ABSTRAK

Diberikan graf $G(V, E)$ dengan $|V(G)| = p$ dan $|E(G)| = q$. Graf G dikatakan memiliki pelabelan total *Edge Bimagic* jika terdapat pemetaan bijektif $f: V(G) \cup E(G) \rightarrow \{1, 2, \ldots, p + q\}$ sehingga untuk setiap sisi $uv \in E(G)$ berlaku $f(u) + f(uv) + f(v) = k_1$ atau k_2, dimana k_1 dan k_2 adalah dua buah konstanta berbeda yang disebut konstanta *magic* dan graf G disebut graf total *Edge Bimagic*. Sebuah pelabelan total *Edge Bimagic* dikatakan pelabelan terurut titik-a total *Edge Bimagic* jika terdapat pemetaan bijektif $f: V(G) \cup E(G) \rightarrow \{1, 2, \ldots, p + q\}$ sehingga untuk setiap sisi $uv \in E(G)$ berlaku $f(u) + f(uv) + f(v) = k_1$ atau k_2 dan $f(V) = \{a + 1, a + 2, \ldots, a + p\}$ dimana $0 \leq a \leq q$. Kemudian graf G dikatakan graf total *Edge Bimagic* jika terdapat pelabelan terutur titik-a total *Edge Bimagic* pada graf G. Pada tugas akhir ini dibahas pelabelan terurut titik-a total *Edge Bimagic* pada graf Path, graf Sikel, dan graf Bintang. Beberapa graf merupakan graf total *Edge Bimagic* seperti graf Path P_n^+, graf Bistar $< B_{m,n} : 2 >$ dimana $(m, n \geq 2)$, graf Bintang $< K_{1,n} : 3 >$ dengan $(n \geq 3)$ dimana n genap, perkalian graf Path P_3 dengan graf Bintang $k_{1,n}$ $(P_3 \odot K_{1,n})$ dimana n genap, gabungan graf Path P_2 dengan m kali graf Komplit K_1 dan graf N_2 $(P_2 \cup mK_1 + N_2)$ dimana $(m \geq 1)$, graf Mahkota $(C_n \odot K_1)$, gabungan dua graf Bintang $K_{1,m}$ dengan $K_{1,n}$ dimana $(m, n \geq 1)$, dan graf Pyramid $PY(n)$.

Kata kunci : Graf, Pelabelan, *Magic, Edge Bimagic*.

ABSTRACT

Given graph $G(V, E)$ with $|V(G)| = p$ and $|E(G)| = q$. Graph G is called has a *Edge Bimagic* total labeling if there is the exist bijectif fungtion $f: V(G) \cup E(G) \rightarrow \{1, 2, \ldots, p + q\}$ thus for each edge $uv \in E(G)$ obtained $f(u) + f(uv) + f(v) = k_1$ or k_2, where k_1 and k_2 are two kinds of the different constanta wich is called the *magic* constanta and graph G is called *Edge Bimagic* total graph. A *Edge Bimagic* total labeling is called a-vertex consecutive *Edge Bimagic* total labeling if there is the exist bijectif fungtion $f: V(G) \cup E(G) \rightarrow \{1, 2, \ldots, p + q\}$ thus for each edge $uv \in E(G)$ obtained $f(u) + f(uv) + f(v) = k_1$ or k_2 and $f(V) = \{a + 1, a + 2, \ldots, a + p\}$ where $0 \leq a \leq q$. Than graph G is called the a-vertex consecutive *Edge Bimagic* total labeling at graph G. In this final paper is discussed about a-vertex consecutive *Edge Bimagic* total labeling at Path graph, Cycle graph, dan Star graph. Some of graph is *Edge Bimagic* total graph such as Path graph P_n^+, Bistar graph $< B_{m,n}: 2 >$ where $(m, n \geq 2)$, Star graph $< K_{1,n}: 3 >$ with $(n \geq 3)$ where n even, multiplication of Path graph P_3 with Star graph $k_{1,n}$ $(P_3 \odot K_{1,n})$ where n even, combination of Path graph P_2 with m times Complite graph K_1 and graph N_2 $(P_2 \cup mK_1 + N_2)$ where $(m \geq 1)$, Crown graph $(C_n \odot K_1)$, combination of two Star graph $K_{1,m}$ with $K_{1,n}$ where $(m, n \geq 1)$, and Pyramid graph $PY(n)$.

keywords: Graph, labeling, *Magic, Edge Bimagic*.