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HOMOMORPHISM AND ANTI-HOMOMORPHISM OF SPHERICAL CUBIC BI-IDEALS OF GAMMA NEAR-RINGS

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Abstract: The purpose of the article is to study about homomorphism and anti-homomorphism of spherical cubic bi-ideals of Gamma near-rings $\mathcal{R}_1$ and $\mathcal{R}_2$. If $\phi : R_1 \longrightarrow R_2$ be a gamma homomorphism and $(\mathscr{C}\mathscr{U}_{s_1}, R_1)$, $(\mathscr{C}\mathscr{U}_{s_2}, R_2)$ are spherical cubic bi-ideals of gamma near-rings R_1 and R_2.Then the image $(\phi(\mathscr{C}\mathscr{U}_{s_1}), R_2)$ and pre-image $(\phi^{-1}(\mathscr{C}\mathscr{U}_{s_2}), R_1)$ are also spherical cubic bi-ideals of gamma near-rings R_2 and R_1. If $\phi : \mathcal{R}_1 \longrightarrow \mathcal{R}_2$ be an epimorphism of gamma near-rings $\mathcal{R}_1$ and $\mathcal{R}_2$ and $(\mathscr{C}\mathscr{U}_{s_2}, \mathcal{R}_2)$ is a SCS of $\mathcal{R}_2$ such that $(\phi^{-1}(\mathscr{C}\mathscr{U}_{s_2}), \mathcal{R}_1)$ is a SCBI of $\mathcal{R}_1$, then $(\mathscr{C}\mathscr{U}_{s_2}, \mathcal{R}_2)$ is a SCBI of $\mathcal{R}_2$.

Keywords and Phrases: Spherical set, cubic set, Γ-near-ring, bi-ideal, homomorphism, anti-homomorphism.

2020 Mathematics Subject Classification: Primary 16Y30, 03E72; Secondary 16D25.

1. Introduction

The notion of fuzzy set was introduced by Zadeh [18] in 1965. It is identified as a better tool for the scientific study of uncertainty, and came as a boost to the researchers working in the field of uncertainty. Many extensions and generalizations of fuzzy set was conceived by a number of researchers and a large number of real-life applications were developed in a variety of areas. In addition to this, parallel analysis of the classical results of many branches of Mathematics were also carried