

大同大學 九十三 學年度研究所碩士班入學考試試題

考試科目：系統程式

所別：資訊工程研究所

第 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. Fill out the following blanks in order on the answer sheet. (12%)
 - (a) The lowest-level software in an operating system, residing entirely in main memory and interfacing directly to the most sensitive hardware facilities, is called the _____ (1) _____.
 - (b) A software module that controls the operation of an I/O device is called a _____ (2) _____.
 - (c) The act of transferring CPU control from one process, thread, or task to another is called _____ (3) _____.
 - (d) A grammar for a programming language is a formal description of the _____ (4) _____, (or form), of programs and individual statements written in the language. The grammar does not describe the _____ (5) _____, (or meaning), of the various statements.
 - (e) List three debugging aids provided by a debugger for programmers: _____ (6) _____, _____ (7) _____, and _____ (8) _____.
 - (f) List four types of resources we might consider in deadlock problems on computers: _____ (9) _____, _____ (10) _____, _____ (11) _____, and _____ (12) _____.
2. (a) Distinguish among absolute loader, linking loader, linkage editor, and dynamic linking schemes. (8%)
(b) What is a bootstrap loader? (2%)
3. (a) Give three examples of machine-dependent optimization. (6%)
(b) State where these types of optimization are performed in the compiler and why. (4%)
4. (a) How should a programmer decide whether to use a macro or a subroutine to accomplish a given logical function? (5%)
(b) If labels are allowed in the macro definition, what modification must be made to the macro processor implementation? (5%)
5. (a) Explain why most assemblers make two passes over the source program. (2%)
(b) List the major functions performed during pass 1 of the assembler. (4%)
(c) List the major functions performed during pass 2 of the assembler. (4%)
(d) There are two types of one-pass assembler. Describe how each of them works. (8%)
6. (a) How do systems-programming languages differ from other high-level languages? (5%)
(b) List several systems-programming languages. (3%)

<背面繼續>

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第 2/2 頁

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7. (a) What is a page fault? (2%)
(b) What is Belady's anomaly? (2%)
(c) Which page-replacement algorithm does suffer from this? (2%)
8. (a) What do location counter and program counter (or instruction pointer) have in common? (3%)
(b) How are they different? (3%)
9. (a) What do multiprogramming and time-sharing have in common? (3%)
(b) How are they different? (3%)
(c) What are the main advantages of a time-sharing system? (3%)
(d) How is time-sharing usually implemented? (3%)
10. (a) What do traps and interrupts have in common? (3%)
(b) How are they different? (3%)
(c) Give an example of each. (2%)