



## CONTENTS

Preface		v
INTRODUCTION		1
CHAPTER 1	TOPOLOGICAL DYNAMICAL SYSTEMS	4
	1.1 Minimality and Ergodicity of Topological Dynamical Systems	4
	1.2 Equicontinuous Dynamical Systems and Ellis Semigroups	15
	APPENDIX A MONOTHETIC GROUP	23
CHAPTER 2	ELEMENTARY THEORY OF C*-ALGEBRAS	25
	2.1 The Gelfand Representation of Commutative Banach Algebras and Spectral Calculus in Banach Algebras	25
	2.2 Elementary Properties of C*-algebras	36
	2.3 States and Representations of Banach *-algebras and C*-algebras	44
	APPENDIX B VON NEUMANN ALGEBRAS	56
CHAPTER 3	TRANSFORMATION GROUP C*-ALGEBRAS: CROSSED PRODUCTS OF COMMUTATIVE C*-ALGEBRAS	64
	3.1 Group C*-algebras and Positive Definite Functions	64
	3.2 Crossed Products of C*-algebras	68
	3.3 Positive Linear Functionals of Transformation Group C*-algebras	76
	APPENDIX C CLASSES OF C*-ALGEBRAS	92

CHAPTER 4	ORBIT STRUCTURE AND DISCRETE IRREDUCIBLE REPRESENTATION OF TRANSFORMATION GROUP C*-ALGEBRAS	96
4.1	Discrete Irreducible Representation of Transformation Group C*-algebras and Finite Orbits of Their Dynamical Systems	96
4.2	Topological Equivalence Between Finite Orbit Structure and Spaces of Finite Dimensional Irreducible Representations of Transformation Group C*-algebras	109
4.3	Relations Between the Structure of Ideals of Transformation Group C*-algebras and the Orbit Structure of Their Dynamical Systems	113
4.4	Representations of the Discrete 3-Dimensional Heisenberg Group. An Application	123
CHAPTER 5	SHIFT DYNAMICAL SYSTEMS AND TOPOLOGICAL DYNAMICAL SYSTEMS ASSOCIATED WITH SUBGROUPS OF THE TORUS T	131
5.1	Shift Dynamical Systems	131
5.2	K-groups of C*-algebras and Topological Dynamical Systems	141
5.3	Transformation Group C*-algebras Associated with Subgroups of the Torus T	154
	NOTE TO THE CONTENTS	163
	REFERENCES	165

