

THE CONNECTED GEODETIC VERTEX COVERING
NUMBER OF A GRAPH

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(Received: Mar. 18, 2020 Accepted: Jan. 02, 2021 Published: Apr. 30, 2021)

Abstract: For a connected graph G of order $n \geq 2$, a set $S \subseteq V(G)$ is a *geodetic vertex cover* of G if S is both a geodetic set and a vertex cover of G . The minimum cardinality of a geodetic vertex cover of G is defined as the *geodetic vertex covering number* of G and is denoted by $g_\alpha(G)$. Any geodetic vertex cover of cardinality $g_\alpha(G)$ is a g_α -set of G . A *connected geodetic vertex cover* of G is a geodetic vertex cover S such that the subgraph $G[S]$ induced by S is connected. The minimum cardinality of a connected geodetic vertex cover of G is the *connected geodetic vertex covering number* of G and is denoted by $g_{ac}(G)$. A connected geodetic vertex cover of cardinality $g_{ac}(G)$ is called a g_{ac} -set of G . Some general properties satisfied by connected geodetic vertex covering sets are studied. The connected geodetic