

00556

**B.TECH. COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

June, 2013

BICSE-001 : EMBEDDED SYSTEM

Time : 3 hours

Maximum Marks : 70

Note : (i) *Attempt any seven questions.*

(ii) *All questions carry equal marks.*

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1. (a) Design and implement EX-OR gate using minimum number of NAND gates. **2x5=10**
(b) What is the significance of timing diagram for a digital circuit ?

 2. (a) Discuss the characteristics of Read Only Memory (ROM). **2x5=10**
(b) Describe the difference between static RAM and dynamic RAM.

 3. (a) Describe the importance of scheduler in a RTOS. **2x5=10**
(b) Discuss the interrupt hardware with the help of a suitable diagram.

 4. (a) Discuss the shared data problem with an example. **2x5=10**
(b) Discuss the difference between microprocessor and microcontroller.

5. (a) Discuss the architecture wise difference between RISC and CISC processors. $2 \times 5 = 10$
(b) Discuss the priority levels for Round - Robin architectures.
6. (a) Describe the difference between RTOS and Windows / Unix based OS. 5
(b) Discuss different types of semaphore. 5
7. Describe *any two* from the following : $2 \times 5 = 10$
(a) DMA
(b) Interrupts
(c) System optimization
8. (a) Describe the memory management of a real time operating system. 5
(b) Explain the rules followed by an interrupt routines in RTOS environments. 5
9. Describe the design considerations of an embedded system using an RTOS. 10
10. (a) Explain the method for testing embedded software. $2 \times 5 = 10$
(b) Discuss the objectives, limitations and shortcomings that arise in the testing of embedded system code.
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