

CHARACTERISTICS OF VARIOUS MAPS VIA OPERATION APPROACH ON αg -OPEN SETS

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Abstract. The objective of this paper is to introduce new maps namely αg - (γ, δ) -continuous, αg - (γ, δ) -homeomorphism, αg - δ -continuous and αg_{γ} - δ -continuous maps and examine their properties in topological spaces. We also derive Urysohn's lemma for αg - γ -normal space using αg_{γ} -closed sets.

1. Introduction

Njastad [12] developed the concept of α -open sets in 1965. In 1970, Levine [6] proposed the notion of generalised closed sets in topological spaces. Later in 1994, Maki et al. [7] presented αg -closed sets in topological spaces. Kasahara [4] put forth the idea of an operation on topological spaces as well as the notion of α -closed graphs of maps in topological spaces. After this, the maps with α -closed graphs was analyzed by Jankovic [3]. Following his work, Ogata [13] instigated γ -open sets using the operation γ on open sets in topological spaces and derived the characteristics of (γ, β) -continuous, (γ, β) -homeomorphism and (γ, β) -open maps. The generalizations of (γ, β) -continuous maps in topological spaces were studied extensively by many authors [1, 2, 5]. Recently, Mershia Rabuni and Balamani [8, 9] put forth αg_{γ} -open sets concept using the operation γ on $\varsigma_{\alpha g}$ and analyzed its properties in topological spaces. Mershia Rabuni and Balamani [10, 11] developed various spaces like αg_{γ} - T_i ($i = 0, 1, 2, 1/2$), αg_{γ} - T_i' ($i = 0, 1, 2$), αg - γ -regular, αg - γ -normal via operation on αg -open sets and investigated their characterizations.

In this paper, we propose the definitions of some new continuous maps such as αg_{γ} - δ -continuous, αg - δ -continuous, αg_{γ} - δ -continuous. Also, we establish the inter continuity connections amongst these continuities. Further we introduce αg - (γ, δ) -homeomorphism, αg - (γ, δ) -open maps and derive their properties. Finally, we obtain the Urysohn's lemma for αg - γ -normal space.

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Key words and phrases. topological space, αg_{γ} -open sets, αg - (γ, δ) -continuous, αg - (γ, δ) -homeomorphism, αg - (γ, δ) -open maps, αg_{γ} - δ -continuous.

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