DECLARATION BY THE CANDIDATE

I, **Reshma Singh**, certify that the work embodied in this thesis is my own bona fide work and carried out by me under the supervision of **Dr. S. K. Upadhyay** from **September 2012** to **December 2016** at the **Department of Mathematical Sciences**, Indian Institute of Technology (Banaras Hindu University), Varanasi. The matter embodies in this thesis has not been submitted for the award of any other degree/diploma. I declare that I have faithfully acknowledged and given credits to the research workers wherever their works have been cited in my work in this thesis. I further declare that I have not willfully copied any other's work, paragraphs, text, data, results, *etc.*, reported in journals, books, magazines, reports dissertations, theses, *etc.*, or available at websites and have not include them in this thesis and have not cited as my own work.

Date: ....

Place: Varanasi

(Reshma Singh)

CERTIFICATE BY THE SUPERVISOR

It is certified that the above statement made by the student is correct to the best of my knowledge.

(Dr. S. K. Upadhyay)   (Prof. L. P. Singh)
Associate Professor   Professor and Head
Department of Mathematical Sciences   Department of Mathematical Sciences
Indian Institute of Technology   Indian Institute of Technology
(Banaras Hindu University)   (Banaras Hindu University)
Varanasi-221005   Varanasi-221005