ACKNOWLEDGEMENT

My sincerest thanks and gratitude are due to the efforts of many, whose valuable contributions and services have helped me in the realization of this research work. At the outset I thank God Almighty, without whose blessings I would never have been able to complete this Herculian task.

My respectful gratitude is offered to PADMASRI Dr. P. R. KRISHNAKUMAR, Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for the continuous support.

I owe my thanks to Dr. PREMAVATHY VIJAYAN, M.Sc., M.Ed., Dip. Spl. Edn., M.Phil., Ph.D., Vice Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for the able leadership and for providing all the necessary infrastructural facilities.

I express my special thanks to Dr. A. VENMATHI, M.Sc., Dip. Ed., M.Phil., Ph.D., Registrar (i/c), Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for permitting me to pursue research work.

I would like to express my heartful thanks to Dr. A. PARVATHI, M.Sc., Dip. H.Ed., M.Phil. (Madras), Ph.D. (Bharathiar), Dean, Faculty of Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for her kind help and valuable suggestions. Her constant benevolent help, keen interest, inestimable guidance, invaluable advice, incessant inspiration and warm encouragement and support throughout the period of study.

My special thanks to Dr. K. UDAYACHANDRIKA, M.Sc., M.Phil. (Madras), Ph.D. (Bharathiar), Professor and Head of the Department of Mathematics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for her excellent advice and valuable guidance extended throughout the study.
I take this opportunity to express my heartfelt gratitude to my guide Dr. M.I. AFTHAB BEGUM, M.Sc., M.Phil. (Annamalai), Ph.D. (Bharathiar), Professor, Department of Mathematics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, who planted the seed of research interest in me. She has been inspiring and dedicated in a very scholarly way and my gratitude to her is that of a humble sishya to a reverend Guru.

I would be failing my duty if mention is not made of the extraordinary qualities of her viz., thought provoking and unlimited ideas, excellent analytical skills, utmost sincerity, commitment and hard work without which this work would not have been shaped up and completed at all.

I extend a special word of thanks to ALL THE STAFF MEMBERS OF DEPARTMENT OF MATHEMATICS, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for their kind support and encouragement.

I express my sincere thanks to Dr. K. JULIA ROSE MARY, Associate Professor in Mathematics, Nirmala College for Women, Coimbatore, for rendering helping hand at any time with her technical skills.

I am gratefully indebted to Mr. B. S. H. SHAH for his support extended during the tenure of my research.

I am happy to acknowledge the assistance extended to me by research scholars and students of the Department of Mathematics for their help and support.

I would like to thank Mrs. PADMAPRIYA SRIRAM, Chief Information Officer, Ganga Medical Centre and Hospitals Pvt. Ltd., for her timely help and support.

On this occasion I cuddle the fond memories of my parents Mr. P. A. JOSE and Mrs. E. K. CRISILY who have inspired me and strengthened my mind to face the realities in this competitive world of research. I am bound by love to admit the help extended by my mother-in-law Mrs. LILLY FRANCIS.
towards the completion of this doctoral work. This acknowledgement would be incomplete without mentioning my brother, sisters and in-laws who loved me while I was steeped in my research work. I thank my husband, Mr. K. F. JOYCE FRANCIS, who has been with me in every ups and downs, consoling me and fortifying me. Without his love and support this research would never have been complete. Last of all I recall my kids RYAN and NEIL who have adjusted so much, so that I could complete my dream work decently.

I would like to extend my thanks to FAST FORWARD, 55, Bharathiar Park Main Road, Second Floor, Opp. To Avinashilingam Institute for Home Science and Higher Education for Women (First Gate), Coimbatore, for their help to complete the thesis successfully in time.

FIJY JOSE, P.