Code No: C0508, C5803 **R09**

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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