

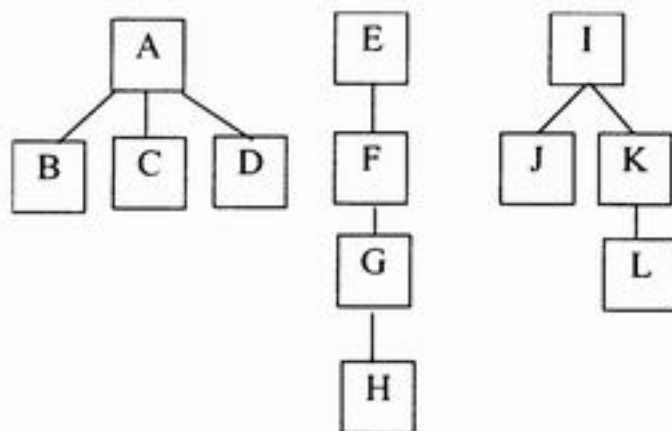


臺中健康暨管理學院
九十四學年度碩士班暨碩士在職專班招生考試試題紙

系所別	組別	考試科目	考試日期	時間	備註
資訊與設計學系碩士班	--	資料結構與演算法	94.4.24	10:30-12:10	共一頁

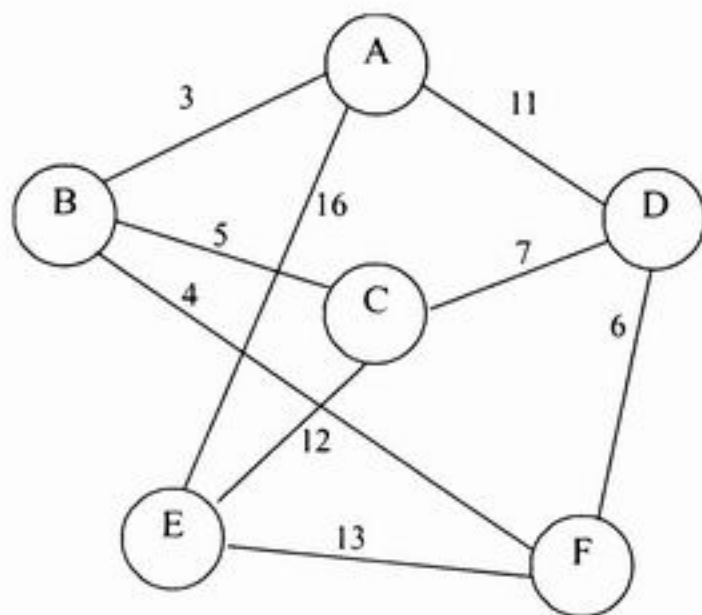
問答題 共 5 題，每題 20 分：

1. Given a mathematic expression as follows: $(23+5)/45-3+6*12$. Please demonstrate how to use a stack to find the postfix expression of the expression and calculate the postfix expression.
2. Given a forest as follows :



Please illustrate how to convert this forest into a binary tree.

3. Given a numeric input sequence: 7, 80, 2, 62, 5, 31, 96, 29, 18, 17, please build a binary search tree, a max-heap, and a binomial min-heap upon this sequence.
4. Given a network as follows :



Please illustrate how to present this network by an adjacency matrix and the adjacency lists. Also, please find its DFS, BFS, minimum cost spanning tree, and minimum cost.

5. Please describe what is the polynomial (P) deterministic, the non-polynomial (NP) deterministic, and the NP completeness (NPC) problems. In addition, please give each class of problem an example.