

Contents

Preface	v
1 Main concepts	1
1.1 Elements of theory of relations	1
1.2 Functions and operations	5
1.3 Algebraic systems	8
1.4 Closure operations	10
1.5 Notes on Chapter 1	20
2 Menger algebras of functions	21
2.1 Definitions and fundamental notions	21
2.2 Menger semigroups	36
2.3 v -regular Menger algebras	42
2.4 i -solvable Menger algebras	50
2.5 Group-like Menger algebras	57
2.6 Antisymmetric Menger algebras	68
2.7 Representations of Menger algebras	76
2.8 Notes on Chapter 2	82
3 Ordered Menger algebras	85
3.1 Menger algebras of relations	85
3.2 F.o. and p.q-o. Menger algebras	90
3.3 Algebras of reversion functions	96
3.4 (\wedge) -, (\vee) -, (\wedge, \vee) -Menger algebras	103
3.5 Subtraction Menger algebras	119
3.6 Restrictive Menger algebras	135
3.7 Functional Menger systems	144
3.8 Notes on Chapter 3	151
4 Relations between functions	153
4.1 Stabilizers of Menger algebras	153
4.2 Stabilizers of functional Menger systems	167
4.3 Stationary subsets	178
4.4 Semi-compatibility relation	196
4.5 Co-definability relation	206
4.6 Connectivity relation	212

4.7	Projection equivalence relation	218
4.8	Semiadjacency relation	224
4.9	Notes on Chapter 4	229
5	$(2, n)$-semigroups of functions	230
5.1	$(2, n)$ -semigroups and their representations	230
5.2	Menger $(2, n)$ -semigroups	248
5.3	Projection relations on $(2, n)$ -semigroups	264
5.4	Notes on Chapter 5	287
6	Systems of multiplace functions	288
6.1	Menger systems	288
6.2	Menger T -systems	302
6.3	Positional algebras	310
6.4	Mal'cev-Post iterative algebras	321
6.5	Semigroups of functions	341
6.6	Central semigroups of operations	349
6.7	Algebras of vector-valued functions	352
6.8	Notes on Chapter 6	361
7	Open problems	363
7.1	Closure operations	363
7.2	Menger algebras of functions	363
7.3	Menger algebras of relations	364
7.4	$(2, n)$ -semigroups	364
7.5	Systems of multiplace functions	365
	Bibliography	366
	Index of notations	382
	Index	386