Chemistry 2542, Spring 2016
Quiz 2

Key

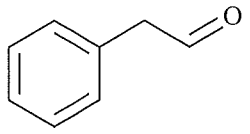
(30 points)

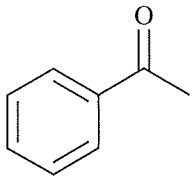
Important notes:

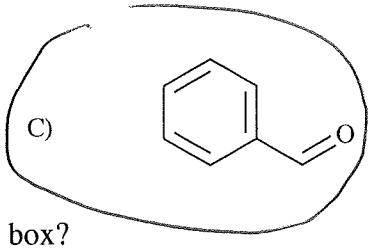
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be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

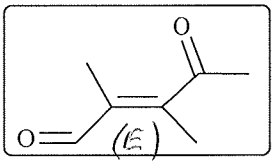
A) 

B) 

C) 

D) $PhCO_2H$

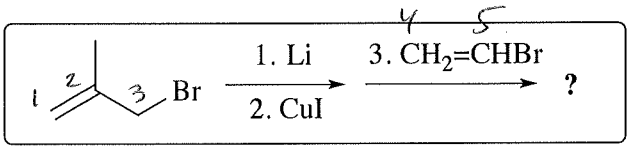
2. What is the **IUPAC name** for the compound shown in the box?



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

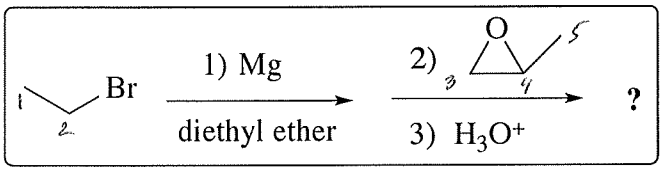
3. What is the **main product** of the reaction shown in the box?

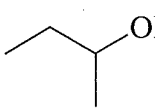


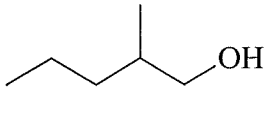
A) 2-methyl-1,3-butadiene B) 2-methyl-1,4-pentadiene

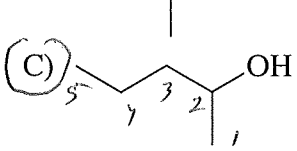
C) 2-methyl-1,5-hexadiene D) 2-methyl-1,4-hexadiene

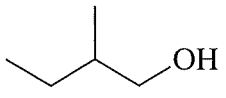
4. What is the **main product** of the sequence of reactions shown in the box?

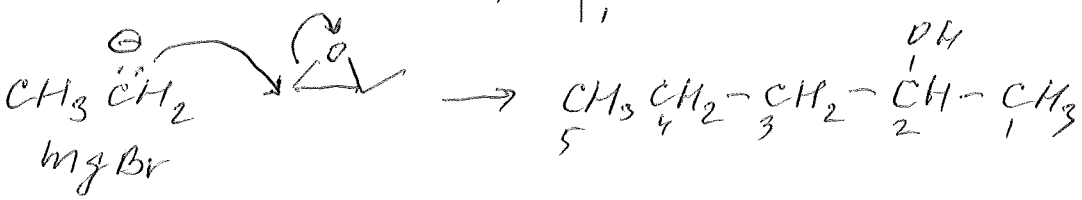


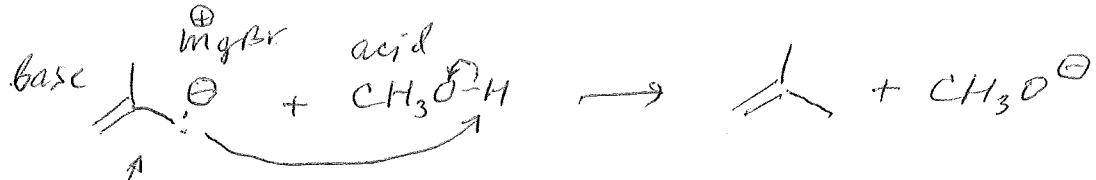
A) 

B) 

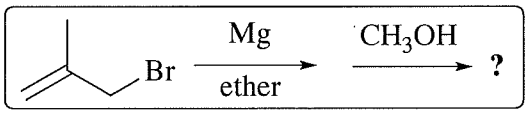
C) 

D) 



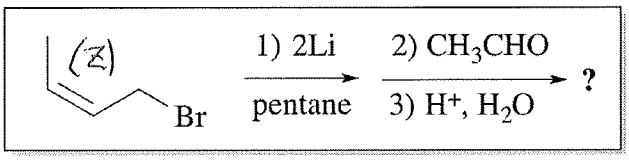


5. What is the **main product** of the sequence of reactions shown in the box?



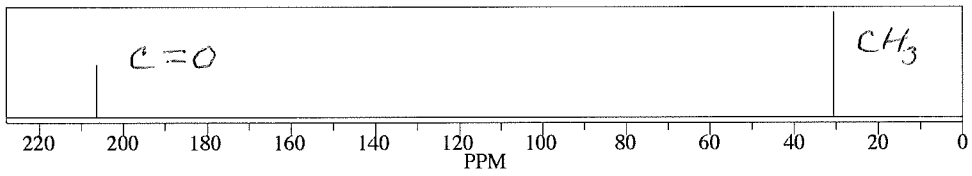
A) 2-methyl-1-propene B) 3-methoxy-2-methyl-1-propene C) 2-methyl-2-propen-1-ol D) 2-methyl-1-butene

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

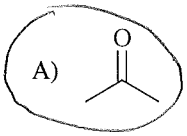


A) (*Z*)-4-hexen-2-ol B) (*E*)-4-hexen-2-ol C) (*Z*)-3-penten-1-ol D) (*E*)-3-penten-1-ol

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}C NMR spectrum:



M=58

A) 

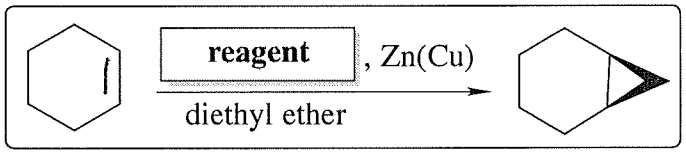
B) 

C) 

D) CH_3CO_2H

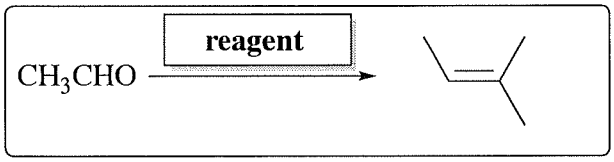
M=56 60

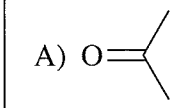
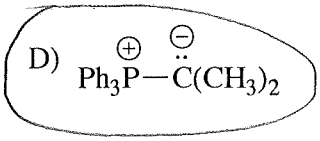
8. Which **reagent** can be used for the reaction shown in the box?



A) *t*-BuOK B) CH_3Cl C) CH_2I_2 D) $CHCl_3$

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



A)  B) Ph_3P C) *t*-BuOK D) 

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

A) $H_3\overset{\delta+}{C}—\overset{\delta+}{MgBr}$ B) $H_3\overset{\delta-}{C}—\overset{\delta-}{MgBr}$ C) $H_3\overset{\delta+}{C}—\overset{\delta-}{MgBr}$ D) $H_3\overset{\delta-}{C}—\overset{\delta+}{MgBr}$