

# Chemistry 2542, Spring 2016

## Quiz 2

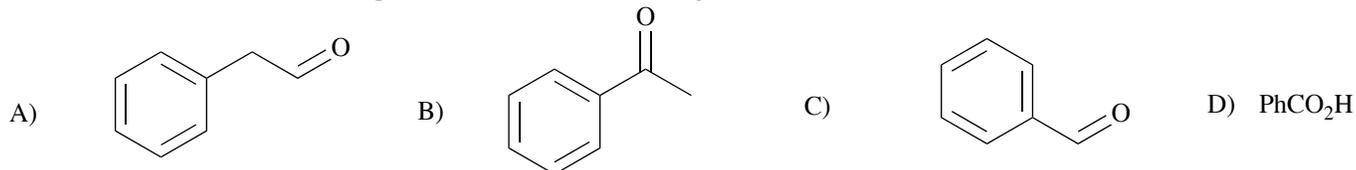
(30 points)

### Important notes:

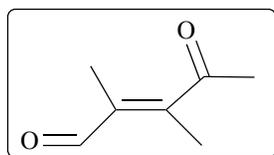
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be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

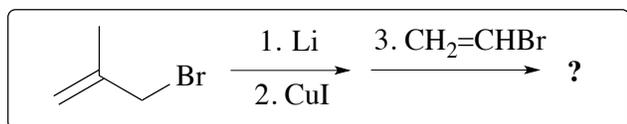


2. What is the **IUPAC name** for the compound shown in the box?



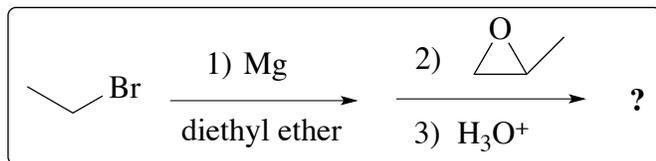
- A) (*E*)-3,4-dimethyl-5-oxopentene-2-one    B) (*Z*)-3,4-dimethyl-5-oxopentene-2-one  
C) (*E*)-2,3-dimethyl-4-oxopent-2-enal    D) (*Z*)-2,3-dimethyl-4-oxopent-2-enal

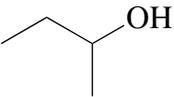
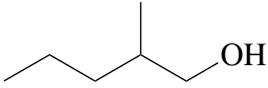
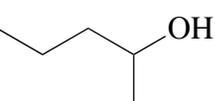
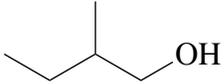
3. What is the **main product** of the reaction shown in the box?



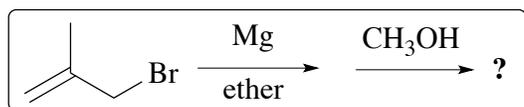
- A) 2-methyl-1,3-butadiene    B) 2-methyl-1,4-pentadiene  
C) 2-methyl-1,5-hexadiene    D) 2-methyl-1,4-hexadiene

4. What is the **main product** of the sequence of reactions shown in the box?



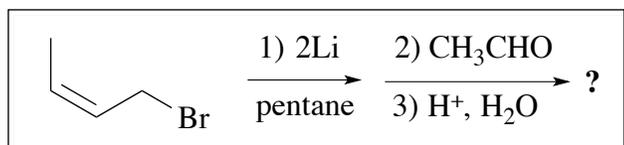
- A)  B)   
C)  D) 

5. What is the **main product** of the sequence of reactions shown in the box?



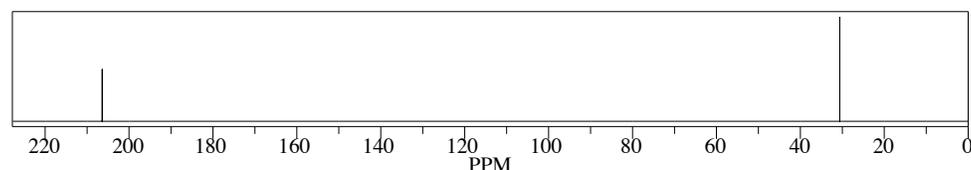
- A) 2-methyl-1-propene      B) 3-methoxy-2-methyl-1-propene  
 C) 2-methyl-2-propen-1-ol      D) 2-methyl-1-butene

6. What is the **main product** of the sequence of reactions shown in the box?



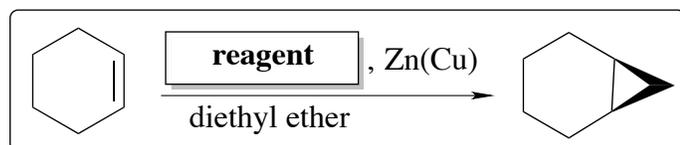
- A) (Z)-4-hexen-2-ol      B) (E)-4-hexen-2-ol  
 C) (Z)-3-penten-1-ol      D) (E)-3-penten-1-ol

7. Which one of the following compounds has the molecular peak  $M^+ = 58$  in the mass spectrum (atomic weight of C is 12, O 16, H 1) **and** the following  $^{13}\text{C}$  NMR spectrum:



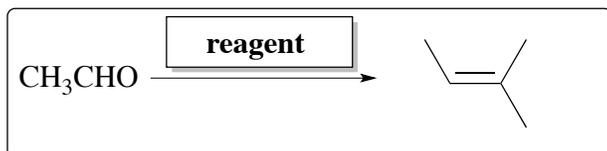
- A)      B)   
 C)      D)  $\text{CH}_3\text{CO}_2\text{H}$

8. Which **reagent** can be used for the reaction shown in the box?



- A) *t*-BuOK      B)  $\text{CH}_3\text{Cl}$       C)  $\text{CH}_2\text{I}_2$       D)  $\text{CHCl}_3$

9. Which **reagent** can be used for the reaction shown in the box?



- A)      B)  $\text{Ph}_3\text{P}$       C) *t*-BuOK      D)  $\text{Ph}_3\text{P}^{\oplus}-\ddot{\text{C}}^{\ominus}(\text{CH}_3)_2$

10. Which of the following correctly describes the direction of **polarity** of the carbon-magnesium bond?

- A)  $\text{H}_3\text{C}-\overset{\delta+}{\text{C}}-\overset{\delta+}{\text{Mg}}\text{Br}$       B)  $\text{H}_3\text{C}-\overset{\delta-}{\text{C}}-\overset{\delta-}{\text{Mg}}\text{Br}$       C)  $\text{H}_3\text{C}-\overset{\delta+}{\text{C}}-\overset{\delta-}{\text{Mg}}\text{Br}$       D)  $\text{H}_3\text{C}-\overset{\delta-}{\text{C}}-\overset{\delta+}{\text{Mg}}\text{Br}$