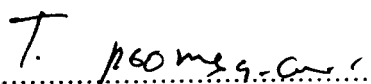
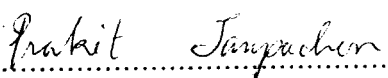


THESIS TITLE : ON THE ARC-TOUGHNESS OF DIGRAPHS $D_1(n,r,d,m_1,m_2)$

AUTHOR : MR. SARAWUT SAENKARUN

THESIS ADVISORY COMMITTEE :


..... Chairman
(Associate Professor Tiang Poomsa-ard)


..... Member
(Assistant Professor Prakrit Jampachon)

ABSTRACT

Arc-toughness $\tau_1(D)$ of adigraph D is defined as

$$\tau_1(D) = \min \left\{ \frac{|X|}{\omega(D-X)-1} \mid X \text{ เป็น arc-cutset ของ } D \right\}$$

where $\omega(D-X)$ denote the number of components of $D-X$. Let $D = D_1(n,r,d,m_1,m_2)$, $m_2 > m_1 > nd$, $r \leq n$, $d \geq 4$ are family of digraphs which each member consisting of three disjoint complete digraphs K_n , K_{m_1} and K_{m_2} such that each vertex of K_n is adjacent to exactly d distinct vertices of K_{m_1} and K_{m_2} where n vertices of K_n there are r vertices join in one direction , otherwise join in two direction and each vertex of K_{m_1} is incident to exactly one vertex of K_n . This thesis we determine the arc-toughness of the digraph $D = D_1(n,r,d,m_1,m_2)$