

115CH09

國立臺北科技大學 115 學年度碩士班招生考試

系所組別：3520 化學工程與生物科技系化學工程碩士班乙組

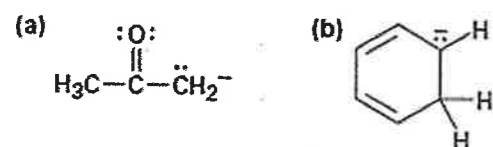
第二節 有機化學 試題

第 1 頁 共 1 頁

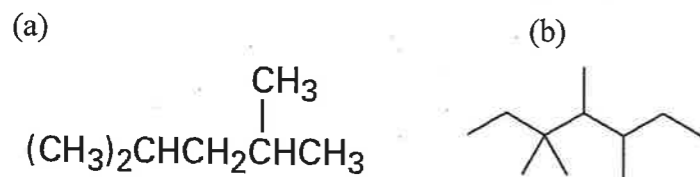
注意事項：

1. 本試題共八題，共 100 分。
2. 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。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

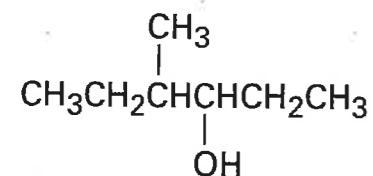
1. Draw the resonance forms of the following compounds: (共 10 分，每小題 5 分)



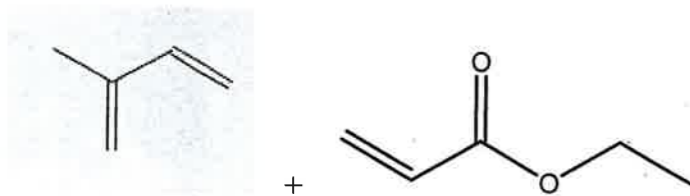
2. Give IUPAC names for the following compounds: (共 10 分，每小題 5 分)



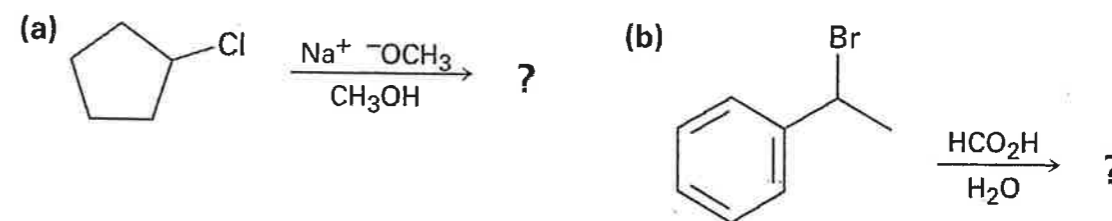
3. How to prepare the following alcohol? Start from an alkene. (10 分)

4. Show the polymerization mechanism of poly(vinyl chloride), a polymer made from $\text{H}_2\text{C}=\text{CHCl}$. (20 分)

5. Reaction of isoprene (2-methylbuta-1,3-diene) with ethyl propenoate gives a mixture of Diels-Alder reaction. Show the structure and reaction mechanisms of the mixture. (10 分)



6. Predict the major product of the sulfonation of (a) toluene and (b) the mononitration of nitrobenzene. (共 10 分，每小題 5 分)

7. Draw the following mechanisms reactions are likely to be $\text{S}_{\text{N}}1$, $\text{S}_{\text{N}}2$, $\text{E}1$, or $\text{E}2$, and predict the product of each: (共 20 分，每小題 10 分)

8. According to the following NMR spectrum, predict the unknown compound from the following multiple choice options and explain the reason. (10 分)

