South East Asian J. of Mathematics and Mathematical Sciences
Vol. 18, No. 3 (2022), pp. 359-368

DOI: 10.56827/SEAJMMS.2022.1803.30 **ISSN (Online): 2582-0850**

ISSN (Print): 0972-7752

DETOUR PEBBLING ON CARTESIAN PRODUCT GRAPHS

A. Lourdusamy and S. Saratha Nellainayaki*

Department of Mathematics,
St. Xavier's College (Autonomous),
Palayamkottai - 627002, Tamil Nadu, INDIA

E-mail : lourdusamy15@gmail.com

*Department of Mathematics,
Vyasa Arts and Science Women's College,
Subramaniapuram, Tamilnadu, INDIA

E-mail : sarathanellai@gmail.com

(**Received:** *Jul. 14, 2021* **Accepted:** *Nov. 17, 2022* **Published:** *Dec. 30, 2022)*

Abstract: Given a distribution of pebbles on the vertices of a connected graph G, a pebbling move is defined as the removal of two pebbles from some vertex and the placement of one of those pebbles on an adjacent vertex. The t - *pebbling number* of G is the smallest number, $f_t(G)$ such that from any distribution of $f_t(G)$ pebbles, it is possible to move t pebbles to any specified target vertex by a sequence of pebbling moves. The detour pebbling number of a graph $f^*(G)$ is the smallest number such that from any distribution of $f^*(G)$ pebbles, it is possible to move a pebbles to any specified target vertex by a sequence of pebbling moves using a detour path. In this paper, we find the detour pebbling number for some Cartesian product graphs and also the detour t - pebbling number for those cartesian product graphs.

Keywords and Phrases: t - pebbling number, detour pebbling number, detour t - pebbling number.

2020 Mathematics Subject Classification: 05C99.