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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.
c. Define the function of following assembler directives with example. (06 Marks)
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)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

