

ACKNOWLEDGEMENTS

It gives me an immense debt of gratitude to express my sincere thanks to my respected supervisor Dr. Rajeev, Assistant Professor, Department of Mathematical Sciences, Indian Institute of Technology (Banaras Hindu University) Varanasi, India for his excellent guidance, continuous encouragement, patience and parental affection care during the entire course of Ph.D. I do admire his exhorting style that has shaped my understanding on research life as well as my chosen field and given me confidence to do independent research. Without his keen supervision and sagacious guidance it would not have been possible for me to complete the work. I feel very fortunate to have an opportunity to work under his supervision.

I am deeply obliged and offer my sincere gratitude and humble respect to Prof. O. P. Singh, present head, Department of Mathematical Sciences, Indian Institute of Technology (Banaras Hindu University) Varanasi, India for his constant support and motivation throughout my tenure as a research scholar.

I acknowledge my sincere thanks to all faculty members of the Department of Mathematical Sciences, Indian Institute of Technology (Banaras Hindu University) Varanasi, India for their valuable suggestions and inspiring guidance throughout my research work. My especially heartfelt thanks go to Prof. K.N. Rai, Prof. Shri Ram, Prof. T. Som, Prof. (Smt.) R. Srivastava, Prof. L.P. Singh, Prof. S. K. Pandey, Dr. Subeer das, Dr. R.K. Gautam, Dr.(Smt.) S. Mukhopadhyay, Dr. Ashok ji Gupta for their instructive

suggestions, support and continuous encouragement. I am grateful to all non teaching staff members of the department for their valuable help.

I would like to express my sincere thanks to all members of RPC and DPGC for their constant moral supports, suggestions and encouragement during my research work.

I would like to thank my colleagues Mr. Manish Kumar Singh, Mr. Shailendra Kumar Tiwari, Mr. Naveen Kumar Jha, Mr. Abhishek Kumar Singh, Mr. Ajay Kumar and all the Ph.D. scholars of the department for their sincere help. I am also thankful to my close friends, Mr. Rajesh Singh, Dr. Ashwamedh Maurya, Mr. Shashikant kushwaha, Mr. A. K. Kushwaha for their continued encouragement, appreciation, stimulating help and criticism.

I express my sincere and heartiest gratitude to my mother Smt. Shanti Kushwaha, my father Sri Dashmi Kushwaha and My elder Brothers Mr. Pramod Kumar and Mr. Ram Pravesh who always backed my decisions and provided all kinds of support moral as well as financial. It was their love, care and patience which inspired me to carry on. I also extend my heartiest thanks to my beloved wife Smt. Archana, my daughter Rishita for their deepest love, endless patience and continued support, shown during the whole tenure of my research work.

Above all, I bow down before the Almighty who has made everything possible.

Date:

(Mohan Singh Kushwaha)

Place: Varanasi

