

Graphoidally independent infinite cactus

Deepti Jain^{1,*}, and Purnima Gupta²

¹Department of Mathematics, Sri Venkateswara College, University of Delhi, Delhi, India
*djain@svc.ac.in

²Adjunct Professor (Prof of Eminence), Department of Mathematics, Ramanujan College,
University of Delhi, Delhi, India
purnimachandni1@gmail.com

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Abstract: A graphoidal cover of a graph G (not necessarily finite) is a collection ψ of paths (not necessarily finite, not necessarily open) satisfying the following axioms: (GC-1) Every vertex of G is an internal vertex of at most one path in ψ , and (GC-2) every edge of G is in exactly one path in ψ . The pair (G, ψ) is called a graphoidally covered graph and the paths in ψ are called the ψ -edges of G . In a graphoidally covered graph (G, ψ) , two distinct vertices u and v are ψ -adjacent if they are the ends of an open ψ -edge. A graphoidally covered graph (G, ψ) in which no two distinct vertices are ψ -adjacent is called ψ -independent and the graphoidal cover ψ is called a totally disconnecting graphoidal cover of G . Further, a graph possessing a totally disconnecting graphoidal cover is called a graphoidally independent graph. The aim of this paper is to establish complete characterization of graphoidally independent infinite cactus.

Keywords: Graphoidal cover of a graph, graphoidally covered graphs, graphoidally independent graphs, cactus

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1. Introduction

Throughout this paper, we shall follow the notation and terminology of West [17] for graphs, except that a graph could be infinite in which case the reader is referred to Ore [14].

The concept of graphoidal covers for finite graphs was first introduced by Acharya and Sampathkumar [4] in 1987. There are several variations of the concept of graphoidal

* Corresponding Author