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.

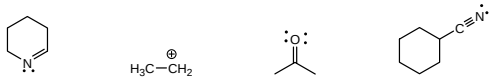
Time allowed: 20 min.

There are **12** questions

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?



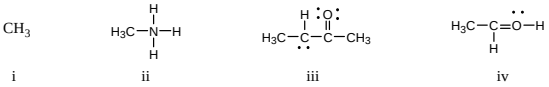
i ii iii iv

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!



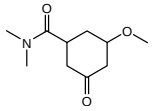
i ii iii iv

a) i, ii, iii b) ii, iii, iv c) i, ii, iv d) i, ii e) iii, iv

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

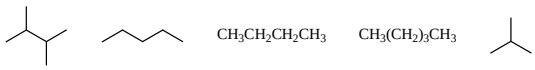
a) b) c) d) e)

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)

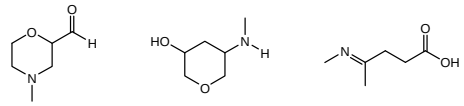
7. Which of the following are pairs of constitutional isomers?



i ii iii iv v

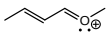
a) i & ii b) i &iii c) ii & iii d) ii & v e) iii & v

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

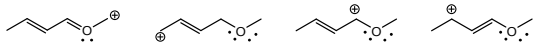


i ii iii

a) i, ii b) ii, iii c) i, iii d) all e) none

9. Consider 

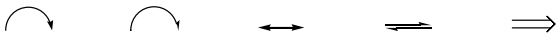
Which of the following are related to the above by resonance? All lone pairs are shown.
(Assume carbon atoms having a formal charge of +1 or -1 are trivalent)



i ii iii iv

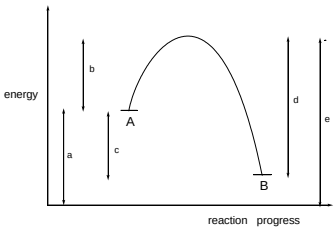
a) i, ii b) ii, iii c) i only d) iii only e) iii, iv

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



a) b) c) d) e)

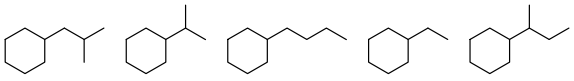
11. The following represents the reaction diagram for a simple equilibrium reaction.



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

a) b) c) d) e)

12. Which of the following contains an isobutyl group?



a) b) c) d) e)