

Chemistry 2541, Fall 2017

Quiz 2

Key

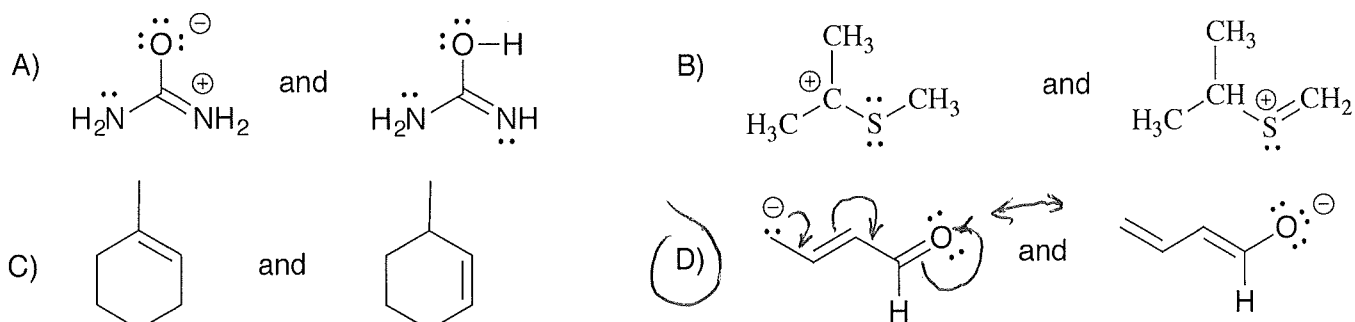
(30 points)

Important notes:

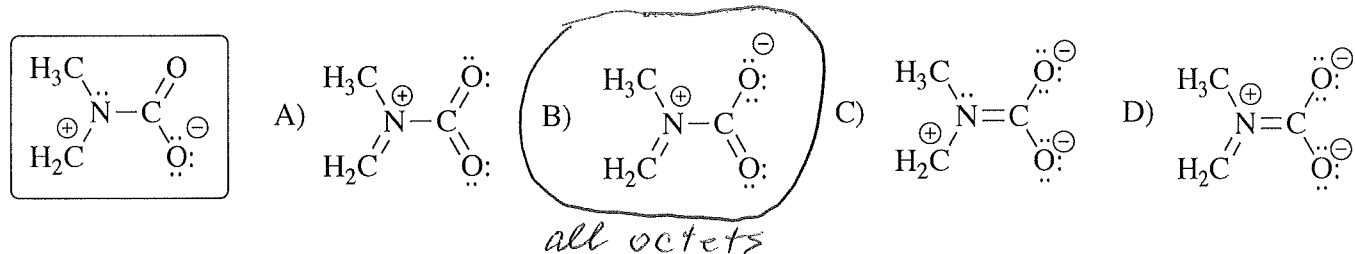
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be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

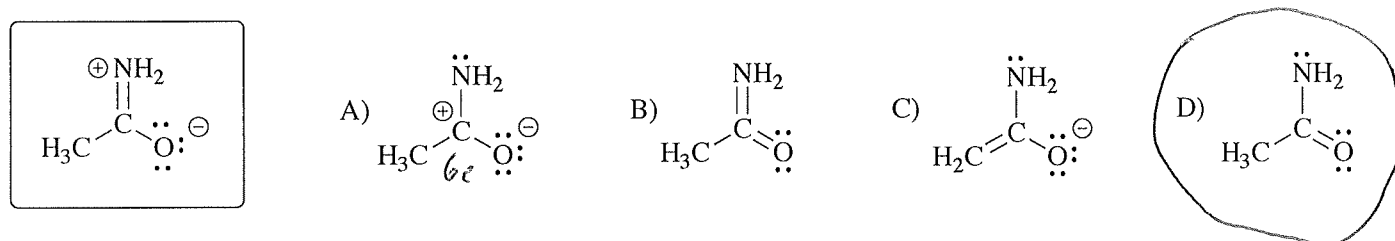
1. Which one of the following pairs of structures depicts **resonance contributors**?



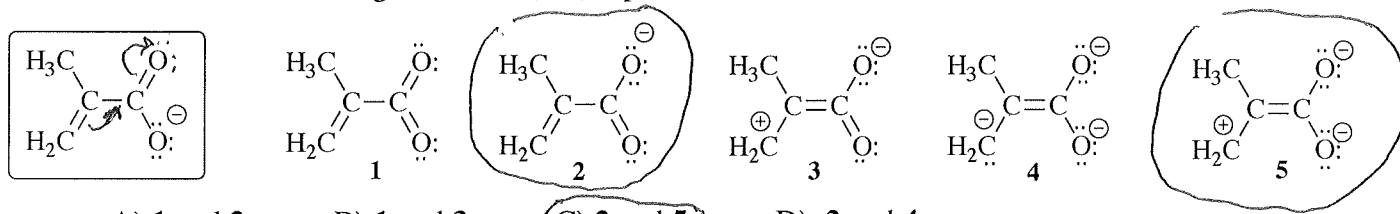
2. Which one of the following structures represents **major resonance contributor** of molecule in the box?



3. Which one of the following structures represents **major resonance contributor** of molecule in the box?

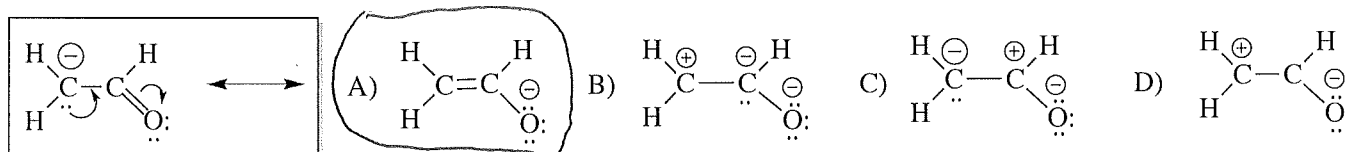


4. Which two of the following structures (1-5) represent **resonance contributors** of molecule in the box?

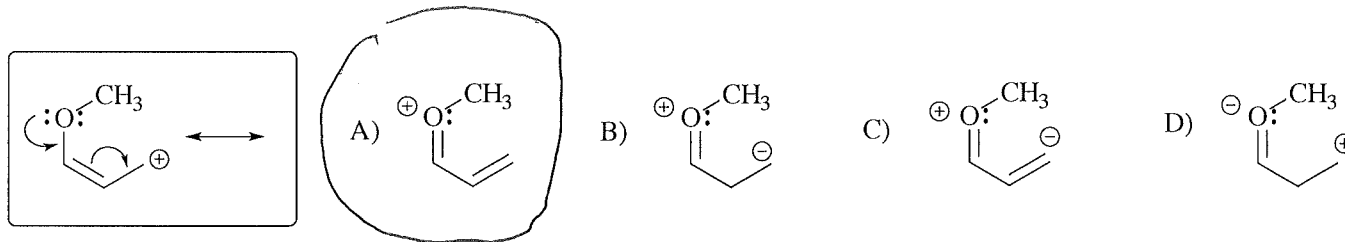


- A) 1 and 2 B) 1 and 3 **C) 2 and 5** D) 2 and 4

5. Which one of the following structures represents **resonance contributor** of molecule in the box in agreement with the shown curved **arrows**?

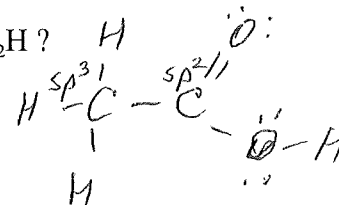


6. Which one of the following structures represents **resonance contributor** of molecule in the box in agreement with the shown curved **arrows**?



7. Which **orbitals** overlap to form the carbon-carbon σ **bond** of acetic acid, $\text{CH}_3\text{CO}_2\text{H}$?

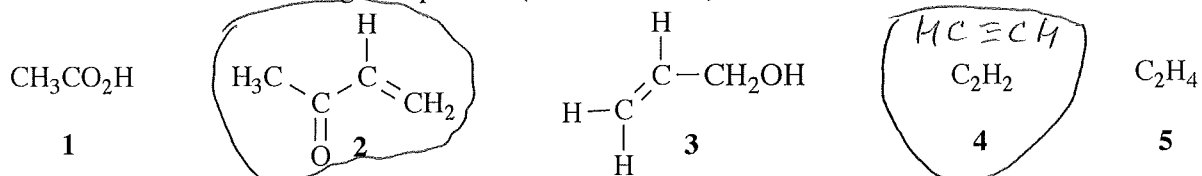
- A) $sp^3 + sp^3$ B) $sp^2 + sp^2$ **C) $sp^3 + sp^2$** D) $sp + sp^3$



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

- A) $\text{CH}_3\text{C}\equiv\text{N}$:** B) $\text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3$ C) $\text{H}_3\text{C}-\overset{\text{H}}{\parallel}{\text{C}}-\text{CH}_2$ D) C_2H_4

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



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

10. Which one of the following molecules has the **shortest carbon-carbon bond**?

- A) C_2H_4 B) $\text{CH}_3\text{CH}=\text{CH}_2$ C) C_2H_6 **D) C_2H_2**