ACKNOWLEDGEMENT

It is a pleasure to thank all the people who made the completion of this Thesis possible.

I would like to express my deep sense of gratitude and sincere thanks to my Ph.D. Supervisor, Prof. Dr. S. R. Kulkarni, Vice-Principal, Department of Mathematics, Fergusson College, Pune. With his enthusiasm, his inspiration and his great efforts to explain thing clearly and simply, he helped to make mathematics fun for me. Throughout my thesis - writing period, he provided encouragement, sound advice, good teaching, good company and a lots of good ideas. I would have been lost without him.

I am sincerely grateful to Prof. Dr. B. N. Waphare, Professor and Head, Department of Mathematics, University of Pune and all members of this Department for providing the necessary facilities to me during the course of this work.

I am specially grateful to Mr. Abdul Rahman Salman Juma, Research Fellow from AL-Anbar University, Iraq for helping with various applications and numerous stimulating discussions.

I wish to thank the Librarian, Department of Mathematics, University of Pune, also Librarian, Jayakar Library, University of Pune, for assisting me in many ways.

I would like to place in record a deep sense of gratitude to the Ministry of Higher Education and Scientific Research in Iraq as well as Indian Council
for Cultural Relation (ICCR) for the scholarship that enable me to pursue my higher studies.

Words and phrases are not able to express my heartiest gratitude to my wife (Hnd Hekmat Abdullah) for providing a loving environment for me, her encouragement and valuable patience during the years we stayed in Pune and without her blessings this Thesis could not be appeared in the present form.

I am forever indebted to my father and father-in-law for their emotional support, giving wise advice and their encouragement during their fruitful life.

I may failing in my duty, if I do not put on record my deepest gratitude to my entire extended family, my mother, my brothers, my sisters, my brothers-in-law and my sisters-in-law for their endless patience and encouragement when it was most required.

Most importantly I would like to thank to my mother-in-law for all she is, and all she has done for me.

I cherish my long and intimate association with friends who have my stay in Pune real fun whenever the going was difficult.

Last but not least, I thank Mrs. Achala Sabane for her neat, accurate and quick typing.

Date: Waggas Galib Atshan, Department of Mathematics, University of Pune, Pune -411007