

國立臺北科技大學九十五學年度碩士班招生考試

系所組別：3711、3712 有機高分子研究所甲組

第一節 有機化學 試題

填准考證號碼

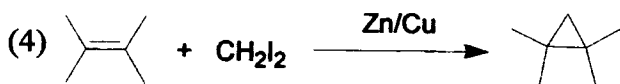
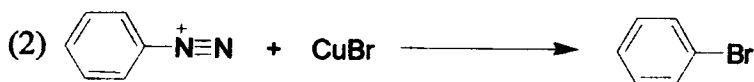
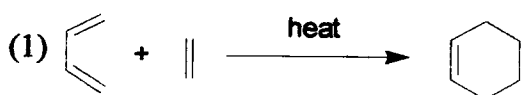
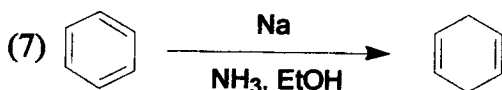
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第一頁 共二頁

注意事項：

1. 本試題共七題，配分共 100 分。
2. 請標明大題、子題編號作答，不必抄題。
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. Give the name, e.g. Michael reaction, for the following name reactions and reagents. (共 21 分，每小題 3 分)

(5) RMgX (6) LiR_2Cu 

2. Draw molecular orbitals to show the dimerization of ethene forming cyclobutane is allowed under irradiation with UV, but is not allowed by heating. (共 6 分)
3. The reaction of 1,3-butadiene with HBr gives two products; one is major product at low reaction temperature, contrarily another product predominates at high temperature. (共 10 分)

6. Will the following reactions be primarily displacement or elimination? (共 10 分，每小題 2 分)
- (a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl} + \text{I}^- \rightarrow$
 - (b) $(\text{CH}_3)_3\text{CBr} + \text{CN}^-$ (in ethanol) \rightarrow
 - (c) $\text{CH}_3\text{CHBrCH}_3 + \text{OH}^-$ (in H_2O) \rightarrow
 - (d) $(\text{CH}_3)_3\text{CBr} + \text{H}_2\text{O} \rightarrow$
 - (e) $\text{CH}_3\text{CHBrCH}_3 + \text{OH}^-$ (in ethanol) \rightarrow
7. Account for the following orders of reactivity: (共 6 分，每小題 3 分)
- (a) Toward H_3O^+ : 2,6-dimethylpyridine (2,6-lutidine) > pyridine
 - (b) Toward the Lewis acid BMe_3 : pyridine > 2,6-lutidine