P R E F A C E

The work of the present thesis entitled ''ON CONVERGENCE
AND SUMMABILITY OF GENERAL ORTHOGONAL SERIES'', is based on
the researches carried out by me since November 1986, under
the valuable guidance and kind supervision of Professor S.R.
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The present thesis contains nine chapters. The first
chapter is introductory. It consists of the basic material
to the present work and a survey of the theorems related
to the present investigations. Chapter 2 consists of
summability of orthogonal series by Cesàro, Riesz, de-la
Vallee Poussin, $(\tilde{N}, p_n)$ and Logarithmic methods, where
we also discussed the convergence and order of approximation.
Chapter 3 deals with degree of approximation of
$(\tilde{N}, p_n)$ means to their generating functions and strong
summability of orthogonal series by $(\tilde{N}, p_n)$ and Euler
methods. The estimation of the order of certain
summability means are discussed in chapter 4. The
order of Lebesgue function corresponding to Nörlund and
$(\tilde{N}, p_n)$ summability of orthogonal series in polynomial

like orthonormal systems are in chapter V. Absolute summability of orthogonal series by Nörlund, $(\bar{N}, p_n)$ and generalized de-la Vallée Poussin methods are in chapter VI. Chapter VII is devoted to the convergence of orthogonal polynomial expansions by Cesàro and Nörlund methods. Chapter VIII contains some of the results regarding absolute convergence of orthogonal series. In the last chapter we have proved the convergence and summability of lacunary orthogonal series.

Complete references of above literature on the subject and list of papers which are accepted and communicated are given at the end.
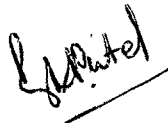
and for providing every possible facility throughout the period of my present study.

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