ACKNOWLEDGEMENT

I express my profound gratitude to my mentor and research supervisor, Dr. H. K. Mishra, Assistant Professor (Senior Garde), Department of Mathematics, JUET, Raghogarh, Guna, for introducing me to the fascinating subject of Numerical Analysis, for his continuous guidance, intellectual discussion and constructive analysis. His affection and sincerity towards work has been much beyond his formal obligation as a supervisor for which I shall ever be indebted to him. I am really quiet fortunate to have had an opportunity to pursue my Ph.D. programme under his able supervision and from whom I have learned the innovative study of mathematical problems. Words of thanks are only a token of my true appreciation for all the support and the guidance for the dissertation.

I am indebted to Jai Praksh Seva Santhan for providing me financial assistance to carry out this research work. It is my great pleasure to acknowledge my gratitude to our Vice–Chancellor, Prof. J.S.P. Rai, for extending to me all research facilities which were required to accomplish my Ph.D. programme. It is a matter of great pleasure for me to extend my sincere thanks to Prof. Shishir Kumar, Dean (A & R) and Prof. V. Tyagi, HOD, Department of Mathematics and Mathematical Sciences, for their continuous cooperation, motivation and encouragement throughout my research. I am also grateful to Brig. (Retd.) S.K.S. Negi, Registrar, for his constant support and infrastructural facilities provided for my research work at JUET, Raghogarh, Guna, M.P., India.

I would also like to thank Dr. Rajneesh Atre and Dr. D. K. Sharma, Members of DPMC, for their evaluation and valuable suggestions during my presentations. I also take this opportunity to thank Dr. B. R. Gupta and Dr. Divya Jain, Faculty member of Department of Mathematics and Dr. Susheel Kumar Bhandari, Assistance professor, H.P. University Regional Centre, Dharamshala, for there valuable suggestion and the moral support during entire research work.
It is with gratification for the unforgettable alliance of my venerated research scholars at JUET, Guna. I express my cordial and special thanks to Dr. Ram Kishun Lodhi, Vandana Mishra, Rajnee Tripathi, to boost my confidence towards research. In addition, the research scholars of other departments Lal Pratap Verma, Varun Sharma, Sanjeev Kumar, Mahendra Singh Yadav, Ghanshyam Raghuwanshi, Mamta Pandey, Mukta Tripathi deserve special thanks for their support and encouragement.

I also extend my thanks to Dr. Sudeep Sharma and his team of the LRC for their help and amiable deeds. I wish to thank my best friends, Dr. Arunodaya Raj Mishra, Sharad Tamrakar, Ramanand Dwevedi, Ajey Singh for their love, care and moral support. Dr. Khushboo Pachori, Dr. Santosh Kumar Srivastava deserve special thanks.

The words are not enough to extend my thanks to Mrs. Kalpana Mishra for their patience to provide us time for the discussion and support. I am also thankful to her son Mr. Sheelesh Mishra.

I owe everything to my beloved mother, Mrs. Sushila Pandey and father, Mr. Vijay Prakash Pandey for their divine blessings to which helped me to accomplish this great academic endeavor. I also express my profound gratitude to my sister Mrs. Jyoti Pandey and Brother in law Mr. Manverdhan Tiwari for their faith and affection. Words are not enough to express my thanks for the support, love and patience of my brothers Mr. Praveen Kumar Pandey and Mr. Prashant Kumar Pandey for their support in every task of my life.

At the end I would like express my gratitude towards my wife Sonam Pandey for her patience and support during the time of submission of work.

(RISHI KUMAR PANDEY)