CHEM 2325 Exam 2 Name:

October 19, 2021 UTEP ID #:

If required, the Exam 2 retake homework will be due Friday, October 22, 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 reactions and that chiral products are racemic.

1. How many ones are in the adjacency matrix of the following compound? 
2. 6 b. 8 c. 10 d. 12 e. not a.-d.
3. hexa-2,3,4-triene can be?
4. *E/Z* b. *R/S* c. *both E/Z and R/S* d. not a.-c.
5. What is the -energy diagram of the following compound? 

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

1. Which compound is least stable?

a.  b.  c.  d.  e. all same stability

1. The Highest Occupied Molecular Orbital (HOMO) of the cyclopentadienyl anion is? 

a. bonding b. nonbonding c. antibonding d. a radical e. not a.-d.

1. What is the major product of the following reaction? 

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

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

8.-12. Classify the following as: a. aromatic b. antiaromatic c. nonaromatic d. not a.-c. Answers are repeated.

8.  9.  10.  11.  12. 

1. Complete the third resonance structure to determine which bond is shortest?



1. Which compound will react third fastest with H2SO4?

a.  b.  c.  d.  e. 

1. At which position will CH3COCl/AlCl3 substitute fastest on the following compound? 
2. What is the major product of the following reaction? 

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

1. Which reagent is used along with base to reduce a carbonyl to a methylene?

a. NaBH4 b. Zn c. HS(CH2)3SH d. NH2NH2 e. not a.-d.

18.-20. Match the following reaction sequences, all starting with benzene, to a product on the right. Steps are separated by commas. Answers may be repeated.

1. CH3COCl/AlCl3, Br2/FeBr3
2. Br2/FeBr3, CH3COCl/AlCl3
3. Br2/FeBr3, H2SO4, CH3COCl/AlCl3, H2O

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

1. Which ipso substitution proceeds by a radical substitution?

a.  b.  c.  d.  e. 