

Code No: 07A60405

R07**Set No. 2**

III B.Tech II Semester Examinations, APRIL 2011
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. With a neat diagram explain Application Specific Instruction Set Processors (ASIP) based architecture of an embedded system? [16]
2. Explain in detail about following:
 - (a) Design Gap.
 - (b) Mythical man-month. [8+8]
3. With the help of neat sketch explain RS422/RS485 in detail ? [16]
4. Explain the implementation of creating and terminating processes? [16]
5. (a) What is Timer? Write the applications of Timer.
(b) Is priority inheritance an important feature? Discuss? [8+8]
6. (a) Explain Event Registers?
(b) Write the Pipe management function calls? [8+8]
7. (a) Explain RMA with suitable example?
(b) Explain Test-and-Set operations? [8+8]
8. Develop an example of a Boolean function that can be implemented with fewer gates when implemented in more than two levels (your design should have roughly 10 gates, but not 100's). Assuming two transistors per gate input, and gate delay of 20 nano seconds, create a single plot showing size versus delay for both designs. [16]

Code No: 07A60405

R07**Set No. 4**

III B.Tech II Semester Examinations, APRIL 2011
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. With the help of neat sketch explain RS422/RS485 in detail ? [16]
2. (a) Define Hardware/Software Codesign?
(b) What is system synthesis?
(c) Write the advantages of Simulations? [4+4+8]
3. (a) Design a 3-8 decoder, start with truth table, and use k-maps to minimize the logic and to draw the circuit?
(b) Define edge triggered and explain why it is used? [8+8]
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) Write the applications of message queues?
(b) List out the function calls to manage queues? [8+8]
6. (a) What is the difference between Semaphore and Mutex?
(b) Explain task management function calls?
(c) Explain context switching? [5+6+5]
7. Using Program state machine model explain the Elevator Controller? [16]
8. (a) Is priority inheritance an important feature? Discuss?
(b) Write the function calls for memory managements? [8+8]

Code No: 07A60405

R07**Set No. 1**

III B.Tech II Semester Examinations, APRIL 2011
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. Explain various models in detail that are commonly used for describing the Embedded Systems ? [16]
2. With a neat sketch Explain the hardware for RS 232 Interface? [16]
3. (a) Write the function calls for Timers Managements?
(b) How accurate are the delays produced by the taskDelay function? [8+8]
4. (a) Define Embedded System? Explain Layered Architecture of Embedded System in detail?
(b) Compare and contrasts general purpose computing system and an embedded system? [8+8]
5. (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]
6. (a) Explain RMA with suitable example?
(b) Write the Kernel objects and Kernel services? [8+8]
7. Show behavior and structure at the same abstraction level for a design that finds minimum of 3 input integers by showing the following descriptions: a sequential program behavior, a processor/memory structure, register-transfer behavior, a register/FU/MUX structure, a logic equation/FSM behavior, and finally a gate/flip-flop structure. Label each description and associate each label with a point on Gajskis Y-chart. [16]
8. (a) Explain the use of Mailboxes?
(b) Write the complications that have to be dealt with in RTOS's? [8+8]

Code No: 07A60405

R07**Set No. 3**

III B.Tech II Semester Examinations, APRIL 2011
EMBEDDED AND REAL TIME SYSTEMS
Electronics And Computer Engineering

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

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is behavioral synthesis? Explain?
(b) Explain Formal verification. [8+8]
2. Explain in detail about Elevator Controller with and without using hierarchy? [16]
3. With a neat sketch explain IEEE 802.11 in detail? [16]
4. List the various open source embedded operating systems and explain their features? [16]
5. (a) Explain task management function calls?
(b) What is an interrupt service routine? Explain in detail? [6+10]
6. (a) Explain the use of Mailboxes?
(b) Write a simple program to implement an RTOS Queue? [8+8]
7. What is design metric? Explain any four design metrics of Embedded Systems in detail? [16]
8. (a) Explain the functional block diagram of an smart card design using ASIC?
(b) Explain the simplified architecture of analog devices DSP? [8+8]
