

## CONTENTS

1. THE JACOBSON RADICAL.....	1
1. Modules .....	1
2. The radical of a ring.....	8
3. Artinian rings.....	18
4. Semisimple Artinian rings.....	25
References.....	37
2. SEMISIMPLE RINGS.....	39
1. The density theorem .....	39
2. Semisimple rings.....	52
3. Applications of Wedderburn's theorem.....	56
References.....	67
3. COMMUTATIVITY THEOREMS.....	69
1. Wedderburn's Theorem and some generalizations .....	69
2. Some special rings.....	76
References.....	87
4. SIMPLE ALGEBRAS.....	89
1. The Brauer group.....	89
2. Maximal subfields.....	94
3. Some classic theorems.....	96
4. Crossed products.....	107
References .....	123
5. REPRESENTATIONS OF FINITE GROUPS.....	124
1. The elements of the theory.....	124
2. A theorem of Hurwitz .....	141
3. Applications to group theory.....	144
References.....	149
6. POLYNOMIAL IDENTITIES.....	150
1. A result on radicals.....	150
2. Standard identities.....	153
3. A theorem of Kaplansky.....	157
4. The Kurosh Problem for P.I. algebras.....	162
References.....	168
7. GOLDIE'S THEOREM.....	169
1. Ore's theorem .....	169
2. Goldie's theorems.....	171
3. Ultra-products and a theorem of Posner.....	179
References.....	186
8. THE GOLOD-SHAFAREVITCH THEOREM.....	187
References.....	194
SUBJECT INDEX.....	195
NAME INDEX .....	199
AFTERWORD by Lance Small .....	201