The atom bond connectivity index of some trees and bicyclic graphs

ABSTRACT

The atom bond connectivity (ABC) index is one of the recently most investigated degree-based molecular structure descriptors that have applications in chemistry. For a graph $G$, the ABC index is defined as $\text{ABC}(G)=\sum_{uv \in E(G)} \sqrt{d_v + d_u} - \frac{2}{d_v} \cdot \frac{1}{d_u}$, where $d_v$ denotes the degree of a vertex $u$ in $G$. In this paper, we obtain the general formula for ABC index of some special, chemical trees, and bicyclic graphs.

Keyword: The atom bond connectivity (ABC) index; Bicyclic graphs; Molecular graphs; Chemical tree