

臺中健康暨管理學院

九十四學年度大學部轉學招生考試試題紙

學系別	考試科目	考試日期	時 間	備 註
資訊科學與應用學系三年級 生物科技與生物資訊學系(生物資訊組) 三年級	資料結構	94.7.30	10:20-12:00	

*請按順序回答，並於答案卷上標明題號

- (a) `int ax[] = {1, 2, 3, 4, 5};` (10%)

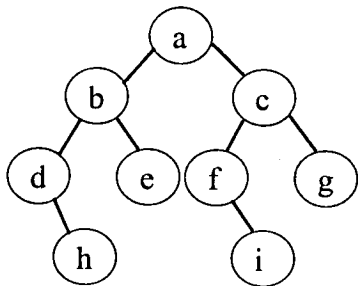
`int *ptr = ax;`

Explain the meanings of `ptr+1`, `*(ptr+1)`, and `ax[1]`.

(b) What are the differences between `ax` and `ptr`? (10%)
- An array `a = {20, 30, 10, 50, 60, 40, 45, 5, 15, 25}`. (20%)

(a) Insert sequentially and build a binary search tree.

(b) Using the above tree to insert two nodes (3 and 13) and delete a node (50). Show the final binary search tree.
- Write out the **inorder**, **preorder**, and **postorder** traversals for the following tree. (20%)



- Assume that we have a sorted list (20%)

10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 200, 300

Draw the binary decision tree for the list. How many comparisons does it take to determine that 30 is in the list? How many does it take to determine that 500 is not in the list?
- (a) What is a stack? a queue? (10%)

(b) What will the pointer **current** point to, after executing the following program segment? (10%)

```

struct node *current;
current = head;
while(current->next != NULL)
    current = current->next;

```