CHEM 2322 Exam 4 Name:

May 9, 2024 UTEP ID #:

If required, the Exam 4 retake homework will be due ***tomorrow***, Friday, May 10, before 5 pm through <http://organic.utep.edu/quiz>, no exceptions or excuses. Expect an email from me this afternoon. ***Put your name and ID on your scantron.***

1. The monomer to synthesize is? a. b. c. d.e. not a.-d.
2. A diad of is? a. b. c. d.  e. not a.-d.
3. Given that most natural *a*-amino acids are *L*, replace the squiggly bonds () to the R side chains with wedges or slashes and determine the tacticity of the hexapeptide in the following zig-zag conformation.



a. atactic b. isotactic c. syndiotactic d. not a.-c.

1. Adding the fourth hydroxyl group from the top of its Fischer projection to the aldehyde *Si* face of *D*-glucose leads to which structure? Hint: Use the following models to get the correct answer: 

a. *a-D*-glucofuranose b. *b-D*-glucofuranose c. *a-D*-glucopyranose d. *b-D*-glucopyranose e. not a.-d.

1. What is the second intermediate in the Fischer synthesis of a carbohydrate?

a.  b.  c.  d.  e. 

1. What is the second intermediate in the Ruff degradation of a carbohydrate?

a. structure 5.a. b. structure 5.b. c. structure 5.c. d. structure 5.d. e. structure 5.e.

1. What is the identity of the starting carbohydrate given the following information? a. b.  c.  d.  e. not a.-d.
2. Which compound is cellobiose, the smallest unit of indigestible cellulose?

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

1. What reagent can be used to convert indigestible cellulose into digestible glucose?

a. Ag+ b. Br2 c. Cu++ d. H3O+ e. not a.-d.

10.-12. Match each synthesis to a product on the right. Steps separated by commas. Answers may be repeated.

1. , HCN, H3O+ a. isoleucine
2. , PBr3, Br2, H2O, , NH2-NH2 b. leucine d. valine
3. , NaOCH3, , NaOH, H+, Heat c. threonine e. not a.-d.
4. What is the product of the following synthesis? 

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

1. Which structure is Lys-Met? e. not a.-d.

a.b. c. d.

1. What is the product of the following reaction? 

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