

Well-covered split graph characterization

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A graph is *well-covered* if any pair of maximal independent sets has the same size. A *split partition* of a graph $G = (V, E)$ is a partition (S, K) of the vertex set V into an independent set S and a clique K , in this case we say that G is a *split* graph. A graph is *well-covered split* if G is split and well-covered. In 1977, Ravindra proved that a graph $G = (V, E)$ is well-covered bipartite if and only if there is a perfect matching M in G such that for every edge uv of M the induced graph $G[N(u) \cup N(v)]$ is a complete bipartite graph. In this paper we show a characterization for the well-covered split graphs. We prove that a graph is well-covered split if and only if G is a split graph with partition (S, K) where either for every vertex $v \in K$ the degree $d_S(v) = 0$, or for every vertex $v \in K$ the degree $d_S(v) = 1$.

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