GLOBAL DOMINATOR COLORING OF GRAPHS

ISMAIL SAHUL HAMID
Department of Mathematics
The Madura College
Madurai – 11, India
e-mail: sahulmat@yahoo.co.in

AND

MALAIRAJ RAJESWARI
Department of Mathematics
Fatima College
Madurai – 18, India
e-mail: rajimaths11@gmail.com

Abstract

Let $S \subseteq V$. A vertex $v \in V$ is a dominator of $S$ if $v$ dominates every vertex in $S$ and $v$ is said to be an anti-dominator of $S$ if $v$ dominates none of the vertices of $S$. Let $C = (V_1, V_2, \ldots, V_k)$ be a coloring of $G$ and let $v \in V(G)$. A color class $V_i$ is called a dom-color class or an anti dom-color class of the vertex $v$ according as $v$ is a dominator of $V_i$ or an anti-dominator of $V_i$. The coloring $C$ is called a global dominator coloring of $G$ if every vertex of $G$ has a dom-color class and an anti dom-color class in $C$. The minimum number of colors required for a global dominator coloring of $G$ is called the global dominator chromatic number and is denoted by $\chi_{gd}(G)$. This paper initiates a study on this notion of global dominator coloring.

Keywords: global domination, coloring, global dominator coloring, dominator coloring.

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References

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