CHEM 2324 Exam 2 Name:

June 28, 2023 UTEP ID #:

If required, the exam retake homework will be due Friday, June 30, 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.

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. CH3(CH2)3NH3+ I- (m.p. 147) and (CH3)4N+ I- (m.p. 369)
2. (CH3CH2)2NH (b.p. 56) and CH3(CH2)3NH2 (b.p. 76)
3. (CH3)3CNH2 (b.p. 44) and CH3(CH2)3NH2 (b.p. 76)
4. CH3SH (m.p. -123) and CH3OH (m.p. -98)

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, cyclohexanol 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 logKow -0.7 is dissolved in 70 mL of octan-1-ol. To the nearest gram, how much compound is extracted into 120 mL of water 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 1 M solution of a compound with pKa of 15.2?

a. 7.9 b. 7.7 c. 7.5 d. 7.3 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. 0.2 b. 0.4 c. 0.6 d. 0.8 e. not a.-d.

1. Which statement is false?

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

c. all nucleophiles are Lewis bases d. all electrophiles are Lewis acids 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. H2O or PH3

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*-8-methylbicyclo[3.2.1]octane 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. Simple cycloalkenes with more than 7 carbons can be?

a. *E/Z* b. *R/S* c. *r/s* d. *e/z* e. not a.-d.



1. The configuration of the carbon with the asterisk (\*) is?

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

1. Which compound is meso? (Hint: Add the missing hydrogens and determine R and S.)

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

1. (CH3)2C(CH2CH3)2 means?

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