

COMPUTATION OF k^{th} ROOT TOPOLOGICAL INDEX OF GRAPHENE

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Abstract: The k^{th} Root Index is a newly defined degree based topological index. It is a generalized index which attempts to study a family of indices. In this paper the computation of k^{th} Root index of Graphene, an allotrope of carbon, is carried out without the aid of computer.

Keywords and Phrases: Molecular graph, k^{th} Root Index, Benzene ring and Graphene.

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1. Introduction

Graphene is an atomic scale honeycomb lattice made of carbon atoms. Among the known materials, Graphene is found to be the strongest material that could even withstand a speeding bullet. In fact Graphene is hundred times stronger than the strongest steel of same thickness. It is one million times thinner than a human hair and hence a single Graphene sheet is almost transparent. Graphene conducts heat and electricity efficiently. It absorbs light of all visible wave lengths. In 1962 Graphene was first observed in electron microscope but was studied only while supported on metal surfaces. It was in the year 2004, Andre Geim and Konstantin Novoselov isolated and characterized Graphene [1].

In the recent years, several topological indices of Graphene have been computed and studied. Here is a brief survey of the topological indices of Graphene with ‘t’