Introduction

INTRODUCTION

Topology is an indispensable subject of study with open sets as well as closed sets being the most fundamental concepts in topological spaces.

The concept of generalized closed set was introduced by Levine in 1970 [42].A set A is g-closed if and only if cl(A)$\subseteq$U whenever A $\subseteq$ U and U is open. After the works of Levine[43] on semi-open sets, Bhattacharya and Lahiri [6] generalized the concept of closed sets to semi generalized closed sets taking the help of the semi open set and obtained various properties. A subset A is said to be semi- generalized closed sets (written in short sg-closed) iff (scl A) $\subseteq$U whenever A $\subseteq$U and U is semi open.

According to Bourbaki [7] a subset of topological space is locally closed if it is the intersection of an open set and a closed set Ganster and Reilly[30] introduced LC-irresoluteness, LC-continuity and Sub-LC-continuity .In 1996 , Balachandran, Sundaram and Maki[5] introduced the concept "Generalized locally closed sets and the classes of GLC-irresolute maps ,GLC-continuous maps". A subset of a topological space is said to be a generalized locally closed sets if it can be written as the intersection of a g-open set and g-closed set in X.

In 1996 Ganster,Arockiarani and Balachandran [29] introduced regular generalized locally closed sets and regular generalized locally closed continuous functions in topological spaces.

In 1992 Hdeib [35] introduced the concept of w- closed sets .

In 1963 Kelly [39] introduced the concept of bitopological spaces.

In 2000 Chandrasekhara Rao and palaniappan [17] introduced the concept of regular generalized star closed sets and regular generalized star open sets in a topological spaces.

In 2000 Chandrasekhara Rao and Joseph [8] introduced the concept of semi star generalized open set and semi star generalized closed sets in unital topological spaces.

In 2005 Chandrasekhara Rao and kannan [14] introduced the concept of semi star generalized open sets and semi star generalized closed in bitopological spaces.

In 2007 Chandrasekhara Rao and kannan [9] introduced the concept of semi star generalized locally closed sets and s*g-submaximal spaces using the concept of s*g- closed sets in unital topological spaces.

In this dissertation we have focused our attention to study various forms of Generalized closed sets and Generalized continuous functions in topological and in bitopological spaces and the following articles are choosen for our discussion.

i)Generalized Locally Closed Sets and GLC-Continuous Functions by Krishnan Balachandran,Palaniappan Sundaram and Haruo Maki [5] .

ii) Regular Generalized Star Closed Sets in Bitopological spaces by Chandrasekhara Rao and kannan [15].

iii)Semi Star Generalized w-Continuity in Topological Spaces by Chandrasekhara Rao and Narasimhan [12] .

iv) Semi Star Generalized w- Closed sets in Bitopological spaces by Chandrasekhara Rao and Narasimhan [13].

v)s*g-Locally Closed Sets in Topological and in Bitopological spaces by Chandrasekhara Rao and kannan [10,11].

In Chapter 1 we discuss the concept of Generalized locally closed sets and Generalized locally closed continuous functions introduced by

Balachandran,Palaniappan Sundaram and Haruo Maki [5]. A subset S of a topological space (X, τ) is called Generalized locally closed if $S=G \cap F$ where G is g-open and F is g-closed. Using this concept the authers have introduced GLC-irresolute maps and GlC-continuous maps and discussed some of the properties and characterization of Generalized locally closed sets and GLC- continuous maps and GLC-irresolute maps.

In chapter 2 we study the contribution of Chandrasekhara Rao and Kannan [15] the auothers have introduced the concept of τ_1 τ_2 – regular generalized star closed sets and τ_1 τ_2 – regular generalized star open sets and discussed some of the basic properties in bitopological spaces. These concepts are extensions of regular generalized star closed sets and regular generalized star open sets in topological spaces due to Chandrasekhara Rao and palaniappan [17].

In chapter 3 we discuss the results due to Chandrasekhara Rao and Narasimhan [12] on semi star generalized w-continuity in topological Spaces, using the concepts semi star generalized w- closed sets, semi star generalized w- open sets and s*gw-$T_{1/2}$ spaces the auothers have introduced semi star generalized w-continuity in topological Spaces and dicussed some of the basic properties.

In chapter 4 we study the concept of semi star generalized w- closed sets and semi star generalized w- open sets in bitopological spaces introduced by Chandrasekhara Rao and Narasimhan and discussed some of the basic properties .These concepts are generalization of semi star generalized open sets and semi star generalized closed sets in topological spaces due to Chandrasekhara Rao and Joseph [8].

In chapter 5 we discuss s*g-locally closed sets in topological spaces and in bitopological spaces due to Chandrasekhara Rao and kannan [10,11].In section-1 preliminary ideas needed for the work are discussed. In section-2 of this chapter using the concept of

s*g- locally closed sets the auothers have defined various notions of s*glc –continuous functions and discussed properties of these functions. In section -3 the concepts of semi star generalized locally closed sets and s*g-submaximal spaces due to Chandrasekhara Rao and kannan are discussed in bitopological spaces.