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# EQUIVALENCIES OF CORDIAL LABELING AND SUM DIVISOR CORDIAL LABELING

**H M Makadia, V J Kaneria* and M J Khoda****

Department of Mathematics,
Lukhdhirji Engineering College, Morbi - 363642, Gujrat, INDIA

E-mail : makadia.hardik@yahoo.com

*Department of Mathematics,
Saurashtra University, Rajkot - 360005, Gujrat, INDIA

E-mail : kaneriavinodray@gmail.com

**Sarvodaya Secondary School,
250 feet ring road, Rajkot - 360004, Gujrat, INDIA

E-mail : mjkmaths@gmail.com

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**Abstract:** In this paper, it has been proved that every tree $T$ is SDC (Sum divisor cordial), every graceful graph with certain condition is SDC and the cordial labeling, sum divisor cordial labeling for a graph $G$ are equivalent.

**Keywords and Phrases:** Sum divisor cordial graph, graceful graph, cordial graph, tree.

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## 1. Introduction

We begin with a simple, undirected finite graph $G$ with $p = |V(G)|$, the number of vertices in $G$ and $q = |E(G)|$, the number of edges in $G$. For all basic terminology, definitions and standard notations, we follows Harary [3]. Gallian [2] survey provide vast amount of literature on different type graph labeling.

Rosa [6] defined $\alpha$-labeling ($\alpha$-Graceful labeling) as a graceful labeling $f$ with an additional property that there is an integer $k(0 \leq k < q)$ such that for any