

PREFACE

The Present dissertation entitled “**Spline Approximation: Theory and Computation**” attempts to discuss the concept of Approximation Theory ,Interpolation ,Spline Interpolation .

The dissertation contains in all Five chapters .

In chapter-0 we have given preliminary results,definitions and notations which are subsequently used in the dissertation .

Chapter-1 includes the Approximation Theory containing Approximation in Metric space , in Normed linear space the L_p -spaces Uniqueness of best approximation ,theorems.Next part is Interpolation, Lagrange form and its algorithm. At the end of this chapter ,Newton divided differences ,Interpolation is given which contains definition table and properties.

Chapter-2 starts with limitations of polynomial approximation, Runge’s example given to explain bad consequences of Uniform spacing of data.Next is Piecewise linear

Interpolation and Least Squares Approximation by Broken Lines is discussed.

Spline Interpolation Linear, Quadratic ,
Cubic spline Interpolation derivations are given in the Chapter -3 .

Chapter-4 includes definition of B-spline
,definition of S_m the space cardinal splines of order m properties
and derivation of expression for B-spline.