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06CS45

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) NEGCL
ADD BL, CL
CMC

ii) MOV CL, 02H
DIV CL

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 PC_5 and reset PC_3 bits of port C. **(05 Marks)**

c. With a neat diagram showing details of signal directions, explain the input data transfer. **(05 Marks)**

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