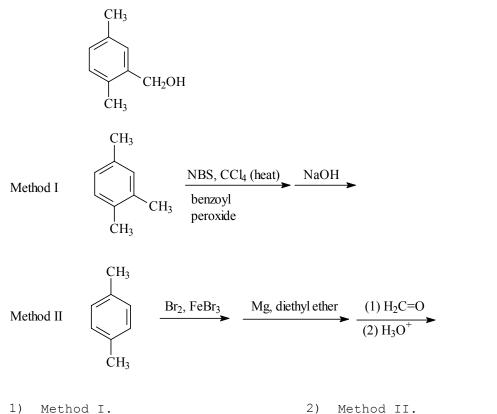
Chemistry 211 Name: Chapter 14 Homework #2 What are the products of the following sequence of reactions? 1. $\xrightarrow{(CH_3CH_2)_2O} \xrightarrow{H_2O}$ $CH_3CH_2CHCH_3 + Mg$ Br 1) 2-butanol and Mg(OH)Br 2) 2-butanol and MgHBr 3) butane and Mg(OH)Br 4) butane and MgHBr 2. Arrange the following in order of decreasing basicity (most basic first). A. CH₃CH₂MgBr B. $HC \equiv CMgBr$ C. CH_3CH_2OMgBr 1) A>B>C 2) A>C>B 3) C>B>A 4) B>A>C 3. Which of the following reaction sequences would convert 2-butanol into the deuterated compound below? CH₃CH₂CHCH₃ Ď OH H_2SO_4 $(1) BD_3/THF$ 1) (2) H₂O₂, NaOH heat OH $\mathrm{H}_2\mathrm{SO}_4$ D_2/Pt 2) heat OH PBr₃ (1) Mg, diethyl ether 3) $(2) D_2 O$ OH PBr₃ NaOD, D₂O 4) 2 1) 2) 3) 3 1 4) 4 4. The reaction of phenylmagnesium bromide ($C_{6}H_{5}MgBr$) with propanal (CH₃CH₂CH=O), folllowed by hydrolysis yields:

1) 2-phenyl-1-propanol 2) 1-phenyl-1-propanol

3) 2-phenyl-2-propanol

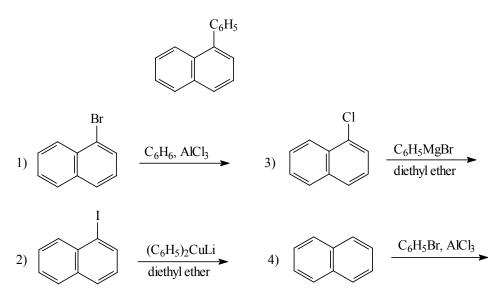
4) 3-phenyl-1-propanol

5. Which of the following pairs of reagents would you use to prepare 4methyl-2-pentanol? O || 1) (CH₃)₂CHCH₂Li + CH₃CH 3) (CH₃)₂CHLi + CH₃CH₂CH O II CH₃CCH₃ 2) (CH₃)₂CHLi 4) $CH_3CH_2Li + (CH_3)_2CHCH$ 3) 3 1) 1 2) 2 4) 4 6. Reaction of excess Grignard reagent with diethyl carbonate, shown below, gives a(n): EtO-C 1) ketone 2) tertiary alcohol 3) secondary alcohol 4) ester 7. Which of the reaction schemes below gives 1,4-pentadien-3-ol, $H_2C=CHCH(OH)CH=CH_2$ as the major organic product and with minimal byproduct formation? 1) $H_2C=CHCHCH=CH_2 + H_2O$ (solvolysis) Βr 2) 2 H₂C=CHMgBr + $HCOCH_2CH_3$ followed by neutralization 3) $H_2C=CHMgBr + H_2C=CHCOH$ 4) H₂C=CHMgBr (xs) + CH₃CH₃OCOCH₂CH₃ followed by neutralization 1) 1 2) 2 3) 3 4) 4 8. Which of the following is the product of the reaction below? HCO₂CH₂CH₃ + C₆H₅MgBr (xs) $\xrightarrow{\text{diethyl ether}}$ $\xrightarrow{\text{H}_3O^+}$ 1) (С₆H₅)₃СОН 2) (С₆H₅)₂СНОН 3) С₆н₅Сн₂Он 4) (C₆H₅)₃CH 9. Consider the two syntheses of the compound shown below. Which method would work best with minimal byproducts?



- 3) Both methods would work.
- 2) Method II.
- 4) Neither method will work.

10. 1-Phenylnaphthalene, shown below, can be prepared in over 80% yield by one of the reactions below. Which one?



1) 1 2) 2	3) 3	4) 4
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- 11. The reaction of cis-2-butene with CH₂I₂ and Zn(Cu) to give cis-1,2-dimethylcyclopropane is a(n):
 - 1) enantiospecific reaction
 - 2) diastereoselective reaction
 - 3) stereospecific reaction
 - 4) regioselective reaction
- 12. What is the product of the following sequence of reactions?

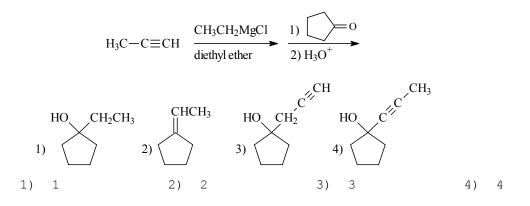
CH₃CH₂C \equiv CH $\xrightarrow{(1) \text{NaNH}_2, \text{NH}_3}$ $\xrightarrow{\text{H}_2}$ $\xrightarrow{\text{CH}_2\text{I}_2}$ (2) CH₃CH₂Br $\xrightarrow{\text{Lindlar Pd}}$ $\xrightarrow{\text{CH}_2\text{I}_2}$

- 1) 1,1-diethylcyclopropane
- 2) *trans-*1,2-diethylcyclopropane
- 3) *cis*-1,2-diethylcyclopropane
- 4) cis and trans-1,1-diiodo-2,3-diethylcyclopropane
- 13. A Ziegler-Natta catalyst, such as TiCl₄/Al(CH₂CH₃)₃, is used for the preparation of:
 - 1) polyethylene 2) cyclopropanes
 - 3) alcohols

cyclopropanes
carbenes or carbenoids

10011013

14. Which of the following is the major organic product in the reaction sequence below?



			Answer Key for Test "Zilc14q2.tst", 12/29/2003	
No. in No. on				
Q-B	ank	Test	Correct Answer	
14	2	1	3	
14	4	2	1	
14	6	3	3	
14	8	4	2	
14	10	5	1	
14	12	6	2	
14	14	7	2	
14	16	8	2	
14	18	9	2	
14	20	10	2	
14	22	11	3	
14	24	12	3	
14	26	13	1	
14	28	14	4	

Answer Key for Test "211c14q2.tst", 12/29/2003