

1100-46-117

Youssef N Raffoul* (yraffoul1@udayton.edu), yraffoul1@udayton.edu, Dayton, OH 45469-2316, and **Mehmet Unal.** *Qualitative Analysis of Solutions of Nonlinear Delay Dynamic Equation.*

Using fixed point theory, we investigate the qualitative analysis of solutions of nonlinear delay dynamic equation of the form

$$x^\Delta(t) = -a(t)g(x(\delta(t)))\delta^\Delta(t), \quad t \in [t_0, \infty)_{\mathbb{T}} \quad (1)$$

on an arbitrary time scale \mathbb{T} which is unbounded above, where the functions a and g are rd -continuous, the delay function $\delta : [t_0, \infty)_{\mathbb{T}} \rightarrow [\delta(t_0), \infty)_{\mathbb{T}}$ is strictly increasing, invertible and delta differentiable such that $\delta(t) < t$, $|\delta^\Delta(t)| < \infty$ for $t \in \mathbb{T}$, and $\delta(t_0) \in \mathbb{T}$.

We illustrate our our results by applying them to various kind of time scales. (Received February 04, 2014)