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COMPUTATION OF WIENER INDEX, RECIPROCAL WIENER INDEX AND PERIPHERAL WIENER INDEX USING ADJACENCY MATRIX

R. Rajendra, P. Siva Kota Reddy* and M. Prabhavathi

Department of Mathematics
Field Marshal K. M. Cariappa College
Madikeri - 571201, Karnataka, INDIA

E-mail : rrajendrar@gmail.com, mprabhavathi@yahoo.co.uk

*Department of Mathematics,
JSS Science and Technology University,
JSS TI Campus, Manasagangotri,
Mysore -570006, Karnataka, INDIA

E-mail : pskreddy@jssstuniv.in

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Abstract: In this short paper, we establish formulae to compute Wiener index, reciprocal Wiener index and peripheral Wiener index of graphs using adjacency matrix. Further, we present algorithms for the same.

Keywords and Phrases: Adjacency matrix, Wiener index, peripheral Wiener index.

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1. Introduction

For standard terminology and notion in graph theory, we follow the text-book of Harary [1]. The non-standard will be given in this paper as and when required.

Let $G = (V, E)$ be a graph (finite, simple, connected and undirected). The distance between two vertices u and v in G, denoted by $d(u, v)$ is the number of edges in a shortest path (also called a graph geodesic) connecting them. We write $u \sim v$ to denote two vertices u and v are adjacent in G.