CHEM 2324 Exam 2 Name:

June 25, 2025 UTEP ID #:

If required, the exam retake homework will be due Friday, June 27, 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.

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)2CH)2 (m.p. -129) and (CH3)3CCH2CH3 (m.p. -99)
2. (CH3)3CCH2CH3 (b.p. 50) and ((CH3)2CH)2 (b.p. 58)
3. CF3CO2H (b.p. 77) and CH3CO2H (b.p. 118)
4. HCl (m.p. -114) and HF (m.p. -84)

a. hydrogen bonds b. polar bonds c. rotational symmetry d. weight e. van der Waal interactions

1. Assuming C = 12, H =1, O = 16, and estimating as we learned in class; what is the missing digit in the specific gravity, 1.1?5, of the following compound?

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

1. Given that 10 g of a compound with pKow -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. 1 b. 3 c. 5 d. 7 e. not a.-d.

1. To nearest tenth, what is the pH of a 3 M solution of a compound with pKa of 5?

a. 1.7 b. 1.9 c. 2.1 d. 2.3 e. not a.-d.

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



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

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

1.  or 

1.  or 

1. H2Se or H2S

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

12.-15. 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.

16.-18. 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? (Hint: D = deuterium, an isotope of hydrogen)

a. *e* b. *E* c. *z* d. *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?

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

1. CH3CH2CH(CH3)CH(CH3)2 means?

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