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Fourth Semester B.E. Degree Examination, June/July 2011
Microprocessors

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions
 selecting atleast two from each part.**

PART – A

- 1 a. Briefly discuss the types of microprocessors. (06 Marks)
- b. Explain with neat diagram the internal architecture of 8086 microprocessor. Clearly state the functions of the following :
 i) E.U. ii) B. I. U iii) Segment registers. (10 Marks)
- c. Explain immediate and direct addressing modes with suitable examples. (04 Marks)
- 2 a. Write and explain template for 8086 MOV instruction. Also generate the opcode for the following instructions.
 i) MOV AX, BX ii) MOV AX, [BX]. (08 Marks)
- b. Explain briefly Editor. Assembler and debugger. (06 Marks)
- c. Define the function of following assembler directives with example.
 i) SEGMENT AND ENDS ii) DT iii) GLOBAL iv) INCLUDE v) PTR. (06 Marks)
- 3 a. Discuss the different types of 8086 unconditional jump instructions with an example for each type. (08 Marks)
- b. Write an ALP to sort a given set of N numbers in ascending order using bubble sort algorithm. (06 Marks)
- c. Write a delay procedure for producing a delay of 1 msec. for 8086 microprocessor working at 5 MHz. (06 Marks)
- 4 a. Write a procedure to convert a packed BCD number to its binary equivalent. Use method of passing parameters in registers. (08 Marks)
- b. Differentiate between macros and procedures. (06 Marks)
- c. Explain REPE CMPSB instruction with an example. (06 Marks)

PART – B

- 5 a. Explain the following instructions with an example for each.
 i) AAM ii) LOOP iii) CWD iv) IRET v) XCHG. (10 Marks)
- b. Write an ALP to generate first 'N' Fibonacci numbers. (06 Marks)
- c. Write the correct format (syntax) for the following instructions
 i) OUT AL, 86H ii) PUSH DL iii) MOV AL, F3H iv) ROL AL, 04H. (04 Marks)
- 6 a. Explain minimum mode configuration of 8086 with a neat diagram. (08 Marks)
- b. Explain with a neat diagram the bus activities during a memory read machine cycle. (08 Marks)
- c. Bring out the differences between 8086 and 8088 microprocessors. (04 Marks)
- 7 a. With any two examples explain hardware interrupt applications. (10 Marks)
- b. Explain the working of 8259 with its internal block diagram and all the ICWs. (10 Marks)
- 8 a. Explain the different operational modes of 8255 along with its internal block diagram. (10 Marks)
- b. Explain the different types of 8255 control word formats. Write the control words to initialize 8255 as follows :
 Port B as mode '1' input, port A as mode '0' output, port C upper as input and port C bit 3 as output. (10 Marks)
