

Code No: 57043

R09

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November - 2015

EMBEDDED SYSTEMS

(Common to ECE, ETM)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions  
All Questions Carry Equal Marks

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1. Discuss about the design challenges in embedded system, brief out the steps involved in the design process of Embedded System. [15]
- 2.a) Write about the operational modes of Timers and Counters in 8051 microcontroller.  
b) Describe about different Memory Interfacings and I/O Devices used for 8051 microcontroller in detail. [8+7]
- 3.a) Discuss in detail about the 8051 Instruction Set and there classifications with an illustration.  
b) What happens if a low – priority interrupt is activated while the 8051 is serving a higher priority interrupts? [10+5]
4. Draw the architecture of Programmable system-on-chip and describe various analog/digital, Controller blocks associated with the architecture. [15]
- 5.a) Explain how semaphores are useful as a signalling device.  
b) Briefly describe about seven segment numeric display interfacing and its design steps. [7+8]
- 6.a) Explain the functioning of semaphores in RTO's with suitable examples.  
b) Discuss in detail about Memory Management, Interrupt Routines in an RTOS Environment. [7+8]
- 7.a) Compare and contrast scheduling strategies, real time scheduling, round robin mode and time Slicing scheduling.  
b) Differentiate between Linker and Locators for Embedded Software. [8+7]
- 8.a) Write about the features of I2C bus and CAN bus, discuss there usage for Networked Embedded systems.  
b) Explain the different Branch and Load-Store Instructions set of ARM. [8+7]

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