Chem 109A
Prof. Bode
Fall 2003, MWF 8-9

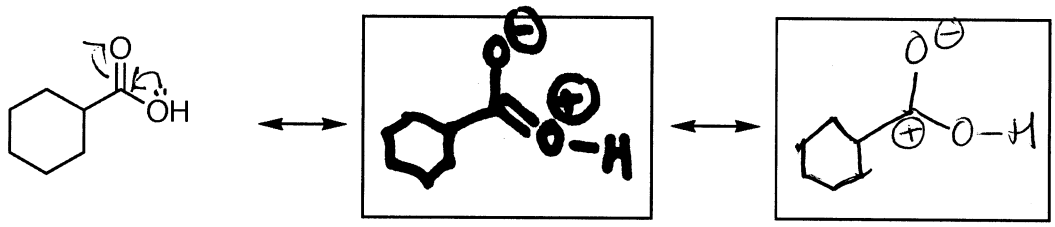
Name Key

Perm No.

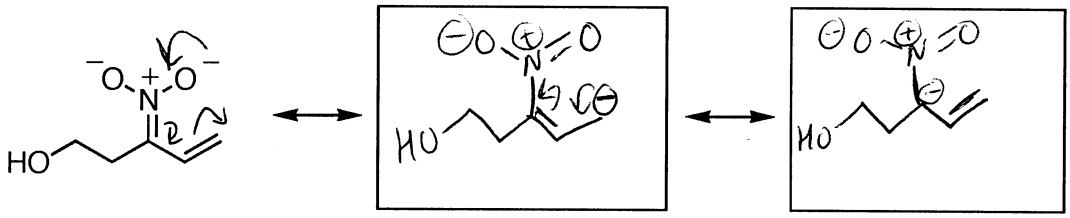
Test 2 (104 points)

1. Draw two resonance structures for the each of the following compounds. (12 points)

(a)

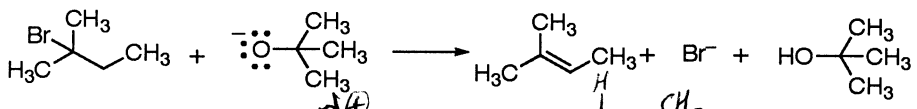


(b)



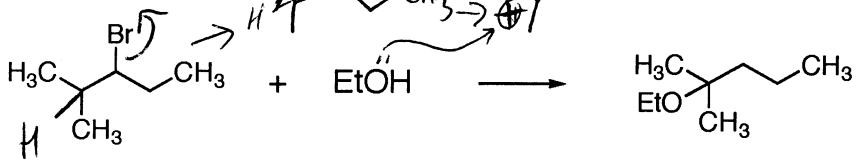
2. By which mechanism does each of the following reactions proceed (E1, E2, S_N1, S_N2)? (12 points)

(a)



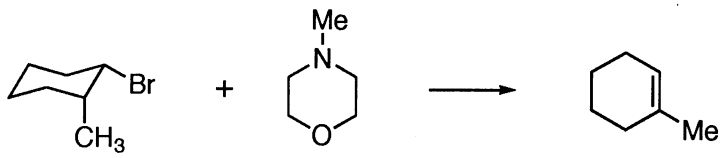
E1

(b)



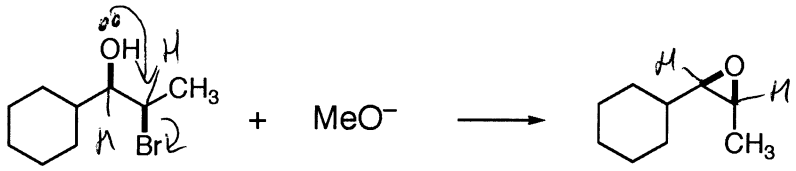
SN1

(c)



E2

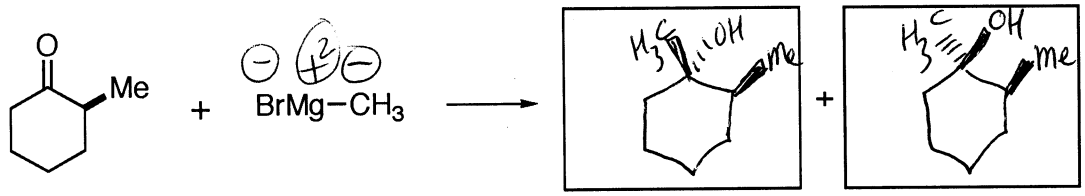
(d)

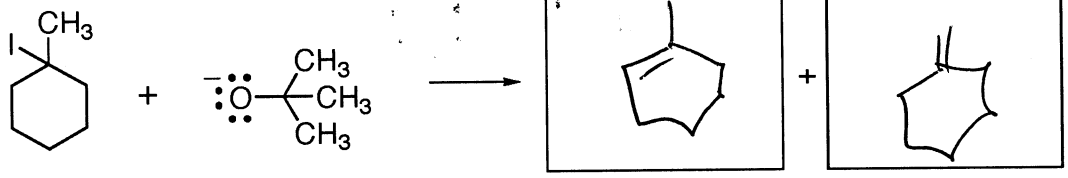


SN2

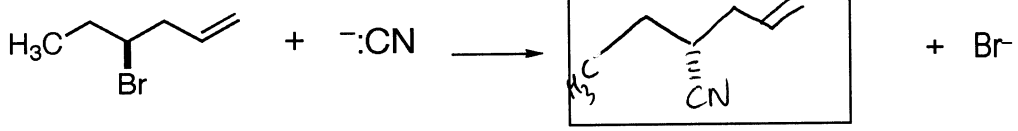
Name_____

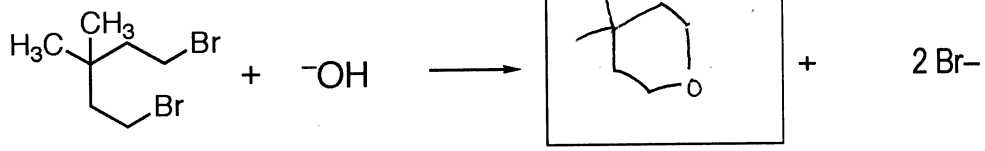
3. Draw the products of the following reactions. (30 points)

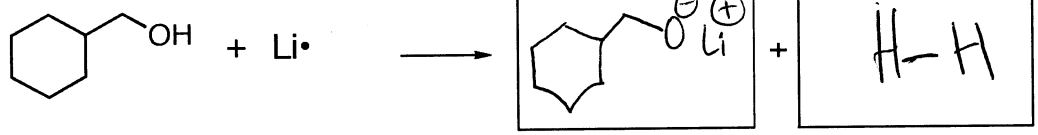
(a) 

(b) 

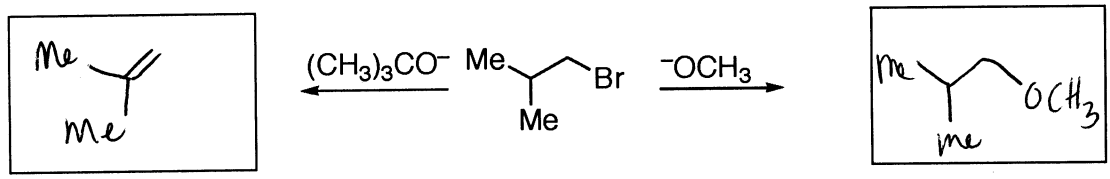
major product minor product

(c) 

(d) 

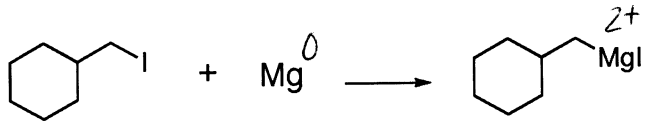
(e) 

(hint: a gas)

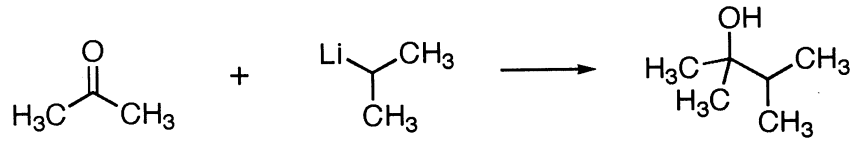
(f) 

Name_____

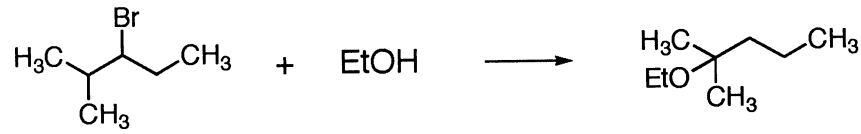
4. Which type of reaction is each of the following: (12 points)
O–R: oxidation–reduction **N–E**: nucleophile–electrophile
A–B: acid–base

(a) 

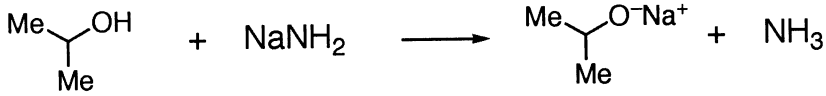
O-R

(b) 

N-E

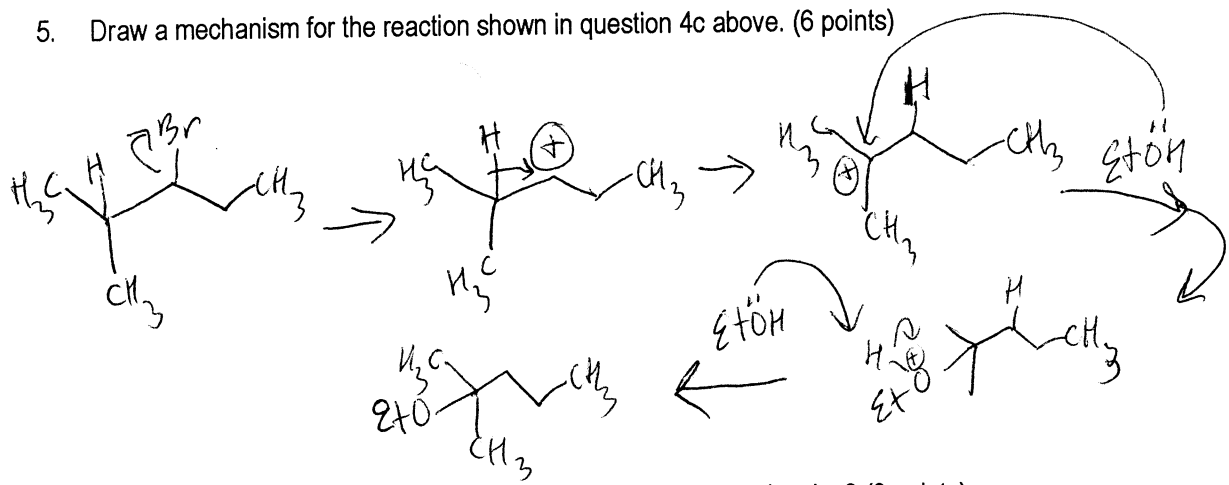
(c) 

N-E

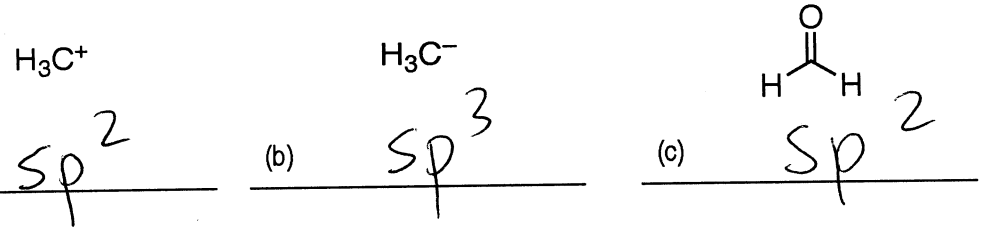
(d) 

A-B

5. Draw a mechanism for the reaction shown in question 4c above. (6 points)



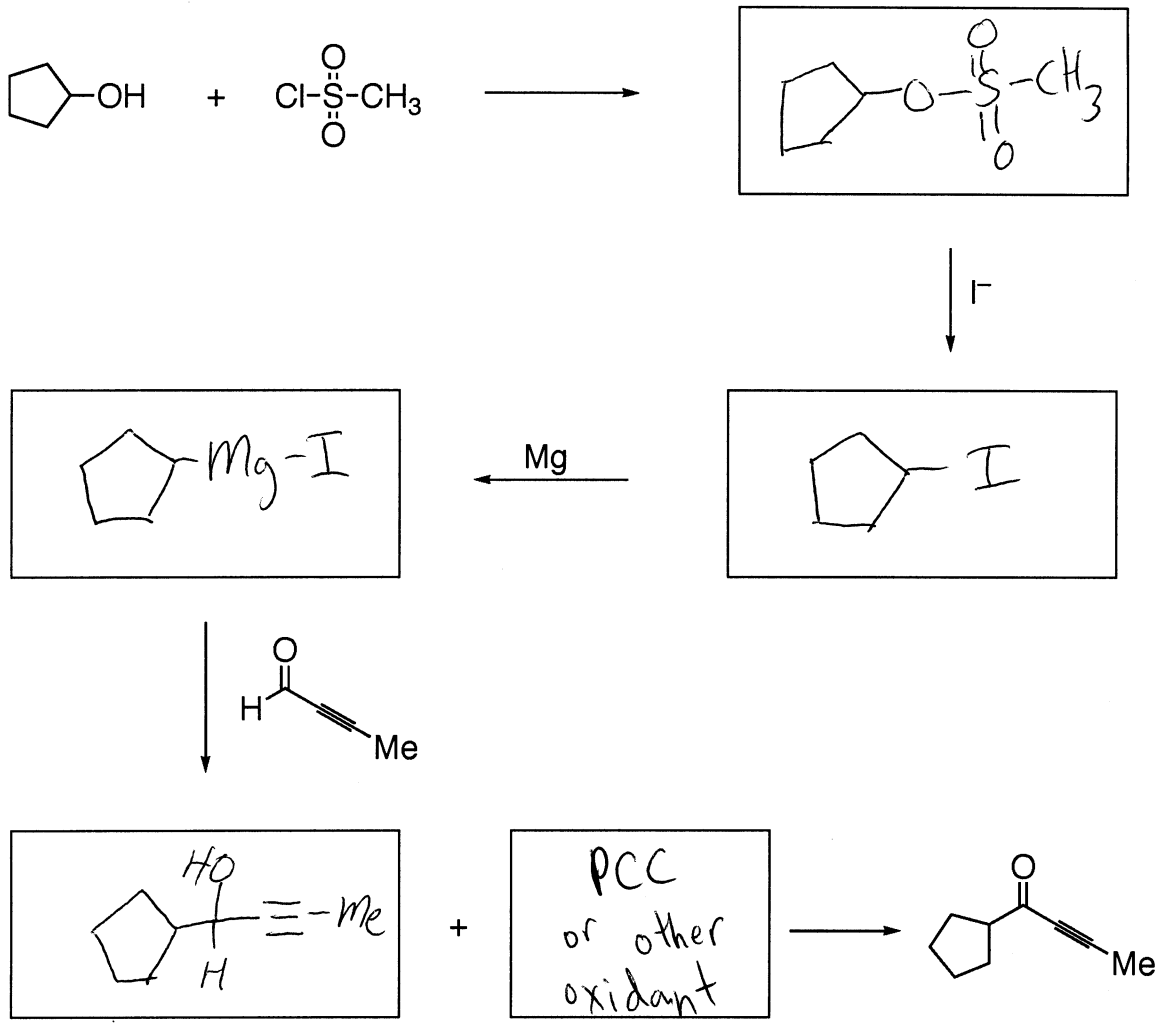
6. What is the hybridization of carbon in each of the following molecules? (9 points)



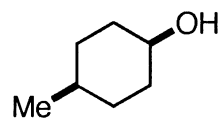
(a) sp^2 (b) sp^3 (c) sp^2

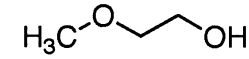
Name_____

6. Fill in the boxes with the correct product or reagent. (15 points)



7. Give names for the following molecules, including stereochemistry. (8 points)





(a) cis-4-methyl cyclohexanol (b) 2-methoxy ethanol