PREFACE

This thesis is devoted mainly to the study of Nevanlinna Theory - entire and meromorphic functions, differential polynomials and difference equations. The content of this thesis is organised into six chapters:

CHAPTER 1 : INTRODUCTION AND PRELIMINARIES

In this chapter, we give brief history of Nevanlinna theory and some necessary definitions. We also state number of useful and well established results.

CHAPTER 2 : MEROMORPHIC FUNCTIONS CONCERNING DIFFERENTIAL POLYNOMIALS SHARING FIXED POINT

This chapter is divided into three sections. Here we concentrate mainly on studying the uniqueness of meromorphic functions sharing fixed points or sharing a small function, using the notion of multiplicity. The techniques used here, relaxes the nature of sharing, generalizes and extends the previous related results.

CHAPTER 3 : STUDY OF MEROMORPHIC FUNCTIONS WITH THEIR DERIVATIVES SHARING A SMALL FUNCTION

This chapter is divided into two sections. This chapter mainly deals with the study of meromorphic functions and their derivatives sharing a small function using the notion of weighted sharing.

CHAPTER 4 : GENERALIZATION OF UNIQUENESS OF DIFFERENTIAL POLYNOMIALS

This chapter is divided into two sections. In this chapter we investigate the uniqueness of differential polynomials sharing one value or sharing a small function. Here, we generalize previous results by using the concept of weighted sharing and using differential
polynomials instead of linear homogeneous differential polynomials.

CHAPTER 5: UNIQUENESS AND VALUE DISTRIBUTION OF CERTAIN DIFFERENCE POLYNOMIALS

This chapter is divided into two sections. In the first section of this chapter, we study the value distribution of entire and meromorphic functions and its linear difference polynomials sharing one value with finite weight. In the second section of this chapter, using the concept of weakly weighted sharing and relaxed weighted sharing we study the uniqueness problems of q-shift linear difference polynomials of entire functions sharing a small function.

CHAPTER 6: ZEROS AND UNIQUENESS OF q-SHIFT DIFFERENCE POLYNOMIALS WITH ZERO ORDER

This chapter is divided into two sections. Here we investigate the zero distribution of q-shift difference polynomials of entire and meromorphic functions with zero order sharing 1 CM (IM) or z CM (IM).