Code No: NR311903 **NR**

III B.Tech I Semester Supplementary Examinations, November 2006
OPERATING SYSTEMS AND SYSTEMS PROGRAMMING
(Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Give the general structure of an assembler.
   (b) Descibe the steps involved in the design of a 2-pass assembler. [8+8]
2. (a) Describe the steps in volved in the execution of a program with the help of a schematic diagram.
   (b) What are Overlays? Give the overlay structure of a linker command. [8+8]
3. (a) Describe the facilities for implementing multiprogramming and time sharing capabilities in an Operating System.
   (b) Describe contiguous memory management technique in the context of OS functions. [8+8]
4. (a) Describe deadlock detection and resolution techniques.
   (b) Give the structure of Job Control Block (JCB) and Event Control Block (ECB). [8+8]
5. (a) Define a Critical section. What properties that must be possessed by a data item for implementation of a critical section.
   (b) Write an algorithm for implementation of control section.
   (c) Compare and contrast semaphores and monitors. [6+6+4]
6. (a) How do data access synchronization, control synchronization and Inter Process Communication differ?
   (b) Name some implementation issues that usually arise in inter process communication. [8+8]
7. (a) Define memory fragmentation. Differentiate between external and internal fragmentation.
   (b) Illustrate an I/O organization that is usually used in present day computer systems. [8+8]
8. (a) Describe different file sharing modes that can be implemented for users and for the file system.
   (b) Describe some important file system reliability techniques. [8+8]

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