

Chemistry 351

Quiz #3

September 19, 2018

Name: _____

Student Number: _____

Section Number: _____

TA: _____

INSTRUCTIONS:

This quiz consists of 3 questions on 3 pages. Please make certain that your quiz is complete.

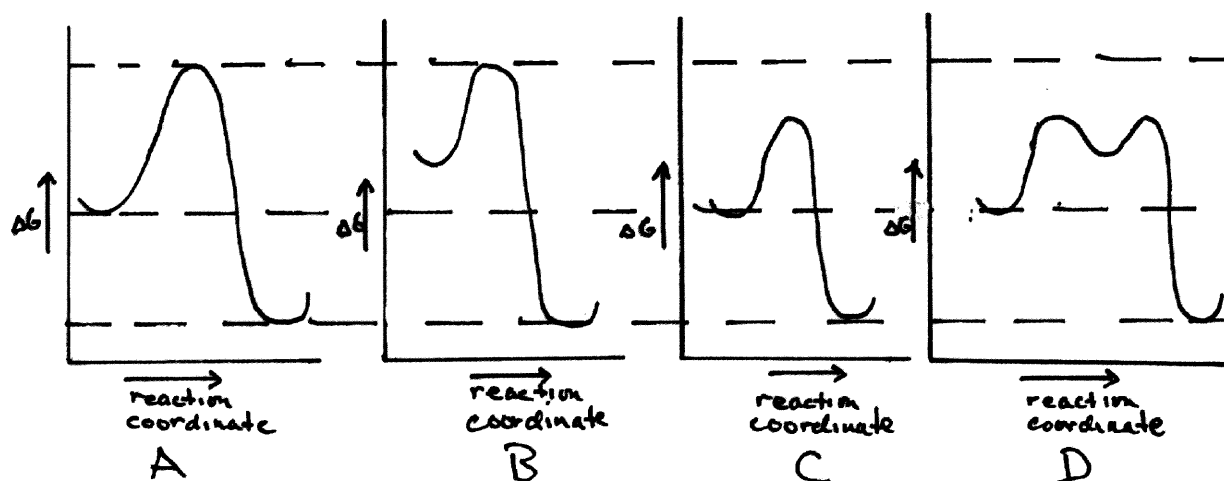
Write your name, student number, and section number **on both the quiz and answer sheet. Be certain to bubble in your PID digits on the answer sheet. The absence of any of these identification items will result in the deduction of 2 points from your score.**

Question 1 and Question 2 are each worth 1 point. Question 3 is worth 8 points.

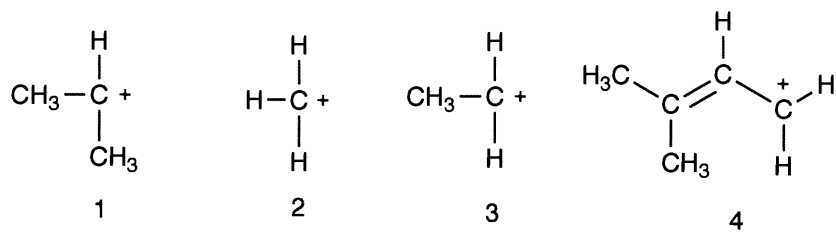
Write your answers to Question 1 and Question 2 on the enclosed answer sheet. **Write your answers to Question 3 in the space provided on this quiz.**

When you complete the quiz, insert your answer sheet into your quiz and then hand both in on the bench in front of the lecture hall in the spot indicated by your section number.

1. Which one of the following potential energy diagrams depicts catalysis involving formation of a reactive intermediate:

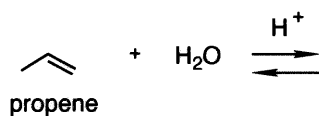


2. From the carbocations listed below, identify the least stable carbocation and the most stable carbocation.



- (a) 1,2 (b) 1,3 (c) 1,4 (d) 2,3 (e) 2,4 (f) 3,4

3. For the acid-catalyzed reaction of propene with water:



- (2 pts) In the labeled boxes below, provide the Lewis Acid and Lewis Base structures.
- (1 pts) In the space provided below, draw one arrow that shows the flow of electrons during attack of the Lewis Acid on propene.
- (1 pt) In the box labeled Reactive Intermediate A, provide the structure of Reactive Intermediate A resulting from attack of the Lewis Acid on propene.
- (1 pt) In the space provided below, draw one arrow that shows the flow of electrons during attack of the Lewis Base on Reactive Intermediate A.
- (1 pt) In the box labeled Reactive Intermediate B, provide the structure of Reactive Intermediate B resulting from attack of the Lewis Base on Intermediate A.
- (1 pt) In the box labeled Reactive Intermediate B, insert one arrow that shows the flow of electrons when Reactive Intermediate B collapses.
- (1 pt) In the boxes labeled Product and Lewis Acid, provide the structure of the Product and regenerated Lewis Acid resulting from collapse of Reactive Intermediate B.

