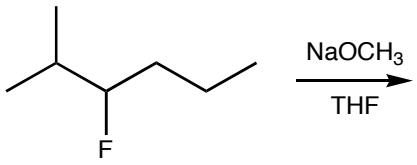
Test 3 Name_____
PHYS 0203 (Organic)

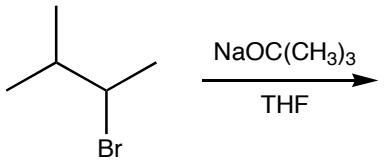
Remember,

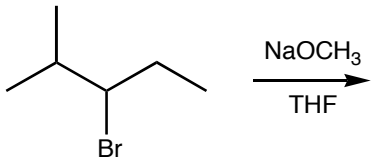
$Et_2O = CH_3CH_2OCH_2CH_3$ or, in general, $Et = CH_3CH_2$ THF = 

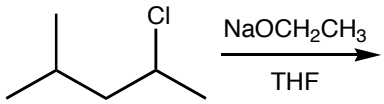
$N(CH_2CH_3)_4^+$ is an organic cation similar to Na^+. xs = excess, and 1 equiv means 1 equivalent

1. (20 pts.) Assuming that the reactions below occur via an E2 mechanism, draw the alkenes that result from the reactions. Ignoring the formation of *Z* and *E* isomers, indicate which product is the major product.

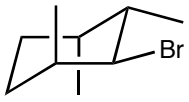
a. 

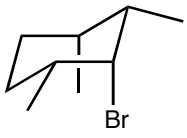
b. 

c. 

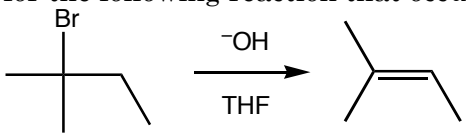
d. 

2. (8 pts.) Determine the alkene(s) that result from E2 reactions on the following molecules.

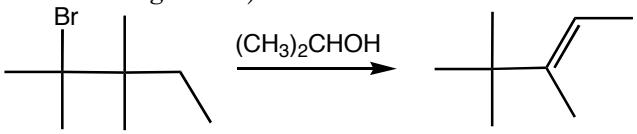
a. 

b. 

3. (10 pts.) Draw the mechanism for the following reaction that occurs via an E2 mechanism.

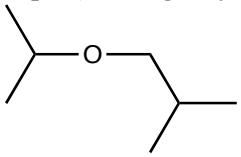


4. (10 pts.) Draw the mechanism for the following reaction that occurs via an E1 mechanism (don't forget to consider carbocation rearrangement).

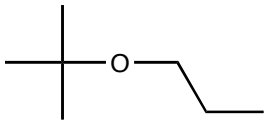


5. (12 pts.) Using any alkoxide and any alkyl halide, make the following molecules.

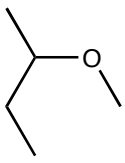
a.



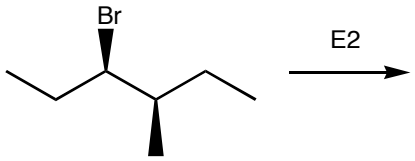
b.

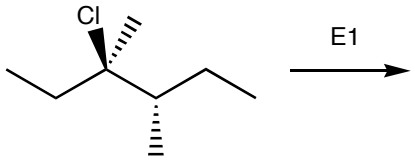


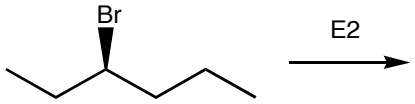
c.

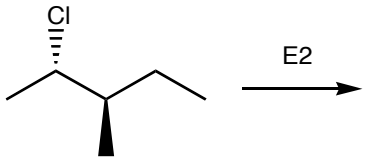


6. (20 pts.) Determine the products of the following reactions. If both *Z* and *E* isomers are possible, indicate which isomer is produced in excess. If only one isomer is produced, clearly indicate this fact. (The mechanism by which the reaction occurs is written over the arrow).

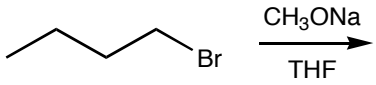
a. 

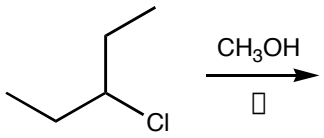
b. 

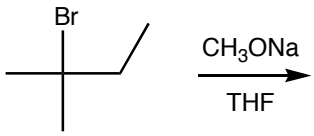
c. 

d. 

7. (20 pts) Determine the product(s) of the following reactions (ignore stereochemistry), and identify the major product.

a. 

b. 

c. 

d.