

B. Tech Degree V Semester Examination, November 2008

CS/EB 506 MICROPROCESSOR BASED SYSTEM DESIGN

(2006 Scheme)

Time : 3 Hours

Maximum Marks : 100

PART - A

(Answer ALL Questions)

(8 x 5 = 40)

- I. (a) Explain the flag registers in 8086 microprocessor.
 (b) Write the differences between directives and opcodes with the help of examples.
 (c) Draw and explain a port decoder that decodes 8 bit I/O ports and generates active low outputs for ports F0H-F7H.
 (d) Give the concept of demultiplexing the bus in 8086 with the help of figure.
 (e) Differentiate between 80386 protected mode and 8086 virtual mode operation.
 (f) Write a short note on register windows in RISC processors.
 (g) Compare and contrast microprocessors and microcontrollers.
 (h) Explain any two applications of microcontroller.

PART - B

(4 x 15 = 60)

- II. (a) Describe the sequence of events during the service of a maskable interrupt with the help of figure. (10)
 (b) Describe the advantage of segmentation. (5)
- OR**
- III. (a) Write an Assembly Language Program to display the BCD numbers between n_1 and n_2 on the screen, where n_1 and n_2 are 2 digit BCD numbers. (10)
 (b) Write a short note on procedures. Also explain different types of 'Near calls' and 'Far calls' in procedure invocations. (5)
- IV. (a) Design and draw the diagram to interface a 4 K x 8 EPROM memory device with 8086 microprocessor. (7)
 (b) Draw and explain the internal structure of 8087 co-processor. (8)
- OR**
- V. (a) Give the general description of 8259. Also draw the diagram that interface a 8259 with a 8086 microprocessor. (7)
 (b) Explain the minimum mode and maximum mode operations in 8088 with the help of diagrams. (8)
- VI. (a) What is descriptor? Explain different types of descriptors in 80386 processor. (8)
 (b) Compare Pentium and Pentium pro architecture. (7)
- OR**
- VII. (a) Explain the features of branch prediction logic, cache structure and super scalar architecture in pentium processor. (8)
 (b) Compare the features of RISC and CISC processor architectures. (7)
- VIII. (a) Explain with examples, the various addressing modes in 8051 microcontroller. (10)
 (b) How a DAC can be interfaced to microcontroller. (5)
- OR**
- IX. (a) Explain the architecture of 8051 microcontroller. (10)
 (b) Explain *any five*, bit manipulation instructions available in MCS - 51. (5)