

On the eccentric connectivity index of a graph

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SAMS Subject Classification: Combinatorics and Graph Theory

If G is a connected graph with vertex set V , then the eccentric connectivity of G , $\xi^C(G)$, is defined as $\sum_{v \in V} \deg(v) ec(v)$ where $\deg(v)$ is the degree of a vertex v and $ec(v)$ is its eccentricity. We obtain an exact lower bound on $\xi^C(G)$ in terms of order, and show that this bound is satisfied by the star graph. An asymptotically sharp upper bound is also derived. In addition, for trees of given order, when the diameter is also prescribed, precise upper and lower bounds are provided.