The Amalgamation Number of Graphs Involving Wheels and Fans*

Thelma C. Montero-Galliguez
Department of Mathematics
Caraga State University
Butuan City

Abstract

Let $G = (V(G), E(G))$ and $H = (V(H), E(H))$ be finite, connected, simple graphs, such that $V(G)$ and $V(H)$ are disjoint sets. A ***k-amalgamation*** of G and H, denoted by $\boldsymbol{G \star^{k} H}$, is the graph obtained by identifying k distinct vertices of G with k distinct vertices of H such that no adjacent vertices of one graph are identified with adjacent vertices of the other. The **amalgamation number** of G and H, denoted by $\boldsymbol{a(G,H)}$, is the maximum k such that a k-amalgamation $G \star^{k} H$ is possible. Let a wheel and a fan be denoted by $W_m = K_1 + C_m$ and $F_n = K_1 + P_n$, respectively, where $m \geq 3$ and $n \geq 2$. Results on the amalgamation number of wheels and fans and of two wheels will be presented.

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