

大同大學 九十一 學年度 轉學考試 試題

考試科目：資料結構 系別：資訊經營學系 級別：三年級 第 頁，共 1 頁

註：本次考試不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。

1. How many comparisons are used by the following methods to sort the numbers {5, 1, 19, 25, 17, 21, 6, 18, 9, 15, 14}. (20%)

(a) Bubble sort

(b) Selection sort

(c) Shell sort to 7-sort, then 3-sort

(d) Insertion sort

2. How long will quicksort take to sort a file of N equal elements? (10%)

3. Draw the heap that results when the following operations are performed on an initially empty heap: insert(10), insert(5), insert(2), replace(4), insert(6), insert(8), remove, insert(7), insert(3). (20%)

4. What method would be best for an application that requires selection of the k th largest element (for various arbitrary k) a large number of times on the same file? (10%)

5. Draw the binary search tree that results from inserting records with the keys {E, A, S, Y, Q, U, E, S, T, I, O, N} into an initially empty tree. (10%)

6. Please write the differences between stack and queue. (10%)

7. Please write the correct infix order for the postfix order expression "abc*+d*abc++/". (10%)

8. Please write the visiting sequence of nodes by the following methods to search the graph in Fig. 1. (10%)

(a) Breadth first search

(b) Depth first search

