

- I. Please answer in detail the followings: (15%)
- Why a compiler is often referred to as a two-phase compiler?
 - Please describe the major difference between an interpreter and a compiler.
 - Why is it easier to achieve software portability via using interpreters? Please also give an example language.
- II. Please give a detail description on the differences among the terms *multiprocessing*, *multitasking*, and *multithreading*. (15%)
- III. What is an embedded system? What are the specific requirements for embedded system program and operating system? Please also give examples of embedded operating systems. (15%)
- IV. An operating system usually incorporate machine-dependent features and machine-independent features. Please identify and classify these features as many as possible. (20%)
- V. What is a dynamic link library(DLL)? What are the advantages a DLL may have? What is the most often purpose a DLL is used for? (15%)
- VI. Please answer in detail the followings: (20%)
- What is an assembler? What is its input and output?
 - How an assembler achieve the program relocation capability, i.e. produce relocatable programs?
 - Why the program relocation capability is critical to a multiprogramming operating system?