

佛光人文社會學院九十五學年度

學士班轉學招生考試試題卷

系所別： 資訊學 學系

科 目： 資料結構

用紙第 1 頁共 1 頁

1. Rewrite the the following expression: $((A/B)*C)*D+E$ into its
 - a. prefix form. (5%)
 - b. postfix form. (5%)
2. Draw a binary tree for the following expression:
 $(x_1 \wedge \neg x_2) \vee (\neg x_1 \wedge \neg x_3) \vee \neg x_3$ (10%)
3. Write down an algorithm, in any your favorite programming language. which can translate an infix expression to a postfix expression using stacks. (20%)
4. Show that the worst case time complexity of *quicksort* is $O(n^2)$ (20%)
5. Implement an n -slot circular buffer, in any your favorite programming language, using a linked-list. (20%)
6. Given a hashing function $f(x) = x \% n$ where n is the number of buckets of the hashing table. Construct a 13-bucket hash table with linear probing for the number sequence: 11, 6, 23, 45, 54, 92, and 40. (20%)