Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VIII.EXAMINATION – WINTER 2016

Subject Code: 181104 Date: 20/10/2016

Subject Name: Advanced Microprocessors

Time: 02:30 PM to 05:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Answer the following questions **07**

(1) When 8086 is reset the next instruction is fetched from which memory location?
(2) What are the special uses of DX register in 8086?
(3) What is the use of TEST pin of 8086?
(4) What is the difference between RET and IRET instruction?
(5) When does 8086 update the instruction queue? Why?
(6) What is the use of BHE and A_0 in 8086?
(7) What is the maximum size of a segment in 8086? How is it computed?

(b) Discuss the internal architecture of 8086 microprocessor. Compare 8086 and 8088 microprocessors in terms of their architecture and pin configuration. **07**

Q.2 **(a)** What do you mean by addressing modes? List the 8086 addressing modes and explain any two of the memory addressing modes with suitable examples. **07**

(b) Briefly explain various methods of passing parameters to and from procedure with their merits and demerits. And also define reentrant and recursive procedures. **07**

OR

(b) (i) What are advantages of memory segmentation in 8086? **07**
(ii) If CS=3499H & IP=2500H in 8086 find logical address, physical address, lower & upper ranges of code segment.
(iii) What are the uses of segment registers in 8086?

Q.3 **(a)** Write an assembly language program in 8086 to arrange a given array of numbers in ascending order. **07**

(b) Explain the following instructions (i)LODS (ii)AAA (iii)SHL (iv)LOOPE **07**
Explain the following directives (i)DUP (ii)DB(iii)EQU

OR

Q.3 **(a)** It is required to interface 64 KB RAM and 64 KB EPROM chips with 8086 according to the following assumptions:- **07**
The starting address of RAM is 00000 H
The starting address of EPROM is FFFFF H
Show the implementation of this memory system.

(b) Write an assembly language program in 8086 to reverse a string. **07**

Q.4 **(a)** Explain interrupt processing sequence in 8086 with proper flowchart. **07**

(b) List the four major processing units in an 80286 microprocessor and briefly describe the function of each. **07**

OR

Q.4 **(a)** Draw the block diagram of microprocessor 80186 and describe basic features of it. **07**

	(b)	Write an assembly language program to convert given string from uppercase to lowercase.	**07**
Q.5	**(a)**	Explain the memory management in 80386 microprocessor.	**07**
	(b)	What is virtual mode addressing? What are the steps taken in moving to protected mode from real mode?	**07**

OR

Q.5	**(a)**	Draw Pentium system architecture and describe the five stage pipeline mechanism	**07**
	(b)	Write a short note on 80486 microprocessor.	**07**

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