

First Name _____ Last Name _____

Student ID _____ Signature _____

Chemistry 161, A1
Quiz - 08 October 2004
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Instructions

Complete the answer sheet:

Name _____

ID Number _____

Special Code J. K :
Enter the numbers you see in a square box at the bottom of page #2.

Select the **best possible answer** for questions 1 – 12 and fill the corresponding circle in the bottom part of the answer sheet.

Assume there is only one correct answer.

You must hand in **both** the answer sheet and the question sheets.

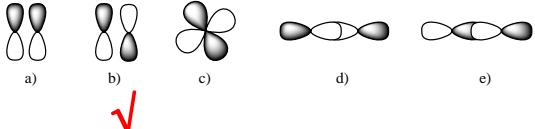
But only the answer sheet will be evaluated.

Closed book exam; no calculators.

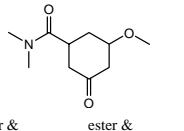
Time allowed: 20 min.

There are **12** questions

5. Which of the following comes closest to represent a π^* molecular orbital? (antibonding)



6. The following structure contains the functional groups indicated below. (There might be more)



ketone & alcohol ether & amide ester & ketone ester & ether amide & ester

a)

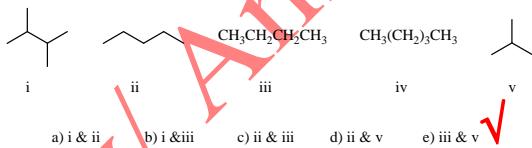
b)

c)

d)

e)

7. Which of the following are pairs of constitutional isomers?



a) i & ii

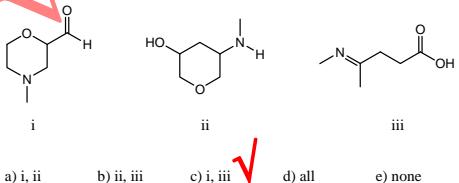
b) i & iii

c) ii & iii

d) ii & v

e) iii & v

8. Which of the following have the molecular formula $C_6H_{11}NO_2$?



a) i, ii

b) ii, iii

c) i, iii

d) all

e) none

1. In the ground state, which atom(s) has (have) three singly occupied p orbitals?

"Mini Periodic Table: H, He, Li, Be, B, C, N, O, F, Ne"

a) N

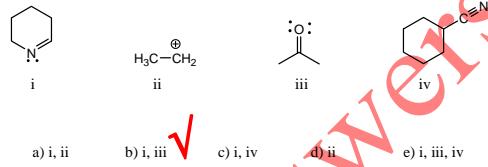
b) N & O

c) B & C

d) B

e) C

2. Which of the following contains exactly two (2) atoms that are sp^2 hybridized?



a) i, ii

b) i, iii

c) i, iv

d) ii

e) i, iii, iv

3. Which of the following terms is out of place?

nucleophile

lone pair

filled orbital

electron source

H^+ donor

a)

b)

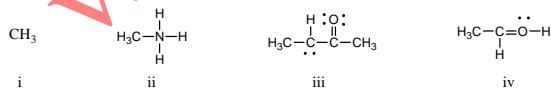
c)

d)

e)

4. Which of the following structures have an overall positive charge?

(all non-bonding electrons are shown). Remember: best answer!



a) i, ii, iii

b) ii, iii, iv

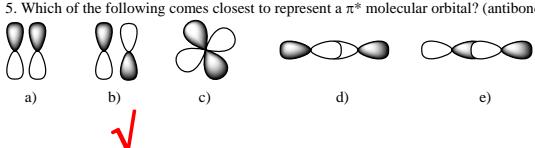
c) i, ii, iv

d) i, ii

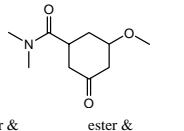
e) iii, iv

2

5. Which of the following comes closest to represent a π^* molecular orbital? (antibonding)



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a)

b)

c)

d)

e)

7. Which of the following are pairs of constitutional isomers?



a) i & ii

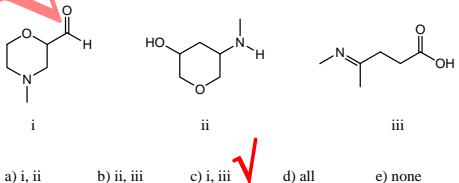
b) i & iii

c) ii & iii

d) ii & v

e) iii & v

8. Which of the following have the molecular formula $C_6H_{11}NO_2$?



a) i, ii

b) ii, iii

c) i, iii

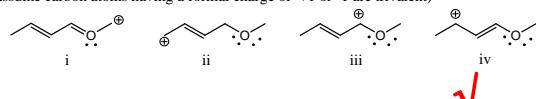
d) all

e) none

3

9. Consider

Which of the following are related to the above by resonance? All lone pairs are shown. (Assume carbon atoms having a formal charge of +1 or -1 are trivalent)



a) i, ii

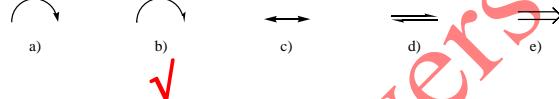
b) ii, iii

c) i only

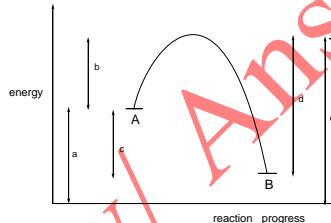
d) iii only

e) iii, iv

10. Which type of arrow is used in homolytic reactions?



11. The following represents the reaction diagram for a simple equilibrium reaction.



Which arrow represents the activation energy for the forward reaction A \rightarrow B?

a)

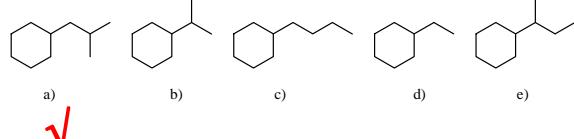
b)

c)

d)

e)

12. Which of the following contains an isobutyl group?



a)

b)

c)

d)

e)