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COMPLEMENTARY SIGNED EDGE DOMINATION NUMBERS IN GRAPHS

A. L. Eunice Alex and Y. S. Irine Sheela

Department of Mathematics,
Scott Christian College (Autonomous),
Nagercoil - 629003, Kanyakumari, Tamil Nadu, INDIA

E-mail : aleunicealex@gmail.com, irinesheela@gmail.com

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Abstract: Let $G = V(G), E(G)$ be a graph. A complementary signed edge dominating function $(CSEDF)$ of G is a function $g : E(G) \to \{-1, +1\}$ such that $\sum_{e' \notin N[e]} g(e') \geq 1$, for every $e \in E(G)$. Weight of a CSEDF g is defined as $w(g) = \sum_{e \in E(G)} g(e)$. The complementary signed edge domination number of G is defined as $\gamma'_{cs}(G) = min\{w(g) \mid$ g is a CSEDF of G$\}$. In this paper, the complementary signed edge domination number for some graphs are found.

Keywords and Phrases: Dominating function, Signed edge dominating function, Complementary signed edge dominating function.

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1. Introduction and Preliminaries

Mitchell and Hedetniemi were introduced the concept of edge domination. Further the concept was extended to define other edge parameter like signed edge domination number which was introduced by B. Xu [6] in the year 2001. Y. S. Irine Sheela and R. Kala were introduced complementary signed dominating function and complementary signed edge domination number [3], [4] in the year 2011. In this paper, we introduce the CSEDF and $\gamma'_{cs}(G)$ and found some results related