CHEM 2324 Exam 1 Name:

June 17, 2025 UTEP ID #:

If required, the Exam 1 retake homework will be due Friday, June 20, 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.

The abandoned weight-loss medication

to the right is for questions 1-10.

1. How many carbons does the given compound have?
2. 30 b. 31 c. 32 d. 33 e. not a.-d.
3. How many methylenes does the given compound have?
4. 7 b. 8 c. 9 d. 10 e. not a.-d.
5. How many tertiary carbons does the given compound have?
6. 3 b. 4 c. 5 d. 6 e. not a.-d.
7. How many secondary methines does the given compound have?
8. 7 b. 8 c. 9 d. 10 e. not a.-d.
9. How many unsaturations are in the given compound?
10. 11 b. 12 c. 13 d. 14 e. not a.-d.
11. How many unsaturated nitrogens are in the given compound?
12. 1 b. 2 c. 3 d. 4 e. not a.-d.
13. How many tetrahedral carbons are in the compound?
14. 7 b. 8 c. 9 d. 10 e. not a.-d.
15. How many sp hybridized atoms are in the compound?
16. 4 b. 5 c. 6 d. 7 e. not a.-d.
17. What is the ideal absolute angle between two sigma bonds to the oxygen that the arrow is pointing to?
18. 90° b. 109.5° c. 120° d. 180° e. not a.-d.
19. How many hydrogens does the given compound have?
20. 30 b. 31 c. 32 d. 33 e. not a.-d.
21. In molecular-orbital energy diagrams, orbitals on the dashed line are called?

a. s b. s anti c. p d. p anti e. not a.-d.



1. Considering resonance structures, which bond is 1.4 Å (Angstroms) long?
2. A compound that is being tested for weight loss has a molecular formula C48H48F2N10O5 and 18 pi bonds. How many rings does it have?
3. octa b. nona c. deca d. undeca e. not a.-d.
4. The compound is question 13 has how many sigma bonds?
5. 119 b. 120 c. 121 d. 122 e. not a.-d.
6. How many total bonds does the compound in question 13 have?
7. 138 b. 139 c. 140 d. 141 e. not a.-d.
8. Which Newman projection corresponds to 2,3-dimethylbutane?
9.  b.  c.  d.  e. 
10. Given the following energies in kcal/moles (CH3/CH3 eclipsed = 4.1, CH3/H eclipsed = 1.2, H/H eclipsed = 1, CH3/CH3 gauche = 0.8), to the nearest 0.1 of a kcal/mole what is the energy difference between the following Newman projections? 
11. -2.7 b. -0.8 c. 0.8 d. 2.7 e. not a.-d.



1. What is the systematic name of the following compound?
2. 4,6-dimethyl-5-ethyloctane b. 3,5-dimethyl-4-ethyloctane

c. 5-ethyl-4,6-dimethyloctane d. 4-ethyl-3,5-dimethyloctane e. not a.-d.

1. Which compound is neither *cis* or *trans*?
2.  b.  c.  d.  e. not a.-d.
3. Which compound has significant angle strain?
4. cyclobutane b. cyclopentane c. cyclohexane d. cycloheptane e. not a.-d.

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