

REVIEW OF LITERATURE

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Topology has experienced rapid growth during the past fifty years and nowadays its language and concepts pervade much of modern day mathematics. Topological structures on the collection of datas are suitable mathematical models for mathematizing not only quantitative data but also qualitative ones. Closedness is the basic concept for the study and investigation in topological spaces. In the study of topological spaces many concepts of topology have been generalized by considering the concepts of open sets.

In the study of topological spaces many concepts of topology had been generalized by considering the concepts of generalized open sets due to Levine [33]. Andrijevic [10] introduced the concept of b-open sets in topological spaces. The class of b-open sets is contained in the class of semipre-open sets and contains the class of semi-open and the class of pre-open sets. Since then several researches were done and the notion of generalized semi-closed, generalized pre-closed and generalized semipre-closed sets were investigated in [11, 35, 20]. The notion of π -closed sets was introduced by Zaitsev [54]. Later Dontchev and Noiri [23] introduced the notion of π g-closed sets. Park [41] defined π gp-closed sets. Then Aslim, Caksu and Noiri [6] introduced the notion of π gs-closed sets. Sreeja and Janaki [49] studied the idea of π gb-closed sets and introduced the concept of π gb-continuity. Later the properties and characterizations of π gb-closed sets and π gb-continuity were studied by Sinem Caglar and Gulhan Ashim [48].

Here a brief survey of some of the articles published on the concepts generalized b-closed sets, π generalized b-closed sets, π generalized b-continuous functions and π generalized b-compact sets were given.

Andrijevic [10] introduced and studied a new class of generalized open sets in topological spaces, called b - open sets. This class of b-open sets contains both the classes of semi-open sets and pre-open sets and contained in the class of semi pre-open sets.

Al-Omari and Noorani [5] introduced the class of generalized b-closed sets. This notion was used to consider new weaker and stronger forms of continuities associated with these sets. These notions were applied to give new characterization of extremely disconnected spaces and also T_{gs} -spaces.

Hussien [2] continued the study of generalized b-closed sets in topological spaces and obtained some new characterizations of extremely disconnected spaces, T_{gs} spaces and sg- submaximal spaces.

Akdag [4] studied some properties of b-I-open sets and obtained several characterizations of b-I-continuous functions and investigated their relationship with other types of functions.

Rajesh [43] introduced and characterized almost b-continuous functions using b-open sets.

Al-Omari and Noorani [5] introduced the notions of locally b-closed, b-t-set, b-B-set, locally b-closed continuous, b-t-continuous, b-B-continuous functions and obtained decomposition of continuity and complete continuity.

Nagaveni, Noiri and Naramdha [37] studied the concept of regular b-open sets (briefly rb-open sets) in topological spaces and obtained some of their properties. Also they introduced the idea of rb-closure and discussed some basic properties of the rb-closure. The concepts of rb-closed spaces by means of filter bases were studied.

Caldas, Jafari and Rajesh [17] defined totally b-continuous functions using b-closed sets and b-open sets and obtained relationships between this new class and other classes of existing functions.

Hussein [2] investigated many relationships between some known types of generalized closed sets and b-generalized closed sets and obtained some new

characterizations of extremely disconnected spaces, T_{gs} -spaces and sg -submaximal spaces.

Benchalli and Karnel [12] introduced a new class of fuzzy sets called fuzzy b -generalized closed sets and studied its properties. Further fuzzy b -generalized continuous function, fuzzy b -irresolute maps and fuzzy $b-T_{1/2}$ -spaces were introduced and fuzzy separation axioms were investigated with the help of fuzzy b -open sets.

Benchalli and Karnel [13] introduced a new form of fuzzy compact spaces namely fuzzy b -compact spaces, b -closed spaces and fbg -compact spaces with the concept of fuzzy b -open sets. Further some characterizations, hereditary properties and the invariance of spaces under fuzzy mappings were investigated.

Bharathi, Bhuvaneswari and Chandramathi (2012) introduced and investigated a new class of sets and maps between topological spaces called strongly generalized b -closed sets, g^*b -continuous maps respectively. Further strongly generalized b -closed maps were introduced and investigated several properties.

Rajesh and Salleh [44] introduced a new class of topological spaces called $b-T_{1/2}$ -space in terms of the concept of b -open sets and b -kernel and investigated some of their fundamental properties. Also, introduced and studied some new notions in topological spaces by utilizing b -open sets.

A new class of functions called generalized αb -continuous mappings (denoted by gab -continuous) had been introduced by Vinayagamoorthi and Nagaveni [52] and some of their properties were studied. Also a study on generalized αb -open maps and on generalized αb -closed maps were carried out.

Muthuvel and Parimelazhagan [36] introduced and studied the concept of a new class of closed sets called b^* -closed sets and investigated some of their properties.

Vidhya and Parimelazhagan [51] introduced a new class of sets called generalized* b-closed sets in topological spaces and studied some of its basic properties.

Ganster and Steiner [28] introduced many relationships between some known types of generalized closed sets and b- generalized closed sets. Adea Khaliefa Hussein [2] derived some more relationships and obtained some new characterizations of extremely disconnected spaces, T_{gs} -spaces and sg- submaximal spaces

Vinayagamoorathi and Nagaveni [53] introduced a new class of generalized α b Spaces and analyzed some of their properties.

Sarsak, Gowrisankar and Rajesh [46] introduced and studied pre-bg-closed functions by using b-open sets.

Aslim, Caksu Guler, Noiri[6] discussed the concept of π_{gs} -closed sets and studied its properties. Moreover the notions of π_{gb} - $T_{1/2}$ space and π_{gs} -continuity was introduced and studied.

Sreeja and Janaki [49] studied the notion of π_{gb} -closed sets and its various characterizations. Basic properties of π_{gb} -closed sets, characterization of π_{gb} -open sets, π_{gb} -continuous functions and π_{gb} -irresolute functions were studied.

Sinem caglar Akgun and Gulhan Aslim [48] investigated further properties of π_{gb} -closed sets due to Sreeja and Janaki. The concept of π_{gb} -closure was introduced and obtained some of its fundamental properties. A new generalization of almost continuity called almost π_{gb} -continuity which is a weaker form of almost b-continuity was discussed. Furthermore, they introduced the concept of π_{gb} -compact space and studied their behavior under π_{gb} -continuous and almost π_{gb} -continuous functions. Finally a new class of space, called quasinormal spaces was introduced and its characterizations were investigated.