Abstract

Let \( G(V,E) \) be a graph with \( p \) vertices and \( q \) edges. A graph \( G(p,q) \) is said to be a Beta combination graph if there exist a bijection \( f: V(G) \to \{1,2,\ldots,p\} \) such that the induced function \( Bf: E(G) \to \mathbb{N} \), \( \mathbb{N} \) is a natural number, given by \( Bf(uv) \), every edges \( uv \) of \( G \) and are all distinct and the function \( f \) is called the Beta combination labeling. In this paper, we proved the Petersen graph, Complete graph \( K_n (n \geq 8) \), Ladder \( L_n (n \geq 2) \), fan \( f_n (n \geq 2) \), wheel \( W_n (n \geq 3) \), path \( P_n \), cycle \( C_n (n \geq 3) \), friendship graph \( F_n (n \geq 1) \), complete bipartite graph \( K_{n,n} (n \geq 2) \), Tree \( T_n \), triangle snake, \( n \)-bistar graph \( B_{n,n} \) and Star graph \( K_{1,n} (n > 1) \) are the Beta combination graphs. Also we proved Complete graph \( K_n (n > 8) \) is not a Beta combination graph.

References

- B. D. Acharya and S. M. Hegde, Arithmetic graphs, J. Graph Theory, 14(3)(1990), 275-299.
Beta Combination Graphs

- S. M. Hegde and Sudhakar Shetty, Combinatorial Labelings of Graphs, Applied Mathematics E-Notes, 6(2006), 251-258.
- F. Harary, Graph Theory, Addison-Wesley, Reading, Massachusetts, 1972.

Index Terms

Computer Science
Applied Sciences

Keywords
Beta combination graph and Beta combination labeling