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UNITS OF CLASSICAL ORDERS: A SURVEY

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ABSTRACT: This survey describes the principal methods and results in the theory of units of orders.

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1. INTRODUCTION

We consider units of orders in semisimple algebras A of finite dimension over $\mathbf{Q}$. The "algebraic background" for this (a formulation due to Zassenhaus) is the classical theory of algebras, where we find as basic results the Wedderburn decomposition plus the exact sequence

$$1 \to B(K) \to \prod_{\mathfrak{p}} B(K_{\mathfrak{p}}) \to \mathbf{Q}/\mathbf{Z} \to 0 ,$$

K denoting a number field and $B(K)$ the Brauer group. (For notation and commentary, see [R], § 32). This sequence, which has been called the "Main Theorem in the theory of algebras" ([N], p. 244), in fact contains a full