

ABSTRACT

In this work, we will first introduce the Graph theory and its basic terminologies. After this, we will discuss the basic concepts of Chemical Graph theory and its relation with Cellular Neural Networks (CNN), whose study is essential for understanding and explaining the concept of Planer Octahedral Network POH (m). The Cellular Neural Network (CNN) has many applications like high-speed computations, geometric maps, biological modeling, 3D surface analysis, and complex imaging. The Cellular Neural Network (CNN) consists of an array of cells that are interconnected locally. Cells can be arranged in different configurations. Each cell has an input, an output, and a state. The Cellular Neural Network (CNN) allows cells to communicate with the neighboring cell only. These arrangements can be represented graphically. And in graphical representation, cells will be represented by vertices, and connections between cells will be represented by edges. After using this concept, we can easily explain our major discussion of Planar Octahedral Network POH (m) where m represents its dimension. And we will extend its dimension to calculate the vertex and edge partition. After determining these partitions in table form, We can easily calculate the vertex-edge topological indices. A topological index is a simple numerical value that characterized the whole graph. It has various representations according to the given graph. Therefore in this content, we will determine the relation of vertex-edge topological indices with Planer Octahedral Network POH (m), which will calculate with the help of its partitions table.