Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII • EXAMINATION – SUMMER • 2015

Subject code: 181104 **Date:11/05/2015**

Subject Name: Advanced Microprocessor

Time: 10.30am-01.00pm **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)**	(i)What happens with prefetch queue when jump or call instruction is received by EU? Why?	**04**
		(ii)Why does 8086 take two machine cycles if 16 bit word starts from odd location in memory?	**03**
	(b)	(i)State the difference between procedure, macro and ISR with example.	**04**
		(ii)Differentiate between interasegment call and intersegment call.	**03**
Q.2	**(a)**	Write an 8086 program to search a given number in an array of N (<10) numbers. Store the position of number in AL register if found otherwise store -1 in AL register.	**07**
	(b)	Briefly explain various methods of passing parameters to and from procedure with their merits and demerits. Define the term reentrant and explain how you must pass parameters to a procedure so that it is reentrant procedure.	**07**
		OR	
	(b)	Explain the instruction template (format) with an example giving purpose and meaning of each field.	**07**
Q.3	**(a)**	(i)Justify "Segment and offset addressing scheme allows relocation in Memory system in 8086.	**04**
		(ii) What are program visible and program invisible registers.	**03**
	(b)	(i)What three housekeeping chores are provided by the 8284A clock generator?	**04**
		(ii)Explain the difference between exceptions and interrupt.	**03**
		OR	
Q.3	**(a)**	(i)What conditions do the QS1 and QS0 pins indicate about the 8086? Also Explain the function of LOCK pin in 8086.	**04**
		(ii) Why buffers are often require in an 8086 based system? Explain.	**03**
	(b)	Write an 8086 program to add only even numbers from the block of ten 16-bit numbers defined as DATA_BLOCK. Store your answer in DS as ANSWER.	**07**
Q.4	**(a)**	(i)Compare the register set of the 80386 with the 80486 Microprocessor.	**04**
		(ii) What is the function of debug registers and control registers in 80386.	**03**
	(b)	How are tasks in an 80386 system protected from each other? How can operating system kernel procedures and data be protected from access by application programs in an 80386 system?	**07**
		OR	
Q.4	**(a)**	Explain virtual 8086 mode in 80386.	**07**

	(b)	(i)Describe the difference between the 80386DX and the 80386SX.	**04**
		(ii)Explain how the 80386 can address a virtual memory space of 64T bytes when the physical memory contains only 4G bytes of memory.	**03**
Q.5	**(a)**	Compare Pentium pro, Pentium II, Pentium III and Pentium IV.	**07**
	(b)	Describe three major improvements that the 80486 processor has over 80386 processor and three major improvements that the Pentium processor has over 80486 processor.	**07**

OR

Q.5	**(a)**	List three major advances that 80386 microprocessor has over the 80286.Describe how the real mode operation of an 80286 is different from protected mode operation.	**07**
	(b)	Explain following instructions of 80286: CLTS,LAR,LSL,APRL,VERR,VERW,SLDT	**07**

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