SUMMARY AND CONCLUSION

In the literature it is observed that there are large number of ways to generalize the closed sets in topological spaces.

In this thesis, the concept of Δ^*-closedness which is stronger than $g\delta$-closedness but weaker than δg^*-closedness is established. Many important concepts such as closure, separation axioms, continuity, homeomorphisms and locally closedness using Δ^*-closedness are developed.

The comparative study of Δ^*-closedness with various existing closed sets has been analyzed in all the concepts stated above. Throughout the thesis, the reverse implications which do not hold good are substantiated by counter examples. The characterizations of Δ^*-closed sets in semi regular space, almost weakly Hausdorff space, R_1-topological space and $T_{1/2}$-spaces are also derived.

As an application of Δ^*-closed sets, four new spaces are constructed and their interrelations with existing various spaces are analyzed.

It is shown that the compositions of two Δ^*-continuous functions, Δ^*-closed maps and Δ^*-homeomorphisms are not preserved. But after changing the conditions in different ways the composition of mapping is preserved. Also several results are analysed under Δ^*-locally closed sets.

The analysis of Δ^*-closed sets is extended to bitopological spaces also.

The collection of various open sets and closed sets for the topological spaces and bitopological spaces of three elements and four elements are tabulated in Appendix I, Appendix II and Appendix III.

The following problems for further study are suggested.

1. Δ^*-locally closed continuity concepts can be extended to bitopological spaces.
2. Weaker form of Δ^*-closed ($w\Delta^*$-closed) sets and stronger form of Δ^*-closed ($s\Delta^*$-closed) sets can be defined and studied.
3. Fuzzy Δ^*-closed sets can be defined and studied in fuzzy topological spaces.
4. The concepts of Δ^*($w\Delta^*$ and $s\Delta^*$) closed sets can be defined for biminimal structures, tri-topological spaces, nano topology and their applications may be obtained.
5. The characterization of Δ^*-closed sets can be studied in Urysohn space and Alexandroff space.