Chemistry 211 Name: Chapter 14 Homework #1 Which one of the following would not be a suitable solvent for Grignard 1. reagents? 3) $\langle 0 \rangle$, tetrahydrofuran (THF) 1) CH₃CH₂OCH₂CH₃, diethyl ether 4) they would all be suitable solvents 2) CH₃CH₂OH, ethanol 3) 3 1) 1 2) 2 4) 4 2. Which of the following has the largest acid dissociation constant, $\ensuremath{\mbox{K}}_a?$ 1) CH₃CH₃ 2) H₂C=CH₂ 3) HC=CH 4) CH₃CH₂OMgBr 3. Select the strongest base in the following. 1) NaNH₂ 2) CH₃Li 3) NaOCH₂CH₃ 4) HC=CNa 4. What is the major product of the following reaction? $CH_{3}CH_{2}CHCH_{2}CH_{3} \xrightarrow[Br]{H_{2}CHCH_{2}CH_{3}} \xrightarrow[H_{2}]{H_{3}O^{+}} \xrightarrow[H_{2}]{H_{3}O^{+}} \xrightarrow[H_{2}]{H_{3}O^{+}}$ 1) 2-ethyl-1-pentanol 2) 2-ethyl-1-butanol 3) 3-pentanol 4) 3-methyl-1-pentanol 5. The reaction of excess Grignard reagent with an ester of formic acid, HCO_2R , gives: 1) a primary alcohol 2) a secondary alcohol 3) a tertiary alcohol 4) methanol 6. What is the product of the following reactions? $\begin{array}{c} O \\ II \\ CH_3COCH_2CH_3 \end{array} \xrightarrow{2 CH_3CH_2CH_2Li} \xrightarrow{H_3O^+} \end{array}$ OH 0 1) CH₃CCH₂CH₂CH₃ 3) CH₃CHCH₂CH₂CH₃ OH OH 2) $CH_3CH_3CH_2CH_2CH_3$ 4) $CH_3CH_3CH_3CH_2CH_2CH_2CH_3$ CH₃ ĊH₂ 2) 2 3) 3 4) 4 1) 1

- The reaction of 4-methylcyclohexanone with CH₃MgBr followed by neutralization gives two alcohols. These two alcohols are;
 - 1) constitutional isomers
 - 2) enantiomers formed in equal amounts
 - 3) enantiomers formed in unequal amounts
 - 4) diastereomers
- 8. What is the product of the following reaction?



9. Which of the following are intermediates in the reaction of excess methylmagnesium bromide with ethyl benzoate (shown below) to make 2phenyl-2-propanol?

 $\begin{array}{ccccc}
 & O \\
 & C_{6}H_{5}COEt + CH_{3}MgBr(xs) & \underbrace{\text{diethyl ether}}_{H_{3}O^{+}} \\
 & O \\
 & O \\
 & O \\
 & C_{6}H_{5} - \underbrace{C-OCH_{2}CH_{3}}_{I} & C_{6}H_{5} - \underbrace{C-CH_{3}}_{C-CH_{3}} & C_{6}H_{5} - \underbrace{C-CH_{3}}_{I} \\
 & A \\
 & B \\
 & C \\
 & 1) \text{ A and B} \\
 & 2) \text{ A and C} \\
 & 3) \text{ B and C} \\
 & 4) \text{ A, B, and C} \\
\end{array}$

10. What is the product of the reaction shown below?

 $\begin{array}{cccc} CH_{3}CH_{2}CH_{2}CH_{2}Br & \xrightarrow{Li, 0^{o}C} & \underbrace{CuI, -20^{o}C}_{THF} & \underbrace{CH_{3}(CH_{2})_{3}CH_{2}Br}_{1) & 4-nonene & & 2) & nonane \\ 3) & 4-bromononane & & & 4) & 5-bromononane \end{array}$

11. The product of the following reaction is:

$H_2C=C(CH_3)_2$ $\xrightarrow{CHCl_3, KOC(CH_3)_3}$

- 1) 1,1-dichloro-2,2-dimethylcyclopropane
- 2) 1,1-dimethylcyclopropane
- 3) 1,1,1-trichloro-3-methylbutane
- 4) 2,2-dichloro-3-methylbutane

12. Which of the following are intermediates in the reaction below?





14. What is the product of the following reaction?



				Answer Key for fest ziftfagi.tst , 12/29/2005
No.	in	No. o	n	
Q−B	ank	Test	<u> Co</u>	prrect Answer
14	1	1	2	
14	3	2	4	
14	5	3	2	
14	7	4	2	
14	9	5	2	
14	11	6	4	
14	13	7	4	
14	15	8	1	
14	17	9	4	
14	19	10	2	
14	21	11	1	
14	23	12	2	
14	25	13	1	
14	27	14	1	

Answer Key for Test "211c14q1.tst", 12/29/2003