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FOUR-PART SEMIGROUPS - SEMIGROUPS OF BOOLEAN OPERATIONS

PRAKIT JAMPACHON¹

Department of Mathematics KhonKaen University 40002 Thailand e-mail: prajam@kku.ac.th

Yeni Susanti

Department of Mathematics Gadjah Mada University Yogyakarta Indonesia 55281

e-mail: inielsusan@yahoo.com

AND

KLAUS DENECKE²

Institute of Mathematics Potsdam University Potsdam Germany e-mail: kdenecke@rz.uni-potsdam.de

Abstract

Four-part semigroups form a new class of semigroups which became important when sets of Boolean operations which are closed under the binary superposition operation $f + g := f(g, \ldots, g)$, were studied. In this paper we describe the lattice of all subsemigroups of an arbitrary four-part semigroup, determine regular and idempotent elements, regular and idempotent subsemigroups, homomorphic images, Green's relations, and prove a representation theorem for four-part semigroups.

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