**R09**

Code No: C0508, C5803

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
## M.Tech I - Semester Examinations, March/April-2011
### EMBEDDED SYSTEMS
(COMMON TO COMPUTER SCIENCE, COMPUTER SCIENCE AND ENGINEERING)

Time: 3hours                                                                 Max. Marks: 60

**Answer any five questions**
**All questions carry equal marks**

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1.a) Discuss the pros and cons of static and dynamic allocation of memory in embedded applications.
  b) Why is a caching scheme of limited utility in certain kinds of embedded system?  [6+6]

2.a) Explain the concept of Load store architecture and instruction pipelining?
  b) What is embedded firmware? What are the different approaches available for embedded firmware development?  [6+6]

3.a) What is the difference between a counter and a timer? How can 8051 be programmed to act as timer or counter?
  b) How can baud rate be doubled?  [6+6]

4.a) What is the difference between RET and RETI?
  b) What happens it a low – priority interrupt is activated while the 8051 is serving a higher priority interrupt?
  c) Write an 8051 'C' program or an assembly language program to display "HELLO" on the LCD connected to 8051.  [12]

5.a) Why do we use infinite loop in embedded system software?
  b) Why does the C++ language make the code lengthy when using Templates, Multiple inheritance, exception handling, virtual base classes and I/O streams?  [6+6]

6.a) List the functions of a kernel.
  b) Compare scheduling strategies, real time scheduling, round robin mode and time slicing scheduling.
  c) How does a preemptive event occur?  [12]

7.a) $V_x$ works Kernel includes both POSIX standard interfaces and $V_x$ works special interfaces. What are the advantages of special interfaces for the semaphores and queues?
  b) What is an emulator? What are the advantages of using an ICE?  [6+6]

8.  Write a brief note on:
    a) Programming a target system.
    b) Linkers and locating software in embedded system development.  [12]

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