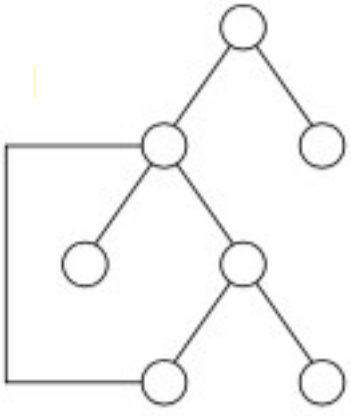
HW #4

Homework exercises should be done individually (You should write the solution by yourself). Solutions must be prepared in python programming language and submitted electronically before **11.59 pm on Sunday, January 3**. No credit will be given to solutions obtained verbatim from the Internet or other sources. **To get full credit for each question, you need to provide a brief explanation of your codes and the efficiency analysis with comments.**

3. Consider a loop tree which is an undirected wighted graph formed by taking a binary tree and adding an edge from exactly one of the leaves to another node in the tree as follows:



Let n be the number of vertices in a loop tree. How long does it take Prim's or Kruskal's algorithms to find the minimum spanning tree in terms of n ?
Devise a more efficient algorithm that takes an nxn adjacency weighted matrix as input, and finds the minimum spanning tree of a loop tree.