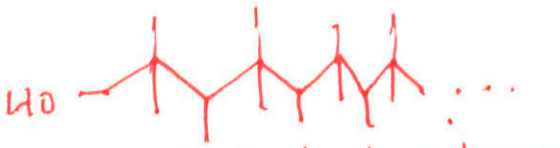


70% H_2SO_4/heat/reflux

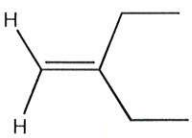


n 2-methylbutenes

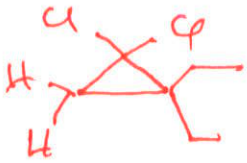
Light, peroxides



must indicate polymer



$OH^- + CHCl_3$



10.2 Classy Thinking (1 point each/5 points total)

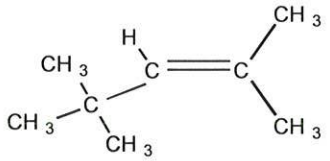
There are 4 major classifications of alkene reactions: carbocation (**C+**); bridgehead (halonium) cation (**Br+**); radical (**RAD**) and organometallic/redox (**O/R**).

Classify the following characteristics as to which class or classes of reaction they fall under:

1) Adds anti-markovnikoff across the double bond

Rad (O/R)

2) high concentration of $(CH_3)_2C{=}CH_2$ $\xrightarrow{H_2SO_4\ (reflux)}$ _____



C+

3) Reaction used to make 90% of the isopropyl alcohol on the planet

C+

4) Adds anti in non-aqueous media

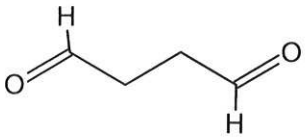
Br+

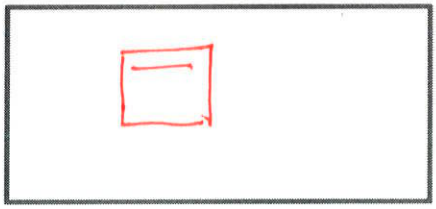
5) Rearrangements are common and acid is a must

C+

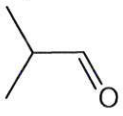
10.3 Classic Organic structure analysis (9 pts)

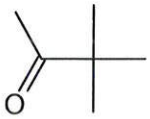
a) What is the structure of the hydrocarbon (call him Ben) that absorbs one molar equivalent of H_2 and yields ony the compound butanedial below after ozonolysis:

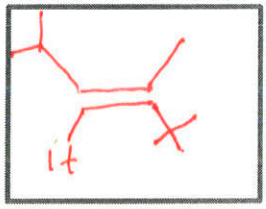


Ben=  3 pts

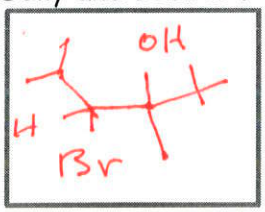
b) An unknown hydrocarbon (call her Sweetie) reacts with 1 molar equivalent of H_2 over Pt. It also reacts with OsO_4 to yield a syn diol. Ozonolysis followed by treatment with Zn/H+ produces two compounds: X and Y. When Sweetie is reacted with Br_2 in wet CCl_4 she becomes Dolly. When Sweetie is exposed to diazomethane over Cu with light, she becomes Bobbie. Supply the structures of Sweetie, Dolly and Bobbie .

X= 

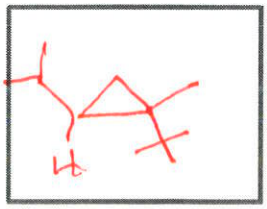
Y= 



Sweetie



Dolly



Bobby

2 pts each (6 pts total)