

Question of carboxylic acid and its derivatives

1. Give and explain the relative reactivity order of the following derivatives of carboxylic acids towards nucleophilic substitution reaction:
 $\text{CH}_3\text{COOCH}_3$, CH_3COCl , $\text{CH}_3\text{COOCOCH}_3$, CH_3NH_2
2. Explain the miscibility of carboxylic acid in water.
3. Write short note on
 - a) Hell-Volhard-Zelinsky reaction.
 - b) Esterification reaction
 - c) Reformatsky reaction