

Chemistry 2541, Fall 2017

Quiz 2

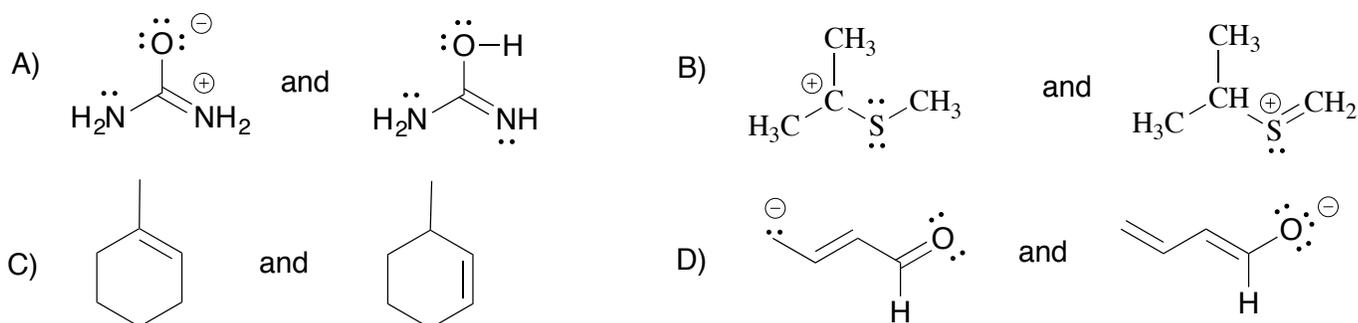
(30 points)

Important notes:

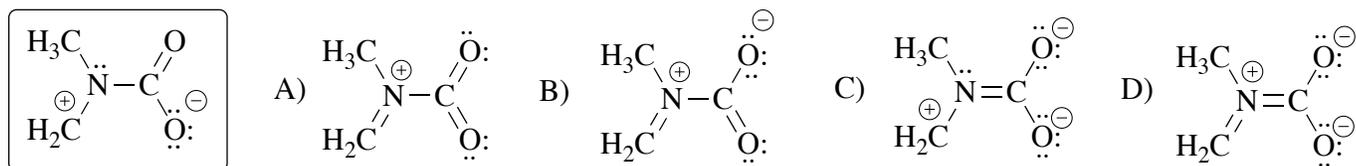
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be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

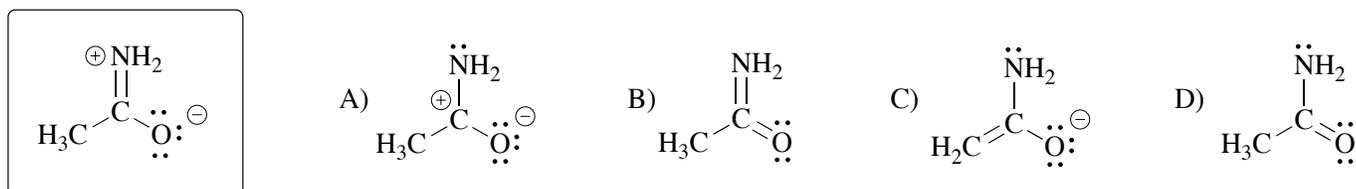
1. Which one of the following pairs of structures depicts **resonance contributors**?



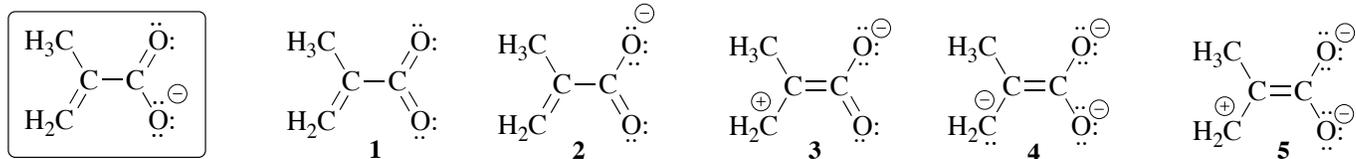
2. Which one of the following structures represents **major resonance contributor** of molecule in the box?



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

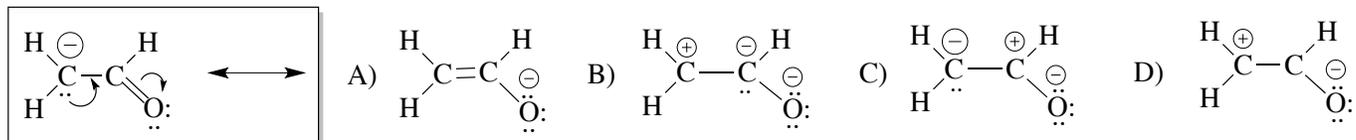


4. Which two of the following structures (1-5) represent **resonance contributors** of molecule in the box?

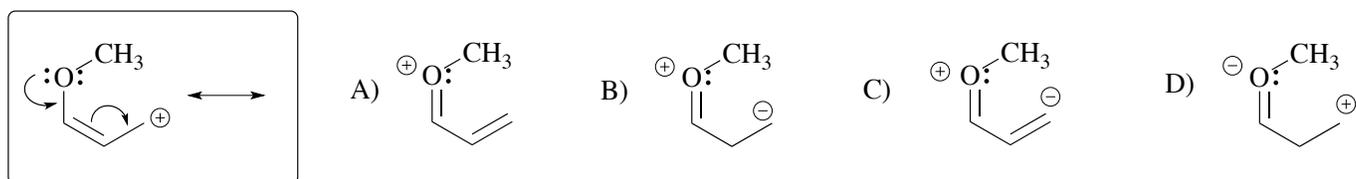


- A) 1 and 2 B) 1 and 3 C) 2 and 5 D) 2 and 4

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**?



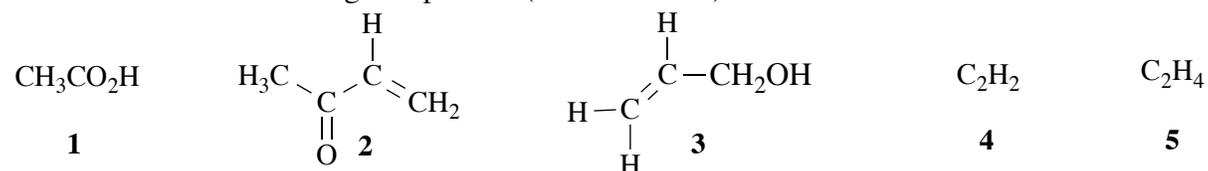
7. Which **orbitals** overlap to form the carbon-carbon σ **bond** of acetic acid, $\text{CH}_3\text{CO}_2\text{H}$?

- A) $\text{sp}^3 + \text{sp}^3$ B) $\text{sp}^3 + \text{sp}^2$ C) $\text{sp}^2 + \text{sp}^2$ D) $\text{sp} + \text{sp}^3$

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



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