CHAPTER I Introduction ................................................. 1

CHAPTER II (a) Expansion of Incomplete 
Gamma function in terms 
of Jacobi Polynomials. 
(b) Extended Form of Jacobi 
Polynomial and Some 
Useful Results. ...................................................... 38

CHAPTER III (a) A few Additional Results 
on Extended Form of 
Jacobi Polynomials. 
(b) Extended Form of Rice's 
Polynomial. .............................................................. 73

CHAPTER IV (a) Dual Series Equations 
Involving Extended Jacobi 
Polynomials. 
(b) Dual Sequence Equations 
Involving Extended Jacobi 
Polynomials. ............................................................ 88

CHAPTER V (a) Some Integral Equations 
Involving Extended Forms of 
Jacobi and Rice's 
Polynomials. 
(b) An Integral Equation 
Involving \( r+3 \) in the 
Kernel. ................................................................. 110

CHAPTER VI (a) Some Generating Functions 
of Extended Jacobi 
Polynomials. 
(b) Extended Jacobi Function 
of Second kind. ........................................................... 134
CHAPTER VII  Extended Forms of Bernoulli and Euler Polynomials.  

CHAPTER VIII(a)  Generalized Kuipers - Meulenbeld Transform.  
(b) Solution of Schrödinger's Wave Equation.  

CHAPTER IX  Extended Prolate Spheroidal Wave Function and its Applications.  

CHAPTER X (a) A Brief History of the Mathematical Theory of Elasticity.  
(b) Application of Generalized Legendre Transform in vibrations of an Elastic Rod.  
(c) A Study of Torsion in an Elastic Non-Homogeneous Solid of Revolution under a set of Impressed Forces.  

CHAPTER XI (a) Two Variable Analogue of Extended Jacobi Polynomials.  
(b) Another Form of Extended Jacobi Polynomial in Two Variable and Some Generating Functions.  

APPENDIX