D 8497

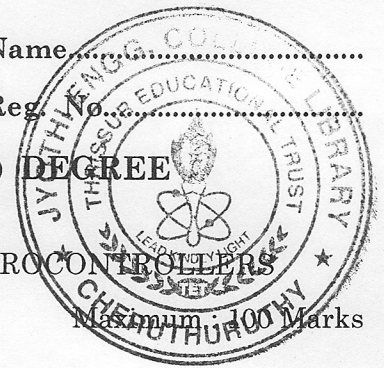Name...

Reg. No..

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2010

AI/BM 04-503—ADVANCED MICROPROCESSOR AND MICROCONTROLLERS

Time : Three Hours

Maximum : 100 Marks

*Answer **all** questions.*

1. (a) Explain the linking process of an assembler in 8086.

   (b) Explain how 8086 is interfaced with 8087.

   (c) Differentiate real mode and protected mode of operation in 80386.

   (d) What is meant by Prefetcher ? Explain with integer pipeline.

   (e) Explain the PSW of 8051 microcontroller.

   (f) Explain index addressing mode of 8051 microcontroller.

   (g) Explain how Timer is programmed in mode 0 programming mode.

   (h) Draw the interfacing diagram of ADC 0803 with 8051 and explain.

   $(8 \times 5 = 40 \text{ marks})$

2. (a) (i) Explain any five data directives with examples. (10 marks)

      (ii) Discuss about macros. (5 marks)

   Or

   (b) (i) With block diagram, explain the architecture of 8087 coprocessor. (10 marks)

      (ii) Explain the different data types of coprocessor 8087. (5 marks)

3. (a) Explain the Bus operation of 80386 with diagram in detail.

   Or

   (b) (i) Explain Dynamic Branch Prediction in Pentium Processor. (10 marks)

      (ii) Describe the Register starvation in Pentium Processor. (5 marks)

4. (a) (i) Explain the operation of three forms of jump instruction in 8051. (10 marks)

      (ii) Explain about the register banks in 8051 microcontroller. (5 marks)

   Or

   (b) What are the different special function registers of 8051 ? Discuss about each one briefly.

   (15 marks)

5. (a) Discuss about the interfacing of 8051 with 8255 PPI.

   Or

   (b) Write a Program to display count 0 on 7 segment LED using 8051 microcontroller. Draw the diagram of how LED is interfaced with 8051 microcontroller.

   $[4 \times 15 = 60 \text{ marks}]$