STRONG QUASI $k$-IDEALS AND THE LATTICE DECOMPOSITIONS OF SEMIRINGS WITH SEMILATTICE ADDITIVE REDUCT

ANJAN KUMAR BHUNIYA

Department of Mathematics, Visva-Bharati,
Santiniketan-731235, India

e-mail: anjankbhuniya@gmail.com

AND

KANCHAN JANA

Department of Mathematics, Katwa College,
Katwa-713130, India

e-mail: kjana76@gmail.com

Abstract

Here we introduce the notion of strong quasi $k$-ideals of a semiring in $SL^+$ and characterize the semirings that are distributive lattices of $t$-$k$-simple ($t$-$k$-Archimedean) subsemirings by their strong quasi $k$-ideals. A quasi $k$-ideal $Q$ is strong if it is an intersection of a left $k$-ideal and a right $k$-ideal. A semiring $S$ in $SL^+$ is a distributive lattice of $t$-$k$-simple semirings if and only if every strong quasi $k$-ideal is a completely semiprime $k$-ideal of $S$. Again $S$ is a distributive lattice of $t$-$k$-Archimedean semirings if and only if $\sqrt{Q}$ is a $k$-ideal, for every strong quasi $k$-ideal $Q$ of $S$.

Keywords: quasi $k$-ideal, strong quasi $k$-ideal, strong quasi $k$-simple, $t$-$k$-simple, $t$-$k$-Archimedean.

2010 Mathematics Subject Classification: 16Y60.

References


[18] T.K. Mondal and A.K. Bhuniya, Semirings which are distributive lattices of t-k-simple semirings, communicated.


Received 26 April 2013
Revised 7 October 2013