Abstract

Let $G(V,E)$ simple connected graph, with $|E| = \varepsilon$. In this paper, we define an edge-set graph $G_G$ constructed from the graph $G$ such that any vertex $V_s,i$ of $G_G$ corresponds to the $i$-th $s$-element subset of $E(G)$ and any two vertices $V_s,i$, $V_k,m$ of $G_G$ correlated with this vertex.
are adjacent if and only if there is at least one edge in the edge-subset corresponding to 
\( V_{s,i} \)
which is adjacent to at least one edge in the edge-subset corresponding to 
\( V_{k,m} \)
where 
\( s, k \)
are positive integers. It can be noted that the edge-set graph \( G \)
\( G \)
of a graph
\( G \)
is dependent on both the structure of
\( G \)
as well as the number of edges \( c \). We also discuss the characteristics and properties of the 
edge-set graphs corresponding to certain standard graphs.

**References**

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**Index Terms**

Computer Science

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**Keywords**
Edge-set graph, Total edge-degree of a graph, Edge-degree of vertex, Connected edge dominating set, Artificial edge-set element