Abstract

Let \( \mathbb{N}_0 \) denote the set of all non-negative integers and \( X \) be any subset of \( X \). Also denote the power set of \( X \) by \( P(X) \). An integer additive set-labeling (IASL) of a graph \( G \) is an injective function \( f : V(G) \rightarrow P(X) \) such that the induced function \( f^+ : E(G) \rightarrow P(X) \) is defined by \( f^+(uv) = f(u) + f(v) \), where \( f(u) + f(v) \) is the sumset of \( f(u) \) and \( f(v) \). An IASL \( f \) is said to be a topological IASL (Top-IASL) if \( f(V(G)) \) is a topology of the ground set \( X \). An IASL is said to be an integer additive set-graceful labeling (IASGL) if for the induced edgefunction \( f^+ \), \( f^+(E(G)) = P(X) \). In this paper, we study certain types of IASL of a given graph \( G \), which is a topological integer additive set-labeling as well as an integer additive set-graceful labeling of \( G \).

References


**Index Terms**

Computer Science  
Applied Mathematics
Keywords

Integer additive set-labeled graphs, integer additive set-graceful graphs, topological integer additive set-labeled graph, topological integer additive set-graceful labeling of graphs