EQUIPRIME N-IDEALS OF MONOGENIC N-GROUPS

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Abstract
In this paper we introduce the notion of equiprime N-ideals where N is a near-ring. We consider the interconnections of equiprime, 3-prime and completely prime N-ideals of a monogenic N-group Γ. We show that if P is an equiprime N-ideal of Γ, then \((P : Γ)_N\) is an equiprime ideal of N, and that the converse holds when N is a right permutable near-ring and Γ is a monogenic N-group.

Keywords: Prime near-ring, Prime ideal, Prime N-group, Equiprime N-ideal.
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1. Introduction
There are various ways to generalize prime ideals of rings to near-rings. Prime ideals in near-rings have been extensively studied by several authors. In 1970, Holcombe [9] studied three different concepts of primeness, which he called 0-prime (or prime), 1-prime and 2-prime. Ramakotaiah and Rao [13], defined the concepts of prime ideal of type 1 and prime ideal of type 2. Groenewald [8] used the phrase “3-prime ideal” for “prime ideal of type 1”. In the literature the phrase “completely prime (or c-prime) ideal” has been used for “prime ideal of type 2”. Booth, Groenewald and Veldsman [5] presented another generalization of prime rings, called equiprime or e-prime. These notions of primeness above are in general distinct for near-rings.

Prime rings and their extensions to ring modules have been studied by various authors [7, 11, 15]. What about the extensions of prime near-rings to prime N-groups? Juglal, Groenewald and Lee [10] generalized the various notions of primeness that were defined in N to the N-group Γ. They also provided characterizations of prime N-groups and showed equivalences between these characterizations.

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