

# 大同大學 102 學年度 轉學入學考試試題

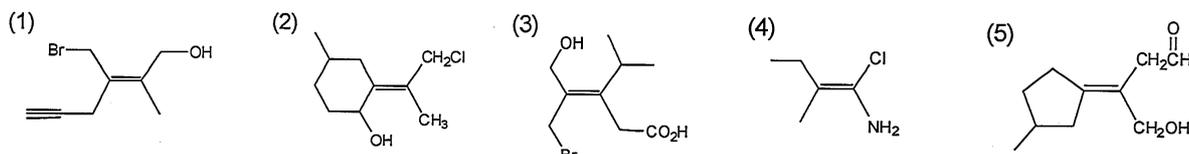
考試科目: 有機化學

所別: 化學工程學系

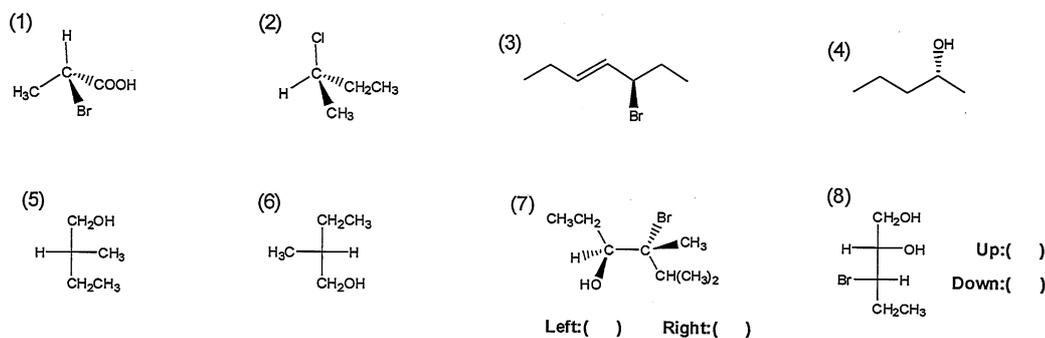
第 1 / 2 頁

註: 本次考試 不可以 參考自己的書籍及筆記; 不可以 使用字典; 不可以 使用計算器。

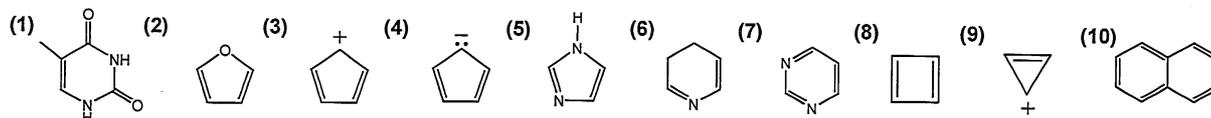
1. Assign *E* or *Z* configuration to the following alkenes. (10%)



2. Please assign *R* or *S* form for asymmetric center of the following structures. (10%)

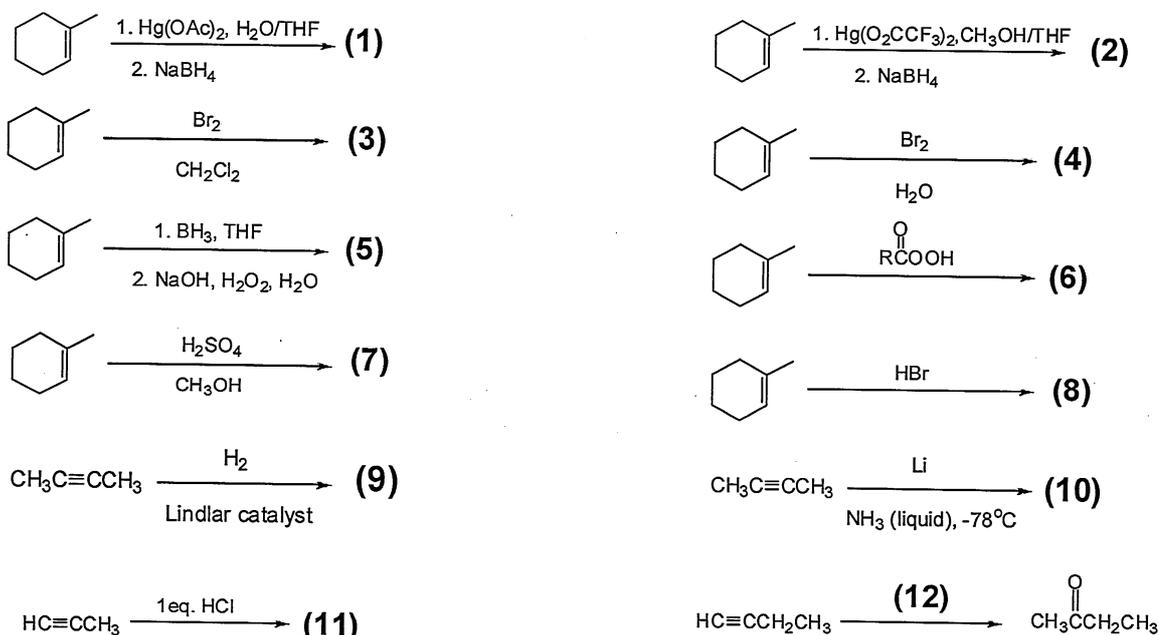


3. Classify the following species as aromatic, nonaromatic or antiaromatic molecule. (10%)



Aromatic: \_\_\_\_\_  
Nonaromatic: \_\_\_\_\_  
Antiaromatic: \_\_\_\_\_

4. Please give the major product for each of the following reactions: (24%)



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第 2 頁

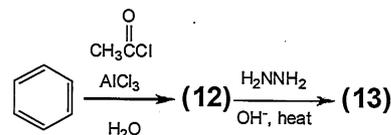
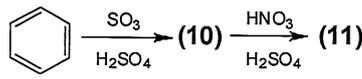
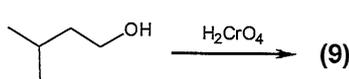
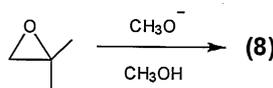
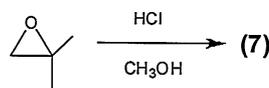
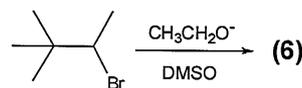
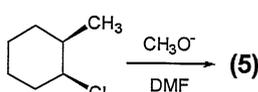
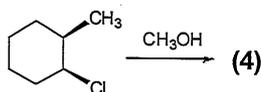
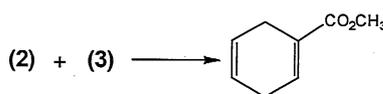
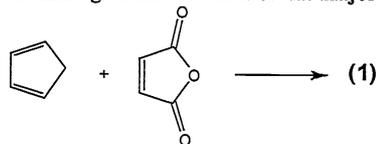
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5. Please rank the reactivity of the following alcohols which will react most rapidly with the Lucas reagent (HCl, ZnCl<sub>2</sub>)? (6%)

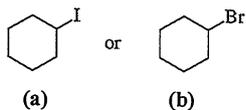
(a) 2-butanol (b) 1-butanol (c) *tert*-butanol Ans: \_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_

6. Please give the reactants or the major product for each of the following reactions: (26%)

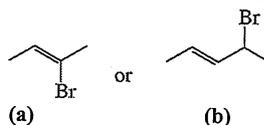


7.

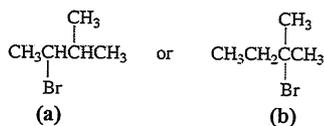
(1). Which reacts faster in an S<sub>N</sub>2 reaction? (2%)



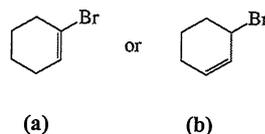
(2). Which reacts faster in an E1 reaction? (2%)



(3). Which reacts faster in an S<sub>N</sub>1 reaction? (2%)



(4). Which reacts faster in an E2 reaction? (2%)

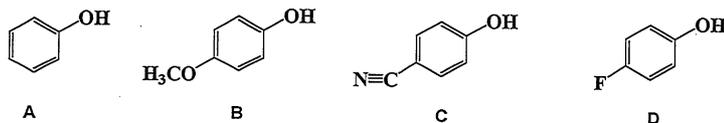


8. Which of the compounds in each of the following pairs is more acidic? (6%)

(1) (a) CH<sub>3</sub>COOH (b) ClCH<sub>2</sub>COOH

Ans: \_\_\_\_\_ > \_\_\_\_\_

(2)



Ans: \_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_