Reg. No. [ ]

B.E./B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS,APRIL/MAY 2012
COMPUTER SCIENCE & ENGINEERING BRANCH
FOURTH SEMESTER
CS9251 – MICROPROCESSORS AND MICROCONTROLLERS
(REGULATION 2008)

Time: Three Hours **Max.Marks: 100**

PART A (10 x 2 = 20 Marks)
Answer All Questions.

1. If the clock frequency of 8085 processor is 5MHz, how much time is required to execute the LDA 16 bit address instruction of 8085?
2. List the sequence of operations that takes place during the execution of a call instruction.
3. Discuss how the memory bank selection is done in 8086.
4. Give the difference between procedures and macros.
5. Discuss the ANYRQS and CRQLOCK signals of the bus arbiter.
6. How does inter-processor communication take place through shared memory?
7. Draw the timing diagram of mode 1 output configuration of 8255A.
8. How is reading on the fly achieved in a timer chip?
9. How do you select a specific register bank present in the RAM of 8051?
10. Give the difference between a microprocessor and a micro controller.

PART – B (5 x 16 = 80 Marks)

11 (i) With the help of a diagram, show how an 8-bit interface can be connected to the 16-bit data bus of the 8086 processor. (8)
(ii) Discuss in detail about the interrupt structure of the 8086 processor. (8)

12 (a) (i)Discuss the architecture of 8085 processor with a neat diagram. (8)
(ii) Write an 8085 ALP to count continuously in hexadecimal from 00H to FFH in a system with 325ns clock period. Use register BC to set up a 250ms delay between each count and display the number at one of the output ports. (8)

(OR)

12 (b))(i) List the advantages of segmentation and discuss in detail about the data related addressing modes of 8086. (8)
(ii) Define a macro for generating the multiplication table of 5 (use XLAT). (8)

13 (a) Assume that a loosely coupled multi processor system consists of the following two modules:

Module A – An 8086 with a local memory
Module B – An 8086 and an 8087

Determine the major bus interface devices required for each module.

(OR)

13 (b) (i) Discuss the evolution of microprocessors. (8)
(ii) Draw and discuss the configuration diagram of the minimum mode operation of 8086. (8)

14 (a) Discuss the DMA controller of operation and its interface with the 8086 processor. (16)

(OR)

14 (b) Discuss in detail about the 8251-USART. (16)

15 (a)(i) Discuss in detail about the addressing modes present in 8051 microcontroller. (8)

(ii) Discuss any one general application using microcontroller. (8)

(OR)

15 (b) (i) Discuss in detail the internal architecture of an 8051 microcontroller. (8)

(ii) Discuss how to interface external memory and I/O with 8051. (8)