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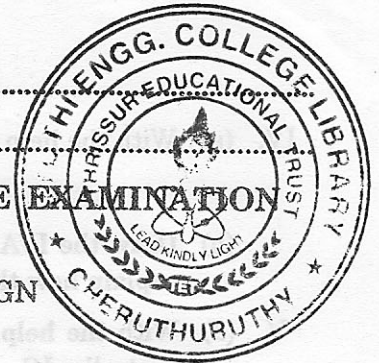
(Pages : 2)

Name.....

Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION  
DECEMBER 2010**

**CS/IT 04 404—MICROPROCESSOR BASED DESIGN  
(2004 admissions)**



Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

- I.
  - (a) Name the flag bits of 8086 processor and explain the use of each one.
  - (b) Distinguish between minimum and maximum mode of operation of 8086 processor.
  - (c) Find out the addressing modes used in the following instructions :
    - (i) MOV AL, 22 h
    - (ii) MOV AH, [2000]
    - (iii) MOV CX, LIST
    - (iv) MOV AX, [BX + DI + 4].
    - (v) MOV AX [BX].
  - (d) What is meant by modular programming ? Explain.
  - (e) The clock input to 8279 keyboard display controller IC is 3.1 MHz. Find out the internal clock frequency generated with in 8279 after reset signal is applied to it.
  - (f) What are the two different ways used for bank selection in the memory system of a micro-computer ? Also mention the special control signals used in these methods.
  - (g) Explain the mode-0 and mode-1 operation of 8254 programmable interval timer with relevant waveforms.
  - (h) Discuss about MFM (modified frequency modulation) method of recording data in Hard Disk drive.

(8 × 5 = 40 marks)
- II.
  - (a) Draw the diagram and explain how the multiplexed AD bus of 8086 can be de-multiplexed to get the address and data bus when it is configured to operate in its minimum mode of operation.

Or

  - (b) With the help of circuit and timing diagram explain how wait state can be introduced to synchronize slow devices with 8086 processor.
- III.
  - (a) List the miscellaneous data transfer instructions of intel processor and explain about each one.

Or

  - (b) Discuss about protected mode memory addressing in detail.

Turn over

IV. (a) With the help of diagram explain 64-bit (Pentium) memory interface.

Or

(b) Draw the D/A converter interface circuit to interface D/A converter to 8086 processor and explain how the circuit can be used to generate square wave and sawtooth wave.

V. (a) With the help of simplified block diagram explain the internal architecture of 8237 DMA controller IC.

Or

(b) Explain the features of PCI bus and its configuration detail.

(4 × 15 = 60 marks)

(c) Find out the addressing modes used in the following instructions:

(i) MOV AX, [2000]

(ii) MOV AX, [BX + 4]

(iii) MOV AX, [BX]

(d) What is meant by modular programming? Explain.

(e) The clock input to 8279 keyboard/hardware controller IC is 3.1 MHz. Find out the internal clock frequency generated with in 8279 after reset signal is applied to it.

(f) What are the two different ways used for bank selection in the memory system of a micro-computer? Also mention the special control signals used in these methods.

(g) Explain the mode 0 and mode 1 operation of 8254 programmable interval timer with relevant waveforms.

(h) Discuss about MEM (modified frequency modulation) method of recording data in Hard Disk drive.

(8 × 5 = 40 marks)

II. (a) Draw the diagram and explain how the multiplexed AD bus of 8086 can be de-multiplexed to get the address and data bus when it is configured to operate in its minimum mode of operation.

(b) With the help of circuit and timing diagram explain how wait state can be introduced to asynchronous slow devices with 8086 processor.

III. (a) List the miscellaneous data transfer instructions of Intel processor and explain about each one.

(b) Discuss about protected mode memory addressing in detail.