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ON SOME CYCLE RELATED ABSOLUTE MEAN GRACEFUL GRAPHS

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Abstract: For a graph G of size q, an absolute mean graceful labeling g of a graph G is an injective mapping from the set of vertices of G to the set $\{0, \pm 1, \pm 2, ..., \pm q\}$ such that when each edge vw is assigned the label $\left\lceil \frac{|g(v)-g(w)|}{2} \right\rceil$, the resulting edge labels are $1, 2, ..., q$. If a graph G admits this labeling, then it is called an absolute mean graceful graph. In this paper, we construct some absolute mean graceful graphs of higher order obtained from cycles using various graph operations.

Keywords and Phrases: Absolute mean graceful labeling, Cycle, Cyclic snakes, Switching of a vertex, Duplication.

2020 Mathematics Subject Classification: 05C78, 05C76, 05C38.

1. Introduction

By a graph $G = (V(G), E(G))$ we mean a finite, simple, undirected and connected graph with p vertices (i.e. order of G is p) and q edges (i.e. size of G is q).

For a given graph G, any mapping which assigns values to the edges or vertices or both under certain condition(s) is known as graph labeling. The concept of graph labelings is introduced by Rosa [15]. Almost 3600 publications have been published in the intervening years that examine more than 350 graph labeling techniques. Labeled graphs have different practical applications, which can be seen in [6, 16, 18, 20]. β-valuation was initially introduced by Rosa [15]. Golomb