South East Asian J. of Mathematics and Mathematical Sciences
Vol. 21, Proceedings (2022), pp. 79-86

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

NLC GRAPH GRAMMAR FOR GENERATING GRAPH CLASSES

S. Therasa, T. Rajaretnam* and S. Arumugam**

Department of Mathematics,
University College of Engineering,
Tiruchirappalli - 620024, Tamil Nadu, INDIA

E-mail : therasa@aubit.edu.in

*Department of Mathematics,
St. Joseph's College, Tiruchirappalli - 620002, Tamil Nadu, INDIA

E-mail : trajaret@gmail.com

**Department of Computer Science and Engineering,
Ramco Institute of Technology,
Rajapalayam - 626117, Tamil Nadu, INDIA

E-mail : s.arumugam@ritrjpm.ac.in

(**Received:** *May 18, 2022* **Accepted:** *Jun. 02, 2022* **Published:** *Aug. 30, 2022)*

Special Issue
Proceedings of International Virtual Conference on
"Mathematical Sciences and Applications, ICMSA - 2022"

Abstract: In a node label controlled (NLC) graph grammar, a node v of a given graph G is replaced by a new graph H and vertices of H are connected to vertices in $G-v$, depending on how the node v was connected to vertices in $G-v$. Terminal and non-terminal labels are used to label the vertices of G and node replacement is a node label controlled mechanism. In this paper, we define NLC graph grammar for generating classes of graphs such as paths, cycles, wheels and complete bipartite graphs.

Keywords and Phrases: NLC graph grammar, node replacement, derivation.

2020 Mathematics Subject Classification: 68Q01, 68R10, 68Q10.