Summary

This thesis consists of three chapters :-

the ***first chapter*** includes a short notes on the diazonium salt and thymol reagent demonstrates a brief review for, an assay of sulpha drugs and aim of the work.

The ***second chapter*** describe a simple sensitive spectrophotometric method for the determination of microgram amounts of sulphamethoxazole in aqueous solution, based on the coupling of diazotized sulphamethoxazole with thymol reagent in alkaline medium to produce an intense yellow coloured ,water- soluble and stable azo-dye which exhibits maximum absorption at 473 nm. The determination limits of Beer's law were 1 – 6 $\mu g.ml^{-1}$, with a molar absorptivity 2.1×10^4 $l.mol^{-1}.cm^{-1}$. The average recovery was 100.12 %, and RSD 0.492 %, the LOD is 0.0087 $\mu g.ml^{-1}$ and LOQ is 0.029 $\mu g.ml^{-1}$. The method has been successfully applied for the determination of sulphamethoxazole in pharmaceutical preparations where the analytical results are compatible with certified value of pharmaceutical preparations and with a standard addition procedure .

The ***third chapter*** demonstrates the development of simple sensitive spectrophotometric method for the determination of microgram amounts 1 – 7 $\mu g.ml^{-1}$ of sulphadiazine , based on the formation of diazotized sulphadiazine by adding sodium nitrite in acidic medium; followed by removing the excess of nitrite by sulphamic acid, the formed diazotized sulphadiazine was then coupled with thymol in strong alkaline medium to get a yellow coloured azo dye.

The produced dye is stable and soluble in aqueous medium and it has maximum absorption at a wave length of 469 nm. The molar absorptivity was 2.6×10^4 $l.mol^{-1}.cm^{-1}$ with LOD and LOQ 0.0077 and 0.025 $\mu g.ml^{-1}$ respectively. The method had good accuracy and precision; The average recovery was 100.57 % and RSD 0.657 %.

The method was applied on the pharmaceutical preparation of sulphadiazine (as cream), the analytical results were in agreement with certified value of pharmaceutical preparation and with a standard addition procedure .