C 37065

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Name............................

Reg. No............................

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2004

EC 2K 405/AI. 2K 405—MICROPROCESSORS AND MICRO-CONTROLLERS

(New Scheme)

Time : Three Hours　　　　　　　　　　　　　　　　　　Maximum : 100 Marks

Answer **all** *the questions.*

1. (a) Name the different addressing modes used in the 8086 instruction set.

   (b) What is an vector interrupt Table ? Where is it located in 8086 CPU based system ? What does it contain ?

   (c) Explain the BSR (Bit Set Reset) mode of operation of 8255 PPI chip.

   (d) Discuss about the encoded and decoded mode of operation of the scan section of the 8279 keyboard display controller IC.

   (e) Explain the mode-0 (interrupt on terminal count) and mode 1 (Hardware one shot) operation of the 8254 Timer IC.

   (f) Distinguish between Real and Protected mode of operation.

   (g) Discuss about selectors and descriptors.

   (h) What do you mean by RALU with reference to 80196 microcontroller ? List the resources available in the RALU.

   (8 × 5 = 40 marks)

2. (a) (i) With the help of diagram explain the 8086 bus cycle Timing in minimum mode of operation.

   (7 marks)

   (ii) Explain the use of the following assembler directives with example :

   EQU, DB, DUP, ORG.

   (8 marks)

   Or

   (b) Explain in detail about the Hardware and Software interrupts of 8086 CPU.　　(15 marks)

3. (a) Draw the block schematic of 8255 PPI chip and explain its different modes of operation.

   (15 marks)

   Or

   (b) Draw the simplified block schematic of the 8279 keyboard display controller IC and briefly explain how a matrix keyboard and seven segment LED displays can be interfaced to a CPU using 8279.

   (15 marks)

Turn over

4. (a) Discuss about the floating point unit of the pentium processor. (15 marks)

Or

(b) Draw the simplified diagram of additional protected mode registers (both control and debug registers) and explain.

(15 marks)

5. (a) (i) Draw the minimum system configuration of 80196 micro controller and explain.

(9 marks)

(ii) Draw the memory map of 80196 micro controller and explain. (6 marks)

Or

(b) How do the parallel ports of 80196 work ? Explain briefly the various other functions carried out by the port pins of 80196.

(15 marks)