



**DEPARTMENT OF MATHEMATICS**

**ELBERT EINSTEIN SCHOOL OF PHYSICAL SCIENCES**

**ASSAM UNIVERSITY, SILCHAR**

**(A CENTRAL UNIVERSITY)**

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## **CERTIFICATE**

Certified that the thesis entitled “**A Study on Conjugate Gradient Methods and their modifications**” submitted by Biprajit Nath for the award of the degree of Doctor of Philosophy in Mathematics is a bonafide research work. This work has not been submitted previously for any other degree of this or any other University. It is further certified that the candidate has complied with all the formalities as per the requirements of Assam University. I recommend that the thesis may be placed before the examiners for the consideration of award of the degree of this University.

( Dr.Sumit Saha)

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