

Midterm Exam 2
[Chapters 4-6 (Carey, 9th Ed)]

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

Fall 2015
Oct. 23, 2015

Version A
(Exam duration: 1 h 30 min)

Name: Answer 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	25	
4	20	
5	30	
6	20	
7	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 compounds shows the *fastest* rate of addition to 1-butene?

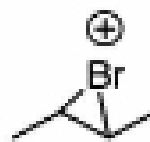
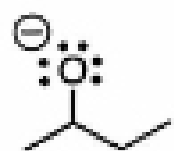
HF

HI

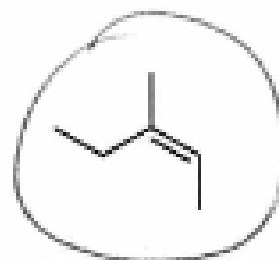
HCl

HBr

(b) Which of the following is the intermediate in the acid catalyzed dehydration of 2-butanol?



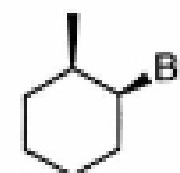
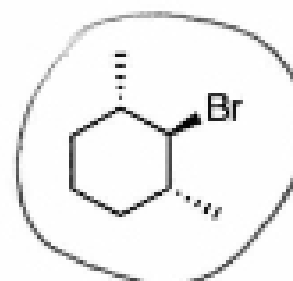
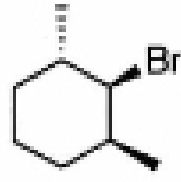
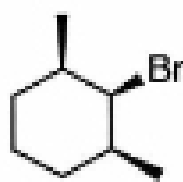
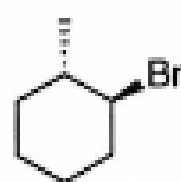
(c) Which of the following alkenes has the *lowest* heat of hydrogenation?



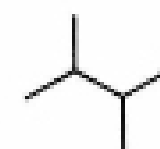
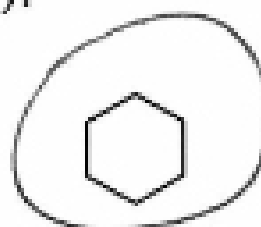
(d) Which of the following halides will react with methanol the *fastest*?



(e) Which of the following halides cannot undergo E2 elimination when reacted with NaOCH₃?



(f) Which of the following alkanes will produce only one monochlorinated product during the reaction with chlorine and ROOR (peroxide)?



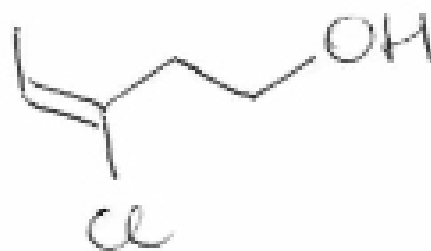
2. (25 points)

(a) Name the following molecule using the IUPAC rules. (6 pts)

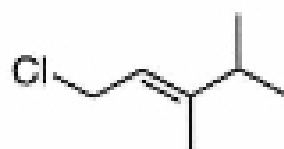


4-bromo-2-pentanol

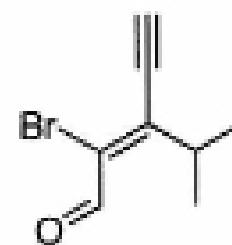
(b) Draw the structure of (E)-3-chloro-3-penten-1-ol. (6 pts)



(c) Assign each double bond E/Z configuration. Write your answers in the provided boxes. (4 pts each)



E



Z

(d) Ozonolysis of an alkene with a molecular formula C_7H_{12} resulted in only one product, shown below. Based on this information, propose the structure of the alkene. (5 pts)

