Zbl 217.30701
Erdős, Paul; Herzog, M.; Schönheim, J.
An extremal problem on the set of noncoprime divisors of a number (In English)
Isr. J. Math. 8, 408-412 (1970). [0021-2172]

A combinatorial theorem is established, stating that if a family $A_1, A_2, \ldots, A_s$ of subsets of a set M contains every subset of each member, then the complements in M of the A's have a permutation $C_1, C_2, \ldots, C_s$ such that $C_i \supset A_1$. This is used to determine the minimal size of a maximal set of divisors of a number N no two of them being coprime.

Classification:
05A05 Combinatorial choice problems