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SUPER-EDGE MAGIC TOTAL LABELING IN CERTAIN CLASSES OF GRAPHS

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Abstract: Duplicate graph of a graph is constructed from a graph with vertex set V of p vertices and edge set E of q edges as a new graph with vertex set union of V, V' where V' is a set disjoint with V having p vertices such that uv is an edge in the graph G if and only if uv' and $u'v$ are the edges in its duplicate graph. Super-edge magic total labeling of a graph is a bijection which labels the vertices with integers 1 to p and edges with integers $p+1$ to $p+q$ such that the induced edge sum of edges defined as "sum of labels of end vertices and label of that edge" are all same. In this paper, we provide algorithms and prove existence of super-edge magic total labeling in extended duplicate graphs of twig, comb, star and bi-star graphs.

Keywords and Phrases: Extended duplicate graphs, Graph labeling, Edge magic total labeling.

2020 Mathematics Subject Classification: 05C78.

1. Introduction

Graph labeling is a branch of Graph theory having wide applications in the field of circuit design, networks, molecular biology, neural networks etc. In 1967, Rosa