

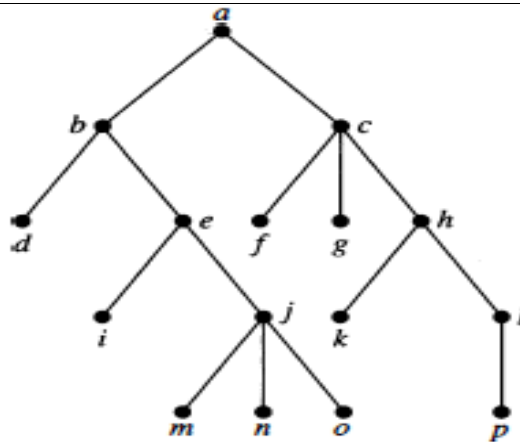
## 00114 - DISCRETE MATHEMATICS [S][SUMMER 19-20]

Q.

Questions.

1. Build a **binary search tree (BST)** for the words *oenology*, *phrenology*, *campanology*, *odrinology*, *ichthyology*, *limnology*, *alchemy* and *astrology* using alphabetical order. Show details.

Figure  
for  
(2-4)



2. Determine the order in which an ***inorder traversal*** visits the vertices of the ordered rooted tree above. Show details.
3. Determine the order in which a ***preorder traversal*** visits the vertices of the ordered rooted tree above. Show details.
4. Determine the order in which a ***postorder traversal*** visits the vertices of the ordered rooted tree above. Show details.
5. Represent the expression  $(x + x * y) + (y / x)$  using a binary tree. What is the ***prefix*** and ***postfix*** form for this expression? Show details.