PREFACE
Quality assurance and control of pharmaceutical, chemical and formulations is essential for ensuring the availability of safe and effective drug formulations to consumers. Hence Pharmaceutical analysis occupies a vital role to statutory certificate of drugs and their formulations either by the industry or by the regulatory authorities. The complexity of problems encountered in pharmaceutical analysis coupling with the importance of achieving the selectivity, speed, cost, simplicity, sensitivity, precision and accuracy results in new methods of analysis being quickly adopted by pharmaceutical industries and chemical laboratories depending upon the facilities available. Formulations contain combinations of drugs for potentiating or complementing one another in therapy or on the increase. In some case, no precise analytical methods are reported and quite often the reported procedures need improvements or change keeping in view of the advances.

Among the several instrumental techniques (HPLC, GC, Fluorimetry, NMR, IR, UV and Visible regions) available for the assay of drugs. Usually spectrophotometric technique is simple and less expensive. The selectivity and sensitivity of the spectrophotometric methods depends only on the nature of chemical reactions involved in colour development and not on the sophistications of the experiment.
UV and Visible spectrophotometric methods are highly versatile, sensitive and reproducible. In an attempt to develop new UV and Visible spectrophotometric techniques for the evaluation of purity of the pharmaceutical preparations, the author has selected sixteen drugs and established new methods. The drugs selected are

The contents of the thesis have been divided in two Parts namely part-I and part-II. The appropriate references have been placed at the end of the last chapter. Part-I of the thesis contain four chapters. Chapter-I opens with the introduction giving a definition of drugs and historical evaluation of drugs, sources of drugs, need for study and principles of spectrophotometry

Chapter-II deals with the survey of literature of the selected drugs.

Chapter-III of the thesis is divided into three sections. Section A describes the preparation of various drug solution and reagents. Section B gives the description of the instrument used in the present study. Sections C involve the
profile of the selected drugs and pharmaceutical formulations which are used for the present investigations.

Part-II

Chapter-IV of the thesis contains the spectrophotometric method for the estimation of four drugs 1. dapsone 2. sufamoxole 3. cisapride 4. mosapride contains aromatic amino group.

The procedure adopted for the assay of the above drugs is mentioned below.

The drug is treated with sodium nitrite in acidic medium for diazotization. After diazotization, the diazotized drug is coupled with coupling reagent (salbutamol and ritodrine hydrochloride) in basic medium to produce orange yellow colour.

The optical measurements of each drug are measured at wavelength of maximum absorbance against reagent blank.

This is a new method found to be simple and sensitive. The colour development is instantaneous and stable for several hours.

Chapter-V of the thesis deals with a recent technique of absorbance difference method for simultaneous estimation of selected binary drug formulations.

The estimation of one drug in presence of another drug and vice-versa by absorbance difference method is described in this chapter. This absorbance difference method is very simple and successful method for the estimation of binary drug formulations.

Chapter-6 of the thesis involves recent techniques of absorbance difference method for the identification and estimation of drug spectrophotometrically. This method is applied certain single drugs and formulations. 1. Dapsone. 2. Ritodrine hydrochloride 3. Sparfloxacin 4. Frusemide 5. Spironolactone 6. Cisapride 7. Omidazole. In this method the absorbance difference of two wavelength of one nm difference is noted, where it shows zero value to all concentrations which characterizes drug. In addition to this drug is estimated by measuring absorbance difference at two wavelengths near maximum slope of the absorption curve of respective drug.

Chapter-VII of the thesis describes the results and discussion of the present investigations.