

# CONTENTS

FOREWORD. . . . .	1
PRELIMINARIES . . . . .	25
I.    Set-theoretical notions . . . . .	25
II.   Metalogical notions . . . . .	39
Chapter 0.  GENERAL THEORY OF ALGEBRAS. . . . .	47
0.1  Algebras and their subalgebras. . . . .	50
0.2  Homomorphisms, isomorphisms, congruence relations, and ideals. . . . .	67
0.3  Direct products and related notions. . . . .	83
0.4  Polynomials and free algebras . . . . .	119
0.5  Reducts. . . . .	149
Problems . . . . .	157
Chapter 1.  ELEMENTARY PROPERTIES OF CYLINDRIC ALGEBRAS . . . . .	159
1.1  Cylindric algebras . . . . .	161
1.2  Cylindrifications . . . . .	175
1.3  Diagonal elements . . . . .	179
1.4  Duality . . . . .	185
1.5  Substitutions . . . . .	189
1.6  Dimension sets. . . . .	199
1.7  Generalized cylindrifications. . . . .	205
1.8  Generalized diagonal elements . . . . .	209
1.9  Generalized co-diagonal elements . . . . .	215
1.10  Atoms and rectangular elements . . . . .	225

1.11	Locally finite-dimensional and dimension-complemented cylindric algebras. . . . .	231
	Problems . . . . .	245
Chapter 2.	GENERAL ALGEBRAIC NOTIONS APPLIED TO CYLINDRIC ALGEBRAS. . . . .	247
2.1	Subalgebras . . . . .	250
2.2	Relativization of cylindric algebras . . . . .	261
2.3	Homomorphisms, isomorphisms, and ideals . . . . .	279
2.4	Direct products and related notions . . . . .	297
2.5	Free algebras . . . . .	335
2.6	Reducts. . . . .	381
2.7	Canonical embedding algebras and atom structures . . . . .	429
	Problems . . . . .	463
	BIBLIOGRAPHY. . . . .	467
I.	Bibliography of cylindric algebras and related algebraic structures . . . . .	469
II.	Supplementary bibliography. . . . .	481
	INDEX OF SYMBOLS . . . . .	489
	INDEX OF NAMES AND SUBJECTS. . . . .	499