GENERAL REMARKS

The present investigation was carried out in the Organic Chemistry laboratory of the University of Kalyani, Kalyani 741 235, West Bengal during the period, 1st September, 1993 to December, 2001.

The numbers given to the literature, references, tables, figures, schemes and structures have been made continuous separately in each part of the dissertation. The structure numbers in the summary of the work and main description are the same for each part; however, scheme numbers in the summary and the main thesis may or may not be the same.

The starting materials were obtained from commercial suppliers and were used without further purification.

Light petrol refers to the one with boiling range 60-80°C. Extracts of products in organic solvents were generally washed with saturated sodium chloride solution and dried over anhydrous sodium sulphate. Column chromatography was carried out with silica gel of 60-120 mesh (BDH, Qualigen). In all TLC experiments, silica gel G was employed as adsorbent, spots were detected by staining with iodine vapour. All chromatographic experiments were monitored by micro TLC. The progress of the reactions was also monitored with TLC. The solvents were distilled prior to use. The melting points were recorded in sulphuric acid bath and are uncorrected. The analytical samples were routinely dried in vacuo over phosphorous pentoxide at 65° for 8 hours. The temperatures are always recorded in °C.

The IR spectra were recorded in KBr pellets and in liquid film on a Perkin Elmer 1310 instrument. Mass spectra were recorded on a Jeol JMS-D 300 instrument from CDRI, Lucknow, India. $^1$H NMR spectra were recorded on Hitachi R-600 (60 MHz), Jeol FX (100 MHz), Brucker AM-300L instruments using tetramethylsilane (TMS) as an internal standard. The 75.5 MHz $^{13}$C NMR spectra were recorded with a Brucker AM-
300L spectrometer using DISR 871 software. The chemical shifts of the proton description are reported in $\delta$ scale; the splitting patterns are designated as $s$, singlet; $d$, doublet; $t$, triplet; $dd$, double doublet; $m$, multiplet; and $br$ indicates a broad signal. Elemental analyses were recorded on a LECO CHNS-932 instrument.