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06CS45

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)**

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