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ODD GRACEFUL LABELING ON EXTENDED SUNFLOWER GRAPH

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Abstract: In 1991, Gnanajothi [3] introduced a labeling method called *odd graceful labeling*. A graph G with q edges is said to be odd graceful if there is an injection f from $V(G) \to \{0, 1, 2, ..., (2q-1)\}$ such that, when each edge xy is assigned the label $|f(x)-f(y)|$, the resulting edge labels are $1, 3, 5, ..., (2q-1)$. In this paper,we prove the odd gracefulness on extended sunflower graph.

Keywords and Phrases: Odd graceful labeling, Cycle, Dutch Windmill graph, Revised sunflower graph, extended sunflower graph.

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1. Introduction and Definition

The *graph labeling* is one of the important area in graph theory. Graph labeling methods trace their origin to the graceful labeling introduced by Rosa [5] in 1967. A graceful labeling of a graph G with q edges and vertex set V is an injection $f : V(G) \to \{0, 1, 2, ..., q\}$ with the property that the resulting edge labels are also distinct, where an edge incident with vertices u and v is assigned the label $|f(u) - f(v)|$.

In 1991, Gananajothi [3] introduced *odd graceful labeling*. A graph G with q edges is said to be odd graceful if there is an injection f from $V(G) \to \{0, 1, 2, ..., (2q-1)\}$ such that, when each edge xy is assigned the label $|f(x) - f(y)|$, the resulting edge labels are $1, 3, 5, ..., (2q-1)$. Gnanajothi [3] proved that every cycle graph is odd graceful if and only if n is even.She also proved that the graph obtained