

Table of Contents

	Page
Prefaces	V
Chapter One: Preliminaries	1
Section 1. Notation and terminology	1
Section 2. Group theory	3
Section 3. Topology	9
Chapter Two: Elements of the theory of topological groups	15
Section 4. Basic definitions and facts	16
Section 5. Subgroups and quotient groups	32
Section 6. Product groups and projective limits	52
Section 7. Properties of topological groups involving connectedness	60
Section 8. Invariant pseudo-metrics and separation axioms	67
Section 9. Structure theory for compact and locally compact Abelian groups	83
Section 10. Some special locally compact Abelian groups	106
Chapter Three: Integration on locally compact spaces	117
Section 11. Extension of a linear functional and construction of a measure	118
Section 12. The spaces $\mathfrak{L}_p(X)$ ($1 \leq p \leq \infty$)	135
Section 13. Integration on product spaces	150
Section 14. Complex measures	166
Chapter Four: Invariant functionals	184
Section 15. The Haar integral	184
Section 16. More about Haar measure	215
Section 17. Invariant means defined for all bounded functions	230
Section 18. Invariant means on almost periodic functions	245
Chapter Five: Convolutions and group representations	261
Section 19. Introduction to convolutions	262
Section 20. Convolutions of functions and measures	283
Section 21. Introduction to representation theory	311
Section 22. Unitary representations of locally compact groups	335
Chapter Six: Characters and duality of locally compact Abelian groups	355
Section 23. The character group of a locally compact Abelian group	355
Section 24. The duality theorem	376
Section 25. Special structure theorems	399
Section 26. Miscellaneous consequences of the duality theorem	426
Appendix A: Abelian groups	439
B: Topological linear spaces	451
C: Introduction to normed algebras	469
Bibliography	492
Index of symbols	506
Index of authors and terms	509