ON SUPER \((a, d)\)-H-ANTIMAGIC TOTAL COVERING OF STAR RELATED GRAPHS

KM. KATHIRESAN

Centre for Research and Post Graduate Studies in Mathematics
Ayya Nadar Janaki Ammal College (Autonomous)
Sivakasi-626 124, Tamil Nadu, INDIA
e-mail: kathir2esan@yahoo.com

AND

S. DAVID LAURENCE\(^1\)

Department of Mathematics
Rajapalayam Rajus’ College
Rajapalayam-626 117, Tamil Nadu, INDIA
e-mail: danipravin@yahoo.co.in

Abstract

Let \(G = (V(G), E(G))\) be a simple graph and \(H\) be a subgraph of \(G\). \(G\) admits an \(H\)-covering, if every edge in \(E(G)\) belongs to at least one subgraph of \(G\) that is isomorphic to \(H\). An \((a, d)\)-H-antimagic total labeling of \(G\) is a bijection \(\lambda : V(G) \cup E(G) \to \{1, 2, 3, \ldots, |V(G)| + |E(G)|\}\) such that for all subgraphs \(H'\) isomorphic to \(H\), the \(H'\) weights

\[ wt(H') = \sum_{v \in V(H')} \lambda(v) + \sum_{e \in E(H')} \lambda(e) \]

constitute an arithmetic progression \(a, a + d, a + 2d, \ldots, a + (n-1)d\) where \(a\) and \(d\) are positive integers and \(n\) is the number of subgraphs of \(G\) isomorphic to \(H\). Additionally, the labeling \(\lambda\) is called a super \((a, d)\)-H-antimagic total labeling if \(\lambda(V(G)) = \{1, 2, 3, \ldots, |V(G)|\}\).

In this paper we study super \((a, d)\)-H-antimagic total labelings of star related graphs \(G_u[S_n]\) and caterpillars.

Keywords: super \((a, d)\)-H-antimagic total labeling, star.

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References


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