ACKNOWLEDGEMENT

First and foremost, I take the immense pleasure to express my sincere gratitude to

my supervisor Prof. Munmun Hazarika for her constant encouragement and sup-

port throughout my Ph.D. journey. I am extremely honoured to have her as my

continuous source of inspiration, without whose dedicated guidance, I could have

never completed my thesis effectively on time.

I am sincerely grateful to my doctoral committee members Prof. Debajit Hazarika

and Prof. Nayandeep Deka Baruah for their valuable suggestions at various stages of

my work. I thank the faculty members and staff of the Department of Mathematical

Sciences, Tezpur University for their sincere co-operation during my research work.

I thank my fellow researchers and friends Bimal Da, Zakir, Pallabi, Dimpal, Jayanta,

Suparna, Junali, Mami, Sougata, Parama, Nilufar, Ajay, Krishna, Juti Ba, Surya

Da, Porinita Ba, and Sangeeta Ba for their well wishes and constant support.

I thank Maa and Devta, it is because of their love and blessings that I have come so

far and achieved this milestone in my life. I thank my husband, Moniraj, who has

supported me all throughout these years and encouraged me to fulfill my dreams.

And finally, I thank my child Vian, for being my constant source of hope and

happiness.

Place: Tezpur

Pearl Sanchayeta Gogoi

Date:

Dedicated

To my little boy, Vian.