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

Due Monday 2 December 2016

Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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



H2O/Br2

` CCl4



B2H6 in diglyme, then basic H2O2



HBr/peroxide



O3 then Zn/H+



70% H2SO4/heat/reflux

Light, peroxides

n 2-methyl-2-butenes



OH- + CHCl3

homework set #8 organic chemistry alfred state (continued)

**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



H2SO4 (reflux)

1. high concentration of (CH3)2C=CH2

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

1. Adds anti in non-aqueous media
2. Rearrangements are common and acid is a must

**10.3 Classic Organic structure analysis (9 pts)**

a) What is the structure of the hydrocarbon (call him Ben) that absorbs two molar equivalents of H2 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 H2 over Pt. It also reacts with OsO4 to yield a syn diol. Ozonolysis followed by treatment with Zn/H+ produces two compounds: X and Y. When Sweetie is reacted with Br2 in wet CCl4 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)