

ABSTRACT

The research reported in this thesis is concerned with the problem of oscillatory and nonoscillatory of nonlinear delay and neutral type difference equations. Chapter 1 provides necessary introduction and motivation for the present work. In Chapter 2, we consider a first order nonlinear neutral difference equations and establish some sufficient conditions for the existence of nonoscillation of all solutions of this equations. In Chapter 3, we consider a second order neutral difference equation and establish some sufficient conditions for the oscillation of all solutions of this equation. In Chapter 4 and 5, we consider a third order nonlinear delay difference equation and study the oscillatory and asymptotic behavior of solutions of this equation. Finally Chapter 6 study with the even order quasilinear delay difference equation and establish some sufficient conditions for the oscillation of all solutions of this equation. Examples are provided to illustrate the main results. The results presented in this thesis improve, generalize and extend some of the known results.