Contents

PART 1

Preface

Birational invariants, purity, and the Gersten conjecture
J.-L. COLLIOT-THÉLÈNE 1

K-theory of simple algebras
A. S. MERKURJEV 65

Abelian class field theory of arithmetic schemes
WAYNE RASKIND 85

Brauer groups of invariant fields, geometrically negligible classes, an equivariant Chow group, and unramified H^3
DAVID J. SALTMAN 189

Higher algebraic K-theory
RICHARD G. SWAN 247

PART 2

Preface

On the Witt ring of elliptic curves
JÓN KR. ARASON, RICHARD ELMAN, AND BILL JACOB 1

p-algebras over maximally complete fields (with an Appendix by J.-P. Tignol)
ROBERTO ARAVIRE AND BILL JACOB 27

Weil's additive characters and class number parity
STELLA ROBERSON ASHFORD 51

Decomposition of positive definite integral quadratic forms as sums of positive definite quadratic forms
R. BAEZA AND M. I. ICAZA 63

Multiples of trace forms in number fields
EVA BAYER-FLUCKIGER AND JORGE MORALES 73

On the structure of Galois groups of the fields of rational functions
FEDOR A. BOGOMOLOV 83

Formal groups of twisted multiplicative groups and L-series
NANCY CHILDRESS AND DAVID GRANT 89

Sums of squares of real polynomials
M. D. CHOI, T. Y. LAM, AND B. REZNICK 103

Unramified Witt groups of real anisotropic quadrics
J.-L. COLLIOT-THÉLÈNE AND R. SUJATHA 127

Orderings, valuations, and Hermitian forms over $*$-fields
THOMAS C. CRAVEN 149

A conjecture about relative Brauer groups
BURTON FEIN AND MURRAY SCHACHER 161

Bernstein's isomorphism and good forms
YUVAL Z. FLICKER 171

Examples of locally trivial Azumaya algebras
T. J. FORD 197

Isotropy of 5-dimensional quadratic forms over the function field of a quadric
DETLEV W. HOFFMANN 217

Minimal forms for function fields of conics
D. W. HOFFMANN, D. W. LEWIS, AND J. VAN GEEL 227

Generalized class field theory and cyclic algebras
RAYMOND T. HOOBLER 239

The number of embeddings of quadratic S-lattices
DONALD G. JAMES 265

On topological filtration for Severi-Brauer varieties
N. A. KARPENKO 275

Discriminants of involutions on biquaternion algebras
M.-A. KNUS, T. Y. LAM, D. B. SHAPIRO, AND J.-P. TIGNOL 279

p-groups and K-admissibility
STEVEN LIEDAHL 305

Brauer groups over affine normal surfaces
HONGNIAN LI 309

Certain K-cohomology groups of Severi-Brauer varieties
A. S. MERKURJEV 319

The u-invariant for algebraic extensions
JÁN MINÁČ AND ADRIAN R. WADSWORTH 333

On defective division algebras
PATRICK J. MORANDI 359

Products of Severi-Brauer varieties and Galois cohomology
EMMANUEL PEYRE 369

A finiteness theorem for cohomology of surfaces over p-adic fields and an application to Witt groups
S. SAITO AND R. SUJATHA 403

Witt rings and realizability of small 2-Galois groups
TARA L. SMITH 417

Quadratic forms and solvable Galois groups
ROGER WARE 425

Symmetric and skew-symmetric elements of involutions, associated groups, and the problem of decomposability of involutions
VYACHESLAV I. YANCHEVSKIĬ 431