South East Asian J. of Mathematics and Mathematical Sciences
Vol. 16, No. 1 (2020), pp. 123-134

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

UNIQUENESS AND ITS GENERALIZATION OF MEROMORPHIC FUNCTIONS CONCERNING DIFFERENTIAL POLYNOMIALS

Rajeshwari S. and Naveen Kumar S. H.*

Department of Mathematics,
School of Engineering,
Presidency University, Bangalore-560 064, INDIA

E-mail : rajeshwari.s@presidencyuniversity.in, rajeshwaripreetham@gmail.com

*Department of Mathematics,
Gitam School of Technology,
Gitam Bangalore-562163, INDIA

E-mail: naveenkumarsh.220@gmail.com

(**Received:** *Jan. 16, 2020* **Accepted:** *Feb. 05, 2020* **Published:** *Apr. 30, 2020)*

Abstract: Considering the generalization of uniqueness of meromorphic functions of differential monomials, we obtain that if two non-constant meromorphic functions $f(z)$ and $g(z)$ satisfy $E_k(1, f^n f^{(k)}) = E_k(1, g^n g^{(k)})$, where k and n are two positive integers satisfying $k \geq 3$ and $n \geq 2k+9$, then either $f(z) = c_1 e^{cz}, g(z) = c_2 e^{-cz}$, where c_1, c_2, c are three constants, satisfying $(-1)^k (c_1 c_2)^n c^{2k} = 1$.

Keywords and Phrases: Uniqueness, Meromorphic function, Sharing value.

2010 Mathematics Subject Classification: Primary 30D35.

1. Introduction and Main Results

In this paper, we use the standard notations and terms in the value distribution theory [1].

Let $f(z)$ be a non constant meromorphic function on the complex plane C. Define $E(a, f) = \{z/f(z) - a = 0\}$, where a zero point with multiplicity m is counted m times in the set. If there zero points are only counted once, then we denote the set by $\overline{E}(a, f)$. Let k be a positive integer. Define