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ANALYSIS OF V_e-DEGREE AND E_v-DEGREE TOPOLOGICAL INDICES OF SILICATE AND OXYGEN NETWORKS

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Abstract: Recently, two novel degree based concepts have been defined in graph theory; E_v-degrees and V_e-degrees. Motivated by chemical applications of topological indices in the QSPR/QSAR analysis, we define V_e-degree re-defined versions of Zagreb indices ($V_e - ReZG_1(G)$, $V_e - ReZG_2(G)$, $V_e - ReZG_3(G)$) and V_e-degree of SK indices ($V_e - SK(G)$, $V_e - SK_1(G)$, $V_e - SK_2(G)$) as parallel to their corresponding classical degree versions. Further-more, we obtain V_e-degree $V_e - ReZG_1(G)$, $V_e - ReZG_2(G)$, $V_e - ReZG_3(G)$, $V_e - SK(G)$, $V_e - SK_1(G)$, $V_e - SK_2(G)$ and E_v-degree $E_v - {}^mM(G)$, $E_v - I(G)$, $E_v - F(G)$ of topological indices of some standard class of graphs like, path, cycle, complete, star, wheel and complete bipartite graphs. Also we compute $V_e - ReZG_1(G)$, $V_e - ReZG_2(G)$, $V_e - ReZG_3(G)$, $V_e - SK(G)$, $V_e - SK_1(G)$ and $V_e - SK_2(G)$ topological indices of some silicate oxygen networks such as dominating oxide network (DOX), regular triangulate oxide network (RTOX), dominating silicate network (DSL) and derive analytical formulae of these networks. Additionally, we analyze the numerical and graphical comparison of the networks.

Keywords and Phrases: SK indices, re-defined Zagreb indices, V_e-degree and