

Coupon coloring of lexicographic product of graphs*

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Abstract

A k -coupon coloring of a graph G without isolated vertices is an assignment of colors from $[k] = \{1, 2, \dots, k\}$ to the vertices of G such that the neighborhood of every vertex of G contains vertices of all colors from $[k]$. The maximum k for which a k -coupon coloring exists is called the *coupon coloring number* of G . In this paper, we have studied the coupon coloring number of Lexicographic product of graphs G and H if G has a Hamiltonian path. We have found a sharp bound for the coupon coloring number of Lexicographic product of connected graphs.

Keywords: Coupon coloring number, Total chromatic number, Lexicographic product.

Math. Subj. Class.: 05C15, 05C69, 05C76

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Kuponsko barvanje leksikografskega produkta grafov*

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Povzetek

k -kuponsko barvanje grafa G brez izoliranih vozlišč je definirano kot določitev barv iz množice $[k] = \{1, 2, \dots, k\}$ vozliščem grafa G , pri čemer okolica vsakega vozlišča grafa G vsebuje vse barve iz $[k]$. Maksimalni k , za katerega obstaja k -kuponsko barvanje, se imenuje *kuponsko barvno število* grafa G . V tem članku preučujemo kuponsko barvno število leksikografskega produkta grafov G in H v primeru ko ima graf G hamiltonsko pot. Odkrili smo ostro mejo za kuponsko barvno število leksikografskega produkta povezanih grafov.

Ključne besede: Kuponsko barvno število, totalno kromatsko število, leksikografski produkt.

Math. Subj. Class.: 05C15, 05C69, 05C76

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