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Fourth Semester B.E. Degree Examination, December 2010
Microprocessors

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. What is a microprocessor? With a neat block diagram, giving the importance of instruction queue, explain the architecture of 8086 microprocessor. (10 Marks)
- b. In brief, explain the different types of microprocessors. (06 Marks)
- c. Explain the sequence of operations to be performed during the execution of an instruction. (04 Marks)
- 2 a. Explain the significance of special bit indicators available in 8086. (06 Marks)
- b. If the opcode for MOV is 100010, then find the opcodes for the following instructions:
 - i) MOV CX, AX
 - ii) MOV AL, [BX]
 - iii) MOV DS : [BP]12, AH
 - iv) MOV BL, [SI]06H
 (08 Marks)
- c. With the flag register format, explain the status flags of 8086. (06 Marks)
- 3 a. Replace the following program segments by their single equivalent instruction: (06 Marks)
 - i) NEG CL
 - ii) MOV CL, 02H
 - ADD BL, CL
 - DIV CL
 - CMC
- b. Write an 8086 program to pack a 2-digit unpacked BCD number, available in memory locations, LOC and LOC + 1. (06 Marks)
- c. Clearly showing delay calculation detail, write an ALP to generate a delay of 50 msec for an 8086 microprocessor, operating at 5 MHz clock frequency. (08 Marks)
- 4 a. Give the comparisons between macros and procedures. (04 Marks)
- b. With suitable examples, explain the repeat prefixes available in 8086. (06 Marks)
- c. Write an ALP to find the number of ovels in a given string. (10 Marks)

PART – B

- 5 a. Explain the following :
 - i) INCLUDE
 - ii) DAS
 - iii) XLAT
 - iv) LDS
 - v) PUBLIC
 - vi) ENDP
 (12 Marks)
- b. Write program segments to set and reset TRAP flag. (08 Marks)
- 6 a. With a neat block diagram, explain memory organization of 8086 microprocessor. (10 Marks)
- b. Clearly indicating demultiplexing details, explain minimum mode configuration of 8086. (10 Marks)
- 7 a. What is an interrupt? Discuss the interrupts classification in 8086. (07 Marks)
- b. What do you mean by an IVT? Explain IVT in 8086 microprocessor. (07 Marks)
- c. Explain the microprocessor's response for an INTR interrupt. (06 Marks)
- 8 a. With a neat block diagram, explain the functioning of 8255 PPI. (10 Marks)
- b. Write the control word format and 8255 initialization to set PC₅ and reset PC₃ bits of port C. (05 Marks)
- c. With a neat diagram showing details of signal directions, explain the input data transfer. (05 Marks)