Code No: B5501

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech II Semester Examinations, October 2011
REAL TIME OPERATING SYSTEMS FOR EMBEDDED SYSTEMS
(EMBEDDED SYSTEMS)

Time: 3hours   **Max. Marks: 60**

Answer any five questions
All questions carry equal marks
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1. a)   Write the usage of any three process handling functions in Unix
   b)   How inter process communication takes place using message queues.   (6+6)

2. a)   Define hard and soft real time systems. Give examples.
   b)   Explain the phases of periodic tasks in periodic task model with example.   (4 + 8)

3. a)   Illustrate the non-optimality of EDF algorithm for scheduling preemptive jobs. Explain.
   b)   Briefly describe the asynchronous and synchronous timer functions.   (6+6)

4. a)   Define the following with examples.
         Hardware fault, software fault and fault latency.
   b)   Write the classification of the faults based on temporal behavior. Explain.   (6+6)

5. a)   Explain the software environment in Vx works to handle tasks for periodic and aperiodic
         tasks.
   b)   How concurrency is handled in Vx works? Illustrate with example.   (6+6)

6. a)   Describe the file structure in Unix.
   b)   Discuss the data and temporal dependencies and its effects.   (6+6)

7. a)   Discuss the Release time jitters of periodic tasks in time services.
   b)   What is redundancy? Give examples for hardware and software redundancy.   (6+6)

8.   Write short notes on
         a) Semaphores
         b) Weighted Round robin scheduling mechanism.   (6+6)

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