Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. - SEMESTER – VIII EXAMINATION – OCTOBER 2012

Subject Code: 181104 Date: 29/10/2012

Subject Name: Advanced Microprocessors

Time: 02.30pm - 05.00pm Total Marks: 70

Instructions:

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

Q.1	**(a)**	Discuss the internal architecture of 8086 microprocessor. Compare 8086 and 8088 microprocessors in terms of their architecture and pin configuration.	**07**
	(b)	(i)What are advantages of memory segmentation in 8086? (ii)Discuss the real mode addressing. (iii)If CS=3499H & IP=2500H in 8086 find logical address, physical address, lower & upper ranges of code segment.	**07**
Q.2	**(a)**	Explain the following instructions (i)MOVS (ii)INTO (iii)SHL (iv)LOOPE Explain the following directives (i)EVEN (ii)DB(iii)EQU	**07**
	(b)	With the help of suitable block diagram explain how 8086 behaves in maximum mode. Draw the write cycle timing diagram for maximum mode.	**07**
		OR	
	(b)	What do you understand by absolute decoding ?How is a word accessed in 8086?	**07**
Q.3	**(a)**	Write an assembly language program in 8086 to arrange a given array of numbers in ascending order.	**07**
	(b)	Write an assembly language program in 8086 to reverse a string	**07**
		OR	
Q.3	**(a)**	What are hardware features of 80286 microprocessors? Explain following instructions (i)BOUND (ii)LEAVE (iii)INS	**07**
	(b)	Write an assembly language program in 8086 to generate Fibonacci series.	**07**
Q.4	**(a)**	Describe in detail with suitable formats how linear address is converted into physical address in reference to 80386 microprocessor.	**07**
	(b)	Write an assembly language program in 8086 to subtract two 32 bit numbers.	**07**
		OR	
Q.4	**(a)**	What are the various ways of segment privilege level protection in 80386 microprocessor? Explain each field of descriptor table.	**07**
Q.4	**(b)**	What is the purpose of interrupt and how an interrupt request is executed? What are the interrupt flag bits and how does an interrupt vector is stored in an IVT?	**07**
Q.5	**(a)**	(i) List the special features of Pentium processors (ii)How memory system is arranged in Pentium & Pentium Pro microprocessors?	**07**
	(b)	Explain the function of following pins (i)$\overline{\text{IGNNE}}$ (ii)$\overline{\text{ADS}}$ (iii)$\overline{\text{LOCK}}$ (iv)RESET (v)$\overline{\text{SMI}}$ (vi)$\overline{\text{FERR}}$ (vii)A20	**07**
		OR	
Q.5	**(a)**	What is virtual mode addressing? What are the steps taken in moving to protected mode from real mode?	**07**
	(b)	Discuss the difference between 80486SX & 80486DX. Explain EFLAG register of 80486.	**07**

****