ACKNOWLEDGEMENT

First and foremost, I wish to place on record my profound indebtedness to Dr. M. Jathavedan, Professor, Division of Mathematics, School of Mathematical Sciences, Cochin University of Science and Technology, under whose incessant and inspiring guidance this research work have settled and undertaken. His timely suggestions, immense patience and encouragement enabled me to complete this thesis successfully. I express my sincere gratitude without bounds to Dr. M. Jathavedan, without whom this thesis work could not have been completed.

I would like to express my gratitude without bounds to Prof. A. Krishnamoorthy, Director, School of Mathematical Sciences, Cochin University of Science & Technology, who rendered me valuable help and cooperation.

To Prof. T. Thrivikraman, former Head of the Department of Mathematics and Statistics, I owe sincerest thanks and gratitude for the valuable advice and encouragement.

I would like to thank the teachers, office staffs and my friends for their kind help and cooperation.

Thanks are also due to Science, Technology and Environment Department, Govt. of Kerala, for their financial support and to the Cochin University of Science and Technology, for providing facilities during my research work.

I am extremely grateful to Dr. V. Nandamohan, Head of the Department of Futures Studies, University of Kerala, Trivandrum, for providing computer facilities.

Finally, I am deeply indebted to my parents, husband and family members who rendered me constant encouragement, help and cooperation throughout the period of my research work and for the successful completion of this thesis work.

GEETHA S