Vertex-graceful graphs

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Abstract

A (p,q)-graph $G = (V,E)$ is called vertex-graceful if it admits a vertex- graceful numbering, which is defined as an injection $f : E \to \{0,1,2,\ldots,q^*\}, q^* = \max\{p,q\}$ such that the function $f^V : V \to \mathbb{N}$ defined by the rule $f^V(v) = \max\{f(e) : e \in E_v \text{ and } v \in e\}$. -min $\{f(e) : e \in E_v \text{ and } v \in e\}$ satisfies the property that $f^V(V) := \{f^V(u) : u \in V\} = \{1,2,\ldots,p\}$, where E_v denotes the set of edges in G that are incident at v and $\mathbb{N}$ denotes the set of natural numbers. A study of this new notion is the prime objective of this paper.

Keywords and phrases : *Band-width, V-graceful graph.*

1. Introduction

For all terminology and notation in graph theory, not specifically de fined in this paper, we refer the reader to the text-book by D. B. West [6]. Unless mentioned otherwise, all graphs considered in the paper are finite, simple and loop-free.

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