PART I.

********** 組合語言（Assembly Language）與編譯器（Compiler）（50%）**********

1. 請由下列各項中選出最適合於各題的答案，並以該項之編號作答於答案卷.
   〔說明〕 . 各項參考答案可重複選用，每小題三分，答錯不倒扣
           . 若你認為適合者不止一個，請全部作答
           . 不必抄題，但請將題號標示清楚

(A) Assembler	(B) Interpreter	(C) Compiler
(D) Pre-processor	(E) Cross-compiler	(F) Macro processor
(G) Pass 0	(H) Pass 1	(I) Pass 2
(J) Pass 3	(K) Queue	(L) Symbol Table
(M) Op-code Table	(N) Syntax	(O) Semantics
(P) Lexcial Analysis	(Q) Syntax Analysis	(R) Grammar
(S) Semantic Analysis	(T) Code Generation	(U) Instruction Point
(V) Program counter	(W) Location counter	(X) Program register
(Y) Compiler-compiler	(Z) 以上各項皆不適合	

   (1) 某甲的程式執行三次皆答案正確，但第四次時出現語法錯誤（Syntax Error）之訊息，則他所使用的編譯器是屬於那一類 ？
   (2) Compiler與Interpreter 共同必需的資料結構為何 ？
   (3) 組合語言程式編譯過程中，那一階段結束時可知目的程式（Object Program）的長度 ？
   (4) 在IBM PC/AT 系統下產生 Macintosh系統執行的程式須使用那一類的編譯器 ？
   (5) Macro expansion 於組合語言程式編譯過程中，何時進行 ？
   (6) Assembler 組譯過程中，藉何者得知指令之位址 ？
   (7) Interpreter 不需做的工作為何 ？
   (8) Token 於編譯過程中何時產生 ？
   (9) 那一類的編譯器可具有 Code Optmization 的功能 ？
   (10) 作業系統中的 Command Language Processor 是屬於那一類的編譯器 ？

2. 何謂 Pass ？ 請說明 Pass 數與高階程式語言編譯器（Compiler）之關係. (10%)

3. 將可執行之程式由機器碼轉換為組合語言俩為反組譯（Disassemble或Unassemble），請說明是否可將高階語言之程式經過編譯所產生的機器碼轉換為高階語言之原始程式(Source Program)？ 若可以則請說明如何進行，若不可以則請說明理由. (10%)

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PART II.
Operating Systems

(1) Explain the concept of spooling. (8%)

(2) Explain the concept of capability-based protection. (8%)

(3) Explain and compare the meanings of the following terms. (12%)

    (A) program
    (B) image
    (C) process

(4) Among the following computer resources, which are preemptible ?
Give explanations for your answers. (6%)

    (A) CPU
    (B) memory
    (C) magnetic tape drive
    (D) printer

(5) Among the following descriptions about the virtual memory systems,
which are <u>incorrect</u> ? Give explanations for your answers. (16%)

  (A) The page fault rate is independent of the program structure,
but is dependent on the size of the physical memory allocated
to the program.

  (B) A global page replacement policy would be more likely to cause
thrashing than a local page replacement policy.

  (C) Compared with a pure paging system (such as the VAX), a pure
segmentation system (such as the 80286) has advantages on
real memory management.

  (D) Theoretically, during the execution time, a process needs
only one physical memory frame (or page as some systems call it)
to complete its execution.

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