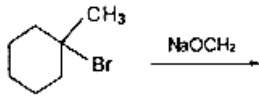


國立中央大學八十五學年度碩士班研究生入學試題卷

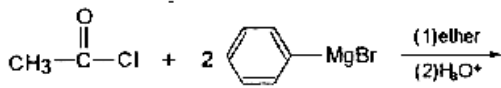
所別: 環境工程研究所 丁組 科目: 有機化學 共 2 頁 第 1 頁

1. Predict the products of the following reactions. When more than one product is expected, predict which product will be the major product. (40%)

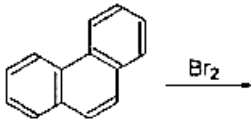
(a)



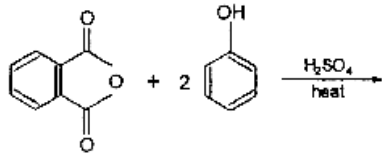
(b)



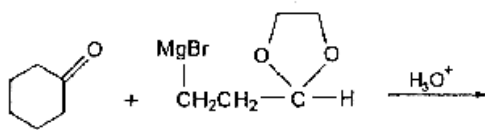
(c)



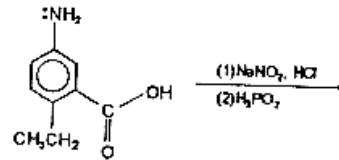
(d)



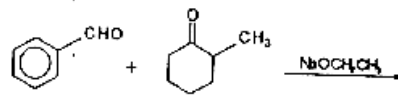
(e)



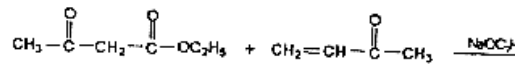
(g)



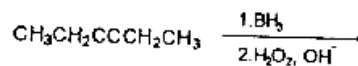
(h)



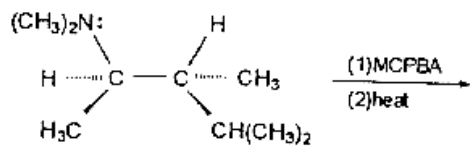
(i)



(j)



(f)

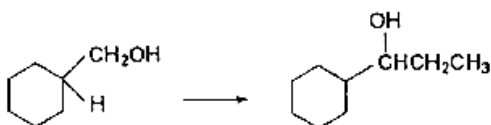


2. Show how you would accomplish each of the following synthetic conversion. (20%)

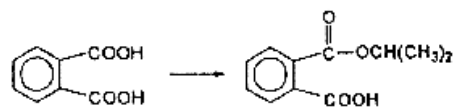
(a)



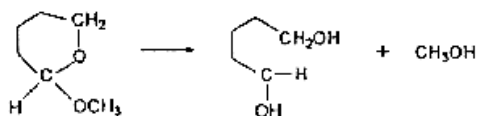
(b)



(d)



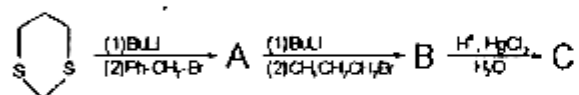
(e)



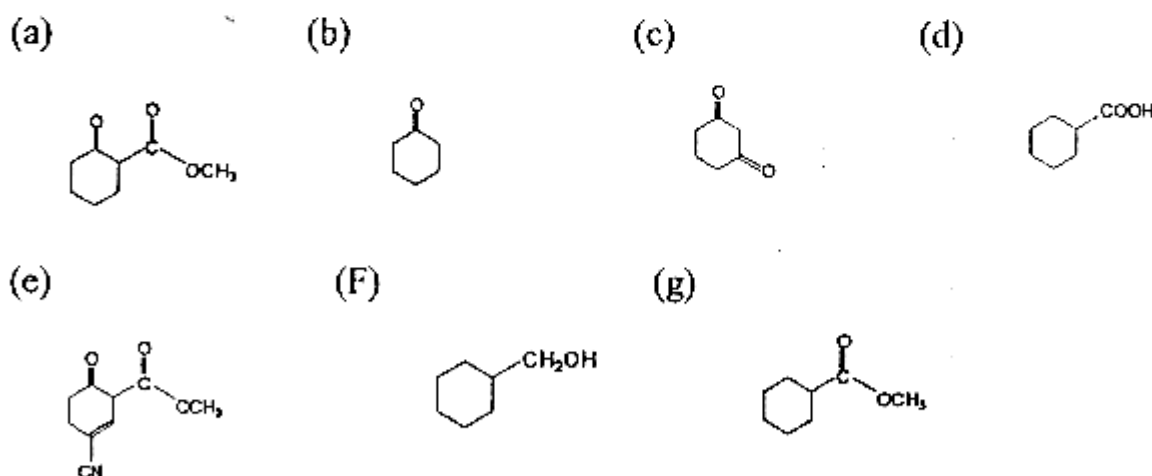
參考用

3. The acetoacetic ester synthesis generally gives best yield when primary halides are used in the alkylation step. Secondary halides give low yields and tertiary halides give practically no alkylation product at all. (a) Explain. (b) What products would you expect from the reaction of sodioacetoacetic ester and tert-butyl bromide? (c) Bromobenzene cannot be used as an arylating agent in an acetoacetic ester synthesis in the manner we have just described. Why not? (10%)

4. Give Structures for compounds A through C (10%)



5. Rank the following compounds in order of increasing acidity. (10%)



6. If 2-bromo-2-methylpropane is dissolved in aqueous ethanol at 25°C, a mixture of $(\text{CH}_3)_3\text{COCH}_2\text{CH}_3$ (30%), $(\text{CH}_3)_3\text{COH}$ (60%), and $(\text{CH}_3)_2\text{C}=\text{CH}_2$ (10%) is obtained. Explain why? (10%)

