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Disjoint cliques and disjoint maximal independent sets of vertices in graphs. (In English)

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From the authors' summary: "In this paper, we find lower bounds for the maximum and minimum numbers of cliques in maximal sets of pairwise disjoint cliques in a graph.By complementation, these yield lower bounds for the maximum and minimum numbers of independent sets in maximal sets of pairwise sisjoint maximal independent sets of vertices in a graph. In the latter context, we show by examples that one of our bounds is best possible." Further, the authors show that Berge's [unpublished] and C. Pajan's hypotheses [Thesis, Grenoble, 1977], which state that any regular graph has two disjoint maximal independent sets of vertices, are true for any regular graph with n vertices and degree $n-k$, where $k < -2 + 2\sqrt{2n}$.

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Classification:
05C70 Factorization, etc.
05C35 Extremal problems (graph theory)

Keywords:
maximal sets of cliques; regular graph; maximal independent sets