Second Examination **Chemistry 118B** **May 19, 2010**

(Closed book, no models)

Name _____**Key**_____
(Please print) Last First Middle initial
Last 4 digits of Students ID Number:_____

TA_____

1) This exam consists of 5 pages (including this page) and 6 questions.

2) Do not turn the pages until 3:10 p.m.

3) Turn in your exam to one of the teaching staff by 4:00 p.m.

4) Put your 4 digits ID in the upper right corner of the next 4 pages. Be sure you have pages 2-5.

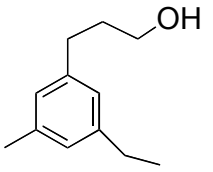
5) Please answer clearly in the spaces provided. The back of the page is for scratch work only.

6) Any request for re-grading should be done according to the TA's instruction.

	1 H								2 He
2	3 Li	4 Be		5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg		13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca		31 Ga	32 Ge	33 As	34 Se	35 Br	35 Kr
5	37 Rb	38 Sr		49 In	50 Sn	51 Sb	52 Te	53 I	53 Xe

Page	Score
2	/24
3	/32
4	/34
5	/10
Total	/100

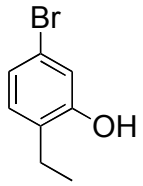
1. (8pts) Name the following in IUPAC:

(a) 

1 pt 1 pt 1 pt 1 pt 1 pt

3-(3-ethyl-5-methylphenyl)-1-propanol

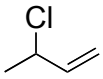
3-(3-ethyl-5-methylphenyl)propan-1-ol

(b) 

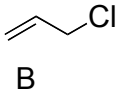
1 pt 1 pt 1 pt

5-bromo-2-ethylphenol

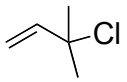
2. (a) 4 pts. Rank the following compounds in order of decreasing **S_N1 reactivity.**



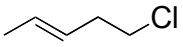
A



B



C

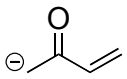


D

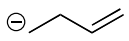
C > A > B > D

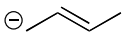
most reactive least reactive

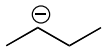
(b) 4 pts. Rank the following ions in order of increasing **stability.**



A


B

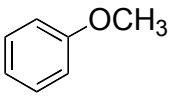

C


D

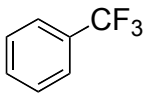
D < B < C < A

least stable most stable

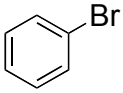
(c) 4 pts. Rank the following compounds in order of decreasing **reactivity** toward Br_2, Fe**.**



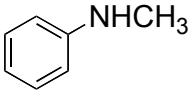
A



B



C



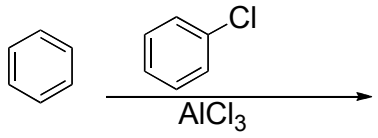
D

D > A > C > B

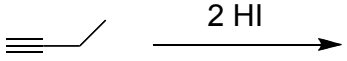
most reactive least reactive

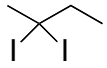
(d) 4 pts. Circle **ONLY** the aromatic compounds (**Wrong answer cancels right answer**).

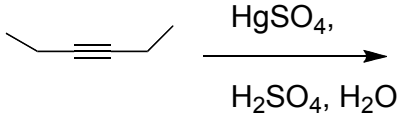
3. (32pts) Please give the expected **major** product(s) for the following reactions. Unless mentioned otherwise, you can assume that all reagents are present in one mole. If there is no reaction, please write NR. Show stereochemistry where necessary.

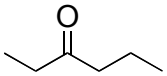
(a) 

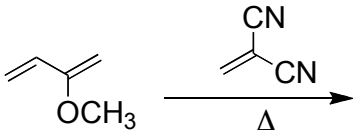
NR

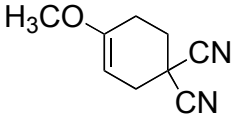
(b) 



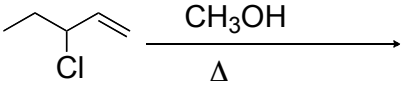
(c) 

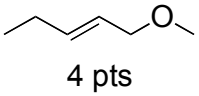


(d) 

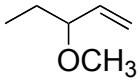


2 pts for any other isomers.

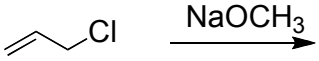
(e) 

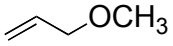


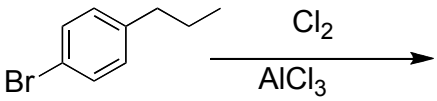
4 pts

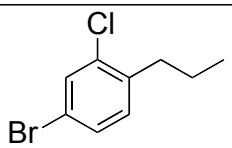


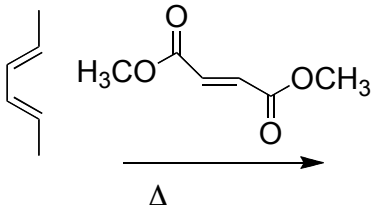
2 pts

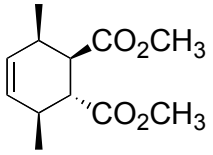
(f) 



(g) 

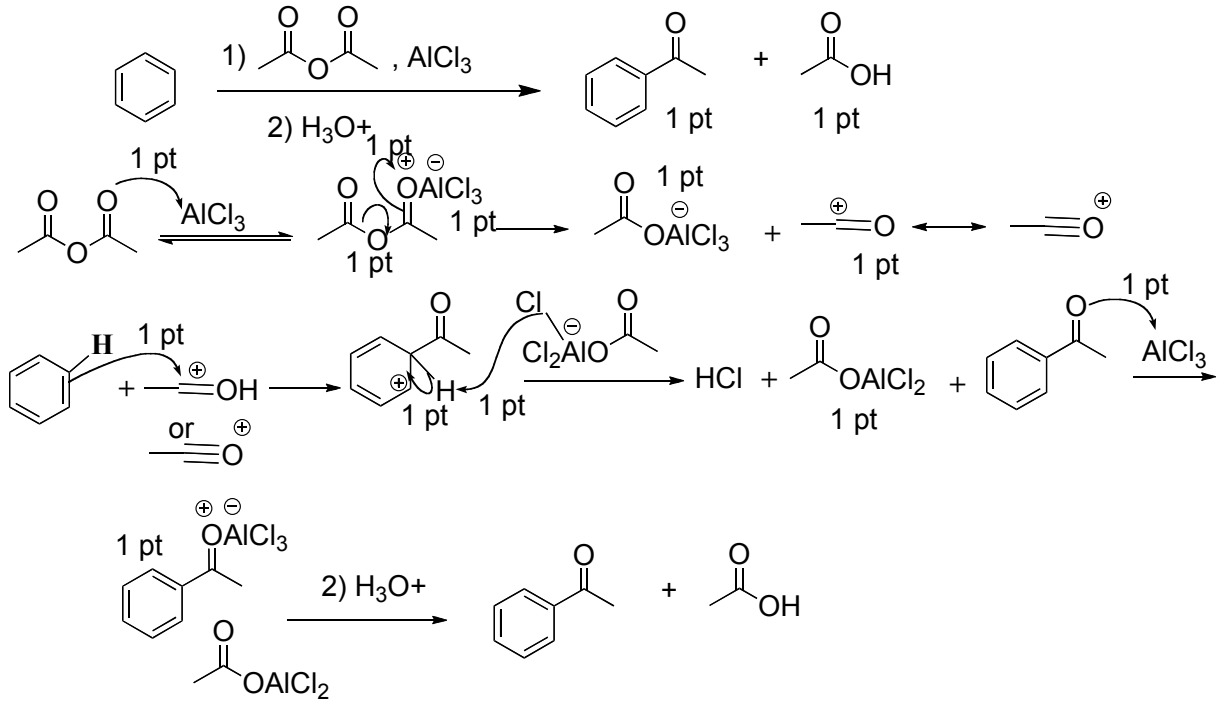


(h) 



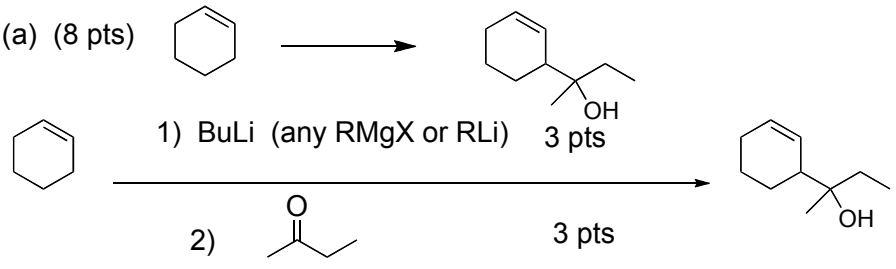
+ enantiomer

4. (18 pts) Write the product of the following reaction, also write a complete, step-wise, detailed mechanism for the reaction.

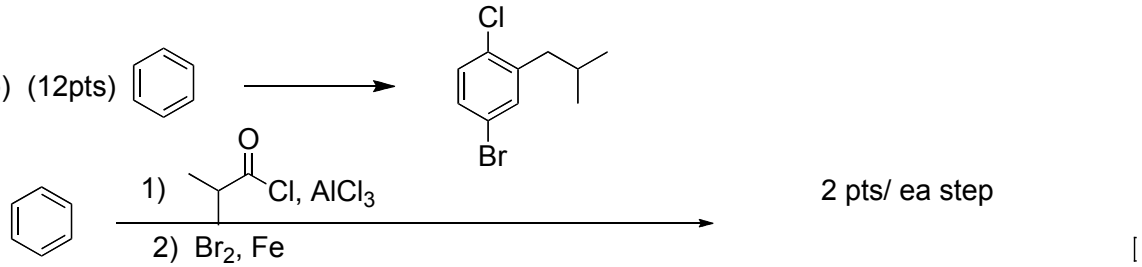


5.Show how you would carry out the following transformations in high yield.

(a) (8 pts)



(b) (12pts)

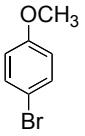


6. (10 pts.) Using the following spectra, draw a possible structure for **C_7H_7BrO**.

Answer:

degree of unsaturation: 4 2 pts

2 pts



para 2 pts