

Highly connected coloured subgraphs

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For integers n, r, s, k , $n \geq k$ and $r \geq s$, let $m(n, r, s, k)$ be the size of the largest k -connected component with at most s colours one can find in any r -colouring of the edges of the complete graph K_n on n vertices. Bollobás asked for the determination of $m(n, r, s, k)$. We obtain bounds in the cases $s = 1, 2$ and $k = o(n)$, which extend results of Liu, Morris and Prince. Joint work with Henry Liu.