

CONTENTS

PART I. THE PROCESSES OF ANALYSIS

CHAPTER	PAGE
I Complex Numbers	3
II The Theory of Convergence	11
III Continuous Functions and Uniform Convergence	41
IV The Theory of Riemann Integration	61
V The fundamental properties of Analytic Functions ; Taylor's, Laurent's, and Liouville's Theorems	82
VI The Theory of Residues; application to the evaluation of Definite Integrals	111
VII The expansion of functions in Infinite Series	125
VIII Asymptotic Expansions and Summable Series	150
IX Fourier Series and Trigonometrical Series	160
X Linear Differential Equations	194
XI Integral Equations	211

PART II. THE TRANSCENDENTAL FUNCTIONS

XII The Gamma Function	235
XIII The Zeta Function of Riemann	265
XIV The Hypergeometric Function	281
XV Legendre Functions	302
XVI The Confluent Hypergeometric Function	337
XVII Bessel Functions	355
XVIII The Equations of Mathematical Physics	386
XIX Mathieu Functions	404
XX Elliptic Functions. General theorems and the Weierstrassian Functions	429
XXI The Theta Functions	462
XXII The Jacobian Elliptic Functions	491
XXIII Ellipsoidal Harmonics and Lamé's Equation	536
APPENDIX	579
LIST OF AUTHORS QUOTED	591
GENERAL INDEX	595

[NOTE. The decimal system of paragraphing, introduced by Peano, is adopted in this work. The integral part of the decimal represents the number of the chapter and the fractional parts are arranged in each chapter in order of magnitude. Thus, e.g., on pp. 187, 188, § 9·632 precedes § 9·7 because 9·632 < 9·7.]