ACKNOWLEDGEMENTS

This dissertation has been prepared under the esteemed guidance of Dr. (Mrs.) Y. S. Pawar, Professor, Department of Mathematics, Shivaji University, Kolhapur. For her keen inspiration and encouragement I express my sincere gratitude to her. Without her constant and gentle assistance, this dissertation work might have not been completed. My vocabulary falls short to express my deep sense of gratitude to her. I am gratefully indebted to her.

My sincere thanks are due to Professor Dr. M. G. Takwale, Vice-Chancellor, Shivaji University, Kolhapur. I am thankful to the authorities of Shivaji University. I am thankful to Dr. M. S. Chaudary, Professor and Head of the Mathematics Department, Shivaji University for encouragement and providing departmental facilities.

I am deeply indebted to Professor Dr. H. V. Kumbhojkar, Ex-Head of the Mathematics Department, Shivaji University for teaching me 'Fuzzy Set Theory' and clarifying my basic concepts.

I am thankful to Mr. Yadav for his valuable suggestions

and timely help during the period of my work. I am thankful to all the

teaching and non-teaching staff of Mathematics Department, Shivaji

University for their support. I sincerely thanks to all staff of Barr.

Balasaheb Khardekar Library, Shivaji University for providing the

library facilities.

I am grateful to my friend Mr. Purushottam Mane and Mr.

Abhijit Patil for their valuable suggestions in typing this dissertation. I

am thankful to all my friends for their co-operation and for encouraging

me during the course of research work.

Finally, I would like to place a praiseworthy thanks to my

parents and my sister who inspired me for higher studies. I am grateful

for their moral support and constant encouragement. This work would

not been completed without their co-operation.

Date:

20th June, 2003.

Place:

Kolhapur.

(Sachin H. Dhanani)