

國立高雄師範大學 105 學年度學士班轉學生招生考試試題

系所別：化學系三年級

科目：有機化學

※注意：1.不必抄題，作答時請將試題題號及答案依照順序寫在答案卷上，於本試題上作答者，不予計分。

2.限用藍色或黑色之鋼筆、原子筆作答，以鉛筆或其他顏色作答者不予計分。


一、簡答題：(每題 10%，共 30%)

1. (a)簡述 Grignard 試劑， RMgBr ，在有機合成上之應用。

(b)寫出下列有機物之化學結構式

(i) cyclohexane; (ii) 2-pentene; (iii) phenol

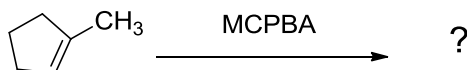
2. 利用  與 $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$ 為原料反應，若依 Friedel Crafts alkylation

合成  時，有何不利副反應發生？說明有何較佳合成方法？

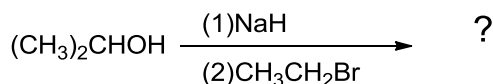
3. 某一有機物， $\text{C}_9\text{H}_{10}\text{O}$ ，其 IR 光譜在 1695cm^{-1} 處有強吸收峰，其 ^1H NMR 光譜資料為 $\delta 1.1(\text{t}, 3\text{H})$; $\delta 2.4(\text{q}, 2\text{H})$; $\delta 7.3(\text{m}, 5\text{H})$ ，請寫出其正確化學結構式，簡述理由。

二、寫出下列反應主要產物之化學結構式 (每題 4%，共 20%)

(a)



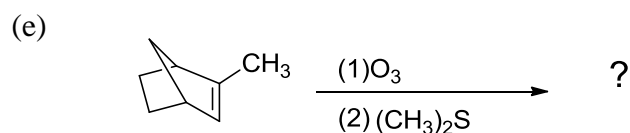
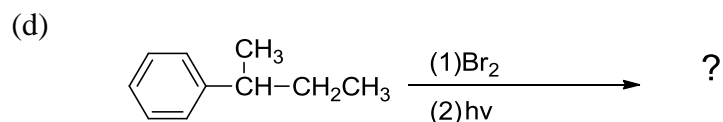
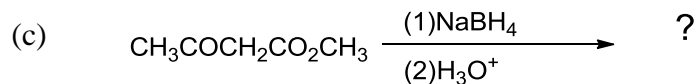
(b)



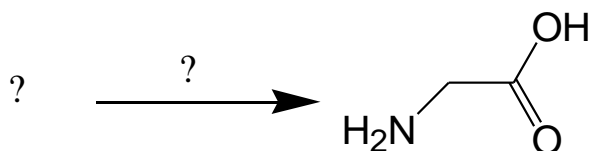
(背面有題 續翻背面)

系所別：化學系三年級

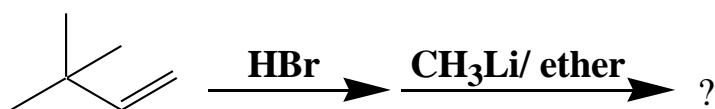
科 目：有機化學



三、Please decide the reasonable starting material by yourself and write down the required reactions including reagents and products for every reaction you design to generate the final product listed below. (10%)



四、Please write down the major final product for the reaction listed below. (10%)



五、Please predict the proton NMR spectrum for acetone. List the chemical shift value and peak character for each peak shown in the proton NMR spectrum of acetone. (10%)

系所別：化學系三年級

科 目：有機化學

六、Please decide the organic solvent's polarity for the organic solvents listed below. List these organic solvents in the order from the highest polar solvent to the lowest polar solvent. (10%)

organic solvents: n-hexane, dichloromethane, benzene, chloroform.

七、Please write down the major final product for the reaction listed below. (10%)

