

所別：網路學習科技研究所碩士班 不分組科目：系統程式

1. Explain the following terms: (30%)

- (1) External fragmentation, Internal fragmentation
- (2) Deadlock & Starvation
- (3) Compiler-compiler
- (4) Throughput
- (5) Dynamic-link library

2. Why the assembler is usually implemented by 2-pass assembler? State and explain briefly 2 different techniques how to be implemented by 1-pass assembler. (15%)

3. Explain the functions of a loader and how it works. (15%)

4. Using the following BNF grammar to construct a parse tree for the statement below. (20%)

```
<id-list> ::= id | <id-list>, id
<assign> ::= id := <exp>
<exp> ::= <term> | <exp>*<term> | <exp>DIV<term>
<term> ::= <factor> | <term> + <factor> | <term> - <factor>
<factor> ::= id | int | (<exp>)
statement → SEGAMA := ALPHA * BETA DIV GAMMA - 100
```

5. The following statement is an array declaration:

D:ARRAY[-10..10, 2..12] OF INTEGER

Produce a sequence of quadruples for the following program fragment: (10%)

D[I, J]:=0

6. What are the differences among the following statements? (10%)

(1) LDA #5

(2) FIVE EQU 5

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·
LDA #FIVE

(3) FIVE EQU 5

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LDA FIVE

