

Contents

CHAPTER 1 Preliminaries

1.1. Commutative Banach algebras	11
1.2. Measures	14
1.3. Convexity	15
1.4. Holomorphic functions of several complex variables	16
Notes	18

CHAPTER 2 Boundaries

2.1. Function algebras	19
2.2. Representing measures	20
2.3. The Choquet boundary	22
2.4. The Shilov boundary	28
2.5. Geometric characterization	31
2.6. Representing theorems	34
Notes	37

CHAPTER 3 Algebras on the maximal ideal space

3.1. The maximal ideal space	39
3.2. Locally analytic functions	40
3.3. The local maximum modulus principle	43
3.4. Gleason parts	47
Notes	53

CHAPTER 4 Approximation and interpolation

4.1. Restrictions	55
4.2. The case of the intersections of peak sets	59

4.3. Antisymmetry	65
4.4. Some characterizations of $C(X)$. . .	67
Notes	73

CHAPTER 5 H^p -spaces

5.1. Definitions and basic lemmas	75
5.2. The theorem of F. and M. Riesz and Szegö theorem	82
5.3. The factorization theorem	92
5.4. The characterization of the func- tions in H^p	97
5.5. Invariant subspaces	101
5.6. The algebra $H^\infty(dm)$	106
Notes	107

CHAPTER 6 Special classes of function algebras

6.1. Dirichlet and logmodular algebras . .	109
6.2. Algebras generated by inner func- tions	120
6.3. Maximal algebras	127
6.4. Functions algebras on compact sets of the complex plane	130
6.5. The standard algebra and H^∞ algebra	143
Notes	146

CHAPTER 7 Operator representations of function algebras

7.1. Positive definite maps on $C(X)$. Spec- tral and semispectral measures . . .	147
7.2. Representations of function algebras .	156
7.3. Representations of the algebra $C(X)$. .	158
Notes	166

CHAPTER 8 Elements of spectral theory of representa- tions of function algebras

8.1. The canonical decomposition	167
8.2. The spectral dilation and attached spectral measures	171

8.3. Szegő measures and natural representations	184
8.4. The Wold decomposition	193
8.5. Decompositions with respect to Gleason parts	203
Notes	209

CHAPTER 9 Elements of prediction theory on S-generated algebras

9.1. Semigroups of contractions	211
9.2. The Wold decomposition	221
9.3. The semigroup of unilateral translations	225
9.4. Representations of S-generated algebras	230
9.5. Prediction theorems	234
Notes	242

CHAPTER 10 Some examples in the spectral theory of non-normal operators

10.1. The case of a single contraction . .	245
10.2. Operators having spectral sets with connected complement	248
10.3. Finite systems of commuting contractions	251
Notes	264
<i>Reference list</i>	<i>265</i>