Total No. of Questions :8] *[Total No. of Printed Pages :2*

Roll No .....

MEVD - 202

M.E./M.Tech., II Semester

Examination, June 2014

Real Time Operating System

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt five questions.
ii) Each question carry equal marks.

1. a) What are the components of a real time system? Draw schematic block diagram of real time system.
   b) Discuss the problems faced in the design and implementation of an operating system.

2. a) Explain the inter process communication in message passing systems with suitable example.
   b) Explain the file system organization.

3. What is binary semaphore? With an example explain how to use binary semaphores for signaling or notifying occurrences of an event from a task or thread and for signaling or notifying another task waiting for that event.

4. Prove the theorem with figures: When preemption is allowed and jobs do not contend for resources, the EDF algorithm can produce a feasible schedule a set of jobs J with arbitrary release times and deadlines on a processor if and only if J has feasible schedules.

5. a) Explain the different methods of scheduling in multiprocessor and distributed systems.
   b) Explain the priority inheritance protocol.

6. a) Explain the task scheduling and task management process.
   b) Explain the various performance metrics of real time operating system?

7. a) What do you mean by porting of COS II? Discuss general requirements of processor to port COS II along with hardware/software architecture.
   b) Describe the role of UNIX as a real time operating system. Explain inter process communication in UNIX environment.

8. Explain the following:
   i) Host target approach
   ii) Fully pre-emptible kernel

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