CHEM 2325 Exam 4 Name:

August 8, 2023 UTEP ID #:

If required, the Exam 4 retake homework will be due tomorrow, Wednesday, August 9, before 5 pm through <http://organic.utep.edu/quiz>, no exceptions or excuses. Expect an email from me this evening. ***Do not forget to put your name, and ID on your scantron.***

1. The following Haworth projection for sure is? 
2. *d* b. D c. *l* d. L e. not a.-d.
3. The compound is question 1 is?

a. alpha b. beta c. gamma d. epsilon e. not a.-d.

1. The compound in question 1 is a?

a. danose b. furanose c. pyranose d. thanose e. not a.-d.

1. The compound is question 1 is a closed form of?
2. fructose b. galactose c. glucose d. sucrose e. not a.-d.
3. Which reagent will not convert an aldose to just an aldonic acid?

a. Ag+ b. Br2 c. Cu++ d. HNO3 e. not a.-d.

6.-8. The stereochemistry of the following compounds varies at which carbon?



1. a-cellobiose vsa-lactose
2. b-cellobiose vs b-maltose e. at more than one carbon
3. a-lactose vs -maltose
4. Starting with erythrose, which compound can be synthesized via two cycles of the Fischer synthesis?

a. 2-dexyribose b. galactose c. glucose d. ribose e. not a.-d.

1. Starting with an open-form carbohydrate, what is the third intermediate in Fischer degradation?

a.  b.  c.  d.  e. 

1. Given that CO2 is a byproduct, the Ruff degradation is a how many electron oxidation of a carbohydrate?

a. 4 b. 3 c. 2 d. 1 e. not a.-d.

1. Which structure is Thr?

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

1. The reaction of cyclohexene and bromine gives a product with what type of relative stereochemistry when viewed as a Fischer projection?

a. erythro b. erythrose c. threo d. threose e. not a.-d.

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

15.-17. Match each set of reagents to a final product. Answers may be repeated. Notices that the first set of reagents is missing for questions 18 to 20.

1.  a. isoleucine
2.  b. leucine d. valine
3.  c. lysine e. not a.-d.

18.-20. What is(are) the first reagent(s) in syntheses 15 to 17?

1. The first reagent(s) of synthesis 15? a. NaOCH3
2. The first reagent(s) of synthesis 16? b. NH3 d. NaOH
3. The first reagent(s) of synthesis 17? c. PBr3/Br2/H2O e. not a.-d.
4. What is the product of the following reactions? 

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

1. The reaction of the following compound with PhNCS and then CF3CO2H gives? 

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