

Radio Mean and Radio Antipodal Mean Labelling of Circulant Graphs $G(4K + 2, \{1, 2\})$

R. Gomathy^{1*} and T. Arputha Jose²

¹Department of Education, Sri Muthukumaran College of Education, Tamil Nadu Teacher's Education University, Chennai, India

²Department of Mathematics, Sri Sivasubramaniya Nadar College of Engineering, Chennai, India

*Corresponding author: gomathyrajagopal94@gmail.com

ABSTRACT

Let V be the vertex set and E be the edge set for the graph $G = (V, E)$. Here $d(u, v)$ represents the shortest distance between any pair of vertices u and v and $diam(G)$ denotes the diameter of G . A one-to-one map f from the vertex set $V(G)$ to t is what is known as a radio mean labelling of a connected graph G , that for two distinct vertices u and v of G , $d(u, v) + \left\lceil \frac{f(u)+f(v)}{2} \right\rceil \geq 1 + diam(G)$. The Radio mean number of f , denoted by $r_{mn}(f)$ is a maximum number assigned to any vertex of G . The radio mean number of G , denoted by $r_{mn}(G)$ is the minimum value of $r_{mn}(f)$ taken over all radio mean labeling f of G . The radio antipodal mean labeling of a graph G is a function f that assigns to each vertex u , a non-negative integer $f(u)$ such that $f(u) \neq f(v)$ if $d(u, v) < diam(G)$ and $d(u, v) + \left\lceil \frac{f(u)+f(v)}{2} \right\rceil \geq diam(G)$. The radio antipodal mean number of f , denoted by $r_{amn}(f)$ is the maximum number assigned to any vertex of G . The radio antipodal mean number of G , denoted by $r_{amn}(G)$ is the minimum value of $r_{amn}(f)$ taken overall antipodal mean labeling f of G . In this paper, the radio mean number and radio antipodal mean number of the Circulant graphs $G(4k + 2, \{1, 2\})$ has been obtained.

Keywords: Radio Mean Number, Radio Antipodal Mean Number, Circulate graph

