A very brief chapterwise synopsis of the contents of the thesis is presented to help ready appraisal.

The experimental work comprises:

1. Hydrolysis of three keto esters, namely, Ethyl Pyruvate, Ethyl Acetoacetate and Ethyl Levulinate in which the keto groups occupy more distant positions from the reacting zone.

   Solvent effects in different binary media and structural effects on the kinetics were investigated.

2. Reaction of the keto esters with ammonia in different dielectric media.

3. A limited study on the kinetics of oxidation of the three keto esters by Ceric Sulphate in aqueous solution.

Chapter - One.

The recent position in our knowledge of solvent effect on rate and other kinetic parameters has been summed up. Emphasis has been laid on the effect of dielectric constant and of the other factors that can be classified under solute-solvent and solvent-solvent interactions. The influence of structure on rate constants concludes the 'Introduction'.
Chapter - Two

The role of water and its possible 'order' in the kinetics of hydrolysis of the three keto esters — Acid Hydrolysis of Pyruvic ester and Base Hydrolysis of Acetoacetic and Levulinic esters — have been sought to be established within the framework of the conventionally accepted mechanisms of ester hydrolysis. In all the three cases, it has been shown that the reactions involve 'mixed order' processes. The variation of dielectric constant has been of special importance in the revelation of the Order.

Chapter - Three

The kinetic aspects, apart from mechanism, and the different peculiarities that have become evident have been dealt with from the viewpoints of solute-solvent and solvent-solvent interactions.

The structural influence on the rate constants as the keto group recedes from the reaction zone has been considered. A semiquantitative treatment of $\pi$-electron charge distribution and of delocalisation energy has been made to deal with the mesomeric effects of such structure on rate constants.

Chapter - Four

Observations indicate that reactions of the keto esters (solutions in aqueous and binary media) with dilute
ammonia do not lead to the formation of amides. The reaction is kinetically second order and dependent upon the concentration of ammonia.

The oxidation reactions of the keto esters by Ceric Sulphate forms the concluding part of the Chapter. A complete analysis of the data has not been made from the limited experimental data. Incidentally, however, it has led to a number of interesting revelations.