KALASALINGAM UNIVERSTIY

APPLICATION FOR ADMISSION TO THE DOCTOR OF PHILOSOPHY (PhD)

APPLICANT'S NAME : ABITHABALA A

DEPARTMENT : MATHEMATICS

RESEARCH AREA : GRAPH THEORY

RESEARCH TITLE : AN ISOLATED BIPOLAR INTERVAL VALUED NEUTROSOPHIC GRAPH

ABSTRACT :

The Neutrosophic Set is the generalization of fuzzy set and intuitionistic fuzzy set. The interval valued neutrosophic graph is the generalization of interval valued fuzzy graph, interval valued intuitionistic fuzzy graph and single valued neutrosophic graph. In this work, we propose the graph for the bipolar interval valued neutrosophic set (BIVNS) models. Several resuts has been proved for the bipolar single valued neutrosophic graph (BSVNG) and an isolated interval valued neutrosophic graph. In this, we compare a bipolar interval valued neutrosophic graph (BIVNG) with an isolated interval valued neutrosophic graph (IIVNG) to demonstrate an isolated bipolar interval valued neutrosophic graph (IBIVNG) and we apply some operations on it.

INTRODUCTION :

The combination of Neutrosophic set and Graph theory is a Neutrosophic graph theory. The Neutrosophic graph theory is a mathematical framework that extends traditional graph theory to handle neutrosophic sets which are characterized by three membership functions,

Truth membership

Indeterminacy membership

Falsity membership

The Neutrosophic graph is a generalization of fuzzy graph and intuitionistic fuzzy graph. In Neutrosophic graph there is two types

Single Valued Neutrosophic Graph

Interval Valued Neutrosophic Graph

Bipolar Interval Valued Neutrosophic graphs (BIVNGs) are a generalization of Neutrosophic graphs which are themselves an extensions of fuzzy graphs. BIVNGs incorporate bipolar information representing both positive and negative aspects of relationships.

LITERATURE REVIEW :

Bipolar interval valued neutrosophic graphs (BIVNGs) are a relatively new area of research and the literature is still evolving. Smarandache (2015) introduced the concept of neutrosophic graphs. Broumi (2016) introduced the concept of bipolar neutrosophic graph.

METHODOLOGY :

Graph construction to the Bipolar interval valued neutrosohic graph and the analysis of the graph.

RESEARCH OUTCOMES :

Extension of an Isolated valued neutrosophic graph to An isolated bipolar interval valued neutrosophic graph.

The combination of bipolar interval valued neutrosophic graph to a regular graph.

The operations like union, intersection and complement can be introduce in an isolated bipolar interval valued neutrosophic graph.

REFERENCES :

Broumi S., Bakali A., Talea M., Smarandache F., : "An isolated interval valued neutrosophic graphs", Critical Review, Volume XIII (2016).

Broumi S., Bakali A., Talea M., Smarandache F., : " An isolated bipolar single valued neutrosophic graphs", Information systems design and Intelligent Applications, Springer nature Singapore Pvt Ltd (2018).