B.TECH. COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

December, 2013

BICSE-001 : EMBEDDED SYSTEM

Time : 3 hours   *Maximum Marks : 70*

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

(ii) *Each question carries **equal** marks.*

1. (a) What is a gate ? Explain AND and OR   5
            gates with input/output diagrams.

    (b) Define memory. Draw the pin diagram and   5
            Timing of a ROM. Explain the signals in it.

2. (a) Define   microprocessor.   Describe   5
            instructions with the help of a diagram.

    (b) Draw the architecture of a system with   5
            DMA and write the instructions.

3. (a) Define an interrupt latency and what are   5
            the factors ?   How to make interrupt
            routines short ?

    (b) How to disable the interrupts and what are   5
            the alterntives for disabling interrupts ?

4. (a) Differentiate between CISC versus RISC   5
            processors.

    (b) Write a short note on Memory System   5
            Design.

5. (a) What is Round Robin with interrupts ? Draw and explain the communication Bridge. **5**

   (b) What are the priority levels of realtime operating system ? Draw its architecture. **5**

6. (a) Define a task. What are the different task states ? Draw the state diagram. **5**

   (b) With a neat diagram explain data in an RTOS based realtime system. **5**

7. (a) Define semaphores. What are Wait and Signal operations. **5**

   (b) Write a program for a semaphore as a signaling device ? **5**

8. What are the rules in the interrupt routines in RTOS ? Explain the rules using diagrams. **10**

9. (a) What is encapsulating semaphores ? Write the code for it. **5**

   (b) What is encapsulating Queues ? List the potential bugs. **5**

10. Write short notes on :
    (a) Host and Target machines. **5**
    (b) Linker/Locator for embedded software. **5**