Contents

		Page
Introduction		1
1.	Definition of the Arithmetical Completely Simple Semigroups ${{\rm M}}$	5
2.	Maximal Orders and Ideals in the Matrix Rings $Q_{n\times n}^{}$ and $K_{n\times n}^{\pi}^{},$ K the Field of the $\pi\text{-adic Numbers}$	12
3.	The a.c.s. Semigroup (M, \circ , \subseteq) of normal ideals in $\mathbb{Q}_{n \times n}$ and $K_{n \times n}^{\pi}$	23
4.	An Arithmetic for Arithmetical Completely Simple Semigroups	41
5.	Lattices, Semilattices and Rooted Trees	61
6.	Treebased A.c.s. Semigroups and their Arithmetics	71
7.	Application to a Treebased Arithmetic of the integral Normal Ideals in $K_{n\times n}^{\pi}$ and in $\Phi_{n\times n}$	83
8.	The Semilattice Theoretical Character of the Classical Arithmetic of	
	$K_{\mathbf{n} \times \mathbf{n}}^{T}$ and of $\mathbf{Q}_{\mathbf{n} \times \mathbf{n}}$	95
9.	Quasi-uniserial Semigroups	107
10.	The Semigroup Rings $\phi[S]$ and D^{*} -Arithmetical ϕ -Algebras	121
Bibliography		131
Index		133