South East Asian J. of Mathematics and Mathematical Sciences Vol. 16, No. 1 (A) (2020), pp. 151-156

> ISSN (Online): 2582-0850 ISSN (Print): 0972-7752

TOPOLOGICAL SET LABELING OF CERTAIN TADPOLE GRAPHS

A. Devika, M. Pavithra and S. Kiruthika

Department of Mathematics, PSG College of Arts and Science Coimbatore - 641014, Tamil Nadu, INDIA

E-mail : devirakavi@gmail.com, pavithraksm@gmail.com, kiruthika.sk@gmail.com,

(Received: Mar. 02, 2020 Accepted: April. 23, 2020 Published: Apr. 30, 2020)

Abstract: The main objective of this paper is to compute the proper inequivalent τ' set labeling of certain tadpole graphs.

Keywords and Phrases: Topological number, Proper τ -set labeling, inequivalent topologies, Proper inequivalent τ' set labeling, Proper inequivalent τ' set labeling number.

2010 Mathematics Subject Classification: 05C78, 05C10.

1. Introduction

B. D. Acharya created a link between graph theory and topology by introducing the topological set indexer concept. Later K. A. Germina extended it to topogenic graphs, topogenic index and graceful topogenic set indexers. Further N. K. Sudev and K. A. Germina discussed the concept of Topological IASL graphs. Inspired by their works we introduced topological set labeling concept.

2. Preliminaries

Definition 2.1. Let G be a graph. X be a non empty set whose cardinality is a topological number and τ denotes the set of all topologies of X. Then the set $f(v) = \{Y/Y \in \tau\}$ for which the set valuation $f: V \cup E \to 2^X$ is a t-set indexer of G is called proper τ -set labeling, otherwise it is called improper τ set labeling. The corresponding cardinality of f(v) is called proper set labeling number and is denoted by η .