Acknowledgement

I feel highly indebted from the core of my heart to my honourable and respected Guide Dr. S. Athisayanathan, Associate Professor, Department of Mathematics, St. Xavier’s College, Palayamkottai. He has been a consistent as well as insistent Guide and supporter to me throughout my research.

I wish to express my deep sense of gratitude to my inspiring and respected Co-Guide Dr. R. Ponraj, Assistant Professor, Department of Mathematics, Sri Paramakalyani College, Alwarkurichi. The fruitful discussions which I had with him, his inspiring guidance and constant encouragement enthused me to evolve new concepts and adopt fresh methods to approach numerous problems.

I express my sincere gratitude to Rev. Dr. V. Britto Vincent S.J, Principal, and Rev. Dr. A. Antony Samy S.J, Secretary, St. Xavier’s College, Palayamkottai for providing me all facilities and environment for research.

I owe my sincere thanks to Dr. S. Arulraj, Head, Department of Mathematics and all Faculty members of the Department of Mathematics, St. Xavier’s College, Palayamkottai for their encouragement and support throughout my work.

I am grateful to Dr. J. Vijaya Xavier Parthipan, Associate Professor, St. John’s College for his concern. I have been blessed with a series of excellent teachers and mentors throughout my Schooling and I am grateful to all of them. A special thanks to my Physics teacher Dr. E. Kumar, who is now Assistant Professor of Physics, Tamil Nadu Open University, for his genuine care.

A very special thanks to F. Patrick, Research Scholar, St. Xavier’s College, Palayamkottai and to all other Research Scholars for their whole-hearted support. Special thanks to P. Ganesh Aravind, M. Edwin Ragland and all my M.Sc friends. I would like to thank all my School friends especially, H. Mohamed Imran, K. Balaji and R.Gururaj for their moral support.

I remember with gratitude the everlasting and loving memories of my great grandfather Sri. N. Bhaskaran Pillai, B. A, my paternal grandfather Sri. M.
Nagappa Pillai and seek their blessings. I thank my maternal grandparents Sri. B. Prabhakaran, Srimathi B. Rukhmoni, my paternal grandmother Srimathi N. Chidambaram Ammal, all venerable elders and all my family members for their prayers and good wishes. My sincere thanks to my sister Mrs. K. C. Nagalaxmi, M. E for the faith she had in me and encouragement. Words cannot express how grateful I am to my parents for all the sacrifices they have made on my behalf.

Adores my heart humbly, silently and gratefully, reflecting the will and blessings showered by Lord Almighty who made me turn every challenge into success till this day of seeing my thesis in print.

M. K. KARThIK CHIDAMBARAM