CHRIST
(DEEMED TO BE UNIVERSITY)
BANGALORE | DELHI NCR | PUNE

Notice for the PhD Viva Voce Examination

Ms Flora Jeba S, Registration Number: 2170216, PhD Scholar at the Department of Mathematics, School of Sciences, CHRIST (Deemed to be University) will defend her PhD thesis at the public viva-voce examination on Tuesday, 19 May 2026 at 03.00 pm in Room No. 044, Ground Floor, R&D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

Title of the Thesis	:	**A Study on Perfect Numbers and Their Overtones**
Discipline	:	**Mathematics**
External Examiner - I	:	**Dr Anirban Mukhopadhyay** Professor The Institute of Mathematical Sciences CIT Campus, Taramani Chennai - 600113 Tamil Nadu
External Examiner - II	:	**Dr Shanta Laishram** Professor Indian Statistical Institute (ISI) Delhi 7 SJS Sansanwai Marg Qutab Institutional Area New Delhi – 110016
Supervisor	:	**Dr Anirban Roy** Associate Professor Department of Science and Humanities School of Engineering and Technology Bangalore Kengeri Campus CHRIST (Deemed to be University) Bengaluru - 560074 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

Registrar (Academics)

Place: Bengaluru
Date: 13 May 2026

ABSTRACT

This study includes the generalization and characterization of various classes of numbers closely related to perfect numbers. The k-facile perfect numbers and their characterization along with their relationship with other special numbers are studied. The concept of the existence of odd-near perfect numbers with five prime factors is explored. This study also explores the generalization of the multiplicative function $\sigma(n)$, $\sigma k(n)$. New generalizations with respect to $\sigma k(n)$ are introduced for abundant and deficient numbers, their characterization and structure are studied. The characterization of Zumkeller numbers, near-Zumkeller numbers, unitary Zumkeller numbers and unitary near-Zumkeller numbers is explored. Throughout this study, we observe the various interesting

relationships between these different types of numbers related to perfect numbers.

Keywords: *Perfect numbers, divisor sum function, near-perfect numbers, Zumkeller numbers, Unitary Zumkeller numbers, k-Facile perfect numbers, [k, l]-near perfect number, [k, l]-deficient perfect number*

Publications:

1. **Flora Jeba S**, Anirban Roy, and Manjil P. Saikia. "On k−Facile Perfect Numbers." Algebra and Its Applications: ICAA−2023, Fez, Morocco, July 12 − 15, Vol 474, pp.111 − 121, 2025.
2. **Flora Jeba S**, Anirban Roy, and Manjil P. Saikia. "On near− perfect numbers with five prime." In Advances in Mathematical and Computational Sciences: Proceedings of The ICRTMPCS International Conference 2023, pp.207 − 220, 2024.
3. **Flora Jeba S**, Anirban Roy, Pankaj Jyoti Mahanta, and Manjil P. Saikia. "On near Fk-perfect and deficient Fk-perfect numbers." Integers, Vol. 25, 2025.