Roll No. .0803E608ME02

MEVD-202

M. E./M. Tech. (Second Semester)
EXAMINATION, Oct., 2009
REAL TIME OPERATING SYSTEM
(MEVD-202)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 40

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Explain the batch processing systems. Also discuss about the user service and batch monitor functions.

   (b) Distinguish between multiprogramming and multiprocessing. What are the key motivations for the development of each ?

2. (a) Why has UNIX emerged as the open operating of choice ?

   (b) Explain the memory management requirements. Also give the comparison for logical organization and physical organization.

3. (a) What is usually the critical performance requirement in an interactive operating system ?

   (b) What is the difference between pre-emptive and non-pre-emptive scheduling ? Briefly define FCFS scheduling.

4. (a) Explain the following :

   (i) Multiprocessor scheduling

   (ii) Real time scheduling

   (b) What is a file management system ? Differentiate between a file and a database.

5. (a) Why is the average search time to find a record in a file less for an indexed sequential file than for a sequential file ?

   (b) What are the typical operations that may be performed on a directory ? Describe the relationship between a path name and a working directory.

6. (a) List and briefly explain seven potential advantages of a microkernel design compared to a monolithic design.

   (b) List and briefly define three techniques for performing I/O . Differentiate between logical I/O and device I/O.

7. (a) Explain, compare and contrast each of the following :

   (i) UNIX as a real time operating system.

   (ii) Windows as a real time operating system.

   (b) Differentiate between static and dynamic memory allocation. Also discuss the features of static and dynamic memory allocation.

8. Write short notes on any *two* of the following :

   (i) Performance metrics of RTOs

   (ii) Priority inheritance protocol

   (iii) Interprocess communication

   (iv) Rate monotonic analysis (RMA)