

Abstract

The theory of oscillation of delay differential equations has many applications in different fields and has great importance in studying the qualitative properties of differential equations.

In this research, we study asymptotic property to the delay differential equation of neutral type. In the first chapter one, we presented initial value problem for delay differential equation and we gave some important definitions in the theory of delay differential equation and oscillatory theory.

Furthermore, we submitted important remarks and application examples with important lemma to prove main result.

In chapter two, we studied the oscillation property of integro-differential equation with delays and obtained sufficient conditions to ensure the oscillation of all solutions of this kind of equations.

We demonstrated our results with application examples to satisfy all sufficient conditions to guarantee the oscillation of all to the integro-differential equation.