Chemistry 2541, Fall 2015
Quiz 2

Key

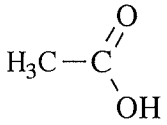
(30 points)

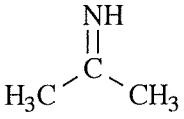
Important notes:

- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be posted on eGradebook; graded Scantron forms will not be returned to students.

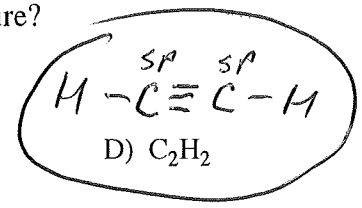
Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

1. Which of the following compounds has ***sp*-hybridized** atoms in the structure?

A) 

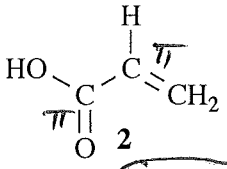
B) 

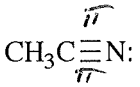
C) C_2H_4

D) C_2H_2 

2. Which of the following compounds (molecules **1-5**) have two **π** bonds in their structures?

C_2H_6 **1**

 **2**

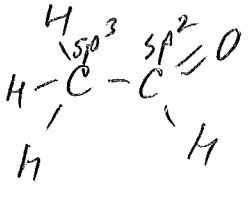
 **3**

CH_3CHO **4**

C_2H_4 **5**

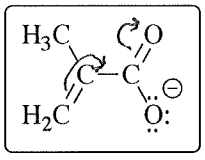
A) **1** and **2** B) **2** and **3** C) **3** and **4** D) **4** and **5**

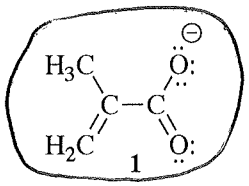
3. Which **orbitals** overlap to form the carbon-carbon **σ bond** of acetaldehyde, CH_3CHO ?

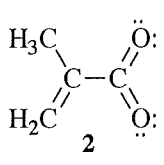


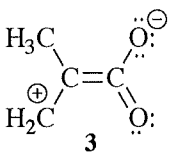
A) **sp^3 + sp^3** B) **sp^3 + sp^2** C) **sp^2+ sp^2** D) **sp + sp^3**

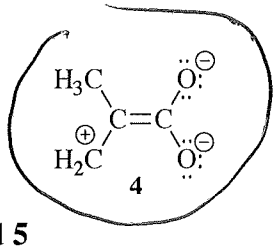
4. Which of the following structures (**1-5**) represent resonance contributors of molecule in the box?

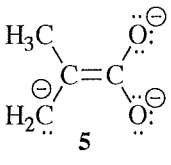


 **1**

 **2**

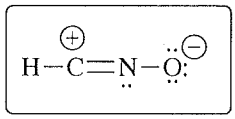
 **3**

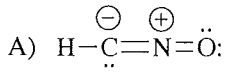
 **4**

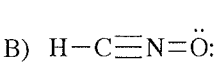
 **5**

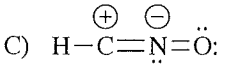
A) **1** and **2** B) **1** and **4** C) **2** and **4** D) **3** and **5**

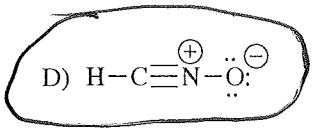
5. Which of the following structures represent **major** resonance contributors of molecule in the box?



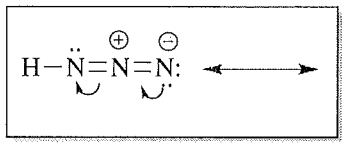
A) 

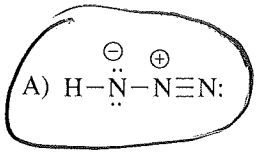
B) 

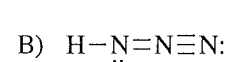
C) 

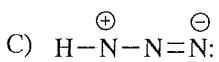
D) 

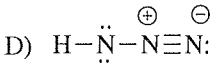
6. Which of the following structures represent resonance contributor of molecule in the box in agreement with the shown curved **arrows**?



A) 

B) 

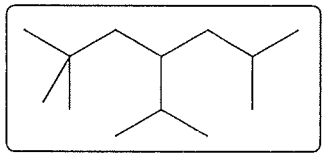
C) 

D) 

7. Which carbon-carbon bond is the **longest**?

A) carbon-carbon single bond
B) carbon-carbon double bond
C) carbon-carbon triple bond
D) all carbon-carbon bonds have the same length

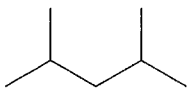
8. Which is the correct **molecular formula** for the line-angle structure shown in the box?

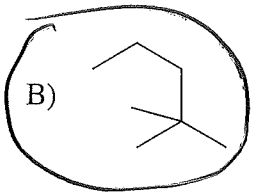


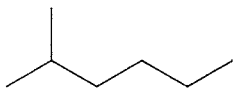
A) $C_{12}H_{24}$ B) $C_{13}H_{28}$ C) $C_{12}H_{26}$ D) $C_{13}H_{26}$

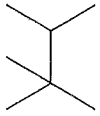
9. Which of the **line-angle formulas** corresponds to the condensed structural formula shown in the box?

$CH_3(CH_2)_2C(CH_3)_3$

A) 

B) 

C) 

D) 

10. Which of the statements in the box are true about **constitutional isomers**?

I. They have the same connectivity of atoms
II. They have the same molecular weight
III. They have the same physical properties
IV. They have the same molecular formula

A) I and II are true
B) I and III are true
C) III and IV are true
D) II and IV are true