R09

Code No: C3806, C0604, C7006, C5501, C7701, C6801, C5701
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, March/April-2011
MICROCONTROLLERS FOR EMBEDDED SYSTEM DESIGN
(COMMON TO DIGITAL ELECTRONICS & COMMUNICATION SYSTEMS, DIGITAL SYSTEMS & COMPUTER ELECTRONICS, ELECTRONICS & COMMUNICATION ENGINEERING, EMBEDDED SYSTEMS, EMBEDDED SYSTEMS & VLSI DESIGN, VLSI & EMBEDDED SYSTEMS, VLSI SYSTEM DESIGN)

Time: 3hours   Max. Marks: 60

Answer any five questions
All questions carry equal marks
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1.a) What are the issues in designing embedded system?
  b) Why does a processor system always need an interrupt handle?   [6+6]

2.a) Explain the need of a watchdog times and reset after the watched time.
  b) What are the advantages of an ASIP for design of an embedded system?   [6+6]

3.   Explain the serial communications control operation in 8051 in different modes of operation.   [12]

4.a) Draw a neat program model of ARM and explain its different modes of usage.
  b) Explain the multiple register transfer instruction set of ARM processor.   [6+6]

5.a) Explain events management? How are inter-task communication objects used for communication and synchronization?
  b) How do we choose scheduling strategy for the periodic, a periodic and sporadic tasks?
                                                                                 [6+6]

6.a) How do you create a counsiling semaphore?
  b) How do we initiate round robin time series scheduling?
  c) How do you let a lower priority task executes in a preemptive scheduler?   [6+6]

7.a) Discuss about I2C bus communication with its devices.
  b) How does CAN differ from I2C?   [6+6]

8.   Write brief note on:
      a) SDMA
      b) Continuous timer blocks in PSOC.   [12]

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