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RESEARCH ARTICLE

The sparing number of the powers of certain Mycielski graphs

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ABSTRACT. In this paper, we discuss the sparing number of the power graphs of the Mycielski graphs of certain graph classes.

1. Introduction

For all terms and definitions, not defined specifically in this paper, we refer to [1, 3, 14]. In this paper, by a graph we mean a simple, connected, finite and non-trivial graph $G = (V(G); E(G))$ with the set of vertices $V(G)$ and the set of edges $E(G)$. Given an integer $m \geqslant 2$, we denote by P_m the path on m vertices and by C_m the cycle on m vertices.

If r is a positive integer, the r-th power of G, denoted by G^r, is a graph with the same vertex set such that two vertices are adjacent in G^r if only if the distance between them is at most r.

The following theorem on graph powers is an important and a very useful result in our present study.

Theorem 1.1. If d is the diameter of a graph G, then G^d is a complete graph.

An *independent set* of a graph G is a subset I of the vertex set $V(G)$, such that no two elements (vertices) in I are adjacent. An independence set I of G is said to have *maximum incidence* in G if the number of edges in G having one of their end vertices in I is maximum when compared to the other independent sets of G.

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