LIST OF SYMBOLS

$V(G)$: the vertex set of graph $G$

$E(G)$: the edge set of graph $G$

$P_n, K_n, C_n$ : respectively Path, Complete graph and Cycle on $n$ vertices

$K_{m,n}$: Complete bipartite graph

d$(u, v)$: the length of the shortest path from $u$ to $v$ or infinity if there is no path from $u$ to $v$

$N(u), N_1(u)$: the set of vertices adjacent to $u$.

$N_2(u)$: set of all vertices of $G$ which are at distance two from $u$

$N[u]$: the closed neighbourhood of a vertex $u$, = $\{u\} \cup N(u)$

$\text{dia}(G)$: the diameter of a connected graph $G$

$\lfloor x \rfloor$: the greatest integer not exceeding $x$

$\lceil x \rceil$: the least integer not less than $x$
\( \langle S \rangle \): subgraph induced by a subset \( S \) of \( V(G) \)

\( \overline{G} \): the complement of the graph \( G \)

\( |S| \): the number of elements in a set \( S \)

\( G \setminus v \): the graph obtained from \( G \) by removing a vertex \( v \)

\( G \setminus e \): the graph obtained from \( G \) by removing an edge \( e \)

\( G + e \): the graph obtained from \( G \) by adding an edge \( e \)

\( E(V_1, V_2) \): the set of all edges in \( G \) joining the vertices in \( V_1 \) and vertices in \( V_2 \), where \( V_1 \) and \( V_2 \) are subsets of \( V(G) \)

\( \Delta(G), \Delta \): maximum degree of \( G \)

\( \delta(G), \delta \): minimum degree of \( G \)

\( d(G) \): domatic number of \( G \)

\( \gamma(G) \): domination number of \( G \)

\( \gamma_t(G) \): total domination number of \( G \)

\( \gamma_s(G) \): signed domination number of \( G \)

\( \gamma_{st}(G) \): signed total domination number of \( G \)

\( \gamma_2(G) \): two-distance domination number of \( G \)

\( \gamma_{t2}(G) \): total two-distance domination number of \( G \)
$\gamma_{psd}(G)$: point-set domination number of $G$

$\gamma_f(G)$: factor domination number of $G$

$\gamma_{fd}(G)$: factor total domination number of $G$

$\gamma_c(G)$: connected domination number of $G$

$\gamma_i(G)$: the independent domination number of $G$

$\gamma_g(G)$: Global domination number of $G$

$\gamma_{tgd}(G)$: total global domination number of $G$

$\gamma_{cc}(G)$: connected cutfree domination number of $G$

$\gamma_d(G)$: d-domination number of $G$

$\gamma_{\lambda}(G)$: Lambda-domination number of $G$

$\gamma_{\frac{1}{2}}(G)$: half-domination number of $G$

$\gamma_{\frac{1}{2}}(G)$: Total- half-fractional domination number of $G$

$\gamma_f(G)$: Fractional domination number of $G$

$\gamma_{\frac{1}{2}}(G)$: Fractional half-domination number of $G$

$\gamma.G$: gamma graph of $G$

$cb(G)$: cobondage number of $G$
$(cb)_t(G)$ : total cobondage number of $G$

$\lceil(G) :$ the upper domination number of $G$

$b(G)$ : bondage number of $G$

$b_t(G)$ : total bondage number of $G$

$b_{\frac{1}{2}}(G)$ : half bondage number of $G$

$b_2(G)$ : bondage number of two-distance domination of $G$

$\kappa(G)$ : connectivity of a graph $G$