B.Tech Degree V Semester Examination November 2011

CS/EB 506 MICROPROCESSOR BASED SYSTEM DESIGN

(2006 Scheme)

Time : 3 Hours Maximum Marks : 100

PART A

(Answer **all** questions)

(8x5=40)

I. (a) Write a note on various pointing registers in Microprocessor 8086.
(b) How does a logical address differ from a physical address?
(c) Write a note on READY input and WAIT state.
(d) Explain the operation of TEST pin and WAIT instruction.
(e) Write the differences between the 80386SX and 80386DX.
(f) Define the purpose of each 80386 debug register.
(g) Write the various control signals available in 8051 for external memory access.
(h) With the help of diagram, describe the layout of On-Chip Memory in 8051.

PART B

(4x15=60)

II. (a) Write a short note on Indirect Memory Addressing modes available in 8086. (7)
(b) What is meant by procedures? What are the various usages of near procedures and far procedures? (8)

OR

III. (a) Determine which of the following instructions are illegal, and state why? (3)

$mov[cx],ax$

$mov\ ax,[bp+bx]$

$mov\ dx,al$

(b) Write an Assembly language program to count the number of bytes stored from memory address 60000h to 60200h, that are smaller than or equal to the number 4Bh. Use the register CX to hold the count. (12)

IV. (a) With the help of a diagram, explain the concept of Bus De-multiplexing in 8086. (5)
(b) With the help of diagram, explain, how an 8259 interfaced to the 8086 microprocessor. (10)

OR

V. (a) Contrast a memory mapped I/O system with an isolated I/O system. (5)
(b) Describe the architecture of 8087 with the help of diagrams. (10)

VI. (a) Explain how the 80836 can address a virtual memory space of 64T bytes when the physical memory contains only 4G bytes of memory. (10)
(b) Define the purpose of each of the control registers found within the 80836. (3)
(c) What new control register is added to the Pentium microprocessor? (2)

OR

VII. (a) What is the difference between a segment descriptor and a system descriptor? (4)
(b) What new flag bits are added to the Pentium microprocessor? (3)
(c) Describe the salient features of Pentium I, Pentium II and Pentium III in detail. (8)

VIII. (a) Write an 8051 program to move the contents of the internal RAM memory from 30h-37h to the Bank0 using only MOV instructions. (10)
(b) Explain the usage of data exchange instruction in direct and indirect addressing modes. (5)

OR

IX. (a) Explain the layout of Register banks, Bit memory and Stack memory of 8051. (10)
(b) Write a short note on various I/O ports available in 8051 and its features. (5)

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