Roll No. $\square$ Total No. of Pages: 02
Total No. of Questions : 08
M.Tech. (Microelectronics) (Sem.-1)

ADVANCED MICROPROCESSOR AND EMBEDDED SYSTEM
Subject Code : ME-815
M.Code : 38413

## Time : 3 Hrs.

Max. Marks : 100

## INSTRUCTIONS TO CANDIDATES:

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.
3. a) Draw and explain the architecture of 8086 microprocessor.
b) Explain the classification of the instruction set of 8086 microprocessor with suitable examples.
4. a) Write an assembly language program for 8086 microprocessor to find out the largest number in a series of 20 numbers stored in consecutive memory locations.
b) Explain the following instructions of 8086 with suitable example.
i) AAA
ii) CBW
iii) IDIV Source
iv) LOOP Label
v) CMC
5. a) Discuss the different types of addressing mode with suitable examples in 8086 .
b) Give the flag register description for 8086 microprocessor and state the uses of individual flags.
6. a) Identify the addressing mode used in the following 8086 instructions :
i) MOV AL, $[1000 \mathrm{H}]$
ii) MOV CL, $[\mathrm{BX}]$
iii) $\operatorname{MOV}$ AX, $[\mathrm{BX}+\mathrm{SI}]$
iv) MOV AL, 50 H
b) Explain the concept of Segmented Memory. What are its advantages? Discuss the physical address formation in 8086.
7. a) What is interfacing? Discuss peripheral mapped I/O and memory mapped I/O interfacing techniques with suitable example and also compares their characteristics.
b) Draw and explain the Internal Architecture of 80186 with neat block diagram.
8. a) Design a complete interface diagram of DMA (8237) with 8086 processor. Assume the address for channel 0 is 3500 H .
b) Write an assembly language program to find out the count of positive numbers and negative numbers from a given series of signed numbers in 8086.
9. a) Draw and explain the Internal Architecture of 8251 (USART).
b) Draw the Interfacing Diagram of 8 bit DAC with the 8086 through 8255 . Also write a program to generate a square wave of 1 kHz . Assume the frequency of microprocessor is 5 MHz .
10. Write short notes on the following :
a) Assembler Directives
b) Pentium Architecture
c) Interrupt Handling in 8086

NOTE : Disclosure of Identity by weliting Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

