South East Asian J. of Mathematics and Mathematical Sciences Vol. 20, No. 1 (2024), pp. 59-70 DOI: 10.56827/SEAJMMS.2024.2001.5 ISSN (Onl

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

ESTIMATES ON INITIAL COEFFICIENT BOUNDS OF SUBCLASSES OF BI-UNIVALENT FUNCTIONS DEFINED BY GENERALIZED DIFFERENTIAL OPERATOR

Girish D. Shelake, Sarika K. Nilapgol* and Santosh B. Joshi**

Department of Mathematics, Willingdon College, Sangli - 416415, Maharashtra, INDIA

E-mail : shelakegd@gmail.com

*Department of Mathematics, Shivaji University, Kolhapur - 416004, Maharashtra, INDIA

E-mail : sarikanilapgol101@gmail.com

**Department of Mathematics, Walchand College of Engineering, Sangali - 416415, Maharashtra, INDIA

E-mail : joshisb@hotmail.com

(Received: Oct. 25, 2023 Accepted: Apr. 07, 2024 Published: Apr. 30, 2024)

Abstract: In this present paper, we introduce two new subclasses $\mathcal{H}^k_{\Sigma}(\alpha, \delta, \lambda, \mu, \sigma)$ and $\mathcal{H}^k_{\Sigma}(\beta, \delta, \lambda, \mu, \sigma)$ of normalized analytic bi-univalent functions defined in the open unit disk and associated with generalized differential operator. Further, we obtain bounds for the second and third Taylor- Maclaurin coefficients of the functions of these subclasses. Also, we obtain some consequences of results obtained.

Keywords and Phrases: Analytic function, Univalent function, Bi-Univalent function, Taylor-Maclaurin series.

2020 Mathematics Subject Classification: 30C45.