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 4 components of BNF grammar are 語法 , (2) , (3) , and (4) .

    (b) In which phase during the process of compiling will the grammar be referenced? (5)

    (c) The 4 necessary conditions needed before deadlock can occur are (6) , (7) , (8) , and (9) .

    (d) A list giving the starting addresses of each interrupt service routine is called an (10) .

    (e) In the x86 architecture, the addressing mode (11) can be used to access one-dimensional array, and the addressing mode (12) can be used to access two-dimensional array.

2. (a) What is the difference between a literal and an immediate operand? (4%)

    (b) Explain in detail how the assembler handles the literals in a program. (8%)

3. (a) What are the differences between a macro and a procedure? (4%)

    (b) Distinguish among macro definition, macro invocation and macro expansion. (6%)

4. (a) Distinguish among linking loader, linkage editor, and dynamic linking schemes. (6%)

    (b) What are the advantages in using each of these three schemes? (6%)

5. MS-DOS contains three major components: BIOS, kernel, and shell. What functions does each component provide? (6%)

6. (a) What is multiprogramming? (2%)

    (b) What is program relocation? (2%)

    (c) What parts of a program require modification for achieving program relocation? (3%)

    (d) Give two methods to accomplish the modification. (5%)

7. Explain the following memory allocation algorithms: first-fit, best-fit, worst-fit. (6%)

8. (a) What is virtual memory? (2%)

    (b) When virtual memory is implemented in a computing system, list some costs and benefits associated with the technique. (4%)

    (c) What is demand paging. (3%)

    (d) List advantages of demand paging. (3%)

〈轉背面〉