

# Chemistry 2541

**Fall Semester 2011**

## Quiz 4

(25 points)

**October 26, 2011**

Printed Name (*Last*, First) \_\_\_\_\_

Good Luck!

1. (5) Arrange the following compounds in order of increasing **acidity** (put numbers 1-5 in the boxes; 1 pt each box):

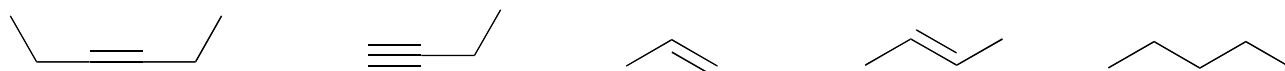
(1) FCH<sub>2</sub>CO<sub>2</sub>H      (2) CH<sub>3</sub>OH      (3) CH<sub>3</sub>NH<sub>2</sub>      (4) HBr      (5) CH<sub>3</sub>I

Weakest  <  <  <  <  Strongest

2. (2) Which one of the following compounds is the **strongest base**?

NaOH    CH<sub>3</sub>ONa    NaNH<sub>2</sub>    NaF    NaCl    NaBr    NaI    CH<sub>4</sub>

3. (2) Which one of the following compounds has the most **acidic C-H bond**?



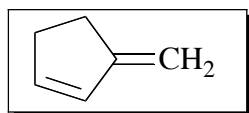
4. (2) Which one of the following compounds is likely to react as **Lewis acid**?

CH<sub>3</sub>NH<sub>2</sub>    NCl<sub>3</sub>    NaAlCl<sub>4</sub>    CH<sub>3</sub>CH<sub>2</sub>OCH<sub>3</sub>    PCl<sub>3</sub>    BCl<sub>3</sub>    NaCl    NaBF<sub>4</sub>

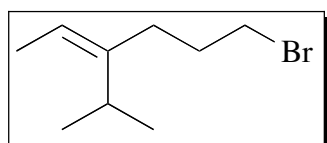
5. (4) Label the **acid**, **conjugate acid**, **base**, and **conjugate base** in the following reaction (1 pt each box):



6. (6) Circle the correct **names** of compounds shown in the boxes (3 pts each):

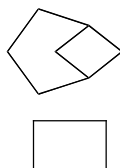
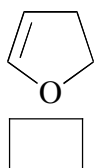


2-vinylcyclopentene    3-vinylcyclopentene    (3Z)-vinylcyclopentene  
 1,3-cyclopentadiene    3-methylenecyclopentene    2-methylenecyclopentene



(Z)-6-bromo-3-isopropyl-2-hexene    1-bromo-4-methyl-3-vinylhexane  
 (E)-6-bromo-3-isopropyl-2-hexene    (Z)-1-bromo-4-isopropyl-4-hexene  
 (E)-1-bromo-4-isopropyl-4-hexene    (Z)-7-bromo-3-isopropyl-2-heptene

7. (4) Specify the **index of hydrogen deficiency** of the following compounds (put number in the box):



C<sub>8</sub>H<sub>8</sub>



C<sub>2</sub>H<sub>3</sub>OC<sub>2</sub>H<sub>5</sub>



Overall Score: \_\_\_\_\_