WREATH PRODUCT OF A SEMIGROUP
AND A Γ-SEMIGROUP

Mridul K. Sen

Department of Pure Mathematics, University of Calcutta
35, Ballygunge Circular Road, Kolkata–700019, India

e-mail: senmk6@yahoo.com

and

Sumanta Chattopadhyay

Sri Ramkrishna Sarada Vidyamahapitha Kamarpukur,
Hooghly–712612, West Bengal, India

e-mail: chatterjees04@yahoo.co.in

Abstract

Let $S = \{a, b, c, \ldots\}$ and $\Gamma = \{\alpha, \beta, \gamma, \ldots\}$ be two nonempty sets. $S$ is called a $\Gamma$-semigroup if $a\alpha b \in S$, for all $\alpha \in \Gamma$ and $a, b \in S$ and $(a\alpha b)\beta c = a\alpha(b\beta c)$, for all $a, b, c \in S$ and for all $\alpha, \beta \in \Gamma$. In this paper we study the semidirect product of a semigroup and a $\Gamma$-semigroup. We also introduce the notion of wreath product of a semigroup and a $\Gamma$-semigroup and investigate some interesting properties of this product.

**Keywords:** semigroup, $\Gamma$-semigroup, orthodox semigroup, right(left) orthodox $\Gamma$-semigroup, right(left) inverse semigroup, right(left) inverse $\Gamma$-semigroup, right(left)$\alpha$- unity, $\Gamma$-group, semidirect product, wreath product.

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References


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