Eccentric connectivity index of unicyclic graphs with application to cycloalkanes

ABSTRACT

Let $G$ be a simple connected molecular graph. The eccentric connectivity index $\xi(G)$ is defined as $\xi(G) = \sum_{\nu \in V(G)} \text{deg}(\nu) \text{ec}(\nu)$, where $\text{deg}(\nu)$ denotes the degree of vertex $\nu$ and $\text{ec}(\nu)$ is the largest distance between $\nu$ and any other vertex $u$ of $G$. In this paper, we construct the general formulas for the eccentric connectivity index of unicyclic graphs with application to cycloalkanes.

**Keyword:** Cycloalkanes; Eccentric connectivity index; Unicyclic chemical graphs; Unicyclic graphs