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EQUIVALENCE COLOURING OF GRAPHS

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ABSTRACT

Let G = (V, E) be a simple and undirected graph. A proper colouring of the vertices of V (G) is an assignment of colours to the vertices of G such that adjacent vertices receive different colours. A proper colouring of G induces a partition of V (G) into independent sets. The minimum cardinality of a proper colour partition of G is called the chromatic number of G and is denoted by χ(G). If in a proper colour partition of G, the union of any two-colour classes induces an acyclic subgraph, then the colouring is called acyclic colouring of G. {[4], [5], [6]}. If instead, the union of any two colour classes in a proper colour partition induces a disjoint collection of stars, the resulting proper colour partition is called a star partition. {[6]}. A subset S of V(G) is called an equivalence set if the subgraph induced by S is component wise complete. In this paper, a study of proper colour partition in which the union of any two colour classes induces an equivalence set is initiated.

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