

## CONTENTS

	Page
<b>Chapter I. ALGEBRAIC FIELDS</b> . . . . .	1
1. Finite field. Norm, trace, discriminant . .	1
2. Tower. Analysis of the field equation . . .	6
3. Simple extension . . . . .	9
4. Relative trace, norm and discriminant . . .	15
5. Removal of the hypothesis of separability .	18
6. The Galois case . . . . .	21
7. Consecutive extensions replaced by a single one . . . . .	24
8. Strictly finite fields . . . . .	28
9. Adjunction of indeterminates . . . . .	30
 <b>Chapter II. THEORY OF DIVISIBILITY (KRONECKER,           DEDEKIND)</b> . . . . .	 33
1. Integers . . . . .	33
2. Our disbelief in ideals . . . . .	35
3. The axioms . . . . .	38
4. Consequences . . . . .	40
5. Integrity in $\kappa(x, y, \dots)$ over $k(x, y, \dots)$ . .	44
6. Kronecker's theory . . . . .	49
7. The fundamental lemma . . . . .	54
8. A batch of simple propositions . . . . .	59
9. Relative Norm of a Divisor . . . . .	63
10. The Dedekind case . . . . .	63
11. Kronecker and Dedekind . . . . .	66
 <b>Chapter III. LOCAL PRIMADIC ANALYSIS (KUMMER,           HENSEL)</b> . . . . .	 71
1. Quadratic number field . . . . .	71
2. Kummer's theory: decomposition . . . . .	75
3. Kummer's theory: discriminant . . . . .	79
4. Prime cyclotomic fields . . . . .	80
5. Program . . . . .	83
6. $p$ -adic and $q$ -adic numbers . . . . .	94
7. $\kappa(\mathfrak{p})$ and $\kappa(\mathfrak{q})$ . . . . .	100
8. Discriminant . . . . .	107
9. Relative discriminant . . . . .	111
10. Hilbert's theory of Galois fields. Artin symbol . . . . .	116

	Page
Chapter III (Continued)	
11. Cyclotomic field and quadratic law of reciprocity . . . . .	124
12. General cyclotomic fields . . . . .	129
Chapter IV. ALGEBRAIC NUMBER FIELDS . . . . .	141
1. Lattices (old-fashioned) . . . . .	141
2. Field basis and basis of an ideal . . . . .	145
3. Norm and number of residues . . . . .	147
4. Euler's function and Fermat's theorem . . . . .	150
5. A new viewpoint . . . . .	153
6. Minkowski's geometric principle . . . . .	158
7. A fundamental inequality and its consequences: existence of ramification ideals, classes of ideals . . . . .	163
8. The Dirichlet-Minkowski-Hasse-Chevalley con- struction of units. . . . .	168
9. The structure of the group of units . . . . .	171
10. Finite Abelian groups and their characters . . . . .	175
11. Asymptotic equi-distribution of ideals over their classes . . . . .	178
12. $\zeta$ -function and related Dirichlet series . . . . .	182
13. Prime numbers in residue classes modulo $m$ . . . . .	190
14. $\zeta$ -function of quadratic fields, and their application . . . . .	193
15. Norm residues in quadratic fields . . . . .	201
16. General norm residue symbol and the theory of class fields . . . . .	210
Amendments . . . . .	223