South East Asian J. of Mathematics and Mathematical Sciences
Vol. 16, No. 2 (2020), pp. 263-270

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

γ_e - GRAPHS OF GRAPHS

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(**Received:** *Jan. 09, 2020* **Accepted:** *Jul. 24, 2020* **Published:** *Aug. 30, 2020)*

Abstract: A set $S \subseteq V$ is an equitable dominating set of a graph $G = (V, E)$ if every vertex in $V - S$ is equitably adjacent to at least one vertex in S. The equitable domination number $\gamma_e(G)$ of G equals the minimum cardinality of an equitable dominating set S in G; we say that such a set S is a γ_e-set. In this paper we consider the family of all $\gamma_e - sets$ in a graph G and we define the $\gamma_e - graph\ G(\gamma_e) = (V(\gamma_e), E(\gamma_e))$ of G to be the graph whose vertices $V(\gamma_e)$ correspond 1-to-1 with the γ_e-sets of G, and two γ_e-sets, say D_1 and D_2, are adjacent in $E(\gamma_e)$ if there exists a vertex $v \in D_1$ and a vertex $w \in D_2$ such that v is adjacent to w and $D_1 = D_2 - \{w\} \cup \{v\}$, or equivalently, $D_2 = D_1 - \{v\} \cup \{w\}$. In this paper we initiate the study of γ_e- graph of graphs.

Keywords and Phrases: Equitable dominating set.

2010 Mathematics Subject Classification: 05C69.

1. Introduction

A set $S \subseteq V$ is an *dominating set* of a graph $G = (V, E)$ if every vertex in $V - S$ is adjacent to at least one vertex in S. The *domination number* $\gamma(G)$ of G equals the minimum cardinality of a dominating set S. For a comprehensive survey of domination in graphs, refer [4, 5]. For graph theoretic terminologies we refer [3].