CONTENTS

INTRO PREFA	DDUCTION	vi: ix
PART	I	1
GENEI	RAL PROPERTIES OF ANALYTIC AND FINITE ORDER FUNCTIONS IN THE HALF-PLANE	1
1	Definition of order and indicator of a function holomorphic in an angle. Relations between various definitions of order .	1
$\frac{2}{3}$	Generalized Nevanlinna and Carleman formulas Canonical representation of a function of finite order in the half-plane	15 23
NECES	SSARY CONDITIONS OF COMPLETELY REGULAR GROWTH IN THE HALF-PLANE	38
4	Definition of completely regular growth in the half- plane. List of results on completely regular growth	38
5	Relation between completely regular growth in open and closed angles	44
6 7	Asymptotic behavior of the modulus and zero distributions of entire functions of the class A_{ρ}^{*}	53
8	Existence of argument boundary density for the zero set of a function from the class A_{ρ}^{*}	64
_	set of a function from A^*_{ρ}	71
SUFFIC	CIENT CONDITIONS OF COMPLETELY REGULAR GROWTH IN THE HALF-PLANE AND FORMULAS FOR INDICATORS	76
9	The growth of some auxiliary functions of non-integer order	76
10	A criterion for a function to belong to the class A_{ρ}^{*} , ρ being non-integer	81
11	A criterion for a function to belong to the class \bar{A}_{ρ}^{*} , ρ being non-integer.	87
12	The argument-boundary symmetry of the zero set of a function of the class A_{ρ}^{*} , ρ being integer	90
13	The growth of some auxiliary functions of integer order \dots	94
14	A criterion for a function to belong to the class A_{ρ}^{*} , ρ integer	100
15	A criterion for a function to belong to the class \tilde{A}_{ρ}^{*} , ρ integer	105
16	Functions of the class \bar{A}^*_{ρ} for even and for odd ρ	107
17	Functions of a finite degree in the half-plane	112

vi CONTENTS

PART	II	116
RIEM	ANN BOUNDARY PROBLEM WITH AN INFINITE INDEX WHEN THE VERTICITY INDEX IS LESS THAN 1/2	110
10		116
18	Statement of the homogeneous problem	116
$\frac{19}{20}$	Canonical function	118
21	scription of solutions of order ρ Formulation of the non-homogeneous problem and an ap-	124
22	proach to its solution	128
	Solution of the non-homogeneous problem	132
RIEMA	ANN BOUNDARY PROBLEM WITH INFINITE INDEX IN THE CASE OF VERTICITY OF INFINITE ORDER	137
23	Statement of the homogeneous problem	137
24	Canonical function	139
25	Asymptotic properties of zero sets of solutions of the homo-	
26	geneous problem from the classes B and B_{σ}^*	142
20	General form of solutions of the homogeneous problem in the	
97	class B	157
27	General form of solutions of the homogeneous problem in the class B_{σ}^*	166
28	An example of a solution of the homogeneous problem in the	
	class B_{σ} . Importance of the restriction on the exponent in	
	the Hölder condition for the function $\varphi(t) = \arg G(t)/(2\pi t^{\rho})$	175
29	Statement of the non-homogeneous problem and an approach	1.0
	to its solution	184
30	Auxiliary statements	187
31	Solution of the homogeneous problem	200
RIEMA	ANN BOUNDARY PROBLEM WITH A NEGATIVE INDEX	204
32		204
32	An example of a solvable homogeneous problem with a negative index	204
33	Conditions of unsolvability of the homogeneous problem with	204
	a negative index	211
34	Conditions of solvability of the non-homogeneous problem	
011 mr	with an index $-\infty$	223
ON THE PALEY PROBLEM		
A.1	Formulation of the problem and proof of the main inequality	232
A.2	Solution of the Paley problem	243
BIBLIOGRAPHY		
DIDMOGRAPHY 2		