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Notice for the PhD Viva Voce Examination

Ms Sabitha Jose (Registration Number: 1942078), PhD scholar at the School of Sciences, CHRIST (Deemed to be University), Bangalore will defend her PhD thesis at the public viva-voce examination on Saturday, 16 March 2024 at 10.30 am in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029.

Title of the Thesis	:	**A Study on Near Proper Coloring of Graphs**
Discipline	:	**Mathematics**
External Examiner (Outside Karnataka)	:	**Dr Susanth C** Associate Professor Department of Mathematics Vidya Academy of Science & Technology Thalakkottukara P O, Kecheri Thrissur – 680501, Kerala
External Examiner (Within Karnataka)	:	**Dr Nagesh H M** Associate Professor Department of Mathematics PES University Electronic City Campus Konappana Agrahara, Electronic City Bengaluru - 560100, Karnataka
Supervisor	:	**Dr Sudev N K** Associate Professor Department of Mathematics School of Sciences CHRIST (Deemed to be University) Bengaluru-560029 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

Place: Bengaluru

Date: 11 March 2024

ABSTRACT

An equitable coloring of a graph G is a proper vertex coloring in which the number of vertices in any two color classes are equal or almost equal. In this graph coloring, there is a partition of tasks into subsets which perform at the same time. Equitable coloring play an important role when there is a requirement of dividing a system with binary conflict free subsystems with equal or nearly equal elements. The non availability of sufficient number of colors leads to different defective coloring problems. An equitable near proper coloring of a graph G is an improper coloring in which the vertex set can be partitioned into k color classes $V1, V2, ..., Vk$; $(1 < k < \chi e(G))$ such that the number of vertices in any two color classes differ by at most one and the resulting monochromatic edges are minimised by restricting the number of color classes that can have adjacency among their own elements. The minimum number of monochromatic edges obtained from an equitable near proper coloring of G is called equitable defective number. This study introduces the notion of equitable near proper coloring of a graph G and investigates the equitable defective number for var -ious graph classes. In this study, the equitable near proper coloring of various graph classes and derived graphs are discussed and the corresponding equitable defective number for any k where $2 \leq k \leq \chi e(G) - 1$ is obtained.

Keywords: Equitable Coloring, Defective Coloring, Near Proper Coloring, Equitable Near Proper Coloring.

Publications:

1. S Jose and S Naduvath, "On Equitable Near Proper Coloring of Mycielski Graph of Graphs", In *Data Science and Security*, Lecture Notes in Networks and Systems, Springer, pp. 331-339, 2021.
2. S Jose and S Naduvath, "On Equitable Near Proper Coloring of Certain Graph Classes", *AIP Conference Proceedings*, vol. 2516, no. 1, pp. 210036, 2022.
3. S Jose and S Naduvath, "On Equitable Near Proper Coloring of Some Derived Graph Classes", *Carpathian Mathematical Publications*, vol. 14, no. 2, pp. 529-542, 2022.
4. S Jose and S Naduvath, "On Equitable Near Proper Coloring of Graphs", *Communications in Combinatorics and Optimization*, vol. 9, no. 1, pp. 131-143, 2022.