

Due March 31, 2006 (in class)

CENG 465 – Assignment #3

Problem 1: (40 points) Use UPGMA to reconstruct a phylogenetic tree for the five species using the following distance matrix given below. Show the intermediate steps of tree construction.

| Species | A | B | C | D | E |
|---------|----|----|----|----|----|
| A | 0 | 3 | 6 | 9 | 12 |
| B | 3 | 0 | 5 | 9 | 11 |
| C | 6 | 5 | 0 | 10 | 13 |
| D | 9 | 9 | 10 | 0 | 9 |
| E | 12 | 11 | 13 | 9 | 0 |

Problem 2: (60 points) Use Neighbor-Joining to reconstruct a phylogenetic tree using the same distance matrix for the five species given in Problem 1. Show the intermediate steps of tree construction.