CHEM 2325 Exam 3 Name:

November 16, 2021 UTEP ID #:

If required, the Exam 3 retake homework will be due Friday, November 19, before noon through <http://organic.utep.edu/quiz>, no exceptions or excuses. Put your name on these sheets so that you can recover your class answers. Expect an email from me this evening. ***Put your name and ID on your scantron and exam sheets. Show your picture ID as you turn everything in.***

***Assume any necessary workup for the following reactions.***

1.-3. Match each reaction to a major product below. Answers may be repeated.

1.  2.  3.

a.  b.  c.  d.  e. not a.-d.

1. What is the major product? 

a.  b.  c.  d.  e. not a.-d.

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a.  b.  c.  d.  e. not a.-d.

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a.  b.  c.  d.  e. not a.-d.

1. What is the enol intermediate at the end of the reactions? 

a.  b.  c.  d.  e. not a.-d.

9.-13. How do the following end up on as y? Answers may be repeated.

1. CH3MgCl a. 
2. NH2NH2 b. 
3. HCN c. 
4. NH2CH3 d. 
5. CH3Li e. not a.-d.
6. At which carbon in the final product is there a methyl? 
7. Ignoring stereochemistry, what is the overall enthalpy difference of the reaction of 1,2,4,5-tetramethylcyclohexane, chlorine, and light going to the major mono-chlorinated product?

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bond Disassociation Energies kcal/mole | | | | | | | | | Selectivity Ratios | | | |
|  | C-H | C-F | C-Cl | C-Br | C-I |  | X-X | H-X |  | 1° | 2° | 3° |
| 1° | 98 | 107 | 81 | 68 | 53 | F | 38 | 136 | F | 1 | 1.2 | 1.4 |
| 2° | 95 | 106 | 80 | 68 | 53 | Cl | 58 | 103 | Cl | 1 | 4 | 5 |
| 3° | 91 | 106 | 79 | 65 | 50 | Br | 46 | 88 | Br | 1 | 80 | 1700 |

a. -25 b. -28 c. -30 d. -33 e. not a.-d.

1. Which is not a product? 

a.  b.  c.  d. not a.-c.

1. What is the major product? 

a.  b.  c.  d.  e. not a.-d.

1. What is the major product? 

a.  b.  c.  d. not a.-c.