Abstract

Graph theory provides a powerful framework for analyzing and understanding the connectivity and relationships between atoms and molecules. By representing chemical compounds as graphs,having edge and vertex. Topological indices have wide range of applications in the world of research. Topological indices are used for the prediction of chemical compounds properties (Boiling point, strain energy, distortion and stability). The calculation of various indices and polynomials for a molecular graph of a superlattice, demonstrates the utilization of graph theory in the characterization and analysis of molecular structures, including degrees based on Fifth M-Zagreb indices, Fifth hyper-M-Zagreb indices, Fifth M_2-Zagreb polynomials, FifthM_1-Zagreb polynomials, and M_1-Zagreb polynomials in general.