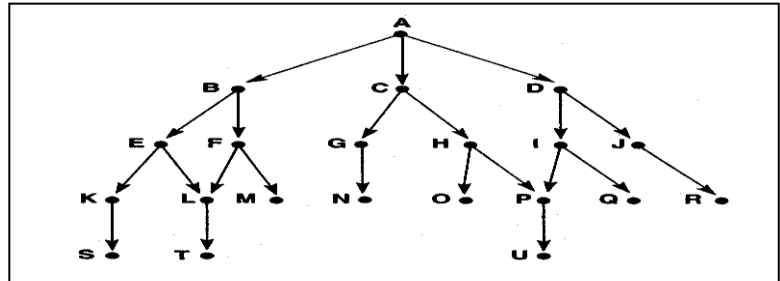


Answer all questions

1. For propositional expressions P, Q and R prove that:
 - a) $(P \vee Q) \equiv (\neg P \rightarrow Q)$.
 - b) $(P \rightarrow Q) \equiv (\neg Q \rightarrow \neg P)$.
 - c) $\neg (P \vee Q) \equiv (\neg P \rightarrow \neg Q)$.
 - d) $P \vee (Q \wedge R) \equiv (P \vee Q) \wedge (P \vee R)$
2. Represent the following English sentences in predicate calculus:
 - a) If it doesn't rain on Friday we will go to the park.
 - b) Emma is a Doberman pinscher and a good dog
 - c) All basketball players are tall.
 - d) Nobody likes taxes.

3. Write and trace the algorithms of Depth-first and Breadth-First search by using this graph.



Good Luck