ACKNOWLEDGEMENTS

I consider it to be my prime obligation to humbly offer my deepest sense of gratitude to my thesis guide Dr. A.C. Sharma, Reader in Physics, M.S. University of Baroda, Vadodara for introducing the objectives of this work to me and for his excellent supervision, encouragement, constructive criticism and inspiring guidance throughout my research work. The value of his contribution far exceeds what these words of appreciation can express.

I also feel privileged to acknowledge Dr. D.R.S. Somayajulu, Head of the Department, for his valuable advice and providing other necessary facilities for my research work.

I also wish to thank all the members of the teaching and nonteaching staff of physics department for the help rendered by them. It might seem invidious to single out any individuals for special mention: but there is a deep appreciation of their unfailing support and fruitful suggestions.

It has been of immense benefit to have had the close co-operation of my colleagues P. Tripathi, K.N. Vyas, Sumi Dhar and my all friends, who have helped and provided me a friendly and cooperative atmosphere throughout this endeavor.

I am very grateful to Mr. V.D. Bajpai for giving me computer assistance and Mr. Arvind Bajpai for bringing the thesis in final form.

I have no words to express my thanks to my family members. It would have been impossible for me to continue my research without the encouragement and help of them. My esteemed parents were the main pillars of strength for me. I feel great pleasure to acknowledge the moral support and kind affections of my brother and sister that enabled me to achieve my objective.

The deep insight and meticulous understanding of my in-laws have enabled me to bring this long and toilsome task to successful completion. My husband, Mr. Vikas Awasthi, in particular deserves tremendous commendations for his willing assistance, adjustability and support during the hectic period of this work.

Sincere thanks are due to Dr. O.N. Awasthi and Dr. D.P. Singh for evincing keen interest in my endeavor.

My special thanks to D.S.T., New Delhi, for the financial support.