Durrmeyer Type Modification of q-Generalized Bernstein Operators

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Abstract : The purpose of this paper to introduce the Durrmeyer type modification of q-generalized-Bernstein operators which include the Bernstein polynomials in the particular $\alpha = 0$. We investigate the rate of convergence by means of the Lipschitz class and the Peetre's K-functional. Also, we define the bivariate case of Durrmeyer type modification of q-generalized-Bernstein operators and study the degree of approximation with the aid of the partial modulus of continuity and the Peetre's K-functional. Finally, we introduce the GBS (Generalized Boolean Sum) of the Durrmeyer type modification of q- generalized-Bernstein operators and investigate the approximation of the Bögel continuous and Bögel differentiable functions with the aid of the Lipschitz class and the mixed modulus of smoothness.
Keywords : Bögel continuous, Bögel differentiable, generalized Boolean sum, Peetre's K-functional, Lipschitz class, mixed modulus of smoothness
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