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EDGE-ODD GRACEFUL LABELING OF JAHANGIR GRAPH

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Abstract: In 2008, Solairaju and Chithra [10] introduced edge-odd graceful labeling. A graph G with p vertices and q edges is called an edge odd graceful graph if there is a bijection f from the edge set of the graph to the set $\{1, 3, \ldots, (2q-1)\}$ such that, when each vertex is assigned to the sum of all edges incident to it modulo $2q$, the resulting vertex labels are distinct. In this paper, we have proved the Jahangir graph $J_{m,n}$ for $m = 3$ and $n \geq 3$ is edge odd graceful and in general, the Jahangir graph $J_{m,n}$ for m, n is odd, $m \geq 5$ and $n \geq 3$ is also edge odd graceful.

Keywords and Phrases: Edge-Odd graceful labeling, Jahangir graph.

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1. Introduction

A Graph labeling is one of the important areas in graph theory. A graph labeling is an assignment of integers to the vertices or edges or both subject to certain conditions. The first graph labeling method was graceful labeling introduced by Rosa [6] in 1967. The graceful labeling of a graph G with q edges is an injection from the vertices of G to the set $\{0, 1, 2, \ldots, q\}$ such that when each edge xy is assigned the label $|f(x)–f(y)|$, the resulting edge labels are distinct.

In 1985, Lo [4] introduced a labeling for the graph G called edge graceful labeling, which is a bijection f from the set of edges $E(G)$ to the set $\{1, 2, \ldots, q\}$ such that the induced map f^* from the set of vertices $V(G)$ to $\{0, 1, 2, \ldots, (p-1)\}$