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Some Additional Morita Invariants of Semirings

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Abstract. There are four algebraic structures in a Morita context $\langle R, S, {}_R P_S, {}_S Q_R, \theta, \phi \rangle$, two semirings R, S and two semimodules P, Q. There is a nice interplay among these components which is evident from the study accomplished by Katsov et al. [10] and Sardar and Gupta [8, 12]. The main purpose of this paper is to extend the above mentioned studies by obtaining isomorphisms among some new types of lattices related to Morita context of semirings which are then used to obtain some more Morita invariants for semirings supplementing to those studied by Sardar and Gupta.

Keywords: Morita context; Morita equivalence; Morita invariant; Semiring; Semimodule; Fuzzy ideal; Fuzzy subsemimodule; Fuzzy congruence.

1. Introduction

Introduction of the Morita theory for rings [11] opened a new window in the study of structure theory of rings. Taking impetus from the concept of Morita

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