

Abstract

In this thesis we introduce a new class of logical algebras: K -algebras on a group G with identity element e by adjoining the induced binary operations \odot on a group G , if G is not an elementary abelian 2-group. A K -algebra is non-commutative and non-associative with right identity element e . We characterize K -algebras by using their left and right mappings. Homomorphism of K -algebras is studied. Isomorphism theorems are given. We introduce the notion of fuzzy K -ideals of K -algebras and give connection between fuzzy ideals and fuzzy K -ideals of K -algebras. Fuzzy isomorphism theorems are given. We discuss a new kind of fuzzy ideal of a K -algebra called, an $(\in, \in \vee q)$ -fuzzy ideal. We introduce the notion of interval-valued fuzzy ideals of K -algebras and investigate some of their properties. Using interval-valued fuzzy ideals, characterizations of Noetherian K -algebras are established. A new generalized fuzzy K -subalgebra is introduced. We introduce the notion of bifuzzy ideals of K -algebras and investigate some interesting properties. We also introduce the notion of bifuzzy topological K -algebras and investigate some of their properties.