CONTENTS

Preface	v
Index of Notation	хi
1. Basic concepts	1
1.1 Group theoretical classes and closure operations	1
1.2. Series of subgroups	6
1.3. Radicals and residuals	13
1.4. Local systems	18
1.5. The minimum condition and Černikov groups	27
1.6. Generalizations of the minimum condition	35
1.7. Some miscellaneous results	46
2. Sylow theory in locally finite groups	53
2.1. Introduction	53
2.2. Elementary results and examples	54
2.3. Conjugacy and the size of $ Syl_{\pi} G $	65
2.4. The Asar-Hartley Theorem for a general set of	76
primes	82
2.5. Groups with min-p	93
2.6 Good Sylow subgroups	
3. Groups satisfying min-p for all primes p	99
3.1. Sylow theory in groups with min- p for all primes p	99
3.2. Locally soluble groups of finite rank	104
2.3 Some properties of $PSL(2,F)$	110
2.4 The 2-radicable part of a group with min-p for all p	114
3.4. The 2-radicable part of p and p are p 3.5. The structure of groups with min- p for all primes p	125
4. Groups with conjugate Sylow subgroups	141
4.1 Upper weeparable groups	141
4.1. Opper w-separation groups 4.2. Groups with the minimum condition on centralizers	144
4.3. The structure of Sylow p-integrated groups	158
4.4. Completely Sylow integrated groups	160
4.5. Metabelian groups with min-n	165

x Contents

5. Sylow bases in locally finite groups	169
5.1. General properties of Sylow bases	169
5.2. Sylow bases in U-groups	175
5.3. Sylow bases in groups with min-p for all p	181
5.4. Further results on groups with min-p for all p	188
5.5. Co-Hopfian groups	196
6. Formation theory in locally finite groups	205
6.1. A brief historical account	205
6.2. Locally defined formations	207
6.3. The 3-normalizers of locally finite groups	216
6.4. F-projectors in locally finite groups	230
6.5. Concluding remarks concerning formation theory	245
7. Fitting classes in locally finite groups	251
7.1 A brief historical account	251
7.2. Elementary properties of Fitting classes	252
7.3. Injectors in locally finite groups	257
7.4. Injectors in groups with min- p for all primes p	265
7.5. Conjugacy conditions for injectors in L-groups	272
7.6. Closing remarks	280
Bibliography	283
Index	200