# DECLARATION BY THE CANDIDATE

I, *Gopal Kumar Gupta*, certify that the work embodied in this thesis is my own bonafide work and carried out by me under the supervision of *Dr. Anuradha Banerjee and Prof. Subir Das* from July, 2013 to May, 2018 at the **Department of Mathematical Sciences, Indian Institute of Technology (BHU), Varanasi.** The matter embodied 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 included them in this thesis and have not cited as my own work.

Date  :
Place : Varanasi                                                        **( Gopal Kumar Gupta )**

## CERTIFICATE BY THE SUPERVISOR(S)

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

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