ON THE PALETTE INDEX OF COMPLETE BIPARTITE GRAPHS

MIRKO HORŇÁK

AND

JURAJ HUDÁK

Institute of Mathematics
P.J. Šafárik University
Jesenná 5, 04001 Košice, Slovakia

e-mail: mirko.hornak@upjs.sk
juraj.hudak1@student.upjs.sk

Abstract

The palette of a vertex $x$ of a graph $G$ determined by a proper edge colouring $\varphi$ of $G$ is the set \{\varphi(xy) : xy \in E(G)\} and the diversity of $\varphi$ is the number of different palettes determined by $\varphi$. The palette index of $G$ is the minimum of diversities of $\varphi$ taken over all proper edge colourings $\varphi$ of $G$. In the article we determine the palette index of $K_{m,n}$ for $m \leq 5$ and pose two conjectures concerning the palette index of complete bipartite graphs.

Keywords: edge colouring, palette index, bipartite graph.

2010 Mathematics Subject Classification: 05C15.

References


1The research of the first author was supported by the Slovak grant VEGA 1/0368/16, by the grant APVV-15-0116 and by the Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic for the Structural Funds of EU under the project ITMS 26220120007.

Received 22 March 2016
Revised 20 October 2016
Accepted 15 December 2016