

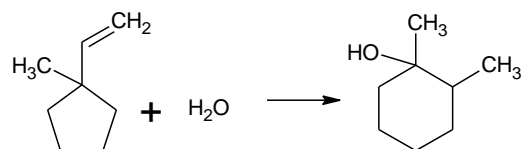
Name: \_\_\_\_\_

Instructions: Answer the questions to the best of your ability. You will have the entire class period (1:15) to complete the test. You will need to hand in the test when you leave the room. That means, you will be unable to leave the room unless you are prepared to hand in the exam. All work should be done on the test.

**Section 1:** Answer 4 of the following 5 questions. Draw an 'X' through the question that you do not want to answer, or have graded. These are worth 10 points each.

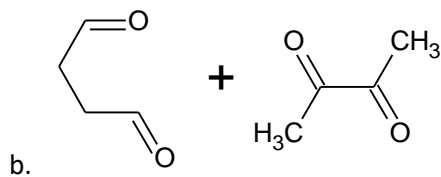
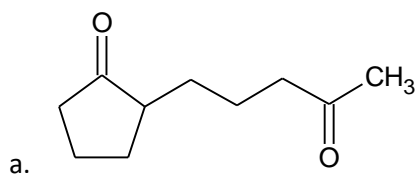
1. Give the structures for the following names. You may use fischer, line, or condensed structures.
  - a. (Z)-5-chloro-2-pentene
  - b. 2,3-dibromobutane (meso compound) \*Show stereochemistry
  - c. 1,6 dimethylcyclohexene
  - d. trans 1-chloro-2-methylcyclohexene
  
2. Propose a mechanism for the major product in the reaction between 3-methyl-1-pentene and water in the presence of acid. Give the minor product(s) as well, but no mechanism is required.
  
  
  
  
  
  
  
  
  
  
3. Draw a fischer projections for all possible stereoisomers of 2-chloro-3-butanol. Give the relationships between the different stereoisomers.

4. Propose a mechanism for the following reaction:



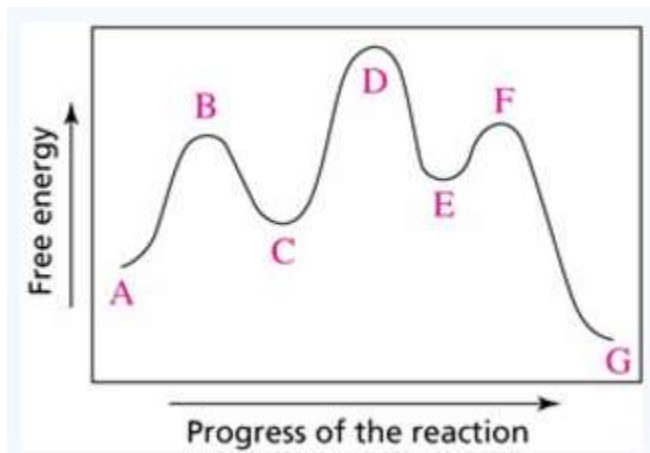
**Section 2:** Answer 4 of the following 5 questions. Draw an 'X' through the question that you do not want to answer, or have graded. These are worth 10 points each.

5. In an ozonolysis reaction, the following products were made. What were the reactants?



6. Give all possible products for the stereospecific reaction of 2-butene with Cl<sub>2</sub> in the presence of water. Show the stereochemistry on all of the products.

7. Consider the reaction coordinate below:



- Which point(s) on the curve represent intermediates? \_\_\_\_\_
- Which point(s) on the curve represent transition states? \_\_\_\_\_
- Is the reaction exothermic or endothermic? \_\_\_\_\_
- Could this reaction coordinate represent the reaction of HBr with an alkene? Give a brief reason for your answer.

8. Give names for the following molecules

