CHEM 2324 Exam 2 Name:

June 25, 2019 UTEP ID #:

If required, the exam retake homework will be due Friday, June 28, before 5 pm 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.

1.-4. Match each pair of compounds on the left and their corresponding melting points (m.p.) or boiling points (b.p.) in °C to the major reason why they increase. Answers may be repeated. All answers should begin with more….

1. propane (m.p. -190) and cyclopropane (m.p.-127)
2. octane (m.p. -57) and 2,2,3,3-tetramethylbutane (m.p. 101)
3. 2,2,3,3-tetramethylbutane (b.p. 107) and octane (b.p. 126)
4. CH3(CH2)3Br (b.p. 101) and CH3(CH2)3I (b.p. 131)

1. weight b. polar bonds c. rotational symmetry d. van der Waal interactions e. hydrogen bonds
2. Assuming C = 12, H =1, O = 16, and estimating its density as we learned in class; naphthalene (mothballs) should?

a. dissolve in water b. emulsify with water c. float in water d. sink in water e. not a.-d.

1. Given that 10 g of a compound with pKow -0.7 is dissolved in 100 mL of water. To the nearest gram, how much compound is extracted into 100 mL of octan-1-ol when mixed in a separatory funnel?

a. 2 b. 4 c. 6 d. 8 e. not a.-d.

1. To nearest tenth, what is the pH of a 12 M solution of a compound with pKa of 1.9?

a. 0.2 b. 0.4 c. 0.6 d. 0.8 e. not a.-d.

1. Given the following pKa’s and initial concentration of reactants, to the nearest tenth, how much product is made in the following reaction? Charges are not shown.



a. 0.3 b. 0.5 c. 0.7 d. 0.9 e. not a.-d.

1. Which statement is true?

a. all Bronsted acids are Lewis acids b. all Lewis acids are Bronsted acids

c. all Lewis bases are nucleophiles d. all electrophiles are Lewis bases e. not a.-d.

10.-12. Predict which compound is most acidic from the following pairs of compounds. Answer may be repeated. Charges are not shown.

1.  or 
2. or 
3. H2S or HF

a. the first compound b. the second compound c. both compounds have equal acidity d. cannot be predicted

13.-16. Match each reaction on the left to a classification on the right. Answers may be repeated. Charges are not shown.

1.  a. addition
2.  b. elimination
3.  c. substitution
4.  d. not a.-c.

17.-19. Match each reaction on the left to a net carbon redox type on the right. Answers may be repeated.

1.  a. oxidation
2.  b. reduction
3.  c. not a net redox of carbon



1. The following *cis*-3-methylbicyclo[3.1.1]heptane is?

a. *anti* b. *endo* c. *exo* d. *syn* e. not a.-d.



1. The following compound is?

a. *e* b. *E* c. *z* d. *Z* e. not a.-d.

1. Cycloalkenes with less than 8 carbons are all?

a. *E* b. *R* c. *S* d. *Z* e. not a.-d.



1. The following compound is?

a. *r* b. *R* c. *s* d. *S* e. not a.-d.

1. Which compound is meso?

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

1. HCO2H most commonly means?

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

***Put your name and ID on your scantron and exam sheets. Show a picture ID as you turn everything in.***