## 國立彰化師範大學98學年度碩士班招生考試試題

系所:化學系 科目:有機化學

☆☆請在答案紙上作答☆☆

共2頁,第1頁

1. Please predict the major product for the following reactions. (50%)	
1). + HBr <u>-80 °C</u>	11) NBS CCI <sub>4</sub>
2). O H 1. NaBH <sub>4</sub> 2. EtOH	12) $\frac{O}{\text{NHCCH}_3}$ $\frac{HNO_3}{H_2SO_4}$ $\frac{1. \text{ HCI, H}_2O, \triangle}{2. \text{ HO}^-}$
3). OTs KOC(CH <sub>3</sub> ) <sub>3</sub> 4).	13) HBr ROOR
O CH <sub>3</sub> O⁻ CH <sub>3</sub> OH	14) $+ HNO_3 \frac{H_2SO_4}{300^{\circ}C}$

5). 
$$+ H_2O$$
  $\frac{H_2SO_4}{HgSO_4}$   $OH_CN$   $HCI, H$ 

CI 
$$\frac{1. \text{ AlCl}_3}{2. \text{ H}_2\text{O}}$$
 18)  $\frac{1. \text{ O}_3, -78^{\circ}\text{C}}{2. \text{ H}_2\text{O}_2}$ 

10) OH 
$$\frac{\text{MsCl}}{\text{pyridine}}$$
  $\frac{\text{NH}_2}{\text{TEA}}$  O O O  $\frac{\text{NaBH}_4, CeCl}_3}{\text{EtOH/H}_2O}$ 

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共2頁,第2頁

2. Propose a mechanism to account for the products formed in the following reaction: (10%)

$$CH_3$$
- $C\equiv C$ - $H$ 
 $Br_2$ 
 $H_2O$ 
 $Br$ 

3. Please propose a mechanism for this reaction. (10%)

4. How would you prepare the following compound from acetylene and any reagents with no more than two carbon atoms or inorganic reagents? (10%)

5. How would you prepare the following compound from any reagents with no more than four carbon atoms or inorganic reagents? (10%)

6. Explain why the addition of HBr to alkenes **A** and **C** is regioselective, forming addition products **B** and **D**, respectively. (10%)