ABSTRACT

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