Abstract

We consider semitotal-block graph, total-block graph of a graph G (respectively, denoted as Tb(G), TB(G)). We prove that the number of edges in a semitotal-block graph of a given graph G is equal to |E(G)| + |V(B1)| + |V(B2)| + … + |V(Bm)|, where B1, B2, …, Bm are the blocks of G. Further, we obtain that TB(G) is the ring sum of Tb(G) and the block graph B(G). We introduce the concept "vertex-block graph (denoted by Bv(G) of G)" and prove that TB(G) is the ring sum of G and Bv(G). We also present some related fundamental results along with illustrations.

References
Some Results on Degree of Vertices in Semitotal-Block Graph and Total-Block Graph

- NarsingDeo "Graph Theory with Applications to Engineering and Computer Science", Prentice Hall of India Pvt. Ltd, New Delhi (1997).
- SatyanarayanBh. and Syam Prasad K. "Discrete Mathematics and Graph Theory", Prentice Hall of India, New Delhi, 2009. ISSN:978-81-203-3842-5.

**Index Terms**

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