ON INTEGER ADDITIVE SET-INDEXERS OF GRAPHS

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Abstract

A set-indexer of a graph G is an injective set-valued function $f : V(G) \to 2^X$ such that the function $f^{\oplus} : E(G) \to 2^X - \{\emptyset\}$ defined by $f^{\oplus}(uv) = f(u) \oplus f(v)$ for every $uv \in E(G)$ is also injective, where 2^X is the set of all subsets of X and $\oplus$ is the symmetric difference of sets. An integer additive set-indexer is defined as an injective function $f : V(G) \to 2^{\mathbb{N}_0}$ such that the induced function $g_f : E(G) \to 2^{\mathbb{N}_0}$ defined by $g_f(uv) = f(u) + f(v)$ is also injective. A graph G which admits an IASI is called an IASI graph. An IASI f is said to be a *weak IASI* if $|g_f(uv)| = max(|f(u)|, |f(v)|)$ and an IASI f is said to be a *strong IASI* if $|g_f(uv)| = |f(u)||f(v)|$ for all $u, v \in V(G)$. In this paper, we study about certain characteristics of inter additive set-indexers.