

Midterm Exam 3
[Chapters 7-9 (Carey, 9th Ed)]

CHE201/203, A-C
Professors Gong and Rzayev, Dr. Clizbe

Fall 2015
Nov. 20, 2015

Version A
(Exam duration: 1 h 30 min)

Name: Key

Person #: _____

circle one: Drs. Clizbe, Gong, and Rzayev: Section (A, B, C)

TA Name: _____ or CHE203

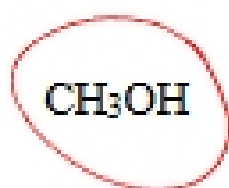
Page	Total Possible Points (Possible Points per page)	Points
2	30	
3	11	
4	19	
5	30	
6	20	
7	15	
8	15	
9	Periodic Table	

TOTAL POSSIBLE: 140 YOUR TOTAL: _____

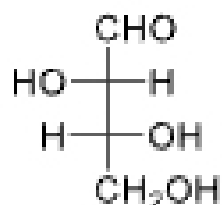
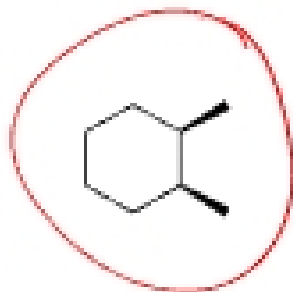
Molecular models are ALLOWED; calculators are NOT ALLOWED. No cell phones or extra paper will be provided. Fill out the exam in pen, use the back of the page if more room is needed.

1. (30 pts) Circle the correct structure for each question. (5 points each)

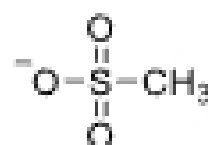
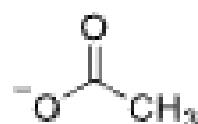
(a) Which of the following would act as the weakest nucleophile in an S_N2 reaction?



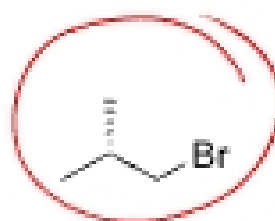
(b) Which of the following would **not** rotate polarized light?



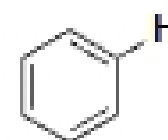
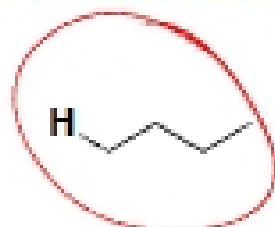
(c) Which of the following is the worst leaving group?



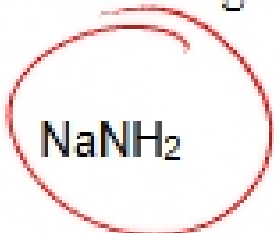
(d) Which of the following alkyl bromides will react the fastest in an S_N2 reaction?



(e) Which of the following molecules has the highest pK_a for the indicated hydrogen?



(f) Which reagent would be used to quantitatively remove a proton from acetylene?



2. What is the ratio of enantiomers in a mixture that has 30% ee? (4 points)

65 : 35

3. The enol shown below is the intermediate product in the HgSO_4 catalyzed hydration of 1-butyne. The ketone is the isolated product. Use the arrow formalism to show the mechanism of how the enol is transformed into the ketone. (The mechanism starting from 1-butyne is not needed). (7 points)

