CHM 233 : Fall 2019
Quiz #5

Question 1
MC10o

Which of the following best describes BOTH a picture of $\Psi$ for the bonding molecular orbital between nitrogen and the carbon of the $-\text{CH}_3$ group, AND a picture of $\Psi^2$ for the N-H bonding molecular orbital in the recreational drug Ketamine, structure shown.

the colors blue, green and grey have no particular significance, except that changes in a picture color mean the same thing as shading and non-shading

A

B

C

D

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Question 2
MCfunct1

The non-nutritive sweetener neotame, shown below, is ca. 7000 times sweeter than sugar.

The functional groups in neotame **include**:
A = 1 acid, 2 amides, 1 aromatic
B = 2 amines, 1 ester, 1 aromatic
C = 1 ester, 1 amine, 1 aromatic
D = 1 ester, 1 acid, 1 alcohol
Question 3

MCbdea

For the specific C-H bonds numbered 1 - 4 in the following structure, which would be the expected order of bond LENGTHS, from longest to shortest?

A 3 > 1 > 2 ~ 4
B 4 > 2 > 3 ~ 1
C 1 > 2 > 3 > 4
D 4 ~ 2 > 1 > 3

Question 4

MCbdee

Which energy diagram best described the energy diagrams for homolytic cleavage of the 4 indicated bonds C-Ha, C-Hb and C-Hc?

A

B

C

D
**Question 5**

**MC10ab**

which correctly describes the respective degrees of unsaturation for the following four compounds?

1. Cadaverine, $C_5H_{14}N_2$, foul-smelling, found in dead tissue
2. Zingerone, $C_{11}H_{14}O_2$, hot-tasting compound found in ginger
3. Adapalene, $C_{28}H_{28}O_3$, used to treat acne
4. Miconazole, $C_{18}H_{14}Cl_4N_2O$, an anti-fungal agent

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadaverine, Zingerone</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Adapalene</td>
<td>14</td>
<td>15</td>
<td>15</td>
<td>15</td>
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<tr>
<td>Miconazole</td>
<td>11</td>
<td>10</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
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**degrees of unsaturation**

**Question 6**

**MCdipole2**

Which has the LARGEST BOND dipole moment?

(select the bond with the largest bond dipole moment in each structure, then compare these to determine the largest overall)

**Question 7**

**MCfunct3**

My mother used to take Ramipril to control high blood pressure. The functional groups in Ramipril INCLUDE

A one alcohol, one ester, one amide
B one amide, one carboxylic acid, one aromatic
C one amine, one carboxylic acid, one ether
D one ester, one aromatic, one alcohol
**Question 8**  
This problem is slightly more difficult than you should expect to see on a midterm exam.

How many different isomeric structures with the molecular formula C₆H₁₂O can you draw, where each structure MUST contain the KETONE functional group?

- A 4  
- B 5  
- C 6  
- D 7

**Question 9**  
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes.

I study hard to learn organic chemistry.

- A Never  
- B Rarely  
- C Sometimes  
- D Often  
- E Always

**Question 10**  
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes.

I spend a lot of time learning organic chemistry.

- A Never  
- B Rarely  
- C Sometimes  
- D Often  
- E Always
QUESTION 11
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes
I put enough effort into learning organic chemistry.
A  Never
B  Rarely
C  Sometimes
D  Often
E  Always

QUESTION 12
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes
I use strategies to learn organic chemistry well.
A  Never
B  Rarely
C  Sometimes
D  Often
E  Always

QUESTION 13
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes
What overall final grade do you really need in this class (note that the question asks about the grade that you need, not the grade you want, these two may not be the same!)?
A
B
C
D
QUESTION 14

There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes.

As of today, what final grade would you be realistically willing to accept in this course?

A
B
C
D