

Nullity of t-Tuple Graphs

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Abstract : The nullity $\eta(G)$ of a graph is the occurrence of zero as an eigenvalue in its spectra. A zero-sum weighting of a graph G is real valued function, say f from vertices of G to the set of real numbers, provided that for each vertex of G the summation of the weights $f(w)$ over all neighborhood w of v is zero for each v in G . A high zero-sum weighting of G is one that uses maximum number of non-zero independent variables. If G is graph with an end vertex, and if H is an induced sub-graph of G obtained by deleting this vertex together with the vertex adjacent to it, then, $\eta(G) = \eta(H)$. In this paper, a high zero-sum weighting technique and the end vertex procedure are applied to evaluate the nullity of t -tuple and generalized t -tuple graphs are derived and determined for some special types of graphs. Also, we introduce and prove some important results about the t -tuple coalescence, Cartesian and Kronecker products of nut graphs.

Keywords : graph theory, graph spectra, nullity of graphs, statistic

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