

Code.No: 37328

R05

SET-1

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**IV.B.TECH - I SEMESTER REGULAR EXAMINATIONS NOV/DEC, 2009**  
**EMBEDDED SYSTEMS**

(Common to CSE, IT, E.CON.E, CSS)

**Time: 3hours**

**Max.Marks:80**

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

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1. a) What are the levels of abstraction in a embedded system design process.[8+8]  
b) What are the major components of an embedded system hardware.
2. a) Explain the Timer Counter unit operations of 8051. [8+8]  
b) List the internal memory contents and their functions.
3. a) Explain the shift and rotate instructions of 8051 with examples [8+8]  
b) Write an assembly language program to 8051 to rotate R<sub>1</sub>R<sub>0</sub> registers to left by two positions treating R<sub>1</sub>R<sub>0</sub> together as a 16-bit register
4. a) Write an assembly language program to search for consecutive zeros in internal RAM locations 60H to 7FH [8+8]  
b) Explain with suitable examples the conditional and unconditional Jump instructions in 8051
5. Interface 4x4 matrix keypad to 8051 and display the key number on 7 segment display interfaced to same 8051 [16]
6. Explain how scheduling takes place in preemptive scheduling algorithm. Compare it with non- Preemptive scheduling [16]
7. List and explain  $\mu$  COS library functions used in task monitoring system. [16]
8. Write a brief notes on [8+8]
  - a. CAN Bus architecture
  - b. Programming model of ARM.

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