Code No: 07A60405 **R07** **Set No. 2**

III B.Tech II Semester Examinations,December 2010
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is hardware/software Co-Simulation? What is a key method for speeding up such simulation?
   (b) Write the advantages of Simulations?
   (c) What is Allocation? [8+4+4]
2. With a neat diagram explain Application Specific Instruction Set Processors (ASIP) based architecture of an embedded system? [16]
3. Explain in detail about Elevator Controller with and without using hierarchy? [16]
4. With a neat sketch explain protocol architecture of IEEE 1394? [16]
5. Write the rules that are followed by Interrupt routines in RTOS environments? Explain? [16]
6. (a) Explain how Inter-task synchronization can be achieved through Mailboxes.?
   (b) Write the function calls for Mailbox managements? [8+8]
7. (a) Build a 3-input NAND gate using a minimum number of CMOS transistors?
   (b) Build a 3-input NOR gate using a minimum number of CMOS transistors? [8+8]
8. (a) Explain RMA with suitable example?
   (b) Explain Test-and-Set operations? [8+8]

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Code No: 07A60405 **R07** **Set No. 4**

III B.Tech II Semester Examinations,December 2010
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain various models in detail that are commonly used for describing the Embedded Systems ? [16]
2. (a) Explain any five Bluetooth System specifications?
   (b) Explain about Link Manager protocol? [8+8]
3. (a) Explain real-time operating systems?
   (b) What is POSIX? Explain? [8+8]
4. (a) Discuss the parallel evolution of Compilation and Synthesis?
   (b) Write about the Simulation speed? [8+8]
5. (a) What are the issues needs to be considering while scheduling the tasks? Explain with suitable examples?
   (b) Write the advantages and disadvantages of Mutex and Semaphore? [8+8]
6. (a) Explain why NAND and NOR gates are more common than AND & OR gates?
   (b) Compare the rate at which the design productivity gap is growing per year. What is the implication of this growing gap? [8+8]
7. (a) Explain the functional block diagram of an smart card designed using ASIC?
   (b) Explain the simplified architecture of analog devices DSP? [8+8]
8. (a) Explain the use of Message Queues?
   (b) Write the variations in details of Mailboxes that can be seen from RTOS to RTOS? [8+8]

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Code No: 07A60405 **R07** **Set No. 1**

III B.Tech II Semester Examinations,December 2010
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Write the standard features of Events?
   (b) Differentiate among various methods for Intertask Communication? [8+8]
2. (a) Explain behavioral synthesis?
   (b) Explain system synthesis and Hardware/Software co-design? [8+8]
3. Using the concept of Concurrency and hierarchy explain the Elevator Controller? [16]
4. (a) Illustrate how program and data memory fetches can be overlapped in Harvard Architecture?
   (b) Explain the basic architecture of general purpose processor? [8+8]
5. (a) Explain about the architecture of the Kernel?
   (b) Define critical section? Explain it with suitable example? [8+8]
6. (a) Explain heartbeat Timer?
   (b) How does the RTOS know how to set up the Timer hardware on a particular hardware?
   (c) Write about RTLinux? [4+8+4]
7. (a) What is Infrared? Explain the IrDA model ?
   (b) Explain the pin connections for Ethernet Interface? [8+8]
8. State and Explain three main IC technologies in detail? Mention benefits of using each of the three different IC technologies? [16]

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Code No: 07A60405 **R07** **Set No. 3**

III B.Tech II Semester Examinations,December 2010
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is behavioral synthesis? Explain?
   (b) Explain Formal verification. [8+8]
2. (a) Explain how the instructions are stored in the memory?
   (b) Explain in detail about Registers in general purpose processors? [8+8]
3. Explain the Ethernet LAN protocol Architecture in detail? [16]
4. (a) Write the function calls for Mailbox managements?
   (b) Write the applications of message queues? [8+8]
5. Define Monitors? Explain Producer Consumer problem using Monitors? [16]
6. (a) Explain heartbeat Timer?
   (b) How does the RTOS know how to set up the Timer hardware on a particular hardware?
   (c) Write about RTLinux? [4+8+4]
7. (a) Build a 3-input NAND gate using a minimum number of CMOS transistors?
   (b) Build a 3-input NOR gate using a minimum number of CMOS transistors? [8+8]
8. (a) Define Semaphore? Explain with suitable examples?
   (b) What is non-reentrant function? Explain with an example? [10+6]

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