

LEFT ZEROID AND RIGHT ZEROID ELEMENTS OF Γ -SEMRINGS

M. MURALI KRISHNA RAO

AND

K.R. KUMAR

Department of Mathematics
GITAM University, Visakhapatnam, 530 045, India

e-mail: mmrapureddy@gmail.com
rkkona72@rediffmail.com

Abstract

In this paper we introduce the notion of a left zeroid and a right zeroid of Γ -semirings. We prove that, a left zeroid of a simple Γ -semiring M is regular if and only if M is a regular Γ -semiring.

Keywords: left zeroid, right zeroid, idempotent, Γ -semiring, division Γ -semiring.

2010 Mathematics Subject Classification: 16Y60, 03G25.

REFERENCES

- [1] P.J. Allen, *A fundamental theorem of homomorphism for semirings*, Proc. Amer. Math. Soc. **21** (1969) 412–416.
doi:10.1090/S0002-9939-1969-0237575-4
- [2] S. Bourne and H. Zassenhaus, *On the semiradical of a semiring*, Proceedings N.A of S of USA **44** (1958) 907–914.
- [3] A.H. Clifford and D.D. Miller, *Semigroups having zeroid elements*, Amer. J. Math. **70** (1948) 117–125.
doi:10.1090/S0002-9904-1955-09895-1
- [4] D.F. Dawson, *Semigroups having left or right zeroid elements*, Bolyai. Institute University of Szeged (1965) 93–96.
- [5] H. Lehmer, *A ternary analogue of abelian groups*, Amer. J. Math. **59** (1932) 329–338.
doi:10.2307/2370997

- [6] W.G. Lister, *Ternary rings*, Trans. Amer. Math. Soc. **154** (1971) 37–55.
doi:10.2307/1995425
- [7] M. Murali Krishna Rao, Γ -*semirings-I*, Southeast Asian Bulletin of Mathematics **19** (1995) 49–54.
- [8] M. Murali Krishna Rao, Γ -*semirings-II*, Southeast Asian Bulletin of Mathematics **21** (1997) 281–287.
- [9] M. Murali Krishna Rao, *The Jacobson radical of Γ -semiring*, Southeast Asian Bulletin of Mathematics **23** (1999) 127–134.
- [10] M. Murali Krishna Rao and B. Venkateswarlu, *Regular Γ -semiring and field Γ -semiring*, Novi Sad J. Math. **45** (2015) 155–171.
- [11] M.K. Sen, *On Γ -semigroup*, Proc. of International Conference of Algebra and its Application (Decker Publicaiton, New York, 1981) 301–308.
- [12] V. Neumann, *On regular rings*, Proc. Nat. Acad. Sci. **22** (1936) 707–713.
doi:org/10.1073/pnas.22.12.707
- [13] N. Nobusawa, *On a generalization of the ring theory*, Osaka J. Math. **1** (1964) 81–89. ir.library.osaka-u.ac.jp/dspace/bitstream/11094/12354/1/ojm_01-01-08.pdf
- [14] H.S. Vandiver, *Note on a simple type of algebra in which the cancellation law of addition does not hold*, Bull. Amer. Math. **40** (1934) 914–921.
doi:10.1090/s0002-9904-1934-06003-8

Received 4 March 2017

Revised 13 April 2017

Accepted 24 April 2017