m9

Ans.

Let $A = (a_{ij})$ be an $L \times L$ incidence matrix where

$a_{ii} \equiv 1$ and for $i \neq j$

$$a_{ij} = \begin{cases} 1 \text{ if } C_i \text{ and } C_j \text{ are adjacent} \\ 0 \text{ otherwise} \end{cases}$$

Let $A^k \equiv (a_{ijk})$

$a_{ijk} > 0$ iff there is a path along adjacent cities between C_i and C_j taking at most k steps.