

大同大學 97 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 1/2 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. (30%)

- Assembler (1) are statements that are not translated into instructions. Instead, they provide instructions to the assembler itself.
- An instruction may contain a reference to a label defined later in the program, which is called a (2).
- A simple assembler uses two major tables: (3) and (4). They are usually organized as a (5) for efficiency.
- A (6) performs all linking and relocation at load time. A (7) performs linking and some relocation, but it writes the linked program on a file or library for later execution. (8) uses facilities of the operating system to load subprograms at the time they are first called.
- When a computer is first turned on or restarted, a special type of absolute loader, called a (9), is executed.
- The tokens of most programming languages can be recognized by a (10), which consists of a finite set of states and a set of (11) from one state to another.
- A programming language has two major components: (12) (or form) and (13) (or meaning).
- A user interface in some operating systems, such as UNIX, is called a (14).
- An operating system needs to manage different resources in a computer system. It resembles an organization with several managers at the top level. A modern operating system has at least four duties: (15), (16), (17), and (18).
- In the ANSI C language, definitions and invocations of macros are handled by (19).
- Multiprogramming brought the idea of (20): Resources can be shared between different jobs. Each job can be allocated a portion of time to use the resource.

2. What is the difference between:

- (a) a page and a frame (4%)
- (b) paging and partitioning (4%)
- (c) a job scheduler and a process scheduler (4%)
- (d) deadlock and starvation (4%)

背 面 繼 續

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第 2/2 頁

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3. Parsing techniques are divided into two general classes according to the way in which the parse tree is constructed. Describe and compare these two classes of methods. (8%)
4. (a) Compare interpreters and compilers. (4%)
(b) Compare macros, subroutines, and coroutines. (6%)
5. (a) What are the two methods used by the assembler to specify relocation for the loader. (5%)
(b) Under what circumstances is each of them more efficient? Why? (5%)
6. Explain in detail the following memory allocation algorithms:
(a) first-fit (3%)
(b) best-fit (3%)
(c) worst-fit (3%)
7. Draw a state diagram to explain (9%)
(a) the relationship between a program, a job, and a process;
(b) the relationship between the different states: hold, terminated, ready, running, and waiting.
8. (a) What is an addressing mode? (2%)
(b) What is the advantage of using immediate addressing mode? (2%)
(c) What is the advantage of using indexed addressing mode? (2%)
(d) What is the advantage of using indirect addressing mode? (2%)