Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII EXAMINATION – WINTER 2015

Subject Code: 181104 **Date:04/12/2015**

Subject Name: Advanced Microprocessor

Time: 2:30pm to 5:00pm **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)**	Discuss the internal architecture of 8088 microprocessor. Differentiate between 8086 and 8088 microprocessor in terms of architecture and pin configuration.	**07**
	(b)	Explain the function of interrupt service routine in 8086 microprocessor. Briefly describe the interrupt processing sequence.	**07**
Q.2	**(a)**	With suitable block diagram explain how 8086 behaves in minimum mode. Draw the write cycle timing diagram for minimum mode.	**07**
	(b)	What do you mean by pipelined architecture? Explain the significance of machine control flags in 8086.	**07**
		OR	
	(b)	Interface two chips of 32K x 8 ROM and four chips of 32K x 8 RAM with 8086, according to the following map. ROM 1 and 2 F0000H - FFFFFH, RAM 1 and 2 D0000H - DFFFFH RAM 3 and 4 E0000H - EFFFFH Show the implementation of this memory system.	**07**
Q.3	**(a)**	Write an assembly language program using 8086 instruction to arrange an array of five numbers in ascending order. Write suitable comments.	**07**
	(b)	Explain with circuit diagram how 8086 system clock and reset signal are been generated.	**07**
		OR	
Q.3	**(a)**	Write an assembly language program using 8086 instruction to copy string from one location to other. Also draw the flowchart for the above program.	**07**
	(b)	Differentiate between real mode and protected virtual mode in 80286 microprocessor. Also explain real mode memory addressing in detail with respect to 8086.	**07**
Q.4	**(a)**	List the important features of 80186 microprocessor. Explain the function of DMA unit of 80186 microprocessor	**07**
	(b)	Explain the following 8086 instructions with example : (i)LOOPNZ (ii)IRET (iii) STOSW (iv)AAS	**07**
		OR	
Q.4	**(a)**	Draw the block diagram of 80286 microprocessor. Explain the additional flags of 80286 microprocessor.	**07**
	(b)	Describe the function of following 8086 pin: (i)HALT (ii)TEST (iii)READY (iv)LOCK	**07**
Q.5	**(a)**	Explain the memory paging mechanism of 80386 microprocessor? Explain how a logical address is converted to physical address using paging mechanism.	**07**
	(b)	Draw and explain the programmer's model of Pentium microprocessor.	**07**
		OR	
Q.5	**(a)**	Briefly describe branching and fusion mechanism in Core 2 Duo processor.	**07**
	(b)	Explain the various types of system segment descriptors. Also draw the descriptor table for 80386 microprocessor.	**07**

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