(Q^*, s) - CONTINUOUS FUNCTIONS IN TOPOLOGICAL SPACES

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Abstract. In this paper, new generalizations of contra - continuity by using Q^* - closed sets called (Q^*, s) - continuity are presented. Characterizations and properties of (Q^*, s) - continuous functions are discussed in detail. Finally, we obtain many important results in topological spaces.

1. Introduction

Levine (1960) introduced the notion of generalized closed (briefly g - closed) sets in topological spaces and showed that compactness, countably compactness, para compactness and normality etc are all g-closed hereditary. The notion of b - open sets were introduced by Andrijevic [2]. Miguel caldas,Saeid Jafari and Raja M.Latif [16] introduced and studied (b, s) - continuous function in topological spaces. In 1982, Mashhour et al [15] introduced the notion of pre-open sets and the pre-closed sets were defined in [7]. The notion of Q^* - closed sets in a topological space was introduced by Murugalingam and Lalitha [17] in 2010. Initiation of contra-continuity was due to Dontchev [6]. In this paper, new generalizations of contra-continuity by using Q^* - closed sets called (Q^*, s) - continuity are presented. Characterizations and properties of (Q^*, s) - continuous functions are discussed in detail. Finally, we obtain many important results in topological spaces. Throughout this paper, (X, τ) and (Y, σ) (or X and Y) stand for topological spaces.For any subset A of X, the closure and the interior of A are denoted by Cl(A) and Int(A), respectively.

2. Preliminaries

Before entering to our work we recall the following definitions and results which are used in this paper.

Definition 2.1. The space X is called submaximal if every dense subset of X is open in X.