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## CERTIFICATE

*This is to certify that the thesis entitled "A Study of Some Cosmological Models in Scalar-Tensor Theory of Gravitation" being submitted by Jagat Daimary for the award of the Degree of Doctor of Philosophy in Mathematics to Bodoland University, Kokrajhar, Assam, India is a record of bonafide research work carried out by him under my supervision and guidance in the Department of Mathematical Sciences, Bodoland University, Kokrajhar, Assam, India.*

*The thesis satisfies the requirements of the regulations relating to the degree. A considerable part of the thesis is in process to publish in International Journals and some of it has been presented in seminars. Any part of this thesis has not been submitted to other Universities/Institution for awarding any degree or diploma.*

Dated, Kokrajhar  
The 24th Feb, 2023

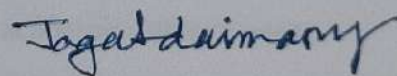
*Rajshekhar Roy Baruah*  
(Dr. Rajshekhar Roy Baruah)  
Research Supervisor

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## Declaration

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I here by declare that the work presented in this thesis entitled “**A Study of Some Cosmological Models in Scalar-Tensor Theory of Gravitation**”, has been carried out entirely by me under the guidance of Dr. Rajshekhar Roy Baruah in the Department of Mathematical Sciences, Bodoland University, Kokrajhar, Assam, India. I further declare that it has not been submitted for the award of any other degree or diploma of this or any other University or Institution.



(Jagat Daimary)

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## Acknowledgement

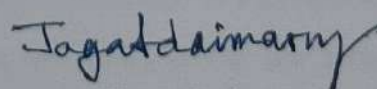
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(Jagat Daimary)

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## List of Symbols

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$V$	Velocity
$\phi$	Scalar field
$\theta$	expansion scalar
$H$	Hubble's parameter
$q$	Deceleration parameter
$\sigma$	Shear scalar
$\Delta$	Anisotropy parameter
$\rho$	Energy density
$\lambda$	String tension density
$F_{15}$	Electromagnetic field tensor
$\rho_p$	Particle density
$p$	Pressure
$\zeta$	Coefficient of bulk viscosity
$\bar{p}$	Coefficient of bulk viscous pressure