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CERTAIN SUBCLASS OF BI-UNIVALENT FUNCTIONS RELATED TO HORADAM POLYNOMIALS ASSOCIATED WITH q-DERIVATIVE

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Abstract: In this paper, by making use of q-derivative, we define a new subclass of analytic and bi-univalent functions related to Horadam polynomials. For functions belonging to this class, we derive coefficient inequalities and the Fekete-Szegö inequalities. We also provide relevant connections of our results with those considered in earlier investigations.

Keywords and Phrases: Univalent and Bi-univalent functions, Fekete-Szegö inequality, Horadam polynomials and q-derivative.

2020 Mathematics Subject Classification: 52A40.

1. Introduction

We indicate by $\mathcal{A}$ the collection of functions, which are analytic in the open unit disc given by

$$\mathbb{D} = \{z \in \mathbb{C}; |z| < 1\}$$

and have the following normalized form:

$$f(z) = z + \sum_{n=2}^{\infty} a_n z^n. \tag{1.1}$$