Conclusions

The main aim of the research work was to study the nature and characterizations of Γ-semirings. The notion of Γ-semirings is a generalization of Γ-rings, Rings and Semirings. In this thesis, we characterized the Γ-semirings and dealt with the results analogous to the results of semirings. We have also made an attempt to develop structure and ideal theory of Γ-semirings. The notions of Commuting regular Γ-semirings, Inverse Γ-semirings, Orthodox Γ-semirings and Pseudo symmetric ideals in Γ-semirings exhibited the generality of Γ-semirings. In the literature, we found applications of semirings in diverse fields of science and engineering such as social network analysis, which includes balance semiring, cluster semiring, geodetic semiring, geosetic semiring; automata theory, which includes tropical semiring; optimization theory, which includes schedule algebra or max-plus semiring, etc.. As the concept of Γ-semirings is a generalization of semiring, our further research will focus on implementing the characterizations of Γ-semirings in the above fields.